FACULTY OF
SOCIAL SCIENCES

ECONOMICS  LAW  POLITICAL & ADMINISTRATIVE STUDIES  POPULATION STUDIES  PSYCHOLOGY  SOCIAL WORK  SOCIOLOGY  STATISTICS

DEAN
Prof. H. K. Siphambe, BA (UB), MA (Western Michigan), PhD (Manitoba)

DEPUTY DEAN
R.G. Majelantle, BA (UB), PGDipPopStud (Rips, Ghana), MA (Pennsylvania)

FACULTY ADMINISTRATORS
M. B. Maje, BA PGDE (UB), MEd (Birmingham)

FACULTY HUMAN RESOURCES MANAGER
M.P. Tshebo, BA (UB), MSc HRM (Salford)
Special Regulations of the Faculty of Social Sciences.

24.00 General Regulations of the University shall apply.

24.01 Failure, without good cause, to deliver an assignment within the first 24 hours of the due date shall carry a penalty of 5 percentage marks. Failure to submit the assignment before the end of the week from the due date shall incur a zero mark.

DEPARTMENT OF ECONOMICS

Bachelor of Arts in Economics Degree Programme
Special Departmental Regulations for the Bachelor of Arts in Economics (Combined Degree and Economics Minor)

Entry Requirements
Subject to the provisions of General Regulation 20.20, at least a credit in Mathematics shall be required for all students intending to take Economics as a Major or Minor subject. Alternative qualifications may be accepted as per General Academic Regulation 20.24b. Requirements for entry into the Bachelor of Arts (Economics) Degree Programme are determined by the Department of Economics Board and may vary from year to year. The Department offers Economics as a Single Major Bachelor of Arts (Economics) Degree, a Combined Major (Major/Major) Degree for the BASS and other Degrees, and a Minor in Economics. Students majoring in other subjects may take courses in Economics provided the pre-requisites are satisfied.

Single Major Programme:
Students intending to take Economics as a Single Major shall take and pass the following courses:

Level 100
All courses at this level are Core.

Semester 1
ECO111 Basic Microeconomics (3)
STA101 Mathematics for Business and Social Sciences I (3)
STA116 Introduction to Statistics (4)

Semester 2
ECO112 Basic Macroeconomics (3)
STA102 Mathematics for Business and Social Sciences II (3)
STA121 Elements of Probability (2)

Level 200
All courses at this level are Core.

Semester 1
ECO211 Intermediate Microeconomics (3)
ECO231 Intermediate Mathematics for Economists (3)

Semester 2
ECO212 Intermediate Macroeconomics (3)
ECO232 Intermediate Statistics for Economists (3)

Level 300
All courses at this level are Core.

Semester 1
ECO311 Microeconomics I (3)
ECO321 Macroeconomics I (3)
ECO331 Mathematics for Economists I (3)
ECO341 Econometrics I (3)
ECO463 Economics of Botswana and Southern Africa (3)

Semester 2
ECO312 Microeconomics II (3)
ECO322 Macroeconomics II (3)
ECO332 Mathematics for Economists II (3)
ECO342 Econometrics II (3)
ECO465 History of Economic Thought (3)

Level 400
All courses at this level are Core.

Semester 1
ECO431 Research Methods in Economics (3 core)
Plus: 4 Optional Courses.

Semester 2
ECO432 Project in Applied Economics (3, core)
Plus: 4 Optional Courses.

Optional Courses
ECO221 Intermediate Microeconomics for Non-Majors
ECO222 Intermediate Macroeconomics for Non-Majors
ECO411 Development Economics
ECO412 Development Problems and Policy
ECO421 International Trade
ECO422 International Finance
ECO441 Economics of Agriculture
ECO442 Agricultural Policy and Rural Development
ECO451 Environmental Economics
ECO452 Resource Economics
ECO463 Economics of Botswana and Southern Africa
ECO465 History of Economic Thought
ECO466 Public Finance
ECO467 Labour Economics
ECO468 Industrial Economics
ECO469 Money and Banking
ECO473 Financial Economics
ECO474 Health Economics
ECO475 Transport Economics

NB: ECO221 and ECO222 are not available for Students taking Economics as a Major or Minor.

NB: Students in Levels 300 and 400 may take any of the above-listed optional courses provided they satisfy the pre-requisites.

Combined Major Programme
Students intending to take Economics as a Combined Major shall take and pass the following courses:

Level 100
All courses at this level are Core.

Semester 1
ECO111 Basic Microeconomics (3)
STA101 Mathematics for Business and Social Sciences I (3)
STA116 Introduction to Statistics (4)

Semester 2
ECO112 Basic Macroeconomics (3)
STA102 Mathematics for Business and Social Sciences II (3)
STA121 Elements of Probability (2)

Level 200
All courses at this level are Core.

Semester 1
ECO211 Intermediate Microeconomics (3)

Semester 2
ECO212 Intermediate Macroeconomics (3)

Minor in Economics
Students intending to take Economics as a Minor subject shall take and pass the following courses:

Level 100
All courses at this level are Core.

Semester 1
ECO111 Basic Microeconomics (3)
STA101 Mathematics for Business and Social Sciences I (3)

Semester 2
ECO112 Basic Macroeconomics (3)
STA102 Mathematics for Business and Social Sciences II (3)

Level 200
All courses at this level are Core.

Semester 1
ECO211 Intermediate Microeconomics (3)
Levels 300 and 400
Students are required to take 2 Optional Courses.

Assessment.
The continuous assessment (CA) of each course will normally include at least 2 components as outlined in the General Academic Regulation 00.811. These 2 components will normally be in written form. However, non-written presentations will count for no more than 10 percent of the CA. The CA will count for 40 percent of the total assessment while the final examination will count for 60 percent of the total assessment. This applies to all courses except ECO432 (Project in Applied Economics).

Research Proposal
All students taking ECO431 Research Methods in Economics shall write a research proposal that shall be graded, and there shall be no final examination for that course. The proposal for this course will normally be used as a basis for ECO432 Project in Applied Economics.

Progression from one Semester to Semester
Progression from one Semester to the next shall be as per General Regulations 00.9

DEPARTMENT OF LAW

The Department of Law offers programmes and courses leading to the award of the following qualifications:

- Bachelor of Laws (LLB)
- Master of Laws (LLM)

Departmental Regulations General Provisions
Subject to the provisions of Academic General Regulations and Faculty of Social Sciences Regulations, the following Departmental Regulations shall apply.

Bachelor of Laws (LLB) Degree

Entry Requirements
1. The normal requirement for admission to the Bachelor of Laws degree programme shall be the Botswana General Certificate of Secondary Education (BGCSE) obtained at one sitting with a minimum of five credits, one of which shall be in English language, or an equivalent qualification.
2. An applicant in possession of a Diploma in Law from this University, obtained with a minimum of five credits, one of which shall be in English language, or an equivalent qualification.

Programme Structure.
The normal duration for the LLB degree programme shall be ten (10) semesters on a full-time basis. Students entitled to exemptions in terms of Academic General Regulations, Faculty and Special Departmental Regulations may however complete the programme within a shorter period which, for students with a Diploma in Law, may not be less than six (6) semesters on a full-time basis.

Programme Structure.
1. The LLB programme shall consist of specified Core (C) and Optional (O) courses in the principal subject Law offered at Levels 100 to 500, and Electives (E) and General Education Courses (GEC) in other subject areas offered at comparable levels.
2. Students shall normally be required to take and complete credits for the Core courses in the manner and sequence indicated in the programme structure. The Core courses at each level and semester from Levels 100 to 400 have generally been designed and arranged to prepare LLB students for other Core courses at each successive higher level.
3. Optional courses on the LLB programme shall be offered subject to optimal student and approval of the Departmental Board.
4. Subject to changes approved from time to time, LLB courses shall be arranged as follows:-

Level 100
Semester 1
COM151 Introduction to Communication and Academic Literacy Skills (Social Sciences) (3)
ICT121 Computer Skills Fundamentals I (2)
LAW131 Introduction to Law (3)
LAW132 Comparative Legal History and Systems (3)
LAW133 Law of Persons (3) GEC / Elective (4)
Total Number of Credits 17

Semester 2
COM152 Academic and Professional Communication (Social Sciences) (3)
ICT122 Computer Skills Fundamentals 2 (3)
LAW106 Customary Law (3)
LAW134 Family Law (3)
LAW135 Law and Social Research Methods (2) GEC / Elective (4)
Total Number of Credits 16

Level 200
Semester 3
LAW231 Criminal Law, General Principles (3)
LAW232 Delict, General Principles (3)
LAW233 Contract Law (4)
LAW234 Constitutional Law (3) GEC / Elective (2)
Total Number of Credits 15

Semester 4
LAW235 Specific Offences in Criminal Law (3)
LAW236 Specific Delicts (3)
LAW237 Administrative Law (3)
LAW201 Introduction to Property Law (3) GEC / Elective (4)
Total Number of Credits 16

Level 300
Semester 5
LAW202 Land and Mineral Resources Law (3)
LAW331 Civil Procedure and Practice (4)
LAW332 Evidence (4)
LAW333 Criminal Procedure (3)
LAW334 Employment Law (3)
Total Number of Credits 17

Semester 6
LAW335 Sale, Lease and Credit Agreements (3)
LAW336 Negotiable Instruments and Banking Law (3)
LAW337 Labour Relations Law (3)
LAW338 Law and the Environment (3)
LAW339 Succession and Administration of Estates (2)

And one of
LAW340 Insurance and Agency Law (3)
LAW217 Insolvency and Secured Transactions (3)
LAW218 Tax Law in Botswana (3)
Total Number of Credits 17

Level 400
Semester 7
LAW431 Public International Law I (3)
LAW432 Jurisprudence (4)
LAW433 Clinical Legal Education I (4)
LAW434 Law of Business Associations I (3)

And one of
LAW439 Gender and the Law (3)
LAW440 Law and the Media (3)
LAW441 Law and Health Care (3)
LAW442 Social Security Law (3)
Total Number of Credits 17

Semester 8
LAW435 Public International Law II (3)
LAW436 Clinical Legal Education II (4)
LAW437 Human Rights Law (3)
LAW438 Law of Business Associations II (3)

And one of
LAW439 Gender and the Law (3)
LAW440 Law and the Media (3)
LAW441 Law and Health Care (3)
LAW442 Social Security Law (3)
Total Number of Credits 16

Level 500
Semester 9
LAW531 Clinical Legal Education III (4)
LAW532 Conveyancing Principles and Practice (4)
LAW535 Research Paper (3)
And at least two of
LAW536 International Moot (3)
LAW537 Private International Law I (3)
LAW538 International Organizations (3)
LAW539 International Business Transactions (3)
LAW540 Intellectual Property Law I (3)
Total Number of Credits 17

Semester 10
LAW533 Introduction to Notarial Practice (4)
ACC407 Accounting for Lawyers (4)
And at least three of
LAW536 International Moot (3)
LAW541 Intellectual Property Law II (3)
LAW542 International Trade Law (3)
LAW538 International Organizations (3)
LAW453 Private International Law II (3)
LAW539 International Business Transactions (3)
Total Number of Credits 17
Minimum Total Credits for the Programme: 165 Credits

Award of Degree
A student shall be eligible for the award of the LLB degree upon completion of a minimum of 165 credits from the Core, Optional, Electives and GECs indicated in the programme structure.

Assessment
1. The following Special Regulations shall supplement Academic General Regulations and Faculty of Social Sciences Regulations on assessment and grading of law courses on the LLB programme.
2. Except for courses LAW135, Law and Social Research Methods; LAW433, Clinical Legal Education I; LAW436, Clinical Legal Education II; LAW531, Clinical Legal Education III; LAW535, Research Paper; and LAW536, International Moot, each Core and Optional course on the LLB programme shall be assessed through continuous assessment and a formal written examination taken at or before the end of the semester.

Continuous Assessment
1. Continuous assessment shall consist of at least two or more of the following pieces of work: written assignments, written tests, oral tests, mock trials, moots, class or seminar exercises, practicals, projects, research exercises or independent study.
2. Except for the courses LAW135, Law and Social Research Methods; LAW433, Clinical Legal Education I; LAW436, Clinical Legal Education II; LAW531, Clinical Legal Education III; LAW535, Research Paper; and LAW536, International Moot, each Core and Optional course on the LLB programme shall be assessed through continuous assessment and a formal written examination taken at or before the end of the semester.

Final Examination
1. Formal written examinations for Core and Optional law courses on the LLB programme shall be of the type and for the duration approved by the Departmental Board and indicated in the course outline or at the beginning of each course.

Service Courses
Subject to optimal student demand and the availability of staff and other resources, the Department of Law shall offer the following courses at levels 100 to 600 to students not majoring in these courses:

- LAW531 Clinical Legal Education III
  - Internship Report - 30%
  - Moot/mock trial documents and performance - 50%
  - Oral examination on work performed in the Legal Clinic - 20%
  Total 100%
- International Moot
  - The Course LAW536, International Moot, shall be assessed as follows:
    - Internship Report - 30%
    - Advocacy skills in the Moot - 40%
  Total 100%

Research Paper
The final version of the research paper in course LAW535 shall be submitted for examination by the relevant date and marked out of 100 per cent. A student who fails to submit the research paper for examination by the relevant date shall be awarded an incomplete Grade (I) in accordance with Academic General Regulation 00.84.4. Delay and Failure to Submit Continuous Assessment Work
Subject to Special Departmental Regulations 3.6.4 and 3.6.5, failure without good cause to submit continuous assessment work within twenty-four hours of the due date shall carry a penalty of 5 percentage marks. Failure to submit the work within forty-eight hours of the due date shall carry a penalty of 10 percentage marks. Failure to submit the work within one week from the due date shall incur a zero mark.

Formal Examinations
Formal written examinations for Core and Optional law courses on the LLB programme shall be of the type and for the duration approved by the Departmental Board and indicated in the course outline or at the beginning of each course.

Service Courses
Subject to optimal student demand and the availability of staff and other resources, the Department of Law shall offer the following courses at levels 100 to 600 to students not registered for law programmes.

Level 100
- GEC277 Law and society in Botswana (2 sem 1 or 2)
- LAW151 Law and social work (4 sem 1)

Level 200
- LAW251 Foundations of Business Law (3, Sem 1)
- LAW252 Specific Business Transactions (4, Sem 2)
- LAW253 Foundations of Engineering Law (3, Sem 2)

Level 300
- LAW351 Introduction to Company Law (4, Sem 1)
- LAW353 Planning and Environmental Law (3, Sem 1 or 2)

Level 400
- LAW452 Construction Law (3, Sem 1 or 2)
- LAW453 Labour and Industrial Property Law (3, Sem 1 or 2)

And at least three of

DEPARTMENT OF POLITICAL AND ADMINISTRATIVE STUDIES

Subject to the provisions of the General Academic Regulations, the following Departmental Regulations shall apply.

4.2. Programmes and Titles of Degrees
The Department of Political and Administrative Studies offers the following undergraduate programmes leading to the award of the undermentioned degrees:

4.2.1 Single Major Public Administration Programme (PAS Regulations 2.1) leading to the award of the BA (Public Administration)
4.2.2 Single Major Political Science Programme (PAS Regulations 2.2) leading to the award of the BA (Political Science)
4.2.3 Combined Major/Major Programme (PAS Regulations 2.3) leading to the award of the BA (Social Science)
4.2.4 Combined Major/Minor Programme (PAS Regulations 2.4.1 and 2.4.2) leading to the award of the BA (Social Science)
4.2.5 Combined Minor in Public Administration + Major in Other Programme
4.2.6 Combined Minor in Political Science + Major Other Programme

4.3 Entry Requirements
Admission to the programmes offered by the Department shall be on the basis of performance in the Botswana General Certificate of Secondary Education (BGCSE) examination, or its equivalent, and as specified in the General Academic Regulations.

4.4 Assessment
Performance in each course shall be evaluated by the combination of continuous assessment and final examination marks in the ratio of 2:3 in favour of the final examination. The only exceptions are internships, projects and seminars, which shall be assessed only through assignments. The final examination for every course shall normally be 2 hours long. However, the department reserves the right to review the mode of assessment, and respective lectures shall specify approved mode of assessment prior to any intake or at the start of the semester in which the course is taken.

4.5 Award of Degree
To be awarded a Degree, a student must satisfy the appropriate provisions of the General Academic Regulation 23.7.1 and the Special Regulations of the Faculty of Social Sciences.

4.6 Degree Structure
4.6.1 The Public Administration and Political Sciences courses shall be offered at Levels 100 to 400 for the undergraduate programmes.
4.6.2 In addition to Public Administration and Political Sciences courses, an undergraduate candidate majoring in these courses shall take the General Education Courses (GECs) and Electives in accordance with the General Regulation 00.2124.
4.6.3 The Department of Political and Administrative Studies offers undergraduate
Public Administration and Political Science courses (as Combined Majors including a Major combined with a Minor) to students majoring in other subjects. In addition, the Department offers single majors in Political Science and Public Administration, subject to departmental approval. 4.6.4 The Department of Political and Administrative Studies offers GECs as outlined in the General Academic Regulations.

5.0 Undergraduate Degree Course Listings.

5.1 Bachelor of Social Science Degree in Public Administration (Single Major)

Level 100 Semester 1
Core Courses
PAD101 Introduction to Public Administration (3)
ECO111 Basic Microeconomics (3)
POL 101 Introductions to Political Science (3)
STA III Basic Statistics (3)
ICT121 Computer Skills Fundamentals (2)
COM151 Communication and Academic Literacy Skills (3)
Total Credits 17

Semester 2
Core Courses
PAD102 Institutions and Processors of Public Administration (3)
ECO112 Basic Macroeconomics (3)
POL 102: The Modern State (3)
STA112 Statistical Tools for Social Research (3)
ICT122 Computer Skills Fundamentals (2)
COM152 Communication and Academic Literacy Skills (3)
Total Credit 17

Level 200 Semester 1
Core Courses
PAD201 Organization Theories (3)
ECO221 Basic Macroeconomics for non-Majors (3) or ECO211 Intermediate Microeconomics (3)
ECO222 Intermediate Macro economics (3)
LAW234 Constitutional Law (3) Plus one Elective Total Credits 15

Semester 2
Core Courses
PAD202 Public Administration in Botswana (3)
ECO222 Intermediate Macro Economics for Non-Majors (3); or ECO212 Intermediate Macro Economics (3)
SOC226 Concepts & Principles of Social Research (3)
LAW234 Constitutional Law (3)
Intermediate Microeconomics (3)
Computer Skills Fundamentals (3)
One Optional Course from:
SOC334 Sociology of Development (3)
PAD 308 Industrial Relations (3)

POL 306 International Political Economy (3)
POL 310 Contemporary Africa (3)
Plus one elective (3) Total Credits 15

Semester 2
Core Courses
PAD304 Public Enterprise Management (3)
PAD307 Human Resource Development (3)
LAW237 Administrative Law (3)
Two Optional courses from:
POL309 Politics of Poverty in Southern Africa (3)
SOC 327 Political Sociology (3)
POL308 Politics and Management of Natural Resources or
ENV301 Environmental Issues (2) or
ENV476 Natural Resources Management and Economics (2)
Total Credits 15

Level 400 Semester 1
Core Courses
PAD401 Development Administration (3)
PAD403 Internship (3)
PAD402 Government Budgeting (3)
Two Optional Courses from:
PAD405 Seminar in Public Policy (3)
PAD407 Comparative Public Administration (3)
PAD413 Leadership & Governance (3)
Total Credits 15

Core Courses
PAD406 Ethics and Public Administration (3)
PAD404 Contemporary Issues in Public Admin (3)
PAD410 Public Financial Management (3)
Two Optional Courses from:
PAD408 International Administration (3)
PAD411 Local Government Finance (3)
PAD412 Research Project in Public Administration (3)
Total Credits 15

5.2 Bachelor of Social Science Degree Programme in Political Science (Single Major)

Level 100 Semester 1
Core Courses
POL101 Introduction to Political Science (3)
PAD101 Introduction to Public Administration (3)
ECO111 Basic Microeconomics (3)
STA112 Basic Statistics (3)
ICT122 Computer Skills Fundamentals (2)
COM151 Communication and Academic Literacy Skills (3)
Total credits 17

Semester 2
Core Courses
POL102 The Modern State (3)
PAD102 Institutions and Processes of Public Admin. (3)
ECO112 Basic Microeconomics (3)
STA112 Statistical Tools for Social Research (3)

Credit 17

Level 200
Semester 1
Core Courses
POL201 Botswana Politics (3)
ECO221 Intermediate Microeconomics (3)
LAW234 Constitutional Law (3) Plus one Elective (3)
ICT122 Computer Skills Fundamentals (2) One Optional Course from:
POL204 Media and Politics (3)
SOC236 Social Inequality (3) Plus one Elective (3)
Total Credits 15

Semester 2
Core Courses
POL301 Modern Political Thought (3)
POL306 International Political Economy (3)
POL310 Contemporary Africa (3)
One Optional Course from:
POL302 Politics of South Africa (3)
SOC334 Sociology of Development (3)
Total Credits 15

Semester 2
Core Courses
POL305 Politics of Southern Africa (3)
POL307 Politics of Regionalsm (3)
LAW237 Administrative Law (3)
Two Optional Courses from:
POL309 Politics of Poverty in Southern Africa (3)
SOC237 Political Sociology (3)
POL308 Politics & Management of Natural Resources (3) or Core-coding
ENV301 Environmental Issues (2) or ENV476 Natural Resource Management & Economics (2)
Total Credits 15

Level 400
Semester 1
Core Courses
POL401 International Relations (3)
POL402 Democratic Theory and Practice (3)
POL412 Internship in Political Science (3)
Two Optional Courses from:
POL406 Africa in World Politics (3)
Semester 2
Core Courses
POL407 Civil Military Relations (3)
PAD402 Government Budgeting (3)
PAD413 Leadership & Governance (3)
Total Credits 15

Semester 2
Core Courses
POL405 Comparative Politics (3)
POL409 Security Studies (3)
Two Optional Courses from:
POL403 Modern Ideologies (3)
POL411 Research Project in Political Science (3)
PAD408 International Administration (3)
Plus one Elective (3)
Total Credits 15

5.3 Bachelor of Social Science Degree Programme
Major in Public Administration + Major in Political Science

Level 100
Semester 1
Core Courses
PAD101 Introduction to Public Administration (3)
POL101 Introduction to Political Science (3)
ECO111 Basic Microeconomics (3)
STA111 Basic Statistics (3)
ICT122 Computer Skills Fundamentals 1 (2)
COM151 Communication and Academic Literacy Skills (3)
Total Credits 17

Semester 2
Core Courses
PAD102 Institutions and Processes of Public Administration (3)
POL102 The Modern State (3)
ECO112 Basic Macroeconomics (3)
STA112 Statistical Tools for Social Research (3)
ICT122 Computer Skills Fundamentals 1 (2)
COM152 Communication and Academic Literacy Skills (3) Total Credits 17

Level 200
Semester 1
Core Courses
PAD201 Organisation Theories (3)
POL201 Botswana Politics (3)
ECO221 Intermediate Microeconomics for Non-Majors (3) or
ECO221 Intermediate Microeconomics (3)
LAWS234 Constitutional Law (3)
Plus one Elective (3) Total Credits 15

Semester 2
Core Courses
PAD202 Public Administration in Botswana (3)
POL202 Classical Political Thought (3)
ECO222 Intermediate Macroeconomics for Non-Majors (3) or
ECO212 Intermediate Macroeconomics (3)
Two Optional Courses from:
POL204 Media and Politics (3)
SOC226 Concepts & Principles of Social Research (3)
SOC236 Social Inequality (3)
Total Credits 15

Level 300
Semester 1
Core Courses
PAD306 Public Policy Analysis (3)
POL301 Modern Political Thought (3)
Three Optional Courses from:
POL310 Contemporary Africa (3)
PAD302 Human Resource Management (3)
PLO302 Politics in South Africa (3)
PAD303 Local Government Management (3)
PLO306 International Political Economy (3)
PAD308 Industrial Relations (3)
Total Credits 15

Semester 2
Core Courses
POL305 Politics of Southern Africa (3)
POL309 Politics of Poverty in Southern Africa (3)
PAD304 Public Enterprise Management (3)
PLO308 Politics and Management of Natural Resources (3) Core-coded
ENV 301: Environmental Issues (2) or ENV 476: Natural Resource Management & Economics (2)
Total Credits 17

Level 400
Semester 1
Core Courses
PAD401 Development Administration (3)
POL 401 International Relations (3)
PAD402 Government Budgeting (3)
Two Optional Courses from:
PAD403/POL410 Internship in Public Administration/Political Science (3)
PAD407 Comparative Public Administration (3)
PAD 405 Case Studies in Public Policy
PAD413 Leadership & Governance
POL402 Democratic Theory and Practice (3)
POL406 Africa in World Politics (3)
Total Credits 15

Semester 2
Core Courses
PAD404 Contemporary Issues in Public Administration (3)
PLO405 Comparative Politics (3)
Three Optional Courses from:
PAD 406 Ethics and Public Management (3)
PAD408 International Administration (3)
PAD 410 Public Financial Administrations (3)
PAD 412/POL411 Research Project in Public Administration/Political Science (3)
Total Credits 15

Level 500
Semester 1
Core Courses
POL301 Modern Political Thought (3)
PLO306 International Political Economy (3)
One Optional Course from:
PLO302 Politics of South Africa (3)
SOC334 Sociology of Development or
One Elective from Other Major (3)
Total Credits 15

Semester 2
Core Courses
POL307 Politics of Regionalisation (3)
LAWS237Administrative Law (3)
One Optional Course from:
PLO305 Politics of Southern (3)
PLO309 Politics of Poverty in Southern Africa (3)
PLO308 Politics & Management of Natural Resources (3) or
ENV301 Environmental Issues (2) or ENV476 Natural Resource Management and Economics (2)
Total Credits 15

5.4 Bachelor of Social Science Degree Programme
Major in Political Science and Major in Another Subject.

Level 100
Semester 1
Level 400  
Semester 1  
Core Courses  
POL401 International Relations (3)  
POL402 Democratic Theory and Practice (3)  
COM152 Communication and Academic Literacy Skills (3)  
Plus One Other Major course. Total Credits 17

Semester 2  
Core Courses  
POL406 Africa in World Politics (3)  
POL407 Civil Military Relations (3)  
POL411 Research Project in Political Science (3)  
Plus Two Other Major courses (6) Total Credits 15

Level 100  
Semester 1  
Core Courses  
PAD101 Introduction to Public Administration (3)  
ECO111 Basic Micro Economics (3)  
STA 111 Basic Statistics (3) Plus  
ICT122 Computer Skills Fundamentals 1 (2)  
COM151 Communication and Academic Literacy Skills (3) and Other Major course. Total Credits 17

Semester 2  
Core Courses  
PAD102 Institutions & Processes of Public Administration (3)  
ECO112 Basic Macro Economics (3)  
STA 112 Statistical Tools Economics (3)  
ICT122 Computer Skills Fundamentals 1 (2)  
COM152 Communication and Academic Literacy Skills (3) Plus one Other Major course. Total Credits 17

Level 200  
Semester 1  
Core Courses  
PAD201 Organisation Theories (3)  
LAW234 Constitutional Law (3)  
ECO221 Intermediate Microeconomics for Non-majors (3) or  
ECO211 Intermediate Microeconomics (3) Plus Two Other Major courses (6) Total Credits 15

Semester 2  
Core Courses  
PAD202 Public Administration in Botswana (3)  
ECO222 Intermediate Macroeconomics for Non-majors (3) or  
ECO212 Intermediate Macro Economics (3)  
SOC226 Concepts & Principles of Social Research (3)  
ICT122 Computer Skills Fundamentals 1 (2)  

Level 300  
Semester 1  
Core Courses  
PAD306 Public Policy Analysis (3)  
PAD302 Human Resource Management (3) One Optional Course from:  
PAD303 Local Government Management (3) or Optional Course from other major Plus One Elective (3), and Other Major course. Total Credits 15

Semester 2  
Core Courses  
PAD307 Human Resource Development (3)  
LAW 237 Administrative LAW (3) One Optional course from:  
PAD304 Public Enterprise Management (3)  
POL308 Politics & Management of Natural Resources (3) (core-coding)  
ENV301 Environmental Issues (2) or ENV476 Natural Resource Management & Economics (2) or Optional Course from the Major (3) Plus Two Other Major courses (6) Total Credits 15

Level 400  
Semester 1  
Core Courses  
PAD401 Development Administration (3)  
PAD402 Government Budgeting (3) Two Optional Courses from:  
PAD403 Internship (3)  
PAD407 Comparative Public Administration (3)  
PAD405 Case Studies in Public Policy or Optional Course from major other (3) One other Major Course (3) Total Credits 15

Semester 2  
Core Courses  
PAD404 Contemporary Issues in Public Administration (3) One Optional Course from:  
PAD406 Ethics and Accountability (3)  
PAD408 International Administration (3)  
PAD410 Public Financial Administrations (3)  
PAD412 Research Project in Public Administration or Optional Course from other major Plus One Elective (3) Two other Major Courses (6) Total Credits 15

Level 100  
Semester 1  
Core Courses  
PUL101 Introduction to Political Science (3)  
ECO111 Basic Microeconomics (3)  
STA111 Basic Statistics (3)  
ICT122 Computer Skills Fundamentals 1 (2)  

Level 200  
Semester 1  
Core Courses  
PUL102 The Modern State (3)  
ECO112 Basic Macro Economics (3)  
STA 112 Statistical Tools for Social Research (3)  
ICT122 Computer Skills Fundamentals 1 (2)  
COM152 Communication and Academic Literacy Skills (3) One Minor course (3) Total Credits 17

Level 300  
Semester 1  
Core Courses  
PUL201 Botswana Politics (3)  
ECO221 Intermediate Micro Economics for Non-Majors (3) or  
ECO211 Intermediate Micro Economics (3) One Optional Course from:  
LAW234 Constitutional Law (3) Plus one Elective (3) and One Minor course (3) Total Credits= 15

Semester 2  
Core Courses  
PUL202 Classical Political Thought (3)  
ECO222 Intermediate Macro Economics for Non-Majors (3) or  
ECO212 Intermediate Macro Economics (3)  
SOC226 Concepts & Principles of Social Research (3) One Optional Course from:  
PUL204 Media and Politics (3)  
SOC236 Social Inequality (3) Plus One Minor course (3) Total Credits 15

Level 400  
Semester 1  
Core Courses  
PUL301 Modern Political Thought (3)  
PUL310 Contemporary Africa (3) One Optional Course from:  
PUL302 Politics of South Africa (3)  
PUL306 International Political Economy (3)  
SOC338 Democracy and Development (3) Plus one Elective (3) One Minor course (3) Total Credits 15

Semester 2  
Core Courses  
PUL307 Politics of Regionalism (3)  
PUL305 Politics of Southern Africa (3)  
LAW237 Administrative Law (3) One Optional Course from:  
PUL309 Politics of Poverty in Southern Africa (3)  
PUL308 Politics and Management of Natural Resources (3) or ENV301 Environmental Issues (2) or ENV476 Natural Resource Management and Economics (2) Plus one Minor course (3) Total Credits 15
Level 400
Semester 1
Core Courses
PAD302 Human Resource Management (3)
PAD306 Public Policy Analysis (3)

Two Optional Courses from:
PAD303 Local Government Management (3)
PAD308 Industrial Relations (3)
SOC334 Sociology of Development (3)
Plus one GEC and one Minor Course
Total Credits 17

Semester 2
Core Courses
PAD307 Human Resource Development (3)
LAW 237 Administrative Law (3)

One Optional Course from:
PAD304 Public Enterprise Management (3)
POLL08 Politics and Management of Natural Resources (3) or ENV301 Environmental Issues (2) or ENVR76 Natural Resource Management and Economics (3)
Plus two GECs and one Minor course. Total Credits 16

Level 100
Semester 1
Core Courses
PAD101 Introduction to Public Administration (3)
ECO111 Basic Micro Economics (3)
POLL01 Introduction to Political Science (3)
STA111 Basic Statistics (3)
Plus two GECs and one Minor Course. Total Credits 19

Semester 2
Core Courses
PAD102 Institutions and Processes of Public Administration (3)
POLL02 The Modern State (3)
ECO112 Basic Macro Economics (3)
STA112 Statistical Tools Social Research (3)
Plus two GECs and one Minor Course. Total Credits 19

Level 200
Semester 1
Core Courses
PAD201 Organisation Theories (3)
LAW234 Constitutional Law (3)
ECO221 Intermediate Micro Economics for Non-Majors (3)
Plus one Elective, two GECs and one Minor Course. Total Credits 19

Semester 2
Core Course
PAD202 Public Administration in Botswana (3)
ECO222 Intermediate Macro Economics for Non-Majors (3)
One Optional Course from:
SOC226 Concepts & Principles of Social Research (3)
Plus one Elective, one GEC and one Minor Course Total Credits 17

Level 300
Semester 1
Core Courses for Minor
POL101 Introduction to Political Science (3)
STA111 Basic Statistics (3)
Plus two Major Core Courses, and two GECs. Total Credits= 16

Semester 2
Core Courses for Minor
POL102 Institutions and Processes of Public Administration (3)
STA112 Statistical Tools for Social Research (3)
Plus two Major Core Courses, and two GECs. Total Credits= 16

5.7 Bachelor of Social Science Degree Programme: Major in Public Administration + Minor

Level 400
Semester 1
Core Courses
PAD401 Development Administration (3)
PAD402 Government Budgeting (3)

One Optional Course from:
PAD403 Internship (3)
PAD407 Comparative Public Administration (3)
PAD405 Case Studies in Public Policy Analysis (3)
Plus one Elective and one Minor course Total Credits 15

Semester 2
Core Courses
PAD404 Contemporary Issues in Public Administration (3)
PAD410 Public Financial Management (3)
One Optional Course from:
PAD406 Ethics and Public Management (3)
PAD411 Local Government Finance (3)
PAD412 Research Project in Public Administration (3)
Plus one Elective, one GEC and one Minor course Total Credits 17

5.8 Bachelor of Social Science Degree Programme: Minor Political Science + Major in Other Subject

Level 100
Semester 1
Core Courses for Minor
POL101 Introduction to Public Administration (3)
STA111 Basic Statistics (3)
Plus two Major Core Courses, and two GECs. Total Credits= 16

Semester 2
Core Courses for Minor
PAD102 Institutions and Processes of Public Administration (3)
STA112 Statistical Tools for Social Research (3)
Plus two Major Core Courses, and two GECs. Total Credits= 16

5.9 Bachelor of Social Science Degree Programme: Minor in Public Administration + Major in Other Subject.
Regulations shall apply:
Regulations 000 and 100, and the Faculty of Social Studies

a) A minimum of 3 credits (one of which is in Population Studies shall be:

b) A GPA of at least 2.0 at the Certificate in Civil POPU

Subject to the provisions of the Academic General Special courses (3 credits)

Programme Structure
The curriculum and methods of assessment shall be as follows:

Level 100
Semester 1
Core courses (6 credits)
POP120 Introduction to Substantive Demography (3 credits)
STA116 Introduction to Statistics (4 credits)
Elective courses (6 credits)
General Education courses (3 credits)

Students planning to enter a degree programme after the completing of their Diploma should take STA101 as well.

Semester 2
Core courses (6 credits)
POP121 Introduction to Epidemiology and Technical Demography (3 credits)
POP110 Elements of Research Methods (3 credits)
Elective courses (6 credits)
General Education courses (3 credits)

Students planning to enter a degree programme after the completing of their Diploma should take STA102 as well.

Level 200
Semester 3
Core courses (6 credits)
POP200 Methods of Demographic Analysis (3 credits)
POP201 Computing for Demographers (3 credits)
Optional courses (3 credits)
Select from the following:

POP202 Introduction to Population and Developments (3 credits)
POP206 Population Policy of Botswana (3 credits)
General Education Courses (6 credits)

Semester 4
Core Courses (3 credits)
POP203 Demographic Data Analysis and Report Writing (3 credits)

Optional courses (3 credits)
Select one from the following:

POP204 Reproductive Health and Family Planning (3 credits)
POP205 Demography of Southern Africa (3 credits)
Elective courses (6 credits)
General Education courses (3 credits).

It is recommended that all Diploma students take POP202: Introduction to Population and Development.

Assessment
Each course shall be evaluated by a combination of continuous assessment and final examination or semester paper in the ratio of 2:3.

Award of Diploma
In order to be awarded the Diploma, a student must have completed a minimum of 60 credits and have a cumulative GPA of at least 2.0.

Bachelor of Arts Degree
Special Regulations for the Major/Major Programme in Population Studies.
Subject to the provisions of the Academic General Regulations 000 and 200, the following Special Regulations shall apply:

Entrance Requirements
The normal requirement for entrance into the Bachelor’s Degree in Population Studies Programme shall be:

a) A minimum of 5 credits (one of which is Mathematics) in the Botswana General Certificate of Secondary Education (BGCSE) or its equivalent;
Or:

b) A GPA of at least 2.0 in the Diploma in Population Studies of this University or its equivalent; Other qualifications for entrance to the Bachelor’s Degree in Population Studies may be accepted on their own merit as alternatives as shown by the General Regulation 00.052.

Duration of the Programme
The normal duration for the Bachelor of Arts Degree in Population Studies Programme shall be 8 to 10 semesters of full-time study.

Level 100
Semester 1
Core courses (9 credits)
POP120 Introduction to Substantive Demography (3 credits)
STA101 Mathematics for Business and Social Sciences (3 credits)
STA116 Introduction to Statistics (4 credits)
General Education courses (8 credits)

Semester 2
Core courses (6 credits)
POP121 Introduction to Epidemiology and Technical Demography (3 credits)
STA102 Mathematics for Business and Social Sciences (3 credits)
General Education courses (8 credits)

Level 200
Semester 3
Core courses (6 credits)
POP200 Methods of Demographic Analysis (3 credits)

Optional courses (3 credits)
Select one from the following:

POP204 Reproductive Health and Family Planning (3 credits)
POP205 Demography of Southern Africa (3 credits)
Elective courses (6 credits)
General Education courses (3 credits).

It is recommended that all Diploma students take POP202: Introduction to Population and Development.

DEPARTMENT OF POPULATION STUDIES

Diploma in Population Studies

Special Regulations for Diploma in Population Studies

Subject to the provisions of the Academic General Regulations 000 and 100, and the Faculty of Social Sciences Special Regulations, the following Special Regulations shall apply:

Entrance Requirements
The normal requirement for entrance into Diploma in Population Studies shall be:

a) A minimum of 3 credits (one of which is Mathematics) in the Botswana General Certificate of Secondary Education (BGCSE) or its equivalent;
Or:

b) A GPA of at least 2.0 at the Certificate in Civil POPU
Students entering the degree programme after the completing of their diploma should take STA202 as well if the course was not taken during the diploma studies.

Level 300
Semester 5
- Core courses (6 credits)
  - POP300 Sources, Evaluation, Adjustment and Analysis of Demographic Data (3 credits)
  - POP302 Research Methods (3 credits)
- Optional course (3 credits)
  - POP304 Inter-relationships of Fertility, Mortality and Migration (3 credits)

Semester 6
- Core courses (6 credits)
  - POP301 Computer Applications in Population Analysis (3 credits)
- Optional courses (3 credits)
  - Select from the following:
    - POP303 Migration, Urbanisation and Development (3 credits)
    - POP305 Population Policies and Programmes (3 credits)
    - General Education courses (4 credits)

Level 400
Semester 7
- Core courses (9 credits)
  - POP400 Integrating Population Variables into Development Planning (3 credits)
  - POP401 Research Paper (3 credits)
  - POP402 Indirect Estimation Techniques (3 credits)
- Optional courses (6 credits)
  - Select from the following:
    - POP403 Population, Development and Environment (3 credits)
    - POP404 Gender, Reproductive Health and Development (3 credits)
    - POP405 Demographic Dimensions of Poverty (3 credits)
    - POP406 Demographic Aspects of Ageing (3 credits)
    - POP407 Demographics (3 credits)
      - Elective courses (2 credits)
      - General Education courses (2 credits)

Assessment
Each course shall be evaluated by a combination of continuous assessment and final examination or semester paper in the ratio of 2:3.

Progression
In order to proceed from one semester to the next, a student must obtain a Cumulative GPA that is in accordance with General Regulation 00.9.

General Education Courses offered by the Department:

Semester 1 & 2
- GEC 372 Migration and Globalisation (2)
- GEC 278 Population and Society (2)

DEPARTMENT OF PSYCHOLOGY

Programmes
The Department offers two degree programmes at undergraduate level:

i) Bachelor of Arts in Social Sciences degree with Psychology as Combined Major (Major/Major) and

ii) Bachelor of Psychology degree, which is a semi-professional programme.

2.0 Bachelor of Arts in Social Sciences with Psychology as Combined Major

2.1 Aims of the Programme
The main aim of a Bachelor’s programme with Psychology as a Combined Major is to introduce students to the discipline of psychology and provide them with basic knowledge about major substantive areas of research in psychology.

2.2 Entrance Requirement
Subject to provisions of General Academic Regulations 20.2, a credit in Mathematics shall be required for applicants intending to enrol for Psychology as a Combined Major.

2.2 General Provisions
2.3.1 Psychology as a Combined Major shall consist of an eight semester programme and with core and optional psychology courses.

2.3 Subject to special regulations of programmes in other departments, students may pursue a combined major in psychology and any other major of their choice.

2.3.3 Students who enrol for psychology as part of a combined degree (major/major) shall be expected to combine courses from psychology and the second subject in the ratio of 50:50 (major/major).

2.3.4 Students at any level of their university studies may be allowed to enrol in a psychology course at another level with the permission of the Head of Department.

2.4 Programme Structure
Level 100
Semester 1
- Core Courses
  - STA101* Mathematics for Social Sciences I (3)
  - STA118* Introduction to Statistics (4)
  - PSY101 Introduction to Psychology (3)
  - * or equivalent course

Semester 2
- Core Courses
  - PSY102 Biological Basis of Human Behaviour (3)
  - Level 200
Combined Major students are expected to enrol in at least two psychology courses per Semester.

Semester 3
- Core Courses
  - PSY201* Theories of Personality (3)
  - PSY209 Research in Psychology: Methods and Designs (3)

Optional Courses
- PSY202 Social Psychology (3)
- PSY203 Developmental Psychology of Childhood and Adolescence (3)
- PSY204 History and Philosophy of Psychology (3)

Semester 4
- Core Courses
  - PSY208* Statistics for Psychology I (3)

Optional Courses
- PSY206 Developmental Psychology of Adulthood and Old Age (3)
- PSY207 Psychology of Work and Labour Relations (3)

Level 300
For the Combined Major, all but one Level 300 psychology courses are optional in order to enable the student flexibility in his/her choice of courses. Level 300 Combined Major students are expected to enrol in at least two psychology courses per Semester.

Semester 5
- Optional Courses
  - PSY302* Psychological Testing and Psychometrics (3)
  - PSY303 Cognition and Learning (3)
  - PSY304 Health Psychology (3)
  - PSY305 Organisational and Personnel Psychology (3)

Semester 6
- Core Courses
  - PSY312 Research Proposal in Psychology (3)
    (Core for B.Psych. students and optional for Combined Major students)

Optional Courses
- PSY309 Human Factors in the Work Environment (3)
- PSY310 Consumer Psychology (3)

Level 400
For the Combined Major, all Level 400 psychology courses are optional in order to enable the student flexibility in his/her choice of courses. Level 400 Combined Major students are expected to enrol in at least two psychology courses per Semester.

Semester 7
- Optional Courses
  - PSY406 Psychological Challenges of HIV/AIDS (3)
  - PSY407 Special Topics in Psychology (3)
  - PSY409 Sensation and Perception (3)

Semester 8
- Optional Courses
PSY410 | Applied Psychology (3)  
PSY411 | Psychopathology (3)  
PSY412 | Research Project (3)  

2.5 Assessment  
Assessment of psychology courses shall be based on any one or combinations of the following: tests, assignments, written examinations, oral examinations as approved by the Department.  

3.0 Bachelor of Psychology (B.Psych.) Programme  

3.1 Objectives of the Programme  
Students who graduate with a Bachelor of Psychology (B.Psych.) degree shall be qualified to work as semi-professionals in the field of psychology, more specifically as "psychological counsellors". In order to become full professional psychologists, graduates would, however, require post-graduate training in psychology on either Masters or Doctorate level that provides coursework and internship.  

3.2 Entrance Requirement  
Subject to provisions of General Academic Regulations 20.2, a credit in Mathematics shall be required for applicants intending to enrol for a B.Psych. degree.  

3.3 General Provisions  
3.3.1 The B.Psych. degree shall consist of an eight-semester programme.  
3.3.2 A student who intends to pursue a B.Psych. degree shall take a minimum of 87 credits in psychology courses (consisting of 54 credits in core and 15 credits in optional psychology courses and 18 credits in the internship), 6 credits from core Mathematics and Statistics courses, and 20 credits from General Education Courses. Required credits from another subject taken during Level 100 and Level 200 shall be determined by this other subject.  
3.3.2.1 The core and optional psychology courses shall consist of 6 credits at Level 100, 12 credits at Level 200, 24 credits at Level 300 and 33 credits at Level 400.  
3.3.2.2 B.Psych. Students at any level of their university studies may be allowed to enrol in a psychology course at another level with the permission of the Head of Department.  
3.3.2.3 A student who intends to pursue a B.Psych. degree shall enroll in a Bachelor's programme of any faculty at Level 100 and Level 200 and study psychology together with another major subject.  
3.3.2.4 Students shall normally be selected for the B.Psych. programme after completing Level 200 to start the programme at Level 300 (fifth semester).  
3.3.2.5 Students who are not selected for the B.Psych. programme may continue with psychology as a Combined Major.  
3.3.2.6 The B.Psych. programme shall consist of core and optional psychology courses that include lectures, seminars, laboratory work and supervised practical work and a research project based on empirical data.  
3.3.2.7 The B.Psych. programme shall include a supervised internship undertaken over six months with a minimum of 960 hours practical experience.  

3.4 Programme Structure  
Level 100  
Semester 1  
Core Courses  
PSY101 | Introduction to Psychology (3)  
PSY102 | Biological Basis of Human Behaviour (3)  

Level 200  
Semester 3  
Core Courses  
PSY201 | Theories of Personality (3)  
PSY202 | Social Psychology (3)  
Optional Courses  
Students choose at least one  
PSY203 | Developmental Psychology of Childhood and Adolescence (3)  
PSY204 | History and Philosophy of Psychology (3)  

Level 300  
Semester 5  
Core Courses  
PSY301 | Abnormal Psychology I (3)  
PSY302 | Psychological Testing and Psychometrics (3)  
PSY303 | Cognition and Learning (3)  
Optional Courses  
Students choose at least one  
PSY304 | Health Psychology (3)  
PSY305 | Organisational and Personnel Psychology (3)  

Semester 6  
Core Courses  
PSY306 | Counselling I (3)  
PSY307 | Psychological Assessment (3)  
PSY311 | Research Methods in Psychology (3)  
Optional Courses  
Students choose at least one  
PSY309 | Human Factors in the Work Environment (3)  
PSY310 | Consumer Psychology (3)  
Level 400  
Semester 7  

Core Courses  
PSY401 | Research Project (3)  
PSY402 | Abnormal Psychology II (3)  
PSY403 | Counselling II (3)  

Optional courses  
Students choose at least two courses  
PSY404 | Psychotherapy (3)  
PSY405 | Training and Human Resource Development (3)  
PSY406 | Psychological Challenges of HIV/AIDS (3)  
PSY407 | Special Topics in Psychology (3)  

*) This course is recommended to students who wish to pursue a career in the field of clinical psychology.  
") This course is recommended to students who wish to pursue a career in the field of industrial psychology.  

Semester 8  
Core Course  
PSY408 | Internship (18 credits)  

The internship shall start with the first week of Semester VIII and continue for at least eight weeks into the Winter vacation.  

3.5 Assessment  
3.5.1 Assessment of psychology courses shall be based on any one or combinations of the following: tests, assignments, written examinations, oral examinations, practical examinations as approved by the Department.  
3.5.2 Assessment of the performance on the internship shall consist of an evaluation of the intern according to criteria set by the Department.  
3.5.2.1 A student who fails the internship shall be permitted to repeat the internship only once.  
3.5.2.2 A student who, for a good reason, fails to complete the internship may be awarded an "I" (incomplete) grade and may, with the consent of the Head of Department and the Dean of the Faculty, be allowed an additional period, not exceeding ten weeks, to complete the work.  
3.5.3 A student who fails the B.Psych. requirements may be permitted to continue his/her psychology studies as a combined major.  

3.6 Special Departmental Regulation  
Subject to provisions of the General Examination Regulations, admission to an examination of a course that contains essential practical components (e.g. PSY306, PSY308, PSY403, PSY404 and PSY405) shall be subject to given if students have achieved a class attendance of at least 80% and a continuous assessment mark of at least 50%. Students who fail to achieve the required minimum class attendance or continuous assessment mark in courses with an essential practical component may be permitted to repeat the course only once.  

3.7 Progression from Level to Level  
3.7.1 A student who intends to pursue a B.Psych. degree must achieve an average of at least 60% (Grade Point 3.0) in all core psychology courses at Level 100.  
3.7.2 A student who intends to pursue a B.Psych. degree must achieve an average of at least 60%
FACULTY OF SOCIAL SCIENCES

[Grade Point 3.0] in all core psychology courses at Level 200.

3.7.3 A student who intends to pursue a B.Psych. degree may be permitted to register for the programme only at Level 300 but not before.

3.7.3.1 The intake into the B.Psych. programme at Level 300 shall be based on academic merit and restricted to a specified number of students per annum. The number of students selected into the B.Psych. programme shall be determined by the Department from time to time.

3.7.3.2 The criteria for selection into the B.Psych. programme shall take into consideration academic performance, performance in a selection interview and the number of spaces available for practical training.

3.7.3.3 A student who does not meet the requirements for the B.Psych. programme may be permitted to continue his/her studies with psychology as a combined major.

3.8 Award of the Degree

In order to be awarded the B.Psych. degree, a student must meet the requirements of the Academic General Regulations, Faculty and Departmental Special Regulations and obtain a minimum of Grade Point of 3.0 (60%) in the internship.

DEPARTMENT OF SOCIAL WORK

Diploma in Social Work (DSW) Programme

Entry Requirements.

Subject to the General Regulations 200 and the Special Regulations of the Faculty of Social Sciences, the following Special Regulations of the Department of Social Work shall apply: The normal minimum requirement is a BGCSE with credit in English or a Certificate in Social Work from this University or an equivalent qualification. Students shall be subject to the guidelines and regulations of the Department’s Fieldwork Manual.

DSW Programme Structure and Content.

The Diploma in Social Work (DSW) Programme has a total of 72 to 74 credits.

Level 100

Semester 1

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSW100</td>
<td>Introduction to Social Work and its Literature (3)</td>
</tr>
<tr>
<td>DSW101</td>
<td>Social Work with Communities and Groups (3)</td>
</tr>
<tr>
<td>DSW102</td>
<td>Social Services in Botswana (2)</td>
</tr>
<tr>
<td>DSW103</td>
<td>Social Work with Youth (3)</td>
</tr>
<tr>
<td>DSW104</td>
<td>Social Work in Health Services (3)</td>
</tr>
<tr>
<td>COM151</td>
<td>Introduction to Communication and Academic Literacy Skills (Social Sciences) (3)</td>
</tr>
<tr>
<td>ICT121</td>
<td>Computer Skills Fundamentals I (2)</td>
</tr>
</tbody>
</table>

Semester 2

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWF101</td>
<td>Orientation to Fieldwork (1)</td>
</tr>
<tr>
<td>DSW105</td>
<td>Social Work with Families and Children (3)</td>
</tr>
<tr>
<td>DSW106</td>
<td>Psychology for Social Work (3)</td>
</tr>
<tr>
<td>DSW107</td>
<td>Social Work and Disabilities (3)</td>
</tr>
<tr>
<td>DSW108</td>
<td>Interpersonal Communication (3)</td>
</tr>
<tr>
<td>STA111</td>
<td>Elementary Statistics (2)</td>
</tr>
<tr>
<td>COM152</td>
<td>Academic and Professional Communication (Social Sciences) (3)</td>
</tr>
<tr>
<td>ICT122</td>
<td>Computer Skills Fundamentals 2 (2)</td>
</tr>
</tbody>
</table>

Level 200

Semester 1

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWF200</td>
<td>Fieldwork (Block Placement) (3)</td>
</tr>
<tr>
<td>SWF201</td>
<td>Fieldwork and Professional Development (3)</td>
</tr>
<tr>
<td>DSW200</td>
<td>Introduction to Counselling in Social Work (3)</td>
</tr>
<tr>
<td>DSW201</td>
<td>Introduction to Social Policy (2)</td>
</tr>
<tr>
<td>DSW202</td>
<td>Selected Issues in Social Work (2)</td>
</tr>
<tr>
<td>DSW205</td>
<td>Probation (3)</td>
</tr>
</tbody>
</table>

General Education Course/Elective (2 or 3 credits) 18/19 credits. 
NB: SWF200 is a 12-week block placement in social welfare agencies that takes place during the long vacation between Levels 1 and 2.

Semester 2

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSW203</td>
<td>AIDS and Home Based Care (3)</td>
</tr>
<tr>
<td>DSW204</td>
<td>Social Work and Social Development (3)</td>
</tr>
<tr>
<td>DSW206</td>
<td>Management and Supervision in the Human Services (3)</td>
</tr>
<tr>
<td>DSW207</td>
<td>Culture, Change and Social Work in Botswana (3)</td>
</tr>
<tr>
<td>SOC122</td>
<td>The Social Structure of Society (3)</td>
</tr>
</tbody>
</table>

General Education Course/Elective (2 or 3 credits) 18/19 credits. 
NB: A student must meet the requirements of the General Academic Regulations 00.8. Assessment criteria shall also be stated in each course outline.

Progression from Semester to Semester.

Progression from one semester to the next shall be as per General Academic Regulations 00.9. Award of the Diploma

The award of the Diploma shall be as per General Regulations 00.852.

Bachelor of Social Work Programme

Entry Requirements.

Subject to the General Regulations 200 and the Special Regulations of the Faculty of Social Sciences, the following Special Regulations of the Department of Social Work shall apply:

1. The normal minimum requirement for entry into the Bachelor of Social Work (BSW) Programme is a credit in Mathematics.

2. Students shall be subject to the guidelines and regulations of the Department’s Fieldwork Manual.

3. Applicants with a Diploma in Social Work from this University or an equivalent qualification with a minimum grade of a credit shall be eligible for entry at Level 2 of the first semester of the second year of the BSW Programme.

BSW Programme Structure and Content.

The BSW programme has a total of 129-137 credits.

Level 100

Semester 1

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSW100</td>
<td>Reading and Writing in Social Work (2)</td>
</tr>
<tr>
<td>BSW101</td>
<td>Introduction to Psychology (3)</td>
</tr>
<tr>
<td>POL101</td>
<td>Introduction to Political Science (3)</td>
</tr>
<tr>
<td>LAW151</td>
<td>Social Work and Law (4)</td>
</tr>
<tr>
<td>SOC121</td>
<td>Introduction to Sociological Concepts and Principles (3)</td>
</tr>
<tr>
<td>COM152</td>
<td>Academic and Professional Communication (Social Sciences) (3)</td>
</tr>
<tr>
<td>ICT122</td>
<td>Computer Skills Fundamentals 1 (2)</td>
</tr>
</tbody>
</table>

Semester 2

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSW102</td>
<td>Oral Communication (3)</td>
</tr>
<tr>
<td>BSW103</td>
<td>Introduction to Social Welfare (3)</td>
</tr>
<tr>
<td>BSW104</td>
<td>Introduction to Social Work (3)</td>
</tr>
<tr>
<td>SWF102</td>
<td>Helping in the Community-Fieldwork Experience (3)</td>
</tr>
<tr>
<td>COM152</td>
<td>Academic and Professional Communication (Social Sciences) (3)</td>
</tr>
<tr>
<td>ICT122</td>
<td>Computer Skills Fundamentals 2 (3)</td>
</tr>
</tbody>
</table>

Level 200.

Semester 1 (Regular Entry)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSW200</td>
<td>Introduction to Community Work (3)</td>
</tr>
<tr>
<td>BSW201</td>
<td>Introduction to Working with Families and Individuals (3)</td>
</tr>
<tr>
<td>STA111</td>
<td>Elementary Statistics (3)</td>
</tr>
<tr>
<td>ECO111</td>
<td>Basic Microeconomics (3)</td>
</tr>
<tr>
<td>LAW151</td>
<td>Social Work and Law (4)</td>
</tr>
<tr>
<td></td>
<td>General Education Course/Elective (2 or 3 credits) 18-19 credits.</td>
</tr>
</tbody>
</table>

Semester 1 (Direct Entry)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSW201</td>
<td>Introduction to Working with Families and Individuals (3)</td>
</tr>
<tr>
<td>POL101</td>
<td>Introduction to Political Science (3)</td>
</tr>
<tr>
<td>LAW151</td>
<td>Social Work and Law (4)</td>
</tr>
<tr>
<td>STA111</td>
<td>Elementary Statistics (3)</td>
</tr>
<tr>
<td>ECO111</td>
<td>Basic Microeconomics (3)</td>
</tr>
<tr>
<td></td>
<td>General Education Course/Elective (2 or 3 credits) 18-19 credits.</td>
</tr>
</tbody>
</table>

Level 300

Semester 1

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWF300</td>
<td>Fieldwork I (Block Placement) (3)</td>
</tr>
<tr>
<td>SWF301</td>
<td>Reflective Practice on Fieldwork (2)</td>
</tr>
</tbody>
</table>

NB: Direct entry students are exempted from BSW200.

Semester 2

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWF101</td>
<td>Orientation to Fieldwork (1)</td>
</tr>
<tr>
<td>BSW202</td>
<td>Social Policy (3)</td>
</tr>
<tr>
<td>BSW203</td>
<td>Social Work and Mental Health (3)</td>
</tr>
<tr>
<td>BSW204</td>
<td>Theory and Social Work Practice (3)</td>
</tr>
<tr>
<td>BSW205</td>
<td>Introduction to Group Work (3)</td>
</tr>
<tr>
<td>STA112</td>
<td>Statistical Tools for Social Research (3) 16 credits.</td>
</tr>
</tbody>
</table>

Level 300

Semester 1

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWF300</td>
<td>Fieldwork I (Block Placement) (3)</td>
</tr>
<tr>
<td>SWF301</td>
<td>Reflective Practice on Fieldwork (2)</td>
</tr>
</tbody>
</table>

NB: Direct entry students are exempted from BSW200.
BSW301 Administration and Change in the Social Services (3)
BSW302 Counselling (3)
BSW303 Social Work Practice with AIDS (3)

*General Education Course/Elective (2 or 3 credits) 16-17 credits.

Semester 2
SWF302 Fieldwork Practice, Culture and Social Work (2)
BSW305 Community with Practice (3)
BSW306 Research in Social Work (3)
BSW307 Social Service Planning (3)
*General Education Course/Elective (2 or 3 credits) 15-17 credits.

Level 400
Semester 1
SWF400 Fieldwork II (Block Placement) (3)  
SWF402 Linking Theory and Fieldwork (2)  
BSW401 Supervision in Social Work (3)

Students shall take one of the following:

BSW402 Seminar (3)
BSW403 Seminar (3)  
BSW404 Seminar (3)
BSW405 Seminar (3) or:
BSW406 Research Project I (3)  
General Education Course/Elective (3 credits each) 15 credits.

Semester 2
SWF401 Integrative Fieldwork Practice (3)

Students shall take two of the following:

BSW407 Seminar (3)
BSW408 Seminar (3)  
BSW409 Seminar (3)
BSW410 Seminar (3)

Or:

BSW415 Research Project II (3) and 1 Seminar. General Education Course/Elective (3 Credits) 15 Credits.

NB: Students with a minimum of a B average from Level 2 and 3 and a minimum of a B average from BSW306 can choose BSW406 and BSW415 in place of one seminar in Semester 1 and one seminar in Semester 2.

NB: SWF300 and SWF400 are 9-week fieldwork placements in social welfare agencies that take place during the long vacation between Levels 2 and 3 and Levels 3 and 4 respectively.

Assessment
Assessment shall be as per General Academic Regulations 00.8. Assessment criteria shall also be stated in each course outline. Progression from Semester to Semester Progression from one semester to the next shall be as per General Academic Regulations 00.9.

Award of the Degree
The award of the Degree shall be as per General Regulations 00.852.

DEPARTMENT OF SOCIOLOGY

Degree Programme in Sociology

Entry Requirement
The normal Entry Requirements shall be as stipulated in General 20.2

Duration of Programme
The normal duration for the Bachelor of Arts Degree in Sociology shall be eight (8) semesters on a full-time basis. Students who are granted exemptions under the Departmental regulations may be able to complete the programme in a shorter period of time.

Programme Structure
The Department offers Sociology as a subject in the following Programmes:

1. Single Major Programme leading to the award of Bachelor of Arts Degree (Sociology)
2. Combined Major/Major Programme leading to the award of Bachelor of Arts Degree
3. Combined Major/Minor (with Sociology as Minor) Programme leading to the award of Bachelor of Arts Degree.

Requirements for the Single Major Degree in Sociology
Only students with a cumulative GPA of at least 3.5 (B-) for all Sociology courses taken during the first and second years of their studies will be invited to pursue a single major degree in Sociology. A student pursuing a single major degree in Sociology must take and pass the following Sociology courses:

Level 100
Semester 1
Core Courses
SOC121 Introduction to Sociological Concepts and Principles (3)
STA111 Elementary Statistics (3); or Equivalent course(s) approved by the Department.

Optional Courses
Any one of the following courses:
SOC125 Theories of Deviance and Crime (3)
SOC130 Crime and Punishment in Modern Society (3)  
PLUS Electives (3 credits) or GEC (4)

Semester 2
Optional Courses
Any one of the following courses:
SOC122 The Social Structure of Society (3)
SOC123 Introduction to Social and Cultural Anthropology (3)
SOC127 Introduction to Penology (3)
SOC133 The History of Punishment in Botswana (3)  
plus Electives (3 credits) or GEC (4 credit)

Level 200
Semester 1
Core Courses
SOC224 Introduction to Sociological Theory (3)

Optional Courses
Any one of the following courses:
SOC234 Social Problems in Southern Africa (3)
SOC236 Social Inequality (3)
SOC242 Concepts of Health and Illness (3)
SOC246 Gender and the Criminal Justice System (3)  
plus Electives (3 credits) or GEC (4)

Semester 2
Core Courses
SOC226 Concepts and Principles of Social Research (3)

Optional Courses
Any one of the following courses:
SOC228 Comparative Social Institutions (3)
SOC229 Urban Sociology (3)
SOC231 Industry and Society (3)
SOC234 Sociology of Development (3)
SOC242 Crime and Victimization (3)  
plus Electives (3 credits) or GEC (3)

Level 300
Semester 1
Core Courses
SOC322 Classical Sociological Theories (3)
SOC339 Quantitative Research Methods (3)

Optional Courses
Any one of the following courses:
SOC328 Comparative Social Institutions (3)
SOC229 Urban Sociology (3)
SOC231 Industry and Society (3)
SOC234 Sociology of Development (3)
SOC232 Advanced Criminological Theories (3)  
plus Electives (3 credits) or GEC (3)

Semester 2
Core Courses
SOC341 Qualitative Research Methods (3)  
Optional Courses
Any one of the following courses:
SOC324 Sociology of Gender (3)
SOC326 Race and Ethnicity (3)
SOC327 Political Sociology (3)
SOC332 Traditional and Alt Medical Systems (3)
SOC335 Rural Sociology (3)
SOC343 Advanced Criminological Theories (3)  
plus Electives (3 credits)

Level 400
Semester 1
Core Courses
SOC424 African Social Thought (3)
SOC436 Micro Sociological Theories (3)
SOC441 Research Proposal (3)

Optional Courses
Any one of the following courses:
SOC428 Family and Kinship (3)
SOC431 Sociology of Law (3)
SOC434 Social Movements (3)
SOC432 Work and Occupations (3)
SOC439 Special Topics in Sociology (3)  
plus Electives (3 credits)

Semester 2
Core Courses
SOC421 Contemporary Sociological Theories (3)
SOC422 Research Project (6)
SOC442 Data Analysis and Report Writing (3)
FACULTY OF SOCIAL SCIENCES

Required courses

Semester 1
Core Courses
SOC121 Introduction to Sociological Concepts and Principles (3)
STA111 Elementary Statistics (3); or Equivalent course(s) approved by the Department.

Optional Courses
Any one of the following courses:
SOC125 Theories of Deviance and Crime (3)
SOC130 Crime and Punishment in Modern Society (3) plus Electives (3) or GEC (4)

Semester 2
Optional Courses
Any one of the following courses:
SOC122 The Social Structure of Society (3)
SOC123 Introduction to Social and Cultural Anthropology (3)
SOC127 Introduction to Penology (3)
SOC133 The History of Punishment in Botswana (3) plus Electives (3) or GEC (4)

Level 200
Semester 1
Core Courses
SOC224 Introduction to Sociological Theory (3)

Optional Courses
Any one of the following courses:
SOC234 Social Problems in Southern Africa (3)
SOC236 Social Inequality (3)
SOC245 Gender and the Criminal Justice System (3) plus Electives (3) or GEC (4)

Semester 2
Core Courses
SOC226 Concepts and Principles of Social Research (3)

Optional Courses
Any one of the following courses:
SOC225 Sociology of Policing (3)
SOC242 Concepts of Health and Illness (3)
SOC246 Communities and Crime (3)
STA241 Statistical Analysis (3) plus Electives (3) or GEC (5)

Level 300
Semester 1
Core Courses
SOC322 Classical Sociological Theories (3)
SOC339 Quantitative Research Methods (3)

Optional Courses
Any one of the following courses:
SOC325 Theories of Deviance and Crime (3)
SOC330 Crime and Punishment in Modern Society (3) plus Electives (3) or GEC (4)

Semester 2
Optional Courses
Any one of the following courses:

SOC324 African Social Thought (3)
SOC328 Comparative Social Institutions (3)
SOC329 Urban Sociology (3)
SOC331 Industry and Society (3)
SOC333 Sociology of Development (3)
SOC342 Crime and Victimization (3)

Semester 2
Core Courses
SOC341 Qualitative Research Methods (3)

Optional Courses
Any two of the following courses:
SOC324 Sociology of Gender (3)
SOC326 Race and Ethnicity (3)
SOC327 Political Sociology (3)
SOC332 Traditional and Alt Medical Systems (3)
SOC335 Rural Sociology (3)
SOC343 Advanced Criminological Theories (3)

Level 400
Semester 1
Core Courses
SOC441 Research Proposal (3)

Optional Courses
Any two of the following courses:
SOC424 African Social Thought (3)
SOC428 Family and Kinship (3)
SOC431 Sociology of Law (3)
SOC432 Work and Occupations (3)
SOC434 Social Movements (3)
SOC436 Micro Sociological Theories (3)
SOC439 Special Topics in Sociology (3)

Semester 2
Core Courses
SOC421 Contemporary Sociological Theories (3)
SOC442 Data Analysis and Report Writing (3)

Optional Courses
Any one of the following courses:
SOC438 The Medical Prof and Allied Occupations (3)
SOC439 Special Topics in Sociology (3)
SOC443 Sentencing Theory and Practice (3)
SOC444 Contemporary Research in Criminology (3)

Requirements for a Combined Major/Minor
A student intending to pursue a degree with Sociology as a minor subject must take and pass the following Sociology courses:

Level 100
Semester 1
Core Courses
SOC121 Introduction to Sociological Concepts and Principles (3)
STA111 Elementary Statistics (3); or Equivalent course(s) approved by the Department.

Optional Courses
Any one of the following courses:
SOC125 Theories of Deviance and Crime (3)
SOC130 Crime and Punishment in Modern Society (3) plus Electives (3) or GEC (4)

Level 200
Semester 1
Core Courses
SOC224 Introduction to Sociological Theory (3)

Optional Courses
Any one of the following courses:
SOC234 Social Problems in Southern Africa (3)
SOC236 Social Inequality (3)
SOC242 Concepts of Health and Illness (3)
SOC245 Gender and the Criminal Justice System (3) plus Electives (3) or GEC (4)

Level 300
Semester 1
Core Courses
SOC322 Classical Sociological Theories (3)
SOC339 Quantitative Research Methods (3)

Level 400
Semester 1
Core Courses
SOC441 Research Proposal (3)

Semester 2
Core Courses
SOC421 Contemporary Sociological Theories (3)
SOC442 Data Analysis and Report Writing (3)

Assessment
Performance shall be evaluated by the combination of continuous assessment scores (CAS) and final examination marks; each contributing 50 percent to the final grade awarded. Seminars, internships and research projects will be assessed through assignments, term papers and research reports.

Progression from one Semester to another Semester
Progression from one Semester to the next shall be as per General Regulation 00.9

Award of Degree
The award of the degree shall be as per General Regulation 00.852
Bachelor of Arts in Criminal Justice Studies (Single Major)

Entry Requirements
Admission to the BA CJS will be as per the University of Botswana General Regulation 20.2 or successful completion of the Diploma in Criminal Justice Studies (DCJ). Applicants who hold the DCJ from the University of Botswana will be admitted to the third year of the BA CJS degree programme. These students will be advised to take three new courses (1 at 1st year level, and 2 at second year level) as electives in order to satisfy requirements.

**Duration of Programme**
The normal duration for the Bachelor of Arts in Criminal Justice Studies shall be eight (8) semesters on a full-time basis. Students who are granted exemptions under the Departmental regulations may be able to complete the programme in a shorter period of time.

**Level 100**
**Semester 1**
**Core Courses**
- CJS 121 Introduction to Criminology (3)
- CJS 125 Theoretical Criminology (3)
- LAW 131 Introduction to Law (3)

**Optional Courses**
- Any one of the following courses:
  - CJS130 Punishment in Contemporary Society (3)
  - PAD102 Institutional Process of Public Administration (3)
  - SOC122 Social Structure of Society (3) plus GEC (4)

**Semester 2**
**Core Courses**
- STA111 Elementary Statistics (3)

**Optional Courses**
- Any one of the following courses:
  - CJS 127 Penology and the Penal System (3)
  - CJS 133 Punishment in Botswana (3) plus Electives (3) or GEC (4)

**Level 200**
**Semester 1**
**Core Courses**
- CJS 221 Classical and Post-Classical Criminological Theories (3)
- LAW 234 Constitutional Law (3)

**Optional Courses**
- Any two of the following courses:
  - CJS 227 Criminal Justice Work Experience (3)
  - CJS 223 Media, Crime and Culture (3)
  - CJS 245 Gender, Crime and Justice (3)
  - SOC 234 Social Problems in Southern Africa (3)
  - BSW201 Introduction to working with Families and Individuals (3) plus Electives (3 credits)

**Semester 2**
**Core Courses**
- CJS221 Basic Concepts and Principles in Criminological Research (3)
- CJS 246 Environmental Criminology (3)

**Optional Courses**
- Any two of the following courses:
  - CJS225 Policing and Society (3)
  - CJS243 Social Inequality and Criminal Justice (3)
  - LAW 235 Administrative Law (3)

**Level 300**
**Semester 1**
**Core Courses**
- CJS236 Crime Prevention, Management and Control (3)
- CJS343 Theoretical Debates in Criminology (3)
- LAW 333 Criminal Procedure (3)

**Optional Courses**
- Any two of the following courses:
  - CJS 342 Victimology (3)
  - CJS 325 Risk Management (3)
  - CJS 328 Psychology of Criminal Behaviour (3)
  - LAW 332 Evidence (4)
  - SOC 324 Sociology of Gender (3)

**Semester 2**
**Core Courses**
- CJS321 Research Methods in Criminal Justice (3)
- CJS332 Policy Analysis in Criminal Justice (3)
- CJS323 Criminal Justice Practicum (3)

**Optional Courses**
- Any two of the following courses:
  - CJS234 White Collar Crime (3)
  - CJS237 Forensic Criminology (3)
  - CJS239 Juvenile Delinquency and Youth Justice (3)
  - PAD 307 Human Resource Development (3)

**Level 400**
**Semester 1**
**Core Courses**
- CJS426 Electronic Crime (3)
- CJS 445 Data Analysis in Criminal Justice Studies (3)

**Optional Courses**
- Any Two of the following courses:
  - CJS422 Management of Criminal Justice Organisations (3)
  - CJS424 Domestic and International Security (3)
  - LAW 432 Jurisprudence (4)
  - SOC431 Sociology of Law (3) plus Electives (3)

**Semester 2**
**Core Courses**
- CJS421 Research Project (6)
- CJS444 Organised Crime (3)
- LAW437 Human Rights Law (3)

**Optional Courses**
- Any one of the following courses:
  - CJS423 International Policing (3)
  - CJS425 Privatisation/Commercialisation of Criminal Justice (3)
  - CJS427 Criminal Offender Profiling (3)
  - CJS428 Special Topics in Criminal Justice Studies (3)
  - CJS443 Sentencing (3)

**Progression from one Semester to another Semester**
Progression from one Semester to the next shall be as per General Regulation 00.9

**Award of Degree**
The award of the degree shall be as per General Regulation 00.852

---

**DEPARTMENT OF STATISTICS**

Diploma in Statistics Programme.

Special Regulations for the Diploma in Statistics Programme.

Subject to the General Academic Regulations 000 and 100, the following Special Departmental Regulations shall apply:

1.2 Direct Entry into the Diploma Programme
Students possessing an Ordinary Level pass with grade C or better in Mathematics, or an additional Mathematics paper are eligible for direct entry admission to the Diploma Programme; those who have a credit of C or better in the extended Mathematics option for BGCSE are also eligible for admission.

1.3 Duration of the Programme
The normal duration of the Programme is 4 semesters on a full-time basis carrying a minimum of 64 accumulated credits for required courses.

1.4 Programme Structure

The core Programme comprises 11 courses in Statistics totalling 33 credits. In addition, there are 11 optional/elective courses with 27 credits and 2 General Education Courses with 4 credits. Students can take electives from other related disciplines. Students intending to take BSC statistics later should take MAT option. Those intending to combine Statistics and Economics should take Economics courses while those intending to major in Population Studies should take Population Studies courses.

1.5 Core Courses
**Level 100**
- DST111 Statistical Systems (3, Sem 1)
- DST112 Collecting and Organizing Data (3, Sem 1)
- DST121 Handling and Analyzing Data Basic (3, Sem 2)
- DST122 Presenting Statistical Data and Results (3, Sem 2)
- DST123 Using Prob. Ideas in Dealing with data (3, Sem 2)

**Optional Courses**
- Semester 1: Either STA101 Mathematics for Business and Social Sciences I or MAT 111
- Semester 2: Either STA102 Mathematics for Business and Social Sciences II or MAT 112

**Elective Courses**
- Semester 1: A 100
  - Level course from Economics/Populations Studies/Environmental Science or any other related discipline (3, sem1)
- Semester 2: A 100 Level course from Economics/Populations Studies/Environmental Science or any other related discipline (3 sem2)

**General Education Courses**
- Semester 1
  1. COM151 Introduction to Communication and Academic Literacy Skills (Social Sciences) (3)
  2. ICDL International Computer Driver’s License Part 1 (3) or ICT121.
FACULTY OF SOCIAL SCIENCES

Semester 2

3. COM152 Academic and Professional Communication (Social Sciences)(3)

Level 200

Semester 2

DST211 Introduction to Basic Statistical Concepts (3 Sem 1)
DST212 Introduction to Time Series Concepts (3 Sem 1)
DST213 Index Numbers and Economics Statistics (3 Sem 1)
DST221 Statistical Modelling (3 Sem 2)
DST222 Sampling Concepts in Survey Work (3 Sem 2)
DST223 Practical Project (3Sem 2)

Optional Courses
Must take one course per semester (2 courses, 6 credits) from any of the following:

Semester 1
MAT221/POP201/ECO211/STA201

Semester 2
MAT212/POP221/STA 212/ECO212

Elective Courses

Semester 1: A 200 Level course from Economics/ Populations Studies/Environmental Science or any other related discipline (3, sem1)
Semester 2: A 200 Level course from Economics/ Populations Studies/Environmental Science or any other related discipline (3 sem2)

Assessment

Unless otherwise specified the mode of delivery and learning objectives for this programme does not follow the usual conventions of teach test and examine. Some courses are theory based; some are more practical and interactive while others require some degree of field work and report writing. Hence the details on how each course shall be assessed are shown under the course description.

Award of Diploma

A student shall be eligible for the award of the Diploma in Statistics after completing a minimum of 64 credits for courses specified in section 7.3.

Classification of the Diploma

The award of the Diploma shall be classified as Distinction, Merit, Credit or Pass, according to the GPA as per General Regulation 10.4.

Undergraduate Degree Programmes

The Department offers Statistics as a subject in the combined Bachelor of Arts Degree in Social Sciences and in the Single Major Bachelor of Science Degree for both the Social Sciences and Science students. In addition Statistics is offered as a subject for the Combined Bachelor of Science Degree in Science. For the Diploma Programme in Statistics see Faculty Regulation 180.

Special Regulations for the Undergraduate Degree Programmes

Special Regulation for the Combined Bachelor of Arts Degree in Statistics Subject to the General Academic Regulations 00.00 and 20.00 the following Departmental Regulations shall apply:

Entrance Requirements

1 Entrance requirements are subject to the Faculty General Regulations.
2 Students who have passed the Diploma in Statistics Examination of this University or who possess the equivalent qualification can be admitted to Semester 5 of the Programme.

Duration of the Programme

The normal duration for the Bachelor of Arts Degree in Statistics Programme shall be 8 semesters on a full-time basis. Students, who were granted exemption under the Departmental Regulations, may be able to complete the Programme in a shorter period of time.

Programme Structure

1 At Levels 100 and 200, the Statistics part of the Programme requires 10 core courses in Statistics totalling 29 credits, science taken during the first 4 semesters. In addition courses from the other major as well as electives and General Education Courses are required as per Faculty Regulations. Core courses are listed in Sections 1.4.1, 1.4.2 and 1.4.3.
2 At Levels 300 and 400, the Statistics part of the Programme consists of 8 core courses in Statistics totalling 24 credits normally taken in Semester 5 and upwards. In addition, students are required to take 12 credits of optional courses and 4 credits of General Education Courses. Core and optional courses are given in Sections 1.4.1, 1.4.2, and 1.4.3.

Assessment

Normally the assessment for any course is based on the continuous assessment and the final examination in the ratio of 1:2, unless otherwise specified.

Award of Bachelor of Arts Degree

A student who has completed the entire core, optional, elective and General Education Courses as listed above shall be eligible for the award of the Bachelor of Arts Combined Degree in Statistics.

Bachelor of Science in Statistics Degree

The Single Major Bachelor of Science Programme can be taken by students from the Faculty of Science as well as from students from the Faculty of Social Sciences or any other faculty, provided they satisfy the requirements outlined below.

Special Regulations for the Single Major Bachelor of Science in Statistics Degree

Subject to General Regulation 20.00 and the relevant Faculty of Science Special Regulations, the following Department of Statistics Special Regulations shall apply:

Entrance Requirements

1 Students who are admitted to the Faculty of Science and who have passed each of the 2 required Level 100 Statistics and Mathematics courses are eligible to join the Bachelor of Science (Statistics) Single Major Degree Programme. The decision as to what major is to be taken should be made as early as possible, preferably not later than Semester 5 of the undergraduate studies.
3 Students who have passed the Diploma in Statistics examination of this University with a credit or who possess equivalent qualifications can join at level Semester 5 of the Programme on condition of Departmental recommendation.
4 Students who intend to join the Single Major Programme are normally expected to complete the courses listed under the Department of Statistics Special Regulation 1.3.3 before Semester 5 of study.

Duration of the Programme

The normal duration for the Bachelor of Science Degree Programme shall be 8 semesters on a full-time basis. Students who join under Departmental Special Regulation 4.6.1.3 may be able to complete the Programme in a shorter period.

Programme Structure

1 At Levels 100 and 200, the Programme requires 11 core courses in Statistics and Mathematics totalling 37 credits, normally to be taken during the first 4 semesters. In addition students are expected to take elective and General Education Courses as required by their Faculty Regulations. At Levels 300 and 400, the Programme consists of 15 core courses in Statistics and Mathematics totalling 48 credits that are usually taken from Semester 5 upwards. In addition, there are 3 optional Statistics courses totalling 9 credits.

Assessment

Normally assessment of any course is based on the continuous assessment and the examination in the ratio 1:2, unless otherwise specified in the Departmental Special Regulations.

Award of Bachelor of Science in Statistics Degree

A student who has completed all core, optional, elective and General Education Course requirements shall be eligible for the award of the Bachelor of Science (Statistics) Degree.

Classification of Degree

The award shall be classified according to the GPA as per General Regulation 20.4.

Combined Bachelor of Science Degree

The Combined Major Bachelor of Science Degree Programmes are for students who take Statistics as a major with any other subject major from the Faculty of Science.

Special Regulations for the Combined Major Bachelor of Science in Statistics Degree

The Programme will be offered under the General Regulations of the University, the Faculty of Science Special Regulations, which allows Statistics as one of the subjects available to the students at Level 100, and the Department of Statistics Special Regulations. Subject to General Regulation 20.00 and the relevant Faculty of Science Special Regulations, the following Department of Statistics Special Regulations shall apply:
Entrance Requirements
1. The Faculty of Science students can take Statistics as a Major subject combined with any other Science subject. In order to take Statistics as a Major the student should have passed the 2 relevant Level 100 courses in Statistics. The decision as to what major to take is to be made as early as possible, preferably not later than Semester 5.
2. Students who intend to join the Bachelor of Science Combined Major Programme in Statistics are normally expected to complete the courses listed under the Department of Statistics Special Regulation 1.3.2 before Semester 5.

Duration of the Programme
The normal duration for the Bachelor of Science Combined Major Degree in Statistics Programme shall be 8 semesters on a full-time basis.

Programme Structure
1. At Levels 100 and 200, the Statistics component of the Combined Major requires 8 core courses in Statistics and Mathematics totaling 28 credits normally taken during the first 4 semesters. In addition, courses from the other major as well as electives and General Education Courses are required as per General Academic Regulations.
2. At Levels 300 and 400, the Statistics part of the Programme consists of 8 core courses in Statistics totaling 24 credits, normally for Semester 5 and onwards. In addition, there are 3 optional courses in Statistics totaling 9 credits to be taken during the same period. Courses from the other major electives and General Education Courses will supplement the Programme structure.

Assessment
Normally assessment of any course is based on continuous assessment and the examination in the ratio 1:2, unless specified otherwise in the Department of Statistics Special Regulations.

Award of the Combined Bachelor of Science Degree
1. A student who has successfully completed the entire core, optional, elective and General Education Courses shall be eligible for the award of the Bachelor of Science Combined Major Degree.

2. Classification of Degree
The award shall be classified according to the GPA, as per General Regulation 20.4.

Level 100 Undergraduate Degree Programmes
At Level 100 a student majoring in the Combined Bachelor of Arts Degree in Statistics shall take:

Semester 1
- STA101 Mathematics for Social Sciences I (3)
- STA116 Introduction to Statistics (4)

Semester 2
- STA102 Mathematics for Social Sciences II (3)
- STA121 Elements of Probability (2)

Elective Courses
Semester 2
One Course on the advice of the Department (3)

At Level 100 a student intending to major in Statistics in the Bachelor of Science Programme shall take:

Semester 1
- MAT111 Introductory Concepts of Mathematics I (4)
- STA116 Introduction to Statistics (4)

Semester 2
- MAT112 Introductory Concepts of Mathematics II (4, Sem 2)
- STA122 Introductory Concepts of Probability (4, Sem 2)

General Education Courses
Two GEC courses as required for the Faculty (2+2 credits) in semester one. Two GEC courses as required by the Faculty (2+2 credits) in semester two.

Level 200
At Level 200 a student majoring in Statistics for the Combined Bachelor of Arts Degree shall take:

Semester 1
- STA201 Elementary Calculus (3)
- STA221 Statistical Distributions I (3)

Semester 2
- STA202 Matrix Algebra (3)
- STA222 Probability I (3)
- STA211 Statistical Methods (3)
- STA272 Statistical Computing (3, Semester 1 and 2)

General Education Courses
A GEC course (2 credit)

At Level 200 a student majoring in Statistics for the Combined Bachelor of Science Degree shall take:

Semester 1
- STA201 Elementary Calculus (3)
- STA221 Statistical Distributions I (3)

Semester 2
- STA222 Probability I (3)
- STA211 Statistical Methods (3)

Optional Courses (2 courses, 6 credits)

Semester 1
- STA272 Statistical Computing (3, Sem 1&2)
- STA291 Elementary Algebra (3)

Semester 2
- STA272 Statistical Computing (3, Sem 1&2)
- STA291 Elementary Algebra (3)

At Level 300, a student majoring in Statistics for the Combined Bachelor of Science Degree shall take:

Semester 1
- STA201 Elementary Calculus (3)
- STA221 Statistical Distributions I (3)

Semester 2
- STA222 Probability I (3)
- STA211 Statistical Methods (3)

Optional Courses (2 courses, 6 credits)

Semester 1
- STA272 Statistical Computing (3, Sem 1&2)
- STA291 Elementary Algebra (3)

Semester 2
- STA272 Statistical Computing (3, Sem 1&2)
- STA291 Elementary Algebra (3)

At Level 300, a student majoring in Statistics for the Combined Bachelor of Arts Degree shall take:

Semester 1
- STA201 Elementary Calculus (3)
- STA221 Statistical Distributions I (3)

Semester 2
- STA222 Probability I (3)
- STA211 Statistical Methods (3)

Optional Courses (2 courses, 6 credits)

Semester 1
- STA272 Statistical Computing (3, Sem 1&2)
- STA291 Elementary Algebra (3)

Semester 2
- STA272 Statistical Computing (3, Sem 1&2)
- STA291 Elementary Algebra (3)

At Level 300, a student majoring in Statistics for the Combined Bachelor of Science Degree shall take:

Semester 1
- STA201 Elementary Calculus (3)
- STA221 Statistical Distributions I (3)

Semester 2
- STA222 Probability I (3)
- STA211 Statistical Methods (3)

Optional Courses (2 courses, 6 credits)

Semester 1
- STA272 Statistical Computing (3, Sem 1&2)
- STA291 Elementary Algebra (3)

Semester 2
- STA272 Statistical Computing (3, Sem 1&2)
- STA291 Elementary Algebra (3)

At Level 300, a student majoring in Statistics for the Combined Bachelor of Science Degree shall take:

Semester 1
- STA201 Elementary Calculus (3)
- STA221 Statistical Distributions I (3)

Semester 2
- STA222 Probability I (3)
- STA211 Statistical Methods (3)

Optional Courses (2 courses, 6 credits)

Semester 1
- STA272 Statistical Computing (3, Sem 1&2)
- STA291 Elementary Algebra (3)

Semester 2
- STA272 Statistical Computing (3, Sem 1&2)
- STA291 Elementary Algebra (3)

At Level 300, a student majoring in Statistics for the Combined Bachelor of Science Degree shall take:
FACULTY OF SOCIAL SCIENCES

Experimental Design (3)
Field Survey (3)

Optional Courses (3 courses, 9 credits)

Semester 2
Statistical Quality Control (3)
Time Series Analysis (3)

Semester 2
Real Analysis II (3)
Operations Research I (3)
Econometric Methods (3)

Level 400

At Level 400, a student majoring in Statistics for the Combined Bachelor of Arts Degree shall take:

Theory of Estimation (3, Sem 1)
Sampling Theory and Applications (3, Sem 1)
Theory of Hypothesis Testing (3, Sem 2)

Optional Courses (2 courses, 6 credits)

One From Semester 1
Multivariate Distributions (3)
Elements of Stochastic Process (3)
Operations Research II (3)
Health Statistics (3)
Research Project (6 credits, Semesters 1 and 2)

One From Semester 2
Introduction to Bayesian Inference (3)
Experimental Design II (3)
Introduction to Generalized Linear Model (3)
Applied Stochastic Process (3)
Multivariate Data Analysis (3)
Agricultural Statistics (3)
Design and Analysis of Clinical Trials (3)

At Level 400, a student majoring in Statistics for the Single Major Bachelor of Science Degree shall take:

Semester 1
Multivariate Distributions (3)
Theory of Estimation (3)
Sampling Theory and Applications (3)
Research Project (6 credits, Semesters 1 and 2)

Semester 2
Elements of Stochastic Process (3)
Theory of Testing of Hypothesis (3)
Introduction to Bayesian Inference (3)
Research Project (6 credits, Semesters 1 and 2)

Optional Courses (2 courses, 6 credits)

One From Semester 1
Health Statistics (3)
Operations Project II

One From Semester 2
Experimental Design II (3)
Introduction to Generalized Linear Model (3)
Applied Stochastic Process (3)
Multivariate Data Analysis (3)
Agricultural Statistics (3)
Design and Analysis of Clinical Trials (3)
DEAN
Prof. M. P. Modisi, BSc (Ibadan), M.S, (South Dakota School of Mines and Tech.)
PhD (McMaster)

DEPUTY DEAN
Prof. B. Moseki, BSc (UB), MPhil (Aberdeen), PhD (Essex)

FACULTY ADMINISTRATOR
L.M. Paledi, BA, MPA (UB)

MANAGER, HR
P.G. Morapedi, BA + PGDE (UB), MSc (Hr+ER) (Brunel University)
DEPARTMENT OF BIOLOGICAL SCIENCES

Bachelor of Science (Biological Sciences)

General Provisions
Subject to the provisions of the General Academic Regulations and the Faculty of Science Special Regulations, the following Departmental Regulations shall apply.

Programmes and Titles of Degrees
The Department of Biological Sciences offers the following programmes leading to the award of the mentioned degrees:

(i) Single Major programme leading to the award of the degree of Bachelor of Science (Biological Sciences, Single Major); B.Sc. (Biological Sciences).

(ii) Combined degree (Major/Minor) programme with Biological Sciences as the Major leading to the award of the degree of Bachelor of Science (B.Sc.).

(iii) Combined degree (Major/Major) programme with Biological Sciences and another Science subject leading to the award of the degree of Bachelor of Science (B.Sc.).

(iv) Combined degree (Minor/Major) programme with Biological Sciences as the Minor leading to the award of the degree of Bachelor of Science (B.Sc.).

Entrance Requirements
Admission to the Biological Sciences shall be as specified in the Faculty of Science Special Regulations. Entrance requirements specific to particular programmes shall be as specified under the specific programmes below.

Structure of the Programme
The Department of Biological Sciences shall:

(i) Offer courses at levels 100 to 400 for the undergraduate programme

(ii) From time to time, design and offer courses for specific needs of other Departments in the University provided there are no suitable courses already on offer.

(iii) Contribute to General Education Courses offered through the Faculty of Science.

(iv) Offer a Single Major Degree programme as per Departmental Special Regulations 2.1.

(v) Offer a Combined Degree Major/Minor programme as per Departmental Special Regulations 2.2.

(vi) Offer a Combined Degree Major/Major programme as per Departmental Special Regulations 2.3.

(vii) Offer a Combined Degree Minor/Major programme as per Departmental Special Regulations 2.4.

SINGLE MAJOR (Biological Sciences)
To be admitted into the Single Major (Biological Sciences) programme, a student must have obtained at least Grade C (GPA: 2.5) in both BIO111 and BIO112.

Semesters 1 and 2
All students who wish to pursue the Biological Sciences programme as Single Major should, in addition to BIO111 and BIO112, take CHE101 and CHE102.

COURSE SYNOPSIS

BIO111 Principles of Biology
Course Summary
The following major biological principles and processes will be covered: Origin and early history of life, hierarchical organisation, scientific method, unifying principles, the cell theory, prokaryotes and eukaryotes, taxonomy, hereditary material and genetic diversity; mitosis and meiosis, the species concept, mechanism of speciation, evolution and natural selection, adaptation.

BIO112 Diversity of Plants and Animals
Course Summary
This course will be in two parts. The first part is a survey of the Kingdom Plantae. It covers classification, general structure, reproduction and life cycles of the different divisions or phyla of the kingdom. The second part focuses on animals and lays a foundation for the study of zoology by highlighting the major adaptations that facilitated a move from aquatic to terrestrial habitats for animals in order to better understand the evolutionary relationships of the animal phyla.

BIO120 Introductory Biochemistry
Course Summary
In this course, students are introduced to the structures and functions of various biological molecules. Water, Proteins, Carbohydrates, Lipids and Nucleic Acids will be discussed. Emphasis is placed on the structural/functional relationships of these molecules.

BIO122 Introductory Biochemistry, Anatomy and Physiology
Course Summary
This course introduces the biological molecules that are present and the chemical reactions that take place in living cells. Metabolism; structures and functions of cells and systems of the human body are discussed.

BIO123 Introductory Microbiology and Stored Product Entomology
Course Summary
The course deals with the microbiology and entomology of foods and stored products. It covers the major features of micro-organisms and those of insects of economic importance associated with foods, the conditions that favour their growth in/on foods and stored products and the risks associated with them. It also explores different modes of control measures as aspects of safety.

BIO211 Cell Biology
Course Summary
The eukaryotic cell is the fundamental structural building block of multicellular organisms and the centre for many biochemical processes. In this course you will be introduced to both the structure and function of cells. A dialectical, not a reductionist approach to cell biology is emphasised. All cellular processes have to be seen in a totality, not isolated from another. A cell is introduced as a dynamic entity, not as a static unit.

The course introduces the basic biomolecules and then gives a broad overview over the inner organisation of the cell covering membrane structure, membrane transport, cell compartmentalization, protein sorting and intracellular vesicle transport. The dynamic organisation of the cell is then related to cell communication, signalling, cell viability and death, cell movement, cell cycle and cell division.

BIO212 Genetics
Course Summary
Genetics is introduced as a discipline of biological science that has a profound impact on how we understand human nature and life processes. Mendelian genetics is discussed as a valid basis to understand specific patterns of genetic transmission, but it is outlined that more complex systems require various extensions, further developments of Mendelian genetics and/or other models. A broad overview over prokaryotic, eukaryotic and human genetics is given, including gene variation, gene regulation, genetic linkage and advances in cloning. Population genetics is introduced, as well as inheritance of complex traits. Genetics of cancer will be discussed as an example of the dialectic relation between genes and environment.

BIO213 Plant Structure and Function
Objectives
The course will deal with plant structure and development in relation to function; drawing attention to the ways in which the structure and arrangement of tissues in the plant body makes a structural and functional unit. Emphasis will be placed on flowering plants, although examples from other plant groups will also be used. Differences between monocotyledons and dicotyledons will be highlighted.

BIO 214 Mammalian Physiology
Objectives
The theme of this course is homeostasis and its importance to the survival of the individual mammal. Specific themes that will be tackled are the need for and acquisition of energy, the
maintenance systems of the body, coordination and reproduction. The mechanisms of function of the major systems of the body responsible for the functions outlined above and their controls will be emphasized.

**BIO215 Principles of Ecology**

**Objectives**

This course will introduce basic concepts in ecology. It will develop the basic principles of population and community ecology. The individual organism as the basic unit of study will be emphasized. Specific topics will include factors influencing how organisms are distributed in nature; the dynamics of populations and their regulation; community structure and organization; and topical issues in ecology.

**BIO216 General Microbiology**

**Objectives**

Developments of microbiology as a scientific discipline; methods of studying microorganisms; review of the microbial world with emphasis with unique features; modes of growth and reproduction; highlights in cellular and molecular biology of microorganisms; aspects of applied microbiology.

**BIO217 Animal Diversity**

**Objectives**

The animal kingdom includes variety of animals ranging from unicellular to multicellular. There is a link between the simplest to most complex animal. Animals may live in water or on the land. Different habitats have an implication on the structure and adaptations of the animal group. This course introduces the student to animal diversity. It deals with the structure adaptation and position of the animal in the animal kingdom.

**BIO 218 Biology of Flowering Plants**

**Objectives**

This is an introductory course on plant biology. It provides the basis upon which higher levels of botany build on. It deals with the morphology, classification, physiology, reproduction and evolution of plants focusing mainly on flowering plants on which our lives depend.

**BIO223 Parasitology for Health Sciences**

**Objectives**

The course deals with human parasites, their effects on the host, and prevalence of parasitic infections worldwide with emphasis on Botswana. Transfer of these parasites in other hosts; development in man, clinical aspects and laboratory diagnosis will also be dealt with; together with their treatment, prevention and control.

**BIO225 Human Physiology and the Environment**

**Objectives**

The course will provide basic knowledge of human physiology. Emphasis will be placed on the concept of homeostasis and on the integrative aspects of physiology. A general introduction to some of the health problems stemming from the contamination of air, water, food, workplace and other special environments will also be provided to illustrate the effects of disrupting homeostasis of human body function.

**BIO 231 Human Anatomy**

**Objectives**

This course will focus on structure of the human body including cells, tissues, organs and organ systems. Major systems to be covered are the digestive system, cardiovascular system, respiratory system, nervous system, excretory system, and the reproductive system. Attention will be given to special organs associated with these systems.

**BIO 232 Human Physiology**

**Objectives**

This course focuses on the functions of the human body and its systems discussed in BIO231 Human Anatomy. Emphasis will be given to normal functions of tissues, organs and organ systems of the human body. The functions of important body parts in normal and abnormal condition will also be considered as well. The course is designed to enrich the knowledge base of nursing professionals about the functions of the human body.

**BIO235 Insect Pest/Vector Control**

**Objectives**

The course deals with insect pests/vectors of medical, veterinary and agricultural importance and their control in Botswana. Emphasis will be placed on principles and practices of pest/vector management in the tropical environment. At the end of the course, students are expected to be able to identify insect pests/vectors and to apply the principles for pests/vectors control. They will also be expected to carry out field and laboratory practices on the pests/vectors in Botswana. Collection of insect pests/vectors forms part of the student assessment.

**BIO236 Developmental Biology**

**Objectives**

The course is a study of the changes in form and structure of organisms in the course of their development. This will include processes such as fertilization, growth, cell and organ differentiation, morphogenesis, pattern formation and embryonic development in plants and animals. Attention will be given to environmental, the genetic, hormonal, cellular and molecular mechanisms governing these processes. Also to be discussed are abnormal development, biology of aging and senescence, regeneration and repair.

**BIO307 Biochemistry**

**Objectives**

Key principles about enzymes, mechanisms of enzyme action, enzyme kinetics, enzyme inhibition, and bioenergetics will be discussed. The course will highlight the importance of central metabolism (glycolysis, gluconeogenesis, TCA cycle, electron transport chain, and fatty acid metabolism) in living organisms. The role of hormones in the regulation of carbohydrate metabolism in the liver and muscles will also be explored along with some inborn errors of metabolism. Photosynthesis will also be discussed.

**BIO308 Molecular Biology**

**Objectives**

Molecular genetics concepts will be developed from principles to cover DNA structure and replication, genomics and the molecular organization of the genome, gene expression and its regulation in prokaryotes and eukaryotes (including the genetic control of development) and mechanisms of genetic change (mutation, recombination and transposition). The theory and practise of various general and specific DNA and RNA techniques will be covered, including methods of isolation, characterisation, sequencing, analysis and modification of polynucleotides. The application of molecular biology will be briefly reviewed.

**BIO309 Mycology**

**Objectives**

The course will provide students with knowledge of the biology and taxonomy of the main groups of fungi; skills to isolate, identify and classify the main groups of fungi; a basic understanding of the roles of fungi in the environment; an overall understanding of detrimental and positive associations of fungi with humans and other organisms; using examples of economically important fungi, information on the literature and other media available for studying mycology.

**BIO310 Bacteriology**

**Objectives**

The course introduces basic concepts and principles in biodiversity, growth, physiology, taxonomy and interactions in bacteria and archaea. It includes strategies in cultivating and control measures of these prokaryotes. Bacterial structure-function...
relationships; cultivation, isolation, growth and reproduction of bacteria; genetic recombination in bacteria; conventional and molecular techniques in taxonomy; control strategies and mode of action of antimicrobials. Selected topics in applied bacteriology will also be discussed.

**BIO311 Plant Systematics Objectives**

The course deals with the principles and practices of plant systematics. It unravels the fascinating differences among species of plants, and uses various sources of evidence to develop a framework upon which classifications can be developed. A general survey of selected flowering plant families in the Botswana flora will be made. It also covers sources of systematic evidence such as morphology, anatomy, cytology, and chemosystematics. Computerised methods (Numerical taxonomy) will be used to highlight the concepts of phenetics and cladistics. Pattern creation phenomena such as variation, hybridization and speciation are also covered. Collection and identification of local flowering plants are an important component of the course.

**BIO 312 Virology Objectives**

This course will deal with basic virology concepts. Structure and composition of viruses. Classification, nomenclature, cultivation and essay of viruses. Viral replication, viral genetics and evolution; pathogenesis; virus induced changes in cells, infection and spread of viruses in the body; mechanisms of disease production, tumorigenesis, laboratory diagnosis and viral diseases; epidemiology of viral infections; surveillance, control and eradication of viral diseases, selected viruses of plants, animals and man.

**BIO313 Dynamics of Savanna Ecosystems Objectives**

This course will develop the theoretical framework of the dynamics of savanna ecosystems. It will address the processes that operate at the ecosystem level, emphasizing the functional components, ecological determinants, and responses of savannas to disturbance.

**BIO315 Invertebrate Zoology Objectives**

The course will deal with systematic survey of invertebrates noting that the incredible array of living group is the product of hundreds of millions of evolution. They are surviving descendants of successful lineages, which today inhabit virtually every environment on earth. The characteristics, which unite phyla and also separate them from other groups, will be explained. Emphasis will be placed on important relationship between structure and function (i.e. Bauplan). The distribution and the rich variety of ways in which invertebrates cope with the problems of survival and reproduction in the environment will be investigated.

**BIO316 Plant Physiology Objectives**

The course deals with the physiology of higher plants in relation to plant growth regulators, vernalisation, germination and dormancy, photosynthesis and phytochrome, senescence and abscission, phloem translocation, photosynthesis, water relations of plants, uptake of ions by plant roots.

**BIO317 Comparative Vertebrate Physiology Objectives**

In this course the adaptation of vertebrate animals to survive in different environments will be explored. Oxygen and nutrient acquisition, energy metabolism, water and salt regulation, temperature regulation, nitrogen excretion and reproductive strategies will be highlighted.

**BIO318 Chordates Objectives**

This course deals with the origin of the Chordates from simple forms, and their evolution into specialized forms. The following will be covered during the course; position and relationship of the different groups within the Chordates, and adaptation of the different groups to their type of environment. The evolution of Chordates, their theories of origin, general characteristics, structure, life history and classification of the Chordates will be highlighted.

**BIO403 Applied Botany Objectives**

This course will deal with the utilization of plants and plant products for food, fibre, medicinal and other purposes, including the management and conservation of plant germplasm through conventional and modern techniques. Botswana as a center of genetic diversity for some crop plants will be highlighted.

**BIO408 Wildlife Biology of Southern Africa Objectives**

The course deals with the relationship between wildlife populations and their habitats. The focus will be on species that are rare or endangered, and those that are economically or ecologically important. Specific topics will include: adaptations, wildlife population dynamics, harvesting wildlife, sustainable use of wildlife resources, practical manipulation of abundance, indices of health, current problems affecting wildlife populations of southern Africa. Special attention will be given to wildlife of Botswana.

**BIO409 Life–History Strategies Objectives**

This course presents analyses of various life strategies and traits in both plants and animals. Topics include: reproductive allocation, reproductive effort, natural selection, fitness, adaptation, plasticity, r- and K-strategies, R-, C- and S-strategies, seed development, seed dormancy, seed dispersal, seed banks, semelparity, iteroparity, scaling effects, life span, ageing.

**BIO411 Wetlands Ecology and Management Objectives**

This course deals with the ecological characteristics and peculiarities of wetland ecosystems. Adaptation of plants and animals to water logging and anoxia will be discussed. Inventories and distributions of wetland ecosystems in Botswana and in southern Africa will be highlighted. The need to conserve and manage, and the methods of managing wetlands will be focused on using case study examples. Approaches to wetland management – the wise use concept.

**BIO412 Aquatic Biology Objectives**

This course introduces concepts in aquatic biology with particular focus on freshwaters. The course will have an ecological approach aimed at understanding how different life forms cope with living in water. The broad concepts include: (i) water as a habitat, (ii) how the structure, anatomy and physiology of different and illustrative life forms are adapted to living in an aquatic habitat, (iii) diversity of aquatic habitats and diversity of life forms living therein. Human influences on aquatic ecology will be highlighted to include both positive and negative aspects of such human interventions. While the course is global in scope, effort will be made to highlight examples relevant to Africa in general and Southern Africa in particular.

**BIO416 Immunology Objectives**

Introduction to the molecular and cellular basis of the immune response; topics include anatomy of the lymphoid system, lymphocyte biology, nature of antigens and antigenicity, antibodies and immunoglobulins, cellular basis of antibody formation, thymus and T development, structure and role of the major histocompatibility complex, T-cell receptor structure and function, regulation of the immune response, hypersensitivity and inflammation, complement and cell mediated lysis, microbial and autoimmune, transplantation and immunology and the scientific world.
BIO417 Biotechnology

Objectives
Biotechnology is comprised of a continuum of technologies, ranging from traditional biotechnologies to modern biotechnology. In this context, biotechnology is defined as any technique that uses living organisms, or substances from those organisms, to make or modify a product, improve plants or animals, or to develop organisms for specific uses.

BIO418 Food Microbiology

Objectives
The course provides students with knowledge and skills in the following areas: intrinsic and extrinsic factors which are responsible for microbial association with foods; identifying hazards in foods; principles of safe food production; examine foods for spoilage and food borne pathogens including emerging pathogens; management aspects of control of pathogenic microorganisms in foods with special reference to HACCP systems; desirable microorganisms which amend our foods.

BIO419 Medical Microbiology

Objectives
Host-parasite relationships with emphasis on microorganisms associated with man; systematic study of microorganisms of medical importance; epidemiology of diseases; methods in diagnosis and treatment.

BIO420 Plant Pathology

Objectives
The course will provide students with a basic knowledge of plant diseases, the causal organisms and the concepts relating to plant pathology. Disease classification and symptomatology, the relationship between the host, pathogen and environment, disease cycle, epidemiology disease resistance, disease control with an emphasis on integrated disease management, etiologic agents (fungi, bacteria, viruses, nematodes), environmental diseases, case studies of host-pathogen interactions.

BIO421 Entomology

Objectives
The course covers a survey of the structure and physiology, life history, classification and evolution of insects. Topics include insect anatomy, physiology, behaviour, the relative numbers of species and the limits to the geographic distribution, the kinds of place in which they live and the food they eat.

BIO422 Applied Entomology

Objectives
The course deals with the biology, recognition and control of Arthropod pests of agronomic and vegetable crops, stored products, rangeland, livestock and poultry; and vectors of medical and veterinary importance. The basic tenets of the principles and practice of integrated pest management will be covered, with emphasis on ecological principles, integration of cultural, physical, chemical and biological tactics into an overall strategy for the ecosystem. The life history, nature of injury and control of major pests of field crops and stored products, as well as vectors of medical and veterinary importance will be covered.

BIO423 Exercise Physiology

Objectives
The course will cover the energetics, integrative and adaptive mechanisms in human body function. The responses of the cardiovascular, respiratory and muscular systems to acute and chronic exercise will be discussed. The assessment of fitness will be highlighted in the laboratory exercises.

BIO424 Vertebrate Structure

Objectives
The course explores the development and structure of the main organs of vertebrates especially mammals. The course explores the development and structure of the main organs of vertebrates especially mammals. The following will be covered during the course: development of the organs from organogamy to the adult form and the structure (histology) and function of the vertebrates. This will include, development, the muscular system and the endocrine system.

BIO425 Parasitology

Objectives
The course covers the study of parasites of medical importance in the Southern African region. The following will be covered during the course: the study of the relationship between parasites and their hosts, pathology, treatment and control of parasites. Emphasis will be on parasites of medical and veterinary importance in Botswana.

BIO426 Behavioural Ecology

Objectives
This course will introduce patterns, processes and evolution of behaviour in animals. It will address the ecology of survival value of various behaviours in: finding a place to live, feeding behaviour, social behaviour, sexual selection and mating systems, and the physiological basis of behaviour.

BIO427 Evolution

Objectives
This course will provide a broad coverage of evolutionary biology, commencing with a catalogue of the evidence for evolution, hypotheses for the origin of life and an overview of the history of life. Evolutionary processes will be examined at the microevolutionary and macroevolutionary levels with detailed coverage of concepts such as natural selection, adaptation, sexual selection, speciation and coevolution. Approaches to the reconstruction of evolutionary history will be introduced and applied to the evolution of man.

BIO429 Ecological Impact Assessment

Objectives
Environmental Impact Assessment has become mandatory in most human developments efforts. While environmental impact assessment is a multi-disciplinary concept involving ecological, social, legal, economic and other concerns, this course as its name implies, will only focus on the ecological aspects of the process of impact assessment.

BIO430 Post Harvest Physiology

Objectives
The deterioration of food crops during storage is a matter of concern for all those involved in agriculture and the food industry. This course will, therefore focus on post-harvest physiological and biochemical changes of crops with more emphasis on selected fruits and seeds. Furthermore, examples of the practical applications of physiological principles to extend storage life and reduce losses will be discussed.

BIO431 Plant Responses to Environmental Stress

Objectives
Semesters 3 and 4
Students must take BIO211, BIO214, BIO217 and BIO218 in Semester 3. Students must take BIO212, BIO213, BIO215 and BIO216 in Semester 4. The following courses are offered in both semesters: BIO211, BIO212 and BIO216. Students are also advised to take as electives CHE211 and CHE213 (Analytical Chemistry), CHE232 and CHE234 (Organic Chemistry) and CHE242 and CHE244 (Physical Chemistry).

Semesters 5 and 6
Students must take BIO301, BIO307 and at least two Optional Courses in Semester 5. Students must take BIO306, BIO308 and at least two Optional Courses in Semester 6.

Semesters 7 and 8
Students must take BIO453 and at least three Optional Courses in semester 7. Students must take BIO454 and at least three Optional Courses in semester 8.

Level, Semester & Core Courses
All courses are worth 3 credits each except BIO111, BIO112 and BIO454 (worth 4 credits each) and BIO453 (which is worth 2 credits). Students who wish to pursue Single Major, Major/Minor or Major/ Major in Biological Sciences must take and pass BIO111 and BIO112.

Semester 1
BIO111 Principles of Biology (pre-req. to Single Major, Major/Minor or Major/Major) (4)
BIO122 Anatomy, Physiology and Biochemistry (3)
Semester 2

BIO112 Diversity of Animals and Plants (pre-req. to Single Major, Major/Minor and Major/Major) (4)
BIO120 Introductory Biochemistry (3)
BIO123 Introduction to Microbiology and Stored Products Entomology

Semester 3

BIO211 Cell Biology (pre-req. to BIO307) (3) (also offered in sem.4)
BIO212 Genetics (pre-req. to BIO308) (3) (also offered in sem.4)
BIO214 Intro. to Mammalian Physiology (pre-req. to BIO317) (3)
BIO216 General Microbiology (pre-req. to BIO309, BIO310, BIO312, BIO416, BIO418, BIO419, BIO420, BIO436) (3)(also offered in sem.4)
BIO217 Animal Diversity (pre-req. to BIO315) (3)
BIO218 Biology of Flowering Plants (3)
BIO223 Parasitology for Health Sciences (3)
BIO231 Human Anatomy (3)

Semester 4

BIO211 Cell Biology (3) (also offered in sem.3)
BIO212 Genetics (3) (also offered in sem.3)
BIO213 Plant Structure and Function (pre-req. to BIO316) (3)
BIO215 Principles of Ecology (pre-req. to BIO313, BIO314, BIO408, BIO409, BIO411, BIO412, BIO426, BIO429, BIO434) (3)
BIO216 General Microbiology (pre-req. to BIO309, BIO310, BIO312, BIO416, BIO418, BIO419, BIO420, BIO436) (3) (also offered in sem.3)
BIO225 Human Physiology and the Environment (3)
BIO232 Human Physiology (3)

Semester 5

BIO301 Quantitative Biology (3)
BIO307 Biochemistry (pre-req. to BIO417) (3)
BIO309 Mycology (pre-req. BIO216) (3)
BIO313 Dynamics of Savannah Ecosystems (pre-req. BIO215) (3)
BIO315 Invertebrate Zoology (3)
BIO316 Plant Physiology (pre-req. BIO213) (3)
BIO317 Comparative Vertebrate Physiology (pre-req. to BIO214) (3)

Semester 6

BIO305 Insect Pest/Vector Control (3)
BIO306 Developmental Biology (3)
BIO308 Molecular Biology (pre-req. to BIO417) (3)
BIO310 Bacteriology (pre-req. BIO216) (3)
BIO311 Plant Systematics (3)
BIO312 Virology (pre-req. BIO216) (3)
BIO314 Conservation Biology (pre-req. BIO215) (3)
BIO318 Chordates (3)

Semester 7

BIO403 Applied Botany (3)
BIO409 Life History Strategies (pre-req. BIO215) (3)
BIO412 Aquatic Biology (pre-req. BIO216) (3)
BIO417 Biotechnology (pre-req. BIO307 & BIO308) (3)
BIO419 Medical Microbiology (pre-req. BIO216) (3)

BIO421 Entomology (3)
BIO423 Exercise Physiology (3)
BIO425 Parasitology (3)
BIO427 Evolution (3)
BIO431 Plant Responses to Environmental Stress (3)
BIO432 Plant Tissue Culture (3)
BIO436 Environmental Microbiology (pre-req. BIO216) (3)
BIO437 Micro techniques in Biology (3)
BIO453 Research Proposal Writing BIO 453 (2)

Semester 8

BIO408 Wildlife Biology of Southern Africa (pre-req. BIO215) (3)
BIO411 Wetlands Ecology and Management (pre-req. BIO215) (3)
BIO416 Immunology (pre-req. BIO216) (3)
BIO418 Food Microbiology (pre-req.BIO216) (3)
BIO420 Plant Pathology (pre-req. BIO216) (3)
BIO422 Applied Entomology (pre-req. BIO315 or BIO421) (3)
BIO424 Vertebrate Structure (3)
BIO426 Behavioural Ecology (pre-req. BIO215) (3)
BIO429 Ecological Impact Assessment (pre-req. BIO215) (3)
BIO430 Post-harvest Physiology (3)
BIO434 Plant Ecology (pre-req.BIO215) (3)
BIO454 Research Project BIO 454 (pre-req BIO453) (4)

Bachelor of Education (B.Ed) Degree
B.Ed students can take any of the courses in Biological Sciences as prescribed by the Faculty of Education as long as they satisfy course pre-req.

Service Courses

Bachelor of Environmental Health
BIO225 Human Physiology and the Environment (3)
BIO305 Insect Pest/Vector Control (3)

Bachelor of Nursing Education
BIO120 Introductory Biochemistry (3)
BIO223 Parasitology for Health Sciences (3)
BIO231 Human Anatomy (3)
BIO232 Human Physiology (3)

Home Economics Education
Courses for the Bachelor of Education in Home Economics Education shall be specified by the Department of Home Economics. Two such courses are:

BIO122 Anatomy, Physiology and Biochemistry Environment (3)
BIO123 Introduction to Microbiology and Stored Products Entomology

Assessment
(a) All courses except BIO453 & BIO454 shall normally (unless otherwise stated) be assessed on the basis of continuous assessment and one final examination in the ratio of 2:3 (CA:Exam).
Continuous Assessment shall be comprised of at least one written test, one practical and one assignment.

(b) There shall be no written examination in BIO453 and BIO454. The course shall be assessed as follows: Project Proposal (including proposal seminar presentation) 20%, Experimental Work 10%, Final Seminar Presentation 15% and Final Report 55%.

Progression from Semester to Semester
Progression from semester to semester shall be as specified in Faculty Regulations 23.6 and General Regulations 00.92.

Award of a Degree
To be awarded a degree, a student must satisfy requirements set in Faculty Regulations 23.7 and General Academic Regulations 00.851

DEPARTMENT OF CHEMISTRY

Departmental Regulations for Undergraduate Courses
The Department has a curriculum that will enable undergraduates to qualify for a Bachelors Degree in the single subject of Chemistry, and a Bachelors Degree with a Major in Chemistry and a Major or a Minor in one other Science subject. The Department also offers a Minor programme in Chemistry. The Department offers the following programmes:

(a) Single major programme leading to a Bachelor of Science Degree in Chemistry
(b) A Combined Degree with a Major in Chemistry and a Major or Minor in another Science subject leading to a Combined Bachelor of Science Degree

1.1 Entry Requirements
To enter into any of the Chemistry programmes, in addition to fulfilling the faculty requirements for progression from Year One to Year Two, students must also have the following:

(a) For entry into the SINGLE MAJOR PROGRAMME, a student must obtain a minimum of C+ average in the level 200 chemistry courses including lab courses with no less than a C grade in any of these courses.
(b) For entry into the CHEMISTRY MAJOR PROGRAMME, a student must obtain a minimum of C average in the level 200 chemistry courses including lab courses with no less than a C+ grade in any of these courses.

1.2 Programme Outlines and Structures
(a) Common First Year Programme
Two general Chemistry courses, CHE101 and CHE102, each consisting of 3-credit lectures and a 1-credit lab, will be offered to the common programme for first year Science students. For a student to be awarded a grade for level 100 chemistry course he/she must have completed the practical component.

(b) Single Major Programme (Entry to single major programme is by application to HOD)
In the Single major programme, students take 85 credits of core courses, 20 credits of General Education courses, and will have opportunities to select more credits from a range of optional and elective courses. Eleven (11) credits of each of Mathematics and Physics courses, are included in the core credits.

(c) Combined Degree Programme (Chemistry Major)
Students in the Combined Degree programme with a Major in Chemistry, in addition to the 34 credits taken in Year One, must complete a minimum of 47 credits in Chemistry, a minimum of 3 credits each in Mathematics and Physics, and 12 credits in General...
Education courses. Students must also meet the requirements for the second Major or Minor as specified by the appropriate department.

(d) Combined Degree (Major/Minor) Programme (Chemistry Minor)

Students in the Combined Degree (Major/Minor) programme with a Minor in Chemistry, in addition to the 34 credits taken in Year One, must complete 18 credits in Chemistry core courses consisting of 12 core credits in Year Two, 4 core credits in Year Three, and 2 credits of Year Three practicals.

### COMMON FIRST YEAR PROGRAMME

**Semester 1**

- **CHE101** General Chemistry I (4 credits)
- **MAT111** Introductory Mathematics I (4 credits)
- **PHY112** Geometrical optics and Mechanics, Vibrations and Waves (4 credits)
- **COM141** Introduction to Communication and Academic Literacy Skills (Science) (3 credits)
- **ICT121** Computing Skills Fundamentals I (2 credits)

**Service Courses**

- **CHE107** Chemistry Applied to Home Economics (3 credits)
- **CHE109** Introductory Chemistry for BNS (3 credits)

**Recommended Electives**

- **ECO111** Basic Microeconomics (3 credits)
- **MG110** Principles of Management (3 credits)

**Semester 2**

- **CHE102** General Chemistry II (4 credits) (Pre-req CHE101)
- **MAT122** Introductory Mathematics II (4 credits)
- **PHY122** Electricity, Magnetism and Elements of Modern Physics (3 credits)
- **COM142** Academic and Professional Communication (Science) (3 credits)
- **ICT122** Computing Skills Fundamentals II (2 credits)

**Recommended Electives**

- **ACC100** Introduction to Accounting (3 credits)
- **ECO112** Basic Macroeconomics (3 credits)
- **MKT100** Principles of Marketing (3 credits)
- **ICT122** Computing Skills Fundamentals 2 (2 credits)

**CHEMISTRY AS SINGLE MAJOR PROGRAMME**

**Semester 3**

**Core Courses**

- **CHE211** Introduction to Analytical Chemistry (2 credits) (Pre-req CHE101 & CHE102)
- **CHE213** Analytical Chemistry Laboratory I (1 credit) (Pre-req CHE101 & CHE102; Co-req CHE211)
- **CHE232** Structure and Survey of Functional Groups I (2 credits) (Pre-req CHE101 & CHE102)
- **CHE234** Organic Chemistry Lab I (1 credit) (Pre-req CHE101 and CHE102; co-req CHE232)
- **MAT291** Engineering Mathematics I (3 credits) (Pre-req CHE101 & CHE102)
- **PHY231** Mechanics & Physical Optics (2 credits)
- **PHY239** Physics Practicals 2.1 (1 credit)

**Semester 4**

**Core Courses**

- **CHE221** Atomic Structure, Bonding and Main Group Chemistry (2 credits) (Pre-req CHE101 & CHE102)
- **CHE223** Inorganic Chemistry Laboratory I (1 credit) (CHE 101 & CHE 102; Co-req CHE221)
- **CHE242** Introductory Physical Chemistry (2 credits) (Pre-req CHE 101 & CHE 102, MAT122)
- **CHE244** Physical Chemistry Laboratory I (1 credit) (Pre-req CHE 101 & CHE 102; Co-req CHE242)

**Semester 5**

**Core Courses**

- **CHE311** Separation Techniques (3 credits) (Pre-req CHE211)
- **CHE321** Coordination Chemistry (2 credits) (Pre-req CHE221)
- **CHE323** Inorganic Chemistry Laboratory II 1 credit (Pre-req CHE 223; Co-req CHE321)
- **CHE331** Study of Survey of Functional Groups II (3 credits) (Pre-req CHE232)
- **CHE341** Applications of Thermodynamic and Electrochemistry (2 credits) (Pre-req CHE 223)
- **CHE343** Physical Chemistry Laboratory II (1 credit) (Pre-req CHE242 & CHE 244)
- **CHE351** Chemical Informatics (1 credit)

**Recommended Electives**

- **BIO307** Biochemistry (3 credits)
- **PHY353** Mathematical Methods for Physical Sciences (3 credits)

**Semester 6**

- **CHE312** Analytical Spectroscopy (2 credits) (Pre-req CHE311)
- **CHE314** Analytical Chemistry Laboratory II (1 credit) (Pre-req CHE 311; Co req CHE 312)
- **CHE322** Group Theory and Organometallic Chemistry (3 credits) (Pre-req CHE321)
- **CHE332** Physical Organic Chemistry (2 credits) (Pre-req CHE232 & CHE 331)
- **CHE334** Organic Chemistry Laboratory II (1 credit) (Pre-req CHE234 & CHE 331)
- **CHE342** Quantum Chemistry I & its Applications (3 credits) (Pre-req CHE242)
- **CHE352** Literature Project (1 credit) (Pre-req CHE351+ all 200 level courses + at least one section at 300 level in which student intends to carry out the literature survey) (For Chemistry major only)

**Semester 7**

**Core Courses**

- **CHE411** Advanced Analytical Techniques (3 credits) (Pre-req CHE311)
- **CHE421** Advanced Transition Metal Chemistry (3 credits) (Pre-req CHE322)
- **CHE431** Heterocyclic Chemistry, Synthetic Reactions and Design of Organic Synthesis (3 credits) (Pre- req CHE331 & CHE 332)
- **CHE441** Advanced Physical Chemistry I (3 credits) (Pre-req CHE341)

**Optional Courses: Take at least ONE course from the following**

- **CHE413** Advanced Analytical Chemistry Laboratory (2 credits) (Pre-req CHE311 & CHE312)
- **CHE423** Advanced Inorganic Laboratory (2 credits) (Pre req CHE 323; Co-req CHE421)
- **CHE433** Advanced Organic Chemistry Laboratory (2 credits) (Pre-req CHE334)
- **CHE443** Physical Chemistry Laboratory III (2 credits) (Pre-req CHE343)
- **CHE446** Special Topics in Physical Chemistry (2 credits) (Pre-req CHE341 & CHE342)

**Recommended Elective**

- **PHY472** Statistical Mechanics (3 credits)
- **PHY473** Solid State Physics (3 credits)

**Semester 8**

**Core Course**

- **CHE452** Student Research Project (3 credits) (Pre-req CHE352)

**Optional Courses: Take at least 9 Credits from the following**

- **CHE412** Sample Handling & Biochemical Analysis (3 credits) (Pre-req CHE311 & CHE312)
- **CHE416** Environmental Chemistry (2 credits) (Pre-req CHE311 and CHE312 Co-req CHE412)
- **CHE418** Special Topics in Analytical Chemistry (2 credits) (Pre-req CHE311 & CHE312)
- **CHE422** Advanced Organometallic and Solid State Chemistry (3 credits) (Pre-req CHE322)
- **CHE426** Special Topics in Inorganic Chemistry (2 credits) (Pre-req CHE322)
- **CHE432** Secondary Metabolites and Biomolecules (3 credits) (Pre-req CHE331 & CHE 332)
- **CHE436** Special Topics in Organic Chemistry (2 credits) (Pre-req CHE331)
- **CHE442** Advanced Physical Chemistry II (3 credits) (Pre-req CHE341)
- **CHE470** Excited State Chemistry (2 credits)

### CHEMISTRY AS MAJOR SUBJECT IN COMBINED DEGREE

**Semester 3**

**Core Courses**

- **CHE211** Introduction to Analytical Chemistry (2 credits) (Pre-req CHE 101 & CHE 102)
- **CHE213** Analytical Chemistry Laboratory I (1 credit) (Pre- req CHE 101 & CHE 102; Co-req CHE211)
- **CHE232** Structure and Survey of Functional Groups I (2 credits) (Pre-req CHE101 & CHE102)
- **CHE234** Organic Chemistry Lab I (1 credit) (Pre-req CHE101 and CHE102; co-req CHE232)
- **MAT291** Engineering Mathematics I (3 credits) (Pre-req CHE101 & CHE102)
- **PHY231** Mechanics & Physical Optics (2 credits)
- **PHY239** Physics Practicals 2.1 (1 credit)

**Semester 4**

**Core Courses**

- **CHE221** Atomic Structure, Bonding and Main Group Chemistry (2 credits) (Pre-req CHE101 & CHE102)
- **CHE223** Inorganic Chemistry Laboratory I (1 credit) (CHE 101 & CHE 102; Co-req CHE221)
- **CHE242** Introductory Physical Chemistry (2 credits) (Pre-req CHE 101 & CHE 102, MAT122)
- **CHE244** Physical Chemistry Laboratory I (1 credit) (Pre-req CHE 101 & CHE 102; Co-req CHE242)
- **CHE433** Advanced Organic Chemistry Laboratory (2 credits) (Pre-req CHE334)
- **CHE443** Physical Chemistry Laboratory III (2 credits) (Pre-req CHE343)
- **CHE446** Special Topics in Physical Chemistry (2 credits) (Pre-req CHE341 & CHE342)

**Recommended Elective**

- **PHY472** Statistical Mechanics (3 credits)
- **PHY473** Solid State Physics (3 credits)
<table>
<thead>
<tr>
<th>Semester 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Courses</td>
</tr>
<tr>
<td>CHE311 Separation Techniques (3 credits) (Pre-req CHE311)</td>
</tr>
<tr>
<td>CHE321 Coordination Chemistry (2 credits) (Pre-req CHE211)</td>
</tr>
<tr>
<td>CHE323 Inorganic Chemistry Laboratory II (1 credit) (Pre-req CHE 223; Co-req CHE321)</td>
</tr>
<tr>
<td>CHE331 Structure and survey of functional groups II (3 credits) (Pre Req: CHE 232)</td>
</tr>
<tr>
<td>CHE341 Applications of Thermodynamic and Electrochemistry (2 credits) (Pre-req CHE242)</td>
</tr>
<tr>
<td>CHE344 Physical Chemistry Laboratory II (1 credit) (Pre-req CHE242 &amp; CHE 244)</td>
</tr>
<tr>
<td>CHE351 Chemical Informatics (1 credit)</td>
</tr>
</tbody>
</table>

Recommended Electives

| BIO307 Biochemistry (3 credits) |
| PHYS353 Mathematical Methods of Physics I (2 credits) |

<table>
<thead>
<tr>
<th>Semester 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Courses</td>
</tr>
<tr>
<td>CHE312 Analytical Spectroscopy (2 credits) (Pre-req CHE311)</td>
</tr>
<tr>
<td>CHE314 Analytical Chemistry Laboratory II (1 credit) (Pre-req CHE311 &amp; Co req CHE 312)</td>
</tr>
<tr>
<td>CHE322 Group Theory and Organometallic Chemistry (3 credits) (Pre-req CHE321)</td>
</tr>
<tr>
<td>CHE332 Physical Organic Chemistry (2 credits) (Pre-req CHE232 &amp; CHE 331)</td>
</tr>
<tr>
<td>CHE334 Organic Chemistry Laboratory II (1 credit) (Pre-req CHE234 &amp; CHE331)</td>
</tr>
<tr>
<td>CHE352 Literature Project (1 credit) (Pre-req CHE351 &amp; all 200 level courses + at least one section at 300 level in which student intends to carry out the literature survey) (For Chemistry major only)</td>
</tr>
</tbody>
</table>

| Semester 7 |
| Optional Courses: Take at least 6 Credits from the following |
| CHE411 Advanced Analytical Techniques (3 credits) (Pre-req CHE311 & CHE312) |
| CHE421 Advanced Transition Metal Chemistry (3 credits) (Pre-req CHE322) |
| CHE431 Heterocyclic Chemistry, Synthetic Reactions and Design of Organic Synthesis (3 credits) (Pre-req CHE331 & CHE332) |
| CHE441 Advanced Physical Chemistry I (3 credits) (Pre-req CHE341) |

| Semester 8 |
| Core Courses |
| CHE342 Quantum Chemistry I & its Applications (3 credits) (Pre-req CHE242) |
| CHE334 Organic Chemistry Laboratory II (1 credit) (Pre-req CHE234 & CHE331) |
| CHE452 Student Research Project (3 credits) (Pre-req CHE352) |

| Recommended Elective |
| ENV476 Natural Resources Management and Economics (2 credits) |

CHEMISTRY AS MINOR SUBJECT IN COMBINED DEGREE

| Semester 3 |
| Core Courses |
| CHE211 Introduction to Analytical Chemistry (2 credits) (Pre-req CHE 101 & CHE102) |
| CHE213 Analytical Chemistry Laboratory I (1 credit) (Pre-req CHE101 & CHE102, Co-req CHE211) |
| CHE232 Structure and Survey of Functional Groups I (2 credits) (Pre-req CHE 101 & CHE102) |
| CHE234 Organic Chemistry Laboratory I (1 credit) (Pre-req CHE 101 & CHE 102; Co-req CHE 232) |

| Semester 4 |
| Core Courses |
| CHE221 Atomic Structure, Bonding and Main Group Chemistry I (2 credits) (Pre-req CHE 101 & CHE102) |
| CHE223 Inorganic Chemistry Laboratory I (1 credit) (Pre-req CHE 101 & CHE 102 Co-req CHE221) |
| CHE242 Introductory Physical Chemistry (2 credits) (Pre-req CHE 101 & CHE 102, MAT122) |
| CHE244 Physical Chemistry Laboratory I (1 credit) (Pre-req CHE101 & CHE102, Co-req CHE242) |

Required to take at least 6 Credits including 2 Credits of Laboratory from the CHE Courses in Semester 5 and 6

| Semester 5 |
| Core Courses |
| CHE311 Separation Techniques (3 credits) (Pre-req CHE211) |
| CHE321 Coordination Chemistry (2 credits) (Pre-req CHE221) |
| CHE323 Inorganic Chemistry Laboratory II (1 credit) (Pre-req CHE 223, Co-req CHE321) |
| CHE331 Structure and Survey of Functional Groups II (3 credits) (Pre-req CHE232) |
| CHE341 Applications of Thermodynamic and Electrochemistry (2 credits) (Pre-req CHE242) |
| CHE343 Physical Chemistry Laboratory II (1 credit) (Pre-req CHE242 & CHE 244) |
| CHE351 Chemical Informatics (1 credit) |

| Semester 6 |
| Core Courses |
| CHE312 Analytical Spectroscopy (2 credits) (Pre-req CHE211) |
| CHE314 Analytical Chemistry Laboratory II (1 credit) (Pre-req CHE 311 Co req CHE 312) |
| CHE322 Group Theory and Organometallic Chemistry (3 credits) (Pre-req CHE321) |
| CHE332 Physical Organic Chemistry (2 credits) (Pre-req CHE232 & CHE 331) |
| CHE334 Organic Chemistry Laboratory II (1 credit) (Pre-req CHE234 & CHE 331) |
| CHE342 Quantum Chemistry and Applications (3 credits) (Pre-req CHE242) |

| Recommended Electives |
| BIO308 Molecular Biology (3 credits) |
| MGT303 Entrepreneurship and New Business Formations (3 credits) |

| Semester 7 |
| Not required to take any Chemistry courses. |

| Semester 8 |
| Not required to take any Chemistry courses. |

Recommended Electives

| ENV476 Natural Resources Management and Economics (2 credits) |

1.3 Assessment and Examination

The coursework shall be continuously assessed. Continuous assessment shall consist of written tests, assignments and laboratory exercises where applicable. The weighting of final examination where applicable, shall not be less than 50% of the overall grade for a given course.

1.4 Progression from one Semester to the next Semester

Progression from one semester to the next shall be as per General Regulations 00.9

1.5 Award of Degree

The award of the degree shall be as per General Regulations 00.852

2.0 Department of Chemistry Course Listing

100 Level Courses

| CHE101 GENERAL CHEMISTRY I (4 credits) |
| Course covers fundamental concepts and principles of chemistry, i.e. the structure of matter, quantitative as well as qualitative aspects of chemistry. |

| CHE102 GENERAL CHEMISTRY II (4 credits) |
| This is a continuation of CHE101. The fundamental principles associated with properties of chemical systems will be presented. |

| CHE107 CHEMISTRY APPLIED TO HOME ECONOMICS (3 credits) |
| The role that chemistry plays in everyday life will be presented. Atomic structure, periodic table, oxidation and reduction, chemistry of carbon compounds, acids and bases, soaps and detergents, food and energy, fats, carbohydrates, proteins, minerals and vitamins, additives, poisons and toxins, gases, polymers and plastics, cosmetics. |

| CHE109 INTRODUCTORY CHEMISTRY FOR BACHELOR OF NURSING SCIENCE, BNS (3 credits) |
| Topics include: Structure and bonding, stoichiometry, solutions, chemistry of certain elements, electricity and chemical change, osmosis, reaction rates and catalysis, radioactivity. |

200 Level courses

| CHE211 INTRODUCTION TO ANALYTICAL CHEMISTRY (2 credits) |
| Basic principles of analytical chemistry, concepts of classical and modern methods in analytical chemistry, statistical treatment of experimental data including error analysis and significance tests; Gravimetry, titrimetry. |

| CHE213 ANALYTICAL CHEMISTRY LABORATORY I (1 credit) |
| Practical experience in analytical procedures, classical and modern methods of analytical chemistry, an overview of analytical instrumentation and the progress made towards development of analytical methodology, gravimetric analysis, titrimetric analysis, Electro analytical/ spectrophotometry. |

| CHE221 ATOMIC STRUCTURE, BONDING AND MAIN GROUP CHEMISTRY (2 credits) |
| Structure of the atom based on elementary quantum theory. Bonding in simple molecules |
based on molecular orbital and valence bond theories; Trends in periodic properties and chemical reactions of s- and p-block elements.

CHE223 INORGANIC CHEMISTRY LABORATORY I (1 credit)
This course covers qualitative inorganic analysis, the synthesis of a selection of compounds, as well as solution chemistry of main group elements.

CHE232 STRUCTURE AND SURVEY OF FUNCTIONAL GROUPS I (2 credits)
Survey of various functional Groups; Aspects of stereochemistry; Review of alkanes, alkenes and alkynes: addition and substitution reactions. Organic halogen compounds: substitution and elimination reactions, aromatic compounds, and electrophilic substitution reactions. Introduction to chirality’s; Acids and bases: alcohols, ethers, epoxides, carbonyls compounds.

CHE234 ORGANIC CHEMISTRY LABORATORY I (1 credit)
Course topics include: Purification and separation of organic compounds-distillation and fractional distillation, crystallization and recrystallization melting point and refractive index determination; Introduction to qualitative analysis of organic compounds; Preparations of simple organic compounds.

CHE242 INTRODUCTORY PHYSICAL CHEMISTRY (2 credits)
Basic principles of thermodynamics: first, second and third laws of thermodynamics; rates of chemical reactions.

CHE244 PHYSICAL CHEMISTRY LABORATORY I (1 credit)
This is an introduction to laboratory techniques in physical chemistry. Experiments dealing with properties of solutions, Calorimetry, thermodynamics, electrochemistry and chemical kinetics.

300 level courses

CHE311 SEPARATION TECHNIQUES (3 credits)
Introduction to chromatographic separation and detection techniques: Liquid-liquid extraction; column chromatography, TLC, GC and HPLC, Supercritical fluid; Capillary electrophoresis. Detection systems include FID/ECD & thermal conductivity for GC, UV-Vis/ DAD/ fluorescence detector for HPLC. Electrochemical / conductivity detectors for Ion Chromatography.

CHE312 ANALYTICAL SPECTROSCOPY (2 credits)
Introduction to spectroscopic methods. Molecular absorption & emission- UV-visible, IR, phosphorescence, fluorescence, Fourier transform spectroscopy. Atomic absorption & emission techniques; AAS / AES and ICP-MS.

CHE314 ANALYTICAL CHEMISTRY LABORATORY II (1 credit)
Introduction to practical aspects of spectroscopic methods of analysis: UV-visible, IR, Fourier transform spectroscopy, GC, HPLC, AAS/AES, etc.

CHE321 COORDINATION CHEMISTRY (2 credits)
Introduction to nomenclature, properties and reactions of coordination compounds & complexes; isomerism and magnetic properties. Valence bond and crystal field theories; absorption spectra; field strength; Jahn-Teller effects; covalency and electron delocalization in complexes. Thermodynamics of complex formation. Hard and soft acids and bases. Non-aqueous chemistry. The chemistry of d-block elements and their compounds. Trends in the properties of elements of groups 3 to 12.

CHE322 GROUP THEORY AND ORGANOMETALLIC CHEMISTRY (3 credits)
Introduction to group theory and basic knowledge of organo-metallic chemistry. Fundamental concepts of organometallic chemistry; organometallic chemistry of transition elements; catalytic applications of organometallic compounds.

CHE323 INORGANIC CHEMISTRY LABORATORY II (1 credit)
Involves use of modern instruments to characterize organic compounds. Synthesis of inorganic compounds and their characterization using various techniques such as NMR, IR and UV-Vis spectroscopy; Reactions of transition elements and their compounds.

CHE331 STRUCTURE AND SURVEY OF FUNCTIONAL GROUPS II (3 credits)

CHE332 PHYSICAL ORGANIC CHEMISTRY (2 credits)
Study of reaction mechanisms. Review of nucleophilic substitution and elimination reactions - E1, E2, S_n1, S_n2, Sn1, and E1CB. Structure- reactivity relationships: equilibrium and rate constants - the Hammett equation. Methods for determining reaction mechanisms. Pericyclic reactions: Frontier Molecular Orbital Theory, cycloadditions, electrocyclic reactions and sigmatropic rearrangements.

CHE334 ORGANIC CHEMISTRY LABORATORY III (1 credit)
Introduction to modern synthetic and chemical reactions of coordination compounds & complexes; isomerism and magnetic properties. Valence bond and crystal field theories; absorption spectra; field strength; Jahn-Teller effects; covalency and electron delocalization in complexes. Thermodynamics of complex formation. Hard and soft acids and bases. Non-aqueous chemistry. The chemistry of d-block elements and their compounds. Trends in the properties of elements of groups 3 to 12.

CHE341 APPLICATIONS OF THERMODYNAMIC AND ELECTROCHEMISTRY (2 credits)
Introduction to the applications of chemical thermodynamics to solutions and electrochemical processes. Partial molar quantities, thermodynamics of mixing, properties of ideal solutions, non-ideal solutions, activity and activity coefficient, phase diagrams, chemical equilibrium, conductivity, ion activities, standard potentials, electrochemical cells applications of standard potentials.

CHE342 QUANTUM CHEMISTRY AND ITS APPLICATIONS (3 credits)
Microscopic concepts of physical chemistry. Basic principles of quantum mechanics, postulates, simple quantum mechanical systems (particle in a1-D and 3-D box), rotational and vibrational energy levels in molecules, rotational, vibrational and electronic spectroscopy, photophysical and photochemical processes in molecules and atoms, photochemical kinetics.

CHE343 PHYSICAL CHEMISTRY LABORATORY II (1 credit)
Practical familiarization with microscopic and time dependent macroscopic aspects of physical chemistry. Laboratory experiments in application of quantum chemistry, spectroscopy, photochemical kinetics, conductivity and transport phenomena.

CHE351 CHEMICAL INFORMATICS (1 credit)
Use of conventional and electronic chemical information resources. An overview of information resources in chemistry. Purpose and scientific literature. Peer review process. Electronic and non-electronic databases. Searching methodologies including Internet searching (use of chemical web browsers). Searching for information using chemical names, CAS numbers, structures, sub-structures, molecular formulas, etc. Searching material safety data sheets (MSDS).

CHE352 LITERATURE BASED PROJECT (1 credit)
Course will cover professional writing in chemistry and scholarly project reports. Writing styles in chemistry: comprehensive report on an assigned topic in chemistry under the supervision of an academic staff.; Thorough search of the chemical literature including the latest information available on the subject.

400 Level Courses

CHE411 ADVANCED ANALYTICAL TECHNIQUES (3 credits)
Advanced analytical methods: Statistical treatment of experimental data; Electroanalytical Chemistry- potentiometry, voltammetry, coulometry, classical and modern polarography, Instrumentation and application of GC-MS, LC-MS, CE-MS, tandem MS, Thermochromical and Radiochemical methods of analysis; isotope dilution and activity analysis.

CHE412 SAMPLE HANDLING AND BIOCHEMICAL ANALYSIS (3 credits)
Sampling strategies, sample preparation and clean-up techniques; solid phase extraction, solid phase micro-extraction, dialysis, solvent extraction, supported liquid membrane. Enzymatic analysis methods; application of immobilised enzymes, competitive binding immunosassays, enzyme immunoassays, proteomics, and genomics. Properties of antibodies. Polymer structure elucidation of carbohydrate polymers; precipitation assays.

CHE413 ADVANCED ANALYTICAL CHEMISTRY LABORATORY (2 credits)
Modern instrumental methods of analysis: atomic absorption (AAS), flame emission, graphite furnace- AAS, inductively coupled plasma- AAS. Sample handling strategies. Micro high performance
CHE416 ENVIRONMENTAL CHEMISTRY (2 credits)
Introduction to environmental pollutants and their analysis using local case studies, e.g., SO2 emissions from the BCL mine; Pesticide analysis, industrial analysis using local case studies e.g., SO2 emission techniques; LC-MS, MS-capillary electrophoresis, anion exchange chromatography. Hyphenated techniques; UC-MSC, MS-capillary electrophoresis, electrochemistry workstations.

CHE418 SPECIAL TOPICS IN ANALYTICAL CHEMISTRY (2 credits)
Special topics selected from the following: Application of Analytical Chemistry, Food, Drugs and Forensic Analysis, Chemostatistics and Clinical Analysis.

CHE421 ADVANCED TRANSITION METAL CHEMISTRY (3 credits)
Advanced topics in transition metal chemistry and introductory bio-inorganic chemistry. Electronic properties of transition metal complexes; magnetic properties of transition metal complexes; inorganic reaction mechanisms; introduction to photo-chemical reactions; f-block chemistry; introduction to bioinorganic chemistry.

CHE422 ADVANCED ORGANO METALLIC AND SOLID STATE CHEMISTRY (3 credits)
Organo metallic Chemistry: Main group organometallics; structure and chemistry of (CSH5)2Mn complexes; organometallic chemistry in synthesis; stereochemically non-rigid molecules; metal clusters and metal-metal bonds; low- and high-nuclearity clusters; NMR spectra; Latimer diagrams, oxidation state stability. Solid state chemistry: lattices; crystal packing; ionics;crystal defects; metallic bonding; spinels.

CHE423 ADVANCED INORGANIC LABORATORY (2 credits)
Physical methods in Inorganic Chemistry: the study of physical and chemical properties of transition metal and organometallic compounds using electronic, infrared, and nuclear magnetic resonance spectroscopy techniques as well as optical isomerism, reaction kinetics, and inert atmosphere techniques.

CHE426 SPECIAL TOPICS IN INORGANIC CHEMISTRY (2 credits)
Selection may be made from the following specialised topics: Nanochemistry, Synthesis of inorganic materials for the fabrication of semiconductors; Molecular orbital calculations; Kinetics and mechanisms of inorganic reactions in solution media; Applied homogeneous catalysis with organometallic compounds; Chemistry and applications of boranes, carbonaranes and metalloboranes.

CHE431 HETEROCYCLIC CHEMISTRY SYNTHETIC REACTIONS AND DESIGN OF ORGANIC SYNTHESIS (3 credits)
Aromaticity and reactions of heterocyclic compounds - furan, pyrrole, thiophene, pyridine, indole, and quinoline. Synthetic reaction, Protective groups.; Molecular rearrangements. Design of organic synthesis: introduction to disconnection approach / retrosynthetic analysis.

CHE432 SECONDARY METABOLITES AND BIOMOLECULES (3 credits)

CHE433 ADVANCED ORGANIC CHEMISTRY LABORATORY (2 credits)

CHE434 SPECIAL TOPICS IN ORGANIC CHEMISTRY (2 credits)
Selection may be made from the following special topics: Chemistry of drugs; Chemistry of lipids; Selected natural products; Agrochemicals; Free radicals and photochemistry; Polymer materials.

CHE441 ADVANCED PHYSICAL CHEMISTRY I (3 credits)

CHE442 ADVANCED PHYSICAL CHEMISTRY II (3 credits)
Reaction kinetics, techniques of fast reactions, theories of reaction rates, reaction in solution, composite reactions, chain reactions, explosions, Transport phenomena. Polymers, kinetics of polymerization, stereoregularity, viscometry, gel-permeation chromatography, TGA, DSC. Introductory polymer processing.

CHE443 PHYSICAL CHEMISTRY LABORATORY III (3 credits)
Laboratory experiments in polymers, surface and colloid chemistry.

CHE446 SPECIAL TOPICS IN PHYSICAL CHEMISTRY (2 credits)
Detailed treatment of topics chosen from: solid-state chemistry; irreversible thermodynamics; molecular dynamics; intermolecular forces; atmospheric and/or astrophysical chemistry.

CHE452 STUDENT RESEARCH PROJECT (3 credits)
The course involves scientific bench work research. Will comprise a study leading to a written report and shall be based on an original investigation of a chemical problem. To be carried out under the supervision of a member of staff.

CHE470 EXCITED STATE CHEMISTRY (2 credits)
Boltzmann population distributions, comparison of ground and excited states, methods of excitation, experimental methods of studying excited states, chemistry of the excited states of molecules, Application of chemistry of excited states (e.g. Lasers).

THE DEPARTMENT OF COMPUTER SCIENCE

Offers the following undergraduate programmes:

Single major programmes leading to the award of:

a) B.Sc. (Computer Science),
b) B.Sc. (Computing with Finance),
c) BIS. (Computer Information Systems)
d) B.Sc. (Information Technology)

Combined Major/Minor programmes leading to the award of:

a) B.Sc(other subject Major/ Computer Science Minor)

Entry Requirements

Subject to the General Academic Regulation 00.5, the following departmental programme entry requirements shall apply for the programmes: B.Sc. (Computer Science), BIS (Computer Information Systems), and B.Sc (Information Technology).

i) For entry into 100-level, candidates must have a minimum grade of C in Mathematics and two other science subjects with computer studies recognized as a science subject, with a minimum grade of D in English.

ii) For entry into the programme at higher level, the following shall apply.

a. Transfer student from a Computer Science or Information Systems or equivalent programme from a higher institution considered equivalent to the University of Botswana, subject to General Academic Regulation 00.3.13.

b. Candidates holding a post Secondary Certificate qualification which is considered by the department as being at least equivalent to the 100-level of the programme and so deemed to earn the candidate an exemption from the 100-level of the programmes.

c. Candidates holding a post-Secondary qualification who do not meet criteria b) above may be required to take some 100-level courses

(J)B.Sc. Computer Science Programme

Semester I

Courses Type Credits Prerequisite
CS1131 Discrete Structures I core (3)
CS141 Programming Principles 3
CS161 Introduction to Computing Core 3
MAT111 Introductory Mathematics Core 3
COM1141 Introduction to Communication and Academic Literacy Skills (Science) GEC 3

Semester II

CS1132 Discrete Structures II Core 3 CS1131
CS142 Object-Oriented Programming Core 4 (pre-req CS141)
MAT112 Introductory Mathematics Core 4 (pre-req MAT111)
STA122 Introductory Concepts of Probability Core (4)
**Semester III**

**CSI242** Data Structures Core 3 (pre-req CSI132, CSI142)
**CSI243** Functional Programming Core 3 (pre-req CSI142)
**CSI213** Discrete Structures III Core 3 (pre-req CSI132)

**MAT221** Calculus I Core 3
E elective 3

**Semester IV**

**CSI262** Database Concepts Core 3 (pre-req CSI242)
**CSI223** Systems Programming Core 3 (pre-req CSI242)

**CSI251** Computer Architecture & Organization Core 3 (pre-req CSI161, CSI141)

**MAT212** Introductory Linear Algebra Core 3
E elective 3

**Semester V**

**CSI322** Algorithms Core 3 (pre-req CSI242)

**CSI354** Operating Systems Core 3 (pre-req CSI242, CSI251)

**CSI374** Computer Networks Core 3 (pre-req CSI142, CSI251)

**CSI342** Systems Analysis & Design Core 3 (pre-req CSI 262 E elective 3)

**Semester VI**

**CSI315** Web Technology and Applications Core 3 (pre-req CSI262, CSI374)

**CSI332** Programming Languages Core 3 (pre-req CSI243)

**CSI341** Introduction to Software Engineering Core 3 (pre-req CSI342)

**CSI344** Artificial Intelligence Optional 3 (pre-req CSI242)

**CSI392** Human Computer Interaction Optional 3 (pre-req CSI342)

**MGT303** Entrepreneurship and New Business Formation Optional 3

**Winter Semester**

**CSI352** Industrial Attachment Core 3 (pre-req CSI354, CSI374, CSI342)

For semester VII and VIII, students choose from the following areas of specializations.

1. Software Engineering
2. Systems & Networks

**Semester VII**

**CSI411** Theory of Computation Core 3 (pre-req CSI222)

**CSI472** Social Informatics Core 3 (pre-req CSI352)

**CSI481** Database Systems Core 3 (pre-req CSI262)

**Semester VIII**

**CSI405** Project Core 4 (pre-req CSI352, CSI315, CSI341)

**CSI412** Programming Language Translation Core 3 (pre-req CSI411)

**CSI461** Computer Networks & Security Core 3 (pre-req CSI374)

**Software Engineering stream (Minimum 6 credits)**

**CSI462** Distributed Computing Optional 3 (pre-req CSI354, CSI374)

**CSI451** Systems Networks Optional 3 (pre-req CSI374)

**CSI493** Computer Graphics Optional 3 (pre-req CSI242)

**Semester IX**

**CSI405** Project Core 4 (pre-req CSI352, CSI315, CSI341)

**CSI412** Programming Language Translation Core 3 (pre-req CSI411)

**CSI461** Computer Networks & Security Core 3 (pre-req CSI374)

**Software Engineering stream (minimum 6 credits)**

**CSI444** Software Project Management Optional 3 (pre-req CSI441 or CSI471)

**CSI392** Human Computer Interaction Optional 3 (pre-req CSI342)

**CSI345** Integrative Programming Optional 3 (pre-req CSI223, CSI354)

E elective 3

**Systems & Networks stream (Minimum 6 credits)**

**CSI464** Mobile Computing Optional 3 (pre-req CSI374)

**CSI424** Network Algorithms Optional 3 (pre-req CSI374, CSI332)

E elective 3

2. B.Sc. (Computer Science - Minor)

The following courses constitute a minor in Computer Science with a total credit of 34.

**First Year**

**CSI131** Discrete Structures I

**CSI141** Programming Principles

**CSI161** Introduction to Computing

**CSI132** Discrete Structures II

**CSI142** Object-Oriented Programming

**Second Year**

**CSI242** Data Structures

**CSI262** Database Concepts

**CSI251** Computer Architecture & Organization

**Third Year**

**CSI354** Operating Systems

**CSI374** Computer Networks

**CSI315** Web Technology and Applications

b) B.Sc. Computing with Finance

**Entry Requirement**

Subject to the General Academic Regulation 00.5, the following departmental programme entry requirements shall apply for the programme:

For entry to the B.Sc. Computing with Finance, the following entry requirements shall apply.

i) For entry into 100-level, candidates must have a minimum grade of C in Mathematics and two other science subjects with Computer Studies recognized as a science subject, with a minimum grade of C in English.

ii) For entry into the programme at higher level:

a. Transfer students from a Computing with Finance or equivalent programme from a higher institution considered equivalent to the University of Botswana, subject to General Academic Regulation 00.313.

b. Candidates holding a post Secondary qualification which is considered by the department as being at least equivalent to the 100-level of the programme. For those who do not meet this criterion, they may be required to take some 100-level

**Semester I**

**Courses Type Credits Prerequisite**

**CSI141** Programming Principles Core 3 (pre-req CSI242)

**MAT111** Introductory Mathematics I Core 4

**CSI131** Discrete Structures Core 3 (pre-req CSI132)

**COM141** Introduction to Communication and Academic Literacy Skills (Core) GEC 3

**Semester II**

**ACC100** Introduction to Accounting Core 3 (pre-req CSI141)

**MAT122** Introductory Mathematics II Core 4 (pre-req MAT111)

**CSI132** Discrete Structures II Core 3 (pre-req CSI131)

**COM142** Academic and Professional Communication (Science) GEC 3

**Semester III**

**CSI242** Data Structures Core 3 (pre-req CSI132, CSI142)

**FIN200** Business Finance Core 3

**MAT221** Calculus I Core 3

**ECO111** Basic Microeconomics Optional 3

**MGF100** Principles of Management Optional 3

**LAW251** Foundations of Business Law Optional 3

**Semester IV**

**CSI262** Database Concepts Core 3 (pre-req CSI242)

**ACC200** Financial Accounting I Core 3 (pre-req ACC100)

**CSI251** Computer Architecture & Organization Core 3 (pre-req CSI141, CSI161)

**STA114** Business Statistics Core 3

**MGT303** Entrepreneurship and New Business Formation Optional 3

**Semester V**

**CSI354** Operating Systems Core 3 (pre-req CSI242, CSI251)

**FIN301** Financial Institutions and Markets I Core 3 (pre-req FIN200)

**CSI374** Computer Networks Core 3 (pre-req CSI141, CSI251)

**CSI342** Systems Analysis & Design Core 3 (pre-req CSI 262)

**ACC302** Auditing I Core 3 (pre-req ACC200)

**Semester VI**

**FIN302** Financial Planning and Forecasting Core 3 FIN200

**CSI315** Web Technology and Applications Core 3 (pre-req CSI262, CSI374)

**FIN300** Financial Management Core 3 FIN200

**CSI341** Introduction to Software Engineering Core 3 (pre-req CSI342)

**Min 3 credits from:**

**CSI392** Human Computer Interaction Optional 3 (pre-req CSI342)
MGT303  Entrepreneurship and New Business Formation Optional 3

Winter Semester
CSI352  Industrial Attachment Core 3 (pre-req CSI354, CSI374, CSI342)

Semester VII
CSI471  Software Design Core 3 (pre-req CSI341)
CSI481  Databases Core 3 (pre-req CSI262)
CSI322  Algorithms Core 3 (pre-req CSI242)
CSI472  Social Informatics Core 3 (pre-req CSI352)

Min 3 credits from:
FIN402  International Business Finance Optional 3 (pre-req FIN301)
CSI441  Requirements Engineering Optional 3 (pre-req CSI341)
CSI432  Intelligent Systems Optional 3 (pre-req CSI342)

Semester VIII
CSI405  Project Core 4 (pre-req CSI352, CSI315, CSI341)
CSI452  Information Security Administration Core 3 (pre-req CSI374)
BIS309  Accounting Information Systems Core 3 (pre-req ACC200)

Min 6 credits from:
FIN403  Financial Institution and Markets II Optional 3 (pre-req FIN301)
CSI416  Web Computing Optional 3 (pre-req CSI315)
CSI444  Software Project Management Optional 3 (pre-req CSI471)

B.Sc. Computer Information Systems; new program suspended till 2012 August

III. B.Sc. Information Technology

Semester I
Courses Type Credits Prerequisite
CSI131  Discrete Structures Core 3
CSI141  Programming Principles Core 3
CSI161  Introduction to Computing Core 3
STA116  Introduction to statistics Core 4
COM141  Introduction to Communication and Academic Literacy Skills (Science) GEC 3

Semester II
CSI132  Discrete Structures II Core 3 (pre-req CSI131)
CSI142  Object-Oriented Programming Core 4 (pre-req CSI141)
MAT111  Introductory Mathematics I Core 4
ECO111  Basic Micro Economics core 3
COM142  Academic and Professional Communication (Science) GEC 3

Semester III
CSI242  Data Structures Core 3 (pre-req CSI132, CSI142)
CSI244  Information Management Core 3
CSI293  Information Technology Fundamentals Core 3
MGT100  Principles of Management Core 3
MAT122  Introductory Mathematics II Core 4

CSI262  Database Concepts Core 3 (pre-req CSI242)
CSI261  Computer Architecture Core 3 (pre-req CSI161)
CSI223  Systems Programming core 3 (pre-req CSI242)
MGT200  Organizational Design and Development Core 3 (pre-req MGT100)

Min 3 credits from:
ECO112  Basic Macro Economics Optional 3
STA211  Statistical Methods Optional 3
LIS 227  Introduction to Knowledge Management Optional 3

Semester V
CSI354  Operating Systems Core 3 (pre-req CSI261, CSI242)
CSI374  Computer Networks Core 3 (pre-req CSI141, CSI261)
CSI342  Systems Analysis & Design Core 3 (pre-req CSI262)
MGT301  Organizational Behavior core 3 (pre-req MGT200)

Elective 3

Semester VI
CSI345  Integrative Programming Core 3 (pre-req CSI354, CSI233)
CSI315  Web Technology and Applications Core 3 (pre-req CSI262, CSI374)
CSI392  Human Computer Interaction Core 3 (pre-req CSI342)
CSI341  Introduction to Software Engineering Core 3 (pre-req CSI342)

Min 3 credit from:
MGT303  Entrepreneurship and Business Formation Optional 3 (pre-req MGT200)
BIS304  Management Information Systems Optional 3

Winter Semester
Courses Type Credits Prerequisite
CSI352  Industrial Attachment Core 3 (pre-req CSI354, CSI374, CSI342)
CSI481  Database Systems Core 3 (pre-req CSI262)
CSI472  Social Informatics Core 3 (pre-req CSI352)
CSI482  Information System Engineering Core 3 (pre-req CSI346)
CSI485  System Administration Core 3 (pre-req CSI354, CSI374)

Min 3 credit from:
LAW251  Foundations of Business Law Optional 3
FIN200  Business Finance Optional 3
LIS 403  Knowledge Management Optional 3 (pre-req LIS227)

Semester VII
CSI405  Project Core 4 (pre-req CSI352, CSI315, CSI341)
CSI416  Web Computing Core 3 (pre-req CSI315)
CSI452  Information Security Administration Core 3 (pre-req CSI374)
CSI446  Information Systems Project Management Core 3 (pre-req CSI482)

Min 3 credits from:
BIS417  Information System Auditing Optional 3
MKT401  Marketing Management and Strategy Optional 3

DEPARTMENT OF ENVIRONMENTAL SCIENCE

4. Entrance Requirements
Normal entry requirements shall be as stipulated in General Regulation 20.00 in this Calendar and Department Regulation 1.4 (see DEPARTMENT Handbook).

5.1 Human Environment Programmes
Level 100
All courses at this level are core courses.

Semester 1
ENS101  Introduction to Environmental Science - Physical (3)
ENS141  Introductory Quantitative Techniques in Environmental Science I (3)

Semester 2
ENS102  Introduction to Environmental Science – Human (3)
ENS142  Introductory Quantitative Techniques in Environmental Science II (3)

Level 200
Semester 3
Core Courses
ENS242  Introduction to Spatial Analysis (3)

Optional Courses
ENS211  The Earth Environment System (3)
ENS251  The Human Environment System (3)

Semester 4
Core Courses
ENS243  Introduction to Remote Sensing (3)
ENS252  Botswana Environment (3)
ENS260  Environment and Population Dynamics (3)

Optional Courses
ENS241  Quantitative Techniques in Environmental Science (3)

Levels 300 to 400
Single Major Programmes
In accordance with General Academic Regulation 00.02, in each of Semesters 5 to 8 the Single Major Programme in Environmental Science shall consist of 10 to 12 core and optional courses for each of the Human Environment Areas of Specialisation, with optional courses selected from the following lists. Availability of courses and areas of specialisation are subject to the staffing situation in the particular semester and/or year. In accordance with Departmental Regulation 1.4, Entry into the programme is by application to HoD.

Human Environment Career areas are as follows
a) Area 1: Population, Economy and Resources;
b) Area 2: Rural and Agricultural Development;
c) Area 3: Management of the Urban and Industrial Environment;
d) Area 4: Tourism Development and Policy.

Semester 5
**Core Courses (By career Areas)**

**Development (3, Area 1) (pre: ENV302 or POP120)**

- ENVS01 Environmental Issues (2, all areas)
- ENVS03 Directed Readings (2, all areas)
- ENVS04 Quantitative Techniques in Human Geography (3, all areas)(PRE: ENS141/ENS142)
- ENVS02 Concepts and Principles in Population Geography (2, Area 1)
- ENVS05 Rural Geography (2, Area 2) (not available in 2011/12)
- ENVS09 Tourism I: Principles and Practices (2, Area 4)
- ENVS17 Industrialisation Trends and the Developing World (2, Area 3) (not available 2011/12)
- ENVS21 Urbanisation in the Developing World (2, Area 3) (pre: ENV210/211/212/219/ ENV241/ENS252/ENS260/POP303/URP300/204)

**Optional Courses (By Area of Specialisation)**

- ENVS05 Rural Geography (2, Areas 1 and 4) (not available 2011/12)
- ENVS06 Globalisation, Socioeconomic and Environmental Change (2, all areas) (not available 2011/12)
- ENVS07 Human Settlements: Principles and Morphology (2, all areas) (pre: ENV210/211/212/219/ ENS241/ENS252/ENS260/POP303/URP300/204)
- ENVS09 Tourism I: Principles and Practices (2, Areas 1 and 2)
- ENVS10 Medical Geography (2, all areas)
- ENVS19 Economic Geography (2, all areas) (not available 2011/12)
- ENVS21 Urbanisation in the Developing World (2, Area 1) (pre: ENV210/211/212/219/ POP303/URP300/204)

**Semester 6 Core Courses (By Career Areas)**

- ENVS31 Environment, Population and Development (3, Area 1) (pre: ENVS02 or POP120)
- ENVS32 Sustainable Development (2, all areas) (pre: ENVS01)
- ENVS34 Project Proposal (2, all areas) (pre: ENVS03)
- ENVS35 Environmentalism and Social Theory (2, all areas) (pre: ENV210/211/212/219/ ENS241/ENS252/ENS301/SOC322/SOC127)
- ENVS33 Elementary Techniques in Population Geography (3, Area 1) (pre: ENV302)
- ENVS36 Agricultural Development (2, Area 2)
- ENVS38 Tourism II: Tools and Analysis (2, Area 4) (pre: ENVS09)
- ENVS30 Botswana's Environment (2, all areas) (not available 2011/12)
- ENVS35 Environmentalism and Social Theory (2, all areas) (ENV210/211/212/219/ ENS241/ENS252/ENS301/SOC322/SOC127)
- ENVS39 Methods and Techniques in Environmental Appraisal (2, all areas)
- ENVS38 Tourism II: Tools and Analysis (2, Areas 1 and 2) (pre: ENVS09)
- POP305 Population Dynamics, Policies and Programmes (2, Area 1)

**Semester 7 Core Courses (By CAREER AreaS)**

- ENV400 Project Data Collection, Analysis and Reporting I (1, all areas)(pre:ENV314)
- ENV426 GIS for Socioeconomic Applications (3, all areas) (pre: ENV215/ENS242)
- ENV401 Advanced Techniques in Population Geography (3, Area 1) (pre: ENV313)
- ENV402 Natural Resource Conservation and Management (3, all areas) (not available 2010/11)
- ENV404 Rural Development Theory and Practice (2, Area 2)
- ENMV05 Rural Survey Techniques (2, Area 2)
- ENMV07 Ecotourism (2, Area 4) (pre: ENV309/318)
- ENV423 Urban Social Theory (2, Area 3) (pre: ENV315/318/POL301/SOC421/433/ URP400/407)
- ENV405 Rural Development Theory and Practice (2, Area 2)
- ENV406 Urban and Rural Survey Techniques (2, Area 2)
- ENMV07 Ecotourism (2, Area 4) (pre: ENV309/318)
- ENV424 Industry and the Environment (2, Area 3) (not available 2011/12)
- ENV406 Regional Development Studies (2, all areas) (not available 2011/12)
- ENV425 The African Environment (3, all areas)
- ENV447 Environmental Hazards (2, all areas)
- ENV404 Rural Development Theory and Practice (2, Area 1 and 2)
- ENV407 Ecotourism (2, Area 1 and 2)
- ENMV07 Ecotourism (2, Area 4) (pre: ENV309/318)
- ENV423 Urban Social Theory (2, Area 1) (pre: ENV315/318/POL301/SOC421/433/ URP400/407)
- ENV424 Industry and the Environment (2, Area 4) (not available 2011/12)

**Semester 8 Core Courses (By CAREER Areas)**

- ENV408 Tourism and Development (2, Areas 1 and 2) (pre: ENV309/318)
- ENV414 Project Data Collection, Analysis and Reporting II (2, all areas) (pre: ENV400)
- ENV456 Remote Sensing for Socio-economic Applications (3, all areas) (pre: ENV216)
- ENV415 Rural Development in Botswana (2, Areas 1 and 2)
- ENV418 Environmental Policy (2, Area 4)
- ENV481 Concepts and Principles of Industrialisation (2, Area 2)
- Optional Courses (By Area of Specialisation)
- ENMV03 Gender and Environment (2, all areas)
- ENV412 Environmental Impact Assessment (3, all areas) (not available 2011/12)
- ENV427 Energy and Environment (2, all areas) (not available 2011/12)
- ENV476 Natural Resource Management and Economics (2, all areas)
- ENV416 Transport and Environment (2, Areas 2, 3 and 4)
- ENV418 Environmental Policy (2, Areas 1, 2 and 3)
- ENV419 Development Geography (3, all areas) (not available 2010/11)
- ENV483 Advanced Map-work and Air Photo Interpretation (1, all areas)
- ENV484 Urbanisation and Environment (2, Area 3) (pre: ENV307/321/URP213, 301)
- POP423 Population and Development (3, Areas 1 and 2)

**Major/Minor Programme with Environmental Science as the Major**

In accordance with General Academic Regulation 00.62, in each of Semesters 5 to 8, the Major (ENV.

**SCIENCE - MINOR Programme in Environmental Science**

Major/Minor Programme in Environmental Science shall consist of 7 to 8 core and optional courses, with optional courses selected from accompanying lists. The CAREER areas specified under Regulation 2.1 shall also apply to this Programme. Availability of courses and areas of specialisation are subject to the staffing situation in the particular semester and/or year. In accordance with DEPARTMENT Regulation 1.4, entry into the programme is by application to HoD.

**Semester 5 Core Courses (By Area of Specialisation)**

- ENVS01 Environmental Issues (2, all areas)
- ENVS02 Concepts and Principles in Population Geography (2, Area 1)
- ENVS04 Quantitative Techniques in Human Geography (3, all areas) (PRE: ENS141/ENS142)
- ENVS05 Rural Geography (2, Area 2) (not available 2011/12)
- ENVS09 Tourism I: Principles and Practices (2, Area 4)
- ENVS17 Industrialisation Trends and Developing Countries (2, Area 3) (not available 2011/12)
- ENVS33 Advanced Human Geography (2, Humanities Students) (pre: ENV102/211/219)

**Optional Courses (By Career Areas)**

- ENVS06 Globalisation, Socioeconomic and Environmental Change (2, all areas) (not available 2011/12)
- ENVS07 Human Settlements: Principles and Morphology (2, all areas) (pre: ENV210/211/212/219/POP303/URP200/204)
- ENVS10 Medical Geography (2, all areas)
- ENVS19 Economic Geography (2, all areas) (not available 2011/12)
- ENVS39 Methods and Techniques in Environmental Appraisal (2, all areas) (NOT AVAILABLE IN 2011/12)
- ENVS305 Rural Geography (2, Areas 1 and 4) (not available 2011/12)
- ENVS309 Tourism I: Principles and Practices (2, Areas 1 and 2)
- ENVS317 Industrialisation Trends and the Developing World (2, Areas 1 and 2) (not available 2011/12)
- ENVS321 Urbanisation in the Developing World (2, all areas) (pre: ENV210/211/212/219/ POP303/URP200/204)

**Semester 6 Core Courses (By CAREER Areas)**

- ENVS31 Environment, Population and Development (3, Area 1)
- ENVS32 Sustainable Development (2, all areas)
- ENVS34 Project Proposal (2, all areas)
- ENVS35 Environmentalism and Social Theory (2, all areas)
- ENVS36 Agricultural Development (2, Area 2)
- ENVS38 Tourism II: Tools and Analysis (2, Area 4)
- ENVS30 Botswana's Environment (2, all areas) (not available 2011/12)
- ENVS35 Environmentalism and Social Theory (2, all areas) (ENV210/211/212/219/ ENS241/ENS252/ENS301/SOC322/SOC127)
- ENVS39 Methods and Techniques in Environmental Appraisal (2, all areas)
- ENVS38 Tourism II: Tools and Analysis (2, Areas 1 and 2)
- POP305 Population Dynamics, Policies and Programmes (2, Area 1)

**Optional Courses (By Career Areas)**

- ENVS33 Advanced Physical Geography (2, Humanities) (pre: ENV101/214/220)
- POP306 Population and Development (3, all areas)
Semester 7

Core Courses (By CAREER Areas)

ENV401 Advanced Techniques in Population Geography (3, Area 1) (pre: ENV313)
ENV404 Rural Development Theory and Practice (2, Area 2)
ENV425 The African Environment (3, all areas) (pre: ENV215)
ENV447 Environmental Hazards (2, all areas)
ENV418 Environmental System (3)

Optional Courses (By Area of Specialisation)

ENV406 Regional Development Studies (2, all areas) (not available 2011/12)
ENV419 Development Geography (2, all areas) (not available 2011/12)
ENV427 Energy and Environment (2, all areas) (not available 2011/12)
ENV428 Environmental Impact Assessment (2) (Area 3) (not available 2011/12)
ENV430 Environmental Policy (2, Area 2)

Semester 8

Core Courses (By CAREER Areas)

ENV415 Rural Development in Botswana (2, Areas 2 and 4)
ENV418 Environmental Policy (2, Area 4)
ENV424 Industry and Environment (2, Area 3) (not available 2011/12)

Optional Courses (By Area of Specialisation)

ENV403 Gender and Environment (2, all areas)
ENV412 Environmental Impact Assessment (2, Area 2) (not available 2011/12)
ENV416 Transport and Environment (2, Areas 2, 3 and 4)
ENV428 Environmental Policy (2, Area 3)
Programme in Environmental Science shall consist of 10 to 12 core and optional courses for each of the Physical Environment Areas of Specialisation, with optional courses selected from the following lists. Availability of courses is subject to the staffing situation in the particular semester and/or year.

**Semester 5**

**Core Courses**
- ENS301 Environmental Issues (2)
- ENS303 Directed Readings (2)
- ENS330 Remote Sensing for Environmental Science (3) (pre: ENV216/ENS243)

**Optional Courses**
- ENS331 Hydro-meteorology (2)
- ENS332 Air Photography (3) (pre: ENV215/ENS216/ENS242/ENS243)
- ENS334 Principles of Soil Science (3)
- ENS338 Management to Geomorphology (3) (pre: ENV218)
- ENS340 Biogeography (2)
- ENS382 Analytical Methods for Specific Hazards (3)

**Semester 6**

**Core Courses**
- ENS312 Sustainable Development (2) (pre: ENV301)
- ENS314 Project Proposal (2) (pre: ENV303)
- ENS336 Advanced Statistical Techniques for Environmental Science (3)

**Optional Courses**
- ENS335 Principles of Hydrology (3)
- ENS337 Dynamic Meteorology (3)
- ENS339 Methods and Techniques for Environmental Appraisal (2) not available 2011/12
- ENS342 The Climate System (3)
- ENS385 Soil Geography (3)

**Semester 7**

**Core Courses**
- ENV400 Project Data Collection, Analysis and Reporting I (1) (pre: ENV314)
- ENV440 Geographical Information Systems (3) (pre: ENV215/ENS242)

**Optional Courses**
- ENV441 Applied Hydrology I (3) (pre: ENV335)
- ENV442 Boundary Layer Climates (3)
- ENV447 Environmental Hazards (2)
- ENV449 Land Reclamation (3)
- ENV450 Rangeland Management I (3)

**Semester 8**

**Core Course**
- ENV414 Project Data Collection, Analysis and Reporting II (2, all areas) (pre: ENV400)

**Optional Courses**
- ENV445 Arid Lands Geomorphology (2) (pre: ENV338)
- ENV451 Rangeland Management II (2) (pre: ENV450)
- ENV452 Soil Survey and Land Evaluation (3) (pre: ENV334/385)
- ENV458 Water Resources Development and Management (2)
- ENV462 Environmental Quality and Management: Land and Air (3) (pre: ENV382)

**Combined Major/Minor Programme with Environmental Science as the Major**

In accordance with General Academic Regulation 00.62, the Combined Major/Minor Programme in Physical Environment shall consist of 7 to 8 credits from core and optional courses, with optional courses selected from the following lists. Courses ENV303, ENV400 and ENV414 jointly satisfy Faculty Regulation 23.47. Availability of courses is subject to the staffing situation in the particular semester.

**Semester 3**

**Core Courses**
- ENS211 The Earth Environment System (3)
- ENS242 INTRODUCTION TO SPATIAL ANALYSIS (3)
- ENS251 The Human Environment System (3)

**Optional Courses**
- ENS241 Quantitative Techniques in Environmental Science (3)
- ENS252 Botswana Environment (3)
- ENS260 Environment and Population Dynamics (3)

**Semester 4**

**Core Courses**
- ENS243 Introduction to Remote Sensing (3)

**Optional Courses**
- ENS241 Quantitative Techniques in Environmental Science (3)
- ENS334 Principles of Soil Science (3)
- ENS338 Introduction to Geomorphology (3) (pre: ENV218)
- ENS340 Biogeography (2)
- ENS382 Analytical Methods for Specific Hazards (3)

**Semester 5**

**Core Courses**
- ENS312 Sustainable Development (2) (pre: ENV301)
- ENS336 Advanced Statistical Techniques for Environmental Science (3)

**Optional Courses**
- ENS330 Remote Sensing for Environmental Science (3) (pre: ENV216/ENS243)
- ENV400 Project Data Collection, Analysis and Reporting I (1) (pre: ENV314)

**Optional Courses**
- ENS335 Principles of Hydrology (3)
- ENS337 Dynamic Meteorology (3)
- ENS339 Methods and Techniques for Environmental Science (3)

**Environmental Appraisal (2)** (not available 2011/12)

**ENS342 The Climate System (3)**

**ENS385 Soil Geography (3)**

**Semester 7**

**Core Course**
- ENV400 Project Data Collection, Analysis and Reporting I (1) (pre: ENV314)

**Optional Courses**
- ENV440 Geographical Information Systems (3) (pre: ENV215)
- ENV441 Applied Hydrology I (3) (pre: ENV335)
- ENV442 Boundary Layer Climates (3)
- ENV444 Arid Lands Geomorphology (2) (pre: ENV338)
- ENV445 Rangeland Management I (3)

**Semester 8**

**Core Course**
- ENV414 Project Data Collection, Analysis and Reporting II (2, all areas) (pre: ENV400)

**Optional Courses**
- ENV445 Arid Lands Geomorphology (2) (pre: ENV338)
- ENV451 Rangeland Management II (2) (pre: ENV450)
- ENV452 Soil Survey and Land Evaluation (3) (pre: ENV334/385)
- ENV458 Water Resources Development and Management (2)
- ENV462 Environmental Quality and Management: Land and Air (3) (pre: ENV382)

**Combined Major/Minor Programme In accordance with General Academic Regulation 00.62, the Major/Minor Programme in Physical Environment shall consist of 5 to 6 credits from core and optional courses, with optional courses selected from the following lists. Course ENV485 satisfies Faculty Regulation 23.47. Availability of courses is subject to the staffing situation in the particular semester.**

**Semester 3**

**Core Courses**
- ENS221 The Earth Environment System (3)
- ENS242 INTRODUCTION TO SPATIAL ANALYSIS (3)
- ENS251 The Human Environment System (3)

**Optional Courses**
- ENS241 Quantitative Techniques in Environmental Science (3)
- ENS252 Botswana Environment (3)
- ENS260 Environment and Population Dynamics (3)

**Semester 4**

**Core Courses**
- ENS243 Introduction to Remote Sensing (3)

**Optional Courses**
- ENS241 Quantitative Techniques in Environmental Science (3)
- ENS334 Principles of Soil Science (3)
- ENS338 Introduction to Geomorphology (3) (pre: ENV218)
- ENS340 Biogeography (2)
- ENS382 Analytical Methods for Specific Hazards (3)

**Semester 5**

**Core Courses**
- ENS312 Sustainable Development (2) (pre: ENV301)
- ENS336 Advanced Statistical Techniques for Environmental Science (3)

**Optional Courses**
- ENS330 Remote Sensing for Environmental Science (3) (pre: ENV216/ENS243)
- ENV400 Project Data Collection, Analysis and Reporting I (1) (pre: ENV314)

**Optional Courses**
- ENS335 Principles of Hydrology (3)
- ENS337 Dynamic Meteorology (3)
- ENS339 Methods and Techniques for Environmental Science (3)

**Environmental Appraisal (2)** (not available 2011/12)

**ENS342 The Climate System (3)**

**ENS385 Soil Geography (3)**
Core Course
ENV301 Environmental Issues (2)

Optional Courses
ENS330 Remote Sensing for Environmental Science (3) (pre: ENV216)
ENS331 Hydro-meteorology (2)
ENS332 Air Photography (3) (pre: ENV215/216)
ENS334 Principles of Soil Science (3)
ENS338 Introduction to Geomorphology (3) (pre: ENV218)
ENS340 Biogeography (2)
ENS382 Analytical Methods for Specific Hazards (3)

Semester 6
Core Courses
ENS312 Sustainable Development (2) (pre: ENV301)
ENS336 Advanced Statistical Techniques for Environmental Science (3)

Optional Courses
ENS335 Principles of Hydrology (3)
ENS337 Dynamic Meteorology (3)
ENS339 Methods and Techniques for Environmental Appraisal (2) (not available 2011/12)
ENS342 The Climate System (3)
ENS385 Soil Geography (3)

Semester 7
Core Courses
None

Optional Courses
ENV440 Geographical Information Systems (3) (pre: ENV215/ENS242)
ENV441 Applied Hydrology I (3) (pre: ENV335)
ENV442 Boundary Layer Climates (3)
ENV447 Environmental Hazards (2)
ENV449 Land Reclamation (3)
ENV450 Rangeland Management I (3) (pre: ENV350)
ENV462 Environmental Quality and Management: Land and Air (3) (pre: ENV382)
ENV475 Pedology (2) (pre: ENV332)

Semester 8
Core Courses
None

Optional Courses
ENV445 Arid Lands Geomorphology (2)
ENV451 Rangeland Management II (2) (pre: ENV450)
ENV452 Soil Survey and Land Evaluation (3) (pre: ENV334/385)
ENV458 Water Resources Development and Management (2)
ENV463 Environmental Quality and Management: Water and Wastewater (3) (pre: ENV462)
ENV478 Climates of Southern Africa (2)
ENV479 Environmental Hazards (2)
ENV480 Rangeland Management I (3)
ENV482 Environmental Quality and Management: Land and Air (3) (pre: ENV382)
ENV485 Research Essay (2)

Combined Minor/Major Programme with Environmental Science as Minor
In accordance with General Academic Regulation 00.62, the Major/Minor Programme in Physical Environment shall consist of 3 to 4 core and optional courses, with optional courses selected from the following lists. Availability of courses is subject to the staffing situation in the particular semester.

Semester 3
Core Courses
ENS211 The Earth Environment System (3)
ENS242 INTRODUCTION TO SPATIAL ANALYSIS (3)
ENS251 The Human Environment System (3)

Optional Courses
ENS243 Introduction to Remote Sensing (3)
ENS244 Quantitative Techniques in Environmental Science (3)
ENS252 Botswana Environment (3)
ENS260 Environment and Population Dynamics (3)

Semester 4
Core Courses
ENS243 Introduction to Remote Sensing (3)

Optional Courses
ENS241 Quantitative Techniques in Environmental Science (3)
ENS252 Botswana Environment (3)
ENS260 Environment and Population Dynamics (3)

Semester 5
Core Course
ENV301 Environmental Issues (2)

Optional Courses
ENS330 Remote Sensing for Environmental Science (3) (pre: ENV216)
ENS331 Hydro-meteorology (2)
ENS332 Air Photo Interpretation (3) (pre: ENS215/216)
ENS334 Principles of Soil Science (3)
ENS338 Introduction to Geomorphology (3) (pre: ENV218)
ENS340 Biogeography (2)
ENS382 Analytical Methods for Specific Hazards (3)

Semester 6
Core Course
ENV312 Sustainable Development (2) (pre: ENV301)

Optional Courses
ENS336 Advanced Statistical Techniques for Environmental Science (3)
ENS335 Principles of Hydrology (3)
ENS337 Dynamic Meteorology (3)
ENS339 Methods and Techniques for Environmental Appraisal (2) (not available 2010/11)
ENS342 The Climate System (3)
ENS385 Soil Geography (3)

Semester 7
Core Courses
None

Optional Courses
ENV440 Geographical Information Systems (3) (pre: ENV215/ENS242)
ENV441 Applied Hydrology I (3) (pre: ENV335)
ENV442 Boundary Layer Climates (3)
ENV447 Environmental Hazards (2)
ENV449 Land Reclamation (3)
ENV450 Rangeland Management I (3)
ENV462 Environmental Quality and Management: Land and Air (3) (pre: ENV382)
ENV475 Pedology (2) (pre: ENV332)

Semester 8
Core Courses
None

Optional Courses
ENV445 Arid Lands Geomorphology (2)
ENV451 Rangeland Management II (2) (pre: ENV450)
ENV452 Soil Survey and Land Evaluation (3) (pre: ENV334/385)
ENV458 Water Resources Development and Management (2)
ENV463 Environmental Quality and Management: Water and Wastewater (3) (pre: ENV462)
ENV478 Climates of Southern Africa (2)
ENV479 Environmental Hazards (2)
ENV480 Rangeland Management I (3)
ENV482 Environmental Quality and Management: Land and Air (3) (pre: ENV382)
ENV485 Research Essay (2)

DEPARTMENT OF GEOLOGY
Programmes and Titles of Degrees
The Department of Geology offers the following Programmes leading to the award of the mentioned Degrees:

• Single Major Programme, leading to the award of a Bachelor of Science Degree in Geology as per Departmental Regulation 2.2
• Combined Major/Minor with a Geology major leading to the award a Bachelor of Science degree as per Departmental Regulation 2.2
• Combined Major/Minor Degree Programme with Geology and one of Chemistry, Environmental Science and Physics leading to the award of a Bachelor of Science Degree as per Departmental Regulation 2.2
• Combined Major/Minor with Geology as a Minor leading to the award of the degree in which the student is enrolled as per Departmental Regulation 2.2
• Single Major Programme (in collaboration with the Department of Physics), leading to the award of a Bachelor of Science Degree in Applied Geophysics as per in the Faculty of Science Regulations 23.2.1 and 23.4.
• Master of Science Programme leading to the award of a Master of Science Degree in Hydrogeology as per Departmental Regulation 4.0.

Entry Requirements
(a) Admission to the Geology Single Major and Combined Degree Programmes shall be as specified in the Faculty of Science Regulations 23.2.1 and 23.4.
(b) Students who wish to register for Geology (Single Major or Combined Degree) at Level 200 must have taken and passed Mathematics, Physics, Chemistry and Geology or Mathematics, Physics and Chemistry at Level 100.
(c) In accordance with the Faculty of Science Special Regulation 23.2.4, a Geology student (Single Major and Combined Degree) can register directly at Level 200 but cannot be exempted from Level 100 Geology courses.
(d) A student admitted to Level 200 Geology who has not completed Level 100 Geology courses must take them during the first semester of Level 200.
(e) A student admitted to Level 200 Geology who
has successfully completed Level 100 Geology courses must comply with the University of Botswana Academic General Regulation 00.311 by taking relevant General Education courses or Elective courses in consultation with the Head of Department.

Award of Degree
To be awarded a Bachelor of Science Degree in Geology or a Bachelor of Science for a Combined Degree involving Geology as a subject, a student must have taken and passed the relevant courses prescribed in sections 3.1 and 3.2 and must satisfy General Academic Regulations 00.85 and 00.9 and Faculty of Science Special Regulation 23.7.

Course Structure
Geology courses shall be offered at Levels 100 to 400 for the Undergraduate Programme as outlined in Regulations 2.1 to 2.4 below and Levels 600 to 700 for Master of Science candidates.

Level 100
Semester 1
EO101 Introduction to Geology (4)

Semester 2
EO102 Introduction to Mineralogy (3)

Levels 200, 300 and 400
Bachelor of Science, Geology Single Major
At Level 200, the Single Major Programme consists of 19 credits of core courses and 9 credits of elective courses from Statistics and Mathematics. In addition, students must take a minimum of 4 credits of General Education Courses.

Semester 3
Core Courses
EO201 Structural Geology (3)
EO204 Sedimentology (3)
EO205 Introduction to Hydrogeology (3)
MAT291 Engineering Mathematics I (3)
STA116 Introduction to Statistics (3)

Semester 4
Core Courses
EO202 Optical Mineralogy (2)
EO203 Photogeology and Remote Sensing Applied to Geology (2)
EO206 Petrography (3)
EO207 Chemical Geology (3)
MAT292 Engineering Mathematics II (3)

Level 300
At Level 300, the Single Major Programme will consist of 35 credits of core courses which include a winter course GEO301 (Field Mapping) to be done during the long vacation/winter semester after Level 200.

Long Vacation/Winter Semester
EO301 Field Mapping (3)

Semester 5
Core Courses
EO302 Igneous Petrology (3)
EO303 Sedimentary Petrology (3)
EO305 Ore Geology (3)
EO306 Exploration Geophysics I (3)
EO312 Research Methods & Computer Applications in Geology (2)

Semester 6
Core Courses
EO304 Advanced Structural Geology (4)
EO308 Metamorphic Petrology (3)
EO309 Hydrogeology (3)
EO310 Exploration Geophysics II (3)
EO311 Palaeontology and Stratigraphy (3)
EO313 Theoretical Geochemistry (3)

Level 400
At Level 400, the Single Major Programme shall consist of 23 credits of core courses and at least 3 credits from optional courses.

Winter Semester
EO401 Research Project (Data Acquisition)

Semester 7
Core Courses
EO401 Research Project (6, yearlong)
EO404 Geology of Africa (3)
EO407 Economic Geology (3)
EO408 Environmental Geology (3)
EO409 Geology of Botswana (3)
EO410 Advanced Methods in Exploration Geophysics (3)

Semester 8
Core Courses
EO401 Research Project (6, yearlong)
EO402 Geotectonics (2)
EO403 Exploration Geochemistry (3)
EO405 Engineering Geology (3) + 4 credits of GEC/Electives

Bachelor of Science, Combined (Geology Major)

Level 200
At Level 200, the Major/Minor programme shall consist of 19 credits of core courses. In addition, the students must take the relevant General Education Courses and comply with Academic General Regulations 00.62.

Semester 3
Core Courses
EO201 Structural Geology (3)
EO204 Sedimentology (3)
EO205 Introduction to Hydrogeology (3)

Students who are registering at level 200 and have not taken GEO101 and GEO102 in the first year have to register for these courses at level 200.

Semester 4
Core Courses
EO202 Optical Mineralogy (2)
EO203 Photogeology and Remote Sensing Applied to Geology (2)
EO206 Petrography (3)
EO207 Chemical Geology (3)

Level 300
At Level 300, the Major/Minor Programme (Geology Major) shall consist of 23 credits. In addition, the students must take relevant General Education Courses.

Long Vacation/Winter Semester
EO301 Field Mapping (3)

Semester 5
Core Courses
EO305 Ore Geology (3)
EO307 Petrology I (2)
EO312 Research Methods & Computer Applications in Geol. (2)
EO315 Introduction to Exploration Geophysics (3)

Semester 6
Core Courses
EO304 Advanced Structural Geology (4)
EO309 Hydrogeology (3)
EO313 Theoretical Geochemistry (3)
EO314 Petrology II (2)

Level 400
At Level 400, the Major/Minor Programme shall consist of 15 credits of core courses and at least 2 to 3 credits from optional courses.

Long Vacation/Winter Semester
EO401 Research Project (Data Acquisition)

Semester 7
Core Courses
EO401 Research Project (yearlong)
EO404 Geology of Africa (3)
EO408 Environmental Geology (3)

Semester 8
Core Courses
EO401 Research Project (6)
EO403 Exploration Geochemistry (3)
EO407 Geotectonics (2)
EO405 Engineering Geology (3)

Bachelor of Science, Combined Major

Level 200
At Level 200, the Major/Minor Programme shall consist of 11 credits of core courses for all streams (Geology/Chemistry; Geology/ Environmental Science; and Geology/Physics). In addition, the student must take the relevant General Education Courses and comply with Academic General Regulation 00.62.

Semester 3
Core Courses
EO201 Structural Geology (3)
EO205 Introduction to Hydrogeology (3)

Students who are registering at level 200 and have not taken GEO101 and GEO102 in the first year have to register for these courses at level 200.

Semester 4
Core Courses
EO202 Optical Mineralogy (2)
EO206 Petrography (3)
EO207 Chemical Geology (3)

Level 300
At Level 300, the Major/Minor Programme is offered in the 3 following streams:

a) Geology/Chemistry;
b) Geology/Environmental Science;
c) Geology/Physics.

The programme consists of 13 credits of core and optional courses. In addition, the students must take the relevant General Education courses and
Geology must register for GEO406 (in semester 2).

Students

Optional Courses (choose at least 1)

Semester 5
Core Courses
GEO305 Ore Geology (3)
GEO307 Petrology I (2)

Semester 6
Core Courses
GEO313 Theoretical Geochemistry (3)
GEO314 Petrology II

Level 400
At level 400, the Major/Major programme shall consist of 3 credits of core courses and 5 to 6 credits of optional courses. In addition, the students must take the relevant General Education courses and comply with the Faculty of Science General Regulation 00.62.

Semester 7
Core course
GEO408 Environmental Geology (3)
Optional Courses (choose at least 1)
GEO407 Economic Geology (3)
GEO409 Geology of Botswana (3)

Semester 8
Optional Courses (choose at least 2)
GEO402 Geotectonics (2)
GEO403 Exploration Geochemistry (3)
GEO405 Engineering Geology (3)

Important Notice for 4th Year Combined Major Students
(a) Students who wish to do a research project in Geology must register for GEO406 in semester 2.
(b) Students who do not register for GEO406 must register for a project in the other subject.

Bachelor of Science, Combined Major (Geology/Physics)

Semester 5
Core Courses
GEO307 Petrology I (2)
GEO315 Introduction to Exploration Geophysics (3)

Semester 6
Core Courses
GEO309 Hydrogeology (3)
GEO314 Petrology II (2)

Level 400
At level 400, the Major/Major programme shall consist of 3 credits of core courses and 5 to 6 credits of optional courses. In addition, the students must take the relevant General Education courses and comply with the Faculty of Science General Regulation 00.62.

Semester 7
Core course
GEO404 Geology of Africa (3)
GEO408 Environmental Geology (3)
GEO402 Geotectonics (2)
GEO405 Engineering Geology (3)

Important Notice for 4th Year Combined Major Students
(a) Students who wish to do a research project in Geology must register for GEO406 in semester 2.
(b) Students who do not register for GEO406 must register for a project in the other subject.

Bachelor of Science, Combined Major (Geology/minor)
The combined Major/Minor programme with Geology as a Minor shall consist of 24 credits of core courses taken in Semesters 3 to 8.

Core Courses
GEO101 Introduction to Geology (4)
GEO102 Introduction to Mineralogy (3)
GEO201 Structural Geology (3)

GEO204 Sedimentology (3)
GEO205 Introduction to Hydrogeology (3)
GEO206 Petrography (3)
GEO305 Ore Geology (3)
GEO408 Environmental Geology (3)

It is important to note which courses are taken in the first semester or second semester of the academic year (Refer to Single Major Programme for such information)

Service Courses
The following are offered as service courses for non-Geology Majors
GEO103 Geology for Teachers (3)
GEO104 Introductory Geology for Engineers (2)

General Education Courses
GEC250 Earth Processes, Mineral Resources and Development (2)
GEC251 Groundwater and Society (2)

Assessment and Examination
(a) 2.5.1 If not stated otherwise, the examination will represent 2/3 and the continuous assessment 1/2 of the final marks.
(b) GEO301 shall be examined by continuous assessment only.

Progression
Student progression is made in accordance with The University of Botswana General Academic Regulation 00.9

BSC201: BACHELOR OF APPLIED GEOPHYSICS

Entrance requirements
Admission to the Applied Geophysics Degree Programmes shall be as specified in the Faculty of Science Regulations 23.2.1 and 23.4.

(a) Students who wish to register for the Applied Geophysics Degree Programme at Level 200 must have taken and passed Mathematics, Physics, Chemistry and Geology or Mathematics, Physics and Chemistry at Level 100.
(b) In accordance with the Faculty of Science Special Regulation 23.2.4, an Applied Geophysics student can register directly at Level 200 but cannot be exempted from Level 100 Geology courses.
(c) A student admitted to Level 200 Applied Geophysics who has not completed Level 100 Geology courses must take them at Level 200.
(d) A student admitted to Level 200 Applied Geophysics who has successfully completed Level 100 Geology courses must comply with the University of Botswana Academic General Regulation 00.311 by taking relevant General Education courses or Elective courses in consultation with the Head of Department.

Award of Degree
To be awarded a B.Sc. (Applied Geophysics) a candidate/student must have taken and passed all the courses prescribed in Section 9 and must satisfy the University of Botswana Academic General Regulations 00.85 and 00.9 and Faculty of Science Special Regulation 23.7.

Programme Structure
The Programme is designed in such a manner as to
gradually introduce students to the principles of
Applied Geophysics in the third year. It is envisaged
that at this level, students are sufficiently grounded
in the basic theories and principles used in
Geophysics and can appreciate all the scientific/
practical developments in this field they are likely
to encounter. They should have been exposed to
adequate field work through the geologic field
course taken during Level 100 and 200.

The fourth and final year consists of the completion
of the Geology and Applied Geophysics courses and
emphasis is placed on application of the various
geophysical methods in exploration and fieldwork
(where the students will be acquainted with the use
of various geophysical equipments) which forms a
major component of the course.

The courses are also designed to satisfy the required
training expected for an applied geophysicist. This
will enable graduates of the programme to qualify to
be members of professional societies such as the
Society of Exploration Geophysicists (SEG).

In the final year students will have the option of choosing either the Mining Geophysics or the
Environmental Geophysics Stream, the latter
including geotechnical and groundwater studies.

LEVEL 100
Semester 1
CHE101 General Chemistry I (4)
PHY112 Geometrical Optics and
Mechanics (4)
MAT111 Introductory Mathematics I (4)
GEC141 Introduction to Communication
and Academic Literacy Skills (Science) (3)
ICT 121 Computing Skills Fundamentals 1 (2)

Semester 2
CHE102 General Chemistry II (4)
PHY122 Electricity, Magnetism and Elements of
Modern Physics (4)
MAT122 Introductory Mathematics II (4)
GEC142 Academic and Professional
Communication (Science) (3)
ICT 122 Computing Skills Fundamentals 2 (2)

LEVEL 200
Semester 3
Core courses
GEO101 Introduction to Geology (4)
GPH201 Fundamentals of Geophysics (3)
GEO201 Structural Geology (3)
MAT221 Calculus I (3)

Optional Courses:
Candidates will be required to take at least 3 credits
from the following:
GEO205 Introduction to Hydrogeology (3)
PHY231 Mechanics, Vibrations and Waves,
Physical Optics
(pre-requisite = PHY112) (3)
PHY232 Properties of Matter, Basic
Thermodynamics and Introduction to
Nuclear Physics (pre-requisite =
PHY112) (3)
PHY239 Physics Practicals (3.1)

Note: Candidates intending to take Environmental
Geophysics at level 400 are advised to take GEO205
as one of the optional courses

Semester 4
GEO102 Introduction to Mineralogy (3)
GEO206 Petrography (3)
PHY241 Advanced Electricity and Magnetism
(pre-requisite = PHY122) (3)
PHY249 Physics Practicals 2.2 (4.1)
(pre-requisite = PHY122, co-requisite =
PHY241 or 242) (1) MAT222
Calculus II (3)

Optional Courses:
Candidates will be required to take at least 3 credits
from the following:
GEO203 Remote Sensing and GIS Applied to
Geology (2)
PHY242 Basic Electronics (pre-requisite =
PHY112) (3)
PHY232 Properties of Matter, Basic
Thermodynamics and Introduction to
Nuclear Physics (pre-requisite =
PHY112) (3)
MAT242 Computing I (3)
MAT244 Numerical Methods (3)
Elective: Candidates are also advised to take the
following course or any other 3-credit course of their choice
as an elective.
ENG112 Sustainable Development (3)

WINTER SEMESTER
GPH307 Geophysical Field School (3 Weeks) (3)

LEVEL 400
Mining Geophysics Stream
Semester 7
GEO407 Economic Geology (3)
GPH403 Seismic Data Processing and
Interpretation (3)
GPH405 Well Logging and Formation
Evaluation (3)
GPH401 Research Project I (3)

Optional Courses:
Candidates will be required to take at least 3 credits
from the following:
GEO404 Geology of Africa (3)
GEO408 Environmental Geology (3)
GEO409 Geology of Botswana (3)
GPH404 Environmental Geophysics (3)
PHY481 Atomic and Basic Nuclear Physics(3)

Semester 8
GEO405 Engineering Geology (3)
GPH412 Research Project II (3)
GPH406 Mining Geophysics (3)

Optional Courses: Candidates will be required to take at least 3 credits
from the following:
PHY485 Microcomputing for Physical
Sciences (3)
GPH402 Geophysical Time Series analysis (3)
GEO402 Geoelectronics (3)
GEO409 Geology of Botswana (3)

In addition candidates are required to take 3 credits of Elective/SEG
Environmental Geophysics Option

Semester 7:
GPH401 Research Project I (3)
GPH403 Seismic Data Processing and
Interpretation (3)
GPH405 Well Logging and Formation Evaluation
Techniques (3)
GEO408 Environmental Geology (3)

Optional Courses:
Candidates will be required to take at least 3 credits
from the following:
GEO404 Geology of Africa (3)
GEO407 Economic Geology (3)
GPH407 Global Geophysics (3)
GPH407 Mining Geophysics (3)
PHY481 Atomic and Basic Nuclear Physics(3)

Semester 8
GPH404 Environmental Geophysics (3)
GEO405 Engineering Geology (3)
GPH412 Research Project II (3)

Optional Courses: Candidates will be required to take at least 3 credits from the following:
PHY485 Microcomputing for Physical sciences
(3)
GPH402 Geophysical Time Series Analyses (3)
GPH407 Global Geophysics (3)
GEO404 Geology of Africa (3)
In addition candidates are required to take 3 credits of Elective/BEC

DEPARTMENT OF MATHEMATICS

Programmes and Titles of Degrees

The Department of Mathematics offers the following Programmes leading to the award of the mentioned degrees:

- Single Major Programme leading to the award of a Bachelor of Science Degree in Mathematics as outlined in Departmental Regulation 2.1
- Combined Major/Minor Programme with Mathematics as the Major, leading to the award of a Bachelor of Science Degree as outlined in Departmental Regulation 2.2
- Combined Major/Minor Programme leading to the award of a Bachelor of Science Degree as outlined in Departmental Regulation 2.4
- Single Major Programme leading to the award of a Bachelor of Science Degree as outlined in Departmental Regulation 2.4.

Entry Requirements

Admission to the Mathematics Programmes shall be as specified in Faculty of Science Regulation 23.21.

The entry requirement for Single Major and Major/Minor (with Mathematics Major) at level 300 shall be a GPA of 3.0 in the Mathematics courses at levels 100 and 200 subject to approval by the Head of the Department.

Single Major (Mathematics Major)

Level 100
Semester 1
MAT111 Introductory Mathematics I (4)

Semester 2
MAT122 Introductory Mathematics II (4)

Level 200
Semester 3
In Semester 3, the Single Major Programme shall consist of 6 credits of core courses and a minimum of 6 credits optional courses.

Core Courses
MAT211 Introductory Set and Number Theory (3)
MAT221 Calculus I (3)

Optional Courses
MAT244 Numerical Methods I (3)
MAT251 Vectors and Introductory Mechanics (3)
MAT271 Introduction to Mathematical Statistics (3)

Semester 4
Core Courses
In Semester 4, the Single Major Programme shall consist of 6 credits of core courses and a minimum of 6 credits of optional courses.

MAT212 Introduction to Linear Algebra (3)
MAT222 Calculus II (3)Optional Courses
MAT214 Discrete Mathematics (3)
MAT242 Computing (3)

MAT252 Newtonian Mechanics (3)

Level 300
Semester 5
In Semester 5, the Single Major Programme shall consist of 6 credits of core courses.

Additional minimum 6 credits should be taken from optional courses in accordance with General Regulation 00.62.

Core Courses
MAT311 Abstract Algebra I (3)
MAT321 Real Analysis I (3)

Optional Courses
MAT323 Vector Calculus (3)
MAT344 Numerical Methods for Linear Algebra (3)
MAT361 Mathematical Programming and Game Theory (3)
MAT371 Mathematical Statistics I (3)

Semester 6
In Semester 6, the Single Major Programme shall consist of 9 credits of core courses. An additional minimum 3 credits should be taken from optional courses in accordance with General Regulation 00.62.

Core Courses
MAT312 Abstract Algebra II (3)
MAT322 Real Analysis II (3)
MAT324 Differential Equations (3)

Optional Courses
MAT346 Numerical Methods II (3)
MAT348 Introduction to Computational Mathematics (3)
MAT352 Dynamics I (3)
MAT372 Mathematical Statistics II (3)

Level 400
Semester 7
In Semester 7, the Single Major Programme shall consist of 7 credits of core courses. Additional minimum 6 credits should be taken from optional courses in accordance with General Regulation 00.62.

Core Courses
MAT401 Introduction to Mathematical Writing (1)
MAT411 Linear Algebra (3)
MAT421 Functions of a Complex Variable (3)

Optional Courses
MAT423 Mathematical Methods I (3)
MAT425 Measure Theory (3)
MAT431 General Topology (3)
MAT451 Dynamics I (3)
MAT461 Optimisation and Control Theory (3)
MAT471 Multivariate Statistics (3)

Semester 8
In Semester 8, the Single Major Programme shall consist of 3 credits of core course and a minimum of 9 credits of optional courses in accordance with General Regulation 00.62.

Core Courses
MAT406 Project (3)

Optional Courses
MAT404 Topics in Advanced Mathematics (3)
MAT412 Number Theory (3)
MAT414 Combinatorics and Graph Theory (3)
MAT416 Abstract Algebra III (3)
MAT422 Functional Analysis (3)
MAT424 Dynamical Systems (3)
MAT426 Partial Differential Equations (3)
MAT428 Introduction to Probability Theory (3)
MAT432 Algebraic Topology (3)
MAT444 Introduction to Fluid Dynamics (3)
MAT464 Introduction to Mathematical Modelling Applied to Life Sciences (3)
MAT472 Linear Models (3)
MAT474 Stochastic Processes (3)
MAT478 Introduction to Statistical Analysis of Reliability (3)

Combined Major/Minor Programme (Mathematics Major)

Level 100
Semester 1
MAT111 Introductory Mathematics I (4)

Semester 2
MAT122 Introductory Mathematics II (4)

Level 200
Semester 3
In Semester 3, the Combined Major/Minor Programme shall consist of 6 credits of core courses and 3 credits from optional courses.

Core Courses
MAT211 Introductory Set and Number Theory (3)
MAT221 Calculus I (3)

Optional Courses
MAT244 Numerical Methods I (3)
MAT251 Vectors and Introductory Mechanics (3)
MAT271 Introduction to Mathematical Statistics (3)

Semester 4
In Semester 4 the Combined Major/Minor Programme shall consist of 6 credits of core courses and 3 credits from optional courses.

Core Courses
MAT212 Introduction to Linear Algebra (3)
MAT222 Calculus II (3)

Optional Courses
MAT214 Discrete Mathematics (3)
MAT242 Computing (3)
MAT252 Newtonian Mechanics (3)

Level 300
Semester 5
In Semester 5, the Combined Major/Minor Programme shall consist of 6 credits of core courses. Additional minimum 6 credits should be taken from optional courses.

Core Courses
MAT311 Abstract Algebra I (3)
MAT321 Real Analysis I (3)

Optional Courses
MAT251 Vectors and Introductory Mechanics (3)
MAT271 Introduction to Mathematical Statistics (3)
MAT223 Vector Calculus (3)
In Semester 8, the Combined Major/Major Programme shall consist of 3 credits of core courses. Additional minimum 6 credits should be taken from optional courses.

Core Courses
MAT324 Differential Equations (3)

Optional Courses
MAT312 Abstract Algebra II (3)
MAT322 Real Analysis II (3)
MAT346 Numerical Methods II (3)
MAT348 Introduction to Computational Mathematics (3)
MAT352 Dynamics I (3)
MAT372 Mathematical Statistics II (3)

Semester 6
In Semester 6, the Combined Major/Minor Programme shall consist of 3 credits of core courses. Additional minimum 6 credits should be taken from optional courses.

Core Courses
MAT111 Introductory Mathematics I (4)

Semester 2
MAT122 Introductory Mathematics II (4)

Level 200
Semester 3
In Semester 3, the Combined Major/Minor Programme shall consist of 6 credits of core courses. Additional credits may be taken from optional courses in accordance with General Regulation 00.62.

Core Courses
MAT211 Introductory Set Theory and Number Theory (3)
MAT221 Calculus I (3)

Optional Courses
MAT244 Numerical Methods I (3)
MAT251 Vectors and Introductory Mechanics (3)
MAT271 Introduction to Mathematical Statistics (3)

Semester 4
In Semester 4, the Combined Major/Major Programme shall consist of 6 credits of core courses. Additional credits may be taken from optional courses in accordance with General Regulation 00.62.

Core Courses
MAT212 Introduction to Linear Algebra (3)
MAT222 Calculus II (3)

Optional Courses
MAT214 Discrete Mathematics (3)
MAT242 Computing (3)
MAT252 Newtonian Mechanics (3)

Level 300
Semester 5
In Semester 5, the Combined Major/Minor Programme shall consist of 6 credits of core courses. Additional minimum 3 credits should be taken from optional courses in accordance with General Regulation 00.62.

Core Courses
MAT311 Abstract Algebra I (3)
MAT321 Real Analysis I (3)

Optional Courses
MAT251 Vectors and Introductory Mechanics (3)
MAT233 Vector Calculus (3)
MAT344 Numerical Methods of Linear Algebra (3)

Semester 6
In Semester 6, the Combined Major/Major Programme shall consist of 3 credits of core courses. Additional minimum 3 credits should be taken from optional courses in accordance with General Regulation 00.62.

Core Courses
MAT324 Differential Equations (3)

Optional Courses
MAT252 Newtonian Mechanics (3)
MAT312 Abstract Algebra II (3)
MAT322 Real Analysis II (3)
MAT346 Numerical Methods II (3)
MAT348 Introduction to Computational Mathematics (3)

Level 400
Semester 7
In Semester 7, the Combined Major/Major Programme shall consist of 3 credits of core courses. Additional minimum 6 credits should be taken from optional courses in accordance with General Regulation 00.62.

Core Courses
MAT421 Functions of a Complex Variable (3)

Optional Courses
MAT361 Maths. Programming and Game Theory (3)
MAT401 Introduction to Mathematical Writing (1)
MAT414 Combinatorics and Graph Theory (3)
MAT416 Abstract Algebra III (3)
MAT422 Functional Analysis (3)
MAT464 Introduction to Mathematical Modelling - Applied to Life Sciences (3)

Combined Major/Minor Programme (Mathematics Minor)

Level 100
Semester 1
MAT111 Introductory Mathematics I (4)

Semester 2
MAT122 Introductory Mathematics II (4)

Level 200
Semester 3
In Semester 3, the Combined Major/Minor Programme with Mathematics as Minor shall consist of 6 credits of core courses.

Core Courses
MAT211 Introductory Set and Number Theory (3)
MAT221 Calculus I (3)

Semester 4
In Semester 4, the Combined Major/Minor Programme with Mathematics as Minor shall consist of 6 credits of core courses.

Core Courses
MAT212 Introduction to Linear Algebra (3)
MAT222 Calculus II (3)

Level 300
Semester 5
In Semester 5, the Combined Major/Minor Programme with Mathematics as Minor shall consist of 6 credits of core courses.
consist of 6 credits of optional courses.

Optional Courses
MAT251 Vectors and Introductory Mechanics (3)
MAT271 Introduction to Mathematical Statistics (3)
MAT311 Abstract Algebra I (3)
MAT323 Vector Calculus (3)
MAT344 Numerical Methods of Linear Algebra (3)

Semester 6
In Semester 6, the Combined Major/Minor Programme with Mathematics as Minor shall consist of 6 credits of optional courses.

Optional Courses
MAT252 Newtonian Mechanics (3)
MAT312 Abstract Algebra II (3)
MAT346 Numerical Methods II (3)
MAT348 Introduction to Computational Mathematics (3)

Semester 7
In Semester 7, the Combined Major/Minor Programme with Mathematics as Minor shall consist of 3 credits of optional courses.

Optional Courses
MAT321 Real Analysis I (3)
MAT361 Mathematical Programming and Game Theory (3)
MAT371 Mathematical Statistics I (3)
MAT411 Linear algebra (3)

Semester 8
In Semester 8, the Combined Major/Minor Programme with Mathematics as Minor shall consist of 6 credits of optional courses.

Optional Courses
MAT322 Real Analysis II (3)
MAT324 Differential Equations (3)
MAT372 Mathematical Statistics II (3)
MAT402 History of Mathematics (3)
MAT414 Combinatorics and Graph Theory (3)

Courses for Non-Mathematics Majors (Service courses)
MAT103 Mathematics for Allied Sciences I (3)
MAT104 Mathematics for Allied Sciences II(3)
MAT201 Ancillary Mathematics (3)

Engineering Mathematics
MAT191 Design Mathematics I (3)
MAT192 Design Mathematics II (3)
MAT291 Engineering Mathematics I (3)
MAT292 Engineering Mathematics II (3)
MAT391 Engineering Mathematics III (3)
MAT392 Engineering Mathematics IV (3)
MAT394 Engineering Mathematics IVB (3)
MAT491 Engineering Mathematics V (3)
MAT492 Engineering Mathematics VI (3)

General Education Course
MAT105 Numeracy Skills (2)

Bachelor of Education Degree (Secondary)
In Semesters 5 to 8, students pursuing the Bachelor of Education (Secondary) Programme shall take credits from the following core courses:

Semester 5
MAT381 Calculus for Teachers I (3)
MAT383 Linear Algebra for Teachers (3)
MAT387 Mechanics for Teachers I (3)
MAT389 Linear Programming and Game Theory for Teachers (3)

Semester 6
MAT382 Calculus for Teachers II (3)
MAT384 Computing for Teachers (3)
MAT388 Mechanics for Teachers II (3)

Semester 7
MAT481 Geometry for Teachers I (3)
MAT483 Real Analysis for Teachers (3)
MAT485 Number Theory and Abstract Algebra for Teachers (3)

Semester 8
MAT324 Differential Equations (3)
MAT482 Geometry for Teachers II (3)
MAT484 Introduction to Probability and Statistics for Teachers (3)

General Education Courses
MAT105 Numeracy Skills (3)
MAT101 Mathematics for Social Scientists (3)
MAT102 Mathematics in Business (3)

Assessment and Examination
Performance in each course shall be evaluated by the combination of continuous assessment and final examination marks:
(a) Continuous Assessment (CA): In all years CA shall be based on tests and/or assignments with at least two tests per semester.
(b) The Project courses MAT401, MAT406; and the course MAT404 shall be assessed by CA only.
(c) Examinations: Each course shall be examined at the end of the semester.
(d) Final marks: The ratio between CA and Examination normally shall be 1:2. For the courses MAT242, MAT348 and MAT384 the ratio between CA and Examination shall be 1:1.

Progression from Semester to Semester
In order to proceed from one semester to the next, a student must obtain a cumulative GPA, which is in accordance with General Regulation 00.9.

DEPARTMENT OF PHYSICS

DEPARTMENTAL REGULATIONS

General Provisions
Subject to the provisions of Academic General Regulations and Faculty of Science Special Regulations, the following Departmental Regulations shall apply.

Programmes and Titles of Degrees
The Department of Physics offers three (3) BSc degree programmes leading to the award of the mentioned degrees:
- BSc230 (Basic Physics Programme)
- BSc202 (BSc in Physics with Meteorology)
- BSc203 (BSc in Radiation and Health Physics)

The Department of Physics in collaboration with The Department of Geology offers a Single Major Programme, leading to the award of a Bachelor of Science Degree in Applied Geophysics as per in the Faculty of Science Regulations 23.2.1 and 23.4. For Details refer to the Geology Department.

Entry Requirements
Admission to the Physics Programmes shall be as specified in Faculty of Science Regulation 23.21.

To register into the 300 level of Physics Single Major Programme, a student must have passed all the levels 100 and 200 Physics courses.

Award of Degree
To be awarded a degree, a student must satisfy appropriate provisions of Academic General Regulation 23.71.

PROGRAMME STRUCTURE
The physics courses shall be offered at levels 100 to 400 for the undergraduate programme as outlined in Regulations Departmental regulations 2.1 to 2.3, levels 600 to 700 for MSc candidates, levels 800 and 900 for MPhil and PhD candidates.

In addition to physics courses, an undergraduate candidate majoring in physics courses shall take General Education Courses (GECs) and Electives in accordance with General Regulation 00.2124.

The Department of Physics offers service courses in physics to non-physics majors as outlined in departmental regulation 2.4

BSC 230: BASIC PHYSICS PROGRAMME
- Single major programme (Departmental Regulation 2.3.1), leading to the award of BSc (Physics).
- Combined major/minor (Physics Major)(Departmental Regulation 2.3.2), leading to the award of BSc
- Combined major/minor programme (Departmental Regulation 2.3.3), leading to the award of BSc
- Combined major/minor (Physics Minor)(Departmental Regulation 2.3.4), leading to the award of BSc if the student is registered in the Faculty of Science

LEVEL 100
Semester 1
PHY112: Geometrical Optics and Mechanics (4)

Semester 2
PHY122: Electricity, Magnetism and Elements of Modern Physics (4)

LEVEL 200
Semester 3
PHY231: Mechanics, Vibrations and Waves, Optical Physics
PHY232: Properties of Matter, Basic Thermodynamics and Introduction to Nuclear Physics

Semester 4
PHY239: Physics Practicals 3.1 (pre-requisites PHY112, co-requisites PHY231 or 232) (1)

PHY 241: Advanced Electricity and Magnetism
In semester 6, the single major programme shall consist of 11 credits of core courses and additional credits may be taken from optional courses in accordance with General Regulation 00.62.

Core Courses

- **PHY 242**: Basic Electronics (pre-requisite = PHY122) (3 Credits)
- **PHY 249**: Physics Practicals 4.1 (pre-requisites = PHY122, co-requisites = PHY241 or 242) (1 Credit)

2.1.3 Levels 300 and 400

2.1.3.1 Single Major Programme

Semester 5

In semester 5, the single major programme shall consist of 11 credits of core courses and additional credits may be taken from optional courses in accordance with General Regulation 00.62.

Core Courses

- **PHY351**: Advanced Mechanics (pre-requisite = PHY231) (3)
- **PHY352**: Introduction to Quantum Mechanics (pre-requisite = PHY231) (3)
- **PHY354**: Advanced Electronics I (pre-requisite PHY242)(3)
- **PHY369**: Physics Practicals 5.1 (pre-requisite PHY239 and 249) (2)

Optional Course

- **PHY353**: Mathematical Methods for Physical Sciences I (3)
- **PHY355**: Basic Potential Fields in Geophysics (3)
- **PHY356**: Special Relativity (pre-requisite PHY231, 241) (3)

Semester 6

In semester 6, the single major programme shall consist of 11 credits of core courses and additional credits may be taken from optional courses in accordance with General Regulation 00.62.

Core Courses

- **PHY 361**: Introduction to Electromagnetism (pre-requisite = PHY241)(3)
- **PHY 362**: Analytical Thermodynamics (pre-requisite = PHY232)(3)
- **PHY 363**: Vibrations, Waves and Advanced Physical Optics (pre-requisite PHY231) (3)

Optional Courses

- **PHY 364**: Advanced Electronics II (pre-requisite PHY354) (3)
- **PHY 365**: Physics of the Environment (pre-requisite PHY231)(3)
- **PHY 367**: Elements of Air Pollution I (3)

Semester 7

In semester 7, the single major programme shall consist of 11 credits of core courses and additional credits may be taken from optional courses in accordance with General Regulation 00.62.

Core Courses

- **PHY 472**: Statistical Mechanics I (3)
- **PHY 473**: Solid State Physics (3)
- **PHY 478**: Project in Physics I (3)
- **PHY 479**: Physics Practicals 7.1 (pre-requisite PHY359 and 369) (2)

Optional Courses

- **PHY 474**: Physics of Renewable Energy (3)
- **PHY 475**: Microprocessor and Digital Systems (pre-requisite PHY354) (3)
- **PHY 476**: Mathematical Methods for Physical Sciences II (pre-requisite PHY353) (3)
- **PHY 477**: Elements of Air Pollution III(3)

Semester 8

In semester 8, the single major programme shall consist of 11 credits of core courses and additional credits may be taken from optional courses in accordance with General Regulation 00.62.

Core Courses

- **PHY 481**: Atomic and Basic Nuclear Physics (3)
- **PHY 482**: Statistical Mechanics II (pre-requisite PHY472) (3)
- **PHY 483**: Advanced Solid State Physics (pre-requisite PHY473; co-requisite PHY 482) (3)
- **PHY 489**: Physics Practicals 8.1 (pre-requisite PHY359 and 369) (2 Credits)

Optional Courses

- **PHY 485**: Microcomputing for Physical Sciences (3 Credits)
- **PHY 486**: Basic Seismology (3 Credits)
- **PHY 487**: Introduction to Astrophysics (3 Credits)
- **PHY 488**: Project in Physics II (3 Credits)

2.1.3.2 Combined Major/Minor Programme (Physics Major)

Semester 5

In semester 5, the combined major/minor programme shall consist of 8 credits of core courses and at least 3 credits from optional courses.

Core Courses

- **PHY 351**: Advanced Mechanics (pre-requisite = PHY231)(3 Credits)
- **PHY 352**: Introduction to Quantum Mechanics (pre-requisite = PHY231)(2 Credits)
- **PHY 354**: Advanced Electronics I (pre-requisite = PHY242) (3 Credits)
- **PHY 355**: Basic Potential Fields in Geophysics (3 Credits)

Optional Courses

- **PHY 353**: Mathematical Methods for Physical Sciences I (3 Credits)
- **PHY 354**: Advanced Electronics I (pre-requisite = PHY242) (3 Credits)
- **PHY 355**: Basic Potential Fields in Geophysics (3 Credits)

Semester 6

In semester 6, the combined major/minor programme shall consist of 8 credits of core courses and at least 3 credits from optional courses.

Core Courses

- **PHY 361**: Introduction to Electromagnetism (pre-requisite = PHY241)(3)
- **PHY 362**: Analytical Thermodynamics (pre-requisite = PHY232)(3)
- **PHY 369**: Physics Practicals 6.1 (pre-requisite PHY239 and 249) (2)

Optional Courses

- **PHY 364**: Advanced Electronics II (pre-requisite PHY354) (3)
- **PHY 365**: Physics of the Environment (pre-requisite PHY231)(3)
- **PHY 367**: Elements of Air Pollution I (3)

Semester 7

In semester 7, the combined major/minor programme shall consist of 8 credits of core courses and additional credits may be taken from optional courses PHY 355 and PHY 356 in accordance with General Regulation 00.62.

Core Courses

- **PHY 471**: Advanced Mechanics (pre-requisite PHY231)(3 Credits)
- **PHY 472**: Statistical Mechanics I (3)
- **PHY 473**: Solid State Physics (3)
- **PHY 479**: Physics Practicals 7.1 (pre-requisite PHY359 and 369) (2) Credits

Optional Courses

- **PHY 474**: Physics of Renewable Energy (3 Credits)
- **PHY 475**: Microprocessor and Digital Systems (pre-requisite = PHY354) (3 Credits)
- **PHY 477**: Elements of Air Pollution II (3 Credits)
- **PHY 478**: Project in Physics I (3 Credits)

Semester 8

In semester 8, the combined major/minor programme shall consist of 8 credits of core courses and at least 3 credits from optional courses.

Core Courses

- **PHY 481**: Atomic and Basic Nuclear Physics (3 Credits)
- **PHY 485**: Microcomputing for Physical Sciences (3 Credits)
- **PHY 489**: Physics Practicals 8.1 (pre-requisite = PHY359 and 369) (2 Credits)

Optional Courses

- **PHY 487**: Introduction to Astrophysics (3 Credits)
- **PHY 488**: Project in Physics II (3 Credits)

2.1.3.3 Combined Major/Minor Programme

Semester 5

In semester 5, the combined major/minor programme shall consist of 8 credits of core courses. Additional credits may be taken from optional courses PHY 355 and PHY 356 in accordance with General Regulation 00.62.

Core Courses

- **PHY 351**: Advanced Mechanics (pre-requisite PHY231)(3 Credits)
- **PHY 352**: Introduction to Quantum Mechanics (pre-requisite = PHY231) (3 Credits)
- **PHY 354**: Advanced Electronics I (pre-requisite = PHY242) (3 Credits)
- **PHY 355**: Basic Potential Fields in Geophysics (3 Credits)

Semester 6

In semester 6, the combined major/minor programme shall consist of 8 credits of core courses. Additional credits may be taken from optional courses PHY363 and PHY364 and PHY 365 in accordance with General Regulation 00.62.
General Regulation 00.62.

Core Courses

PHY361: Introduction to Electromagnetism  
(Pre-requisite: PHY241) (3 Credits)

PHY 362: Analytical Thermodynamics  
(Pre-requisite: PHY232)  
(3 Credits)

PHY 369: Physics Practicals 6.1  
(Pre-requisite: PHY239 and 249) (2 Credits)

Semester 7

In semester seven, the combined major/programme shall consist of 8 credits of core courses. Additional credits may be taken from optional courses PHY474, PHY475 and PHY477 in accordance with General Regulation 00.62.

Core Courses

PHY472: Statistical Mechanics I (3 credits)

PHY 473: Solid State Physics (3 Credits)

PHY 479: Physics Practicals 7.1  
(Pre-requisite: PHY359 and 369) (2 Credits)

Semester 8

In semester eight, the combined major/programme shall consist of 8 credits of core courses. Additional credits may be taken from optional courses PHY 486 or PHY 488 in accordance with General Regulation 00.62.

Core Courses

PHY481: Atomic and Basic Nuclear Physics  
(3 Credits)

PHY485: Microcomputing for Physical Sciences  
(3 Credits)

PHY489: Physics Practicals 8.1  
(Pre-requisite: PHY359 and 369) (2 Credits)

Combined Major/Minor Programme  
(Physics Minor)

Seminars 5 – 8

In seminars five to eight, the combined major/programme shall consist of 6 to 8 credits of any of the physics courses from the core courses or optional courses of the Combined Major/Minor Physics Programme as defined in Regulation 2.3.2. In the given semester, to complete the Physics Minor programme, a candidate must take 4 credits of practical courses, PHY 359 or PHY 369 at 300 level, and PHY 479 or PHY 489 at 400 level.

BSC 202: PHYSICS WITH METEOROLOGY  
(Departmental Regulations 22.2.1 and 23.4)  
Leading to the award of BSc (Physics with Meteorology)

REGULATIONS

Entrance requirements

Admission to the degree programme shall be as specified in the Faculty of Science Regulations 23.2.1 and 23.4

Award of Degree

To be awarded a degree, a candidate/student must have taken and passed all relevant courses as prescribed in Section 13 and must satisfy the University of Botswana Academic General Regulations 00.8 and 00.9 and Faculty of Science Special Regulation 20.

Programme Structure

Level 100

Semester I

PHY112: Geometrical Optics and Mechanics  
(3 Credits)

CHE101: General Chemistry I (4 Credits)

MAT111: Introductory Mathematics I (4 Credits)

COM141: Introduction to Communication and Academic Literacy Skills (Science)  
(3 credits)

ICT121: Computing Skills Fundamentals 1  
(2 credits)

Semester II

PHY122: Electricity and Magnetism,  
Introduction to Modern Physics (4 Credits)

CHE102: General Chemistry II  
(Pre-requisite: CHE 101) (4 Credits)

MAT122: Introductory Mathematics II  
(Pre-requisite: MAT 111) (4 Credits)

PHY122: Electricity, Magnetism and Elements of and Elements of Modern Physics (3 credits)

COM142: Academic and Professional Communication (Science) (3 credits)

ICT122: Computing Skills Fundamentals 2  
(2 credits)

Level 200

Semester III

Core Courses

PHY232: Properties of Matter, Basic Thermodynamics and Introduction to Nuclear Physics (Pre-requisite: PHY 112) (3 Credits)

PMT231: The Earth’s Atmosphere (3 Credits)

MAT271: Introduction to Mathematical Statistics (Pre-requisite: MAT 122) (3 Credits)

MAT 221: Calculus I (Pre-requisite: MAT 122) (3 Credits)

CHE 211: Introduction to Analytical Chemistry (Pre-requisite: CHE 102) (2 Credits)  
Optional Course (3 Credits)

Semester IV

PHY242: Basic Electronics  
(Pre-requisite: PHY 122) (3 Credits)

PMT241: Thermodynamics (3 Credits)

MAT222: Calculus II  
(Pre-requisite: MAT 221)(3 Credits)

MAT244: Numerical Methods (Pre-requisite: MAT122) (3 Credits)

PMT242: Computer Programming – FORTRAN, Matlab (3 Credits)

Winter Semester

PMT299: Internship: Synoptic Meteorology  
(3 Credits)

Level 200

Optional Courses

Semester III

PHY231: Mechanics, Vibrations and Waves (Pre-requisite: PHY 112) (3 Credits)

MAT 242: Computing I  
(Pre-requisite: GEC 121 and 122) (3 Credits)

Level 300

Semester V

Core Courses

PMT311: Atmospheric Radiation (3 Credits)

PMT322: Atmospheric and Ocean Dynamics I  
(Pre-requisite: MAT331 OR 222) (3 Credits)

PMT353: Mathematical Methods for Physical Sciences I (3 Credits)

MAT 371: Mathematical Statistics 1  
(Pre-requisite: MAT 271)(3 Credits)  
Optional Course (3 Credits)

Semester VI

Core Courses

PMT361: Introduction to Agrometeorology  
(3 Credits)

PMT 362: Numerical Weather Prediction  
(Pre-requisite: PMT 232 and 352) (3 Credits)

PMT369: Electronic Instrumentation  
(Pre-requisite: PHY 242) (3 Credits)

Optional Course (5 Credits)

Winter Session

PMT399: Internship: Forecasting and Agrometeorology (3 Credits)

Level 400

Optional Courses

Semester VII

Core Courses

PMT471: Global Circulation Models I  
(Pre-requisite: PMT 352)(3 Credits)

PMT472: Atmospheric and Ocean Dynamics II  
(Pre-requisite: PMT 352)(3 Credits)

PMT474: Boundary Layer Meteorology  
(Pre-requisite: pmt 351)(3 Credits)

PMT 474: Basic Atmospheric Chemistry  
(3 Credits) Elective Course(3 Credits)

Level 203

BSC 203 BSC IN RADIATION AND HEALTH PHYSICS
PROGRAMME Structure

LEVEL 100
Semester I
PHY112: Geometrical Optics and Mechanics (4 Credits)
CHE101: General Chemistry I (4 Credits)
MAT111: Introductory Mathematics I (4 Credits)
COM114: Introduction to Communication and Academic Literacy Skills (Science) (3 Credits)
ICT121: Computing Skills Fundamentals I (2 Credits)

Semester II
PHY122: Electricity and Magnetism, Introduction to Modern Physics (4 Credits)
CHE102: General Chemistry II (Pre-requisite: CHE101) (4 Credits)
MAT122: Introductory Mathematics II (Pre-requisite: MAT111) (4 Credits)
PHY122: Electricity, Magnetism and Elements of Modern Physics (3 Credits)
COM114: Academic and Professional Communication (Science) (3 Credits)

LEVEL 200
Semester III
PHY232: Properties of Matter, Basic Thermodynamics and Introduction to Nuclear Physics (Pre-requisite: PHY112) (3 Credits)
PHY 239: Physics Practicals 3.1 (Pre-requisite: PHY 112)(1 Credit)
CHE 211: Introduction to Analytical Chemistry (Pre-requisite: CHE 102) (2 Credits)
CHE 213: Analytical Chemistry Laboratory (Co-requisite: CHE 211) (1 Credit)
ENH 211: Introduction to Environmental Health (3 Credits)
MAT 221: Calculus I (Pre-requisite: MAT122) (3 Credits)
MAT 271: Introduction to Mathematical Statistics (Pre-requisite: MAT 122)(3 Credits)

Semester IV
Core Courses
PHY 242: Basic Electronics (Pre-requisite: PHY 122) (3 Credits)
PHY 249: Physics Practicals 4.1 (Pre-requisite: PHY112) (1 Credit)
PRH 241: Radiation Physics I (3 Credits)
PRH 242: Radiation Therapy I (3 Credits) Optional Course (3 Credits) Elective Course(3 Credits)

WINTER SEMESTER
PRH299: Internship: Supervised Clinical and/or Industrial Exposure (3 Credits)

LEVEL 200 Optional Courses
Semester IV
(May take any one course)
PHY241: Electricity and Magnetism (Pre-requisite: PHY 122) (3 Credits)
CSI 241: Structured Programming (3 Credits)
ENH 222: Epidemiology (3 Credits)

LEVEL 300
Semester V
Core Courses
PRH351: Radiation Physics II (Pre-requisite: PRH 241) (3 Credits)
PRH 352: Radiation Therapy II (Pre-requisite: PRH 242) (3 Credits)
PRH 353: Introduction to Radiography (3 Credits)
PRH354: Introduction to Radiology (3 Credits) Optional Course(3 Credits)

Semester VI
Core Courses
PRH 361: Radiobiology and Protection (3 Credits)
PRH 362: Physics of Medical Imaging (Pre-requisite: PRH 354) (3 Credits)
PRH 363: Radiation Detection and Instrumentation (Pre-requisite: PHY 242)(3 Credits)
PRH 365: Environmental Physics (3 Credits) Elective Course(3 Credits)

LEVEL 300 Optional Courses
Semester V
(May take any one course)
MAT371: Mathematical Statistics I (Pre-requisite: MAT 271) (3 Credits)
ENH 313: Toxicology (3 Credits)
PHY 367: Elements of Air Pollution I (3 Credits)

LEVEL 400
Semester VII
Core Courses
PRH471: Nuclear Rules and Regulations (3 Credits)
PRH472: Fundamentals of Nuclear Energy (Pre-requisite: PHY 232) (3 Credits)
GPH402: Geophysical Time Series Analysis (3 Credits) Optional Course (3 Credits) Elective Course (3 Credits)

Semester VIII
Core Courses
PRH481: Applied Nuclear Physics (Pre-requisite: PHY 232)(3 Credits)
PRH482: Radiation Protection and Dosimetry (Pre-requisite: PRH 361) (3 Credits)
PRH483: Applied Radiation Safety Techniques (3 Credits)
PRH489: Research Project (6 Credits)

LEVEL 400 Optional Courses
Semester VII
(May take any one course)
PHY477: Elements of Air Pollution II (3 Credits)
PHY476: Microprocessor and Digital Systems (Pre-requisite: PHY 353)(3 Credits)

GRADUATE PROGRAMMES:
- MSc Programme in Physics (Departmental Regulation 5.0), leading to the award of MSc (Physics)
- MPhil and PhD Programmes in Physics (Departmental Regulation 6.0), leading to the award of MPhil (Physics) and PhD (Physics) respectively.

SERVICE COURSES
The following physics courses are offered as service courses for non-physics majors.

PHY161: Physics for Nurses (3 Credits)
PHY162: Physics Applied to Home Economics (2 Credits) BEd (Secondary)

Seminars 5-8
In semesters 5 - 8, students pursuing the BEd (Secondary) programme shall choose credits from the core courses or optional courses of the Combined Major/Minor Physics Programme as defined in Regulation 2.3.2, or from the Combined Major/Major programme as defined in Regulation 2.3.1, in the given semester. The courses chosen must include practical courses PHY 359, PHY 369, PHY 479 and PHY 489.

GENERAL EDUCATION COURSES
The Department of Physics currently offers the following General Education courses under the Area 6 (Science and Technology) pending the outcome of the University review of General education Courses:
- GEC 252: Origin of the Universe (2 Credits)
- GEC 253: Energy and Society (2 Credits)

Assessment
Performance in each course shall be evaluated by the combination of continuous assessment and final examination marks in the ratio of 1:1, except for physics practicals and physics projects which will be assessed by CA only.

Progression
In order to proceed from one semester to the next, a student must obtain a Cumulative GPA which is in accordance with General Regulation 003.

DEPARTMENT OF PHYSICS
PHY 112: GEOMETRICAL OPTICS AND MECHANICS (4)
- Geometrical Optics: Rectilinear propagation of light, Laws of reflection; Reflection from plane and spherical surfaces; Laws of refraction: Refraction at plane and spherical surfaces; Combined Lenses; Defects of Lenses; Optical Instruments; Mechanics: Units and dimensions; Vector algebra; Linear Kinematics; Kinematics in two dimensions; Circular motion, Projectiles; Newton’s laws of motion; Static and Kinetic Friction; Work, Energy and
Power; Torque. A set of experiments to illustrate theoretical concepts.

PHY 212: ELECTRICITY, MAGNETISM AND ELEMENTS OF MODERN PHYSICS (4)

Electricity and Magnetism: Electrostatics: Electrostatic energy and dielectrics; Capacitance: Combination of capacitors in series and in parallel; Potential energy in a capacitor, Effects of dielectrics on capacitance and energy; Current Electricity: Resistance, Combination of resistors in series and in parallel; Magnetism; Cathode Ray Oscilloscope; Introduction to Modern Physics: Electromagnetic wave spectrum; Atomic Structure: Thompson’s model, Rutherford model, Bohr’s hydrogen model; Wave-particle duality: De Broglie’s relation, Dual model, Rutherford model, Bohr’s hydrogen model;

PHY 213: ADVANCED ELECTRICITY AND MAGNETISM (3)

Electrostatics field applied to line, surface and volume charges: applications of Gauss’ law of electric fields: electric potential and potential energy of line surface and volume charges; applications to capacitance with and without dielectric; Magnetic field including Biot–savart law and amperes law: electromagnetic induction including faraday and lenz laws.

PHY 242: BASIC ELECTRONICS (3)

Alternating current circuits: ac source, peak, r.m.s. values, ac source with R, L, C, RC circuits, differentiating and integrating circuits, filters, series and parallel LCR circuits, and using them as band pass and band stop filters. Ideal transformers. Electronics: Equivalent circuits including application of Norton and Thevenin theorems: Basic theory of the Physics of semi-conductors: diodes and diode applications including clipping and clamping circuits: transistors e.g. BJT, FET, JFET and MOSFET; other devices such as thyristor and opto-electronic devices.

PHY 249: PHYSICS PRACTICALS 4.1 (1)

A set of experiments to be performed in Semester 4 illustrating work done in the 200 level physics lecture courses.

PHY 351: ADVANCED MECHANICS (3)

Newtonian formulation of mechanics including integration of Newton’s equations of motion. Projectile in resistive media, central force motion, collision and scattering; Inertia matrix, Euler's equation of motion, spinning top; Lagrangian and Lagrange’s equation of motion. Introduction to the theory of Special Relativity.

PHY 352: INTRODUCTION TO QUANTUM MECHANICS (3)


PHY 353: MATHEMATICAL METHODS FOR PHYSICAL SCIENCES I (3)


PHY 354: ADVANCED ELECTRONICS I (3)

Frequency characteristics of RLC networks, Bode-plots; Principles of voltage amplifiers: amplifier characteristics for the bipolar junction transistor (BJT) amplifier, the field-effect-transistor (FET) amplifier, and the operational amplifier (Op Amp); Feedback and its applications: negative feedback, positive feedback and oscillators. Logic elements; Multivibrators; Introduction to digital electronics.

PHY 355: BASIC POTENTIAL FIELDS IN GEOPHYSICS (3)

The Earth in the Solar System; Radiometrics; Gravity; Earth’s thermal and electrical regime; geo-electricity and geomagnetism; plate tectonics; application of potential fields to exploration geophysics; field and laboratory exercises; Use of potential fields with other methods such as Seismics, Ground Penetrating Radar, e.t.c.

PHY 356: SPECIAL RELATIVITY (3)

Galilean transformation, Michelson-Morley experiment, Lorentz transformation; four vector formulation of mechanics; energy momentum tensor, four vector formulation of Maxwell theory; Introduction to general relativity: Principle of equivalence, Einstein’s field equations, Schwarzchild solution.

PHY 359: PHYSICS PRACTICALS 5.1(2)

A set of advanced experiments to be performed in Semester 5 illustrating work done in the 300 level lecture courses of the Combine Major/Minor (Physics Major) or Combined Major/Major Programmes.

PHY 361: INTRODUCTION TO ELECTROMAGNETISM (3)


PHY 362: ANALYTICAL THERMODYNAMICS (3)


PHY 363: VIBRATIONS, WAVES AND ADVANCED PHYSICAL OPTICS (3)

Damped oscillations; Forced oscillations and resonance; Coupled oscillations and normal modes; Wave equation; Interference; Diffraction, Elliptical polarization of light.

PHY 364: ADVANCED ELECTRONICS II (3)

Laplace transform methods; Fourier series analysis; Special purpose circuits: Principles of Radio communication; Digital systems; Semiconductor device physics. A set of experiments to illustrate theoretical concepts.

PHY 365: PHYSICS OF THE ENVIRONMENT (3)


PHY 367: ELEMENTS OF AIR POLLUTION I (3)


PHY 369: PHYSICS PRACTICALS 6.1 (2)

A set of advanced experiments to be performed in Semester 6 illustrating work done in the 300 level lecture courses of the Combine Major/Minor (Physics Major) or Combined Major/Major Programmes.
PHY 472: STATISTICAL MECHANICS I (3)
Statistical mechanics: Need for statistical laws in many particle systems; condition equations; partition function; Lagrange's method of undetermined multipliers; Maxwell-Boltzmann distribution and applications; Fermi-Dirac statistics and applications.

PHY 473: SOLID STATE PHYSICS (3)
Crystal structure, Experimental methods for determining crystal structure: x-ray crystallography and others; Interatomic forces and binding mechanisms. Elementary Excitations in solids: Phonons (lattice vibrations), Free electron theory (classical and quantum), Band theory; Classification of solids: metals, semiconductors, insulators; Some semiconductor devices; Magnetism; Diamagnets, Paramagnets and Spin ordered systems (ferromagnets, antiferromagnets and ferrimagnets).

PHY 474: PHYSICS OF RENEWABLE ENERGY (3)
Renevable energy resources: solar energy, wind power, hydro-power, geothermal energy, bio-fuels, ocean power systems

PHY 475: MICROPROCESSOR AND DIGITAL SYSTEMS (3)
Interfacing with Analog World: D/A converter and A/D converter; transducers; Digital wave-shaping and timing circuits; Digital Signal Processing (DSP); Microprocessor: Architecture and system operation, addressing modes, instruction set and programming; Microprocessor interfacing and applications.

PHY 476: ADVANCED MATHEMATICAL METHODS FOR PHYSICS II (3)

PHY 477: ELEMENTS OF AIR POLLUTION II (3)
Air pollutants, Gaseous and particulate, Dispersion of pollutants, Monitoring techniques, Preventive techniques, Air quality standards, Air pollution control management, strategies and legislation. Air pollution and impacts on energy, water resources, health and agriculture. Field based exercises.

PHY 478: PROJECT IN PHYSICS I (3)
A supervised independent study on any topic in Physics.

PHY 479: PHYSICS PRACTICALS 7.1 (2)
A set of experiments to be performed in Semester 7 illustrating work done in the 400 level lecture courses of the Combine Major/Minor (Physics Major) or Combined Major/Minor Programmes.

PHY 481: ATOMIC AND BASIC NUCLEAR PHYSICS (3)
Atomic Structure; Structure and spectra of many-electron atoms; Structure of the Nucleus; Nuclear Reactions: Classification of Nuclear Reactions, Elementary particles: Basic interaction and conservation laws, properties of elementary particles.

PHY 482: STATISTICAL MECHANICS II (3)
Statistical mechanics: Review of Distribution functions; Boltzmann transport equation without and with collisions; Phase transitions: critical points; order parameters; critical points exponents.

PHY 483: ADVANCED SOLID STATE PHYSICS (3)

PHY 485: MICROCOMPUTING FOR PHYSICAL SCIENCES (3)
Computer programming languages; Numerical methods: Roots of equations; Numerical integration; Solution of ordinary differential equations; Data reduction.

PHY 486: BASIC SEISMOLOGY (3)
Elasticity and seismic waves; seismic ray theory and boundary interactions; seismometry and seismogram interpretation; seismoteleconics and earthquake prediction; the earth's internal structure from seismic waves; seismic waves application to exploration; field and laboratory exercises.

PHY 487: INTRODUCTION TO ASTROPHYSICS (3)
Astronomy and Astrophysics; The Astronomical Context; Radiation; Classical Dynamics; Stars and Stellar Structure

PHY 488: PROJECT IN PHYSICS II (3)
A supervised independent study on any topic in Physics.

PHY 489: PHYSICS PRACTICALS 8.1 (2)
A set of advanced experiments to be performed in Semester 8 illustrating work done in the 400 level courses of the combined Major/Minor (Physics Major) or Combined Major/Minor Programmes.

PMT 231: THE EARTH'S ATMOSPHERE (3)

PMT 232: COMPUTER PROGRAMMING – C/C++ (3)

PMT 241: THERMODYNAMICS (3)
The law of conservation of energy including the zeroth law of thermodynamics. Gas laws: ideal gas law, kinetic theory of gases, Dalton's law, Van der Waals’s law. Specific heat and enthalpy: heating at constant pressure and constant volume, enthalpy, adiabatic processes, dry adiabatic lapse rate, thermodynamic diagrams. Entropy: free expansion, heating and cooling, reversible and irreversible processes, potential temperature, Carnot cycle. Water and its transformations: moisture variables, condensation and evaporation, phase changes, Clausius-Clapeyron equation, phase diagrams. Moist air and clouds: cloud formation, moist adiabatic lapse rate, conditional instability, CAPE (convective available potential energy) and entrainment.

PMT 299: METEOROLOGY INTERNSHIP I (3)
Supervised internship in Synoptic Meteorology.

PMT 351: ATMOSPHERIC RADIATION (3)

PMT 352: ATMOSPHERIC AND OCEAN DYNAMICS (3)
Atmosphere radiative transfer through high and low level clouds and the physical implications of aerosols on climate; atmospheric circulation, surface ocean/terrestrial/biosphere exchange processes, greenhouse gas fluxes; implications of sea ice extent and sea level change, deep convection and mixed layer dynamics on ocean heat budgets and the breakdown of the thermohaline circulation.

PMT 369: ELECTRONIC INSTRUMENTATION (3)
A set of experiments in electronics to underscore the principles behind weather-monitoring equipment.

PMT 399: METEOROLOGY INTERNSHIP II (3)
Supervised internship in Forecasting and Agrometeorology.

PMT 471: GLOBAL CIRCULATION MODELS I (3)
PMT 472: ATMOSPHERIC AND OCEAN DYNAMICS II (3)
Kinematics—vorticity and divergence; Lagrangian and Eulerian frames of reference and the Lagrangian derivative; Continuity and state equations; Forces in a Newtonian fluid; The Navier Stokes equations and some basic solutions; Scale analysis and the Reynolds number; Bernouilli's theorem; Incompressible and irrotational flows; The vorticity equation; Some effects of buoyancy and stratification; Fluids on a rotating plane—the Coriolis force.

PMT 473: BOUNDARY LAYER METEOROLOGY (3)
Boundary layer definition: forcing mechanisms, meteorological scales, comparison with the free atmosphere, significance of the boundary layer. General characteristics and evolution of the boundary layer: winds in the boundary layer, turbulence and Taylor's hypothesis, thermodynamic variables, boundary layer depth and structure, introduction to evolution over land, daytime convectively mixed boundary layer, nocturnal boundary layer. Boundary layer phenomena: coastal fronts, sea/land breeze circulations, lake breezes, gust fronts, boundary layer convection—horizontal rolls, open/closed cell convection, urban heat island, local circulations due to land heterogeneity.

PMT 474: BASIC ATMOSPHERIC CHEMISTRY (3)

PMT 481: GLOBAL CIRCULATION MODELS II (3)
Discussion on the prognostic equations of a GCM that are stepped forward in time (typically winds, temperature, moisture, and surface pressure) together with a number of diagnostic equations that are evaluated from the simultaneous values of the variables. Computer simulations of these equations to include: equations of fluid motion, typically for surface pressure, horizontal components of velocity in layers, temperature and water vapor in layers; a radiation code split into solar/short wave and terrestrial/infra-red/long wave and parameterizations for convection, land surface processes, albedo, hydrology and cloud cover.

PMT 482: GLOBAL CLIMATE CHANGE (3)
Observed climate variability and change: Recent centuries; climate reconstruction; the last 100 years. Climate science: Energy balance; heat fluxes; the carbon cycle, physical climate interactions, chemistry, biogeochemistry- and biosphere-climate interactions; natural modes and coupled systems. Human perturbation of climate: Climate forcing agents; aerosol forcing of climate; climate models and simulation of current climate; climate change detection and attribution. Future climate: future emissions; future climate predictions; effects of climate change. Different portrayals of climate change issues, including scientific consensus and uncertainty, and their social and political implications—Environmental mechanisms through which climate change leads to socio-economic impacts. Methods for assessing socio-economic impacts of climate change: regional predictions, adaptability and vulnerability (including case studies from Sub-Saharan Africa). Climate change mitigation: the international political response, including the flexibility mechanisms of the Kyoto Protocol.

PMT 483: CLOUD PHYSICS (3)
Overview of cloud systems; theories of phase changes in clouds and micro-physical mechanisms of precipitation formation; cloud electrification. Topics include nucleation, hydrodynamics of cloud and precipitation particles, ice physics, mechanisms of precipitation formation, electrical and radiative properties. Formation of cloud droplets: droplet growth by condensation, formation of ice crystals, precipitation processes, weather radars, cloud models.

PMT 489: RESEARCH PROJECT (6)
A supervised independent study

PRH 241: RADIATION PHYSICS I (3)

PRH 242: RADIATION THERAPY I (3)
X-ray production, x-ray properties, gamma rays, electrons, and their respective interactions with matter. Other topics include the measurement of radiation, radioactivity, and particulate radiation. Brachytherapy, including radioactive sources, exposure rate, implant dosimetry, and remote after-loading units.

PRH 299: RADIATION AND HEALTH PHYSICS INTERNSHIP I (3)
Supervised internship in Clinical and/or Industrial Exposure

PRH 351: RADIATION PHYSICS II (3)
Principles of radiation physics as they apply to the treatment and care of the cancer patients. Topics studied include measurements, general principles, structure of the atom, structure of the matter, electromagnetics, magnetism, electromoderns, electromagnetic radiation, and production and properties of radiation and radiographic techniques.

PRH 352: RADIATION THERAPY II (3)
Basic Radiation Therapy focusing on quality assurance, basic dosimetry concepts, radiographic anatomy, clinical objectives, and medical and technical terminology. Fundamentals of radiography, film construction, processing, and x-ray generation. Other topics include professional ethics, patient care procedures, pharmacology, nutrition, and oncology. Basic dosimetry skills including dose calculations for external beam, radiation therapy equipment, practical treatment planning, and brachytherapy applications.

PRH 353: INTRODUCTION TO

RADIOGRAPHY (3)
Introduction to hospital organization and professional ethics in radiography. Also introduces elementary radiation protection, general radiographic anatomy and positioning, medical terminologies, and the basic principles of exposure.

PRH 354: INTRODUCTION TO RADIOTHERAPY (3)
Introduction to radiology and necessary skills of a health care professional. Nuclear medicine, and radiation therapy by incorporating lectures with field site visits. The roles of an allied health professional in the hospital and community setting. Explores career potentials and alternatives.

PRH 361: RADIOBIOLOGY AND PROTECTION (3)
Introduction to biological responses to radiation and factors influencing radiation effects, tissue sensitivity, tissue tolerance, and clinical applications. Also includes a study of radiation protection principles, units of measurement and survey methods, advanced brachytherapy, personnel monitoring techniques and regulatory agencies and regulations.

PRH 362: MEDICAL IMAGING PHYSICS (3)
Basics of imaging science. X-ray imaging modalities including basic principles, detectors, scattered radiation, planar imaging, CT, fluoroscopic imaging, nuclear medicine imaging, State-of-the-art specialized organ imaging, equipment, and procedures. Image intensification, serial radiography, cineradiography, TV and video systems, tomography, computerized technologies, and magnetic resonance imaging.

PRH 363: RADIATION DETECTION AND INSTRUMENTATION (3)
Principles and mechanisms underlying nuclear radiation detection and measurements; operation of nuclear electronic laboratory instrumentation; application of gas-filled, scintillation and semiconductor laboratory detectors for measurement of alpha, beta, gamma, and neutron radiation; experimental investigation of interactions of radiation with matter.

PRH 365: ENVIRONMENTAL PHYSICS (3)
Introduction to the atmosphere; the radiation environment; transfer principles; introduction to soil physics; radiation from groundwater; ionizing radiation and the environment.

PRH 399: INTERNSHIP II (3)
Supervised internship in Clinical and/or Industrial Exposure

PRH 471: NUCLEAR RULES AND REGULATIONS (3)
Introduction to key nuclear regulatory agencies; major nuclear legislations; current radiation protection standards and organizational responsibility for their implementation. Introduction to rules and regulations applicable to (1) radiation and environmental protection, (2) the operation and licensing of nuclear facilities, and (3) the medical use of radioactive material.

PRH 472: FUNDAMENTALS OF NUCLEAR ENERGY (3)
Power from fission; fission process, neutron chain reactions, reactor types, reactor operation and criticality, fuel types, energy balance, nuclear
heat energy, breeder reactors, commercial reactors, reactor safety, advanced reactors; fusion, fusion reactors, history of nuclear explosions; environmental effects of nuclear power generation and weapons.

PRH 481: APPLIED NUCLEAR PHYSICS (3)
Radioactivity, statistical nature, Alpha decay, barrier penetration, Gammow’s theory, alpha particle spectra, Beta decay, neutrino hypothesis, Fermi’s theory, detection of neutrino, Gamma decay, multipole classification, gamma interaction, Two body systems and nuclear force. Nuclear power; Reactor Physics.

PRH 482: RADIATION PROTECTION AND DOSIMETRY (3)
Theoretical principles of shielding for neutron and gamma radiation and applications to problems of practical and planar projections, and how they are dealing with major forms of ionizing and non-ionizing radiation, the physics and chemistry of radiation biology, biological effects of ionizing and non-ionizing radiations (lasers, etc.) at cellular and tissue levels, radiation protection quantities and units, medical HP issues in clinical environments, radiation safety regulations, and basic problem solving in radiation safety.

PRH 483: APPLIED RADIATION SAFETY TECHNIQUES (3)
Application of radiation protection as practiced in the fields of nuclear science and engineering; application of health physics principles to reduce the health hazards at each of the following stages of nuclear laboratory equipment design: design, prevention, assessment; and post-incident. A history of the key nuclear regulatory agencies; early and current radiation protection standards and regulatory authorities; major nuclear legislation; pertinent nuclear rules and regulations and their application.

PRH 484: ENVIRONMENTAL RADIOACTIVITY (3)
Radionuclides in the environment: their measurement and identification, uptake and transfer through food chains. Effects of radiation on natural populations of plants and animals.

PRH 485: ANATOMY AND PHYSIOLOGY FOR MEDICAL PHYSICS (3)
A course focused on medical terminology, biochemistry pertaining to MP, basic Anatomy and physiology, elementary tumor and cancer biology, and overview of disease in general. Upon completion, the student should: (a) understand anatomic structures, their relationships, cross-sectional and planar projections, and how they are modified by attenuation and artifacts in the final images; (b) understand the physiology underlying radionuclide images, (c) understand how (a) – (b) are modified by disease, (d) identify anatomical entities in medical images (different modalities), and (e) identify basic disease features in medical images (e.g., Pneumothorax in chest radiographs, microcalcifications in mammograms).

PRH 489: RESEARCH PROJECT (6)
A supervised independent study.

GEC 252: ORIGINS OF THE UNIVERSE (2)
Introduction to Astronomy: The solar system, Stars, Galaxies, The universe, Distance measurement in astronomy, The Expansion of the Universe: Analyzing light from stars, Doppler effect, Spectral red shift, The Hubble constant; The Big Bang: The age of the universe, Age from its expansion, Age from the oldest stars, Age from the oldest atoms, Half life of U235, U238, Th232, Rh187; The remnant of the Big Bang at 3K; The formation of the universe: First few minutes, Formation of stars and galaxies, Formation of interstellar material and planets.

GEC 253: ENERGY AND SOCIETY (2)

DEPARTMENT OF CHEMISTRY

100 Level Courses
CHE101 General Chemistry I (4 credits)
Course covers fundamental concepts and principles of chemistry, i.e. the structure of matter, quantitative as well as qualitative aspects of chemistry.

CHE102 General Chemistry II (4 credits)
This is a continuation of CHE101. The fundamental principles associated with properties of chemical systems will be presented.

CHE107 Chemistry Applied to Home Economics (3 credits)
The role that chemistry plays in everyday life will be presented. Atomic structure, periodic table, oxidation and reduction, chemistry of carbon compounds, acids and bases, soaps and detergents, food and energy, fats, carbohydrates, proteins, minerals and vitamins, additives, poisons and toxins, gases, polymers and plastics, cosmetics.

CHE109 Introductory Chemistry for Bachelor of Nursing Science, Bns (3 credits)
Topics include: Structure and bonding, stoichiometry, solutions, chemistry of certain elements, electricity and chemical change, osmosis, reaction rates and catalysis, radioactivity.

200 Level Courses
CHE211 Introduction To Analytical Chemistry (2 credits)
Basic principles of analytical chemistry, concepts of classical and modern methods in analytical chemistry, statistical treatment of experimental data including error analysis and significance tests; Gravimetry, titrimetry; Introduction to analytical spectroscopy and electro analytical chemistry.

CHE213 Analytical Chemistry Laboratory I (1 Credit)
Practical experience in analytical procedures, classical and modern methods of analytical chemistry, an overview of analytical instrumentation and the progress made towards development of analytical methodology, gravimetric analysis, titrimetric analysis, Electro analytical/ spectrophotometry.

CHE221 Atomic Structure, Bonding and Main Group Chemistry (2 Credits)
Structure of the atom based on elementary quantum theory. Bonding in simple molecules based on molecular orbital and valence bond theories; Trends in periodic properties and chemical reactions of s- and p-block elements.

CHE223 Inorganic Chemistry Laboratory I (1 credit)
This course covers qualitative inorganic analysis, the synthesis of a selection of compounds, as well as solution chemistry of main group elements.

CHE232 Structure And Survey Of Functional Groups (2 credits)
Survey of various functional groups; Aspects of stereochemistry; Introduction to qualitative analysis of organic compounds; Preparations of simple organic compounds.

CHE234 Organic Chemistry Laboratory I (1 credit)
Course topics include: Purification and separation of organic compounds-distillation and fractional distillation, crystallization and recrystallization melting point and refractive index determination; Introduction to qualitative analysis of organic compounds; Preparations of simple organic compounds.

CHE242 Introductory Physical Chemistry (2 credits)
Basic principles of thermodynamics: first, second and third laws of thermodynamics; rates of chemical reactions.

CHE244 Physical Chemistry Laboratory I (1 credit)
This is an introduction to laboratory techniques in physical chemistry. Experiments dealing with properties of solutions, Calorimetry, thermodynamics, electrochemistry and chemical kinetics.

300 Level Courses
CHE311 Separation Techniques (3 credits)
Introduction to chromatographic separation and detection techniques: Liquid-liquid extraction; column chromatography, TLC, GC and HPLC, Supercritical fluid; Capillary electrophoresis. Detection systems include FID/ECD; isothermal conductivity detector for GC. UV-Vis/ DAD fluoroscence detector for HPLC. Electrochemical / conductivity detectors for ION Chromatography.

CHE312 Analytical Spectroscopy (2 credits)
Introduction to spectoscopic methods. Molecular absorption & emission:- UV-visible, IR, phosphorescence, fluorescence, Fourier transform spectroscopy. Atomic absorption & emission techniques; AAS / AES and ICP-MS; NMR and X-ray spectroscopy.

CHE314 Analytical Chemistry Laboratory II (1 credit)
Introduction to practical aspects of spectroscopic methods of analysis: UV-visible, IR, Fourier
CHE321 Coordination Chemistry (2 credits)
Introduction to nomenclature, properties and reactions of coordination compounds & complexes; isomerism and magnetic properties. Valence bond and crystal field theories; absorption spectra; field strength; Jahn-Teller effects; covalency and electron delocalization in complexes. Thermodynamics of complex formation. Hard and soft acids and bases, Non-aqueous chemistry. The chemistry of d-block elements and their compounds. Trends in the properties of elements of groups 3 to 12.

CHE322 Group Theory and Organometallic Chemistry (3 credits)
Introduction to group theory and basic knowledge of organo-metallic chemistry. Fundamental concepts of organometallic chemistry; organometallic chemistry of transition elements; catalytic applications of organometallic compounds.

CHE323 Inorganic Chemistry Laboratory II (1 credit)
Involves use of modern instruments to characterize organic compounds. Synthesis of inorganic compounds and their characterization using various techniques such as NMR, IR and UV-VIS spectroscopy; Reactions of transition elements and their compounds.

CHE331 Structure and Survey of Functional Groups II (3 credits)

CHE332 Physical Organic Chemistry (2 credits)

CHE333 Organic Chemistry Laboratory III (1 credit)
Introduction to modern synthetic and characterization methods for organic compounds: Preparation of liquid and solid products then separation, purification and identification by physical and spectroscopic properties- UV, IR and NMR techniques. Chemical and spectroscopic methods in qualitative analysis of organic compounds. Molecular modeling. Simulation of spectra.

CHE334 Applications of Thermodynamic and Electrochemistry (2 credits)
Introduction to the applications of chemical thermodynamics to solutions and electrochemical processes. Partial molar quantities, thermodynamics of mixing, properties of ideal solutions, non-ideal solutions, activity and activity coefficient, phase diagrams, chemical equilibrium, conductivity, ion activities, standard potentials, electrochemical cells applications of standard potentials.

CHE342 Quantum Chemistry And Its Applications (3 credits)
Microscopic concepts of physical chemistry. Basic principles of quantum mechanics, postulates, simple quantum mechanical systems (particle in a 1-D and 3-D box), rotational and vibrational energy levels in molecules, rotational, vibrational and electronic spectroscopy, photophysical and photochemical processes in molecules and atoms, photochemical kinetics.

CHE343 Physical Chemistry Laboratory II (1 credit)
Practical familiarization with microscopic and time dependent macroscopic aspects of physical chemistry. Laboratory experiments in application of quantum chemistry, spectroscopy, photochemical kinetics, conductivity and transport phenomena.

CHE351 Chemical Informatics (1 credit)
Use of conventional and electronic chemical information resources. An overview of information resources in chemistry. Purpose of scientific literature. Peer review process. Electronic and non-electronic databases. Searching methodologies including Internet searching (use of chemical web browsers). Searching for information using chemical names, CAS numbers, structures, sub-structures, molecular formulas, etc. Searching material safety data sheets (MSDS).

CHE352 Literature Based Project (1 credit)
Course will cover professional writing in chemistry and scholarly project reports. Writing styles in chemistry: comprehensive report on an assigned topic in chemistry under the supervision of an academic staff. Thorough search of the chemical literature including the latest information available on the subject.

400 Level Courses

CHE411 Advanced Analytical Techniques (3 credits)
Advanced analytical methods: Statistical treatment of experimental data; Electroanalytical Chemistry; -potentiometry, voltammetry, coulometry, classical and modern polarography, Instrumentation and application of GC-MS, LC-MS, CE-MS, tandem MS, Thermochemical and Radiochemical methods of analysis; isotope dilution and activity analysis.

CHE412 Sample Handling and Biochemical Analysis (3 credits)
Sampling strategies, sample preparation and clean-up techniques; solid phase extraction, solid phase micro-extraction, dialysis, solvent extraction, supported liquid membrane. Enzymatic analysis methods; application of immobilised enzymes, competitive binding immunoassays, enzyme immunoassays, proteomics, and genomics. Properties of antibodies. Polymer structure elucidation of carbohydrate polymers; precipitation assays.

CHE413 Advanced Analytical Chemistry Laboratory (2 credits)

CHEA16 Environmental Chemistry (2 credits)
Introduction to environmental pollutants and their analysis using local case studies e.g., SO2 emission from the BCL mine; Pesticide analysis, industrial waste management; Selection of safe methods of disposal. Degradation reactions and the dispersal pathways of materials into the environment.

CHE418 Special Topics in Analytical Chemistry (2 credits)
Special topics selected from the following: Application of Analytical Chemistry, Food, Drugs and Forensic Analysis, Chemometrics and Clinical Analysis.

CHE421 Advanced Transition Metal Chemistry (3 credits)
Advanced topics in transition metal chemistry and introductory bio-inorganic chemistry. Electronic properties of transition metal complexes; magnetic properties of transition metal complexes; inorganic reaction mechanism; introduction to photochemical reactions; f-block chemistry; introduction to bioinorganic chemistry.

CHE422 Advanced Organometallic and Solid State Chemistry (3 credits)
Organometallic Chemistry: Main group organometallics; structure and chemistry of (CSH32M1M complexes; organometallic chemistry in synthesis; stereoelectronically non-rigid molecules; metal clusters and metal-metal bonds; low- and high-nuclearity clusters; NMR spectra; Latimer diagrams, oxidation state stability. Solid state chemistry: lattices; crystal packing; ionicstructures; crystal defects; metallic bonding; spinels.

CHE423 Advanced Inorganic Laboratory (2 credits)
Physical methods in Inorganic Chemistry: the study of physical and chemical properties of transition metal and organometallic complexes using electronic, infrared, and nuclear magnetic resonance spectroscopy techniques as well as optical isomerion, reaction kinetics, and inert atmosphere techniques.

CHE416 Environmental Chemistry (2 credits)
Introduction to environmental pollutants and their analysis using local case studies e.g., SO2 emission from the BCL mine; Pesticide analysis, industrial waste management; Selection of safe methods of disposal. Degradation reactions and the dispersal pathways of materials into the environment.

CHE424 Special Topics in Inorganic Chemistry (2 credits)
Selection may be made from the following specialized topics: Nanochemistry, Synthesis of inorganic materials for the fabrication of semiconductors; Molecular orbital calculations; Kinetics and mechanisms of inorganic reactions in solution media; Applied homogeneous catalysis with organometallic compounds; Chemistry and applications of boranes, carbonaranes and metalloboranes.

CHE431 Heterocyclic Chemistry Synthetic Reactions and Design of Organic Synthesis (3 credits)
Aromaticity and reactions of heterocyclic compounds – furan, pyrrole, thiophene, pyridine, indole, and quinoline. Synthetic reaction, Protective groups.; Molecular rearrangements. Design of organic synthesis: introduction to disconnection approach / retrosynthetic analysis.
CHE432 Secondary Metabolites and Biomolecules (3 credits)

CHE433 Advanced Organic Chemistry Laboratory (2 credits)

CHE436 Special Topics in Organic Chemistry (2 credits)
Selection may be made from the following specialised topics: Chemistry of drugs; Chemistry of lipids; Selected natural products; Agrochemicals; Free radicals and photochemistry; Polymer materials

CHE441 Advanced Physical Chemistry I (3 credits)

CHE442 Advanced Physical Chemistry II (3 credits)
Reaction kinetics, techniques of fast reactions, theories of reaction rate, reaction in solution, composite reactions, chain reactions, explosions, Transport phenomena. Polymers, kinetics of polymerization, osmometry, viscometry, gel-permeation chromatography, TGA, DSC. Introductory polymer processing.

CHE443 Physical Chemistry Laboratory III (2 credits)
Laboratory experiments in polymers, surface and colloid chemistry.

CHE446 Special Topics in Physical Chemistry (2 credits)
Detailed treatment of topics chosen from: solid-state chemistry; irreversible thermodynamics; molecular dynamics; intermolecular forces; atmospheric and/or astrophysical chemistry.

CHE452 Senior Research Project (3 credits)
The course involves scientific bench work research, Will comprise a study leading to a written report and shall be based on an original investigation of a chemical problem. To be carried out under the supervision of a member of staff.

CHE470 Excited State Chemistry (2 credits)

DEPARTMENT OF COMPUTER SCIENCE

BSc/BIS Degree Course Details

CS231 Discrete Mathematics I (3) pre-req.: MAT222/5IA102
Sets, relations and functions Propositional and predicate calculus; Mathematical proofs; Induction; Basic number theory – well-ordering, divisibility and congruence; Discrete probability; Algebraic structures – groups and rings

CS232 Discrete Mathematics II (2) pre-req.: CS231

CS241 Structured Programming (4) pre-req.: GEC122
Problem solving with computer: The programming process. High level language programming: data types, input/output, control structures, functions, objects and classes, file I/O; simple data structures like arrays and records, Programme design concepts. Programme testing, debugging and documentation Practical problem-solving exercises.

CS242 Data Abstraction and Structures (4) pre-req.: CS241
Abstraction, decomposition, Abstract Data Types, information hiding; records, sets, arrays, tables, stacks, queues, binary trees, trees, graphs, etc. Object-oriented paradigm; practical application in problem-solving.

CS252 Operating System Concepts (3)
History, evolution, philosophies, structures of OS systems. Introduction to the concepts processes; resource management; virtual machines; scheduling; memory management; file systems; device management, allocation techniques, memory protection; virtual memory; paging and segmentation. OS in security and protection: OS interface and distributed/network. Detailed comparative study of features and architecture of current OS

CS261 Machine Organization (3)
Introduction to computer hardware: Computer systems organization: CPU organization; memory organization; I/O devices characteristics. Digital logic circuit; Combinational logic; sequential logic. Data representation; data coding; error detection and correction. Microprogramming based on a simplified machine example; sample macro-architecture. Some examples from Intel-80x86 architectures

CS272 Computer Communications Networks Fundamentals (2)
Network basic Concepts Data transmissions, Multiplexing, Concentrators; Front-end Controllers line connectors, components of data communications system, network topologies, ISO-OSI reference model, LAN, WAN, Internet; Network Components and Technologies. Installation of networks particularly LAN and WAN Network tools, cables, hubs, and routers, NICS. Practical involving cables preparations etc, network installation. NOS and installation.

CS292 Information Systems Fundamentals (3)
Fundamental Systems Concepts; Systems components and relationships; IS in perspective; Information and knowledge economy; Information as an organizational resource; Processing models; IS Architectural Framework; IS infrastructure: Organisations as systems; IS in organizational context; IS Development frameworks: Life cycles and Methodologies; Global IS; Fundamentals of IS for Enterprise: Elements of Socio-economics of of IS. Case studies

CS311 File Systems and Data Management (4)
prereq.: CS242
Techniques for storing, accessing, and managing long-term data in computer systems Hardware and software aspects of data processing: processors, storage devices, communications, file I/O control. Techniques for organizing and managing files: DBMS. Data organisation methods in relation to physical database design. Major practical data management systems implementation.

CS312 Programming Language Translation (3)
pre-req.: CS341, CS351/CS361
The principles and design aspects of programming language translation. Compiler organisation Lexical analysis, Syntax analysis, type checking, code generation, optimisation Alternative parsing strategies, comparison with respect to time and space trade offs. Grammars and ambiguity Data representation Error recovery strategies Symbol table design Binding Compiler writing tools: Incremental compiling, interpreters Abstract machine concept

CS314 Decision Support Systems II (3)
Structure of the decision problem DSS Framework and applications: DSS Model Representation. DSS: Data Warehousing, Data mining and Data Mining for DSS; DSS Re-engineering; Modelling and decision support; Decision model construction; Forecasting; Optimisation and Simulation; Group support systems. Model Based Management Systems. DSS and IS DSS Development Tools Group DSS; DSS development project

CS315 Web Technology and Applications (3)
prereq.: CS341
The Internet, intranet and Web technologies; Systems development; Rapid Applications Development concept; Web application development, architectures, environments, and technologies. Web applications Web Development using Web authoring tools Database –Web connectivity Scripting languages for Web development; Web applications Client/Server technologies Project

CS322 Measuring algorithm performance: worst case analysis; average case analysis; lower bounds. Techniques of efficient algorithm design: greedy method, dynamic programming graph traversal. Illustration with topics from integer and polynomial
arithmetic; matrix multiplication; random number generation; sorting; searching; graph and tree algorithms. Introduction to complexity theory Parallel and Randomized algorithms.

CSI331 Numerical Methods I (3) Approximation and errors Finite differences Interpolation Solution of linear an non – linear equations. Numerical integration Curve fittings

CSI332 Programming Languages (3) pre-req.: CS241 Principles of programming language design. A brief history of major developments Procedural and non-procedural paradigms (languages-functional, logic, object-oriented, parallel) Virtual machines and language Translation Binding time Sequence control. Representation of data types; data control, sharing, and type checking. Encapsulation Polymorphism Run-time storage management: allocation, recovery, and reuse of storage.

CSI341 Introduction to Software Engineering (3) The software development process Design objectives. Function oriented and object oriented design methodologies. Documentation Implementation strategies Debugging, anti bugging Introduction to specifications verification, and validation Elementary proof of correctness Code and design reading, structured walkthroughs. Testing strategies Software reliability issues Configuration management. CASE tools Team project assignments

CSI342 Systems Analysis and Design (3) General Systems Theory: development life cycle; analysis; description and modelling techniques: Systems development project planning: concepts and tools; System Requirements; design implementation, changeover and maintenance overview; Documentation; Systems development management; Modern systems development tools, implementation, techniques, and methodologies; Systems Analysis and Design project.

CSI351 Assembly Language Programming (3) Assembly language programming Language hierarchy, the assembly-linking process and the role of the OS in assembly level programming. Machine level data structures Assembly language programming techniques: advanced data structures like arrays; advanced I/O. Interrupt handling and introduction to concurrent programming. Use and definition of macros; conditional assembly object modules and linking Assembly/high-level language interface. Run-time considerations.

CSI352 Industrial Attachment (2)pre-req.: Completion of All Level 200 courses

CSI361 Computer Architecture (3) pre-req.: CSI261 The computer system: interconnection structure; internal & external memory; input/output; relationship between the architecture and the OS. Advance topic in computer organization: pipelining; horizontal vertical microprogramming architecture; microprogramming applications. Alternative architectures: parallel processing; vector processing; RISC vs. CISC.

CSI362 Database Concepts (3) Principles and concepts of the DBMS DBMS architecture Databases and data modelling Services of DBMS Overview of database languages Transactions The relational model. Mapping from a conceptual model to a relational model Database design methodologies The network and hierarchical models. Database Design languages Overview of commercially available systems. Practical work with DBMS

CSI371 Information Systems Resources Management (3) Information Systems resources (ISR) ISR Management objectives, responsibilities, principles and environment. IS Management, Control and Maintenance (MCM) concepts IS Management tasks and state models; Tasks at ISR Tasks Management level; IS Control and Maintenance Processes modeling; Organisation of IS Management ISR Management types. ISR Management issues; practice; Background Infrastructure Library; resources planning; and impact on organisational planning cycle Case studies


CSI373 Economics of Information Technology(3) Economic aspects of IT; systems managers, system users, the IT industry, and national policy-makers; the systems management perspective; performance and capacity, system financing, and price-for-service strategies. Cost benefit trade-off and measurement. Impacts of IT industries and markets National issues Global competition Informatics policies, and the role of IT in development

CSI382: Formal languages and Automata (3)pre-req.: CSI231 and CSI232 Theory of formal languages The Chomsky hierarchy of formal grammars and the corresponding automata Finite state automata and regular expressions Deterministic and nondeterministic finite state automata, Criterion for regularity Context-free grammars and push down automata Pumping Lemma for regular and context-free languages Push-down automata in IS Management languages Decision problems

CSI392 Human Computer Interaction (3) Basic principles and methodology for user interface design. Background in human information processing and human factors. Practical case studies Techniques for user-centred analysis and design Prototyping tools Introduction to Usability Engineering and evaluation methods. Methods for enhancing system usability including systems ergonomics

CSI393 Multimedia Computing (3) Multimedia computing concepts and principles; Multimedia computing application, Multimedia computing application packages; Multimedia components - Sound, Graphics, Animation, Video; Understanding multimedia components and developing contents; Web Integration of multimedia components; Visual communication; Database integration of multimedia components.

CSI403 Project I (2) Project proposal, Literature review, Systems Analysis and Design It shall be a pre-req. course which must be passed before taking CSI405.

CSI405 Project II (4) pre-req.: CSI403 Continuation of CSI405 covering implementation and full documentation in form of a project report

CSI411 Complexity and Computability theory (3)pre-req.: CSI322 Computational complexity of algorithms Phrases like NP-Complete and NP-Hard have already become common to the lexicon of algorithm designers. Computability, addresses time-honoured issues such as the famous halting problem, and, of course, some of the more interesting variations on the Turing machine theme.

CSI412 Topics in Computer Science (3) A selected advanced topic in computer science may be offered depending on the qualification and interest of available teaching staff. This course would be offered in first semester.

Number of hours/week: 4 lecture hours, or equivalent.

CSI414 Information Interfaces and Presentation (3) General: Multimedia IS; Animations Artificial, augmented and virtual realities. Audio I/O; Hypermedia Navigation and maps; Video; Users Interfaces; Auditory feedback; Benchmarking; Evaluation/methodology; Graphical user interface (GUI) I/O strategies; Interaction styles Natural language prototyping; Screen design Standardization: Style guides Theory and methods; User-centred design User interface management systems Voice I/O Windowing systems Group and Organization interface; HyperText/Hypermedia: Sound and Music Computing.

CSI416 Topics in Information Systems (3) Selected current topics in Information Systems may be offered depending on the qualification and interest of available teaching staff. This course would be offered in first semester.

CSI421 Operating Systems (3) pre-req.: CSI252 Issues in analyzing, designing and implementing operating systems (OSs); Models of OS structure Processes;models, scheduling. Memory management: allocation techniques, memory protection; virtual memory; paging and segmentation. File System Information Systems. Btrees and index structures; directories; implementation; security and protection and deadlocks. Distributed OSs: design issues; communications; synchronization; processes and processors. In-depth case studies of implementation of selected Operating Systems.

CSI422 Operations Research (3) Operations Research (OR): concepts, tools, techniques, applications in solving practical problems. Topics include: linear programming, parametric programming, dual, post optimal analysis; integer programming, the transportation problem, networks, simulation, queuing theory, inventory control and forecasting models. OR packages and their uses

CSI423: Systems Programming (3) pre-req.: CSI241 Introduction to Systems Programming Process
Control and Scheduling Processes; Threads and Threads Programming; File I/O and Signal Processing; Memory Management; Programming Distributed Systems; and Client-Server Programming Unix socket programming. Java Systems Programming; SWING, multithreading and networking.

CS4321 Formal Methods (3)
Introduction to Formal Methods; Introduction; Rationale for use of formal methods; Review of specification methods; Properties of specifications; Specification classes; Overview of formal method approaches. Mathematical Basis for Formal Methods: Propositional logic; Predicate calculus; Theories and proof systems; Reasoning and proof techniques. Formal Specification using Z: Z notation and structure; Building Z specifications; Functional and data refinement; Proving properties of Z specifications; Use of automated theorem proving tools.

CS4342 Intelligent Interfaces and Systems (3) pre-req.: CS372
Introduction to Natural Language Processing; Natural Language Interfaces; The linguistic Application; NLP NLP as a tool for Linguistic Research. Software for Natural Language Systems Comparison between Natural Language Interactive Interfaces and direct manipulation, graphical interfaces.

CS4343 Algorithmic Graph Theory (3) pre-req.: CS322
Graph Algorithms: depth first search, breadth first search, connected components, topological sorting, shortest path algorithm, network flow, string searching, parallel computation, graph partitioning, and graph isomorphism.

CS4344 Knowledge Management Systems (3) pre-req.: CS362
Knowledge systems theoretical foundations; infrastructure enabling technologies, emerging applications and management; Knowledge-based Economy; Knowledge Management systems; Types of knowledge Technologies; KM technical infrastructure; Data Warehousing/Data Mining and Knowledge delivery Systems; Knowledge modeling; Application of AI technologies in KMS development; Case studies.

CS4441 Software Engineering (3) pre-req. CS341
Course provides students with experience in requirements analysis, architectural high-level design, implementation testing maintenance, and control. Metrics and measurement; Software reliability modeling; Software validation and testing. AI/BIS approaches environments; AI/BIS development techniques Principles of object-oriented systems Prototyping, Software reuse.

CS4442 Artificial Intelligence (3) pre-req.: CS372

CS4541 Knowledge Engineering (3) pre-req.: CS372
The facility of KE and problem solving – an overview; Fuzzy sets and fuzzy operations; Fuzziness and probability. Fuzzy systems Neural Networks; Theoretical and Computational models Real and artificial neurons; Fuzzy neurons and fuzzy neural networks; NN for Knowledge Engineering and problem solving; NN as a problem solving paradigm; Hybrid Symbolic and Fuzzy Systems.

CS4542 Computer Simulation (3) pre-req.: CS331 and MAT271
Models, model development, verification, and validation; Simulation Study; Discrete and Continuous Probability distributions Linear congruential method for generating uniform random numbers; Tests for uniformity and independence; Inverse transform technique; Acceptance-rejection technique; Student, Chi-square and Kolmogorov-Smirnov tests; Covariance and Correlation, ANOVA; Testing for significance of regression.

CS4546 Computer Communications Networks Management (4) pre-req.: CS372
Data communications: theory; and systems structures. Networks, types, structures, ISO-OSI reference model; Protocols types and structure. Protocol layers: functions; LAN and WAN and ISDN; Network management and Administration.

CS4547 Distributed Systems (3) pre-req.: CS411 and CS161
Design issues of Distributed Systems (DS); Architecture, design, and implementation of DS. Comparison of DS to PC's and centralized systems. Performance security and reliability issues; Process communication: IPC, remote procedure calls (RPC), Java communications; transactions; processing and concurrency control. Naming, security, Distributed file system, replication, shared memory, distributed algorithms and message passing.

CS4548 Object Oriented Systems Development (3) pre-req.: CS241
Object-orientation paradigm; Analysis design, OO databases; Software reusability Abstraction, Polymorphism; Object messages and encapsulation; Inheritance, and class categories. Foundations and collection classes. Iconic user interfaces. Design and implementation Survey of Object Oriented features of programming languages, modeling database and knowledge – based systems.

CS4549 Social Issues of Information Technology (3)
Historical development and transfer of Science and Technology of computing; Social context of computing; Perspectives to computer systems; development; Risks and liabilities of computer-based systems; intellectual property; Privacy and civil liberties; Computer crime; Ethics and professionalism issues; IT in socio-economic development; Computing technology transfer to Developing countries. Case studies.

CS4550 – Database Systems (3) pre-req.: CS362
Database systems development framework; Planning, Logical and Physical DB design Query processing, Backup and recovery; Concurrence Management; Performance tuning; DB security, integrity and control. DBS architectural frameworks; Client/Server, Distributed and parallel DBS; Object-oriented DB KB and DBS Intelligent Data and DBA; Data Warehouse DB Design; Web-DBS; DB Programming languages Current topics.

CS4551 Information Systems Engineering (3)
Information Systems; Engineering; Design; Software engineering; ISO engineering; Integrated Software Engineering; Engineering; Design; IS software engineering; Web-based systems engineering; IS Developmental assessment; IS Developmental tools.

CS4552 Pattern Recognition (3) pre-req.: CS372
Introduction to Pattern Recognition; Statistical decision theory; Image processing and Analysis. Pattern recognition models; Pattern Recognition Design Methodology. NN for Pattern recognition; Pattern Recognition implementation – interactive systems; special architectures Pattern recognition applications – computer vision, signal processing, text processing etc.

CS4553 Computer Graphics I (3) pre-req.: CS241
Computer Graphics (CG)?, Image Analysis(A) vs. CG. Hardware devices Software packages 2D-Graphics; homogenous coordinates, Transformations, Clippings 3D-Graphics 2D screens, projection Realism; Basic illumination models, primary and secondary effects.

CS4554 Computer Graphics II (3) pre-req.: CS493
Colour Models and Colour Applications; Modelling in 3D; Surface Rendering; Lighting effects; Computer Animation; Interaction; Computer Graphics in Scientific Visualization; Graphs on the World Wide Web; Graphics and multimedia systems.

GEC Area 2
ICT 121 Computing Skills Fundamentals 1 (2)
Hardware and software systems concepts and principles; DOS and file management basics; Applications areas of computers; Data Communications and network systems; Internet and Electronic mail basics; Computers and society issues; Information skills and organisation Information need, and sources. Security and legal issues, Problem-solving with computers Practical laboratory exercises.

ICT 122 Computing Skills Fundamentals 2 (2) pre-req.: ICT 121
Advanced operating systems file management; Spreadsheet and database management; Use of basic spreadsheet application package facilities; Basic database application package facilities; Principles of problem-solving with computers. Design and specification with pseudo-code and
other tools; evaluating information sources; Practical

GEC 221 Information Management Skills (2) pre-req.: IEC 122
Word processing and database management; application package facilities; DB application package facilities; problem-solving methods Data communication and network systems Evaluating information sources; Electronic information resources. Information management using intermediate to advanced Database management; Electronic information communications Topic analysis; integrated information management.

GEC222 Problem-Solving with Spreadsheet (2) pre-req.: IEC122
Problem solving Concepts and principles Spreadsheet problem-solving methodology; Problem-specification and solution design; Advanced Spreadsheet features. Survey of Spreadsheet application domains Spreadsheet programming Practical problem-solving using spreadsheet facilities Further information skills; Electronic information sourcing and evaluation; Information synthesis; Practical lab exercises.

GEC 223 Web Application Skills (2) pre-req.: IEC122
The Internet and Web technologies; Systems development Web Application development cycle; Web-Based Systems, structure and applications; Survey of Web development tools and use; HTML components and syntax; Web planning, design using programmatic (e.g. scripting) and non-programmatic approaches; Use of tables and pictures; Validation and verification, error checking; Qualities of a good web site; Static versus Dynamic web concepts; Practical

GEC321 Multimedia Information Presentation Skills (2) pre-req.: IEC122
Multimedia information resources; Use of facilities in appropriate Presentation application packages Integrated use of presentation application packages with related application packages (e.g. Word processing, Spreadsheet, and Database packages). Advanced information skills: Topic analysis - Information needs analysis and problem definition; Use of advanced electronic information resources.

DEPARTMENT OF MATHEMATICS

MAT111 Introductory Mathematics I (4)
Basic algebra; Introduction to functions; Trigonometry; Series; Induction; Complex numbers; Permutations and combinations.

MAT122 Introductory Mathematics II (4)
Calculus; Co-ordinate geometry; Vectors.

MAT191 Design Mathematics I (3)
Basic Algebra; Trigonometry. Statistics.

MAT192 Design Mathematics II (3)
Co-ordinate Geometry; Matrices and Determinants; Calculus.

MAT201 Ancillary Mathematics (3)
Linear algebra; Calculus; Probability and statistics.

MAT211 Introductory Set and Number Theory (3)
Logic; Sets; Relations; Integers; Modular Arithmetic.

MAT212 Introductory Linear Algebra (3)
Linear equations; Matrices; Vector spaces; Transformations; Eigenvectors.

MAT 221 Calculus I (3)
Techniques of integration; Applications of integration; Improper integrals; Generalized mean value theorem; Taylor's theorem; Differential equations; Sequences and series.

MAT 222 Calculus II (3)
Power series; Conic sections; Differential calculus; Multiple integrals.

MAT 242 Computing I (3)
Elements of programming; Procedures and subroutines; Structured design; Introduction to modularization.

MAT244 Numerical Methods (3)
Computer arithmetic; Numerical approximation and integration.

MAT251 Vectors and Introductory Mechanics (3)
Vectors; Vector calculus; Particle motion in a straight line; Newton's laws of motion; Kinematics; Dynamics in space; Statistics.

MAT252 Newtonian Mechanics (3)
Work, power and energy; Momentum; Simple harmonic motion; Statics of rigid bodies; Centre of gravity; Dynamics of a rigid body.

MAT271 Introduction to Mathematical Statistics (3)
Sample space and probability function; Distributions of random variables; Expectations; Normal distribution; Applications of t, chi-square and F distributions; Sampling distributions; Statement of central limit theorem; Confidence intervals and testing of hypothesis.

MAT291 Engineering Mathematics I (3)
Determinants and matrices; Application of derivatives; Number sequences and series; Partial derivatives; Application of integration.

MAT292 Engineering Mathematics II (3)
Ordinary differential equations; Statistics; Probability; Binomial, Poisson and normal distributions.

MAT311 Abstract Algebra I (3)
Groups; Factor groups; Homomorphisms; Rings.

MAT312 Abstract Algebra II (3)
Group actions; p-groups; Rings; Fields.

MAT 321 Real Analysis I (3)
The real number system; Sequences of real numbers; Series; Functions; Continuity; Differentiability; Integration.

MAT 322 Real Analysis II (3)
Introduction to R^n as a metric space; Differentiation in R^n; Power series; Integration in R^n.

MAT 323 Vector Calculus (3)
Vectors and applications to lines and planes; Curves and surfaces; Differentiation and integration of vector functions; The divergence theorem and Stoke's theorem.

MAT324 Differential Equations (3)
Second order linear differential equations; Power series solutions to ordinary differential equations; Systems of differential equations; Boundary value problems for ordinary differential equations and partial differential equations.

MAT342 Computing II (3)
Recursion, pointers and linked lists; Object oriented programming; Dynamic memory allocation; Mathematical usage of objects and modules.

MAT344 Numerical Methods of Linear Algebra (3)
Direct and iterative methods for solving systems of linear equations; Numerical methods for computation of eigenvalues and eigenvectors of matrices.

MAT352 Dynamics I (3)
Central forces, systems of particles, variable mass; Non-inertial frames; Rigid body motion; Lagrangian and Hamiltonian dynamics.

MAT361 Mathematical Programming and Game Theory (3)
Graphical solution for linear programming; Simplex method and new developments; K-T condition and basic methods for non-linear programming; Linear programming method for two person zero-sum games.

MAT371 Statistical Analysis I (3)
Review of probability; Distributions of random variables; Conditional distributions; Normal, gamma, t, chi-square and F distributions; Different modes of convergence; Limiting distributions; Introduction to estimation theory and hypothesis testing.

MAT372 Mathematical Statistics II (3)
Estimation theory; Classical methods of estimation versus Bayes estimation; Theory of uniformly powerful tests and likelihood ratio tests; Introduction to linear models; Linear regression and ANOVA models.

MAT381 Calculus for Teachers I (3)
Differentiation; Integration.

MAT382 Calculus for Teachers II (3)
Complex numbers; Differential equations; Partial differentiation.

MAT383 Linear Algebra for Teachers (3)
Linear equations; Matrices; Transformations; Vectors; Geometric equations.

MAT384 Computing for Teachers (3)
Introduction to computing; Basics of programming; Laboratory exercises.

MAT387 Mechanics for Teachers (3)
Vectors; Co-ordinate systems; Kinematics; Velocity; Acceleration; Projectiles; Relative motion and circular motion.

MAT388 Mechanics for Teachers II (3)
Newton's law of motion; Momentum and impulse; Conservation of momentum; Work, power and
energy; Simple harmonic motion.

MAT389 Linear Programming and Game Theory For Teachers (3) Mathematical formulation of linear programming (LP) problem; Graphical method; The simplex procedure and other techniques; Game theory; Two-person games; Zero-sum games; Mixed strategies; Graphical solution; The best mixed strategy as an LP problem.

MAT391 Engineering Mathematics III (3) Laplace transforms; Vector analysis; Interpolation; Numerical solution of differential equations; Fourier series representation of periodic functions.

MAT392 Engineering Mathematics IVA (3) Laplace transforms; Partial differential equations; Complex analysis.

MAT394 Engineering Mathematics IVB (3) Partial differential equations; Laplace transforms.

MAT400 Project (3)

MAT402 History Of Mathematics (3) The origins of mathematics; Greek mathematics; Mathematics in other cultures; The European renaissance; Modern mathematics.

MAT404 Topics in Advanced Mathematics (3) Topics to be determined.

MAT411 Linear Algebra (3) Vector spaces; Linear transformations; Eigenvalues and eigenvectors; Inner product spaces; Multilinear algebra.

MAT412 Number Theory (3) Brief revision of elementary number theory; Quadratic reciprocity; Number theoretic functions; Sums of squares; Algebraic integers.

MAT414 Combinatorics and Graph Theory (3) Graphs; Planar graphs; Paths; Directed graphs; Networks; Matchings.

MAT416 Abstract Algebra III Group theory; Field theory.

MAT421 Functions of a Complex Variable (3) The elementary functions; Analytic functions; Series; Calculus of residues; Introduction to conformal mappings and analytic continuation.

MAT422 Functional Analysis (3) Normed linear spaces; Inner product spaces; Fundamental theorems for normed linear spaces; Applications.

MAT423 Mathematical Methods (3) Laplace transforms and applications; Fourier series; Fourier transforms and applications; Classification of partial differential equations; Boundary value problems.

MAT424 Dynamical Systems (3) Periodic attractors; Stability and bifurcations; Chaos and chaotic attractors.

MAT425 Measure Theory (3) Measure spaces; Measurable functions; Integration; Spaces of functions; Product measures.

MAT426 Partial Differential Equations (3) Initial boundary problems for parabolic, elliptic and hyperbolic equations.

MAT431 General Topology Topological spaces; Bases and sub-bases; Continuous mappings; Hausdorff spaces; Compact spaces; Connected spaces.

MAT432 Algebraic Topology (3) Homotopy theory; Homology theory; Categories and functors.


MAT442 Computational Mathematics (3) Symbolic calculations with a computer; Automatic symbolic differentiation and integration; Symbolic solution of differential equations; Approximation of functions with a computer.

MAT451 Dynamics II (3) Further work on systems of particles; Lagrangian and Hamiltonian dynamics; Variational principles; canonical transforms; Hamilton-Jacobi theory.

MAT452 Quantum Mechanics (3) Quantization rules; Application to the hydrogen atom; Schrodinger wave equation; Poisson brackets and commutation relations; The uncertainty principle.

MAT453 Electromagnetic Theory (3) Electric field; Electric currents in linear conductors; Biot-Savart law; Magnetic field; Potentials and related boundary value problems; Maxwell's equations.

MAT454 Introduction to Fluid Dynamics (3) Tensor methods; Two dimensional steady flow; Stream lines and streak lines; Properties of fluid; Mass conservation; Continuity equations; Convective derivative; Vorticity.

MAT 461 Optimization And Control Theory (3) Calculus of variation; Pontryagin maximum principle; Optimal control of linear systems; Linear systems with quadratic cost.

MAT 462 Mathematical Modelling (3) Population models; Competing species; Epidemic models; Van der Pol and Lotka-Volterra equations.

MAT 471 Multivariate Statistics (3) Multivariate, marginal and conditional distributions; Multivariate normal distribution Np (m,S); Wishart distribution and Hotelling T2 distribution; Maximum likelihood estimation of m and S of Np (m,S) distribution; Likelihood ratio test for testing H0: m = mo; Multivariate regression; Canonical correlations; Principal components.

MAT 472 Linear Models (3) General linear model and linear hypotheses; Models of full rank and models not of full rank; Estimable functions; Testable hypotheses; The exponential family and generalized linear models; Introduction to fi xed models; Illustration of fitting models to real life data with a computer package.

MAT 474 Stochastic Processes (3) Stochastic processes in both discrete and continuous time; Markov chains; Poisson processes; Renewal theory; Branch processes; Applications.

MAT 476 Statistical Computing (3) Use of symbolic computation in statistics with a computer algebra system; Developing computational methods for selected problems of multivariate statistics; Using a statistics package for estimation and testing of hypotheses in different statistical models with real life data and/or data supplied by simulation.

MAT481 Geometry for Teachers I (3) Logic; Axiomatic systems; Incidence geometry; Euclidean geometry.

MAT482 Geometry for Teachers II (3) Analytic Geometry in the Euclidean plane and space; Transformational Geometry in the Euclidean plane.

MAT483 Real Analysis for Teachers (3) Sequences; Functions; Continuity; Derivatives; Riemann integral.

MAT484 Introduction to Probability and Statistics For Teachers (3) Sample space and probability function; Distributions of random variables and their moments; Binomial, Poisson, normal and other probability functions; Estimation and hypothesis testing.

MAT485 Number Theory and Abstract Algebra for Teachers (3) Elementary number theory; The Diophantine equation; Congruences; Fermat's and Wilson's theorems; Group theory; Polynomials.

MAT491 Engineering Mathematics V Partial differential equations; Bessel functions; Legendre polynomials; Reliability theory

MAT492 Engineering Mathematics VI Tests of hypothesis; Linear programming; Stochastic processes.
FACULTY OF
HUMANITIES

AFRICAN LANGUAGES & LITERATURE  ENGLISH  FRENCH  HISTORY  LIBRARY & INFORMATION STUDIES
MEDIA STUDIES  THEOLOGY & RELIGIOUS STUDIES, CHINESE STUDIES, VISUAL & PERFORMING ARTS,
CONFUCIOUS INSTITUTE

DEAN
Moahi, K.H.N, BA (UBS), MSc (Sheffield), PhD (Pittsburgh)

DEPUTY DEAN
Mwikisa, P.W, BA (Zambia), MA, D.Phil (Sussex)

FACULTY ADMINISTRATOR
L. Monei, DABS (UB), CIS Intermediate (South Africa), BSc HRM (Cyprus)

HUMAN RESOURCES MANAGER
M. K. Tshoganetso, BASS (UB), CPIR (Witwatersrand), MSc HRM (Cardiff)
Although for administrative purposes the Departments of Environmental Science and of Sociology are located in other Faculties, they are considered academically to be part of the Faculty of Humanities. In fact, a considerable number of students who major in Environmental Science and Sociology are Humanities students. With the flexibility that is afforded by semesterised courses, most departments in the Faculties of Business and Science will become accessible to Humanities students, especially through cross-faculty programmes. With the new focus on educating specialists in a generalist way, the Faculty values a well-rounded education with the requisite ICT and numeracy skills. The Faculty of Humanities concentrates mainly on those studies that specialise in understanding human ideas, behaviour, culture and its mediation, with a particular emphasis on humanity in Africa in relation to the rest of the world. This Faculty thus has a prime role to play in the discovery and the appreciation of the heritage and liberal arts of the societies of Africa in general and of southern Africa and Botswana in particular. In this regard, the Faculty of Humanities, through research and teaching in its academic departments, is in a privileged position to effectively contribute to the realization of the Vision and Mission of the University. In addition, the Faculty of Humanities contributes to human resource development by assisting in the training of teachers. The departments in the Faculty provide the content base for secondary school and tertiary level teachers of English, Setswana, French, History/ Social Studies, Geography and Religious/Moral Education by offering majors in the Bachelor of Arts, Bachelor of Education and the Masters of Education Degrees in these disciplines. As the Faculty continues to implement the provisions of the Tenth National Development Plan (NDP 10), the semesterised academic programmes, and also plans new programmes within the plan period, it shall simultaneously address the requirements of the Revised National Policy on Education as well as the aspirations of the National Vision 2016. It will also position itself strategically within the plan period processes to face the challenges brought about by diminishing budget allocations and competition for fewer resources.

22.0 Special Regulations for the Faculty of Humanities

22.1 Preamble

22.11 The following are the Faculty’s Special Regulations and shall apply subject to the General Academic Regulations

22.12 In addition to these Special Regulations, relevant Special Departmental Regulations shall also apply.

22.2 Entrance Requirements

22.21 Admission into the Humanities Degree Programmes shall be on the basis of performance in the Botswana General Certificate of Secondary Education (BGCSE) examination or its equivalent, in humanities (languages, geography, social studies, history, moral/religious education, and science (cf.22.22a), and also See Regulation 22.22a for other qualifying subjects)

22.22 Applicants who register for Bachelor's Degree programmes in Humanities shall be required

a) To have taken at least five subjects, including English Language, at the Botswana General Certificate of Secondary Education (BGCSE) examination or its equivalent;

b) To have obtained a credit in the English language.

22.23 An applicant who has taken relevant Advanced (A) – level or equivalent examinations and attained a minimum of one E and two C’s in the relevant subjects may be admitted to a Bachelor degree in Humanities programmes.

22.24 If an applicant has grade E or better at Advanced (A)-Level or equivalent qualifications in relevant subjects s/he may, subject to the recommendation of the relevant Head of Department and the approval of the Dean’s Office, be awarded credits and exempted from equivalent courses prescribed for a degree programme.

22.25 A student who may transfer from a recognized university, or any other institution of higher learning, and on the submission of a transcript of his/her academic records may, subject to the recommendation of the relevant Head of Department and approval of the Dean's Office, be awarded credits and exempted from equivalent courses prescribed for a degree programme.

22.3 General Provisions

22.31 A course may consist entirely of fieldwork, project work, practical-work, seminar or tutorials or any combination of these components. In addition to work during the semester, a course may include prescribed fieldwork or assignments during university vacation periods.

22.32 Unless otherwise provided in the departmental regulations, all courses are semester long.

22.33 For ease of reference, the use of course codes shall provide information as follows: the first digit refers to the level of study, the second to the status and orientation of the course, and the last digit to the number of course in each category.

22.4 Degree Structure

22.41 In accordance with General Academic Regulation 00.211, Departments in the Faculty of Humanities shall offer courses which shall be prescribed in Departmental Special Regulations.

22.42 The Faculty of Humanities shall, depending on the core course in the subject area offer the following degree programmes:

a) Bachelor of Arts which is composed of core and optional courses from African languages and Literature, English, French, History, Archaeology, Environmental Science, Sociology, Psychology and Theology and Religious Studies subjects.

b) Bachelor of Fine Arts

c) Bachelor of Chinese Studies

d) Bachelor of Library and Information Studies which is composed of core and optional courses from the department of Library and Information Studies

e) Bachelor of Arts in Library and Information Studies which is composed of core and optional courses from Library and Information Studies and another subject available as a major to Humanities students

f) Bachelor of Information Systems (Information Management) which is composed of core and optional courses from the Faculty of Business, Department of Computer Science and Department of Library and Information Studies.

g) Bachelor of Media Studies which is composed of core and optional courses from the Department of Media Studies.

22.43 A combined degree (major/major) shall be a programme composed of core and optional courses from two equally-weighted subjects which are concurrently studied. In order to partially satisfy the requirement for a degree, a student must take and pass a minimum of 40 credits from each of the two subjects.

22.44 A combined degree (major/minor) shall be a programme composed of core and optional courses from two subjects. In order to partially satisfy the requirements for a degree, a student must take and pass a minimum of 56 credits from the major subject and a minimum of 24 credits from the minor subject.

22.45 In Semesters 1 and 2 (Level 1) of a degree programme, each student shall take Courses in English as well as courses from at least two of the following subjects: African Languages and Literature, French, Environmental Science, History, Sociology, Theology and Religious Studies, Psychology.

22.46 In addition to core and optional courses, and in compliance with the General Regulation 00.2124d, each student shall, unless exempted, take two credits of General Education Courses in each of Area 1, Communication and Academy Literacy Skills and Area 2, Computer Skills Fundamentals, in each of Semesters 1 and 2 of higher programme. In addition, a student shall register for a minimum of twelve credits of General Education Courses offered outside the Faculty of Humanities before completing his/her programme of study.

22.47 Departments may specify projects that each student shall carry out as partial fulfilment of the requirements for the award a degree, based on an investigation of some original theme in his/her major subject under the supervision of an academic member of staff. This study shall be for one semester and normally take place during the course of the programme. The mode of assessment shall be as prescribed under Special Departmental Regulations. There shall only be one such project per programme.

22.5 Assessment

22.51 Continuous Assessment (CA) shall be as prescribed in General Academic Regulations.

22.52 The examination in a course, whenever required, shall normally be held during the examination period at the end of the semester in which the course is taught.

22.53 Performance in each course shall normally be evaluated according to stipulated departmental requirements. Any departure from indicated ratios
shall require the approval of the Faculty Board.

22.54 Overall performance in a course shall be assessed on a Percentage Scale, a Letter Grade and a Grade Point in accordance with General Regulations.

2.7 Award of Degree

22.71 To be awarded a degree, a student must satisfy the appropriate provision of General Academic Regulations from core and optional/elective/general education courses.

DEPARTMENT OF AFRICAN LANGUAGES & LITERATURE

Bachelor of Arts Degree in African Languages and Literature

General Provisions

Subject to the provisions of General Academic Regulations and the Faculty of Humanities Special Regulations, the following Departmental Regulations shall apply for the Bachelor of Arts Degree in the Department of African Languages and Literature.

Programme Structure

Level 100

At Level 100 (Semesters 1 and 2), the Programme shall consist of a total of 6 credits made up of 2 core courses per semester.

Level 200

At Level 200 (Semesters 3 and 4), the Programme shall consist of a total of 6 credits made up of 2 core courses per semester.

Levels 300 and 400

At Levels 300 and 400 (Semesters 5 to 8), the Programme shall comprise a Single Major, a Combined Major, a Major/Minor, Minor/Major and Multi-disciplinary Streams.

a) Single Major in African Languages and Literature
   The Single Major Programme shall consist of a total of 18 credits made up of 3 core courses and 3 optional courses per semester.

b) Combined Major/Major in African Languages and Literature
   The Combined Major/Major Programme shall consist of a total of 9 credits made up of 2 core courses and 1 optional course per semester.

c) Combined Major/Minor with African Languages and Literature as a Major
   The Combined Major/Minor Programme shall consist of 12 credits made up of 2 core courses and 2 optional courses per semester.

d) Combined Minor/Major with African Languages and Literature as a Minor
   The Combined Minor/Major Programme with African Languages and Literature as a Minor shall consist of a total of 9 credits made up of 1 core course and 2 optional courses per semester.

e) Multi-disciplinary Combined Degree Programme
   The Multi-disciplinary Combined Degree Programme in African Languages and Literature shall consist of a minimum of 6 credits in accordance with Departmental Regulation 07.3.5 and General Regulation 00.62.

General Education Courses

The Department of African Languages and Literature offers three (3) General Education Courses (GECs).

Assessment and Examination

1.3.1 Performance in each course shall be evaluated by a combination of continuous assessment and final examination marks.

1.3.2 Continuous assessment shall normally constitute at least two pieces of work or one long paper per semester.

1.3.3 The duration of the final examination shall be two hours.

Progression

In order to proceed from one semester to the next, a student must maintain a cumulative GPA in accordance with General Regulation 00.9.

Level 100

Semester 1

Core Courses

ALL122 The Characteristics of Human Language (3)
ALL141 Introduction to African Oral and Written Literature (3)

Optional Courses

ALL131 Language and Communication in Africa (3)
ALL132 Language Instruction I: Beginners Course in one of the Botswana Languages (3)
ALL151 Short Story Theory and Practice (3)
ALL152 Style in Writing (3)

Semester 2

Core Course

ALL121 Introduction to the Study of Language and Linguistics (3)
ALL142 The Study of Drama in Indigenous Languages (3)

Optional Courses

ALL134 Language Instruction II Pre: ALL132 (3)
ALL153 Introduction to the African Novel (3)
ALL154 Theory of Humour in Africa (3)

Level 200

Semester 3

Core Courses

ALL221 Sound Systems in African Languages (3)
ALL241 History and Structure of the Setswana Novel (3)

Optional Courses

ALL231 The Perception and Transcription of African Language Sounds (3)
ALL232 Language Instruction III Pre: ALL134 (3)
ALL251 Folk Speech in Africa (3)
ALL252 Rites of Passage: A Study of Social Dramas (3)

Semester 4

Core Courses

ALL222 Structure of Words in African Languages (3)
ALL242 African Written Poetry (3)

Optional Courses

ALL233 Generative Phonology in African Languages (3)
ALL234 Language Instruction IV Pre: ALL232 (3)
ALL253 The Sociology of Literature (3)

Level 300

Semester 5

Core Courses

ALL321 The Structure of the Sentence (3)
ALL322 The Structure of Meaning (3)
ALL341 Introduction to Literary Theory (3)

Optional Courses

ALL331 Introduction to Translation (3)
ALL332 Language Instruction V Pre: ALL234 (3)
ALL333 Introduction to Research Methods (3)
ALL351 Politics and Southern African Poetry (3)
ALL352 Epic Performance in Africa (3)

Semester 6

Core Courses

ALL323 Introduction to Stylistics and Discourse Analysis (3)
ALL342 African Oral Narratives (3)
ALL343 Introduction to African Popular Theatre (3)

Optional Courses

ALL334 Introduction to Modern Theories in Grammatical Analysis (3)
ALL335 Language Instruction Course VI Pre: ALL332 (3)
ALL336 Field Research Preparation and Proposal Writing Pre: ALL333 (3)
ALL353 African Oral Literature and the Media (3)
ALL354 The Contemporary Setswana Novel (3)

Level 400

Semester 7

Core Courses

ALL421 Introduction to Historical and Comparative Linguistics Based on Africa (3)
ALL422 A Sociolinguistic Study of Southern Africa (3)
ALL441 World Literature in Setswana Translation (3)

Optional Courses

ALL431 Introduction to Psycholinguistics (3)
ALL432 Language Instruction VII Pre: ALL335 (3)
ALL433 Research Project: Data Collection Pre: ALL336 (3)
ALL451 Studies in African Aesthetics (3)
ALL452 Popular Culture in Africa (3)
ALL453 Women’s Literature in Botswana (3)

Semester 8

Core Courses

ALL423 The Bantu and Khoesan Languages of Southern Africa (3)
ALL442 Creative Writing, Theory and Practice (3)
ALL443 Oral Poetry in Botswana (3)

Optional Courses

ALL434 Introduction to Applied Linguistics (3)
ALL435 Language Instruction VIII ALL432 (3)
ALL436 Research Project: Data Analysis and Interpretation Pre: ALL433 (3)
ALL454 Children’s Traditions and Dramatics (3)
ALL455 Postcolonial Theory and African Literature (3)
ALL456 Introduction to African Thought (3)

General Education Courses (GECs)

Semester 1
GEC261 Languages of Botswana (2)

Semester 2
GEC262 Introduction to Cultural Studies (2)
GEC361 Introduction to Rhetoric and Public Speaking (2)

AFRICAN LANGUAGES & LITERATURE COURSE DESCRIPTIONS

ALL121 Introduction to the Study of Language and Linguistics (3)
The content of the course will cover the study of human language and its significance in human life. It will also deal with linguistics as the scientific approach to language study, the branches of linguistics, how it is related to other disciplines and how linguistics can be applied to certain professions.

ALL122 The Characteristics of Human Language (3)
The content of this course will include an overview of the various theories about the origin of language and the relationship between language origin, the development of society and the structure of the brain. The course will also examine the difference between human language and animal communication as well as the unique characteristics of human language.

ALL131 Language and Communication in Africa (3)
The content of the course will include a study of the communication devices among human beings, with special reference to Africa. The course will also cover speech acts, writing systems as well as language acquisition phases and functions of language.

ALL132 Language Instruction I (Beginners Course in one of the Botswana Languages) (3)
The content will include an introduction to the culture and history of one of the Botswana Languages and training in the basic use of the language such as essential expressions and self-expression. The course will also introduce the students to some of the basic structures of the language.

ALL134 Language Instruction II (3)
The content of the course will include a study of the current state of one of the Botswana languages as well as a study of some selected areas of usage such as reporting, expressing one's feelings or seeking attention. The course will also introduce the students to the description of the language's morphology and syntax.

ALL141 Introduction to African Oral and Written Literature (3)
The content will include a study of sub-genres of African oral and written literatures such as oral and written poetry, traditional drama and written plays and their form and functions in society as well as how content and meaning is such literatures are manipulated in order to differentiate insider/writer from outsider/reader as well as men from women.

ALL142 The Study of Drama in Indigenous Languages (3)
The course deals with intrinsic and extrinsic aspects of drama with emphasis on the fact that plays are not primarily intended for reading but to be performed.

ALL151 Short Story Theory and Practice (3)
The course deals with theories of the short story but much of the time will be spent on reading short stories, critically analyzing them at the same time appreciatively enjoying and getting involved in their production.

ALL152 Style in Writing (3)
The course will deal mainly with the relationship between the author, the text and the readers with emphasis on aspects of style that enable messages to reach the addresses.

ALL153 Introduction to the African Novel (3)
The course will basically introduce students to genre classification, textual analysis of the novel and the socio-political as well as the gender and cultural history from which it emerged.

ALL154 Theory of Humour in Africa (3)
The course will focus on the structure and function of various types of the joke genre in Africa with a special focus on the text, context and performance aspects. The issue of gender and the influence of modern technology and the media on the genre will also be scrutinized.

ALL221 Sound Systems in African Languages (3)
The course content will include the definition of phonology, phonemic analysis and the function of distinctive features. The course will also consider the structure of the syllable and other prosodic phenomena.

ALL222 Structure of Words in African Languages (3)
The content of the course will include the definition and scope of morphology, the morpheme and its various types as well as allomorphic variation. The course will then focus on the various types of morphemes and apply the principles underlying word formation, analysis to an African language; discuss the processes of term development in Setswana.

ALL231 The Perception and Transcription of African Language Sounds (3)
The content of the course will include practice in identifying, describing and transcribing speech sounds. Also students will be trained in classifying the sounds according to shared phonetic features.

ALL232 Language Instruction III (3)
The course content will include a discussion of the current state of one of the Botswana languages and then train the students in oral and aural skills, text comprehension and an introduction to the literature created in the language. It will also provide skills in the description of the structure of the target language.

ALL233 Generative Phonology in African Language Analysis (3)
The course content will include an introduction to generative phonology followed by the study of segmental, auto-segmental and metrical phonology. Setswana and one other African language will be used as case studies.

ALL234 Language Instruction IV (3)
The course content will include the discussion of the salient issues concerning the current and future situation of one of the Botswana languages. The course will enhance the students' oral and aural skills, text comprehension and a good understanding of the literature created in the language.

ALL241 History and Structure of the Setswana Novel (3)
The course will include an exploration of the evolution of the novel genre over time among the Setswana speaking peoples of Southern Africa and how it has been influenced by the social, cultural and political environment of the epoch of its composition and production, especially in terms of structure, artistic style and themes.

ALL242 African Written Poetry (3)
The course will include a holistic theoretical approach to African written poetry utilizing the Reader response, New Historicism and Feminist theories. Included will be the study of poetry and the influences of various epochs on the form and content of African written poetry.

ALL251 Folk Speech in Africa (3)
The content of the course will cover aspects of performance, aesthetics, form and function of the various communicative speech acts such as proverbs, riddles, epiphetns, euphemisms and dysphemisms. The focus of the study will be on both literary texts and everyday discourse.

ALL252 Rites of Passage: A Study of Social Dramas (3)
The course content will cover performance, structural patterns and functions of the calendar and life cycle ritual ceremonies that affect the individual and the community. Also the importance of symbolism, role-play and reversal of roles will be explored from various theoretical perspectives.

ALL253 The Sociology of Literature (3)
Basically, the course will include the importance of sociological considerations in understanding literature. These encompass the writer’s social situation, the production and the consumption of written literature and the impact of the historical, cultural and political environment on the production and consumption.

ALL231 The Structure of the Sentence (3)
The course content will include the discussion of the principles and methods of sentence analysis focusing on the basic structure of the sentence. The standard generative grammar model will be used in sentence analysis, based on Setswana.

ALL322 The Structure of Meaning (3)
The course content will include the definition of meaning, types of meaning, semantic features and lexical relations. It will also consider the modes of meaning interpretation, context, deictic expressions, presuppositions and speech acts.

ALL323 Introduction to Stylistics and Discourse Analysis (3)
The content of the course will include the study of register, stylistic variation, discourse devices, discourse appropriateness and conversation structure.

ALL331 Introduction to Translation (3)
The course content will comprise the theory of translation; types, modes and problems of translation; the role of semantics, pragmatics and discourse analysis in translation and structural adaptation. Case studies will be taken from the Botswana languages as well as international languages spoken in Botswana.

ALL332 Language Instruction V (Beginners’ Level) (3)
The content of the course will include an introduction to the culture and history of one of the major languages of Africa and training in the basic use of the language such as essential expressions and self-expression. The course will also introduce the students to some of the basic structures of the language.

ALL333 Introduction to Research Methods (3)
The course will introduce students to both quantitative and qualitative research paradigms in African Languages and Literature. Also the content will include objectivity in scientific research, topic selection, definition of the problem, significance of a research study, formulation of hypotheses, research methodology, literature review and research proposal framework.

ALL334 Introduction to Modern Theories in Grammatical Analysis (3)
The course content will include a study of the current conception of grammar, the modern grammatical theories, and their application to African language description.

ALL335 Language Instruction Course VI (3)
The course content will include the study of the current state of one of the major languages of Africa as well as a study of some selected areas of usage such as reporting, expressing one’s feelings or seeking attention etc. Also, the course will introduce the students to the description of the language’s morphology and syntax.

ALL336 Field Research Preparation and Proposal Writing (3)
The course will include techniques of fieldwork, data collection as well as archival research, resource planning, ethical issues and how to write a research proposal.

ALL337 Introduction to Computational Linguistics (3)
The course will introduce the students to a variety of topics in computer-based language analysis and processing among which three will be examined in a given semester. These topics will include: computational syntax, computational phonology, computational semantics, computational lexicography, speech synthesis, and machine translation.

ALL341 Introduction to Literary Theory (3)
The course content will include five literary theories (mainly Structuralism, Psychoanalysis, Reception, Marxism and Deconstruction) from which at least three will be selected for discussion in a particular semester.

ALL342 African Oral Narratives (3)
The course will cover various sub-genres of institutionalized sub-Saharan African oral narratives such as myths, folktales and legends that will be studied, analyzed and interpreted from various theoretical viewpoints.

ALL343 Introduction to African Popular Theatre (3)
The course content will include the history of Popular Theatre in Africa from the pre-colonial to the postcolonial era with reference to socioeconomic problems facing Africa. Emphasis will be on practical drama and performances in schools and villages within the concept of intervention-participation-consensitisation.

ALL351 Politics and Southern African Poetry (3)
The course content will include an analysis and interpretation of translated or transcribed oral poetry that deals with socio-political criticism and the influence thereof of oral traditions on political poetry in general. Also included will be the influence of Negritude and African-American poetry on Southern African protest and resistance poetry.

ALL352 Epic Performance in Africa (3)
The content of the course will include basic characteristics of African epics, their historical contexts, and the mode of delivery to the audience.

ALL353 African Oral Literature and the Media (3)
The content will include a study of the multiple ways in which the mass media influence oral literature and how oral literature permeates media-manipulated texts and contexts as well as how it is portrayed by the media in its various forms.

ALL354 The Contemporary Setswana Novel (3)
The course will include a critical analysis of artistic styles, thematic trends, inter-textual relationships and literary quality of the Setswana novels recently written and published in Botswana and South Africa.

ALL421 Introduction to Historical and Comparative Linguistics based on Africa (3)
The course will include an introduction to historical and comparative linguistics as a discipline and then look at how this approach has been used in the comparison, classification and accounting for patterns of change in the languages of Africa.

ALL422 A Sociolinguistic Study of Southern Africa (3)
The course will include the patterns of language use in Botswana, the factors that influence language change and maintenance and the various efforts, both formal and informal, which are being made in order to preserve, promote and empower languages.

ALL423 The Bantu and Khoesan Languages of Southern Africa (3)
The course content will consist of the origin and migration of the Bantu and Khoi-San language speakers, the settling of the Bantu languages in the Southern African region, the classification of the Bantu and Khoi-San languages and their major characteristics.

ALL431 Introduction to Psycholinguistics (3)
The course will include the various approaches to psycholinguistics, language production and comprehension, the biological foundations of language and language pathology.

ALL432 Language Instruction VII (3)
The course content will include discussion of the current state of one of the major languages of Africa, comprehension texts and an introduction to the literature created in the language, oral and aural skills and structural analysis.

ALL433 Research Project: Data Collection (3)
The research project will be carried out through regular consultation with the relevant lecturer and will lead to the collection of data on the chosen research topic and documentation of the research findings.

ALL434 Introduction to Applied Linguistics (3)
The course content will include the study of mental representation of grammar, the child’s processing of grammar, the psycholinguistic approach to mental process and the language learning processes.

ALL435 Language Instruction VIII (3)
The course synopsis will include a discussion of the salient issues concerning the current state and future situation of one of the major languages of Africa, advanced comprehension texts and a good understanding of the literature created in the language, advanced oral and aural skills and an in-depth descriptive knowledge of the language.

ALL436 Research Project: Data Analysis and Interpretation (3)
The course will consist of supervised work on hands-on data analysis, interpretation and research report write-up.

ALL441 World Literature in Setswana Translation (3)
The content of the course will include primarily literary texts translated into Setswana from other African languages, and secondly those translated from foreign/non-African languages. A study of how (and why) cultures are constructed, inter-textualized and manipulated through translation will also be done.

ALL442 Creative Writing, Theory and Practice (3)
The content of this course includes techniques of writing in three genres: short stories, plays (drama) and poems (poetry).

ALL443 Oral Poetry in Botswana (3)
The course will cover the performance and significance of the various forms of indigenous oral poetry that are composed and rendered by oral artists under different cultural and situational contexts in Botswana.

ALL451 Studies in African Aesthetics (3)
The course content will include theories of aesthetic judgment and arguments propounded by philosophers, artists, literary critics and consumers of objects of aesthetic value.

ALL452 Popular Culture in Africa (3)
The course will include a study of culture, subcultures and visual culture with emphasis on music, dance, films/videos, television, computer and their interpersonal relationship. It will also include the ideology of mass culture, theories of consumption and its confrontation with politics, religion and the spirit.
of conservatism.

ALL453 Women’s Literature in Botswana (3)
The course will include a study on various literary texts created by women in Botswana from oral to written, how they handle relations of power, sexuality and gender issues, their vision and communicative strategies.

ALL454 Children’s Traditions and Dramatics (3)
The content of the course will include research on children’s traditional games, storytelling, songs, and methods of dramatic improvisation and creative writing for children’s books.

ALL455 Postcolonial Theory and African Literature (3)
The course examines from a historical perspective the national, transnational and translational boundaries of culture with reference to colonial and post-colonial literature.

ALL456 Introduction to African Thought (3)
The course content will include philosophical treatise that exist within the discipline of African philosophy and thought on various topics that by their very nature raise questions of philosophical discussion.

GEC261 Languages of Botswana (2)
The content of the course will include the study of the various language groups that settled in what is now Botswana and how they have interacted over the years to give rise to the current language situation. The course will also discuss the role of Setswana as national and English as official language.

GEC262 Introduction to Cultural Studies (2)
The content of the course includes theories of cultural production, practices and values in Africa. Sensitive questions of ethnicity and multiculturalism are also discussed.

GEC361 Introduction to Rhetoric and Public Speaking (2)
The content of the course will include aspects of African literature, language and philosophy with reference to interpersonal communication.

DEPARTMENT OF ENGLISH

Departmental Regulations
Subject to the provisions of the Academic General Regulations and the Faculty of Humanities Special Regulations, the following Departmental Regulations shall apply:

Programmes and Titles of Degrees
The Department of English offers the following programmes leading to the award of a Degree:
a) Single Major Programme leading to the award of a Bachelor of Arts Degree as per Departmental Regulations;
b) Combined Major/Minor Programme with English as the Major leading to the award of a Bachelor of Arts Degree as per Departmental Regulations;
c) Combined Major/Minor Programme with English and a second subject other than English as Majors leading to the award of a Bachelor of Arts Degree as per Departmental Regulations;
d) Combined Major/Minor with English as the Minor leading to the award of a Bachelor of Arts Degree as per Departmental Regulations, if the student is registered in the Faculty of Humanities;
e) Multi-disciplinary Programme leading to the award of a Bachelor of Arts Degree as per Departmental Regulations.

Entry Requirements
Admission requirements to the Programmes in the Department of English are specified in the Faculty of Humanities Regulation 22.2.

Award of Degree
A student must satisfy the appropriate provisions of General Academic Regulation 20.4 to be awarded a Degree.

Career Opportunities for Graduates of the Department of English
1.5.1 Career prospects for Bachelor of Arts Degree holders in English include professional employment in the fields of:
a) Education, teaching at secondary and tertiary levels or in the field of curriculum development in the Ministry of Education;
b) Print and Electronic Media;
c) Publishing;
d) Public Relations;
e) The Civil Service.
1.5.2 Training in English studies provides the recipient with the kind of adaptable mind that enables him/her to fit, with some additional training, into a wide range of managerial and administrative positions, including posts in financial and business institutions.

Course Structure
1.6.1 Courses in the Department of English shall be offered at Levels 100 to 400 for the undergraduate programmes as outlined below.
1.6.2 In addition to the Department’s courses, an undergraduate candidate majoring in English shall take General Education Courses (GEs) and electives in accordance with General Regulation 00.2124.

Level 100
Semester 1
Core Courses
ENG121 Introduction to English Language Description and Usage (3)
This course provides an overview of basic grammatical concepts and terms that students can apply to particular examples and difficulties of usage.
ENG113 Introduction to Literature: Prose (3)
This course is designed to introduce first-year students to the literary aspects of the essay and (auto) biography, and to the structure and components of the novel and short story.

Semester 2
Core Courses
ENG131 Writing in English (3)
The course familiarises students with various rhetorical principles and examines various features of discourse types specific to particular genres.
ENG123 Introduction to Literature: Drama and Poetry (3)
This course is designed to introduce students to the literary and theatrical aspects of drama, and to the structure and literary strategies of poetry.

Level 200
Semester 3
Core Course
Band A: Language
ENG221 The Pronunciation of English (3)
This course introduces students to articulatory processes and the description of English sounds.

Optional Courses
Band B: English Literature
ENG212 Introduction to English Literature: The Novel (3)
The course seeks to introduce students to the development of the English Novel from its infancy in the 18th Century to modern times. The course broadly examines the emergence of the English Novel and the conditions under which it emerged.

Band C: African Literature
ENG213 Prose Literature of Southern Africa (3)
This course introduces students to the prose literature of the Southern African region, covering various historical, political and social topics as they are written about in the literature of the region.

ENG223 The Drama of Southern Africa (3)
This course introduces students to the drama of Southern Africa, covering the genesis and development of Southern African drama, identifying a dramatic form that is Southern African, and relating, comparing and contrasting such dramatic forms to those from other parts of Africa.

Semester 4
Core Course
Band A: Language
ENG221 Introduction to English Linguistics (3)
An introductory over-view of Descriptive Linguistics, viewed as a foundation for the study of English Language and Linguistics courses.

Optional Courses
Band B: English Literature
ENG222 Introduction to English Literature: Poetry and Drama (3)
The course seeks to introduce students to some of the major poets and dramatists in English Literature. It examines the works of some of the major poets and dramatists in English Literature from Chaucer up to the present time.

Band C: African Literature
ENG223 The Poetry of Southern Africa (3)
This course introduces students to the poetry of Southern Africa. While focusing on the modern written forms, it also points to the living, everyday experience of oral traditions of poetry. The course is broadly representative of the countries, themes and forms of poetic expression in the region.

Band D: Theatre Studies
ENG217 Theatre History (3)
This course introduces students to the study of Theatre, from a historical perspective. The course traces developments in Theatre across the world, highlighting the circumstances that have either helped develop or stifle it.

Level 300
Semester 5
Core Course
Band A: Language
ENG331 Phonology of English (3)
The course introduces students to some of the
phonological theories on the pronunciation of English and other languages known to them. In addition, it gives students the opportunity to apply this knowledge to some data to enhance their understanding of the theories.

Optional Courses
Band A: Language
ENG341 Introduction to Sociolinguistics (3)
The course introduces students to the relationship between language and society. It focuses in particular on the description of varieties of English and their use in various contexts, and on the analysis of and solutions to language problems, especially in developing countries.

ENG441 Introduction to Pragmatics (3)
This course introduces students to Pragmatics, a discipline which studies various factors involved in appropriate use and understanding of language. It looks at such factors as the speaker's intentions and how they are surmised by the addressee, the speaker's and addressee's background attitudes and beliefs, their understanding of the context in which the utterance is made, and their knowledge of how language can be used for a variety of purposes.

Band B: English Literature
ENG352 The Metaphysical Poets (3)
This course will chart the development during the 16th-17th Centuries of Metaphysical poetry through its chief practitioners: Donne, Herbert, Vaughan and Marvell. It will study the poetic devices, styles and subjects that link together these writers as Metaphysical poets.

ENG332 English Romantic Poetry: The Early Romantics (3)
This course deals with the early part of the literature that came to be known as English Romantic Poetry. Focus will be on Blake, Wordsworth and Coleridge.

ENG342 Elizabethan and Jacobean Literature: Drama (3)
The course is a study of Elizabethan and Jacobean Drama as a significant literary, cultural, political and religious expression of the Age.

ENG412 Introduction to Shakespeare (3)
This course deals with the achievement of Shakespeare as the hallmark of the English literary tradition through an exploration of three of his more famous plays and a selection of his most popular poems.

Band C: African Literature
ENG333 Critical Issues in Modern African Literature: Phases of Modern African Literature (3)
An examination of the major critical issues and trends in Modern African literature using both creative materials and critical works of African authors.
ENG353 Currents of Thought in the Literature of the African Diaspora: African-American Literature (3)
A survey of African-American literature from slave narratives to contemporary works.

ENG363 Oral Literature (3)
This course acquaints students with orality as a cultural process. It develops an appreciation of verbal art and examines the fundamental sources and bases of the forms and structures of African and European literature.

ENG373 Botswana Literature (3)
The course is a critical study of the novel, poetry, short story and drama of Botswana. It will also trace the development of the literature. The course will focus on stylistic, thematic and generic differences and similarities in the works.

Band D: World Literature
ENG334 Commonwealth Literature (3)
A selection of works of prose, fiction, drama, poetry and essays drawn from a number of literary traditions in The Commonwealth. The choice of texts for study will help students to reflect on the problematic use of the English language as a medium of literary expression in all Commonwealth societies.

Band E: Theory
ENG415 Readings in Literary Theory 1 (3)
The course surveys the changing conceptions of the nature and function of literature in the Western tradition from Plato and Aristotle in the Classical period to Tolstoy and Marx in the nineteenth century.

ENG317 African Drama (3)
The course offers students an opportunity to critically look at a representative selection of African dramatic literature. The course helps students to identify and appreciate the various themes explored in drama, its various styles and techniques and its role in society.

ENG327 Practical Theatre (6, 2 Semesters)
This course is an introduction to the practice of theatre. It involves such processes as script analysis, research, rehearsal, stagecraft and performance. The course will offer students an opportunity to approach theatre holistically and to understand the relationships between the various arts that go into its making.

Semester 6 Core Course
Band A: Language
ENG311 Modern English Grammar (3)
This course is a detailed description and analysis of modern English grammar: meaning of grammar, word classes in English, English phrase types and English sentence structure.

Optional Courses
Band A: Language
ENG321 Usage in English (3)
The course examines common problems associated with word class usage (noun/gerund agreement, tense and voice in verbs, comparative and superlative forms in adjectives and adverbs) and sentence usage, including modification, coordination, subordination and fragmentation.

ENG361 Morphology of English (3)
The course provides students with an understanding of the morphological structure of English and their own languages. It also teaches students how to analyse any language morphologically.

Band B: English Literature
ENG312 Milton (3)
The course provides a detailed study of the seminal poetical writings of John Milton. It will place Milton in the context of the tradition of world Epic poetry and of English 17th Century poetry, and systematically explore Miltonic ideas about literary genre, politics, religion and philosophy.

ENG362 English Romantic Poetry: The Later Romantics (3)
This course attempts to establish the relationship between the Early Romantics and the Later Romantics in terms of theme and style. Focusing on Keats, Shelley and Byron, it will attempt to place the Later Romantics in their proper literary and socio-political context.

ENG372 Elizabethan and Jacobean Poetry (3)
The course examines how Elizabethan and Jacobean writers employed the poetic mode to express views on private and personal feelings, and on social and public issues.

Band C: African Literature
This course continues the discussion of the major issues and trends in Modern African Literature using both creative works and critical writings of African authors.

ENG343 Modern African Poetry (3)
This course deals with the modes, styles and themes of modern African poetry, and the socio-political and cultural influences that have shaped it. The traditions of modern African poetry are studied across periods and regions.

ENG393 Currents of Thought in the Literature of the African Diaspora: African-Caribbean Literature (3)
A critical study of Caribbean literature within the context of the forces and conditions that occasioned its advent, and continues to impact its survival and future.

Band D: World Literature
ENG324 Twentieth Century American Literature (3)
A critical examination of twentieth-century American literature using representative texts of various genres: fiction, drama and poetry.

Band G: Theatre Studies
ENG327 Practical Drama (6, 2 Semesters)
This course is an introduction to the practice of theatre. It involves such processes as script analysis, research, rehearsal, stagecraft and performance. The course will offer students an opportunity to approach theatre holistically and to understand the relationships between the various arts that go into its making.

Level 400
Semester 7
Core Course
Band A: Language
ENG421 Approaches to Syntax (3)
This course provides students with knowledge of various approaches to syntax with specific emphasis on functional approaches.

Optional Courses
Band A: Language
ENG331 Language Acquisition (3)
The course introduces students to the principles governing how humans acquire a first language, and a second or additional language. Important aspects of the course include the role of the brain and other speech organs in language processing, and learner strategies in Second Language Acquisition.

ENG471 Introduction to Literary Stylistics (3)
Students will be introduced to a range of linguistic theories on which their work will be based. This course is intended for students who have completed at least two core English courses, as well as for students with a strong background in theoretical and practical approaches to stylistics.

ENG422 The Development of the English Novel (3)
This course is a chronological study of the development of the English Novel from its 18th Century inception by Defoe through to Romantic conceptions of the form. It will consider the novel’s evolution as a form of social commentary and its response to diverse social and political pressures.

ENG432 Victorian Poetry (3)
A Study of 19th Century English Victorian poetry, identifying the important themes and the characteristic poetic features of the age. It will consider the Victorian concerns about death, love, religious faith, marriage, the position of women, and the great growth and optimism of the age.

ENG442 Modern English Prose Fiction: 1900–1930 (3)
The course is an intensive study of a major work by each of the following writers: Joseph Conrad, E.M. Forster, D.H. Lawrence, Virginia Woolf and James Joyce. Students will explore and analyse the way these works relate to the intellectual, cultural and social concerns of the period.

ENG452 Shakespearean Drama (3)
This course considers a selection of Shakespearean tragic, comedic and historical texts, as well as their cultural setting, historical context and literary environment.

ENG413 The African Novel I (3)
A study of the African novel written in English or translated into English from indigenous and other languages of the continent of Africa. This study concentrates on the characteristic themes and concerns of the African novel.

ENG433 Introduction to Gender Issues (3)
This course will combine theoretical and practical approaches to literature in order to clarify how, and the extent to which, feminist criticism can be applied to analyse literary texts.

ENG424 The Novel in the Modern World (3)
Focusing on major novels published since 1950, this course provides an overview of how novelists from different parts of the world have developed the form as a means to address important social, cultural and political issues.

ENG416 Research Essay (6, 2 Semesters)
The course offers the student the opportunity to conduct supervised research which should result in the submission of an essay of 5000 – 7000 words.

ENG417 Theory and Practice of Drama (6, 2 Semesters)
This is a course designed for students with an interest in the practice of theatre. It is intended to deepen students’ practical theatre skills and some important theories underlying the skills of acting, directing for the stage, set design, lighting, script-writing.

ENG427 Dramatic Literature (3)
The course explores the importance of play texts in the development of theatre traditions around the world. It is designed to help students appreciate the difference between drama as literature and drama as theatre.

ENG451 Introduction to Semantics (3)
An introductory course to semantics which promotes an understanding of a framework for conceptualising meaning leading to clear and logical thinking.

Optional Courses
Band A: Language
ENG411 Form, Function, and Variation in English (3)
The course focuses on the practical analysis of texts against a background of various theoretical approaches to stylistics.

ENG431 Introduction to Discourse Analysis (3)
This course introduces students to Discourse Analysis, a discipline which is concerned with how language users produce and interpret language in situated contexts and how these constructions relate to social and cultural norms, preferences, and expectations. Among other things, the course focuses on the nature and structure of written and spoken discourse and attempts to link the characterization of speaker/writer meaning and its explanation in the context of use.

ENG481 Language and Gender (3)
This course introduces students to a range of gender-related theoretical and analytical issues in the structure and use of English, and examines the current trends in gender-related language reform.

ENG462 Shakespearean Poetry (3)
This course will explore a selection of Shakespeare’s sonnets and excerpts from the longer poems, focusing on major themes of Elizabethan poetry such as love, time, death, religion and politics.

ENG472 The Development of the English Novel: The Victorian English Novel (3)
A chronological study of the traditional English novel from the Romantic Movement to the end of the reign of Queen Victoria. Problems the novel address include the decline in religious faith due to Darwinism, and the social pressures of the increase in urbanisation and industrialisation.

ENG482 Modern English Drama (3)
An exploration of the stylistic and thematic advances made by British playwrights at the beginning of the 20th century and their imprint on the development of drama during the rest of the century.

ENG492 Modern English Poetry (3)
The poets of the period explore the material and spiritual dislocations that were signs of the break-up of Western Civilisation. The course studies the poetry of Hopkins, W.B. Yeats, T.S. Eliot and the poetry of WWI.

Band C: African Literature
ENG443 The African Novel II (3)
A study of the design and technical innovations to be seen in the African novel written in English or translated into English from indigenous and other languages of the continent of Africa.

ENG463 Gender Issues in African Literature (3)
Requiring a comprehensive reading of feminist theory and some literary texts, the course encourages students to draw on different disciplines to explore representations of motherhood and fatherhood in nationalist politics and literature; visual representations of female and male sexuality, mainstream feminist criticism and “womanism.”

ENG453 Bessie Head (3)
This course focuses on Bessie Head as one of the major writers to emerge from Botswana and Africa.

Band D: World Literature
ENG434 Non-European World Literature (3)
This course provides an overview of the literatures of unfamiliar cultures, covering topics such as classical Asian poetry, the novel in China and Japan, magical realism in Latin America, identity and social status in multi-ethnic and multi-lingual societies, the problems of translation.

Band E: Theory
ENG435 Readings in Literary Theory II (3)
The course surveys the various and sometimes conflicting twentieth-century approaches to literature from Russian Formalism to the more recent Feminist and Postcolonial arguments.

ENG425 Seminar on Feminist Literary Theory (3)
Although the course demands an in-depth reading of feminist theory, emphasis will also be placed on interdisciplinary approaches. Students will be encouraged to consider how theoretical statements affect their own thinking and ideologies.

Band F: Project/Long Essay
ENG416 Project/Essay in either Language or Literature (6, 2 Semesters)
The course offers the student the opportunity to conduct supervised research which should result in the submission of an essay of 5000 – 7000 words.

Band G: Theatre Studies
ENG417 Theory and Practice of Drama (6, 2 Semesters)
This is a course designed for students with an interest in the practice of theatre. It is intended to deepen students’ practical theatre skills and some important theories underlying the skills of acting, directing for the stage, set design, lighting, script-writing.

Programme Structure
1.7.1. In each semester at Level 100 English shall comprise 6 credits made up of 1 core course in Language (3 credits) and 1 core course in Literature (3 credits).
1.7.2 In each semester at Level 200 English shall comprise 6 credits made up of the following:
   a) A core course in Language; and
   b) A Literature course selected from the available options.

1.7.3 In a Combined Degree (Major/Major) Programme, English shall comprise the following at Level 300: In each semester, 6 credits made up of the core Language course and one Literature course selected from any of the bands.

1.7.4 In a Combined Degree (Major/Major) Programme, English shall comprise the following at Level 400: In each semester, 6 credits made up of the core Language course and one Literature course selected from any of the bands.

1.7.5 In a Combined Degree (Major/Minor) Programme, where English is the Major subject, English shall comprise the following at Level 300: a) In each semester, 9 credits made up of the core Language course, one Literature course, and either another language course or another Literature course from a different band; b) Over the two semesters, a student may only take a maximum of 9 credits in Language.

1.7.6 In a Combined Degree (Major/Minor) Programme, where English is the Major subject, English shall comprise the following at Level 400: a) In each semester, 9 credits made up of the core Language course, one Literature course and another Language or another Literature course, provided it is from a different band; b) Over the two semesters, a student may only take a maximum 9 credits in Language.

1.7.7 In a Combined Degree (Major/Minor) where English is the Minor subject at Level 300: In each semester English shall comprise 3 credits selected in consultation with the Head of Department from the Department’s course offerings from Level 300 and above.

1.7.8 In a Combined Degree (Major/Minor) where English is the Minor subject at Level 400: In each semester, English shall comprise 3 credits selected in consultation with the Head of Department from the Department’s course offerings from Level 300 and above.

1.7.9 In a Single Major Programme at Level 300, English shall comprise the following in each semester: 15 credits made up of:
   a) The core Language course, one optional Language course, two Literature courses selected from different bands and another Language or Literature course also from a different band.
   b) Over the two semesters, a student must take at least 12 credits, the equivalent of 4 courses, in Language.

1.7.10 In a Single Major Programme at Level 400: In each semester, English shall comprise 15 credits made up of the following:
   a) A core Language course;
   b) One optional Language course;
   c) Two optional Literature courses provided that each course is from a different band;
   d) A project or long essay in either Language or Literature (6 credits over two semesters).

1.7.11 In a Multidisciplinary Programme at Levels 300 and 400, the student shall, in consultation with his/her tutor and the Head of Department, select for credit relevant courses from the Departmental offerings. Such courses shall normally be at Level 300 and above.

Assessment and Examination
Student performance in each course shall be evaluated by taking into account continuous assessment and final examination, except in the case of ENG416: Research Essay, where the completed essay will take the place of a final examination.

Progression from Semester to Semester
In order to proceed from one semester to the next, a student must maintain a cumulative GPA in accordance with General Regulation 00.9.

CHINESE STUDIES PROGRAMME
Programme Regulations for the Bachelor of Arts Degree in Chinese Studies
General provisions
The General Academic Regulations and the Faculty of Humanities Special Regulations shall apply.

Entrance Requirements
Eligibility for admission to the programme shall be in accordance with the General Academic Regulations and the Faculty of Humanities Special Regulations 22.2.

Programme Structure
Chinese studies at the University of Botswana shall consist of the following programmes:
1. Single Major
2. Minor either in Language-only option or Language and cultural studies option.

SINGLE MAJOR:
3.1 The Chinese Studies programme is a concentrated Single Major leading to a Bachelor of Arts degree. This concentration is necessary in view of the high language standard to be mastered in four years.

3.2 In the Third Year, Single Major Students will spend a compulsory year in China at a partner institution. This year is an indispensable feature in order to produce graduates with sufficient fluency in Chinese and familiarity with the society. It will however be expensive, and it is therefore necessary that students’ sponsors should be aware of the full cost, and able to guarantee it, for any student to be admitted to the Single Major. (In this regard the programme is similar to some existing high-cost programmes such as medicine.)

3.3 Teaching will be in English at lower levels. This is in accordance with international best practice and is necessary because of the relative difficulty of beginning Chinese.

3.4 To successfully complete the programme, students will be required to obtain 122 credits, of which 39 will be from core language courses, 30 from a compulsory year abroad in China, 30 from optional social/historical courses, 15 from electives and 8 from GEC courses.

3.5 The following will be the core courses:
   CHN 101: Basic Mandarin 1 6 credits
   CHN 102: Basic Mandarin 2 6 credits
   CHN 103: Introduction to China 3 credits
   CHN 104: Understanding China 3 credits
   CHN 201: Pre-intermediate Mandarin Chinese 1 6 credits
   CHN 202: Pre-intermediate Mandarin Chinese 2 6 credits
   CHN 203: Ancient and Imperial History of China [to 1911] 3 credits
   CHN 204: Modern History of China [Since 1911] 3 credits
   CHN 205: Chinese Philosophy and Religion 3 credits
   CHN 206: Political Economy of Contemporary China 3 credits
   CHN 207: Introduction to Chinese Literature in Translation 3 credits
   CHN 300: Semester and Year Abroad 30 credits
   CHN 401: Advanced Mandarin Chinese 1 6 credits
   CHN 402: Advanced Mandarin Chinese 2 6 credits
   CHN 403: Africa’s Relations with China 3 credits
   CHN 404: China, Globalization & Changing Power Relations 3 credits
   CHN 405: Chinese Literature and Culture 3 credits
   CHN 406: Business Chinese 3 credits

3.6: Five options will be selected from a list of approved optional courses from other departments.

3.6.1 It should be noted that due to the special nature of this programme, all the Chinese Studies courses (both language and non-language) are core. The optional courses are approved courses which may be taken from other subjects. The programme does not include any electives.

3.6.2 The following list is provided for this year (2011–12); however, the Faculty may alter the list in accordance with General Regulation 00.9.

The following will be the core courses:—

Business
   MGT 100: Principles of Management 1 (3)
   MKT 100: Principles of Marketing 2 (3)
   THM 101: Principles of Tourism 1 (3)
   MGT 200: Organisational Design and Development (Pre-MGT 100) 2 (3)

History and Politics
   ARC 102: World Prehistory 1 (3)
   HIS 102: Introduction to the Study of History 1 (3)
   POL 113: Foreign Policy and Diplomacy 3 (3)
   HIS 201: African Cultures and Civilisations to c.1500 1 (3)
   HIS 214: Agriculture & Industrialisation in the World Economy to 1945 2 (3)
   HIS 333: Intro to Foreign Policy, Diplomacy & International Relations 1 (3)
   HIS 334: Superpowers in the 20th Century 2 (3)
   HIS 446: Growth, Policy and Poverty in Africa, L. America, S & SE Asia 2 (3)
POL 401: International relations 1 (3)

Language and Literature
ENG 213: Prose Literature of Southern Africa 1 (3)
ENG 223: The Drama of Southern Africa 1 (3)
ENG 233: The Poetry of Southern Africa 2 (3)
ALL 353: African Oral Literature and the Media (3)
ENG 317: African Drama 1 (3)
ENG 373: Botswana Literature (can be taken in year 4) 1 (3)
ALL 453: Women’s Literature in Botswana 1 (3)
ENG 433: Introduction to Gender Issues 1 (3)
ENG 453: Bessie Head (can be taken in year 4) 2 (3)
ENG 463: Gender Issues in African Literature 2 (3)

Media Studies
BMS 320: Media and Society (from 2011-12) 1 (3)
BMS 329: Development Communication (from 2011-12) 3 (3)
BMS 421: Current Issues in African Media (from 2012-13) 1 (3)

Philosophy and Religion
TRS 107: African Traditional Religions 2 (3)
TRS 304: African Philosophy and Culture 1 (3)
TRS 409: African Christian Theologies 1 (3)
TRS 413: Hinduism 1 (3)
TRS 418: Contemporary African Philosophy 2 (3)
TRS 424: Buddhism 2 (3)

Society
SOC 123: Introduction to Social and Cultural Anthropology 1 (3)
SOC 236: Social Inequality 2 (3)
SOC 324: Sociology of Gender 2 (3)
SOC 424: African Social Thought 1 (3)

3.7 The programme structure is as follows:

Year 1
Semester One
CORE
CHN 101: Basic Mandarin (6)
CHN 103: Introduction to China (3)

1 OPTIONAL
Choose one (1) from the following:

MG1 100: Principles of Management
THM 101: Principles of Tourism
ARC 102: World Prehistory
SOC 123: Introduction to Social & Cultural Anthropology

COM 111(3)
ICT 121 (2)
Total credits 17

Semester Two
CORE
CHN 102: Basic Mandarin 2 (6)
CHN 104: Understanding China (2)

1 OPTIONAL Choose one (1) from the following:

MKT 100: Principles of Marketing
HIS 102: Introduction to the Study of History
TRS 107: African Traditional Religion

Total credits 17

Year 2
Semester One
CORE
CHN 201: Pre-intermediate Mandarin Chinese (6)
CHN 203: Ancient and Imperial History of China (3)
CHN 205: Chinese Philosophy and Religion (3)
CHN 207: Introduction to Chinese Literature in Translation (3)

Total credits: 15

Semester Two
CORE
CHN 202: Pre-intermediate Mandarin Chinese 2 (6)
CHN 204: Modern History of China (3)
CHN 206: Political Economy of Contemporary China (3)

1 OPTIONAL (3)
Total credits: 15

Year 3
YEAR AT CHINESE UNIVERSITY
30 credits, semesters 1 & 2

Year 4
Semester One
CORE
CHN 401: Advanced Mandarin Chinese 1 (6)
CHN 403: Africa’s Relations with China (3)
CHN 405: Chinese Literature and Culture (3)

1 OPTIONAL Choose one (1) from the following:

HIS 201: African Cultures and Civilization to c.1500
HIS 333: Intro to Foreign Policy, Diplomacy  & International Relations
ENG 401: International Relations
ENG 373: Botswana Literature (3)
ALL 453: Women’s Literature in Botswana
ENG 433: Introduction to Gender Studies
TRS 304: African Philosophy & Culture
TRS 409: African Christian Theologies
SOC 424: African Social Thought

Total credits 15

Semester Two
CORE
CHN 402: Advanced Mandarin Chinese 2 (6)
CHN 404: China, Globalization & Changing Power Relations (3)
CHN 406: Business Chinese (3)

1 OPTIONAL
Choose one (1) from the following:

MGT 200: Organizational Design & Development (Prereq MGT 100)
MKT 303: Sales Management
HIS 214: Agriculture & Industrialization in the World Economy to 1954
HIS 334: Superpowers in the 20th Century
HIS448: Growth, Policy, Diplomacy & International Relations
ENG 233: The Poetry of Southern Africa
ENG 453: Bessie Head
ENG 463: Gender Issues in African Literature
BMS 329: Development Communication (from 2011-12)
TRS 418: Contemporary African Philosophy
TRS 424: Buddhism

SAC 236: Social Inequality
SOC 324: Sociology of Gender
Total credits 15

3.8 MINORS:

A Minor in Chinese Studies will be available for students in other programmes. Apart from its general educational value, a qualification in Chinese would improve employability for e.g. an engineering, tourism or business graduate.

Three possible types of secondary qualification are available:

(i) Minor in Chinese Studies (Language option) with study in China

(ii) Minor in Chinese Studies (Language option) with supplementary language study with the Confucius Institute, etc.

(iii) Minor in Chinese Studies (cultural option) For Year One and Two, Minor students will take the same language courses as the Major students. Minor students will take a reduced language component at Year Three, either in China or in Botswana, and take some non-language courses at Year Four.

3.9 Minors in the Chinese Studies Programme

Students wishing to graduate with a Minor in Chinese Studies can select either a language option or an option including language and cultural studies. For the language option, there is a further subdivision according to whether a student in China is included, or whether this is substituted by approved courses and attachments locally. All these options require 51 credits.

Minor in Chinese Studies, Language-only option.

3.10 This Minor would be suitable for a student specializing in some other subject but wishing to acquire some degree of competence in Chinese language, thus increasing employability for e.g. an engineering, tourism or business graduate.

3.10.1 Language only Option with study in China

The requirements for this option are

• 24 core credits from all the language courses at first and second year,
• 15 core credits from a winter session in China.
• 6 credits from GEC courses.
• 6 credits from electives

However, the requirement for a winter session in China may at the discretion of the Faculty be replaced by a shortened study session in China and/or alternative language courses such as Confucius Institute classes, an attachment to a Chinese company, etc.

3.10.2 Language only Option with supplementary language study in Botswana.

The requirements for this option are

• 24 core credits from all the language courses at first and second year,
• 15 core credits from alternative language courses such as Confucius Institute classes, an attachment to a Chinese company, etc.
• 6 credits from GEC courses.
• 6 credits from electives

4 Minor in Chinese Studies, Language and Cultural Studies Option

This Minor would be suitable for a student specializing in some other subject but wishing...
to acquire basic Chinese, together with a good understanding of Chinese society.

The requirements for this programme are:

• 24 core credits from all language courses at first and second year
• 9 core credits from a shortened study session in China or alternative language courses
• 18 optional credits from six of the following courses:

CHN 103: Introduction to China 3 credits
CHN 104: Understanding China 3 credits
CHN 203: Ancient and Imperial History of China to 1911 3 credits
CHN 204: Modern History of China Since 1911 3 credits
CHN 205: Chinese Philosophy and Religion 3 credits
CHN 206: Political Economy of Contemporary China 3 credits
CHN 207: Introduction to Chinese Literature in Translation 3 credits
CHN 403: Africa’s Relations with China 3 credits
CHN 404: China, Globalization & Changing Power Relations 3 credits
CHN 405: Chinese Literature and Culture 3 credits

4.1 To graduate with the Minor in Chinese Studies (Language and cultural studies Option) a student shall be required to obtain 51 credits, including 24 core credits from Basic Mandarin 1, Basic Mandarin 2, Pre-intermediate Mandarin Chinese 1, and Pre-intermediate Mandarin Chinese 2, 9 core credits from a shortened study session in China or at the discretion of the Faculty approved alternative language courses, attachments with Chinese companies and agencies, etc., and 18 optional credits from six of the following courses:

CHN 102: Introduction to China
CHN 103: Understanding China
CHN 203: Ancient and Imperial History of China to 1911
CHN 204: Modern History of China Since 1911
CHN 205: Chinese Philosophy and Religion
CHN 206: Political Economy of Contemporary China
CHN 207: Introduction to Chinese Literature in Translation
CHN 402: Africa’s Relations with China
CHN 403: China, Globalization & Changing Power Relations
CHN 404: Chinese Literature and Culture

4.2 Students with prior HSK qualifications in Chinese language may at the discretion of the Faculty be given credit for these as substituting for language courses.

4.3 The list of approved optional courses from other departments shall be determined and published as appropriate from time to time.

5. Assessment

Assessment shall normally include course assessment as provided for in General Regulations, including essays, tests, presentations, project assignments, group exercises, practical exercises, and other forms of assessment appropriate to the particular course, and final examinations, but the assessment requirements may vary between courses according to the approved course prescriptions.

6. Awards in Chinese Studies

Bachelor of Arts Degree: To graduate as Bachelor of Arts in Chinese Studies, students must qualify for a BA under the General Regulations of the Faculty of Humanities, and satisfy the requirements for the Major in Chinese Studies.

To graduate with the Major in Chinese Studies, a student shall be required to obtain 122 credits, of which 39 will be from core language courses, 30 from a compulsory year of study in China, 30 from core social/historical courses, 15 from electives and options and 8 from GEC courses.

Minors:

To graduate with the Minor in Chinese Studies (Language option), a student shall be required to obtain 51 credits, including 24 core credits from Basic Mandarin 1, Basic Mandarin 2, Pre-intermediate Mandarin Chinese 1, and Pre-intermediate Mandarin Chinese 2, 15 core credits from a winter session in China, 6 credits from GEC courses, and 6 credits from electives. At the discretion of Faculty, the requirement for a winter session in China may be replaced by other appropriate language study, which may include a shortened study session in China, approved alternative language courses, attachments with Chinese companies and agencies, etc.

DEPARTMENT OF FRENCH

Entry Requirements

1.1. Only candidates who have passed French in the Botswana General Certificate of Secondary Education (BGCSE) or its equivalent may be admitted to Level 100 Group A

Advanced Programme.

1.2. Candidates without the above requirements may be admitted to Level 100 Group B Beginners Programme.

Level 100

Group A: Advanced Students (pre-requisite: BGCSE in French or equivalent).

Semester 1

Core Course
FRE111: Practical French Language (3)

Optional Courses
FRE112: Spoken and Written French (2)
FRE113: French for Specific purposes I (2)

Semester 2

Core Course
FRE121: Communication Skills in French (3)

Optional Courses
FRE122: Techniques of Oral and Written Expression (2)
FRE123: French for Specific Purposes II (2) Group B: Beginners (pre-requisite: None)

Semester 3

Core Courses
FRE114: Basic French Language (3)
FRE115: Oral and Written Comprehension (3)

Semester 2

Core Courses
FRE124: Oral and Written Expression (3)
FRE125: Elementary French Language (3)

Level 200

Semester 3

Core Course
FRE211: Intermediate French Language (3)

Optional Courses
FRE212: Business, Scientific and Technical French (2)
FRE213: Introduction to French Literature (2)
FRE214: Introduction to the Culture and Civilization of the French-Speaking World (2)
FRE217: French Language I (2)

Semester 4

Core Courses
FRE221: Advanced French Language (3)

Optional Courses
FRE222: French for International Relations, Tourism and Hotel Industry (2)
FRE223: Intro. to African Literature in French (2)
FRE224: Conversation (2)
FRE227: French language II (2)

Level 300

Semester 5

Core Course
FRE311: Proficiency in French Language (3)

Optional Courses
FRE312: French Novel and Poetry of the 19th Century (3)
FRE313: Introduction to French Linguistics (2)
FRE314: French Culture and Civilization (2)
FRE315: Introduction to Text Analysis (2)
FRE317: French for Tourism and Hospitality I (2)

Semester 6

Core Course
FRE325: Advanced Communicative French (3)

Optional Courses
FRE321: African Caribbean Literature in French (2)
FRE322: Culture and Civilization of French-Speaking Africa Countries (2)
FRE323: French Linguistics and Orthography (2)
FRE324: French Essay Writing
FRE327: French for Tourism and Hospitality II (2)

Level 400

Semester 7

Core Course
FRE411: French Language in Use (2)

Optional Courses
FRE413: Theory of Translation (2)
FRE414: Modern French Literature: Study of a Genre, an Author (2)
FRE415: Research Essay (2)

Semester 8
and description of different types of the French written in French. The content comprises analysis and strategies. The content of the course will cover both written and verbal.

**Assessment**

1. Performance in each course, with the exception of core courses and the Conversation course, will be evaluated by the combination of continuous assessment and the final examination in the ratio of 2.3. The final examination shall consist of a written paper of two hours duration.

2. In levels 100 to 400, the final examination for all core courses shall comprise a written paper of two hours’ duration and an oral examination of 15 minutes in the ratio of 2:1.

3. The continuous assessment of each course shall comprise a minimum of two oral and written assignments and/or two tests.

4. The ratio between continuous assessment, oral examination and written examination shall be 2.1:2.

5. At Levels 100 400, a three hour Language Laboratory class shall be regarded as equivalent to one lecture hour.

**Progression**

1. In order to proceed from one semester to the next, a student must obtain a cumulative GPA, which is in accordance with General Regulation 00.9.

2. A minimum of credit in French in the Botswana General Certificate of Secondary Education (BGCSE) or its equivalent is required in order to be admitted to Levels 200, 300 and 400 courses.

**Course Descriptions**

**FRE111 Practical French Language (3)**

This course will reinforce students’ competence in oral and written French so that they have a more spontaneous use of the French Language. Emphasis will be laid on mastering basic language functions and linguistic structures learnt by students at secondary level for effective expression in French both written and verbal.

**FRE112 Spoken and Written French (2)**

This course aims at rapidly developing students’ fluency and accuracy in spoken and written French by equipping them with listening and reading skills and strategies. The content of the course will cover practical exercises both oral and written in the classroom and in the Language Laboratory.

**FRE113 French For Specific Purposes I (2)**

This French Language course aims at equipping students with reading techniques so as to understand and interpret texts of their area of specialization (economics, law and social sciences) written in French. The content comprises analysis and description of different types of the French discourse used in various disciplines offered to students at this level.

**FRE114 Basic French Language (3)**

This is an intensive French Language course intended to develop the student’s ability to communicate in French both orally and in writing. Emphasis is placed on elementary linguistic structures with emphasis on free expression (spoken and written), oral exercises in the Language Laboratory to consolidate communicative and linguistic competencies.

**FRE115 Oral and Written Comprehension (3)**

The aim of this course is to develop the students’ comprehension of spoken and written French by equipping them with some reading techniques and listening strategies and strengthening their ability to express ideas in French by means of both oral and written speech. The course will be based on oral and written comprehension of descriptive and narrative passages for essay writing.

**FRE121 Communication Skills in French (3)**

This course aims at developing the ability to use the French language efficiently in a practical way. It incorporates language activities related to all four skills that will enable learners to understand and communicate in spoken and written language.

**FRE122 Techniques of Oral and Written Expression (2)**

The aim of this course is to develop fluency and accuracy in spoken and written French. Students will be trained to introduce nuance in their oral expression through some communicative activities. Emphasis will be placed on techniques and strategies relevant to the planning and organization of writing tasks (writing reports, summaries, formal and informal letters, expressing opinions etc.)

**FRE123 French for Specific Purposes II (2)**

This French Language course aims at equipping students with reading techniques so as to understand and interpret texts of their area of specialization (Library and Information Studies, History etc.) written in French. The content comprises analysis and description of different types of the French discourse used in various disciplines.

**FRE124 Oral and Written Expression (3)**

This course aims at helping students use acquired communication skills so as to express themselves freely in accurate spoken as well as written French. Communication activities will be performed in both spoken and written French in order to give students self-confidence in the use of the French language.

**FRE125 Elementary French Language (3)**

This course will further develop communicative skills and introduce new speech acts and grammatical structures, and building up vocabulary on new topics in order for them to achieve proficiency in spoken and written French. The content includes the consolidation of language functions and grammatical structures already acquired and the introduction of new ones.

**FRE211 Intermediate French Language (3)**

This course aims at consolidating communicative fluency and grammatical accuracy in order to help students achieve proficiency in spoken French. Students will acquire useful oral and writing skills for setting up efficient communication in French within standard situations. Focus will be placed on the study of new language forms and functions.

**FRE212 Business, Scientific and Technical French (2)**

This course aims at giving students an opportunity to learn the French language that can be used in professional situations of communication. A study of the French language mechanisms and structures that is necessary for understanding scientific and technical texts written in French. Study of the common and important commercial vocabulary related to the economic field.

**FRE213 Introduction to French Literature (2)**

This course is offered to introduce students to a variety of basic literary genres of particular authors from France: novels, short stories, and poems, of intermediate difficulty. The main objective will be to introduce students to a basic vocabulary of literary discourse in French, to make them aware of literary style and help them improve communicative competence in French.

**FRE214 Introduction to Culture and Civilization of the French Speaking World (2)**

This course intends to examine aspects of the culture and civilization of the French-speaking world. A survey will be made of civilization of French-speaking countries through authentic materials based on economy, social life and politics. Students will have the opportunity to compare aspects of culture and civilization of the French-speaking world with their own culture.

**FRE217 French Language I (2)**

This course is designed to develop students’ competence in spoken and written French so that they may have a more spontaneous use of the French language. Emphasis will be laid on mastering basic language functions and linguistic structures for effective expression in both written and spoken French. The content of this course will cover practical exercises, both oral and written, in the classroom and the language laboratory.

**FRE221 Advanced French Language (3)**

This course aims to help students express themselves as clearly as possible with more confidence and accuracy. Emphasis is on exercises reflecting real-life language use and leading to better pronunciation and grammatical control. It is based on oral and written exercises aimed at broadening vocabulary and improving style. Composition will cover the following areas: description, portrait and narration.

**FRE222 French for International Relations, Tourism and the Hotel Industry (2)**

This course aims at giving students an opportunity to learn the register of French typically used in a professional situation of communication. Study of vocabulary and savoir-faire related to international relations or to tourism and the hotel trade. Students are to choose one of the following two topics: French for International Relations or French for Tourism and the Hotel Industry.

**FRE223 Introduction to African Literature (2)**

This course is offered to introduce students to a variety of basic literary genres of particular authors from francophone Africa: novels, short stories, and poems, of intermediate difficulty. The main classroom activities comprise oral and written exercises.
objective will be to introduce students to a basic vocabulary of literary discourse in French, to make them aware of literary style and help them improve communicative competence in French.

FRE224 Conversation (2)
This course aims to develop students' ability to understand and produce general notions (basic concepts) and help them improve their command of spoken French. Real-life documents as well as communicative activities will be used to strengthen the students' ability to communicate in French. Conversation from a topic, a text, a film, a documentary etc. will lead to written exercises.

FRE227 French Language II (2)
The content of this course includes the consolidation of language functions and grammatical structures already acquired by students and the introduction of new ones. It will focus on essential linguistic (oral and written) communication skills so as to be able to use French effectively for the purpose of practical communication. This course will develop students' ability to use the French language in a practical way.

FRE311 French Novel and Poetry of the 19th Century (2)
This course aims at helping students achieve proficiency in spoken French and improve their written language skills. Students will obtain a deeper knowledge of the structure and functioning of the French language in order to write and speak better in French.

FRE312 French Novel and Poetry of the 19th Century (2)
The aim of this course is to introduce students to the major schools and movements of French literature through the works of some of the leading writers of the French tradition and to familiarize them with particular expressions and stylistic features used by selected authors in their work. Students will become familiar with major writers and schools of the French tradition and through them improve their language skills and familiarity with French culture. Students will read major works of French literature from selected movements of the 19th century.

FRE313 Introduction to French Linguistics (2)
This course will provide a general knowledge base for scientific study of the French language and equip students with facts and skills to enable them to describe the French language, and account for its internal changes. The course entails an elaborate description of phonetics, phonology/ morphology, semantics and syntax of French.

FRE314 French Culture and Civilization (2)
This course examines aspects of French culture and civilization that are relevant to the study of literature and language and constitutes an introduction to ways of life, social organization, law, politics, attitudes and mentalities, etc. Students will learn to appreciate better the civilization of France and be able to pursue studies of French language and literature.

FRE315 Introduction to Text Analysis (2)
This course intends to give students a basic familiarity with the genres of literature in French and with different ways of approaching texts: thematic studies, use of language, relationship between form and content, characterization and to familiarize them with the vocabulary used in French literary studies. This will include study of some schools and methods of literary criticism.

FRE 317 French for Tourism and Hospitality I (2)
This is a practical course meant for students who want to acquire relevant language skills so as to communicate in a professional situation. The aim of the course is to help students acquire a basic knowledge of the type of French commonly used in the fields of the Hotel and Tourism Industry. It consists of the study of vocabulary and linguistic skills related to the profession of tourism and the hotel industry. This topic-based language course will cover real-life contexts and situations. Focus will be on oral and written communication related to the situations and practices in the area of hotel and tourism. The course will also examine aspects of the culture and civilization of the French-speaking world.

FRE321 African and Caribbean Literature in French (2)
This course aims at introducing students to the main currents in Black African and Caribbean Francophone literature and to familiarize them with the history, culture, experiences and aspirations of Black African people and people of African descent in the Caribbean through the study of selected works of prose and poetry by major writers.

FRE322 Culture and Civilisation of French Speaking African Countries (2)
This course aims at giving students an opportunity to gain a basic familiarity with the civilization of French-speaking Black Africa and the ability to understand their own culture better by a comparison of the two. Aspects of the culture and civilization of French speaking Black Africa will be examined.

FRE323 French Linguistics and Orthography (2)
This course introduces students to the understanding of the fundamental basis of the study of the French language and the application of the scientific knowledge of the French language to the understanding of transcription and of the writing systems of the language. It provides students with skills to manage possible language errors related to pronunciation and writing.

FRE324 French Essay Writing (2)
The course aims at improving students' performance and competence in objective reading and writing. Students will learn and put into practice reading and writing techniques. The content will cover practical exercises such as: note-taking, summarizing, letter writing, writing paragraphs and compositions, reading and writing different types of texts.

FRE325 Advanced Communicative French (3)
The aim of this course is to help students use acquired communication skills so as to express themselves freely and accurately in spoken and written French. The course content will cover practical exercises that will help learners to use French in simulated communicative situations.

FRE 327 French for Tourism and Hospitality II (2)
This course aims at developing students' communicative skills relevant to the profession of tourism, hotel management and the catering industry. More precisely, it aims at reinforcing all basic grammatical structures and vocabulary acquired through language functions in order to equip students with the necessary oral and writing skills for setting up an efficient communication in French within professional situations linked to Tourism and the Hotel Industry.

FRE411 French Language in Use (3)
The aim of this course is to develop particular communicative skills and strategies and to carry out some communicative activities as well as to familiarize students with the grammatical, stylistic, and linguistic problems in spoken versus written French. Students will study form and structure of the French language to improve their skills in conversation and writing.

FRE412 Currents of Thought in the French Speaking Africa (2)
The aim of this course is to familiarize students with currents of thought in the French-speaking African and Caribbean countries. A study of selected philosophers and thinkers in Africa and the Caribbean: S. Signora, O. Saïoude, F. Fanon, J. Roumain, A. Memmi etc.

FRE413 Theory of Translation (2)
This course provides students with skills to handle translation problems between French and English. Students will review the role played by the vocabulary, structure and meaning in the theory of translation from French to English and vice versa.

FRE414 Modern French Literature: Study of a Genre or an Author (2)
The aim of this course is to give students an in-depth knowledge of a particular author, genre, literary movement, or subject in Modern French literature. Students will read several works of the chosen author, genre, or subject.

FRE415 Research Essay (2)
This course provides students with the opportunity to conduct research and use their linguistic skills to write on a chosen topic of linguistic, literary, or cultural interest. Students will be trained in research methods and carry out such research under staff supervision that will result in submission of a finished dissertation. Admission to this course is subject to Departmental approval.

FRE421 French Language Through Drama (2)
The aim of this course is to develop particular communicative skills and strategies through the use of some theatrical techniques. Students will have an opportunity to learn the French language while writing their own plots, which they will perform subsequently. This course includes the use of some theatrical techniques and practical exercises and discussions of students' work.

FRE422 Advanced French Linguistics (2)
The course introduces students to the scientific description of the French language with special emphasis on the phonetics/phonology, morphology/ syntax and semantics. The approach is descriptive. Theoretical approaches (generativist, structuralist, transformationalist, etc.) will be referred to without being taken as the explicit basis of the language analysis.
FACULTY OF HUMANITIES

FRE423 Translation (2)
This is a practical course that will give students skills to handle the translation of French into accurate English and vice versa using simple texts and writings, real-life documents and interpretation of speech.

FRE424 African Literature: Study of a Genre or an Author (2)
This course gives students more in-depth knowledge of particular authors, genres, literary movements, or subjects in Francophone African literature. Students will read several works of selected authors, and gain an ability to apply what they have learnt to their other studies. Readings on the chosen topic assigned by the staff member. Possible topics include Ngritute, women in Africa, tradition and modernity.

FRE425 Aspects of French Thought (2)
The aim of this course is to familiarize students with currents of thought in France on social, economic, political, and cultural problems, as well as their philosophical underpinnings, as seen by influential French writers since the 1930s. Students will read selections from major French intellectuals of the post-war period and from current journals.

FRE426 Advanced Communication Skills in French (3)
This course aims at reinforcing students' competence in oral and written expression and comprehension so as to give them more confidence in speaking and discussing a variety of topics.

FRE427 Caribbean Literature in French (2)
The objective of this course is to introduce students to the history, culture, experience and aspirations of people of African descent in the French speaking Caribbean. Coursework includes a study from a selected period, theme, and piece of the work of an author.

DEPARTMENT OF HISTORY

Degree Programmes
Bachelor of Arts in Archaeology
Bachelor of Arts in History

Entry Requirements
The normal Entry Requirements are as stipulated in General Regulation 20.20 and in Departmental Regulation 1.4.

(A) Archaeology Course Descriptions

ARC101 Introduction to Archaeology
This course provides students with a basic understanding of archaeological practice and human cultural development, with a special focus on the archaeology of the African continent 2 lecture hours per week.

ARC102 Introduction to World Prehistory
This course provides students with a basic understanding of prehistory through a critical appraisal of concepts of culture change and continuity in selected regions of the world. Key concepts such as human evolution, domestication, origins of agriculture and emergence of complex societies are discussed. 2 lecture hours per week.

ARC201 Introduction to Archaeological Theory
The course presents to students archaeological theories, and analytical techniques generally employed in the study of archaeological phenomena, and also discusses the history of the discipline, its aims, goals, and development as a discipline. 3 lecture hours per week.

ARC202 Introduction to Archaeological Method
The course is an introduction to archaeological/prehistoric research methods, organisation, curation and interpretation- including reconnaissance, environmental reconstruction, excavation, principles of stratigraphy, and analysis of finds. 3 lecture hours per week.

ARC203 Introduction to African Archaeology
This course (i) introduces students to issues and debates in African archaeology and its place in World Archaeology; (ii) provides the students with an overview of Palaeolithic and post-Palaeolithic archaeology of Africa, with particular reference to sub-Saharan Africa; (iii) present critical appraisal of approaches to culture change; (iv) inculcate an ability to think and write critically about interpretations that explain patterns in settlement and material culture. 3 lecture hours per week.

ARC204 Introduction to Environmental Archaeology (Previous number: ARC 207)
This course provides students with an understanding of social and economic changes in prehistory, and helps to reconstruct the interaction between peoples and their environment. It provides theoretical background in ecology, geology and related fields which are useful to develop competence in archaeological research. 3 lecture hours per week.

ARC301 Archaeological Heritage Management (Previous Title: History of Archaeology)
Philosophy, policy and practice, to enable students to choose appropriate techniques for cultural and natural resources, and to comprehend the theoretical aspects of Cultural Resource Management. 3 lecture hours per week.

ARC302 Quantitative Techniques
This course equips students for working with varied archaeological samples, and introduces basic quantitative or statistical principles and techniques applied in the field and laboratory practices as well as in research data analysis. 3 lecture hours per week.

ARC304 Research Project Proposal
To test student initiative in choosing and preparing a Research Project Proposal based on analysis of previous research reports and publications. (presuppose for ARC 471 and compulsory for single Major) 3 lecture/tutorial hour per week.

ARC313 Stone Tools (Lithics)
This course introduces students to the basics of stone tool technology and typology— including learning how to make stone tools, how to identify and describe them, and how others in the region have classified stone tools into various types. 3 lecture hours

ARC 314 Ceramic Analysis
This course introduces students to the basics of ceramic technology and typology— including how to make pots, how to identify and describe whole vessels and potsherds, and how others in the region have classified ceramics into various types. 3 lecture hours per week.

ARC315 Field Techniques
This course introduces students to basic archaeological field skills—including map reading, orienteering, map-making, survey, excavation, sorting and cataloguing finds. Students spend two weeks intensive fieldwork training conditions under supervision. 3 credits per 2 weeks.

ARC316 Archaeological Interpretation
This course teaches students how archaeologists go about interpreting the past through a series of simulated archaeological problems that the students solve. The problems closely resemble actual archaeological evidence. 3 lecture hours per week.

ARC317 Bioarchaeology I
Study of the relationship between human beings and their natural and social environments, integrating data from botanical and faunal remains. 3 lecture hours per week.

ARC321 Ethnoarchaeology
This course introduces learners to basic concepts in ethnarchaeology, the study of contemporary societies/ cultures and their relevance to archaeology. It focuses on the principles and development of the subdiscipline. 3 lecture hours per week.

ARC322 Special Subject (Previous Title: Case Studies in Ethnoarchaeology)
Study of a subject of current research and debate and/or topical issues in Botswana and Southern African archaeology, based on current staff expertise—currently offered as Geographical Information Systems and Archaeology. 3 lecture hours per week.

ARC323 Research Methods in Archaeology (Previous Title: Reading Material Culture in Archaeology)
Equipping students with basic knowledge and skills to conceptualize, plan and carry out archaeological research and data analysis. 3 lecture/tutorial hours per week.

ARC401 Archaeology of Botswana
The course traces the history of archaeological research in Botswana and highlights major influences in and contributions to scholarship, and the impact of archaeology on the reconstruction of Botswana’s history and museum development. 3 lecture hours per week.

ARC 402 Advanced Archaeological Theory
This course focuses on the developments in archaeological theory from the 1960s, including the influence of Euro-American researchers on theoretical archaeology and reviewing contributions of researchers in other parts of the world. 3 lecture hours per week.

ARC 412 Human Origins
This course presents the naturalist’s point of view of evolution and human origins, from around 5 million years ago—discussing the origins of upright posture, tools, languages, and our extraordinary brains. 3 lecture hours per week.

ARC 413 Complex Societies (Previous Title:
**Farmers And State Formation**

This course examines why people turned to food production after more than a million years of successful hunting and gathering. Case studies cover food production, sedentary life, and complex societies in the Near East, Africa and Central America. 3 lecture hours per week.

**ARC 421 Geoarchaeology**

The course focuses on spatial and temporal distributions of archaeological sites, landscape topography, geomorphology and subsurface stratigraphy, and site context formation theory. Practical classes include terrain unit evaluation and a compulsory five-day field work (to the Makgadikgadi or the Shashe-Limpopo Basin) during the mid-semester break. 3 lecture hours per week.

**ARC 417 Heritage Management**

The course aims to develop skills in heritage management so that learners can be able to articulate the different perspectives to heritage management focusing on cultural heritage and environmental resources. At the end of the course learners are expected to be able to differentiate different approaches to the valuation of heritage, management of heritage and the role of heritage in development.

**ARC423 Bioarchaeology II (Previous Title: Faunal And Floral Analysis)**

This course explores processes leading to the formation of fossil records and examines methodologies and techniques of extracting, analysing and interpreting plant and animal micro and macrofossil material from the archaeological record. 3 lecture hours per week.

**ARC471 Research Project: Fieldwork & Preliminary Reports 3 Credits**

**ARC472 Research Proposal: Intermediate & Final Reports 9 Credits**

**GEC462 Reconstructing African Heritage through Multimedia.**

The course uses specially designed audiovisual multimedia materials to study the major achievements of African prehistory evidenced by the remains of material cultures, the representation of material heritage by archaeologists, and how African heritage can be maintained and marketed. 2 lecture hours

(A) BA in Archaeology

**Level 100**

**Semester 1**

Core Course

ARC102 Introduction to World Prehistory (2)

**Semester 2**

Core Courses

ARC 101 Introduction to Archaeology (2)

**Level 200**

**Semester 1**

Core Courses

ARC201 Introduction to Archaeological Theory (3)

ARC203 Introduction to African Archaeology (3)

**Semester 2**

Core Courses

ARC202 Introduction to Archaeological Methods (3)

ARC204 Introduction to Environmental Archaeology (3)

**Level 300**

**Semester 1**

Core Courses

ARC301 Archaeological Heritage Management (3)

ARC323 Research Methods in Archaeology (3)

**Semester 2**

Core Courses

ARC302 Quantitative Techniques (3)

ARC304 Research Project Proposal (3) (core for Single Major Only)

ARC315 Field Techniques (optional)

**Level 400**

**Semester 1**

Core Courses

ARC401 Archaeology of Botswana (3)

ARC417 Heritage Management (3)

ARC471 Research Project Fieldwork & Preliminary Report (3 credits, core for Single Major Only)

**Semester 2**

Core Courses

ARC402 Advanced Archaeological Theory (3)

ARC472 Research Project Intermediate & Final Reports (9 credits, core for Single Major Only) (B) BA in History

**HISTORY COURSE DESCRIPTIONS**

**HIS102 Introduction to the Study of History**

The course applies the skills and methods of university historians to selected aspects of the history of Botswana and neighbouring areas, raising questions of individual identity, gender, class, language and ethnicity, inheritance and heritage. 2 lecture hours per week.

**HIS201 African Cultures & Civilisations to C.1700**

Selected themes in prehistory, state formation, trade, and small-scale societies—from the origin and spread of modern humans, via Ancient Egypt, Ethiopia and West African kingdoms, to the rise and fall of Great Zimbabwe. 3 lecture hours per week.

**HIS202 Africa in the Era of the Atlantic Slave Trade C.1500–c.1800**

From later Islamic and Christian history in North Africa, via the growth of coastal and interior trading states, slave trading in the Atlantic and Indian Oceans, with greater depth on south-eastern Africa. 3 lecture hours per week.

**HIS211 The Rise of Europe to World Dominance**

Rise of Europe from the Middle Ages to its position of world dominance in the late 19th century, including religion, social and cultural change, science and technology, witchcraft and deviance, and changing relations with other civilizations. 3 lecture hours per week.

**HIS212 Catastrophe & Survival in 20th Century Europe**

From world dominance to near self-destruction, and then recovery in three major cycles: the two world wars; the era of Fascism; and the era of Communism—including extremism, economic collapse and the Nazi Holocaust. 3 lecture hours per week.

**HIS213 Poverty, Economic Growth and Affluence in Western Europe and America**

Examining the transformation of Western European and American economies through the development of trade in medieval Europe, feudal economies, markets during the renaissance, and the industrialization of Western Europe and North America. 3 lecture hours per week.

**HIS214 Agriculture and Industrialisation in the World Economy to 1945**

Comparing the rise of capitalism in Britain, France, Germany, Russia and parts of southern and eastern Europe, with Japan and North America—with emphasis on agrarian transition, commercial revolutions, economic crisis and recovery. 3 lecture hours per week.

**HIS305 Historical Research Methods & Historiography of Botswana**

Stages and processes in the research and writing of history—including topic selection, data collection, evaluation, dating analysis and interpretation of data, and systematic presentation of data as coherent meaningful accounts of the past. Debates and research lacunae on historical study of Botswana ecology and environment, culture, family life, migration and settlement, trade and production, technological change, elite formation, labour relations, political institutions, religion, education, etc. 4 lecture/tutorial hours per week.

**HIS306 Introduction to the Philosophy of History & Research Project Proposal**

The course discusses the issues relating to the scientific or non-scientific, objective or non-objective nature of historical knowledge, and the various theories advanced to explain the entire course of the human past. Each individual student writes a Research Project proposal for consideration by the History Department Board (pre-requisite for entering HIS 471 Research Project course). 4 lecture/tutorial hours per week.

**HIS311 African Diaspora in the Islamic World & Asia**

In the context of the Saharan and Indian Ocean slave trades, contrasting mining and plantation labour with domestic labour and military employment in the Mediterranean and the Near East, Arabia and Persia, and the islands of the Oceans. 3 lecture hours per week.

**HIS312 African Diaspora in the Caribbean & The Americas**

Why Africans rather than natives became slaves, African cultural survivals, slavery within mercantile and industrial economies, debates about emancipation, subsequent racial segregation, black political and intellectual movements. 3 lecture hours per week.

**HIS333 Introduction to Foreign Policy, Diplomacy and International Relations, 1800 to 1945**

The concepts of diplomacy, foreign policy and international relations, and their historical evolution; operation of the international system
and role of big powers therein. 3 lecture hours per week.

HIS334 Superpowers in the 20th Century
Conceptual frameworks for analysing the international system; main historiographical issues concerning the role of the big powers and the survival of small states. 3 lecture hours per week.

HIS335 Colonial Latin America to 1830
Conquest and establishment of colonial rule by Spain and Portugal; the indigenous people of Latin America, impact of conquest, the establishment of colonial rule, and anti-colonial struggles. 3 lecture hours per week.

HIS336 Modern Latin America
Independence and the failure of Pan Americanism; military dictatorships to bureaucratic-authoritarianism; revolutions in Mexico, Cuba and Nicaragua and the rise of modern Latin American democratic states. 3 lecture hours per week.

HIS341 From Slavery to Colonialism in West Africa
Contact with Islam, growth of states, impact of slave trade and Scramble for colonisation, similarities and differences between French and British colonial conquest and systems of rule and changes within them. 3 lecture hours per week.

HIS342 Modern Anglophone, Francophone & Lusophone West Africa
Political and socio-economic changes since the outbreak of the Second World War: late colonial constitutions; early independence and popular betterment; military-bureaucratic coups; structural adjustment and multiparty democracy. 3 lecture hours per week.

HIS343 Trade & Politics in Central African Kingdoms
Socio-economic and political organization before contact with Europeans, contact with Europeans and its impact, imposition of colonial rule, and African reaction to colonial policies up to the early 20th century. 3 lecture hours per week.

HIS344 The Roots of Crisis in Modern Central Africa
Colonial administrations and settler economies, resistance to colonialism, industrial workers, modern forms of nationalism in Zambias and Malawi, armed struggles in Angola and Congo; ‘structural adjustment’ and multiparty democratisation. 3 lecture hours per week.

HIS401 Mfecane & the Settler Scramble for Southern Africa
Historical debates on coastal frontiers in the 18th century, interior states and Mfecane/ Difaqane wars, settlers and missionaries; diamond and gold mining, migrant labour; African states, Boer republics, British, German and Portuguese colonies. 3 lecture hours per week.

HIS412 Twentieth Century South Africa
Confrontations between African nationalism and black African nationalism; racial segregation and apartheid; worker resistance, native reserves and ‘Bantustans’; liberation struggles up to 1994 and achievements since then. 3 lecture hours per week.

HIS414 Chiefs, Commoners & the Impact of Colonial Rule in Botswana, Lesotho and Swaziland
Forms of ‘parallel rule’ through paramount chiefs; economic and political relations with the South Africa and Southern Rhodesia; contrasting political development into kingdoms and a republic; post-colonial internal and regional developments. 3 lecture hours per week.

HIS416 Land, Labour & Liberation in Mozambique, Namibia & Zimbabwe
Contrasting colonial conquests and heritages within the context of South African regional domination, white settler and company land and labour alienation; armed liberation movements, post-colonial insurgence and land reclamation. 3 lecture hours per week.

HIS421 Political Ideas during the Ancient and Medieval Periods
Concepts and definitions, and the development of the philosophy and theory of the State from the Ancient to Medieval periods, to understand the origins and historical background to later political thoughts, cultures and theories. 3 lecture hours per week.

HIS422 Political Ideas during the Modern and Contemporary Periods
Further developments in the philosophy and theory of the State and the organisation of societies to those students can understand political theory and ideas and participate effectively in modern societies and the world system. 3 lecture hours per week.

HIS431 Natives & Settlers in Early North America
The dispossession of native North Americans by European settlers between the Arctic and the Caribbean; frontier penetration and settlement by free Europeans and slave Africans; native-settler contact, and land alienation through the 19th century. 3 lecture hours per week.

HIS432 Industrialisation & Expansion in Modern North America
Themes from the American Revolution to the present day: expansionism/ imperialism and isolationism; extensive use of intensive agriculture; rapid development of extractive and manufacturing industries; markets, settlement and urbanisation; origins of the Information Age. 3 lecture hours per week.

HIS433 Civilization and Modernization in China & Japan
Contrasting two ancient cultures and paths to modernization: Japan’s conversion into a world power with consumer-based capitalism, and China’s convulsions, socialist experimentation, and subsequent political and economic developments. 3 lecture hours per week.

HIS434 Ancient, Colonial & Independent India & South Asia
Ancient civilisations, Muslim and early European colonial trade; British colonial rule and transformations during the colonial period; nationalism, independence and partition; different trajectories of India, Pakistan, etc. since independence. 3 lecture hours per week.

HIS435 Modern Britain: Nation, Class, Gender, Race, Religion, Culture, Power
Creation of the ‘imagined community’ of Britain out of disparate cultures and ‘nations’, elites and power structures, class conflict, gender assertion and ideas of ‘race’, post-imperial crisis of identity and European Union membership. 3 lecture hours per week.

HIS436 The British Empire & Commonwealth in World History
From 16th century rise to 20th century decline of British world power: constitutional development of settler colonies into Dominions, contrasted with non-settler colonies; Commonwealth issues and membership crises since the 1950s. 3 lecture hours per week.

HIS442 Ecology & Empire, Conservation & Politics in Eastern Africa
Human settlement in relation to natural environment, and effects of political intervention and land partition—including tsetse-fly y and malaria, peasant farmers and white settlers, wildlife conservation and peasant ‘betterment’ schemes. 3 lecture hours per week.

HIS444 Globalisation and Third World Economies in Africa, Latin America and South-east Asia
How Africa found its modern development path compared with Latin America and South-East Asia: ‘African capitalism’, agrarian transition, technology and productivity, incorporation into the international economy, and debates in economic history. 3 lecture hours per week.

HIS446 Growth, Policy and Poverty in Africa, Latin America, South & South-East Asia
Comparing pre-colonial, colonial and postcolonial world regions: institutional settings, rise of capitalist development, contesting rationalities in the agricultural sector, famines, hunger, and starvation; persistence of poverty and social exclusion. 3 lecture hours per week.

HIS443 Islam, Imperialism & the Military in the Making Of Modern Egypt
Islamization and Arabization of the Nile valley and the coast; Ottoman imperial rule; France and Britain; rise of Egyptian nationalism; Sudan condominium; Nasser and Nasserism in the Arab world; Egypt’s role in Palestine, Islamic fundamentalism. 3 lecture hours per week.

HIS444 French Colonialism & its Aftermath in North Africa
Ottoman imperial rule but Morocco independent;
imposition of French colonial rule, alienation of land, white settlement; rise of nationalism and socialism, anti-colonial insurgency; post-colonial developments and contemporary problems. 3 lecture hours per week.

**HIS471 Research Project: Fieldwork & Preliminary Report**

If the HIS 304 proposal has been accepted by the History Department Board, the student is allocated a supervisor and conducts fieldwork during the winter period. The preliminary draft report is presented at a seminar during Semester I. 2 seminar hours per week.

**HIS472 Research Project: Intermediate & Final Reports**

If the HIS 472 proposal has been judged satisfactory by the History Department Board, the student submits a final report at the end of Semester II. 2 seminar hours per week. 9 credits

**HIS473 Special Seminar I**

Special seminars are based on reading and resources recommended by the expert staff member in a chosen topic. Each seminar consists of an essay presentation by one student and a brief critique of by another student, followed by discussion. 3 seminar hours per week.

**HIS474 Special Seminar II**

[Description as for HIS 473]

**HIS601 History Research Methodology**

The nature of History and the techniques utilized for research and writing in the discipline—collection, evaluation, analysis and interpretation of data, and the presentation of the data in a coherent meaningful account in support of a point of view. 3 seminar hours per week.

**HIS602 Philosophy of History**

The course deals with the theoretical and philosophical aspects of historical studies. It focuses on theory of knowledge or epistemology of history as a discipline, and the reflections of scholars on the course of human history as a whole. 3 seminar hours per week.

**HIS603 Historiographical Issues in Pre-colonial Southern Africa**

The course commences by considering the major "schools" of historical writing about Southern Africa, and then examines debates among historians, mainly in the 19th century, ending with colonization and African responses to it. 3 seminar hours per week.

**HIS604 Historiographical Issues in Modern Southern Africa Add "Em"**

The focus is on continual discourse and debate among historians concerning topics mainly in the 20th century, to give students a good grasp of the main historiographical trends and enable them to be more analytical and critical in their own research. 3 seminar hours per week.

**HIS611 Introduction to the Economic History of Africa**

The course takes a topical approach to economic development in Africa, focusing on the origins of "African capitalism" and industrialization in North and Sub-Saharan Africa, and on controversies and debates in the economic history literature. 3 seminar hours per week.

**HIS612 Case Studies in the Economic History of Africa**

Topics range from the economy of precolonial Africa, through critical examination of contending rationalities in agriculture, institutional rigidities and the political economy of famines, hunger, and starvation, persistence of poverty and economics of social exclusion. 3 seminar hours per week.

**HIS613 Political and Economic Aspects of Imperialism**

European imperialism has had a profound impact on recent world history, and yet it is surprisingly hard to explain satisfactorily. This course reviews the main political and economic explanations for the phenomenon. 3 seminar hours per week.

**HIS614 Cultural and Environmental Approaches to the History of Imperialism**

The course considers scholarly issues and approaches in the relationship between culture and imperialism, including "postcolonial" theory, on the topics of empire, race and gender; the Orientalism debate; and environmental and scientific imperialism. 3 seminar hours per week.

**HIS615 History of Religion in Africa**

An overview of the historical study of religion in Africa, including introduction to the main theoretical issues. Students completing this course should be familiar with and able to discuss the main ideas current in the historical study of African religion. 3 seminar hours per week.

**HIS616 Religion and Power in Botswana**

The course surveys relationships between religion and power, including "traditional religion" and chiefdoms, impact of missionaries and traders, "church and state"; conflicts over medicine, rise of independent churches, and impact of post-colonial secularism. 3 seminar hours per week.

**HIS627 Archaeology for Teachers**

Designed for secondary school teachers to update and expand their knowledge of three archaeological modules: human evolution, the origins of food production, and the origins of civilization, including current theories and case studies. 3 seminar hours per week. HIS 651, HIS 652, HIS 653, & HIS 654 Special Topics I, II, III, & IV

**HIS662 Research Proposal for Dissertations**

This course provides a structure in which students prepare their research proposals. Students will meet regularly with assigned staff members, and will be required to make periodic reports. 2 credits/ tutorial hours per week.

**GEC265 Two World Wars on Film**

The course introduces students to public discourse on the two World Wars of the 20th century—how Europe, America and Japan, and their colonial empires, underwent war and genocide; the impact of warfare on their economies and societies; and how visual media have reported, represented, interpreted and manipulated events. 2 lecture hours.

**GEC362 Africa and its Past on Film**

Introducing students to the creation and recreation of the history and imagery of Africa in cinema and television, how the African past has been represented in major television series, and how Southern Africa people, particularly Zulu and Khoe and San, have been represented in drama and documentary films. 2 lecture hours.

**GEC462 Reconstructing African Heritage through Multimedia**

The course uses specially designed audiovisual multimedia materials to study the major achievements of African prehistory evidenced by the remains of material cultures, the representation of material heritage by archaeologists, and how African heritage can be maintained and marketed. 2 lecture hours.

(B) BA in History

**Level 100**

**Semester 1:**

**Core Course**

ARC 102 Introduction to World Pre-History (core) (2)

**Semester 2:**

Core Course

HIS 102 Intro. to the Study of History (core) (2)

**Level 200**

**Semester 1:**

Core Course

HIS 201 African Cultures and Civilisations to c. 1500 (core) (3)

**Semester 2:**

Core Course

HIS 202 Africa in the Era of the Atlantic Slave Trade c. 1500–1800 (core) (3)

**Level 300**

**Semester 1:**

Core Course

HIS 305 Historical Research Methods and Historiography of Botswana (core) (3)

**Semester 2:**

Core Course

HIS 306 Philosophy of History and Research Project Proposal (core) (4)

**Level 400**

**Semester 1:**

Core Course

HIS 401 Mfecane and the Settler Scramble for Southern Africa (3) (core)

**Semester 2:**

Alternate Core Courses (at least one must be taken)

HIS 412 Segregation, Apartheid & African Nationalism in South Africa (3)

HIS 414 Chiefs, Commoners & the Impact of Colonial Rule in Botswana, Lesotho & Swaziland (3)

HIS 416 Land, Labour & Liberation in Mozambique, Namibia & Zimbabwe (3)

**Level 600**

**Semester 1:**

Core Courses

HIS 601 History Research Methodology (3)

HIS 602 Historiographical Issues in Precolonial Southern Africa (3)

**Semester 2:**

Core Courses

HIS 602 Philosophy of History (3) credits)

HIS 604 Historiographical Issues in Modern...
Southern Africa (3)

Assessment
Assessment shall be as per Academic Regulations 00.8

Award of Degree
The award of the Degree shall be as per General Regulations 00.852

DEPARTMENT OF LIBRARY & INFORMATION STUDIES

CAR100 Special Regulations for the Certificate in Archives and Records Management
Subject to the provisions of the General Academic Regulations and Faculty of Humanities Regulations, the following Departmental Regulations shall apply.

Entrance Requirements
The normal requirements for entrance to the certificate in Archives and Records Management Program shall be: Botswana General Certificate of Secondary Education or equivalent with at least six credits in three subjects including English. Applicants with at least one year work experience in a registry or related institutions will be preferred.

Programme Structure
The Certificate in Archives and Records Management extends over two semesters for full-time study or four semesters for part-time (distance learning/ sandwich) study in the single subject Archives and Records Management. Students can take a minimum of 6 credits of optional courses or elective courses. The Program shall consist of a minimum of 30 credits. All core courses must be passed.

Level 100 Semester 1
Core Courses
LIS110 Administration and Management of Information Centres (3)
RECO11 Introduction to Records Management (3)
RECO12 Introduction to Archives (3)
RECO15 Introduction to Office Skills (3)
RECO17 Introduction to Information Technology (3)

General Education Courses
COM111 Communication and Academic Literacy Skills I (2)
ICT121 Computer Skills Fundamentals 1 (2)

Semester 2
Core Courses
RECO13 Intro to Principles of Archival Arrangement (3)
RECO14 Search Room Operations (3)
RECO16 Practicum (3)

Optional Courses
LIS104 Introduction to the Internet and Web Design (3)
LIS106 Information Resources Management (3)

Progression from Semester to Semester
Progression from semester to semester shall apply according to Regulation 00.9.

Assessment and Examinations
Evaluation of students' performance in the Certificate in Archives and Records Management Program shall be based on continuous assessment and a formal examination at the end of each semester. The weighting between continuous assessment and formal examination shall be 2:3.

DIS110 Special Regulations for the Diploma in Library and Information Studies
Subject to the provisions of the General Academic Regulations and the Faculty of Humanities, the following Departmental Regulations shall apply:

Entrance Requirements
The normal requirement for entrance to the Diploma in Library and Information Studies Program shall be:
- Botswana General Certificate of Secondary Education or equivalent with a credit in English;
- Certificate in Library and Information Studies from this University or its equivalent from any other recognized institution.

Candidates with a Certificate in Library and Information Studies from this University shall be admitted directly to Level 2 of the Diploma Program.

All candidates for admission must have a minimum of credit in English Language in Botswana General Certificate of Secondary Education or equivalent.

Programme Structure
The Diploma in Library and Information Studies Program extends over four semesters for full-time study or six semesters for part-time (distance learning) study in the single subject Library and Information Studies leading to the award of the Diploma in Library and Information Studies.

Level 100 Semester 1
Core Courses
LIS100 The Information Environment (3)
LIS101 Introduction to Organising Information (3)
LIS103 Basic Reference Sources and Services (3)
LIS110 Administration and Management of Information Centres (3)
BIM100 Introduction to Information Management (3)

General Education Courses
COM111 Communication and Academic Literacy Skills I (3)
ICT121 Computer Skills Fundamentals 1 (2)

Semester 2
Core Courses
BIM101 Introduction to Information Science (3)
LIS114 Collection Development and Management (3)

Optional Courses
LIS104 Introduction to the Internet and Web Design (3)
LIS106 Information Resources Management (3)
LIS112 Introduction to Publishing and the Book Trade (2)

Level 200 Semester 3
Core Courses
LIS202 IT Tools and Applications (3)
LIS223 Digital Libraries (3)
LIS206 Introduction to Information Retrieval (3)

General Education Courses
LIS203 African Information Environment (3)
LIS211 Information and Society (3)
BIM200 Information Management Systems Development (3)

Semester 4
Core Courses
LIS200 Organising Information (3)
LIS205 Library Practice and Attachment (3)
LIS227 Introduction to Knowledge Management (3)
BIM202 Introduction to Databases and Information Retrieval (3)

Optional Courses
LIS212 Information Resources in Business (3)
LIS230 Legal Aspects in Information (3)

Progression from Semester to Semester
Progression from semester to semester shall apply according to Regulation 00.9.

Assessment and Examinations
Evaluation of students' performance in the Diploma in Library and Information Studies shall be based on continuous assessment and a formal examination at the end of each semester. The weighting between continuous assessment and formal examination shall be 2:3.

DAR110 Special Regulations for the Diploma in Archives and Records Management
Subject to the provisions of the General Academic Regulations and the Faculty of Humanities Regulations, the following Departmental Regulations shall apply:

Entrance Requirements
The normal requirements for entrance to the Diploma in Archives and Records Management Programme shall be:

a) Certificate in Archives and Records Management from this University or its equivalent from any other recognized institution;

b) Botswana General Certificate of Secondary Education or equivalent with a credit in English;

c) Candidates with a credit in the Certificate in Archives and Records Management from this University shall be admitted directly to Year Two of the Diploma Programme. Those with a pass in the Certificate in Archives and Records Management of this University plus two years post qualification experience will be admitted directly to Year Two.

Programme Structure
The Diploma in Archives and Records Management Programme extends over four semesters for full-time study or six semesters for part-time (distance learning/ sandwich) study in the single subject Archives and Records Management leading to the award of the Diploma in Archives and Records
Management. The Programme shall consist of a minimum of 30 credits per year. All core courses must be passed.

Level 100
Semester 1
Core Courses
LIS110 Admin. and Management of Information Centres (3)
RECO11 Introduction to Records Management (3)
RECO12 Introduction to Archives (3)
RECO15 Introduction to Office Skills (3)
RECO17 Introduction to Information Technology (3)

General Education Courses
COM 111 Communication and Academic Literacy Skills (3)
ICT 121 Computer Skills Fundamentals 1 (2)

Semester 2
Core Courses
RECO13 Intro to Principles of Archival Arrangement (3)
RECO14 Search Room Operations (3)
RECO16 Practicum (3)

Optional Courses
LIS104 Introduction to the Internet & Web Design (3)
LIS106 Information Resources Management (3)

Level 200
Semester 3
Core Courses
RECO12 Managing Media Archives (3)
RECO21 Introduction to Preservation and Conservation (3)
RECO218 Computer Applications in Archives and Records Management (3)
LIS101 Introduction to Organizing Information (3) (pre-requisite for LIS200)

General Education Courses
Semester 4
Core Courses
LIS200 Organising Information (3) (pre-requisite, LIS101)
RECO21 Administrative History (3)
RECO215 Microphotography & Reprographics (3)
RECO216 Records Centre Management (3)

Optional Courses
BMS207 Public Relations, Writing and Reporting (3)
LIS212 Information Resources in Business (3)
LIS230 Legal Aspects in Information (3)
LIS227 Introduction to Knowledge Management (3)

Progression from Semester to Semester
Progression from semester to semester shall apply according to Regulation 00.9.

Assessment and Examinations
Evaluation of students’ performance for the Diploma in Archives and Records Management shall be based on continuous assessment and a formal examination at the end of each semester. The weighting between continuous assessment and formal examination shall be 2:3.

BIS220 Special Regulations for the Bachelor of Library and Information Studies (BLIS) – Single Major Subject to the provisions of the General Academic Regulations and the Faculty of Humanities Academic Regulations, the following Departmental Regulations shall apply:

Entrance Qualifications
The normal requirements for entrance to the BLIS single major degree shall be:

a) A pass in the Diploma in Library and Information Studies from this university or its equivalent from any other recognized institution

b) Botswana General Certificate of Secondary Education or equivalent. All candidates for admission must have a minimum of credit in English Language.

c) Candidates with at least one year’s experience in a library or related institution will be given preference.

d) Candidates with a Diploma in Library and Information Studies of this university or its equivalent from any other recognized institution may be admitted directly to Level 3 of the program.

e) Candidates with a Certificate in Library and Information Studies of this university or its equivalent from any other recognized institution may be admitted directly at Level 2 of the program.

Programme Structure
The BLIS is a full-time Programme extending over eight semesters in the single subject Library and Information Studies leading to the award of the Bachelors Degree in Library and Information Studies.

Level 100
Semester 1
Core Courses
LIS100 The Information Environment (3)
LIS101 Introduction to Organising Information (3) (pre-requisite for LIS200)
LIS103 Basic Reference Sources and Services (3)
LIS110 Admin. and Management of Information Centres (3)
BIM100 Introduction to Information Management (3)

General Education Courses
COM 111 Communication and Academic Literacy Skills (3)
ICT 121 Computer Skills Fundamentals 1 (2)

Semester 2
Core Courses
BIM101 Introduction to Information Science (3)
LIS114 Collection Development and Management (3)

Optional Courses
LIS104 Intro. to the Internet and Web Design (3)
LIS106 Information Resources Management (3)
LIS112 Intro. to Publishing and the Book Trade (3)

Level 200

Semester 3
Core Courses
LIS202 IT Tools and Applications (3)
LIS223 Digital Libraries (3)
LIS206 Introduction to Infopreneurship (3) (pre-requisite for LIS404)

General Education Courses
Should not exceed 6 credits for both semesters.

Optional Courses
LIS203 African Information Environment (3)
LIS211 Information and Society (3)
LIS230 Legal Issues of Information (3)
BIM200 Information Management Systems Development (3)

Semester 4
Core Courses
LIS200 Organising Information (3) (pre-requisite, LIS101)
LIS208 Principles of Data Communications (3)
BIM202 Introduction to Databases and Information Retrieval (3)
LIS227 Introduction to Knowledge Management (3) (pre-requisite for LIS403)

General Education Courses
Should not exceed 6 credits for both semesters.

Optional Courses
LIS212 Information Resources in Business (3)
LIS230 Legal Issues in Information (3)

Level 300
Semester 5
Core Courses
LIS300 Online Information Retrieval (3)
LIS304 Understanding the User (3)
LIS303 Advanced IT Applications (3) (pre-requisite LIS202)

General Education Courses
Should not exceed 6 credits for both semesters.

Optional Courses
LIS304 School Librarianship (3)
LIS310 Health Information Systems (3)

Semester 6
Core Courses
LIS305 Advanced Organization of Information (3) (pre-requisite LIS200)
LIS 306 Professional Attachment (3)

General Education Courses
Should not exceed 6 credits for both semesters.

Optional Courses
LIS311 Business Information Systems (3)
LIS312 Legal Information Systems (3)
LIS313 Gender and Information Management (3)
LIS314 Agricultural Information Systems (3)

Level 400
Semester 7
Core Courses
LIS401 Organising Internet Resources (3)
LIS402 Marketing of Information Services (3)
LIS403 Knowledge Management (3)
BIM402 Research in Information Management (3)

Optional Courses
CS461 Computer Communications Network Management (3)
LIS407 Emerging Technologies (3)
LIS412 Information Policies (3)
ENV440 Geographic Information Systems (2)

Semester 8
Core Courses
LIS404 Advanced Infopreneurship (3) (pre-requisite LIS206)
LIS406 Database Management Systems Design (3)
LIS408 Project Work (3) (Must have taken BIM402)
General Education Courses (4 credits)

Optional Courses
LIS425 Global Information System (3)
Progression from Semester to Semester
Progression from semester to semester shall apply according to Regulation 00.9.

Assessment and Examinations
Evaluation of students’ performance in BLIS shall be based on continuous assessment and a formal examination at the end of each semester. The weighting between continuous assessment and formal examination shall be 2:3.
Award of the BLIS Single Major Degree Candidates must obtain a minimum of 120 credits including all core courses and optional courses or elective courses, and twenty General Education Courses. In addition, Regulation 00.85 shall apply.

BIS230 Special Regulations for the Bachelor of Arts, Library and Information Studies

(BALIS) Combined Major
Subject to the provisions of the General Academic Regulations and the Faculty of Humanities Regulations, the following Departmental Regulations shall apply:

Entrance Requirements
The normal requirements for entrance to the BALIS Combined Major Degree Programme are that applicants shall have the Botswana General Certificate of Secondary Education or equivalent, with a credit in English. Those applicants who will major in Social Science or Science Subjects must obtain a minimum of credit in Mathematics or Computer Science.

Programme Structure
The BALIS is a full-time programme extending over eight semesters in the single subject Library and Information Studies and another subject leading to the award of a BALIS Combined Major with another subject. The Programme shall consist of a minimum of 30 credits per year. All core courses must be passed.

Level 100
General Education Courses (4 to 6)
Other Subject Core Courses (12)

Semester 1
Core Courses
LIS100 The Information Environment (3)
LIS101 Introduction to Organising Information (3) (pre-requisite for LIS200)
BIM100 Introduction to Information Management (3)

Level 200
Semester 3
Core Courses
BIM101 Introduction to Information Science (3)
LIS114 Collection Development and Management (3)

Level 300
Semester 4
Core Courses
LIS223 Digital Libraries (3)
US202 IT Tools and Applications (3) (pre-requisite for LIS303)
LIS211 Information and Society (3)

Level 400
Semester 6
Core Courses
LIS305 Advanced Organisation of Information (3) (pre-requisite LIS200)
LIS306 Professional Attachment (3)

Award of BALIS Candidates must obtain a minimum of 120 credits, including all core courses in both subjects. In addition, Regulation 00.85 shall apply.

BIS210 Bachelor of Information Systems (Information Management) (BIS) Degree

Entrance Requirements
The normal requirements for entrance to the Bachelor of Information Systems (Information Management) Degree Programme shall be the Botswana General Certificate of Secondary Education or equivalent with a credit in English Language and Mathematics.

Programme Structure
The BIS Degree is a full-time programme extending over eight semesters in the subject of Information Management, leading to the award of a Bachelor of Information Systems Degree.

Level 100
Semester 1
Core Courses
LIS100 The Information Environment (3)
BIM100 Introduction to Information Management (3)
STA101 Maths for Business and Social Sciences I (3)
STA116 Business Statistics I (4)

General Education Courses
COM111 Communication and Academic Literacy Skills (3)
ICT121 Computer Skills Fundamentals (2)

Semester 2
Core Courses
BIM101 Introduction to Information Science (3)
STA102 Maths for Business and Social Sciences II (3)
STA114 Statistical Tools for Business (3)

General Education Courses
COM112 Communication and Academic Literacy Skills (3)
ICT122 Computer Skills Fundamentals 2 (2)

Level 200
Semester 3
Core Courses
BIM200 Information Management Systems Development (3)
CS241 Structured Programming (4)
CS292 Information Systems Fundamentals (3)

Optional Courses
BIM201 Web Information Management (3)
LIS206 Introduction to Infopreneurship (3) (pre-requisite for LIS404)
LIS211 Information and Society (3)

GECS and Electives
General Education Courses and electives to be chosen by the student from any discipline throughout the University.
Semester 4
Core Course
BIM202 Introduction to Databases and Information Retrieval (3)
CS1272 Computer Communication Network Fundamentals (3)
CS1252 Operating System Concepts (3)
BIM204 Designing and Implementing Intranets (3)

Optional Courses
BIM205 Business Process Modelling (3)
LIS227 Introduction to Knowledge Management (3)
(pre-requisite for LIS403)

General Education Courses and electives to be chosen by the student from any discipline throughout the University.

Level 300
Semester 5
Core Courses
BIM300 Distributed Systems (3)
BIS302 Decision Support Systems I (3)
CS115 Web Technology and Applications (3)
LIS304 Understanding the User (3)
Optional Courses
LIS300 Online Information Retrieval (3)
BIM301 Information Security (3)
BIS308 Marketing Information Systems (3)

General Education Courses and electives to be chosen by the student.

Level 400
Semester 6
Core Courses
CS142 Systems Analysis and Design (3)
BIM303 Industrial Attachment (3)
BIS307 Project Management of Information Systems (3)
Optional Courses
BIS308 Electronic Commerce (3)
CS114 Decision Support Systems II (3)
CS132 Ergonomics and Human Computer Interaction (3)
CS132 Database Concepts (3)

General Education Courses and electives to be chosen by the student.

Level 400
Semester 7
Core Courses
BIM400 Individual Project (3)
BIM402 Research in Information Management (3)
CS471 Object Oriented Systems Development (3)
CS461 Computer Communications Networks Management (3)

Optional Courses
LIS403 Knowledge Management (3)
LIS407 Emerging Technologies (3)
LIS412 Information Policies (3)
CS414 Information Interfaces and Presentation (3)
BIS405 Legal and Ethical Issues of Information Systems (3)
(pre-requisite BIS100)

General Education Courses and electives to be chosen by the student.

Semester 8
Core Courses
BIS420 Strategic Information Systems (3)
CS472 Social Issues of Information Technology (3)

Optional Courses
LIS404 Advanced Entrepreneurship (3)
LIS425 Global Information Systems (3)

General Education Courses and electives to be chosen by the student.

Progression from Semester to Semester
Progression from semester to semester shall apply according to Regulation 00.9.

Assessment and Examination
Evaluation of students’ performance shall be based on continuous assessment and a formal examination at the end of each semester. The weighting between continuous assessment and examinations shall be determined in each course.

Award of the Degree
Candidates must obtain a minimum of 120 credits including all core courses and optional or elective courses, and 20 General Education Courses. In addition, Regulation 00.85 shall apply.

Frequently Asked questions
1. What is semesterization?
   Semesterization is the process that UB is undertaking through changing its yearlong courses into courses that only run through one semester.

2. What is a semester?
   A semester comprises 14 teaching weeks, a week of mid-semester break, and a 1-week period of study/revision time and finally a week for examinations.

3. What is a core course?
   This is a course that must be taken in order to meet the requirements of an award, that is, it is mandatory or compulsory.

4. What is an optional course?
   This is a course that may be selected from a list of courses within a subject of study and which counts towards the requirements of an award.

5. What is an elective course?
   This is a course that may be selected from a list of courses outside a subject of study and which counts towards the requirements of an award.

6. What is a prerequisite course?
   This is a course that must be taken in preparation for another course.

7. What is a co-requisite course?
   This is a course that must be taken concurrently with other courses to enhance learning in the program.

8. What is an audit course?
   This is a course that may be taken by student but for which no credit is awarded. It can only be taken upon received assent from the Director, Academic Services and the relevant Heads of Department(s).

9. What is a General Education course?
   This is a course that is taken for the purpose of broadening the knowledge of a student and count towards the overall credit requirement for an award. The courses are placed in 7 large groups as shown in the table below.

Area Course group
1. Communication and Study skills
2. Computer and Information Skills
3. Modes of inquiry and critical thinking
4. Physical education, health and wellness
5. Science and technology
6. World civilization
7. World economy and business skills.

10. How do I know whether I have taken the correct GEC courses for my program?
   For all students, the total credits for GECs/Electives must not exceed a third of the total credits for a programme:
   - Certificate students may have no more than 10 credits from GEC/Elective courses. This will be one third of the minimum 30 credits required over 2 semesters to earn the award.
   - Degree students may have no more than 20 credits GEC/Elective courses. This will be one third of the minimum 60 credits required over levels 1 and 2 to earn the award. Holders of Certificates who are exempted from Diploma level 100 must take up to 6 credits of GEC/elective courses.
   - Degree students may have no more than 40 credits GEC/Elective courses. This will be one third of the minimum 120 credits required over levels 1, 2, 3 and 4 to earn the award. Holders of Diplomas who are exempted from Degree levels 1 and 2 must take at least 12 credits of GEC/elective courses including at least credits from Area 3.

   Students are required to take GEC/Elective courses as follows:
   - Certificate and Diploma Students
     At least 6 credits in Area 1 (COM 111 and 112)
     At least 4 credits in Area 2 (ICT 121 and 122)

   - Degree students
     At least 6 credits in Area 1 (COM 111 and 112)
     At least 4 credits in Area 2 (ICT 121 and 122)
     At least 2 credits in Area 3
     At least 10 credits from Areas 4, 5, 6 and 7

11. How many credits could I take in a semester?
   A full-time student undertaking a certificate, diploma, degree, post graduate diploma or masters program should carry a minimum workload of 15 credits per semester. Students may also carry up to 18 credits maximum, and beyond that, would have to seek permission from the Deputy Dean’s office. A part-time student undertaking a certificate, diploma, degree, post graduate diploma or masters program should carry a workload of between 6 to 14 credits per semester, unless officially exempted. It is possible to carry a higher workload within each semester as a strategy of completing the requirements of a students program. However, there is always the risk of carrying too many credits.
12. How many credits should I take in order to graduate?

Program Minimum number of credits from core, optional and elective courses for purposes of graduation
Certificate 30 (including 4 credits from General Education courses)
Diploma 60 (including 8-10 credits from General Education courses)
Bachelor's 120 (including 20 credits from General Education courses)
Masters 54 (including 24 credits from dissertation and 6 credits from practical attachment)

DEPARTMENT OF MEDIA STUDIES

BACHELOR OF MEDIA STUDIES (BMS) (Revised)

The Bachelor of Media Studies (BMS) that has been taught since 2002 has now been phased out and replaced with a revised BMS, a BA (Media Studies) and a minor programme in Media Studies. What follows is the revised BMS and BA (Media Studies).

1.0 Entrance Requirements

1.0.1 The normal minimum entrance requirement shall be the Botswana BGCSE or the equivalent with credit in English and in three other subjects.

1.0.2 Candidates who fulfill Regulation 1.0.1, have a credit in English and work experience in Media are preferred.

1.0.3 Candidates who do not meet Regulation 1.0.1 but have the BGCSE or equivalent and the CMS from a recognised institution may be admitted directly to Level 100 of the Programme.

1.0.4 Candidates with a Diploma in Media Studies or its equivalent may be admitted directly to Level 300 of the Programme.

1.1 Programme Structure

1.1.1 The Bachelor in Media Studies is a full-time programme extending over eight semesters. The programme should contain a minimum of 76 and a maximum of 88 credits. Part-time study for the Degree is also possible. It is expected that part-time students would finish their coursework in not more than ten semesters.

1.1.2 In Levels 2 (2nd semester) 3 and 4 of the Degree Programme, five specialised streams will be offered:
a) Print Media
b) Radio broadcasting
c) Television broadcasting
d) Public Relations
e) Film and Video

Level 1 Semester 1

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMS110</td>
<td>History of World Media, 3 credits CORE</td>
</tr>
<tr>
<td>BMS111</td>
<td>Media in Botswana, 3 credits CORE</td>
</tr>
<tr>
<td>ENG121</td>
<td>Intro to English Language, Description and Usage, 3 credits CORE</td>
</tr>
<tr>
<td>ENG113</td>
<td>Introduction to Literature and Prose, 3 credits CORE</td>
</tr>
<tr>
<td>COM111</td>
<td>Communication and Academic Literacy Skills (1), 3 credits CORE</td>
</tr>
</tbody>
</table>

17 CREDITS

Level 1 Semester 2

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMS112</td>
<td>Introduction to Media Technology, 3 credits CORE</td>
</tr>
<tr>
<td>BMS113</td>
<td>Theories of Mass Communication, 3 credits CORE</td>
</tr>
<tr>
<td>ENGL11</td>
<td>Studies in Prose, 3 credits CORE</td>
</tr>
<tr>
<td>ENGL12</td>
<td>Introduction to Literature, Drama and Poetry, 3 credits CORE</td>
</tr>
<tr>
<td>COM112</td>
<td>Communication and Academic Literacy Study Skills (2), 3 credits CORE</td>
</tr>
<tr>
<td>ICT122</td>
<td>Computer Skills Fundamentals 2, 2 credits</td>
</tr>
</tbody>
</table>

15 CREDITS

Level 2 Semester 3

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMS220</td>
<td>Introduction to Techniques of Digital Media, 3 credits CORE</td>
</tr>
<tr>
<td>BMS221</td>
<td>Introduction to Journalism, 3 credits CORE</td>
</tr>
<tr>
<td>BMS222</td>
<td>Introduction to Broadcasting, 3 credits CORE</td>
</tr>
<tr>
<td>BMS223</td>
<td>Introduction to PR &amp; Advertising, 3 credits CORE</td>
</tr>
<tr>
<td>BMS224</td>
<td>Introduction to Film and Video, 3 credits CORE</td>
</tr>
</tbody>
</table>

15 CREDITS

Level 2 Semester 4

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMS225</td>
<td>Media Attachment, 1 credit CORE</td>
</tr>
<tr>
<td>BMS226</td>
<td>Ethics for Media Professionals, 3 credits CORE</td>
</tr>
<tr>
<td>BMS227</td>
<td>Print Journalism Reporting &amp; Writing, 3 credits OPTIONAL</td>
</tr>
<tr>
<td>BMS228</td>
<td>Broadcast Interviewing &amp; Presentation Techniques, 3 credits OPTIONAL</td>
</tr>
<tr>
<td>BMS229</td>
<td>Basics of Video Production, 3 credits OPTIONAL</td>
</tr>
<tr>
<td>BMS230</td>
<td>Writing for PR &amp; Copy-writing, 3 credits OPTIONAL</td>
</tr>
<tr>
<td>BMS231</td>
<td>Major Film &amp; Video Genres, 3 credits OPTIONAL</td>
</tr>
</tbody>
</table>

15 CREDITS

Level 3 Semester 5

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMS320</td>
<td>Media &amp; Society, 3 credits CORE</td>
</tr>
<tr>
<td>BMS321</td>
<td>Media Law, 3 credits CORE</td>
</tr>
<tr>
<td>BMS322</td>
<td>Audio Technology, 3 credits OPTIONAL</td>
</tr>
<tr>
<td>BMS338</td>
<td>UB Horizon 1, 3 credits OPTIONAL</td>
</tr>
<tr>
<td>BMS324</td>
<td>Broadcast News Writing &amp; Production, 3 credits OPTIONAL</td>
</tr>
<tr>
<td>BMS325</td>
<td>Basics of TV Production, 3 credits OPTIONAL</td>
</tr>
<tr>
<td>BMS326</td>
<td>Research for PR &amp; Advertising, 3 credits OPTIONAL</td>
</tr>
</tbody>
</table>

17 CREDITS

Level 3 Semester 6

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMS328</td>
<td>Communication Research Methods, 3 credits CORE</td>
</tr>
<tr>
<td>BMS329</td>
<td>Developmental Communication, 3 credits CORE</td>
</tr>
<tr>
<td>BMS330</td>
<td>Media Attachment, 3 credits CORE</td>
</tr>
<tr>
<td>BMS339</td>
<td>UB Horizon 23 credits OPTIONAL</td>
</tr>
<tr>
<td>BMS332</td>
<td>Beat Reporting, 3 credits OPTIONAL</td>
</tr>
<tr>
<td>BMS333</td>
<td>Radio Documentary Writing &amp; Production, 3 credits OPTIONAL</td>
</tr>
<tr>
<td>BMS334</td>
<td>TV &amp; Video Documentary Writing &amp; Production, 3 credits OPTIONAL</td>
</tr>
<tr>
<td>BMS335</td>
<td>Motion Graphics, 3 credits OPTIONAL</td>
</tr>
<tr>
<td>BMS336</td>
<td>PR &amp; Advertising Campaigns, 3 credits OPTIONAL</td>
</tr>
<tr>
<td>BMS337</td>
<td>Cinema Language in World Film, 3 credits OPTIONAL</td>
</tr>
</tbody>
</table>

15 CREDITS

Level 4 Semester 7

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMS420</td>
<td>Media Project or Dossier (1), 2 credits CORE</td>
</tr>
<tr>
<td>BMS421</td>
<td>Current Issues in African media, 3 credits CORE</td>
</tr>
<tr>
<td>BMS422</td>
<td>Broadcast Programming, 3 credits OPTIONAL</td>
</tr>
<tr>
<td>BMS423</td>
<td>Investigative Journalism, 3 credits OPTIONAL</td>
</tr>
<tr>
<td>BMS424</td>
<td>Radio Drama Script-writing &amp; Production, 3 credits OPTIONAL</td>
</tr>
<tr>
<td>BMS425</td>
<td>TV &amp; Video Drama, 3 credits OPTIONAL</td>
</tr>
<tr>
<td>BMS426</td>
<td>Economic &amp; Social Issues in PR &amp; Advertising, 3 credits OPTIONAL</td>
</tr>
<tr>
<td>BMS427</td>
<td>African Cinemas, 3 credits OPTIONAL</td>
</tr>
</tbody>
</table>

15 CREDITS

Level 4 Semester 8

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMS428</td>
<td>Media Project or Dossier (2), 4 credits CORE</td>
</tr>
<tr>
<td>BMS429</td>
<td>Media Management &amp; Entrepreneurship, 3 credits CORE</td>
</tr>
<tr>
<td>BMS430</td>
<td>On-Line Media Production, 3 credits OPTIONAL</td>
</tr>
<tr>
<td>BMS431</td>
<td>Health &amp; Scientific Reporting, 3 credits OPTIONAL</td>
</tr>
<tr>
<td>BMS432</td>
<td>Live Radio Broadcasting, 3 credits OPTIONAL</td>
</tr>
<tr>
<td>BMS433</td>
<td>TV Entertainment Shows, 3 credits OPTIONAL</td>
</tr>
<tr>
<td>BMS434</td>
<td>Public Communication Campaign, 3 credits OPTIONAL</td>
</tr>
<tr>
<td>BMS435</td>
<td>Current Cinema, 3 credits OPTIONAL</td>
</tr>
</tbody>
</table>

15 CREDITS
## BA (MEDIA STUDIES)

### 1.0 Entrance Requirements

**As for BMS**

### 1.1 Programme Structure

1.1.1 The B.A. (Media Studies) is a full-time programme extending over eight semesters, as the Major part of a Combined Major/Minor programme. The Media Studies programme should contain a minimum of 54 and a maximum of 56 credits. Part-time study for the Degree is also possible. It is expected that part-time students would finish their coursework in not more than ten semesters.

#### Level 1 Semester 1

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMS110</td>
<td>History of World Media, 3 credits</td>
<td></td>
</tr>
<tr>
<td>BMS111</td>
<td>Media in Botswana, 3 credits CORE</td>
<td></td>
</tr>
<tr>
<td>ENG121</td>
<td>Intro to English Language, Description and Usage: 3 credits CORE</td>
<td></td>
</tr>
<tr>
<td>ENG113</td>
<td>Introduction to Literature and Prose: 3 credits CORE</td>
<td></td>
</tr>
<tr>
<td>COM111</td>
<td>Communication and Academic Literacy Skills (1): 2 credits CORE</td>
<td></td>
</tr>
<tr>
<td>ICT121</td>
<td>Computer Skills Fundamentals 1, 2 credits CORE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 ELECTIVE or COURSE FROM MINOR PROGRAMME 3 credits</td>
<td></td>
</tr>
<tr>
<td></td>
<td>16 CREDITS</td>
<td></td>
</tr>
</tbody>
</table>

#### Level 1 Semester 2

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMS112</td>
<td>Introduction to Media Technology, 3 credits CORE</td>
<td></td>
</tr>
<tr>
<td>BMS113</td>
<td>Theories of Mass Communication, 3 credits CORE</td>
<td></td>
</tr>
<tr>
<td>ENG111</td>
<td>Studies in Prose: 3 credits CORE</td>
<td></td>
</tr>
<tr>
<td>ENG123</td>
<td>Introduction to Literature, Drama and Poetry: 3 credits CORE</td>
<td></td>
</tr>
<tr>
<td>COM112</td>
<td>Communication and Academic Literacy Skills (2): 3 credits CORE</td>
<td></td>
</tr>
<tr>
<td>ICT122</td>
<td>Computer Skills Fundamentals 2, 2 credits CORE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 ELECTIVE or COURSE FROM MINOR PROGRAMME 3 credits</td>
<td></td>
</tr>
<tr>
<td></td>
<td>17 CREDITS</td>
<td></td>
</tr>
</tbody>
</table>

#### Level 2 Semester 3

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMS222</td>
<td>Introduction to Broadcasting, 3 credits OPTIONAL</td>
<td></td>
</tr>
<tr>
<td>BMS220</td>
<td>Introduction to Techniques of Digital Media, 3 credits OPTIONAL</td>
<td></td>
</tr>
<tr>
<td>BMS221</td>
<td>Introduction to Journalism, 3 credits OPTIONAL</td>
<td></td>
</tr>
<tr>
<td>BMS223</td>
<td>Introduction to PR &amp; Advertising, 3 credits, OPTIONAL Introductions to Film and Video, 3 credits, OPTIONAL</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6 CREDITS (Media)</td>
<td></td>
</tr>
</tbody>
</table>

#### Level 3 Semester 4

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMS226</td>
<td>Ethics for Media Professionals, 3 credits, CORE AND ONE OF THE FOLLOWING</td>
<td></td>
</tr>
<tr>
<td>BMS227</td>
<td>Print Journalism Reporting &amp; Writing, 3 credits, OPTIONAL</td>
<td></td>
</tr>
<tr>
<td>BMS228</td>
<td>Broadcast Interview &amp; Presentation Techniques 3 credits, OPTIONAL</td>
<td></td>
</tr>
<tr>
<td>BMS229</td>
<td>Basics of Video Production, 3 credits, OPTIONAL</td>
<td></td>
</tr>
<tr>
<td>BMS230</td>
<td>Writing for PR &amp; Copy-writing, 3 credits, OPTIONAL</td>
<td></td>
</tr>
<tr>
<td>BMS231</td>
<td>Major Film &amp; Video Genres, 3 credits, OPTIONAL</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6 CREDITS (Media)</td>
<td></td>
</tr>
</tbody>
</table>

#### Level 3 Semester 5

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMS320</td>
<td>Media &amp; Society 3 credits</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 OUT OF:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 CREDITS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>17 CREDITS</td>
<td></td>
</tr>
</tbody>
</table>

#### Level 4 Semester 4

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMS229</td>
<td>Media Management &amp; Entrepreneurship 3 credits CORE</td>
<td></td>
</tr>
<tr>
<td>BMS330</td>
<td>On-Line Media Production 3 credits OPTIONAL</td>
<td></td>
</tr>
<tr>
<td>BMS331</td>
<td>Health &amp; Scientific Reporting 3 credits OPTIONAL</td>
<td></td>
</tr>
<tr>
<td>BMS332</td>
<td>Live Radio Broadcasting 3 credits OPTIONAL</td>
<td></td>
</tr>
<tr>
<td>BMS333</td>
<td>TV Entertainment Shows 3 credits OPTIONAL</td>
<td></td>
</tr>
<tr>
<td>BMS334</td>
<td>Public Communication Campaign 3 credits OPTIONAL</td>
<td></td>
</tr>
<tr>
<td>BMS335</td>
<td>Current Cinema 3 credits OPTIONAL</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6 OR 9 CREDITS (Media)</td>
<td></td>
</tr>
</tbody>
</table>

**Minor Programme in Media Studies**

#### 1.0 Entrance Requirements

As for BMS

#### 1.1 Programme Structure

1.1.1 The Minor programme in Media Studies is a full-time programme extending over eight semesters, as the Minor part of a Combined Major/Minor programme. The Media Studies programme should contain a minimum of 30 credits. Part-time study for the Programme is also possible. It is expected that part-time students would finish their coursework in not more than ten semesters. Streams are available in Journalism, Public Relations or Mediated Drama.

#### Level 1 Semester 1

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMS110</td>
<td>History of World Media, 3 credits</td>
<td></td>
</tr>
<tr>
<td>BMS111</td>
<td>Media in Botswana, 3 credits CORE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 ELECTIVE or COURSE FROM MINOR PROGRAMME 3 credits</td>
<td></td>
</tr>
<tr>
<td></td>
<td>16 CREDITS</td>
<td></td>
</tr>
</tbody>
</table>

#### Level 2 Semester 2

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMS229</td>
<td>Developmental Communication 3 credits OPTIONAL</td>
<td></td>
</tr>
<tr>
<td>BMS339</td>
<td>UB Horizon 23 credits OPTIONAL</td>
<td></td>
</tr>
<tr>
<td>BMS332</td>
<td>Beat Reporting 3 credits OPTIONAL</td>
<td></td>
</tr>
<tr>
<td>BMS333</td>
<td>Radio Documentary Writing &amp; Production 3 credits OPTIONAL</td>
<td></td>
</tr>
<tr>
<td>BMS334</td>
<td>TV &amp; Video Documentary Writing &amp; Production 3 credits OPTIONAL</td>
<td></td>
</tr>
<tr>
<td>BMS335</td>
<td>Motion Graphics 3 credits OPTIONAL</td>
<td></td>
</tr>
<tr>
<td>BMS336</td>
<td>PR &amp; Advertising Campaigns 3 credits OPTIONAL</td>
<td></td>
</tr>
<tr>
<td>BMS337</td>
<td>Cinema Language in Film 3 credits OPTIONAL</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6 OR 9 CREDITS (Media)</td>
<td></td>
</tr>
</tbody>
</table>

#### Level 3 Semester 3

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMS221</td>
<td>Current Issues in African media 3 credits CORE</td>
<td></td>
</tr>
<tr>
<td>BMS222</td>
<td>Broadcast Programming 3 credits OPTIONAL</td>
<td></td>
</tr>
<tr>
<td>BMS243</td>
<td>Investigative Journalism 3 credits OPTIONAL</td>
<td></td>
</tr>
<tr>
<td>BMS244</td>
<td>Radio Drama Script-writing &amp; Production 3 credits OPTIONAL</td>
<td></td>
</tr>
<tr>
<td>BMS245</td>
<td>TV &amp; Video Drama 3 credits OPTIONAL</td>
<td></td>
</tr>
<tr>
<td>BMS246</td>
<td>Economic &amp; Social Issues in PR &amp; Advertising 3 credits OPTIONAL</td>
<td></td>
</tr>
<tr>
<td>BMS247</td>
<td>African Cinemas 3 credits OPTIONAL</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6 OR 9 CREDITS (Media)</td>
<td></td>
</tr>
</tbody>
</table>
Entrepreneurship, 3 cr

BMS229 Basics of Video Production, 3 cr

BMS230 Writing for Public Relations, 3 cr

BMS231 Major Cinema Genres, 3 cr

3 CREDITS

Level 3 Semester 5
ONE OF:

BMS231 Media Law, 3 credits OPTIONAL

BMS235 Basics of TV Production, 3 credits OPTIONAL

BMS238 Media and Society, 3 credits OPTIONAL

BMS239 Research for PR & Advertising, 3 credits OPTIONAL

3 CREDIT

Level 3 Semester 6
TWO OF:

BMS239 Development Communication, 3 credits OPTIONAL

BMS330 UB Horizon 2, 3 credits OPTIONAL

BMS332 Beat Reporting, 3 credits OPTIONAL

BMS333 Radio Documentary Writing & Production, 3 credits OPTIONAL

BMS334 TV/Video Documentary Writing & Production, 3 credits OPTIONAL

BMS336 PR & Advertising Campaigns, 3 credits OPTIONAL

6 CREDITS

Level 4 Semester 7
ONE OR TWO OF:

BMS423 Investigative Journalism, 3 credits OPTIONAL

BMS424 Radio Drama Scriptwriting & Production, 3 credits OPTIONAL

BMS425 TV & Video Drama Script & Production, 3 credits OPTIONAL

BMS426 Economic & Social Issues in PR & Advertising, 3 credits OPTIONAL

3 or 6 CREDITS

Level 4 Semester 8
ONE OR TWO OF:

BMS429 Media Management & Entrepreneurship, 3 credits OPTIONAL

BMS431 Health and Scientific Reporting, 3 credits OPTIONAL

BMS433 TV/Video entertainment Shows, 3 credits OPTIONAL

BMS435 Current Cinema, 3 credits OPTIONAL

BMS434 Public Communication Campaign 3 credits OPTIONAL

3 or 6 CREDITS

Assessment

Assessment shall be as per General Academic Regulation 00.8

Progression from one Semester to the next

Course and assessment linked to UB Horizon.

Course and assessment linked to UB Horizon.

Award of Degree

The award of the Degree shall be as per General Regulations 00.8

FACULTY OF HUMANITIES

Writing, 3 credits, OPTIONAL

BMS229 Basics of Video Production, 3 credits, OPTIONAL

BMS230 Writing for Public Relations, 3 credits, OPTIONAL

BMS231 Major Cinema Genres, 3 credits, OPTIONAL

3 CREDITS

BMS110 HISTORY OF WORLD MEDIA (3)

A brief history of world media from the invention of writing through to the internet and other 21st century developments. The course will also look at some of the major social impacts of media developments through the ages.

BMS111 MEDIA IN BOTSWANA (3)

A brief history of media in Botswana, including indigenous communication techniques, and showing links to media in the region and the wider world. A survey of current media houses, trends and genres in Botswana is included.

BMS112 INTRODUCTION TO MEDIA TECHNOLOGY (3)

An introduction to communication principles followed by a survey and simple explanation of the major technologies used by 20th and 21st century media.

BMS113 THEORIES OF MASS COMMUNICATION (3)

A survey of some major theories of Mass Communication, including their applications in communication practice (both mediated and non-mediated)

BMS232 INTRODUCTION TO TECHNIQUES OF DIGITAL MEDIA (3)

An introduction to principles and practice of design for digital media (desk-top publishing, digital imaging and web design).

BMS221 INTRODUCTION TO JOURNALISM (3)

A survey of print and on-line journalism industries, including a description of the whole production process and the main requirements of a journalist, including the basic elements of story writing. Course and assessment linked to UB Horizon.

BMS222 INTRODUCTION TO BROADCASTING (3)

A survey of radio and television industries, including a description of the whole production process and the main requirements of a broadcaster.

BMS223 INTRODUCTION TO PR & ADVERTISING (3)

A survey of the Public Relations and advertising industries, including a description of the whole production process and the main requirements of a worker in the Public Relations and Advertising industries. Course and assessment linked to UB Horizon.

BMS224 INTRODUCTION TO FILM & VIDEO (3)

A survey of the history of world film, from silent movies through to the digital age, including the major production methods.

BMS225 MEDIA ATTACHMENT (1)

A one month internship in a media company during which the student observes and becomes familiar with media organization and participates in work practices.

BMS226 MEDIA ETHICS (3)

An analysis of theoretical issues concerning media ethics and their practical application in various case studies of media within Botswana and beyond.

BMS227 PRINT JOURNALISM REPORTING AND WRITING (3)

A practical course in how to report and write stories for print media journalism. The course will be closely linked to UB Horizon, with students expected to write stories for the newspaper, for which they will be assessed.

BMS228 BROADCAST INTERVIEWING & PRESENTATION TECHNIQUES (3)

Techniques of interviewing and presentation for radio and television (course split into radio or television after mid-semester break).

BMS229 BASICS OF VIDEO PRODUCTION (3)

A mainly practical course on the basic requirements of pre-production, production and post-production in the making of video films.

BMS230 WRITING FOR PUBLIC RELATIONS & COPY WRITING (3)

A mainly practical course on the basic requirements of copy-writing for both print and broadcast media in the field of Public Relations and Advertising. Course and assessment linked to UB Horizon.

BMS231 MAJOR CINEMA & VIDEO GENRES (3)

A survey of the major genres, such as comedy, adventures, blockbusters, thrillers, art films, dramas and animated films.

BMS232 PRINT MEDIA & SOCIETY (3)

A theoretical course analyzing the way media represent various social groups and the way the media impact upon society.

BMS231 MEDIA LAW (3)

A survey of laws relevant to journalism, broadcasting and telecommunications, with case studies to illustrate their application.

BMS232 AUDIO TECHNOLOGY (3)

A mostly technical course training students in the correct use of various types of microphones, mixers and other examples of audio technology.

BMS338 UB HORIZON 1 (3)

The fundamentals of taking and editing both digital and non-digital photographs for print, television and on-line journalism. Course and assessment linked to UB Horizon.

BMS324 BROADCAST NEWS WRITING & PRODUCTION (3)

Electronic news gathering, news writing and production for both radio and television.

BMS325 BASICS OF TV PRODUCTION (3)

The techniques of planning, writing and production of television programmes both in the studio and outside.

BMS 326 RESEARCH FOR PUBLIC RELATIONS & ADVERTISING (3)
Market and product research in order to motivate campaigns in the fields of Public Relations and Advertising.

BMS327 HISTORY OF FILM & VIDEO DOCUMENTARY (3)
The history and genres of Film and Video documentary, linked to practical work in documentary and feature script-writing.

BMS328 COMMUNICATION RESEARCH METHODS (3)
An intensive course explaining the principles of research and useful quantitative and qualitative media research methodologies.

BMS329 DEVELOPMENT COMMUNICATION (3)
A survey of major development communication theories and their application in different media arts as part of total communications strategies.

BMS 330 MEDIA ATTACHMENT II (3)
A three month internship in a media company during which the student observes and becomes familiar with media organization and participates in work practices.

BMS339 UB HORIZON 2 (3)
A course that grounds students in the principles and practices of editing for print journalists and editors. Course and assessment linked to UB Horizon.

BMS342 BEAT REPORTING (3)
A course that prepares students for reporting in special interest fields such as crime, sport, environment, health and entertainment.

BMS334 RADIO DOCUMENTARY WRITING & PRODUCTION (3)
Skills for script-writing (and other pre-production work), production and post-production for radio documentaries and features.

BMS344 TV AND VIDEO DOCUMENTARY WRITING & PRODUCTION (3)
Skills for pre-production work, production and post-production for TV/Video documentaries and features.

BMS335 MOTION GRAPHS (3)
A mainly practical course in special visual effects and animation for television and video.

BMS336 PR & ADVERTISING CAMPAIGNS (3)
Skills for planning, designing, writing and implementing total campaigns for Public Relations and Advertising. Course and assessment linked to UB Horizon.

BMS337 CINEMA LANGUAGE IN WORLD FILM (3)
A survey of important cinematography and editing styles (such as montage, neo-realism, cinema noire and magic realism), along with mini video projects to apply the theories in practice.

BMS420 MEDIA PROJECT & DOSSIER I (2)
The course will allocate students to individual tutors who will take students through the research process up to the completion of the project proposal for their chosen topics.

BMS421 CURRENT ISSUES IN AFRICAN MEDIA (3)
The course will provide an overview of current issues affecting African media including the press or broadcast organizations that influence the media.

BMS422 BROADCAST PROGRAMMING (3)
How to design short and long term programme schedules for radio and television broadcasting. The 2nd half of the semester may be split into radio and television.

BMS423 INVESTIGATIVE JOURNALISM (3)
In depth, carefully researched, critical journalism for print or broadcast media. For students taking the print pathway, the course and assessment are linked to UB Horizon.

BMS424 RADIO DRAMA SCRIPT-WRITING & PRODUCTION (3)
Writing drama scripts and producing them for radio broadcasts, including casting, rehearsing, recording and post-production editing.

BMS425 TV & VIDEO DRAMA (3)
Writing drama scripts and producing them for TV and Video drama, including casting, rehearsing, recording and post-production editing.

BMS426 ECONOMIC & SOCIAL ISSUES IN PR & ADVERTISING (3)
The impact of economic and social issues on Public Relations and Advertising campaigns including issues of ethics and corporate responsibility.

BMS427 AFRICAN CINEMAS (3)
The course will include skills in film reviewing.

BMS428 MEDIA PROJECT & DOSSIER II (3)
A research project involving any one or any combination of media to show the student has acquired the skills of using media techniques for communication.

BMS429 MEDIA MANAGEMENT & ENTREPRENEURSHIP (3)
A practical and theoretical course on how to set up and grow a small media company, and how management/organizational issues relate to the wider economic landscape.

BMS430 ON-LINE MEDIA PRODUCTION (3)
Preparation for work in the area of online publishing, this includes streaming of video and audio content, formatting images and text, and web-programming. Course and assessment linked to Media Studies and UB Horizon web-sites.

BMS431 HEALTH & SCIENTIFIC REPORTING (3)
A journalism course on the special skills needed for researching and writing stories on issues of Health and Science. The course and assessment are linked to UB Horizon.

BMS432 LIVE RADIO BROADCASTING (3)
Techniques of radio for Studio and Outside live Broadcast shows in News, Educational and Entertainment fields.

BMS433 TV/VIDEO ENTERTAINMENT SHOWS (3)
Production of entertainment programmes such as game shows, talk shows, and music shows for television or video.

BMS 434 PUBLIC COMMUNICATION CAMPAIGNS (3)
Planning, designing and implementation of public media communication campaigns for government or NGO social change agencies.

BMS435 CURRENT CINEMA (3)
Current issues in film and video production, distribution, exhibition, reception and aesthetics.

DEPARTMENT OF THEOLOGY AND RELIGIOUS STUDIES

Bachelor of Arts in Humanities and Degree Programme

Special Regulations for the BA Programme

1. Theology and Religious Studies is offered as a Single Major Subject, a Major Subject in a Combined Major programme, a Major and Minor Subject and as a multidisciplinary degree as stipulated in General Regulations 22.37 and 00.2114 and departmental regulations.

2. A multidisciplinary degree including Theology and Religious Studies may, in accordance with General Regulation 00.2114 be approved in special cases, but only at the discretion of the TRS Department.

3. All courses offered in the TRS Department will be semester long. However, students taking TRS 420 Directed Research II will also be required to have taken TRS 326 Directed Research I.

4. Unless indicated otherwise all courses will carry 3 credits.

5. Not all courses listed may be offered in any one semester.

6. Students pursuing a Single Major in TRS are required to take a total of 96 credits in TRS consisting of 48 credits from the core courses and additional credits from optional and other courses.

7. Students pursuing a Major in TRS as part of a combined Major/Minor are required to take a total of 84 credits in TRS consisting of 48 credits from the core courses and additional credits from optional and other courses.

8. Students pursuing a Major in TRS as part of a combined Major/Minor are required to take a total of 60 credits in TRS consisting of 24 credits from the core courses and additional credits from optional and other courses.

9. Students pursuing a Minor in TRS as part of a combined Minor/Major are required to take a total of 36 credits in TRS consisting of 24 credits from the core courses and additional credits from optional and other courses.

10. Unless otherwise specified in the published course description or in a written syllabus distributed by the instructor to the students during the first week of class lectures, course assessment will be by a standard (750-1,000 word) written assignment, a mid-term test, and a final examination, weighted 1: 1: 2 respectively.

11. Students from other departments and other
faculties, who wish to take TRS courses as electives, may take any course for which they have the prerequisites.

12. Students pursuing a Single Major with concentration in Biblical studies are recommended to include Biblical languages either Hebrew (for Old Testament) or Greek (for New Testament).

Programme Structure

SINGLE MAJOR PROGRAMME
In a Single Major Degree, a student shall take the following:

Level: 100
Semester 1: 1 core course, any one optional course.
Semester 2: 1 core course, any one optional course.

Level: 200
Semester 3: 1 core course, any one optional course.
Semester 4: 1 core course, any one optional course.

Level: 300
Semester 5: Three core courses and any three optional courses.
Semester 6: Three core courses and any three optional courses.

Level: 400
Semester 7: Three core courses and any three optional courses.
Semester 8: Three core courses and any three optional courses.

MAJOR (TRS)/MINOR
In a Major/Minor Degree a student shall take the following courses:

Level: 100
Semester 1: 1 core course, any one optional course.
Semester 2: 1 core course, any one optional course.

Level: 200
Semester 3: 1 core course, any one optional course.
Semester 4: 1 core course, any one optional course.

Level: 300
Semester 5: 2 core courses in the area of specialisation (TRS 301 for Theology, TRS 304 for Biblical Studies, TRS 302 for Religious Studies and TRS 305 for Philosophy), and any two optional courses.

Semester 6: 2 core courses in the area of specialisation (TRS 315 for Theology, TRS 316 for Religious Studies, TRS 317 for Biblical Studies and TRS 318 for Philosophy), and any two optional courses.

Level: 400
Semester 7: 2 core course in the area of specialisation (TRS 401 for Theology, TRS 402 for Religious Studies, TRS 403 for Biblical Studies and TRS 404 for Philosophy), and any one optional course.

Level: 300
Semester 5: 1 core course in the area of specialisation (TRS 301 for Theology, TRS 302 for Religious Studies, TRS 303 for Biblical Studies and TRS 304 for Philosophy), and any two optional courses.

Semester 6: 1 core course in the area of specialisation (TRS 315 for Theology, TRS 316 for Religious Studies, TRS 317 for Biblical Studies and TRS 318 for Philosophy), and any one optional course.

Semester 7: 1 core course in the area of specialisation (TRS 401 for Theology, TRS 402 for Religious Studies, TRS 403 for Biblical Studies and TRS 404 for Philosophy), and any one optional course.

Semester 8: 1 core course in the area of specialisation (TRS 415 for Theology, TRS 416 for Religious Studies, TRS 417 for Biblical Studies and TRS 418 for Philosophy), and any one optional course.

Entry Requirements
The normal entry requirements shall be as stipulated in General 20.2 and Departmental Regulations.

Level 100
Semester 1 Core courses
TRS101 Introduction to Biblical Studies (3)

Optional Courses
TRS102 Religion and Science (3)
TRS103 Religions of Botswana (3)
TRS104 Christianity and the rise of New Religious Movements in Botswana (3)
TRS105 Asian Religions: A Survey (3)
TRS106 Ethics: Classical Theories (3)

Semester 2 Core Courses
TRS107 African Traditional Religions (3)

Optional Courses
TRS108 History of Philosophy I: Classical Greek Philosophy (3)
TRS109 Biblical Interpretation (3)
TRS110 God in the Hebrew Bible (3)
TRS111 Epistemology I: Theory of Knowledge (3)
TRS112 Bible and Gender (3)

Level 200
Semester 3 Core Courses
TRS201 Logic I: Introduction to Logic (3)

Optional Courses
TRS202 Hebrew Bible Narratives (3)
TRS203 African Traditional Religions in Botswana (3)
TRS204 Theologies of Gender (3)
TRS205 History of Philosophy I: Post-Aristotelian to Medieval (3)
TRS206 Beginning Biblical Greek I: New Testament Greek (3)
TRS207 Introduction to Christian Theology (3)
TRS208 The Hebrew Bible as History & Story (3)

Semester 4 Core Courses
TRS209 History of Christian Thought (3)

Optional Courses
TRS210 Gospel Narratives (3)
TRS211 Ecclesiology (3)
TRS212 Beginning Biblical Greek II: New Testament Greek (3)
TRS213 Johannine corpus (3)
TRS214 Beginning Arabic I: Intro. to the basic Arabic (3)
TRS215 Metaphysics I: Appearance and Reality (3)
TRS216 History of Philosophy III: Post-Medieval to 19th Century (3)
TRS220 Critical Thinking (3)
TRS221 Politics of Gender (3)
TRS222 Religion and Development (3)

Level 300
Semester 5
Core Courses

TRS301 Christology (3)
TRS302 Missions in 19th Century South Africa (3)
TRS303 Creation and the Bible (3)
TRS304 African Philosophy and Culture (3)

Optional Courses

TRS305 Judaism (3)
TRS306 Intermediate Greek I: Exam. of selected texts (3)
TRS307 Beginning Arabic II: Arabic construction (3)
TRS308 Beginning Biblical Hebrew I: Introduction to Hebrew Script (3)
TRS309 Psychology of Religion (3)
TRS310 Professional Ethics (3)
TRS311 Metaphysics II: Idealism (3)
TRS312 Logic II: Logic and the Sciences (3)
TRS313 History of Christianity: Medieval to the Reformation (3)

Semester 6

Core Courses

TRS314 Christian Moral Theology (3)
TRS315 Sociology of Religion (3)
TRS316 History and Mythology of Jesus (3)
TRS317 Theodicy: The Co-existence of God and Evil (3)

Optional Courses

TRS318 Beginning Biblical Hebrew II: Translation of Hebrew Texts (3)
TRS319 Philosophy of Religion (3)
TRS320 Epistemology II: Theories of Truth (3)
TRS321 Metaphysics III: Body/mind Problem (3)
TRS322 History of Christianity in Southern Africa (3)
TRS323 Intermediate Greek II: Translation of selected texts (3)
TRS324 Intermediate Arabic I: Arabic grammar (3)
TRS325 Foundational Structures of Islam (3)
TRS326 Directed Research I: Research Methods (3)

Level 400

Semester 7

Core Courses

TRS401 New Religious Movements (3)
TRS402 Religion and Politics (3)
TRS403 The Doctrine of Sin in the Bible (3)
TRS404 Metaphysics IV: Personal Identity (3)

Optional Courses

TRS405 Intermediate Hebrew I: Examination of selected Hebrew texts (3)
TRS406 Intermediate Arabic I: Translation of Arabic texts (3)
TRS407 Islam’s socio-cultural, legal and political structures (3)
TRS408 Directed Research I: Research Methods (3)
TRS409 African Christian Theologies (3)
TRS410 Theory of Government (3)
TRS411 Politics and Development of Biblical Thought (3)
TRS412 Ecumenical Theology (3)
TRS413 Hinduism (3)
TRS414 Metaphysics V: Materialism (3)

Semester 8

Core Courses

TRS415 Twentieth Century Theologians (3)
TRS416 Religion and Modernity (3)
TRS417 Paul’s Epistles (3)
TRS418 Contemporary African Philosophy (3)

Optional Courses

TRS419 Intermediate Hebrew II: Hebrew Texts and Dead Sea Scrolls (3)
TRS420 Directed Research II: Research Project (3)
TRS421 History of Christianity: Modern and Contemporary (3)
TRS422 Epistemology III: Rationalism & Empiricism (3)
TRS423 History of Philosophy IV: Contemporary (3)
TRS424 Buddhism (3)
TRS425 The theology of the Reformation (3)
TRS426 Religious Rituals and Sacred Places (3)
TRS427 Applied Ethics (3)
TRS428 Religious Pluralism (3)

THEOLOGY AND RELIGIOUS STUDIES COURSE DESCRIPTIONS

TRS 101 Introduction to Biblical Studies (3)
This course will present a general overview of the contexts in which the Old Testament and the New Testament came into being and a survey of the contents of both testaments. It will consider various ways in which the Bible is used in Judaism and Christianity.

TRS 102 Religion and Science (3)
This course will study the assumptions, practices, and methodologies of what is commonly called “religion” and what is commonly called “Science”. It will ascertain the similarities and differences, continuities and discontinuities between the two domains.

TRS 103 Religions of Botswana (3)
This course will study the different religious traditions that exist in Botswana with the view towards a better understanding of their beliefs, rituals and practices. It will survey ATR, Christianity, Islam, Hinduism, Baháí, Sikhism and Buddhism as they have developed and are currently practiced in Botswana.

TRS 104 Christianity and the Rise of New Religious Movements in Botswana (3)
This course will study changes that have taken place in the Christian churches of Botswana since independence. It will examine the rise of New Religious Movements and the integration of Christian belief and practice with cultural tradition.

TRS 105 Asian Religions A Survey (3)
This course will present a comprehensive survey of Asian religions, namely Jainism, Sikhism, Zoroastrianism, Confucianism, Baháí, Shinto and Taoism.

TRS 106 Ethics: Classical Theories (3)
This course will offer an introduction to moral philosophy particularly by exploring the origins of ethical reflection among the classical Greek philosophers, including the Sophists, Socrates, Plato and Aristotle.

TRS 107 African Traditional Religions (3)
This course will study the beliefs and practices of African traditional religions from a phenomenological point of view. It will focus in particular on the traditional religions of Southern Africa.

TRS 108 History of Philosophy I: Classical Greek Philosophy (3)
This course will study the thought of major Greek Philosophers of the classical period, including the pre-Socratics (e.g. Parmenides, Heracleitus, Pythagoras and Pragmator), Socrates, Plato, and Aristotle, and the post- Aristotle schools of Stoicism, Epicureanism and Skepticism.

TRS 109 Biblical Interpretation (3)
This course will study different methods, both modern and contemporary, of reading the Bible. It will explore modern historical critical methods like textual, form, compositional and redactional criticisms.

TRS 110 God in the Hebrew Bible (3)
This course will study the diverse depictions of God in the Hebrew Bible, including the identities of the surrounding cultures. In particular, it will explore such themes as anthropomorphism, creation, monotheism and mythology, the justice of God, the figure of Wisdom, female imagery and God.

TRS 111 Epistemology I: Theory of Knowledge (3)
This course will introduce students to the theory of knowledge. Students will explore how Plato, René Descartes, Baruch de Spinoza and Gottfried von Leibniz approached the theory of knowledge from a rationalist point of view.

TRS 112 Bible and Gender (3)
This course will explore the construction of gender and identity in the Hebrew and Christian Testaments. It will examine how different types of biblical literature constructed gender over various times and circumstances.

TRS 201 Logic I: Introduction to Logic (3)
This course will define “Philosophy” and “Logic”, and examine in detail informal fallacies and deductive methods of reasoning. It will explore the nature of definitions, decisions, and classifications.

TRS 202 Hebrew Bible Narratives (3)
This course will study several short narratives from the Hebrew Bible selected from different books. Focus will be on the literary dimension of the story, narrative technique, effect on a reader, ideology and social location implied in the narrative.

TRS 203 African Traditional Religions in Botswana (3)
This course will study the beliefs and practices of traditional religions in Botswana. It will survey a large number of the ethnic groups in the country, with emphasis on continuity and change in their mutual relationships and in their development.

TRS 204 Theologies of Gender (3)
This course will explore theological questions surrounding the issues of gender and gender identity. It will examine traditional theological positions as well as those of feminist/womanist theologians.
TRS 205 History of Philosophy II: Post-Aristotelian to Medieval (3)
This course will study the development of philosophy from the time following the classical Greek Philosophers until the Middle Ages. In particular it will examine the interaction of philosophy and religious thought, both Christians and Islamic.

TRS 206 Beginning Greek I: New Testament Greek (3)
This course will introduce students to the basic elements of New Testament Greek (Koine) and teach them how to write it. It will focus on basic Koine grammar and how to read some prescribed texts.

TRS 207 Introduction to Christian Theology (3)
This course will study the nature of theology, its different branches and its relevance to society. It will focus on the different methods used in doing theology, its sources, its relationships with other sciences and its application.

TRS 208 The Hebrew Bible as History and Story (3)
This course will study both the historical texts in the Hebrew Bible and the eternal historical factors that have shaped the formation of the Hebrew Bible. It will examine in detail the theological focus and agenda of Hebrew Bible historical texts.

TRS 209 History of Christian Thought (3)
This course will study the development of Christianity and Christian thought from the New Testament period to its establishment as the state religion of the Roman Empire under Constantine. It will emphasize relations between the Church and the state and how these affected the life of the Church and of Christian believers.

TRS 210 Gospel Narratives (3)
This course will study gospels of the New Testament, Mark, Matthew, Luke and John. Students will study the gospels through employing different perspectives such as historical, literary, sociological and liberation methods.

TRS 211 Ecclesiology (3)
This course will study the doctrine of the Christian Church, its nature and functions in relation to other doctrines, such as the doctrine of God, Christology, and sacraments. It will examine the scriptural, historical and systematic dimensions of the doctrine of the Church from its origin in New Testament times through the patristic period, the Reformation, and the post-Reformation period.

TRS 212 Beginning Greek II: New Testament (3)
This course is a continuation of Beginning Koine Greek I. It will study basic Arabic grammar and how to read basic prescribed texts.

TRS 213 Johanne Corpus (3)
This course will study the Johanne Corpus both the Gospel of John and the Epistles of John. It will examine the historical, philosophical and political factors that shaped its theology in the apostolic period.

TRS 214 Beginning Arabic I: Introduction to Basic Arabic (3)
This course will introduce students to the Arabic script and teach them how to write it. It will study basic Arabic grammar and how to read basic prescribed texts.

TRS 215 Metaphysics I: Appearance and Reality (3)
This course will introduce students to basic and fundamental concepts of metaphysics. Students will examine why the Platonic theory assigns reality to the "forms" and appearance to the sensible objects.

TRS 216 History of Philosophy III: Post-Medieval of 19th Century (3)
This course will survey the main strands of philosophy from the Renaissance to modern times. It will consider Renaissance philosophy, the critical examination of reason and pragmatism.

TRS 220 Critical Thinking (Optional 3 Credits)
This course will train students not to take anything they hear, read, write and do for granted without first critically assessing and analyzing them. In order to do these students will examine key logical concepts and principles such as laws of identity, non contradiction and exclude middle. Some logical formal and informal will also be dealt with.

TRS 221 The Politics of Gender (Optional 3 Credits)
This course will discuss the roles and contributions of men and women in nation building. It will examine in particular the disadvantaged position women hold in most societies.

TRS 222 Religion and Development (Optional 3 Credits)
This course undertakes a study of religion amidst social transformation in different countries with special reference to Sub-Saharan Africa. In the process of assessing the role of religion, taking into account the theories of development, secularization and modernization, it also looks at the paradigms in conflict in the socio-political and economic spheres.

TRS 301 Christology (3)
This course will study the meaning and significance of the person of Jesus Christ. It will examine critically the life of Jesus from the time of his conception to his resurrection and the developing understanding of Christology through the first five years of Christian thought.

TRS 302 Missionaries in Nineteenth Century Southern Africa (3)
This course will investigate early missionaries’ attitudes toward African culture, beliefs and practices. It will draw much of its information from primary sources.

TRS 303 Creation and the Bible (3)
This course will focus on the creation texts of the Hebrew Bible. They will be compared and contrasted with other ancient Near Eastern creation accounts. This will also examine creation in the New Testament.

TRS 304 African Philosophy and Culture (3)
This course will examine how philosophy and culture have interacted in an African context. It will investigate the thought of several African thinkers.

TRS 305 Judaism (3)
This course will present an introduction to the main beliefs and practices of the several forms of post-biblical Judaism. The course will cover some of the milestones of the history of the Jewish people.

TRS 306 Intermediate Greek I: Examination of Selected Texts (3)
This course will build on the knowledge of New Testament vocabulary, grammar and syntax acquired in Beginning Koine Greek I and II.

TRS 307 Beginning Arabic II: Arabic Construction (3)
This course is a continuation of Beginning Arabic I.

TRS 308 Beginning Biblical Hebrew I: Introduction to Hebrew Script (3)
This course will introduce the student to the Hebrew script and teach them how to write it. It studies basic Hebrew grammar and how to read basic prescribed texts.

TRS 309 Psychology of Religion (3)
This course will critically discuss the relationship of religion and psychology. It will study and examine the various theories, principles, and methods spruced by the psychologists of religion.

TRS 310 Professional Ethics (3)
This course will examine the question of whether professional morality is independent of and separate from ordinary morality. It will look at business, medicine, law and political ethics.

TRS 311 Metaphysics II: Idealism (3)
This course will study issues of particular importance in the philosophy of the metaphysical idealists George Berkeley, Immanuel Kant, George W. F. Hegel and others. Concepts such as existence, being causality, change, time and other shall be examined.

TRS 312 Logic II: Logic and the Sciences (3)
This course will examine the place of logic in philosophy, the sciences, and other human activities and relations. It will study the concepts (in) validity and soundness of arguments, and the different patterns that arguments can follow. It will consider the benefits of symbols and will introduce students to the use of elementary symbolic language.

TRS 313 History of Christianity: Medieval To Reformation (3)
This course will study the development of the church from the Middle Ages to the Reformation. It will examine the separation between Eastern and Western Christianity, scholasticism, sacramentalism and opposition to monarchical papacy.

TRS 314 Christian Moral Theology (3)
This course will examine the moral implications of being a Christian in a secular society in the context of the teachings of the Christian church. It will focus on issues related to Christian behaviour in regard to marriage and other ethical issues.

TRS 315 Sociology of Religion (3)
This course will study the influence of religion in society. It will examine sociological theories of religion and the concrete interaction of religion and particular societies.

TRS 316 History of Mythology (3)
This course will study the presentation of Jesus in the four gospels. It will investigate how each gospel characterizes Jesus and the significance of such characterization, as well as the character of Jesus that emerges in Paul’s writings.

TRS 317 Theology: The Co-existence of God and
Evil (3)
This course will examine various philosophical arguments for the existence of God. It will discuss the ontological, cosmological, and teleological arguments for the existence of God. It will examine the problem of Evil and the difficulties it poses for arguments for the existence of God.

TRS 318 Beginning Biblical Hebrew II: Translation of Biblical Texts (3)
This course is a continuation of Beginning Biblical Hebrew I.

TRS 319 Philosophy of Religion (3)
This course will study some fundamental issues connected with the human activity called "religion". It will use rational, critical analysis to investigate the nature of belief, worship, and sacrifice, and the roles that religion plays in the lives of human beings. It will examine the validity of the argument from miracles, moral argument, and religious experience as proofs of God’s existence.

TRS 320 Epistemology II: Theories of Truth (3)
This course will examine the concepts of knowledge and belief and relate them to theories of truth. It will discuss theories such as the "correspondence theory", the "coherence theory", and the "pragmatist theory".

TRS 321 Metaphysics III: Body/mind Problem (3)
This course looks at the mind and body problem. It will examine different theories that arose as an attempt to answer the questions concerning dualism, behaviourism, functionalism, epiphenomenalism and others.

TRS 322 History of Christianity in Southern Africa (3)
This course will study the origin and development of the Christian Church in Southern Africa from its inception to the present. It will examine the cultural context in which the Church was introduced and the role of foreign missionary societies in that process.

TRS 323 Intermediate Greek II: Translation of Selected Texts (3)
This course will build on the knowledge of New Testament vocabulary, grammar and syntax acquired in Beginning Koine Greek I and II and intermediate Koine Greek I. Students will translate and study closely selected passages from one book of the New Testament.

TRS 324 Intermediaries Arabic I: Arabic Grammar (3)
This course will study intermediate Arabic grammar and examine classical and contemporary Arabic texts. It will also expose the student to standard Arabic oral drills.

TRS 325 Foundation Structures of Islam (3)
This course will study the basic doctrines and practices of Islam. It will introduce the primary sources of Islam and survey the social history of the Muslim community from its emergence through its early years.

TRS 326 Directed Readings: Research Methods (3)
In this course the student will undertake independent study under the guidance of a supervisor who will be responsible for advising and instructing the student in matters of research method as well as content.

TRS 401 New Religious Movements (3)
This course will examine new Christian theologies from new Christian movements emerging today in various regional, social and intellectual settings across the world. It will pay special attention to theological and social developments in Africa.

TRS 402 Religion And Politics (3)
This course will foster a rethinking of the relationship between religion and politics and analyze the changing dimensions of society, religion, and the state.

TRS 403 The Doctrine of Sin In The Bible (3)
This course examines the concepts of "Sin" and "evil" in the Hebrew Bible and the Christian New Testament. It will investigate related concepts such as law and commandment, purity/impurity, judgement, punishment, and forgiveness.

TRS 404 Metaphysics IV: Personal Identity (3)
This course will examine the question of personhood. The course will look at different criteria of personal identity. It will also look at divided minds and consciousness.

TRS 405 Intermediate Hebrew: Examination of Selected Texts (3)
This course will build on the knowledge of Biblical Hebrew vocabulary, grammar and syntax acquired in Beginning Biblical Hebrew I and II. The student will study closely set texts from all three main divisions of the Hebrew Bible.

TRS 406 Intermediate Arabic II: Translation of Arabic Texts (3)
This course is continuation of Intermediate Arabic I yet students who have not successfully completed that course may take TRS 406.

TRS 407 Socio-Cultural, Legal and Political Structures of Islam (3)
This course will study the growth of the early Muslim community. It will trace and reflect critically upon the development and evolution of the theological, juridiprudential and mystical schools. It will explore the thoughts and practices of individual representatives of these schools.

TRS 409 African Christianity Theologies (3)
This course will comprise readings from African theologians that focus on important theological issues facing the African Church today. It will examine the question of the enculturation of the Church in Africa, taking into account the cultural, social, economic and political factors in both colonial and postcolonial Africa.

TRS 410 Theories of Government (3)
This course will discuss the theory of the state, such thinkers as Plato, Thomas Hobbes, John Locke, Jean-Jacques Rousseau and Karl Marx have presented it.

TRS 411 Politics and the Development of Biblical Thought (3)
This course will foreground the idea that the texts of the Bible were written, collected, edited and read in political environments. Political agendas, in turn, have left discernible traces in biblical literature.

TRS 412 Ecumenical Theology (3)
This course will study the theological foundations of the ecumenical movement, whose aim is to achieve organic church unity. It will investigate the New Testament, especially the Johannine and Pauline writings, to discern the scriptural basis for ecumenical theory and practice.

TRS 413 Hinduism (3)
This course will study Hinduism from the Harrappan culture to contemporary period. The approach will be thematic including themes such as creation, sacrifice, polytheism and others.

TRS 414 Metaphysics V: Materialism (3)
This course will examine the main tenets of materialism: the uniformity of law, the denial of teleology, the denial of any form of existence beyond that envisaged by the natural sciences. Particularly attention will be given to the thought of Karl Marx, William James and John Dewey.

TRS 415 Twentieth Century Theologians (3)
This course will study several major theologians, Protestant and Roman Catholic, of the twentieth century, and the contributions their thought has made to the development of contemporary systematic theology.

TRS 416 Religion and Modernity (3)
This course will study the relationship and interaction between religion and popular culture. It will explore the significance and importance of religious expressions contained in various media such as films, theatre, music and others.

TRS 417 Paul’s Epistle (3)
This course will cover the Pauline and Deutero-Pauline letters of the New Testament. It will use different methods to analyze the socio historical context that gave rise to Pauline letters.

TRS 418 Contemporary African Philosophy (3)
This course will study some of the major issues that have shaped, and continue to shape, African’s social, economic and political landscape. It will examine the development and application of such theories as humanism, African socialism and others.

TRS 419 Intermediate Hebrew II: Hebrew Texts and Dead Sea Scrolls (3)
This course will build on the knowledge of Biblical Hebrew vocabulary, grammar and syntax acquired in Beginning Biblical Hebrew I and II. Set texts from the Hebrew Bible and the Dead Sea Scrolls will be studied closely.

TRS 420 Directed Research (3)
In this course the student will undertake independent study under the guidance of a supervisor who will be responsible for advising and instructing the student in matters of research method as well as content.

TRS 421 History of Christianity: Modern and Contemporary (3)
This course will study the expansion of the church from Europe and America to other parts of the world during the missionary era of the nineteenth and twentieth centuries. It will discuss issues such as colonialism and missiology.

TRS 422 Epistemology: Rationalism and Empiricism (3)
The student will study the philosophy position that knowledge is only attained through the senses, and that truth must conform to the rules of logic and of material science.

TRS 423 History of Contemporary
Philosophy (3)
This course will study the basic tenets of logical positivism and ordinary language philosophy. It will also explore philosophical questions that arise from contemporary concerns such as war and peace and others.

TRS 424 Buddhism (3)
This course will study the origin, development and basic concepts of Buddhism. It will trace ways in which different “Buddhisms” developed.

TRS 425 The Theology of the Reformation (3)
This course will study the religious, social economic and political factors that led to the Reformation and counter-Reformation in the sixteenth century Europe. It will consider some of the important theological themes that dominated the thinking of the Reformers.

TRS 426 Religious Rituals and Sacred Places (3)
This course will study the role of sacred sites, shrines, rivers, mountains, worship centers and other sacred places in several religious traditions.

TRS 427 Applied Ethics (3)
This course will study the concept of human rights, the nature and origin of human rights, and some specific contemporary ethical issues that arise from the question of human rights, such as abortion, infanticide and others.

TRS 428 Religion and Pluralism (3)
This course will discuss the relationship between religion and religious pluralism. It will explore the theories pertaining to religious pluralism, and probe the related notions or religious language, religious dialogue and inter-religious cooperation.

DEPARTMENT OF VISUAL AND PERFORMING ARTS

BACHELOR OF FINE ARTS COURSES

Level 100
BFA100 Introduction to the Theatre (3)
Core 3 Credits
BFA121 Workshop Theatre I (3)
Core 3 Credits
BFA102 Theatre in Botswana I (Origins) (3)
Core 3 Credits
BFA122 Workshop Theatre I Core 3 Credits

Level 200
BFA203 Acting, Movement & Mime I (3)
Core 3 Credits
BFA205 Designs & Technical Theatre I (3)
Core 3 Credits
BFA206 Theatre in Africa II** (3)
Core 3 Credits
BFA222 Production Workshop II (3)
Core 3 Credits
BFA201 Theatre History II** (3) Core 3 Credits
BFA202 Theatre in Botswana II (3)

[Popular Theatre] 200 Core 3 Credits

BFA204 Playwriting*** 200 Core 3 Credits
BFA221 Production Workshop I Core 3 Credits

Level 300
BFA 309 Directing I Core 3 Credits
BFA 310 Dramatic Literature I [Africa] Core 3 Credits
BFA 312 Stage Management Core 3 Credits
BFA 313 Theatre Ethics Core 3 Credits
BFA 302 Theatre in Botswana [Theatre & Mass Media] Optional 3 Credits
BFA 303 Acting, Movement & Mime II Optional 3 Credits
BFA 304 Playwriting II Optional 3 Credits
BFA 305 Design & Technical Theatre II Optional 3 Credits
BFA 308 Theatre in Africa II** Optional 3 Credits
BFA 308 American Theatre Optional 3 Credits
BFA 311 Playback Theatre Optional 3 Credits
BFA 314 Theatre History [Europe] ** Optional 3 Credits
BFA 318 Theatre Attachment Core 3 Credits

Level 400
BFA 400 Theatre History: Asia** Optional 3 Credits
BFA 403 Acting, Movement & Mime III Optional 3 Credits
BFA 404 Playwriting III*** Optional 3 Credits
BFA 405 Design & Technical Theatre III Optional 3 Credits
BFA 406 Theatre & Society in Africa [Special Author] Optional 3 Credits
BFA 409 Advanced Directing Optional 3 Credits
BFA 410 Dramatic Literature II [Europe] ** Optional 3 Credits
BFA411 Theories of Modern Drama [1920-Present] Optional 3 Credits
BFA 412 Theatre Administration Optional 3 Credits
BFA 415 Drama-in-Education [DIE] Optional 3 Credits
BFA 416 Senior Project Core 6 Credits
BFA 417 Theatre-for-Development Optional 3 Credits
BFA 418 Theatre & Tourism Optional 3 Credits

NOTE:
• All Practical courses are assessed on a 70% [practical exam] and 30% [CA] format. The practical examination is a semester-long/year-long extensive work on a theatre project that culminates in a performance.
• * This course will assessed on a 60% [ensemble production] and 40% [CA] format

** These are existing courses in the Department of English
*** These courses are part of ENG317 [Practical Theatre] and ENG417 [Theory and Practice of Drama] currently being offered in the Department of English

All practical courses shall, to a large degree be linked to workshops, festivals or other community activities

OPTIONAL COURSES FROM OTHER DEPARTMENTS****
ALL142: The Study of Drama in Indigenous Languages 100 Optional 3 Credits
ARB 121: Design Communication Optional 3 Credits
ARB 123: History of Art Optional 3 Credits

COM111: Communication and Academic Literacy Skills GEC 3
COM112: Communication and Academic Literacy Skills GEC 3
ICT121: Computer Skills Fundamentals 1 GEC 2
ICT122: Computer Skills Fundamentals 2 GEC 2
MTK100: Principles of Marketing Optional 3 Credits
DSW207: Culture, Change and Social Work Botswana Optional 3 Credits
DTB 222: Graphics Optional 3 Credits
EPP 201: Art Introduction Optional 3 Credits
EPP 202: Practical Arts Skills for the Teacher Optional 3 Credits
GEC 200 GEC 2
GEC200 GEC 2

MTK200: Integrated Communications Optional 3 Credits
ALL343: Introduction to African Popular Theatre Optional 3 Credits
ALL 352: Epic Performance in Africa Optional 3 Credits

BMS 329 Developmental Communication Optional 3 Credits
BMS 333 Radio Documentary Writing ProductionOptional 3 Credits
BMS 334 TV and Video Documentary Writing & Production Optional 3 Credits

DBT 312: Aesthetics Optional 3 Credits
EPP302: Practical Skills in Teaching of Art Optional 3 Credits
GEC300 GEC 2
GEC300 GEC 2

HEE 358: Fashion and Society Optional 3 Credits
HEE 359: Design Fundamentals Optional 3 Credits

MTK304 Advertising (Prerequisite: MKT200) Optional 3 Credits
POP302 Research Methods Optional 3 Credits
ALL 454: Children’s Traditions and Dramatics Optional 3 Credits

BMS424 Radio Drama Script-writing & Production Optional 3 Credits
GEC 400 GEC2
GEC400 GEC 2
HEE 457: History and Conservation of Textiles

Optional 3 Credits
PHR424: Movement & Creative Dance Technique

Optional 3 Credits

NOTE
****All optional courses from other Departments are existing courses.

APPENDIX 1: THEATRE PROGRAMME
[ABBREVIATED COURSE DESCRIPTIONS]
INTRODUCTION TO THE THEATRE

LEVEL 1 [CORE] 3 CREDITS

This course offers a theoretical panoramic coverage of important theoretical foundations from the ancient Greek period to the modern period. Course spread touches on most arms of the arts of Theatre, ranging from stage movement to costume, scene design and construction, acting and directing. This course helps to familiarize students with the traditions, components and development of Theatre and dramatic arts from the earliest times to the 21st century.

Outcomes: Information and communication technology knowledge and skills; Self-directed, lifelong learning skills; Critical and creative thinking skills; Problem-solving skills; Entrepreneurship and employability skills; Research skills and information literacy; Cross-cultural fluency; Accountability and ethical standards.

Mode of Assessment 30% coursework 70% exam

ACTING, MOVEMENT AND MIME I LEVEL 2
[OPTIONAL] 3 CREDITS

This course offers a critical and creative introduction to acting, movement and mime for the stage. The course, devoted to the development of the physical instrument of the actor (the body), will include basic physical, vocal, imaginative skills, miming skills, and development of general stage movement for the beginning actor.

Outcomes: Information and communication technology knowledge and skills; Self-directed, lifelong learning skills; Critical and creative thinking skills; Problem-solving skills; Communication skills; Entrepreneurship and employability skills; Organizational and teamwork skills; Research skills and information literacy; Cross-cultural fluency; Accountability and ethical standards.

Mode of Assessment 30% coursework 70% Practical exam

DESIGN AND TECHNICAL THEATRE I LEVEL 2
[OPTIONAL] 3 CREDITS

An introduction to the techniques involved in costume, light, set, and sound design for the Theatre. Productions currently being presented at the University will serve as the sources for study.

Outcomes: Information and communication technology knowledge and skills; Self-directed, lifelong learning skills; Critical and creative thinking skills; Problem-solving skills; Organizational and teamwork skills; Research skills and information literacy; Interpersonal skills; Cross-cultural fluency.

Mode of Assessment 30% coursework 70% Practical exam

PLAYWRITING LEVEL 2 [OPTIONAL] 3 CREDITS

Principles of playwriting will be taught through practical work. Development of techniques required for dramatic stage scripts include original writing and adaptations with emphasis on play construction, character development, dialogue, and mood.

Outcomes: Self-directed, lifelong learning skills; Critical and creative thinking skills; Problem-solving skills; Entrepreneurship and employability skills; Research skills and information literacy; Interpersonal skills; Cross-cultural fluency.

Mode of Assessment 30% coursework 70% Exam [original one-act play]

PRODUCTION WORKSHOP I LEVEL 2 [OPTIONAL] 6 CREDITS

This intensive workshop course introduces students to the processes of working with scripted a play and preparing the play for performance. Students will engage in text analysis, social research, creative interpretation, rehearsals and then performance. This is a course for performers, designers, and directors.

Outcomes: Information and communication technology knowledge and skills; Self-directed, lifelong learning skills; Critical and creative thinking skills; Problem-solving skills; Communication skills; Entrepreneurship and employability skills; Organicational and teamwork skills; Research skills and information literacy; Social responsibility and leadership skills; Interpersonal skills; Cross-cultural fluency; Accountability and ethical standards.

Mode of Assessment 30% coursework 70% Practical exam

THEATRE HISTORY I [1642–1800] LEVEL 2
[OPTIONAL] 3 CREDITS

This is a follow-up on the Theatre History course in Level I. this course specifically tracks the historical development of British Theatre and drama from the Middle Ages to 1800, the Spanish Theatre to 1700, and Theatre in France 1500–1700.

Outcomes: Self-directed, lifelong learning skills; Critical and creative thinking skills; Problem-solving skills; Communication skills; Entrepreneurship and employability skills; Research skills and information literacy; Cross-cultural fluency; Accountability and ethical standards.

Mode of Assessment 40% coursework 60% Written exam

THEATRE IN AFRICA LEVEL 2 [CORE] 3 CREDITS

This course explores the nexus between history, culture and identity in African performance. The course raises questions about representation and the production of theatrical knowledge within and across African cultures. While play-texts dealing with cultural practices, history, politics, religion and social problems plaguing the African continent will be studied, in-depth historical and sociological studies of indigenous forms of drama in Africa will also be surveyed.

Outcomes: Self-directed, lifelong learning skills; Critical and creative thinking skills; Problem-solving skills; Communication skills; Entrepreneurship and employability skills; Research skills and information literacy; Interpersonal skills; Cross-cultural fluency.

Mode of Assessment 40% coursework 60% Written exam

THEATRE IN BOTSWANA [POPULAR THEATRE] LEVEL 2 [CORE] 3 CREDITS

This course is a continuation of Theatre in Botswana at Level 1. The course will now take a more detailed look at popular performances and Theatre-for-Development in Botswana.

Outcomes: Self-directed, lifelong learning skills; Critical and creative thinking skills; Problem-solving skills; Communication skills; Research skills and information literacy; Interpersonal skills; Cross-cultural fluency.

Mode of Assessment 40% coursework 60% Written exam

ACTING, MOVEMENT AND MIME II LEVEL 3
[OPTIONAL] 3 CREDITS: PREREQUISITE: ACTING, MOVEMENT AND MIME I

A more advanced course on acting, movement, and mime for the stage. This course continues development of skills acquired in Acting, Movement...
and Mime I. Helps students develop believable characters while working on acting, movement and mime exercises and next scenes from contemporary dramatic literature. This is a course for actors, dancers and physical performers and as such will uncover a performer's physical personality and presence on stage, to prepare work using the body as an intuitive and symbolizing instrument. Students taking this course will also explore Physical Theatre forms and approaches.

Outcomes: Information and communication technology knowledge and skills; Self-directed, lifelong learning skills; Critical and creative thinking skills; Problem-solving skills; Communication skills; Entrepreneurship and employability skills; Organizational and teamwork skills; Research skills and information literacy; Interpersonal skills; and Cross-cultural fluency.

Mode of Assessment 30% coursework 70% Practical exam

AMERICAN THEATRE [20-21st CENTURY] LEVEL 3 [CORE] 3 CREDITS
This course focuses on the development of the American Theatre from the 20th to the 21st century, paying attention to the changing conditions of the Theatre in the United States and other American nations. Topics include black Theatre, women's Theatre, off-Broadway and Minority Theatre. It examines the plays as theatrical experiences to such aspects as staging, acting, lighting and music and the responses of American drama to changing social and political thought in the Americas.

Outcomes: Self-directed, lifelong learning skills; Critical and creative thinking skills; Problem-solving skills; Entrepreneurship and employability skills; Research skills and information literacy; Interpersonal skills; and Cross-cultural fluency.

Mode of Assessment 40% coursework 60% Written exam

DESIGN AND TECHNICAL THEATRE II LEVEL 3 [OPTIONAL] 3 CREDITS
This course is a follow-up to Design and Technical Theatre I. in this course the techniques involved in costume, light, set, and sound designing for the Theatre are taken to a higher level. Productions currently being presented at the University will serve as the sources for study.

Outcomes: Information and communication technology knowledge and skills; Self-directed, lifelong learning skills; Critical and creative thinking skills; Problem-solving skills; Communication skills; Entrepreneurship and employability skills; Organizational and teamwork skills; Research skills and information literacy; Interpersonal skills; and Cross-cultural fluency.

Mode of Assessment 30% coursework 70% Practical exam

DIRECTING I LEVEL 3 [CORE] 3 CREDITS
This is an introductory practical course in directing plays and an analysis of skill and role of the director. The course will explore script analysis, casting, staging, space, composition, movement, picturization, rhythm and tempo of actors, and scripts. Special emphasis will be on directing the one-act play.

Outcomes: Information and communication technology knowledge and skills; Self-directed, lifelong learning skills; Critical and creative thinking skills; Problem-solving skills; Communication skills; Entrepreneurship and employability skills; Organizational and teamwork skills; Research skills and information literacy; Social responsibility and leadership skills; Interpersonal skills; Cross-cultural fluency; Accountability and ethical standards.

Mode of Assessment 30% coursework 70% Practical exam

DRAMATIC LITERATURE [AFRICA] LEVEL 3 [OPTIONAL] 3 CREDITS
This course focuses on the history and development of drama in Africa. Dramatic literature refers to the texts of plays that can be read, as distinct from being seen and heard in performance. Therefore, drama will be studied primarily as a literary form but will be given to glancing at the drama in the Theatre and cultural milieu from which it developed. Authors to be studied will include, for instance, Soyinka, J.P. Clark, Wilde, Shaw, Aidoo, Fugard etc.

Outcomes: Self-directed, lifelong learning skills; Critical and creative thinking skills; Problem-solving skills; Entrepreneurship and employability skills; Research skills and information literacy; and Cross-cultural fluency.

Mode of Assessment 40% coursework 60% Practical exam

PLAY BACK THEATRE LEVEL 3 [OPTIONAL] 3 CREDITS
This course will place Playback Theatre in a literary and historical context as a modern development of oral traditional ceremonial ritual. Students will learn about stories and how they work; about the history of the approach and its comparison to Theatre of the oppressed, Theatre for development, and other forms of interactive Theatre; and about the underlying theories of respect for persons and positive social change on which it is based. The basic forms of Playback Theatre will be taught experientially, and students will practice the roles of actor, musician, conductor, and teller. Also introduced will be the group dynamics necessary for successful encounters with community audiences.

Outcomes: Information and communication technology knowledge and skills; Self-directed, lifelong learning skills; Critical and creative thinking skills; Problem-solving skills; Communication skills; Entrepreneurship and employability skills; Organizational and teamwork skills; Research skills and information literacy; Social responsibility and leadership skills; Interpersonal skills; Cross-cultural fluency; Accountability and ethical standards.

Mode of Assessment 30% coursework 70% Practical exam

PLAYWRITING II LEVEL 3 [OPTIONAL] 3 CREDITS
This course continues, at an advanced level, the playwriting course in Level 2. At this level the techniques of writing other forms such as Film, Radio and TV scripts will be added to the course. Students will be expected to write a short play loosely based on an existing classic from which they write their own -- fresh, relevant and personal - new, full-length play. The idea behind this approach is two-fold. Firstly, it gives the writers a sense of complete creative freedom, along with the security of a failsafe structure. Secondly, through the deep investigation of a classic work, the writers absorb an understanding of how all the elements of drama are effectively employed.

Outcomes: Information and communication technology knowledge and skills; Self-directed, lifelong learning skills; Critical and creative thinking skills; Problem-solving skills; Communication skills; Entrepreneurship and employability skills; Research skills and information literacy; and Cross-cultural fluency.

Mode of Assessment 30% coursework 70% Exam [original multi-scene play]

STAGE MANAGEMENT LEVEL 3 [CORE] 3 CREDITS
This course deals with the techniques and conventions commonly in use for staging the production, planning, rehearsals, coordinating, technical requirements, and professional standards expected in staging a production.

Outcomes: Information and communication technology knowledge and skills; Self-directed, lifelong learning skills; Critical and creative thinking skills; Problem-solving skills; Communication skills; Entrepreneurship and employability skills; Organizational and teamwork skills; Research skills and information literacy; Social responsibility and leadership skills; Interpersonal skills; Cross-cultural fluency; Accountability and ethical standards.

Mode of Assessment 30% coursework 70% Practical exam

THEATRE ETHICS LEVEL 3 [CORE] 3 CREDITS
This course will examine a series of contemporary plays and Theatre productions in relation to the ethics of representation. It will explore the writer's or the director's responsibilities in staging the self and the other in Theatre and the strategies they adopt to highlight and problematize this process. By combining theoretical, textual and performance analysis, the course will engage with debates surrounding, for instance, alterity, community research, consent, cultural and autobiographical memory, defamation, intellectual property rights, representation of violence, sexuality, and trauma in Theatre. The course will also look at concepts such as meta-Theatre and the role of the author in the Theatre text as well as practices that aim to embody ethical positions in and through performance. Theatre Ethics will combine the pleasure and excitement of attending live Theatre, with the challenge of exploring and discussing the principles that frame moral choice.

Outcomes: Critical and creative thinking skills; Problem-solving skills; Communication skills; Entrepreneurship and employability skills; Research skills and information literacy; Interpersonal skills; Cross-cultural fluency; Accountability and ethical standards.

Mode of Assessment 30% coursework 70% exam

THEATRE HISTORY: EUROPE LEVEL 3 [OPTIONAL] 3 CREDITS
This course surveys the heritage and beginning of modern European drama, investigating significant movements and key personalities in Theatre practice from 1875-1915. This course will provide
a theoretical base for the exploration, as well as providing a conceptual framework for Theatre research in modern European drama.

Outcomes: Self-directed, lifelong learning skills; Critical and creative thinking skills; Problem-solving skills; Communication skills; Entrepreneurship and employability skills; Research skills and information literacy; and Cross-cultural fluency.

Mode of Assessment 40% coursework
60% Written exam

THEATRE IN AFRICA II LEVEL 3 [OPTIONAL] 3 CREDITS
This course is an extension of Theatre in Africa I. The course seeks to imbue students with knowledge of drama, thematic concerns, and theatrical practices [performance mode and styles] as they obtain in works from pre-colonial days to the present. Play-texts which explore African problems from the colonial period to the present will be studied.

Outcomes: Self-directed, lifelong learning skills; Critical and creative thinking skills; Problem-solving skills; Entrepreneurship and employability skills; Research skills and information literacy; and Cross-cultural fluency.

Mode of Assessment 40% coursework
60% Written exam

THEATRE IN BOTSWANA [THEATRE AND THE MASS MEDIA] LEVEL 3 [OPTIONAL] 3 CREDITS
The focus of this course will be contemporary Theatre in Botswana, taking particular look at Botswana Theatre and the mass media – television drama; video drama/movie.

Outcomes: Self-directed, lifelong learning skills; Critical and creative thinking skills; Problem-solving skills; Entrepreneurship and employability skills; Research skills and information literacy; and Cross-cultural fluency.

Mode of Assessment 40% coursework
60% Written exam

ACTING, MOVEMENT AND MIME III LEVEL 4 [OPTIONAL] 3 CREDITS: PREREQUISITE: ACTING, MOVEMENT AND MIME II
A much more advanced course on acting, movement, and mime for the stage. This course continues development of skills acquired in Acting, Movement and Mime II. Helps students develop believable characters while working on acting, movement and mime exercises and duet scenes from contemporary dramatic literature. The students offering this course will form the core of actors for students offering Advanced Directing.

Outcomes: Information and communication technology knowledge and skills; Self-directed, lifelong learning skills; Critical and creative thinking skills; Problem-solving skills; Communication skills; Entrepreneurship and employability skills; Organizational and teamwork skills; Research skills and information literacy; Social responsibility and leadership skills; Interpersonal skills; Cross-cultural fluency; Accountability and ethical standards.

Mode of Assessment 30% coursework
70% Practical exam

ADVANCED DIRECTING LEVEL 4 [OPTIONAL] 3 CREDITS
This course is an advanced exploration of the directing process. This course is the principal training forum for the directing specialization. It is a rigorous practicum that hones the vision of each student-director. Each directing student will analyze a play script to uncover dramatic events, beats, dramatic structure, spine or through-line, and inciting incident which will culminate in the performance of a full-length play by each student offering this course.

Outcomes: Information and communication technology knowledge and skills; Self-directed, lifelong learning skills; Critical and creative thinking skills; Problem-solving skills; Communication skills; Entrepreneurship and employability skills; Organizational and teamwork skills; Research skills and information literacy; Social responsibility and leadership skills; Interpersonal skills; Cross-cultural fluency; Accountability and ethical standards.

Mode of Assessment 30% coursework
70% Practical exam

DRAMATIC LITERATURE II [EUROPE] LEVEL 4 [OPTIONAL] 3 CREDITS
This course is a continuation of the introductory work done in third year at an advanced level. This course will entail detailed study of dramatists and play texts. Among the dramatists to be studied will be Aeschylus, Sophocles, Euripides, Menander, Seneca, the Wakefield Master, Marlowe, Shakespeare, Ben Jonson, Lope de Vega, Molierie, Racine, Dryden, and Congreve.

Outcomes: Self-directed, lifelong learning skills; Critical and creative thinking skills; Problem-solving skills; Entrepreneurship and employability skills; Research skills and information literacy; and Cross-cultural fluency.

Mode of Assessment 40% coursework
60% Practical exam

PLAYWRITING III LEVEL 4 [OPTIONAL] 3 CREDITS
In Playwriting III [Advanced playwriting] each student is expected to produce a full-length play of any style. This course is for the student who has developed experience in creating a narrative presentation, this course will further the study of the dramatic structure of short and full length plays, screenplays, and teleplays. This course focuses on the writing of an original full-length play.

Outcomes: Information and communication technology knowledge and skills; Self-directed, lifelong learning skills; Critical and creative thinking skills; Problem-solving skills; Communication skills; Entrepreneurship and employability skills; Research skills and information literacy; and Cross-cultural fluency.

Mode of Assessment 30% coursework
70% Exam [original multi-scene play]

SENIOR PROJECT LEVEL 4 [CORE] 6 CREDITS
In this course each student majoring in Theatre will write a proposal on any chosen topic in any of the major areas of Theatre. After writing the proposal students can then either choose to carry out a practical project on the topic, or complete a full-length essay on the topic.

Outcomes: Self-directed, lifelong learning skills; Critical and creative thinking skills; Problem-solving skills; Information and communication technology knowledge and skills; Self-directed, lifelong learning skills; Critical and creative thinking skills; Problem-solving skills; Communication skills; Entrepreneurship and employability skills; Research skills and information literacy; Social responsibility and leadership skills; Interpersonal skills; Cross-cultural fluency; Accountability and ethical standards.

Mode of Assessment 100% coursework

THEATRE ADMINISTRATION LEVEL 4 [OPTIONAL] 3 CREDITS
This course is designed to study the tools of Theatre management and producing, box office, price and percentages, publicity, pro-motion, and production costs, and dealing with publishers and agencies. Regional Theatre problems are analyzed. This course
will, therefore, focus on the business of Theatre, administration, budgeting, feasibility studies, funding, publicity/promotion, master scheduling, and event handling.

Outcomes: Information and communication technology knowledge and skills; Self-directed, lifelong learning skills; Critical and creative thinking skills; Problem-solving skills; Communication skills; Entrepreneurship and employability skills; Organizational and teamwork skills; Research skills and information literacy; Social responsibility and leadership skills; Interpersonal skills; Cross-cultural fluency; Accountability and ethical standards.

Mode of Assessment 30% coursework 70% Practical exam

THEATRE AND SOCIETY IN AFRICA [SPECIAL AUTHOR] LEVEL 4 [OPTIONAL] 3 CREDITS

This course provides the students the opportunity of studying in depth the work of a particular African author. The author, content bibliography and mode of teaching this course will be determined from time to time as circumstances allow. The study of such an author affords the students the opportunity of also surveying the role of African Theatre and playwrights in their engagement with the nagging problems of the environment and cultural super-structures, including eco-political conditions in African societies. This course responds to the growing awareness of the contributions, and impact of Theatre on African societies and arms students with the tools of theatrical/dramatic criticism of society.

Outcomes: Self-directed, lifelong learning skills; Critical and creative thinking skills; Problem-solving skills; Communication skills; Entrepreneurship and employability skills; Research skills and information literacy; and Cross-cultural fluency.

Mode of Assessment 40% coursework 60% Written exam

THEATRE AND TOURISM LEVEL 4 [OPTIONAL] 3 CREDITS

This course will focus on the role of Theatre in promoting tourism in Botswana by exploring ways of matching tourists’ actual experiences of the destination with the image and expectations created by the Theatre. This course will also explore not only issues of basic satisfaction, but also of authenticity, changes in culture, heritage interpretation, and presentation. This course will involve the students working with communities to produce plays or devising plays for communities.

Outcomes: Information and communication technology knowledge and skills; Self-directed, lifelong learning skills; Critical and creative thinking skills; Problem-solving skills; Communication skills; Entrepreneurship and employability skills; Organizational and teamwork skills; Research skills and information literacy; Social responsibility and leadership skills; Interpersonal skills; Cross-cultural fluency; Accountability and ethical standards.

Mode of Assessment 60% coursework 40% Practical exam

THEATRE ATTACHMENT LEVEL 3 [CORE] 3 CREDITS

A one month internship in a Theatre company during which the student observes and becomes familiar with Theatre organization and participates in work practices.

Outcomes: Information and communication technology knowledge and skills; Self-directed, lifelong learning skills; Critical and creative thinking skills; Problem-solving skills; Communication skills; Entrepreneurship and employability skills; Organizational and teamwork skills; Research skills and information literacy; Social responsibility and leadership skills; Interpersonal skills; Cross-cultural fluency; Accountability and ethical standards.

Mode of Assessment 100% coursework

THEATRE-FOR-DEVELOPMENT LEVEL 4 [OPTIONAL] 3 CREDITS

This course introduces students to the concept of Theatre as an instrument of conscientization and empowerment for the socially deprived communities. In this course, Theatre will be approached as an agent of integrated rural development used as a method for non-formal adult education in rural and marginalized areas. The course will enable students to perceive the relationship between popular Theatre and non-formal education as it will be anchored on the grassroots approach to education and development. The course will also train students to become catalysts and participants in rural development.

Outcomes: Information and communication technology knowledge and skills; Self-directed, lifelong learning skills; Critical and creative thinking skills; Problem-solving skills; Communication skills; Entrepreneurship and employability skills; Organizational and teamwork skills; Research skills and information literacy; Social responsibility and leadership skills; Interpersonal skills; Cross-cultural fluency; Accountability and ethical standards.

Mode of Assessment 30% coursework 70% Practical exam

THEATRE HISTORY: ASIA LEVEL 4 [OPTIONAL] 3 CREDITS

This course will explore the history and origins of the major forms of Asian Theatre, performance and production style and practices of both the traditional Asian Theatre and the contemporary theatrical trends and influences with the objective of exposing students to, and broadening their appreciation of, the theatrical arts of Asia. This course will also identify the similarities and the differences between the various Asian theatrical forms, and explore the influences of western style Theatre on Asian theatrical practices, and the significant influences of Asian Theatre on the west.

Outcomes: Self-directed, lifelong learning skills; Critical and creative thinking skills; Problem-solving skills; Communication skills; Entrepreneurship and employability skills; Research skills and information literacy; Social responsibility and leadership skills; Interpersonal skills; and Cross-cultural fluency.

Mode of Assessment 40% coursework 60% Practical exam

THEORIES OF MODERN DRAMA [1920–PRESENT] LEVEL 4 [OPTIONAL] 3 CREDITS

The course involves the study of the major modern theories and developments that have shaped the Twentieth Century Theatre from 1920 to the present. Students will be trained to become familiar with modern and experimental developments of Theatre and drama.

Outcomes: Self-directed, lifelong learning skills; Critical and creative thinking skills; Problem-solving skills; Entrepreneurship and employability skills; Research skills and information literacy; and Cross-cultural fluency.

Mode of Assessment 40% coursework 60% Written exam
FACULTY OF

HEALTH SCIENCES

SCHOOL OF PUBLIC HEALTH SCHOOL OF MEDICINE SCHOOL OF NURSING SCHOOL OF ALLIED HEALTH PROFESSIONS

ACTING DEAN
Prof. Y. J. S. Mashalla MD, PhD (University of Dar es Salaam)

DEPUTY DEAN
K. D. Mogobe, RN, RM, BEd (UB), MEd, MSc (Columbia University), PhD (University of Washington, Seattle)

FACULTY MANAGER (ACADEMIC)
H. Tlhobono, DARM (UB), BA (UB), MPA (HRM) (UB)

HUMAN RESOURCES MANAGER
M. Segaetsho, BA, (UB) MSC (HRM) (Salford University, UK)
DEPARTMENT OF ENVIRONMENTAL HEALTH

Departmental Regulations for the Undergraduate Program

General Provisions
Subject to the provisions of the General Academic Regulations, the following Departmental Regulations shall apply:

Programs and Titles of Degrees:
The Department currently offers one program in Environmental Health leading to the following qualification:

Bachelor of Science
(Environmental Health or BSc- EH degree)

Entrance requirements
Prospective students must:
If entering the program through the direct entry route, satisfy the University of Botswana General Academic Regulation 20.21 and the Faculty of Science Special Regulation 23.2 of the Faculty of Science. If already registered under the General BSc Program, must have obtained at least a grade C in BIO 111 & 112; CHE 101&102; MAT 111&122; PHY111,119,121&129 at first year level.
If possessing a Diploma, satisfy General Academic Regulation 20.24 and appropriate Special Regulations of the Faculty of Science.
Applicants with a Diploma in Environmental Health shall be admitted into level 200 or 300 of the degree programme on the basis of accumulated credits in the area of environmental health.
If possessing other entry qualifications deemed relevant by the Department, satisfy General Academic Regulation 20.22 or General Academic Regulation 20.23 and any other appropriate Special Regulations of the Faculty of Science.

Semester 1
Core Courses
CHE101 General Chemistry I (4)
BIO 111 Principles of Biology (4)
PHY112 Geometrical Optics, Mechanics, Vibrations and Waves (4)
MAT111 Introduction to Linear Algebra (4)
COM101 Introduction to Digital Electronics (2)
ICT121 Computer Skills Fundamentals (2)

Semester 2
Core Courses
CHE102 General Chemistry II (4)
BIO112 Diversity of Animals and Plants (4)
PHY122 Electricity and Magnetism (4)
MAT122 Introductory Mathematics II (4)
COM102 Health Communication (2)
ICT122 Computer Skills Fundamentals 2 Information skills 11 (2)

Semester 3
Core Courses
BIO120 Introductory Biochemistry (3)
ENH211 Introduction to Environmental Health (3)
BIO301 Quantitative Biology (3)
CHE211 Introduction to Analytical Chemistry (3)
CHE213 Analytical Chemistry Laboratory I (1)
GEC/Optional (4)

Semester 4
Core Courses
ENH221 Principles and Practice of Health Education (3)
ENH222 Epidemiology (3)
BIO216 General Microbiology (3)
ENH223 Control of Communicable Diseases (3)
LAW203 Environmental Laws of Botswana (3)
BIO225 Human Physiology and the Environment (3)

Semester 5
Core Courses
ENH313 Basic Toxicology (3)
CCB315 Environmental Engineering (3)
CCB318 Liquid Waste Management (3)
CCB319 Solid Waste Management (3)
ASB 321 Meat Science (3)
CCB331 Environmental Health and Building Services (3)

Semester 6
Core Courses
BIO305 Insect Pest/ Vector Control (3)
ENH321 Environmental Health Sampling and Analysis (4)
ENH322 Food Safety and Hygiene (3)
ENH323 Occupational Health, Safety and Hygiene (3)
PHY360 Atmospheric Pollution Control I (2)
ASB321 Meat Science (3)

Winter Semester
ENH331 Internship (4)

Semester 7
Core Courses
ENH411 Environmental Risk Assessment (3)
ENH412 Environmental Health Seminar (3)
PHY460 Atmospheric Pollution Control II (2)
GEC/Optional (7)

Semester 8
Core Courses
ENH413 Inspection and Report Writing (2)
ENH422 Research Project in Environmental Health (3)
GEC/Optional (10)

Optional Courses
CHE211 Introduction to Analytical Chemistry (2)
CHE213 Analytical Chemistry Laboratory (1)
ENV101 Medical Geography (2)
ENV382 Analytical Methods for Specific Hazards (3)
ENV440 Geographic Information Systems (3)
ENV462 Environmental Quality Management- Land & Air (3)
ENV418 Environmental Policy (2)
ENV412 Environmental Impact Assessment (3)
ENV463 Environmental Quality Management- Water & Waste (3)
CHE416 Environmental Chemistry (2)
CHE418 Special Topics in Analytical Chemistry (2)
BIO418 Food Microbiology (3)
LAW441 Law and Health Care (3)
SCHOOL OF MEDICINE

Acting Head
Prof. S. Vento, MD (University of Bologna)

Entry Requirements to the pre-medical programme

(a) BGCSE/equivalent with a minimum of grade E in English Language and a grade of C or better in any two courses from Biology, Chemistry, Physics or a minimum of grade BB in Science Double Award or equivalent and a minimum of A in Physical Science and a C in Biology or equivalent.

(b) A-Level (Advanced Level) holders can enter at the second year provided that they have completed the clinical exposure track of the first year. (NB. Top A’ Level students may apply for direct entry to many medical schools including UB, bypassing the University’s premedical programme entirely).

(c) First year students in Level 100 of the BSc degree may apply to transfer to Level 200 of the Premedical programme if they have performed well academically [i.e., achieved GPAs of at least 3.5 in all three Level 100 Sciences, 3.0 in Level 100 Mathematics and 3.0 in at least one of the General Education Courses], have been performed satisfactorily [a grade of at least “very good”]; in the clinical exposure course that takes place between year one and two, and have succeeded in being designated for a career in medicine by the Ministry of Education (if a citizen of Botswana).

Admission to the School of Medicine

The University of Botswana selects students to enter the new medical degree programme in August, over May and June. Students seeking admission must apply by 1st April. These students will be selected on the basis of their year one results in Pre-Med, BSc or A’ level results, followed by assessment of their application form short essay and interviews. Personal and professional behaviours, academic performance and communication skills will be considered in the process. Successful candidates will be immediately enrolled in the School of Medicine to begin the Phase One Problem Based Learning (PBL) Curriculum. It should be noted that for students not admitted to UB Medical School from the Pre-Med programme, the application process may vary with the different medical schools. Those who gain admission to those other medical schools with which the Botswana Government has partnerships will generally report after successful completion of the level 200 Pre-Med programme.

Those who qualify for the University’s South African and Australian partner medical schools may transfer there after three semesters to accommodate the academic schedules of those schools.

Undergraduate Degree Programme

The undergraduate programme is six years in length and divided into three parts. The first part is the first year of the current pre-medical programme, with some clinical exposure. Part two (Phase 1 of the MBBS program) will require 2 years in a fully integrated curriculum of basic medical sciences within clinical PBL cases and clinical skills teaching with regular clinical attachments. A 10 week Winter Semester has been added to allow for the greater intensity of medical education and an external rural clinical attachment. The teaching methodology is based on body systems and includes plenary lectures, PBL within small groups, workshops, with laboratories and clinical skills for practical learning. The curriculum is intended to have a strong focus on the community. It is flexible to meet the needs of both faculty and students, and respond to changing health care demands of the country. Design of the PBL content reflects the health problems and resources of the community. The third part, or the three subsequent Phase 2 years will have required hospital and clinic rotations in the major disciplines. These experiences will be enhanced with an opportunity to explore community services and public health efforts. Some time will be spent in distant parts of the country to gain experience in rural medical practice. The initial 36 students who entered the MBBS programme in August 2009 are expected to graduate from the University of Botswana, School of Medicine in June 2014.

Internship

The period of out-of country training varies from one medical school to another. It is usually five or six years. On completion of their medical training, doctors are expected to do a one-year internship in Botswana before being registered by the Botswana Health Professions Council (BHPC) to practice independently as a doctor.

**PHASE 1 PROGRAMME (TWO YEARS)**

**Semester 1**

- SOM201 Foundations of Medicine (5)
- SOM202 Cardiovascular and Respiratory System (5)
- SOM203 Gastrointestinal and Urinary systems (6)

**Semester 2**

- SOM204 Growth, Reproduction and Endocrine system (6)
- SOM205 Blood and Immune system (4)
- SOM206 Muscular Skeletal, Nervous System and Special Senses (6)

**FIRST WINTER SEMESTER**

- SOM207 Psychological Health (5)
- SOM208 Community Attachment – Public Health (4)

**Semester 3**

- SOM301 Skin patholgy, Atherosclerosis and Cancer (5)
- SOM302 Infections; Viral, Bacterial and Parasitic Disease (6)
- SOM303 Pregnancy, Birth and Child Health (5)

**Semester 4**

- SOM304 Urinary System II (2)
- SOM305 Cardiovascular and Respiratory System II (5)
- SOM306 Muscular Skeletal System II (5)
- SOM307 Nervous System and Senses II (4)

**SECOND WINTER SEMESTER**

- SOM308 Community Attachment, Public Health Project II (4)
- SOM309 Gastro Intestinal Diseases (5)

**PHASE 2 PROGRAMME – THREE YEARS**

SCHOOL OF NURSING

Head: M.B. Sabone, RN, RM, Bed (UB), MSc, PhD (Case Western Reserve University)

1.0 Special Regulations for the Bachelor of Nursing Science Degree Programme

Subject to the provisions of the General Academic Regulations and the Faculty of Health Sciences Special Regulations, the following Departmental Special Regulations shall apply:

1.1 Entrance Requirements for the Bachelor of Nursing Science

Bachelor of Nursing Science Programme - Generic Stream

1.1.1 Admission to Level 100 of the Bachelor of Nursing Science Generic stream shall be on the basis of performance in the Botswana General Certificate of Secondary Education (BGCSE) examination, or its equivalent, in Science subjects. There shall be cut-off points, which shall be determined by the Directorate of Academic Services.

1.1.2 Applicants who register for the Bachelor of Nursing Science (Generic) stream shall be required to:

a) To have taken at least 5 subjects, including English Language and Mathematics, at the Botswana General Certificate of Secondary Education (BGCSE) examination or at one sitting of its equivalent;

b) To have obtained a minimum grade of Pass in English Language;

c) To have obtained a minimum grade of credit, or its equivalent, in Mathematics.

1.1.3 In addition to the above basic requirements, applicants must have a minimum grade of C, or its equivalent, in at least 2 of the following subjects: Physics, Chemistry and Biology; and a minimum grade of B, or its equivalent, in Science. A double award or its equivalent is required. The other qualifying subject must be one of the following:

a) Development Studies
b) Literature in English
c) Design and Technology
d) Agriculture
e) Art
f) Food and Nutrition
g) Computer Studies
h) Fashion and Fabrics
i) Business Studies
j) Home Management
k) Any other subject deemed appropriate by the Faculty of Health Sciences.

1.1.4 An applicant who has taken relevant Advanced (A)-level or equivalent examinations and who has attained a minimum of one E and two O’s in the relevant subjects may be admitted to a Bachelor of Nursing Science Degree Programme.

1.1.5 If an applicant has grade E or better at Advanced (A)-level or equivalent qualifications in Science subjects, he/she may be awarded credits and exempted from equivalent course(s) prescribed for a Degree Programme, subject to the recommendation of the relevant Head of Department and approval.
1.2 Course Listings for the Bachelor of Nursing Science

Generic Stream

### Level 100

#### Semester 1
- General Education Courses
  - COM101 Introduction to Communication and Literacy Skills (2)
  - ICT121 Computing Skills Fundamentals 1
- Core Courses
  - BIO111 Principles of Biology (4)
  - CHE101 Chemistry (4)
  - MAT111 Mathematics (4)
  - BNS209 HIV/AIDS Education, Prevention and Control in Botswana (2)

#### Semester 2
- GEC Courses
  - COM102 Health Communication (2)
  - ICT121 Computing Skills Fundamentals 2
- Core Courses
  - CHE102 Chemistry (4)
  - MAT122 Mathematics (4)
  - BIO112 Diversity of Plants and Animals (4)
  - Students can choose to take one course physics of at least 3 credits at Level 100 or Level 200 of their study.
- PHY119 Physics (3)
  - PHY111 Physics (3)
  - PHY121 Physics (3)
  - PHY129 Physics (1)

### Level 200

#### Semester 3
- Core Courses
  - BIO231 Human Anatomy (3)
  - BIO223 Parasitology for Health Sciences (3)
  - STA111 Elementary Statistics (3)
  - PHY161 Physics for Nurses (3)
  - BNS201 Introduction to Professional Nursing (3)
  - BNS203 Basic Nursing Concepts and Skills in Health and Wellness (3)

#### Semester 4
- Core Courses
  - BIO211 Cell Biology (3)
  - BIO216 General Microbiology (3)
  - BIO232 Human Physiology (3)
  - BNS202 Basic Nursing Concepts and Skills in Health and Illness (3)
  - Optional Courses (3 credits)
    - All students shall take 1 optional course and one elective course

#### Level 300

#### Semester 5
- Core Courses
  - BNS301 Pathophysiology (3)
  - BNS302 Nursing Management of Low Risk Childbearing Families (2)
  - BNS303 Introduction to Community Health Nursing (2)
  - BNS305 Basic Nursing Knowledge and Skills in Care of Well and Ill Adults (3)
  - BIO307 Biochemistry (3)
  - BNS309 Community-Based Nursing Care Practicum (3)
  - FSC102 Introduction to Nutrition
  - Elective Course (3 credits)
    - Students shall select 1 elective course, not already taken,
  - General Education Course (2 credits)
    - All students shall select a course not already taken from the list of General Education Courses.

#### Semester 6
- Core Courses
  - BNS200 Pharmacology (3)
  - BNS300 Health Assessment (3)
  - BNS304 Community Mental Health Nursing (2)
  - BNS306 Introduction to Nursing Research (3)
  - BNS310 Institution-Based Nursing Care Practicum (2)
  - SOC332 Traditional and Alternative Medical Systems (3)
  - BNS311 Internship (4)
- General Education Courses (2 credits)
  - All students shall select a course not already taken from the list of General Education Courses.

#### Optional Courses
- Students shall choose 1 of the optional courses listed in the optional course menu.

#### Level 400

#### Semester 7
- Core Courses
  - BNS401 Principles of Management and Education in Nursing (2)
  - BNS402 Parent and Child Practicum (2)
  - BNS405 Advanced Knowledge and Skill in Adult Health (2)
  - BNS407 Nursing Management of High Risk Childbearing Families (2)
  - BNS410 Adult Health Nursing Practicum (2)
- General Education Courses (6 credits)
  - In addition, all students shall select 3 courses not already taken from the list of General Education Courses.

#### Semester 8
- Core Courses
  - BNS403 Principles and Practice of Community Health Nursing (2)
  - BNS404 Psychiatric Mental Health Nursing Theory (2)
  - BNS406 Adolescent Health and Development (2)
  - BNS408 Community Health Nursing Practicum (2)
  - BNS409 Psychiatric Mental Health Nursing Practicum (2)
- General Education Courses (4 credits)
  - In addition, all students shall select 2 courses not already taken from the list of General Education Courses. Students shall also take one elective course, and one elective course chosen from the following list:
- Optional Courses Menu
  - BSIW201 Introduction to Group Work (3)
  - BSIW202 Introduction to Working with Families and Individuals (3)
  - BSV309 Social Policy (3)
  - EFH201 Counselling over the Lifespan (3)
  - EFH202 Theories and Techniques of Counselling (3)
  - EFH402 Counselling Persons with Special Needs (2)

#### Semester 9
- Core Courses
  - BNS301 Pathophysiology (3)
  - BNS307 The Individual in Health Illness (3)

### Level 500

- Introduction to Educational Psychology (3)
- Issues in Food and Nutrition (3)
- Ethics and Law in Health Care (3)
- History of Fertility, Mortality and Migration (3)
- Theories of Fertility, Mortality and Migration (3)
- Demographic Aspects of the HIV/AIDS Epidemic (3)
- Urbanisation, Migration and Development (3)
- Gender, Reproductive Health and Development (3)
- Demographic Dimensions of Poverty (3)
- Social Problems in Southern Africa (3)

### 1.3 Entrance Requirements for Bachelor of Nursing Science

Candidates for the Bachelor of Nursing Science Completion stream will fulfill the following requirements:
- A Diploma in General Nursing or its equivalent;
- A minimum of 2 years’ nursing experience after completion of a Diploma in a General Nursing Programme;
- Current registration with the Nursing and Midwifery Council of Botswana or its equivalent;
- BGCSE or its equivalent with either a credit in Combined Science or a pass in any one of Biology, Chemistry or Physics and a pass in any other 4 subjects.

### 1.4 Course Listings for the Bachelor of Nursing Science

Completion Stream

#### Level 200

#### Semester 3
- Core Courses
  - BIO231 Human Anatomy (3)
  - CHE109 Introductory Chemistry for Nursing Science (3)
  - PHY161 Physics (3)
  - STA111 Elementary Statistics (3)
  - BNS201 Introduction to Professional Nursing (3)
  - BNS203 Basic Nursing Concepts and Skills in Health and Wellness (3)

#### Semester 4
- Core Courses
  - BIO211 Cell Biology (3)
  - BIO216 General Microbiology (3)
  - BIO232 Human Physiology (3)
  - BNS202 Basic Nursing Concepts and Skills in Health and Illness (3)
- Optional Courses (3 credits)
  - All students shall take 1 optional course and one elective course

#### Level 300

#### Semester 5
- Core Courses
  - BNS301 Pathophysiology (3)
  - BNS302 Nursing Management of Low Risk Childbearing Families (2)
  - BNS303 Introduction to Community Health Nursing (2)
  - BNS305 Basic Nursing Knowledge and Skills in Care of Well and Ill Adults (3)
  - BIO307 Biochemistry (3)
  - BNS309 Community-Based Nursing Care Practicum (3)
- Elective Course (3 credits)
  - Students shall select 1 elective course, not already taken,
- General Education Course (2 credits)
  - All students shall select a course not already taken from the list of General Education Courses.

#### Semester 6
- Core Courses
  - BNS200 Pharmacology (3)
  - BNS300 Health Assessment (3)
  - BNS304 Community Mental Health Nursing (2)
  - BNS306 Introduction to Nursing Research (3)
  - BNS310 Institution-Based Nursing Care Practicum (2)
  - SOC332 Traditional and Alternative Medical Systems (3)
  - BNS311 Internship (4)
- General Education Courses (2 credits)
  - All students shall select a course not already taken from the list of General Education Courses.

#### Optional Courses
- Students shall choose 1 of the optional courses listed in the optional course menu.

#### Level 400

#### Semester 7
- Core Courses
  - BNS401 Principles of Management and Education in Nursing (2)
  - BNS402 Parent and Child Practicum (2)
  - BNS405 Advanced Knowledge and Skill in Adult Health (2)
  - BNS407 Nursing Management of High Risk Childbearing Families (2)
  - BNS410 Adult Health Nursing Practicum (2)
- General Education Courses (6 credits)
  - In addition, all students shall select 3 courses not already taken from the list of General Education Courses.

#### Semester 8
- Core Courses
  - BNS403 Principles and Practice of Community Health Nursing (2)
  - BNS404 Psychiatric Mental Health Nursing Theory (2)
  - BNS406 Adolescent Health and Development (2)
  - BNS408 Community Health Nursing Practicum (2)
  - BNS409 Psychiatric Mental Health Nursing Practicum (2)
- General Education Courses (4 credits)
  - In addition, all students shall select 2 courses not already taken from the list of General Education Courses. Students shall also take one elective course, and one elective course chosen from the following list:
- Optional Courses Menu
  - BSIW201 Introduction to Group Work (3)
  - BSIW202 Introduction to Working with Families and Individuals (3)
  - BSV309 Social Policy (3)
  - EFH201 Counselling over the Lifespan (3)
  - EFH202 Theories and Techniques of Counselling (3)
  - EFH402 Counselling Persons with Special Needs (2)

#### Semester 9
- Core Courses
  - BNS301 Pathophysiology (3)
  - BNS307 The Individual in Health Illness (3)
In addition, all students shall take 1 elective course.

Semester 6
Core Courses
BNS300 Health Assessment (3)
BNS304 Community Mental Health Nursing (3)
BNS306 Introduction to Nursing Research (3)
BNS308 The Nursing Process in Family Health (3)
BNS310 Institution Based Nursing Care Practicum (3)
SOC332 Traditional and Alternative Medical Systems (3)
BNS311 Internship (4)

General Education Course (4 credits)
Students shall select 2 GEC courses from the University-wide listing. Students shall also choose one optional course.

Level 400 Semester 7
Core Courses
BNS401 Principles of Management and Education in Nursing (2)
BNS402 Parent and Child Health Nursing Practicum (2)
BNS405 Advanced Knowledge and Skills in Adult Health Nursing (2)
BNS407 Nursing Management of High Risk Childbearing Families (2)
BNS410 Adult Health Nursing Practicum (2)

General Education Courses (6 credits)
In addition, all students shall select 3 General Education Courses not already taken.

Semester 8
Core Courses
BNS403 Principles and Practice of Community Health Nursing (2)
BNS404 Psychiatric Mental Health Nursing Theory (2)
BNS406 Adolescent Health and Development (2)
BNS408 Community Health Nursing Practicum (2)
BNS409 Psychiatric Mental Health Nursing Practicum (2)

General Education Courses (6 credits)
In addition, students shall select 3 General Education Courses not already taken. Students shall also choose one elective course and one optional course from the following listing:

Optional Course Menu
BSW201 Introduction to Group Work (3)
BSW202 Introduction to Working with Families and Individuals (3)
BSW309 Social Policy (3)
EHF201 Counselling Over Lifespan (3)
EHF202 Theories and Techniques of Counselling (3)
EHF402 Counselling Persons with Special Needs (3)
EFP100 Introduction to Educational Psychology (3)
HEE444 Issues in Food Nutrition (3)
LAW441 Ethics and Law in Health Care (3)
POP220 History of Fertility, Mortality and Migration (3)
POP221 Theories of Fertility, Mortality and Migration (3)
POP225 Demographic Aspects of the HIV/AIDS Epidemic (3)
POP303 Urbanisation, Migration and Development (3)
POP405 Demographic Dimensions of Poverty (3)
SOC234 Social Problems in Southern Africa (3)
POP404 Gender, Reproductive Health and Development (3)

1.5 Assessment
1.5.1 Continuous assessment in Levels 200, 300 and 400 shall be based on tests and/or assignments, and where applicable, clinical practice.

1.5.2 The ratio of continuous assessment to an end of semester examination shall be 1:1, unless otherwise specified in the Departmental Special Regulations.

1.5.3 The above Regulations shall apply to both Generic (Pre-service) and In-service Bachelor of Nursing Science Streams.

1.5.4 General Regulations 00.811 to 00.826 and 00.842 shall apply to the Bachelor of Nursing Science Degree.

1.6 Progression from Year to Year
To proceed from one semester to the next, a student must pass all courses and have a cumulative GPA of 2.0 or above as specified in General Regulation 00.842.

1.7 Award of Degree
To be awarded a Degree, a student must satisfy the relevant General Academic Regulations 00.851 and 00.852. The Degree shall be classified in accordance with the provisions of General Academic Regulations 20.4, with the cumulative GPA of 2.0 or above completed in accordance with General Regulation 00.86. Faculty of Education

SCHOOL OF ALLIED HEALTH PROFESSIONS
Acting Head: I. Kasvose DMLT, MSc (UZ, Zimbabwe), PhD (Ghent University, Belgium)

The School currently has two departments, Department of Medical Laboratory Sciences and Department of Pharmacy. Department of Rehabilitation Sciences will be added to the School in the near future.

DEPARTMENT OF MEDICAL LABORATORY SCIENCES
Founding Head: I. Kasvose DMLT, MSc (UZ, Zimbabwe), PhD (Ghent University, Belgium)

The Department of Medical Laboratory Sciences offers the following programmes leading to the award of the mentioned degrees.

BSc Medical Laboratory Sciences (BSc MLS)
Programme
The programme is designed to develop knowledge, technical skills and professional attributes to perform testing in clinical, public health, forensic and veterinary laboratories.

1. Entrance Requirements
1.1. Admission into Level 100 shall be according to performance at BGCSE or equivalent as stipulated by the University with a the specific requirement of a grade B or better in mathematics, chemistry, and biology or physics and a grade C or better in English, or must have obtained grade A for double science in lieu of the subjects listed here.

1.2. An applicant who holds Advanced Level passes in Mathematics, Chemistry and Biology/Physics with a grade C or better will be admitted into Level 200 but will be required to take GEC courses COM101 and COM102.

1.3. An applicant who holds a Diploma in Medical Laboratory Technology obtained from the Institute of Health Sciences or its equivalent plus two years relevant experience and registered with Botswana Health Professions Council as a medical laboratory technician will be exempted from Level 100 and 300 courses. However, they will be required to take GEC courses COM101 and COM102.

1.4. An applicant who holds a BSc degree in biological science/biochemistry or equivalent will be admitted into Level 200 and may be exempted from equivalent courses prescribed in the degree programme, subject to the recommendation of the Department.

2. Programme Structure
Semester 1
BIO111 Principles of Biology (4)
MAT111 Introductory Mathematics (4)
CHE101 General Chemistry I (4)
COM101 Introduction to Communication and Academic Literacy Skills for Health Sciences (3)
ICT121 Computer Skills Fundamentals I (2)

Semester 2
BIO112 Diversity of Plants and Animals (4)
MAT122 Introductory Mathematics II (4)
CHE102 General Chemistry II (4)
COM102 Health Communication (3)
ICT122 Computer Skills Fundamentals II (2)

Semester 3
PHY161 Physics for Nurses (3)
BIO211 Cell Biology (3)
BIO212 Genetics (3)
BIO231 Human Anatomy (3)
MLS201 Clinical Laboratory Instrumentation (3)

Semester 4
BIO232 Human Physiology (3)
MLS202 Laboratory Quality Management Systems (3)
MLS203 Medical Virology (3)
MLS204 Introduction to Immunology and Serology (3)
MLS205 Medical Parasitology (3)

Semester 5
MLS206 Medical Bacteriology (3)
MLS207 Hematology I (3)
MLS208 Immunohematology and Blood Transfusion Techniques (3)
MLS209 Clinical Chemistry I (3)
MLS210 Principles of Molecular Diagnostics (3)

Semester 6, Winter Semester
and Semester 7
MLS301 Bacteriology, Serology and Parasitology

113
The BSc CHS programme is designed to develop competencies to:

- evaluate Pap smears and other non-gynaecologic specimens for the presence of abnormal cells, and
- process and screen biopsy samples for diagnostic purposes.

### 1. Entrance Requirements

1.1. Admission into Level 100 shall be according to performance at BGCSE or equivalent as stipulated by the University with a the specific requirement of a grade B or better in mathematics, chemistry, and biology or physics and a grade C or better in English, or must have obtained grade A for double science in lieu of the subjects listed here.

1.2. An applicant who holds Advanced Level passes in Mathematics, Chemistry and Biology/Physics with a grade C or better will be admitted into Level 200 but will be required to take GEC courses COM101 and COM102.

1.3. An applicant who holds a Diploma in Medical Laboratory Technology obtained from the Institute of Health Sciences or its equivalent and registered with Botswana Health Professions Council as a medical laboratory technician will have advanced placement. He/she will be exempted from Level 100 courses, but will be required to take GEC courses COM101 and COM102.

1.4. An applicant who holds a BSc degree in biological science/biochemistry or equivalent will be admitted into Level 200 and may be exempted from equivalent courses prescribed in the degree programme, subject to the recommendation of the Department.

### 2. Programme Structure

#### Semester 1

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BI0111</td>
<td>Principles of Biology (4)</td>
<td></td>
</tr>
<tr>
<td>MAT111</td>
<td>Introductory Mathematics (4)</td>
<td></td>
</tr>
<tr>
<td>CHE101</td>
<td>General Chemistry I (4)</td>
<td></td>
</tr>
<tr>
<td>COM101</td>
<td>Introduction to Communication and Academic Literacy Skills for Health Sciences (3)</td>
<td></td>
</tr>
<tr>
<td>GEC121</td>
<td>Computer Skills Fundamentals I (2)</td>
<td></td>
</tr>
</tbody>
</table>

#### Semester 2

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BI0112</td>
<td>Diversity of Plants and Animals (4)</td>
<td></td>
</tr>
<tr>
<td>MAT212</td>
<td>Introductory Mathematics II (4)</td>
<td></td>
</tr>
<tr>
<td>CHE102</td>
<td>General Chemistry II (4)</td>
<td></td>
</tr>
<tr>
<td>COM102</td>
<td>Health Communication (3)</td>
<td></td>
</tr>
<tr>
<td>GEC122</td>
<td>Computer Skills Fundamentals II (2)</td>
<td></td>
</tr>
</tbody>
</table>

#### Semester 3

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BI0211</td>
<td>Cell Biology (3)</td>
<td></td>
</tr>
<tr>
<td>BI0212</td>
<td>Genetics (3)</td>
<td></td>
</tr>
<tr>
<td>BI0231</td>
<td>Human Anatomy (3)</td>
<td></td>
</tr>
<tr>
<td>CHS201</td>
<td>Introduction to Cytology and Histotechnology</td>
<td></td>
</tr>
</tbody>
</table>

#### Semester 4

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BI0232</td>
<td>Human Physiology (3)</td>
<td></td>
</tr>
<tr>
<td>MLS202</td>
<td>Laboratory Quality Management Systems (3)</td>
<td></td>
</tr>
<tr>
<td>CHS202</td>
<td>Introduction to Medical Laboratory Sciences (4)</td>
<td></td>
</tr>
<tr>
<td>CHS203</td>
<td>Histotechnology Techniques (3)</td>
<td></td>
</tr>
<tr>
<td>CHS204</td>
<td>Histotechnology Techniques Practicals (3)</td>
<td></td>
</tr>
</tbody>
</table>

#### Semester 5

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHS301</td>
<td>Biology of Disease (4)</td>
<td></td>
</tr>
<tr>
<td>CHS302</td>
<td>Special Histotechnology Procedures (3)</td>
<td></td>
</tr>
<tr>
<td>CHS303</td>
<td>Special Histotechnology Procedures Practicals (3)</td>
<td></td>
</tr>
<tr>
<td>CHS304</td>
<td>Normal Gynaecology Cytology (3)</td>
<td></td>
</tr>
<tr>
<td>CHS305</td>
<td>Normal Gynaecology Cytology Practicals (3)</td>
<td></td>
</tr>
</tbody>
</table>

#### Semester 6

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHS306</td>
<td>Abnormal Gynaecology Cytology (3)</td>
<td></td>
</tr>
<tr>
<td>CHS307</td>
<td>Abnormal Gynaecology Cytology Practicals (3)</td>
<td></td>
</tr>
<tr>
<td>CHS308</td>
<td>Non-Gynaecology Cytology (3)</td>
<td></td>
</tr>
<tr>
<td>CHS309</td>
<td>Non-Gynaecology Cytology Practicals (3)</td>
<td></td>
</tr>
<tr>
<td>CHS310</td>
<td>Molecular Diagnostics in Cytology and Histology (3)</td>
<td></td>
</tr>
</tbody>
</table>

#### Winter Semester and Semester 7

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHS401</td>
<td>Histotechnology Clinical Practicum (8)</td>
<td></td>
</tr>
<tr>
<td>CHS402</td>
<td>Cytology Clinical Practicum (16)</td>
<td></td>
</tr>
</tbody>
</table>

#### Semester 8

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLS404</td>
<td>Introduction to Biostatistics (3)</td>
<td></td>
</tr>
<tr>
<td>MLS405</td>
<td>Research Methods and Proposal Writing (3)</td>
<td></td>
</tr>
<tr>
<td>CHS403</td>
<td>Body Fluid Cytology (4)</td>
<td></td>
</tr>
<tr>
<td>CHS404</td>
<td>Fine Needle Aspiration Cytology (4)</td>
<td></td>
</tr>
</tbody>
</table>

#### Winter Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHS405</td>
<td>Fine Needle Aspiration Cytology Practicum (4)</td>
<td></td>
</tr>
</tbody>
</table>

#### Semester 8

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLS407</td>
<td>Laboratory Management and Education (3)</td>
<td></td>
</tr>
<tr>
<td>MLS409</td>
<td>Research Project (3)</td>
<td></td>
</tr>
<tr>
<td>CHS406</td>
<td>Slide Screening, Case Studies and Seminars in Cytology (3)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Optional Course (3)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Elective Course (3)</td>
<td></td>
</tr>
</tbody>
</table>
FACULTY OF
ENGINEERING AND TECHNOLOGY

ARCHITECTURE AND PLANNING CIVIL ENGINEERING ELECTRICAL AND ELECTRONIC ENGINEERING INDUSTRIAL DESIGN AND TECHNOLOGY MECHANICAL ENGINEERING

DEAN (ACTING)
J. M. Chuma, BEng (Nottingham), M.Sc. (Essex) PhD (Essex) IEEE, IEE, BIE

DEPUTY DEAN (ACTING)
O. J. Kanyeto, B.A.Sc. Civil Eng. (UBC, Canada), M.Sc. (UMIST, UK), Ph.D. (Kingston, UK), MBI, MIMS

FACULTY ADMINISTRATOR
L. B. J. Dingalo, BA (UB) MA, (Sussex)

HUMAN RESOURCES MANAGER
L B Molokomme  BCom, MBA (UB)

INDUSTRIAL TRAINING COORDINATOR
J.N. Tau, BSc. (Florida A&M), PGD (UMIST)
The Faculty of Engineering and Technology (FET) is dedicated to the following aims:

a) To produce high quality engineering graduates who can adapt to the work environment and discharge their duties to the satisfaction of their employers;
b) To be responsive to the needs of the industry in all sectors of the Botswana economy. This will be accomplished mainly by providing study programmes designed to meet the need for highly trained manpower in required areas of technology and the environment;
c) To respond to the needs of industry through research, consultancy, advisory and related services;
d) To maintain a continuous dialogue with industry and other relevant bodies to determine and fulfill any needs which may be raised by industry from time to time;
e) To provide access, with proper theoretical and practical backing, to recent developments in the field of technology and to prepare graduates for professional responsibilities;
f) To prepare FET graduates to pursue further studies in their relevant engineering and technology disciplines.

Academic Departments and Programmes
The Faculty of Engineering and Technology consists of five departments:

- Department of Architecture and Planning
- Department of Civil Engineering
- Department of Electrical Engineering
- Department of Industrial Design and Technology
- Department of Mechanical Engineering

The Faculty of Engineering and Technology offers MPhil/PhD programmes which are interdisciplinary. The Faculty also offers undergraduate programmes as follows: The Departments of Civil Engineering, Electrical Engineering, and Mechanical Engineering offer Bachelor of Engineering Degree programmes in Civil Engineering, Construction Engineering and Management, Geomatics, Land Management, Mining Engineering, Electrical and Electronic Engineering, Mechanical Engineering and Industrial Engineering. The Department of Industrial Design and Technology offers Bachelor of Design Degree programmes in Industrial Design and Technology Education. The Department of Architecture offers Bachelor of Architecture Degree programme in Architecture, BSc(NA) professional degree in Urban and Regional Planning and a BSc in Real Estate. Details of the requirements for admission into the various programmes are outlined in the following pages under each relevant Department.

110 Special Regulations for the Diploma in Engineering
Subject to the provisions of General Academic Regulations 000 and 100, the following Special Regulations shall apply to students in the following programmes:

- Diploma in Mining Engineering.
- Diploma in Mineral Engineering

11.10 Entrance Requirements
11.11 The minimum entrance qualifications to the Diploma programme shall be the Botswana General Certificate of Secondary Education (BGCE) or its equivalent, with a minimum of grade E in English Language and a minimum of grade C in both Mathematics and Physics. Preference shall be given to applicants with relevant industrial experience. In addition, all admitted applicants would be required to provide medical proof of fitness when accepting their offer to confirm that they would be fit to work in a mining environment at the end of their studies.

11.12 Alternative entry qualifications may be considered at the discretion of the Departmental Board. Mature entrants with evidence of relevant prior learning shall be admitted according to the General Regulations 000.52.

11.13 Applicants in possession of an appropriate Engineering Certificate may be admitted directly into the second year of the Diploma Programme.

11.20 Programme Structure
11.21 Diploma programmes will normally extend over 4 semesters of full-time study, unless otherwise specified in the Special Departmental Regulations.

11.22 The courses offered in the programme shall be specified in the Special Departmental Regulations.

11.23 Industrial and/or site visits may be arranged to supplement learning, as specified in the Special Departmental Regulations.

11.24 The availability of optional courses offered shall be at the discretion of the Department.

11.30 Assessment
11.31 Except for a project and courses with 100 percent continuous assessment, the ratio of continuous assessment to end of semester examination marks shall be 2:3, unless otherwise specified in the Special Departmental Regulations.

11.32 A project shall be evaluated by continuous assessment, oral presentation and demonstration and a written report. The ratio of the marks for continuous assessment, presentation assessment and written report shall be 1:1:2.

11.33 For continuous assessment, the ratio of marks for tests to assignment and/or laboratory report marks shall be 1:1.

11.34 The final project report must be submitted to the co-ordinator at least 2 weeks before the beginning of the end of semester examinations.

11.35 Failure without good cause to submit an item of continuous assessment within 24 hours of the due date shall carry a penalty of 5 percent marks for each working day.

11.36 A student who fails to submit an assignment shall score a zero mark for that test. A student absent from a test with documented legitimate reason shall be entitled to a special test.

11.37 Where a course includes a written final examination, a course with a credit value of 3 or more shall be examined by an end of semester examination of duration 2 hours, and 1 hour for a course with less than 3 credits.

11.38 Courses with a practical component or drawing included in a written examination shall be examined by a 3-hour, end-of-semester examination.

120 Industrial Training Regulations for the Diploma in Engineering
Subject to the provisions of General Academic Regulations 000 and 100, the following Special Regulations shall apply to students in the following programmes:

- Diploma in Mining Engineering.
- Diploma in Mineral Engineering.

12.10 Programme Structure
12.11 A student shall undergo a single period of supervised Industrial Training for 8 weeks and shall be undertaken at a time specified by the Faculty.

12.12 Industrial Training course codes shall be as follows: ITD100 Industrial Training (duration 8 weeks, 4 credits, core course).

12.13 During the course of Industrial Training a student shall be subjected to such codes, procedures, laws, and other regulations as applicable to the industry.

12.14 Subject to Regulations Governing Admissions, Fees and Discipline Regulation 4.0, and Regulation 12.13 above, a student who receives a final warning during the course of Industrial Training shall be subjected to Disciplinary Regulations.

12.20 Assessment
12.21 During the course of Industrial Training, each student shall be visited at least once at the location of placement to be assessed by Faculty of Engineering and Technology staff.

12.22 A student’s performance will be assessed by means of:

12.22(a) Continuous assessment by the industrial based supervisor and an assessor from a relevant department of the Faculty of Engineering and Technology;

12.22(b) Industrial Training report and logbook submitted by the student at the end of the Industrial Training period.

12.23 ITD100 shall be assessed based on Regulations 120.22(a) and 120.22(b). The ratio of marks for continuous assessment to Industrial Training report shall be 1:2.

12.24 A student who has an incomplete grade shall be allowed to complete Industrial Training at a time recommended by the Faculty.

210 Special Regulations for the Degree in Bachelor of Engineering
Subject to the provisions of the General Regulations 000 and 200, the following Special Regulations shall apply:

21.10 Entrance Requirements
21.11 Admission to the Bachelor of Engineering Degree shall be as stipulated in General Regulation 20.20.

21.12 The normal minimum entry requirement for admission to level 100 of the degree programme shall be BGCE/Equivalent with a minimum of grade D in English Language and a grade of C in Mathematics and Physics, and a grade of C in any one from Biology or Chemistry.

21.13 The normal minimum requirements for admission to Level 200 of the Degree programme shall be satisfactory completion of Level 100 of the Bachelor of Science (General) Degree of the Faculty of Science with at least C grades in Mathematics and Physics.

21.14 Applicants in possession of an appropriate A’ level qualification with at least C grades in Mathematics and Physics may be admitted directly into Level 200 of the Degree programme.

21.15 Applicants in possession of an appropriate Diploma may be admitted directly into Level 200 of the Degree programme.
21.16 Applicants in possession of an appropriate Higher Diploma may be admitted directly into Level 300 of the appropriate Degree programme.

21.20 Programme Structure
21.21 Level 100 courses shall be as specified in the Faculty of Science Special Regulations for the Bachelor of Science Degree.
21.22 Level 200 shall consist of the following core courses:

Semester 3

DTB211 Workshop Technology I (2)
MBB211 Engineering Drawing (2)
CCB211 Engineering Materials (2)
CCB212 Statics (2)
EEB211 Electrical Principles I (2)
MAT291 Engineering Mathematics I (3, pre-req. MAT111, MAT122)

Semester 4

DTB221 Workshop Technology II (2)
MBB221 Manual and Computer Aided Drafting (2, pre-req. MBB211)
MBB222 Dynamics (2)
CCB221 Strength of Materials (2, pre-req. CCB212)
EEB221 A.C. Circuit Principles II (2)
MAT292 Engineering Mathematics II (3, pre-req. MAT291)

21.23 Students registered for a Bachelor of Engineering programme shall undergo two periods of Industrial Training: 8 weeks and 20 weeks as specified in Faculty Special Regulation 22.10.
21.24 At Levels 300, 400 and 500 each student shall register for General Education Courses as prescribed by General Regulations 00.2124, Departmental prescribed number of core, optional and elective courses per semester, unless exempted.
21.25 The availability of optional and elective courses offered by a Department shall be at the discretion of the relevant Department.
21.26 A student shall register for a Single Major or a Combined Degree programme in the fifth semester.
21.27 A subject may include courses consisting entirely of fieldwork, project work, practical work or seminars. In addition to work during the semester, a subject may include prescribed fieldwork or assignments during the vacation periods.

21.30 Assessment
21.31 Continuous assessment in Levels 200, 300, 400 and 500 courses shall be based on tests and/or assignments, and where applicable, laboratory reports/field reports.
21.32 Except for a project and courses with 100 percent continuous assessment, the ratio of continuous assessment to end of semester examination shall be 2:3, unless otherwise specified in the Departmental Special Regulations.
21.33 A project shall be evaluated by continuous assessment, oral presentation and/or demonstration and a written report. The ratio of the marks for continuous assessment, presentation assessment and written report shall be 1:1:2.
21.34 For continuous assessment, the ratio of marks for tests to assignments and/or laboratory marks shall be 1:1.
21.35 Level 500 Project Report must be submitted to the co-coordinator at least two weeks before the beginning of the end-of-semester examinations.
21.36 Where a course includes a written final examination, a course with a credit value of 3 or more shall be examined by an end of semester examination of duration 2 hours, and 1 hour for a course with less than 3 credits.
21.37 Courses with a practical component or drawing included in a written examination shall be examined by the end of semester examination of duration 3 hours.
21.38 Industrial Training shall be assessed as specified in the Faculty Special Regulation 22.20. Failure without good cause to submit an item of continuous assessment within 24 hours of the due date shall carry a penalty of 5 percentage marks per day. Failure to submit the assignment before the end of one week from the due date shall incur a zero mark.
21.40 A student who fails to sit a continuous assessment test without documented valid reasons shall score a zero mark for that test. A student absent from a test with documented legitimate reason shall be entitled to a special test.

220 Industrial Training Regulations for the Faculty of Engineering and Technology Programmes
Subject to the provisions of General Regulations 000 and 200, the following Industrial Training Regulations shall apply to students in the following programmes:
- Bachelor Design (Industrial Design)
- Bachelor Design (Design and Technology Education)
- Bachelor of Engineering (Civil Engineering)
- Bachelor of Engineering (Construction Engineering and Management)
- Bachelor of Engineering (Electrical and Electronic Engineering)
- Bachelor of Engineering (Industrial Engineering)
- Bachelor of Engineering (Mechanical Engineering)
- Bachelor of Engineering (Mineral Engineering)
- Bachelor of Science (Mining Engineering)
- Bachelor of Geomatics
- BSc/MA in Urban and Regional Planning
- Bachelor of Science (Real Estate)
- Bachelor of Architecture
- Bachelor of Land Management

22.10 Programme Structure
22.11 A student shall undergo two periods of supervised Industrial Training: 8 weeks between Levels 200 and 300, and 20 weeks starting from the beginning of Semester 2 of Level 400 including part of the vacation between Levels 400 and 500.
22.12 Industrial Training course codes shall be as follows:

 ITB200 Industrial Training I (duration 8 weeks, 4 credits, core course)
 ITB420 Industrial Training II (duration 20 weeks, 10 credits, core course).
22.13 During the course of Industrial Training, a student shall be subjected to such codes, procedures, laws, rules, and other regulations as applicable to the industry.
22.14 Subject to Regulations Governing Admissions, Fees and Discipline Regulation 4.0, and Regulation 22.13 above, a student who receives a final warning for misconduct during the course of Industrial Training shall be subjected to Discipline Regulations.
22.20 Assessment
22.21 During the course of the Industrial Training period, each student shall be visited twice at the location of placement to be assessed by the Faculty of Engineering and Technology staff.
22.22 A student’s performance will be assessed by means of:
22.22(a) Continuous assessment by the industrial based supervisor and an assessor from a relevant department of the Faculty of Engineering and Technology;
22.22(b) Industrial Training report and logbook submitted by the student to the end of the Industrial Training period;
22.22(c) Oral Presentation.
12.23 ITB200 shall be assessed as based on Regulations 22.22 a) and 22.22 b). The ratio of marks for continuous assessment to Industrial Training report shall be 1:2.
22.24 ITB420 shall be evaluated as specified in Regulation 22.22. The ratio of marks for continuous assessment to Industrial Training report to oral presentation shall be 1:2:1.

230 Special Regulations for the Degree in Bachelor of Design
Subject to the provisions of the General Regulations 000 and 200, the following Special Regulations shall apply:

23.10 Entrance Requirements
23.11 Admission into Level 100 of the Bachelor of Design Degree Programme shall be as stipulated in the General Admission Regulations.23.12 Admission into Level 100 of the BDes Degree Programme shall be minimum requirement of a BGCSE with a with a minimum of grade D in English Language and a grade C in Mathematics, Physics and Chemistry or a minimum of grade BB in Science Double Award or equivalent.
23.13 Admission into Level 200 of the Bachelor of Design Degree Programme shall be as stipulated in General Admission Regulations.
23.14 Admission into Level 200 of the BDes Degree Programme shall be satisfactory completion of Level 100 of the Bachelor of Science General Degree of the Faculty of Science with at least C- (C minus) grades in Mathematics and Physics.
23.15 Applicants in possession of an appropriate 'A' level qualification with at least D grades in Mathematics and at least one of: Physics, Chemistry or Design and Technology may be admitted directly into Level 200 of the Degree Programme.
23.16 Applicants in possession of an appropriate Higher Diploma may be admitted directly into Level 200 of the Degree Programme.
23.17 Applicants in possession of an appropriate Higher Diploma may be admitted directly into Level 300 of the Degree Programme.

23.20 Degree Structure
23.21 Level 100 courses shall be as specified in the Faculty of Science Special Regulations for the Bachelor of Science Degree.
23.22 Level 200 shall consist of the following courses:

Semester 3

DTB210 Elements of Design (3)
DTB211 Workshop Technology I (3)
MBB211 Engineering Drawing I (2)
CCB211 Engineering Materials (2)
CCB212 Statics (2)
EEB211 Electrical Principles I (2)
Semester 4

DTB220 Designing Artifacts (3, pre-req. DTB210)
DTB221 Workshop Technology II (2, pre-req. DTB211)
MMB221 Computer Aided Drafting (2, pre-req. MMB211)
MMB222 Dynamics (2)
CCB221 Strength of Materials (2, pre-req. CCB212)
DTB 222 Graphics (2)

23.23 Students registered for a Bachelor of Design Degree Programme shall undergo industrial training as specified under Departmental Special Regulations.
23.24 At Levels 300, 400 and 500 each student shall register for General Education Courses as prescribed by General Regulation 00.2124, Departmental prescribed number of core, optional and elective courses per semester, unless exempted.
23.25 The availability of optional and elective courses offered by a Department shall be at the discretion of the Department.
23.26 A student shall register for a Single Major or a Combined Degree Programme in the third semester.
23.27 A subject may include courses consisting entirely of fieldwork, project work, practical work, and seminars. In addition to work during the semester, a subject may include prescribed fieldwork or assignments during the vacation periods.

23.30 Assessment
23.31 Continuous assessment in Levels 200, 300, 400 and 500 courses shall be based on tests and/or assignments, and where applicable laboratory reports/field reports.
23.32 Except for a project and courses with 100 percent continuous assessment, the ratio of continuous assessment to end of semester examination shall be 2:3, unless otherwise specified in the Departmental Special Regulations.
23.33a) A Design Project shall be assessed through documentation (folio, report and diary) of the Design Process and presentation. The ratio of marks for documentation to presentation shall be 2:1.
23.33b) A Major Make and Evaluate Project shall be assessed through Product and its Evaluation and presentation. The ratio of marks for documentation to presentation shall be 2:1.
23.33c) A Design and Make Project shall be evaluated as specified in Regulations 23.33a and 23.33b.
23.34 The Level 500 Project Report must be submitted to the co-ordinator at least 2 weeks before the beginning of the end-of-semester examinations.
23.35 Each course includes a written final examination, a course with a credit value of 3 or more shall be examined by an end of semester examination of duration 2 hours, and 1 hour for a course with less than 3 credits.
23.36 Courses having a practical component or drawing that include a written examination shall be examined by an end of semester examination of duration 3 hours.
23.37 Industrial Training shall be assessed as specified in the Faculty Special Regulation 35.20.
23.38 Failure without good cause to submit an item of continuous assessment within 24 hours of the due date shall carry a penalty of 5 percentage marks per day. Failure to submit the assignment before the end of 1 week from the due date shall incur a zero mark.
23.39 A student who fails to sit a continuous assessment test without documented valid reason shall score a zero mark for that test. A student absent from a test with documented legitimate reason shall be entitled to a special test.
24 Industrial Training Regulations for the Degree in Bachelor of Design Preamble
Subject to the provisions of General Regulations 000 and 200 the following Industrial Training Regulations shall apply to students on the following programmes:
• Bachelor of Design (Design and Technology Education)
• Bachelor of Design (Industrial Design)

24.10 Structure
24.11 A student shall undergo a period of supervised Industrial Training for 7 weeks between Levels 300 and 400.
24.12 In addition to the above, a student doing Industrial Design shall undergo a second period of supervised Industrial Training for 20 weeks starting from the beginning of semester 2 of Level 400 including part of the vacation between Levels 400 and 500.
24.13 Industrial Training course codes shall be as follows:
DTB300 Industrial Training (duration 7 weeks, 3 credits, core course)
IDB400 Industrial Training for Industrial Design (duration 20 weeks, 10 credits, core course).
24.14 During the course of Industrial Training a student shall be subjected to such codes, procedures, laws, rules, and other regulations as applicable to the industry.
24.15 Subject to Regulations Governing Admissions, Fees and Discipline Regulation 4.0, and regulation 35.13 above, a student who receives a final warning for misconduct during the period of Industrial Training shall be subjected to Discipline Regulations.

24.20 Assessment
24.21 During the periods of Industrial Training, each student shall be visited a minimum of twice at the location of placement to be assessed by Faculty of Engineering Technology staff.
24.22 A student’s performance will be assessed by means of:
24.22a) Continuous assessment by the industry based supervisor and an assessor from a relevant Department of the Faculty of Engineering and Technology.
24.22b) Industrial Training Report and logbook submitted by the student at the end of the Industrial Training period.
24.22c) Oral Presentation.
24.23 DTB300 shall be assessed as based on regulations 35.22a) and 35.22b). The ratio of marks for Continuous Assessment to Industrial Training Report and Logbook shall be 1:2.
24.24 IDB400 shall be assessed as based on regulation 35.22. The ratio of marks for Continuous Assessment to Industrial Training Report and Logbook to Oral Presentation shall be 1:2:1.

DEPARTMENT OF ARCHITECTURE AND PLANNING

Departmental Regulations for Undergraduate
Programmes General Provisions
Subject to General Academic Regulations and the Faculty of Engineering and Technology Special Regulations, the following Departmental Regulations shall apply:

Programmes and Qualification Titles
The Department of Architecture and Planning offers programmes in Architecture, Urban and Regional Planning and Real Estate, leading to the following qualifications:
A Single Major Programme leading to a Bachelor of Architecture Degree for students specialising in Architecture.
A Single Major Programme leading to a Bachelor of Science Degree in Urban and Regional Planning for students who opt to exit the Basic Urban and Regional Planning Programme after Four Years or Professional MA for student exiting the programme after an additional 5th year of specialization.
A Single Major Programme leading to a Bachelor of Science Degree in Real Estate for students specialising in Real Estate.

Aim and Objectives of Undergraduate Programmes
The aim of the URP programme is to train students to enable them to function and work in the fields of human settlement development and urban and regional planning. The Architecture programme is designed to equip students with the academic knowledge and skills they will need for a successful professional career in architecture. The Real Estate is aimed at training students to appreciate, comprehend, theorise, synthesise, project and guide the development and utilisation of land property and related resources in an efficient, equitable and sustainable ways within frameworks shaped by the current land commoditisation trends and the country’s future needs. The Programmes have been carefully developed to be broad based including courses from the faculties of Science, Engineering, Humanities, Social Sciences and Business that are uniquely related to the cultural heritage of Botswana. These Programmes will benefit immensely from each other and also from other departments within The Faculty.

Assessment and Examination
Performance in courses shall be evaluated through a combination of continuous assessment and final. The duration of examinations will be 2 hours for all the courses. All studio based and research based courses shall be assessed by continuous assessment only. The ratio of continuous assessment to formal examination shall be 2:2. A project or design shall be evaluated by continuous assessment, oral presentation and/or demonstration and a written report. The ratio of the marks for continuous assessment, presentation assessment and written report shall be 2:1:1. Overall performance in a course shall be as specified in the General Regulation 00.84. There shall be no supplementary
examinations for all research and studio based courses. A student who fails a core or pre-req or co-requisite course shall retake the course when offered again. A student who has failed an optional Elective/general education course may retake the course or its equivalent.

Progression From Semester to Semester
Progression from semester to semester shall be in accordance with General Academic Regulation 00.90.

Duration of the Programmes
The duration of the URP Programme shall be 10 to 12 semesters full-time; and the duration of the Architecture Programme shall be a minimum of 10 and a maximum of 14 semesters on a full-time basis. Award of the Degree General Academic Regulation 00.85 shall apply. Minimum number of credits for award of the degree shall be 180 for architecture, 160 for Professional MA in Urban Planning and Regional Planning, 130 for BSc in Urban and Regional Planning 133 for Real Estate. Classification of the degree shall be in accordance with the provisions of General Academic Regulation 20.4

Professional Training
For Architecture, Urban and Regional Planning and Real Estate Programmes, students shall be subjected to such codes, procedures, laws, rules, and other regulations as applicable to the industry organisation during the Professional Training. Urban and Regional Planning Programme Students shall undergo Professional Training (Internship) of 8 weeks duration after Assessment of Professional Training at level 200 and 300. The internship courses are URP 226 and URP 128. During each Professional Training period, students shall be visited at least once at locations of placement by staff teaching the programme to monitor progress and also give advise where necessary.

Architecture Programme
Professional Training (Internship) Regulations for the Bachelor of Architecture Programme Subject to the provisions of General Academic Regulations 00.0 and 100 the following Professional Training Regulations shall apply to students on the Bachelor of Architecture Programme.

A student shall normally undergo 3 periods of supervised Professional Training (Internship) of 8 weeks each after Levels 200, 300 and 400. Professional Training course codes are: ARB220, ARB320 and ARB420.

Assessment
A student’s performance will be assessed by means of:

- a) Confidential report from the student’s immediate supervisor at location of placement.
- b) Professional Training reports and logbook submitted by the student at the end of each internship period.
- c) Professional Training visits by an assessor from the relevant Department of the Faculty of Engineering and Technology.
- d) Students will be assessed through confidential reports from the organisation they have been placed at, production of a concept paper and oral presentation.

Therefore the assessment ratio for Confidential Report to Internship Concept Paper to Oral Presentation shall be 1:2:1. For both Architecture and Urban and Regional Planning Programmes, a student who has an incomplete grade shall be allowed to complete Professional Training at a time recommended by the Faculty.

Repeating Professional Training
A student who fails to meet the requirements of Professional Training shall be required to repeat the training at a time recommended by the Faculty.

Architecture Programme Entrance Requirements
Admission to the BArch Degree programme shall be as stipulated in General Academic Regulation 20.20 Applicants for admission to level 100 must have a minimum of Grade D in English Language, a minimum of Grade C in Mathematics, either a minimum of Grade C in Physics or Grade BB in Science Double Award, and a minimum of Grade C in Art or in Design and Technology.

Advanced Standing: Students with credits towards a degree from other Post-Secondary Educational institutions are eligible for application and may receive advanced credit for their prior studies in comparable courses.

All applicants are required to attend an interview with Architecture Programme Staff and are advised that it would be an advantage to bring a portfolio containing evidence of interest in visual arts and/or design. Admission into the programme is subject to the positive result of the interview.

In addition to 1.4.1.1, applicants for admission to Level 100 of the programme must take courses in Physics, Chemistry and mathematics in the Faculty of Science. Applicants in possession of an appropriate ‘A’ level qualification with at least C grades in Mathematics and at least one of: Physics, Chemistry, Art or Design and Technology may be exempted from taking Physics, Chemistry and Mathematics in the Faculty of Science.

Applicants who possess the normal entry requirements listed in the General Academic Regulation 20.2 but who do not satisfy 1.4.1.2 or 1.4.1.3 may be admitted to the programme if they:
- a) have assessable experience in artistic and/or design activities and/or
- b) submit a portfolio of drawings and design exercises (not exceeding 10) with the application.

Programme Structure
Level 100 shall consist of the following courses:

Semester 1

**Core Courses**
- ARB111 Design & Communication I (4)
- ARB112 Building Materials & Construction I (2)
- ARB122 Building Materials & Construction II (2)
- PHY112 Geometrical optics, Mechanics, Vibrations and Waves
- COM132 Communication and Academic Literacy II (3)
- ICT122 Computer Skills Fundamentals (2)

**Elective Courses**
- ARB113 Traditional African Architecture (2)
- ARB119 History of Art (2)
- ARB120 Environment and Comfort (2)
- MAT192 Design Mathematics II (3)

Semester 2

**Core Courses**
- ARB121 Design and Communication II (4)
- ARB113 Traditional African Architecture (2)
- ARB123 History of Art (2)
- ARB124 Environment and Comfort (2)
- MAT192 Design Mathematics II (3)

**GEC Courses**
- Level 200 shall consist of the following courses:
- ARB211 Architectural Design I (6)
- ARB212 Building Materials & Construction III (2)
- ARB222 Building Materials & Construction IV (2)
- ARB214 Energy Efficiency in Buildings (2)
- ARB216 Computer Aided Drafting (2)
- CCB217 Theory of Structures I (2)

Semester 4

**Core Courses**
- ARB220 Internship I (2)
- ARB221 Architectural Design II (6)
- ARB213 History of Architecture I (2)
- ARB223 History of Architecture II (2)
- CCB227 Theory of Structure II (2)
- URFP207 Land Surveying and Cartography + Lab (3)

**Optional Courses**
- Level 300 shall consist of the following courses:
- URFP200 Introduction to Town Planning (2)
- URFP202 Infrastructure Planning & Management (20) (2)

Semester 6

**Core Courses**
- ARB320 Internship II (2)
- ARB321 Architectural Design IV (6)
- ARB313 History of Architecture III (2)
- ARB323 History of Architecture IV (2)
- CCB 327 Theory of Structures IV (2)
- ARB325 Interior Design (2)

**Level 400 shall consist of the following courses:**

Semester 7

**Core Courses**
- ARB411 Architectural Design V (6)
- ARB412 Building Systems I (2)
- ARB422 Building Systems II (2)
- LAW452 Construction Law (2)
- URFP305 Research Methods (2)
- ARB415 Landscape Design (2)

Semester 8

**Core Courses**
- ARB420 Internship III (2)
- ARB421 Architectural Design VI (6)
- ARB413 Philosophy of Architecture I (2)
- ARB423 Philosophy of Architecture II (2)
- ARB424 Professional Practice I (2)
Level 500 shall consist of the following courses:

**Semester 9**

**Core Courses**
- ARB511 Design Project I (8)
- CCB519 Building Economics (2)
- ARB524 Project Management (2)

**Optional Courses**
- URP307 Land and Property Evaluation (2)
- URP314 Land and Property Management (2)

**Semester 10**

**Core Courses**
- ARB521 Design Project II (8)
- ARB522 Urban & Rural Design Practice (2)
- GEC Courses
  - GEC273 The State & Society (2)
  - GEC277 Law & Society in Botswana (2)

**Course Listing**

**ARB111 Design Communication I**
This course concerns the experience of seeing, drawing and communication of form, mainly physical form. It deals with free hand drawing as well as geometric projections: Orthographic, axonometric, and isometric. The course deals with communication through three main topics: free-hand drawing, geometric projections, and colour.

- Credits: 4
- Lectures/Studio: 8 hours per week
- Continuous assessment: Research report and interim assessments of design project
- Final examination: Final assessment of design project
- CA/Exam ratio: 1:1

**ARB112 Building Materials & Construction I**
This course deals with building materials and their use in “fundamental” conditions, “natural” as distinct from “fabricated” materials: earth and its derivatives and wood. It does so through observation of these materials in traditional and modern buildings. The course deals with materials and process of construction and their inter-relationship in the way they are used in building.

- Credits: 2
- Lectures/Studio: 2 hours per week
- Continuous assessment: 2 Tests and 2 assignments
- Final examination: 2 hours
- CA/Exam ratio: 2:3

**ARB113 Traditional African Architecture**
This course concerns the genesis of Architecture in Africa as a part of African Culture. It examines architecture as a response, an expression, and a formative part of the communal and individual human habitation. This course begins with a review of African communes and villages, proceeds to the study of particular buildings within them from their origin to the present.

- Credits: 2
- Lectures/Studio: 2 hours per week
- Continuous assessment: 2 Tests and 2 Assignments
- Final examination: 2 hours
- CA/Exam ratio: 2:3

**ARB 121 Design Communications II**
This course deals with representation and abstraction in the process of communication. It deals with free-hand drawing, perspective projection, three-dimensional models as instruments of study of geometry and appearance (light) of physical form, leading to the design of a simple structure.

- Pre-req.: ARB111
- Credits: 4
- Lectures/Studio: 8 hours per week
- Continuous assessment: Research report and interim assessments of design project
- Final examination: Final assessment of design project
- CA/Exam ratio: 1:1

**ARB122 Building Materials & Construction II**
This course deals with building materials and their use in “fundamental” conditions with focus on industrially produced materials: cement, concrete, glass, steel and other metals used in buildings. The course covers basic characteristics of these materials but focusing on them as construction materials.

- Pre-req.: ARB112
- Credits: 2
- Lectures/Studio: 2 hours per week
- Continuous assessment: At least 1 test and 1 assignment
- Final examination: 2 hours
- CA/Exam ratio: 2:3

**ARB 123 History of Art**
Architecture is rooted in the search for order and the establishment of immortality. The achievement of mankind is easily assessed through art, from the establishment of immortality. The achievement of the individual and community as inhabitants of the earth. It examines the seminal building and communal forms that emerge as the “typical” forms in this evolutionary process. Beginning with the Prehistoric, the main civilisations from Mesopotamia to Rome are examined, detailing their main aspects.

- Pre-req.: ARB123
- Credits: 2
- Lectures/Studio: 2 hours per week
- Continuous assessment: At least one test and one assignment
- Final examination: 2 hours
- CA/Exam ratio: 2:3

**ARB 124 Environment and Comfort**
This course introduces (1) the range of human comfort conditions within the built environment and the effect of air, light and temperature (2) sources of the natural and artificial environmental conditions affecting the built environment including the sun, wind, precipitation, seasons, day and night, weather and climatic conditions, electricity, HVAC and (3) the building as a controlled environment. Coursework consists of lectures providing knowledge of principles to be observed in field studies and reports to document the results. Assessment will be through continuous assessment in form of essays and tests and a final examination.

- Pre-req.: ARB124
- Credits: 2

**ARB211 Architectural Design I**
The course deals with the simplest possible enclosure: a room, a hut, through examination of the room and buildings in existing contexts, examples in the work of architects, and its design by the students. The course will apply the various types of spatial organization and basic structures in small buildings in context, and the possibilities of presentation modes of professional architecture.

- Pre-req.: ARB121
- Credits: 6
- Lectures/Studio: 12 hours per week
- Continuous assessment: Research report and interim assessments of design project
- Final examination: Final assessment of design project
- CA/Exam ratio: 1:1

**ARB212 Building Materials & Construction III**
Students are asked to study selected buildings as case studies, analyse the use of materials and methods of construction in the building, and apply the results in their own design. Emphasis will be put on cladding and external finishes.

- Pre-req.: ARB122
- Credits: 2
- Lectures/Studio: 2 hours per week
- Continuous assessment: At least one test and one assignment
- Final examination: 2 hours
- CA/Exam ratio: 2:3

**ARB 213 History of Architecture I**
The course Covers Architecture As A Development of the individual and community as inhabitants of the earth. It examines the seminal building and communal forms that emerge as the “typical” forms in this evolutionary process. Beginning with the Prehistoric, the main civilisations from Mesopotamia to Rome are examined, detailing their main aspects.

- Pre-req.: ARB123
- Credits: 2
- Lectures/Studio: 2 hours per week
- Continuous assessment: At least one test and one assignment
- Final examination: 2 hours
- CA/Exam ratio: 2:3

**ARB214 Energy Efficiency In Buildings**
This course deals with the following topics: Basic principles of energy efficiency, energy efficiency and sustainable development, energy efficient design (passive and active design), technologies for energy efficient building, energy efficiency policy and legislation introduction to energy management, green financing. Throughout the course, case studies and existing good practice examples will be used as a major instrument of instruction. Assessment will be through continuous assessment in form of essays and tests and a final examination.

- Pre-req.: ARB124
- Credits: 2
ARB216 Computer Aided Drafting
Introduction to computers and two drafting tools: Arch-Cad and Auto-Cad. This course involves four lectures followed by extensive exercise and application of exercises in the use of two architectural drafting tools.

Pre-req.: GEC121 and GEC122, ARB111 and ARB121
Credits: 2
Lectures/Studio: 2 hours per week
Continuous assessment: Interim assessments
Final examination: Assessment of major design project
CA/Exam ratio: 2:3

ARB221 Architectural Design II
More advanced and institutional building types form the vehicle of instruction in this course, allied with case studies and the understanding of natural light in architecture. A full response of the selection of materials, appropriate finishes and more complex structural applications is also demanded to ensure competence at this level.

Pre-req.: ARB211
Credits: 6
Lectures/Studio: 12 hours per week
Continuous assessment: At least 1 test and 1 assignment
Final examination: Final assessment of design project
CA/Exam ratio: 1:1

ARB222 Building Materials I
Construction IV
Students are asked to study selected buildings, analyse the use of materials and methods of construction in the building, and apply the results in their own designs. Emphasis will be put on materials used for interior finishes: floor and wall tiling, ceilings etc.

Pre-req.: ARB212
Credits: 2
Lectures/Studio: 2 hours per week
Continuous assessment: At least 1 test and 1 assignment
Final examination: 2 hours
CA/Exam ratio: 2:3

ARB223 History of Architecture II
The course will deal with architecture as a development of the individual and community as inhabitants of the earth and examines the seminal building and communal forms that emerge as the “typical” forms in this evolutionary process. Beginning with Early Christian architecture, the course proceeds to deal with the middle Ages, looking at Europe, Africa and the Far East.

Pre-req.: ARB213
Credits: 2
Lectures/Studio: 2 hours per week
Continuous assessment: At least 1 test and 1 assignment
Final examination: 2 hours
CA/Exam ratio: 2:3

ARB 220 Internship I
Internship means the external placement of a student with a professional or other kind of body in order to gain the necessary experience of the profession. During the long vacation of May to July, students spend at least eight weeks undergoing this professional experience. Staffs visit the students and meet their supervisors to get a feedback on the attachment.

Pre-req.: None
Credits: 2
Duration: Minimum 8 weeks.
Assessment: Field Supervisor/Concept Paper/ Presentation =1/2/1

ARB311 Architectural Design III
This course builds on the input of previous design courses with the emphasis on buildings serving the community. More advanced structural analysis and response is expected, and issues of detailed planning of site and overall organization are explored, resulting in deepening awareness of architecture in relation to current norms of professional achievement.

Pre-req.: ARB221
Credits: 6
Lectures/Studio: 12 hours per week
Continuous assessment: Research report and interim assessments of design project
Final examination: Final assessment of design project
CA/Exam ratio: 1:1

ARB312 Building Services I
This course covers building services including water supply and plumbing, drainage and waste disposal, electricity supply, lighting, communications, HVAC, fire fighting, and conveyance. Assessment will be done by essays and examination.

Credits: 2
Lectures/Studio: 2 hours per week
Continuous assessment: At least 1 test and 1 assignment
Final examination: 2 hours
CA/Exam ratio: 2:3

ARB313 History of Architecture III
The Post-Renaissance period up to nineteenth century was a period of revolutions in science, technology, commerce, and politics and had a decisive shaping influence on today's world. The achievements of the High Renaissance and the Baroque are examined and how the Enlightenment and other movements prepared the way for Modernist ideas in the early nineteenth century.

Pre-req.: ARB223
Credits: 2
Lectures/Studio: 2 hours per week
Continuous assessment: At least 1 test and 1 assignment
Final examination: 2 hours
CA/Exam ratio: 2:3

ARB321 Architectural Design IV
The emphasis in this course is to heighten the interpretation of more complex briefs and building programmes, with emphasis on landscape, structure and basic building services. The final design should be a multi-storey building with a public address, and related to full exploration of design method and competent presentation on professional lines.

Pre-req.: ARB311
Credits: 6
Lectures/Studio: 12 hours per week
Continuous assessment: Research report and interim assessments of design project
Final examination: Final assessment of design project
CA/Exam ratio: 1:1

ARB322 Building Services II
Subsequent to ARB321, this course will cover a practical analysis of the requirements of a selected building type followed by design of the building services as part of the process of design. Assessment will be done by coursework.

Pre-req.: ARB312
Credits: 2
Lectures/Studio: 2 hours per week
Continuous assessment: At least 1 test and 1 assignment
Final examination: 2 hours
CA/Exam ratio: 2:3

ARB323 History of Architecture IV
This course deals with the rise of modern states/cities and institutions in Europe following the Industrial Revolution and examines new building types and technology in response to these developments up to the present. Clear notions of High Modernism are followed by a treatment of Postmodernism.

Pre-req.: ARB313
Credits: 2
Lectures/Studio: 2 hours per week
Continuous assessment: At least 1 test and 1 assignment
Final examination: 2 hours
CA/Exam ratio: 2:3

ARB320 Internship II
Internship means the external placement of a student with a professional or other kind of body in order to gain the necessary experience of the profession. During the long vacation of May to July, students spend at least eight weeks undergoing this professional experience. Staffs visit the students and meet their supervisors to get a feedback on the attachment.

Pre-req.: ARB220
Credits: 2
Duration: Minimum 8 weeks.
Assessment: Field Supervisor/Concept Paper/ Presentation =1/2/1

ARB325 Interior Design
The course consists of extensions of the current architectural design project in the studio. Students are taught to deal with colour, light and texture as well interior arrangements and spatial qualities. Advanced awareness of issues such as the integration of structures, services and environmental control are also expected.

Credits: 2
Lectures/Studio: 2 hours per week
Continuous assessment: At least 1 test and 1 assignment
Final examination: 2 hours
CA/Exam ratio: 2:3

ARB411 Architectural Design V
This course will be concerned with urban and community issues of some complexity and the development of design skills in terms of functional and environmental control systems. Possible vehicles of delivery could be an urban design complex or social housing, accompanied by building studies and/or selected exemplars incorporated in a short report to accompany drawings and model.

Pre-req.: ARB321
Credits: 6
Lectures/Studio:

Duration: Minimum 8 weeks.
Assessment: Field Supervisor/Concept Paper/ Presentation =1/2/1

ARB411 Architectural Design V
This course will be concerned with urban and community issues of some complexity and the development of design skills in terms of functional and environmental control systems. Possible vehicles of delivery could be an urban design complex or social housing, accompanied by building studies and/or selected exemplars incorporated in a short report to accompany drawings and model.

Pre-req.: ARB321
Credits: 6
Lectures/Studio:
ARB421 Architectural Design VI
This course will treat a major building of known performance or derived brief, and of high complexity in terms of structural application, formal exploration and environmental control systems and sustainability. The brief must be fully understood and realized in the design response, and issues of contemporary theory and international norms should be addressed as well. 
Pre-req.: ARB411
Credits: 6
Lectures/Studio: 12 hours per week
Continuous assessment: Research report and interim assessments of design project
Final examination: Final assessment of design project
CA/Exam ratio: 1:1

ARB422 Building Systems II
The course introduces analytical methods in architectural design by applying the knowledge of various building systems from previous courses. Students are required to produce a comparable analytical report of their own design. 
Pre-req.: ARB412

ARB431 Philosophy of Architecture I
This course consists of examination of main theories of architecture since the Renaissance and exercises aimed at helping the student to develop refine their own position in design. Many aspects of philosophical and cultural criticism are introduced, leading to a final essay on a major topic.
Pre-req.: ARB323
Credits: 2
Lectures/Studio: At least 1 test and 1 assignment
Continuous assessment: Final examination: 2 hours
CA/Exam ratio: 2:3

ARB415 Landscape Design
This course consists of study of principles of landscape design as related to design of microclimate and ecological considerations. It is centred around lectures on land and landscape design and parallel studio exercise based closely on the context of the architectural design project in ARB411.
Credits: 2
Lectures/Studio: 2 hours per week
Continuous assessment: At least 1 test and 1 assignment
Final examination: Assessments of studio projects
CA/Exam ratio: 2:3

ARB424 Professional Practice I
This course deals with an introduction to the common and statute law and goes into the details of contract law before concentrating on construction contracts, types of building contracts and conflict/dispute resolution.
Pre-req.: LAW253
Credits: 2
Lectures/Studio: 2 hours per week
Continuous assessment: At least 1 test and 1 assignment
Final examination: 2 hours
CA/Exam ratio: 2:3

ARB420 Internship III
Internship means the external placement of a student with a professional or other kind of body in order to gain the necessary experience of the profession. During the long vacation of May to July, students spend at least eight weeks undergoing this professional experience. Staffs visit the students and meet their supervisors to get a feedback on the attachment.
Pre-req.: ARB320
Credits: 2
Duration: Minimum 8 weeks.
Assessment: Field Supervisor/Concept Paper/ Presentation =1/2/1

ARB511 Design Project I
The course consists of a proposal for a project at a community scale and the design from general strategy to Preliminary design stage, accounting for massing, basic organizational strategies and other issues of relevant importance.
Pre-req.: ARB421
Credits: 8
Lectures/Studio: Individual supervised research
Continuous assessment: Interim assessments of research report
Final examination: Final assessment of research report
CA/Exam ratio: 1:1

ARB514 Professional Practice II
This course deals with the following issues: Architect licensing process, techniques and rationale of marketing architectural services, market forecasting, client behaviour, office organisation and business methods applied to architecture, meeting procedures.
Pre-req.: ARB424
Credits: 2

ARB521 Design Project II
This course requires the students to take the proposal in ARB511 – or using an alternative strategy depending on the student. The course requires the student to prepare and present a proposal for a final design. Students will be expected to develop performance criteria for major spaces and components for the design and to present results to a high professional degree.
Pre-req.: ARB511
Credits: 8
Lectures/Studio: Individual supervised studio
Continuous assessment: Interim assessments of design project
Final examination: Final assessment of design project
CA/Exam ratio: 1:1

ARB522 Urban and Rural Design Practice
This course requires a comprehensive urban study of the project selected as the subject of ARB521. The students will be required to prepare a comprehensive research report on possible approaches to the urban design aspects of the "thesis" project – ARB521. The report will be illustrated with design options related to each approach and to develop a selected approach in detail.
Credits: 2
Lectures/Studio: 2 hours per week
Continuous assessment: At least 1 test and 1 assignment
Final examination: 2 hours
CA/Exam ratio: 2:3

ARB524 Project Management
This course deals with various processes and techniques of monitoring projects: the project life cycle, project planning and control, project cost control, Work Breakdown Structures (WBS), Programme Evaluation and Review Technique (PERT), Critical Path Method (CPM).
Credits: 2
Lectures/Studio: 2 hours per week
Continuous assessment: At least 1 test and 1 assignment
Final examination: 2 hours
CA/Exam ratio: 2:3

Bachelor of Science/Master of Arts professional Degree in Urban and Regional Planning Entrance Requirements
Admission to the Degree programme shall be as stipulated in General Academic Regulation 20.20
Applicants for admission to level 100 must have a minimum Grade of C in English Language, Mathematics, and Geography. Preference will be given to candidates with a minimum of grade C in Art or Design and Technology.

Students will upon successful completion of Level 400 (spatial) be awarded Bachelor of Science in Urban and Regional Planning (BScURP), and will have an option to pursue Level 500 (specialist), of which upon successful completion, will be awarded Master of Arts Professional Degree in Urban and Regional Planning (MAURP). Applicants
with a BScURP or equivalent with a minimum GPA of 3.0 may be admitted to Level 500 of the provisionally accredited degree programme by the Royal Town Planning Institute, UK. (http://www.rtpi.org.uk/item/3779/23/5/3)

Programme Structure
The programme is structured as follows:
- 1 year of preparatory pre-plan component with selection of cognate subjects that will lead to a smooth transition from preparatory to planning studies.
- 3 years of professional planning studies designated as spatial planning component
- 1 year of professional planning studies designated as specialist planning component

Level 100
Semester 1
Core courses
URP110 Introduction to Planning and Built Environment (3)
ENV101 Introduction to Physical and Human Environment I (3)
STA101 Mathematics for Social Sciences I (3)
ECD111 Basic micro-economics (3)

General courses
COM113 Communication and Academic Literacy I (3)
ICT121 Computer Skills Fundamentals (2)

Semester 2
Core courses
URP111 History of Planning (3)
ENV102 Introduction to Physical and human environment I (3)
STA102 Mathematics for Social Sciences II (3)
ECD112 Basic macro-economics (3)

General courses
COM112 Communication and Academic Literacy II (3)
ICT122 Computer Skills and Fundamentals (2)

Level 200
Semester 3
Core courses
URP220 Planning theory I (3)
URP221 Planning graphics and communication (4)
CGB213 Principles of Cartography (3)
URP222 Planning methods and techniques (3)

Optional courses
ARB216 Computer Aided Drafting (3)
RES200 Land Economics I (3)

Semester 4
Core courses
URP223 Site Planning and Design I (4)
URP224 Planning theory II (3)
URP225 GIS for Planners (3)
URP226 Planning practice/Internship I (8 weeks) (4)

Optional courses
URP227 Remote Sensing for Planners (3)
RES210 Land Economics II (3)
Level 300
Semester 5
Core courses
URP320 Planning Practice (3)
URP321 Transportation Planning & Management (3)
URP322 Environmental Land Use Planning (3)
URP323 Site Planning and Design II (4)

Optional courses
URP324 Facilities and Service Planning (3)
RES202 Planning Law (3)

Semester 6
Core courses
URP325 Urban & Regional Economics (3)
URP326 Neighbourhood planning and design (4)
URP327 Infrastructure Planning and Management (3)
URP328 Planning Practice/Internship II (8 weeks) (3)

Optional courses
LAW355 Land and Environmental Law (3)
RES211 Facilities Management (3)

Level 400
Semester 7
Core courses
URP420 Planning Legislation (3)
URP421 Planning and Management for Climate Change (3)
URP422 Urban Regenerating and renewal (4)
URP423 Gender and Planning (3)

Optional courses
URP424 Land and Property Development (3)
RES303 Property Management (3)

Semester 8
Core courses
URP425 Contracting and Planning Project Management (3)
URP426 Planning Implementation techniques (3)
URP427 Planning ethics (3)
URP428 Urban governance and management (3)

Optional courses
URP429 Urban Agriculture (3)
RES310 Property Management (3)

Level 500
Semester 9
Core courses
URP500 Research Methods and Techniques (3)
URP501 New Urbanism (3)
URP502 Landscape Planning and Design (3)
URP503 Integrated Housing Studies (3)

Planning Policy and Strategy Specialization
URP500 Research Methods and Techniques (3)
URP505 Integrated Development Planning (3)
URP 506 Regional and Rural Planning and Development (3)

URP 507 Comparative Planning (3)
Planning Methods and Techniques
URP 500 Research Methods and Techniques (3)
URP 510 Planning Support Systems (3)
URP 511 Development Impacts Analysis (3)
URP 512 Public Participation and Negotiations Techniques (3)

Optional courses
Urban Design, Environment and Housing Specialization
URP 504 Health city Planning (3)
ENS 404 Environmental Impact Assessment (3)
Planning Policy and Strategy Specialization
URP 508 Administrative and Policy Planning (3)
URP509 Smart Growth Planning (3)
Planning Methods and Techniques Specialization
URP 513 Community Planning Methods and Scenarios (3)
URP 514 Urban Ecological footprint methods (3)

Semester 10
Core courses
URP 315 Research Project (15)

LISTING

FOR ALL OTHER COURSES NOT OFFERED BY THE DEPARTMENT PLEASE CONSULT THE RELEVANT DEPARTMENT FOR THE SYNOPSIS

URP 110 Introductory Planning and Built Environment. Introduction to Planning and the Built Environment offers an introduction to the complexities of contemporary planning. The course will open with a discourse on the diverse and sometimes conflicting definitions of planning. It will then proceed on a journey through the dynamic sub-discipline foci encompassed in planning theory and practice. The course content will draw from both practice and theory, bringing the two together by way of lectures, seminars, a field trip, guest speakers and varied assessment. This journey will conclude with a return to the fundamental questions raised at the start of course – that of the conflicting definitions of contemporary planning.

URP 111 History of Planning. All settlements display various degrees of forethought and conscious design in their layout and functioning. The building and the planning of settlements has a long and complex history. However, planning as an organised profession has existed for less than two centuries.


URP 221 Planning graphics and communications. Description, use and care of equipment. Line drawing –pencil and ink. Lettering – freehand, guided and transfer letters. Colouring and shading – pencil, ink, magic markers and transfer tones/ shades. Graphical language, presentations and exhibitions. Scales – scale formula, application of formula,
types of scales (linear, fraction, statement, ratio etc). Scale change and conversion. Measurements – straight and other distances; and area measurements at various scales. Projections – orthographic (plan, sections and elevations), isometric, axonometric and perspectives. Measured drawing exercise.


URP 223 - Site planning and design I. Processes and tools: land and society, land planning and design, spatial information and mapping. Site selection and programming: land valuation, site selection context, site selection factors, site alternatives, programming methods, programming documentation. Site inventory and analysis; physical attributes, biological attributes, cultural attributes, integration and synthesis. Design and implementation: concept development, project components, concept evaluation, design development and implementation.

URP 225 - Planning practice/internship I (8 weeks). During internship the students should be able to collect basic data, analyse data, prepare base maps, update maps and prepare simple layouts.


URP 321 - Transportation planning & management. Transportation system objectives and constraints, modes of transportation, institutional structure, Transportation system issues and challenges, traffic congestion, traffic safety, equality of access, environmental protection, funding, environmental protection, Transportation planning, perspectives on the planning process, planning regulations, transportation and air quality planning, planning studies, planning studyorganisation, Transportation demand analysis, travel behaviour travel demand modelling, Trip generation models, trip distribution models, mode choice models, trip assignment models, Transit Operations, route planning, route location, stop location, route schedules, Transportation project evaluation, economic evaluation techniques, environmental impact assessment.

URP 322 - Environmental land use planning. Introduction to Environmental Planning: Issues of Environmental Concern; Sustainability and Sustainable development; The Nature of Planning; The Environmental Planning Process; Striking a Balance. Perspectives on Environmental Planning: Two integrating Perspectives – Natural Resources and Environmental systems; The Scientific Perspective; The Social Scientific Perspective; Foundations of Environmental Planning: Legal; Economic; Ethical; Ecological. Planning and Managing the Natural Resource Base: The Changing Countryside; Productive uses of rural resources; Mineral Resources. Rural Environmental Planning: Principles of Landscape Ecology; Environmental Planning and the Countryside; Landscape and Nature; Planning Catchments and Rivers; Recreation Ecology; Natural Resource Management Plans. Urban Environmental Planning: Urban Growth and Management; Managing Demand; Shelter and Urban Form; Energy; Managing Waste and Recycling; Traffic and Transport; Nature in the City; Industrial Ecology.


URP 324 - Public facilities and services planning. Definition of public and community facilities and services vis a vis commercial and private facilities; Characteristics of public/community facilities; Type, design and location requirements for educational facilities; Characteristics and design considerations for health facilities; Recreational facilities ( passive and active recreation, green areas and open spaces, parks, sports grounds and stadiums, indoor and outdoor facilities); Cultural and religious facilities – churches, libraries; Security facilities – fire halls, police stations; Public services – post offices, phone and telecommunication facilities, etc.

URP 325 - Urban & regional economics. Topics include models and techniques for describing and evaluating urban economies; central place theory, agglomeration economies, urban land use models, intra-city location models, development strategies and tools; commercial, industrial, and housing development; and problems of poverty and housing. In addition the course covers This course includes the following topics: comparative costs vs. comparative advantage, location analysis for industry, various indices of location measures, land use theories, interregional labour migration, gravity model, interregional trade, regional development, regional equilibrium analysis, export base multiplier, locational quotient, shift share techniques, regional and interregional input-output analysis, and econometric models for regional analysis.

URP 326 - Neighborhood planning and design. Definitions and Perceptions of Urban Design; Urban Design Approaches; Current Issues of Urban Design; Urban Design User Requirements; The Concept of Neighbourhood; Neighbourhood Development; Layout Planning Concerns; Layout Planning Principles and Guidelines; Designing with Nature.

URP 327 - Infrastructure planning & management. Definitions, reasons for studying infrastructure planning, role of physical planner, infrastructure and public health linkages, infrastructure and shelter linkages; onsite excreta disposal systems, offsite excreta disposal systems; wastewater technology; solid waste management; storm water management; water demand supply and distribution; power demand, supply and distribution; Telecommunication infrastructure. Financing and cost recovery of sanitation, wastewater, solid waste, power and water supply services.

URP 328 - Planning practice/internship II (6 weeks). The planning profession, Town Planning Associations and professional ethics. Managing the planning process. Planning and social opportunities. Current issues in planning practice. Development control and Development plan exercises comprising the preparation of committee reports and appeals statements. Communications and presentations. Course is also expected to cover transportation data collection, analysis, traffic forecasting, evaluation of transportation and finally transport management.

URP 420 - Planning Legislation. History of planning law will be studied and particularly the British type of legislation that influenced planning here in Botswana. The relevance of the Town and Country Planning Act of 1977, Urban Development Standards 1992, the Development Control Code 1995 and Physical Planning policies within the contemporary planning framework. How efficient are the planning law organisations? It explores the relationship between the planning legislation and other auxiliary statutes that have a bearing on land use planning, development, environmental concerns and land. Land use and Environmental Impact Assessment Bill, the Building Control Act, land Survey Act and the Tribal land Act. Existing and potential conflicts would be identified between the Town and Country Planning Act and the above mentioned statutes and suggestions in class as amelioration measures.

URP 421 - Land and property development. Overview of land and property development process. Feasibility and site analysis (allowable use of site, site analysis and site selection, rezoning). Conceptual design; Schematic design (base map preparation, refinement of previous assumptions). Final design (suburban street design, storm drainage design, design of storm water management facilities, floodplain studies, grading and earthwork, wastewater collection, water distribution, wastewater treatment, water supply and treatment, erosion and sediment control, contract documents and specifications, construction cost estimating). Plan submission and permitting (subdivision submissions, plan submissions, review and approval process, environmental permits, etc.). Construction (construction stakeout surveys, building permits, certificates of occupancy, etc.).
URP 422 - Regional and rural planning and development. The ways of determining regions and types of Regions in Botswana. Reasons for developed and under-developed regions globally; Core Periphery models, growth pole and cumulative causation and concepts such as multiplier effects, economies of scale are discussed etc; Sector Theory, aligning of stages of Sector theory to various economic situations; General discussion of Economic Base Theory and discussion of its three techniques basic (Location Quotient, Minimum Economic Base Theory and discussion of its three causation and concepts such as multiplier effects, and types of Regions in Botswana. Reasons for governments municipalities; elected officials; senior actors in urban governance: citizens and electors; roles Regional/District institutions; Review or the Rural Development policy and National Settlement Policy and their related strategies. Critical review of the settlement strategy where it has been applied globally and in particular in the Sub-Saharan Africa

URP 423 - Urban regeneration & renewal. Classification of settlements; Need for urban renewal and settlement upgrading; Slums – causes and effects; advantages and disadvantages of slum clearance; in situ upgrading of slums: theory and practices, advantages and disadvantages; public participation in urban renewal settlement upgrading; building partnerships with private sector and communities. Pot regularization and service provision; private, community and state partnerships in regeneration and renewal.

URP 424 - Gender and planning. The course will explore ‘gender’ as an analytical tool and a proxy for decision making and accessing resources; gender roles, contracts and relationships in society; Gender analysis, auditing, mainstreaming and proofing; Gendered domestic and public spaces; Gendered inequalities and social exclusion; Urbanisation (modernisation) and women’s empowerment; and approaches for mainstreaming and promoting women’s participation in development planning.

URP 425 - Land and property valuation & management. The course enables physical planners to appreciate the links between planning decisions and urban renewal and to which processes in may negatively or positively affect value of development. In addition, compensation needs tend to influence land use planning decisions.

URP 426 - Contracting and Planning Project Management. Contracting: initiating an urban (land development) project, preparing a detailed project brief and ToR, ToR submission, project management/organising people. Introduction to planning project management: professional development, what is project management, planning staff motivation, planning managers. The process of project management: the project management life cycle; the work cycle, the business context, building the business case. Case studies and Perspectives: local, regional and international case studies.

URP 427 - Urban government and management. The nature of urban governance, and urban governance. History of urban governance in Botswana and elsewhere. Overview of trends in urban governance in Botswana and elsewhere. Actors in urban governance: citizens and electors; municipal employees; elected officials; senior governments and special interests. Issues in urban governance: finances; land-use planning; transport and other infrastructure; economic and social development; energy and environment. Prospects for the future of urban governance. Intersecting these topics will be several critical matters including size of the municipality, governmental framework (e.g., single-tier, two-tier), involvement of municipal agencies, and societal/economic context (e.g., command vs. market economy; rich vs. poor). Theoretical content will be introduced as appropriate but will not be emphasized.

URP 428 - Planning implementation techniques. Introduction to plan implementation: importance; timing, stakeholders, roles and responsibilities; Implementation techniques categories: non-regulatory (special purpose planning, education, planning or zoning administrator hiring, etc), regulatory (zoning, land division and sub division control, site plan review, design standards, performance standards, etc.), voluntary (conservation easement, purchase of development rights, donation of land, etc), incentive based (transfer of development rights, density bonus, tax increment financing, tax initiatives, revenue sharing, etc.). Controlling growth using Smart code: the nature and role of code, form based code, transect-based code; Monitoring: programmes and projects impacts, strengths, weaknesses, budgeting and review.


URP 500 - Research methods and techniques. Major research approaches: Objectivity, Positivism, Postmodernism and empiricism etc. Values and ethics in research. Research design; identification and conceptualization of the research problem. Quantitative and qualitative data collection: tools: questionnaire, structured/ semi-structured questionnaires. Sampling – random sampling, purposeful sampling, ‘snowball sampling’ etc. Methods for qualitative data collection: participatory and non-participatory approaches; Data analysis – SPSS and other statistical packages . Triangulation and issues of data validity and reliability. (For all 3 specialist streams A,B and C)


URP 502 - Landscape Planning and design. Background information: Definitional issues in Landscape design and planning, historical perspective of landscape design and planning; Urban Planning and landscape planning and design. Landscape design: An overview of the landscape design process; How to read architects and engineers drawings; Soft and hard landscape, external furniture; Barriers, study of flora of Botswana, Climatic design and energy efficiency in landscape design, Landscape design and management in semi arid environments. Landscape planning: Landscape planning and City form, Environmental inventory and site assessment, sustainability planning and landscape ecology; hazard assessment and risk management, special environments, restoration, facility planning, master planning and management planning.


URP 504 - Healthy City Planning. Healthy City Planning explores the link between urban planning and health.

This is traced to the public health origins of urban planning which somehow got overshadowed by other planning concerns. The incidence of diseases in cities in developing countries provides a challenge to which urban planning has to respond.


URP 506 - Planning and Management for Climate Change. This course provides guidance for spatial planners on how to meet the economic, social and environmental challenges that climate change raises for urban and regional development. It brings together some of the recent research and scholarly
ideas on the role of spatial planning in combating climate change. It addresses both mitigation measures for reducing greenhouse gas emissions and adaptation to the effects of climate change. It provides an overview of emerging practice, with analysis of the drivers of policy change and practical implementation of mitigation measures, plans, designs, programmes and strategies. It scope planning issues and opportunities at different spatial scales, drawing on both the African and international experiences and highlighting the need to link global and local responses to shared risks and opportunities.


URP 509 - Planning Support Systems. Introduction of PSS concept: PSS systems progress, predictions & speculations; planning movements, concept of planner’s tool box of digital tools and applications: visualization and spatial decision making; The Regional Scale: cellular urban modeling; simulating regional futures; What if? A new tool for new planning; Moving from Region to City: an overview of UrbanSim; Community Viz; INDEX; PSS in practice: planner’s perspective; what planners can achieve with PSS.

URP 510 - Development impacts analysis. Overview and historical development of DIA. The DIA current practice and usage, the DIA decision making process, and how to develop an effective DIA team. The weaknesses in the existing DIA process, and its likely future development. DIA scoping, information gathering and assimilation and technical report writing. Identification of project characteristics, prediction of impacts and significance assessment. Available mitigation techniques are available. Participation in a site visit and studying of real-life case studies Review DIA statements and DIA post-auditing and developmental management methods.

URP 511 - Public participation & negotiations techniques. Public Participation defined - rationale for participation- Sherry Arnstein’s Ladder of Citizen Participation and adaptations; Theoretical basis for participation- Good Governance Model-

FACULTY OF ENGINEERING AND TECHNOLOGY

Level 100
Semester 1
Core courses
STA101 Mathematics for Business & Social Sciences I
CO111 Basic Microeconomics
CBG111 Geometrics I
RES101 Introduction to Real Estate

General courses
ICT121 Computing and Information Skills
COM132 Communication and Academic Literacy

Semester 2
Core courses
STA102 Mathematics for Business & Social Sciences II
ECO112 Basic Macroeconomics
LAW110 Introduction to Subjective
RES102 Introduction to Valuation
ICT122 Computing and Information Skills
COM131 Communication and Academic Literacy

General courses
Level 200
Semester 3
Core courses
RES200 Land Economics I
RES202 Planning Law
ACC100 Introduction to Accounting
MG110 Principles of Management
RES201 Principles and Methods of Valuation
URP200 Introduction to Town Planning

Semester 4
Core courses
RES210 Land Economics II
RES211 Facilities Management
RES212 Land Policy and Administration
RES213 GIS & Estate Management
ARB 112/122 Building Materials I & II
RES214 Internship

Level 300
Semester 5
Core courses
RES300 Housing Economics and Policies
RES301 Real Estate Marketing and Agency
LAW354 Law Land
RES302 Applied Valuation I
RES303 Property Development & Finance

Semester 6
Core courses
RES310 Property Management
RES311 Property Investment and Appraisal
RES312 Property Conveyance and Disposition
RES313 Applied Valuation II
RES314 Internship

Level 400
Semester 7
Core courses
RES400 Investment and Valuation Project
RES401 Computer Application to Real Estate
RES402 Business Planning and Entrepreneurship
RES403 Research Methodology

Semester 8
Core courses
RES410 Dissertation/Project
RES5411  Business and Professional Ethics
RES5412  Project Planning and Implementation

COURSE LISTING

FOR ALL OTHER COURSES NOT OFFERED BY THE DEPARTMENT PLEASE CONSULT THE RELEVANT DEPARTMENT FOR THE SYNOPSIS

RES101 – Introduction to Real Estate
The course is meant to introduce students to the Real Estate profession with a view to enabling them understand the definition, origin, growth, nature and scope of the Real Estate industry; types of properties and interests in land; basic estate accounts; duties of the Estate Manager and Real Estate Portfolio Management.

RES102 – Introduction to Valuation
The course is meant to introduce students to valuation and value concepts. The course will enable students to appreciate the role of a property surveyor and to understand the purposes for which property valuations are required; the factors that affect property values as well as the mathematical principles underlying property valuation.

RES200 – Land Economics I
The course covers major aspects of land as an economic resource. The objective is to teach students the processes of land market and resource allocation in an economy. Concepts of economics introduced in Year I are, in this course related to real property.

RES201 – Principles and Methods of Valuation
The course gives students a detailed understanding of the theory, principles and application of the conventional methods of valuation as well as modified approaches. The valuation introduced in Year I (RES102) is treated to a greater depth to include valuation table construction and application.

RES202 – Planning Law
The objective of the course is to give students an understanding of planning law and other legislation governing land use planning in Botswana.

RES210 – Land Economics II
The course examines theories propounded on distribution of urban land uses as well as the evolution and growth of urban areas. It is meant to develop students understanding of the factors, which influence the growth of urban areas and the problems that accompany them.

RES211 – Facilities Management
The course provides students with the basic foundation of facilities management in terms of building performance; legal framework regarding facilities management and property management; management skills; facility planning; building services management and maintenance.

RES212 – Land Policy and Administration
The course will equip students with knowledge relating to land tenure and policy to enable them to evaluate various land tenure systems and deal with land problems in today’s society. It will also deal with formulation of land policy, land policy determinants as well as marketability of land.

RES213 – GIS & Estate Management
The course deals with the general principles and techniques of GIS as well as land and building measurements. It will enable students to understand the application of GIS and land surveying skills, including surveying for sectional titles and techniques in the field and ways of dealing with spatial and attribute data in estate management.

RES214 – Internship
Internship at the end of this semester is devoted to practical training through field or industry attachment. Students are attached to an organisation to undertake industrial training under the supervision of a Field Supervisor will be responsible for overseeing the students’ training at the work-place while Internship Supervisors from the University undertake targeted visits. The essence is to provide practical training to students so as to enable them acquire practical skills and to enable students to integrate the theoretical knowledge learnt in class with real life situations. Furthermore it is to acquaint students with the organisation and nature of work-places and the requisite human relations to enable them work harmoniously with others at work-places.

RES300 – Housing Economics and Policies
The course will equip students with housing economics and policy related matters in terms of the dynamics of the housing market; housing finance; governmental intervention and programmes or housing policy affecting the housing market and their objectives and impacts; zoning and land use regulation, rent and price controls as well as formal and informal housing.

RES301 – Real Estate Marketing and Agency
The course provides a detailed treatise on the process involved in the disposal of real property and to understand the professional liability arising from the work of an estate agent. The course covers such aspects as property marketing; marketing planning; marketing strategies; market research as well as Estate Agency.

RES302 – Applied Valuation I
The aim of this course is to provide a platform for the application of the valuation principles and tools of analysis for a wide range of purposes. It offers knowledge on contemporary valuation approaches and skills on valuation of special types of properties.

RES303 – Property Development & Finance
The aim of this course is to provide students with an understanding of why people invest in landed properties and how they make such investment decision. The course will cover in detail the various stages and requirements in the property development process, its economic context and alternative sources of funding. It will also outline different types of risks investors have to contend with and the available techniques in assessing the risks.

RES310 – Estate Management
This course provides and equips students with the general principles, knowledge and skills of the practice of estate management, including basics of estate management such as key elements of leases, types of estate management and duties and roles of property managers. It deals with systems of property management; estate policy formulation and estate accounts.

RES311 – Property Investment and Appraisal
The course provides students with knowledge about property portfolio analyses and the appraisal of property investment schemes. It offers students the opportunity of application of theories of property investment analysis at both, the individual property level as well as the portfolio level. Furthermore it enables students to acquire the theory and practice of fund management techniques.

RES312 – Property Conveyance and Disposition
The course is designed to expose students to conveyancing and disposition of interests in property together with the various aspects of interests involved. It deals with the law of landlord and tenant; meaning and types of securities including mortgage, charge, pledge, pawn, lien; transfers and sales of land as well as land and document registration.

RES313 – Applied Valuation II
The aim of this course is to offer a detailed coverage of valuations done for specific purposes together with those provided for in legislation or arising from a contractual duty. It provides skills in the application of valuation principles within the provision of statutes relating to land and property acquisition, rent controls legislation, ratings, principles of plant and machinery valuation, sectional titles, compensation, and third party interests in land.

RES314 – Internship
Internship at the end of this semester is devoted to practical training through field or industry attachment. Students are attached to an organization to undertake industrial training under the supervision of a Field Supervisor will be responsible for overseeing the students’ training at the work-place while Internship Supervisors from the University undertake targeted visits. The essence is to provide practical training to students so as to enable them acquire practical skills and to enable students to integrate the theoretical knowledge learnt in class with real life situations. Furthermore it is to acquaint students with the organisation and nature of work-places and the requisite human relations to enable them work harmoniously with others at work-places.

RES400 – Investment/Valuation Project
The essence of the course is to develop skills on how to approach investment and/or valuation project by applying acquired knowledge in property development, construction, disposal, management and valuation in practical situations, in combination with other disciplines, and with emphasis on procedures, monitoring and report writing.

RES401 – Computer Application in Real Estate
The course offers students mastery in the application of modern ICT in the spheres of property development, facilities management, valuation and the real estate business in general with emphasis on the “hands-on” approach, particularly in the areas of property valuation, property management, and real estate investment analysis and estate agency.

RES402 – Business Planning and Entrepreneurship
The course is meant to impart knowledge on the
rational, process and the dynamics of the planning function in business as well as introduce students to the different types of planning and their applications in an enterprise context. Students will be exposed to knowledge on how to identify opportunities in real estate, screen such opportunities, develop a business plan, seek funding for implementing the plan, set up and run the enterprise successfully. Students will be expected to be familiar with the domestic and international business environment in which real estate entrepreneurs operate.

**RES403 – Research Methodology**

The objective of the course is to guide the students on research methods, data collection techniques and analysis so as to prepare them for the projects and dissertation to be carried out in the final year of study.

**RES410 – Dissertation/Project**

Final year students will be expected to have acquired knowledge of the programme as an integrated whole and should be able to write and submit a dissertation or project. The dissertation or project should be based on both analytical and empirical components in addition to descriptive material. Topics should be selected by students and approved by the Department. A relevant academic staff member will be assigned to supervise each student dissertation. The dissertation will have to be presented orally to a Departmental Examination Panel.

**RES411 – Business and Professional Ethics**

The course is designed to enable students to have a broad understanding of business ethics such that the students appreciate the need to apply ethical behaviour in the conduct of the real estate business. The course is intended to equip students with skills and insights into professional practices including ways of approaching people and problems, practical advice, tips and techniques and effective communication skills with colleagues and clients.

**RES412 – Project Planning and Implementation**

In this course students will be exposed to theories, processes and techniques for planning and management medium to large scale projects in the field of Real Estate. Accompanied by case studies and hand on exercises, the course will cover project scheduling; cost estimation and control; bidding and contracting; construction and implementation management.

**DEPARTMENT OF CIVIL ENGINEERING**

**Introduction**

The Department of Civil Engineering offers the following programmes:

- Bachelor of Engineering (Civil)
- Bachelor of Engineering (Construction Engineering and Management)
- Bachelor of Engineering (Mineral Engineering)
- Bachelor of Science (Mining Engineering)
- Bachelor of Geomatics
- Bachelor of Land Management
- Diploma in Land Management
- Certificate in Land Administration
- Diploma in Mining
- Diploma in Mineral Engineering

**Departmental Regulations for the Bachelor of Engineering (Civil) Degree**

Subject to the provisions of General Regulations 000 and 200 and the Faculty Special Regulation 21.0, the following Departmental Regulations for the Bachelor of Engineering (Civil) Degree shall apply:

**Entrance Requirements**

Admission to the Bachelor of Engineering (Civil) Degree shall be as stipulated in the Faculty Special Regulation 21.10.

**Programme Structure**

The Programme for the Degree in Civil Engineering will be a Single Major Programme that will extend over 10 semesters of full-time study. It shall contain 1 subject called Civil Engineering consisting of courses shown below.

The curriculum for Levels 100 and 200 shall be stipulated in the Faculty Special Regulation 21.20.

**Level 300**

**Civil Engineering**

**Semester 5**

**Core Courses**

- MAT391: Engineering Mathematics III (3, pre-req. MAT 292)
- CCB313: Surveying (3)
- CCB311: Geomechanics I (3, pre-req. CCB 212)
- CCB315: Environmental Engineering (2)

In addition, all students shall select at least 1 of the following 2 credit, optional courses:

- CCB312: CAD for Civil Engineers (pre-req. MMB 221)
- CCB316: Principles of Mining Engineering
- CCB314: Engineering Geology

**Semester 6**

**Core Courses (all 3 credits)**

- CCB321: Structural Analysis (pre-req. CCB221)
- CCB324: Construction Materials (pre-req. CCB211)
- CCB322: Fluid Mechanics and Hydraulics (pre-req. CCB212)
- CCB323: Construction Principles

In addition, all students shall select at least 1 of the following 2 credit, optional courses:

- CCB325: Geomechanics II (pre-req. CCB 311)
- CCB329: Architectural Design
- MAT392: Engineering Mathematics IV (pre-req. MAT391)

**Level 400**

**Civil Engineering**

**Semester 7**

**Core Courses**

- CCB411: Structural Design (3, pre-req. CCB321)
- CCB412: Water Engineering (3, pre-req. CCB315)
- CCB413: Traffic and Highway Engineering (3, pre-req. CCB313)
- CCB414: Construction and Specifications - Transportations Engineering (pre-req. CCB313)

In addition, all students shall select at least 2 of the following 2 credit, optional courses:

- CCB415: Civil Engineering Construction (pre-req. CCB412)
- CCB416: Structural Steelwork (pre-req. CCB321, co-requisite CCB411)
- URP200: Introduction to Town Planning

- CCB418: Hydrology and Water Resources (pre-req. CCB322, co-requisite CCB412)
- CCB419: Engineering Surveying (pre-req. CCB313)

**Semester 8**

IBT420: Industrial Training (Vacation, 20 weeks), (10, core, pre-req. IBT 200)

**Level 500**

**Civil Engineering**

**Semester 9**

**Core Courses**

- CCB514: Project I (3)
- CCB511: Structural Engineering (2, pre-req. CCB321)
- CBB512: Construction Management I (2)
- CCB515: Transportation Engineering (2, pre-req. CCB413)

In addition, all students shall select at least 2 of the following 2 credit, optional courses:

- CCB516: Foundation Design (pre-req. CCB414)
- CCB517: Structural Dynamics (pre-req. CCB321, MMB222)
- CBB518: Public Health Engineering (pre-req. CCB315)
- CBB513: Measurements and Specifications – Civil Works

**Semester 10**

**Core Courses**

- CCB524: Project II (3, pre-req. CCB514)
- CBB522: Construction Management II (2, pre-req. CCB512)

In addition, all students shall select at least four of the following 2 credit, optional courses:

- CCB521: Waste Water Engineering (pre-req. CCB412)
- CCB523: Timber and Pre-stressed Concrete Structures (pre-req. CCB411)
- CCB525: Advanced Transportation Engineering (pre-req. CCB515)
- CBB526: Foundation on Problematic Soils (pre-req. CCB516)
- CCB527: Construction Cost & Financial Control
- CBB528: Estimating and Tendering for Civil Works (pre-req. CCB 513)

**Assessment**

Except for CCB313 (Surveying), all courses shall be assessed as stipulated in the Faculty Special Regulation 21.30.

For CCB313 the ratio of marks for continuous assessment to examination shall be 1:1.

**Departmental Regulations for the Bachelor of Engineering (Construction Engineering and Management) Degree**

Subject to the provisions of General Regulations 000 and 200 and the Faculty Special Regulation 210, the following Departmental Regulations for the Bachelor of Engineering (Construction Engineering and Management) Degree shall apply:

**Entrance Requirements**

Admission to the Bachelor of Engineering (Construction Engineering and Management) Degree shall be as stipulated in Faculty Special Regulation 21.10.
Programme Structure

The Programme for the Degree in Construction Engineering and Management will be a Single Major Programme that will extend over 10 semesters of full-time study. It shall contain 1 subject called Construction Engineering and Management consisting of courses shown below.

The curriculum for Levels 100 and 200 shall be stipulated in the Faculty of Engineering and Technology Special Regulation 21.20.

Level 300
Construction Engineering and Management

Semester 5
Core Courses (all are 3 credits)
MAT391 Engineering Mathematics III (pre-req. MAT292)
CCB313 Surveying
CCB311 Construction Technology I
MGT100 Principles of Management

In addition, all students shall select at least 2 of the following optional courses:

- CBB312 History of Building (2)
- CCB312 CAD for Civil Engineers (2) (pre-req. MMB 221)
- CBB315 Environmental Engineering (2)
- ECO111 Basic Microeconomics (3)

Semester 6
Core Courses (all are 3 credits)
CCB321 Structural Analysis (pre-req. CCB221)
CCB324 Construction Materials (pre-req. CCB211)
CCB322 Measurement and Specification I (pre-req. CBB311)
LAW253 Foundation of Engineering Law

In addition, all students shall select at least 1 of the following 2 credit, optional courses:

- CBB323 Construction Industry Economics
- CBB325 Information Technology in the Construction Industry (pre-req. MMB221)

Level 400
Construction Engineering and Management

Semester 7
Core Courses
CBB311 Construction Economics I (2)
CBB312 Construction Technology II (3, pre-req. CBB311)
CBB413 Measurement and Specification II (3, pre-req. CBB322)
CBB414 Building Services (2)
CBB415 Health and Safety Management in Construction (2)

In addition, all students shall select 1 of the following optional courses:

- LAW452 Construction Law (3, pre-req. LAW253)
- MMB414 Engineering Management (3)

Semester 8
ITB420 Industrial Training II [Vacation, 20 weeks] (10, core, pre-req. ITB 200)

Level 500
Construction Engineering and Management

Semester 9
Core Courses
CBB514 Project I (3)
CBB515 Estimating and Tendering (3, pre-req. CBB413)
CBB511 Construction Economics II (2, pre-req. CBB411)
CBB512 Construction Management I (2)

In addition, all students shall select at least 2 of the following 2 credit, optional courses:

- CBB513 Measurements and Specifications - Civil Works
- CBB518 Public Health Engineering (pre-req. CBB515)
- CBB526 Construction Disputes Resolution (pre-req. LAW452)

Semester 10
Core Courses
CBB524 Project II (3, pre-req. CBB514)
CBB522 Construction Management II (2, pre-req. CBB512)
CBB523 Construction Technology III (2, pre-req. CBB412)
CBB521 Contract Administration (2, pre-req. CBB515 and CBB413)

In addition, all students shall select at least 2 of the following 2 credit, optional courses:

- CBB525 Property Management and Valuation
- CBB527 Facilities Management (pre-req. CBB414)
- MMB516 Building and Factories Services (4)

Assessment
Except for CBB313 (Surveying), all courses shall be assessed as stipulated in the Faculty Special Regulation 21.30.

For CBB313 the ratio of marks for continuous assessment to examination shall be 1:1.

Special Regulations for Bachelor of Science (Mining Engineering)
Subject to the provisions of the General Regulations 00.0 and 20.00, the following Faculty Special Regulations for the Bachelor of Science (Mining Engineering) Degree shall apply.

Degree Programmes

The following degree programme is offered:

Bachelor of Science (Mining Engineering) Degree

Entrance Requirements

Admission to the Bachelor of Science (Mining Engineering) Degree shall be as stipulated in the Faculty Special Regulations 21.10.

The normal minimum requirements for admission to Level 200 for a degree program shall be satisfactory completion of level 100 of the Bachelor of Science (General) degree of the Faculty of Science or equivalent institution with at least C grades in Mathematics, Chemistry and Physics.

Applicants in possession of an appropriate A’ level qualification with at least C grades in Mathematics and at least one of: Physics and Chemistry may be admitted directly into Level 200 of the programme.

Applicants in possession of an appropriate Diploma may be admitted directly into Level 200 of the degree programme.

Duration of the Programme

The duration of the programme shall be: A minimum of 10 and a maximum of 12 semesters on a full-time basis.

Degree Structure

The curriculum for Level 100 shall be stipulated in the Faculty Special Regulation 21.20.

Level 200 Mining Engineering shall consist of the following courses:

Semester 3
Core Courses
MAT 291 Engineering Mathematics I (3)
CCB 211 Engineering Materials (2)
CCB 212 Statistics (2)
MIN 211 Introduction to Mining Engineering (2)
EEB 211 DC Circuit Principles (2)
MMB211 Engineering Drawing (2)
GEC 253 Energy and Society (2)

Semester 4
Core Courses
MAT 292 Engineering Mathematics II (3)
CCB 221 Strength of Materials (2, pre-req. CBB212)
MIN 221 Introduction to Mine Safety and Health (3)
EEB 221 AC Circuit Principles (2)
MMB221 Computer Aided Drafting (2, pre-req. MMB211)
MMB222 Dynamics (2)
GEC 250 Earth processes, mineral resources and development (2)
MIN 220 Professional Training (4, pre-req. MIN211)

Level 300 Mining Engineering shall consist of the following courses:

Semester 5
Core Courses
MIN 311 Introduction to Mine Surveying (3)
MIN 312 Introduction to Geology (2)
MIN 313 Introduction to Mineral Processing (3)
MIN 314 Computer Applications in Mining (2)
MIN 315 Small Scale Mining (2, pre-req. MIN211)
MIN 316 Elements of Mining Environmental Management (2)
GEC 276 Contemporary Economic Issues (2)

Semester 6
Core Courses
MIN 321 Elements of Mining Methods (3, pre-req. MIN211)
MIN 322 Elements of Mine Safety & Health (2, pre-req. MIN211)
MIN 323 Elements of Mine Ventilation (2)
MIN 324 Botswana Mining Law (2)
MIN 325 Introduction to Mine Supervision & Management (2)
MIN 326 Mine Surveying (2, pre-req MIN311)
ECO 111 Basic Microeconomics (2)
ECO 112 Basic Macroeconomics (2)
MIN 320* Mine Tour (1)

Level 400 Mining Engineering shall be as stipulated in the advanced mining engineering subjects offered at the Mining Engineering Department,
Level 500 Mining Engineering shall be as stipulated in the Advanced Mining Engineering subjects offered at the Mining Engineering Department, University of Missouri Rolla.

A course may consist entirely of fieldwork, project work, practical work, design, and seminars. In addition to work during the semester, a student may include prescribed fieldwork or assignments during the vacation periods.

Assessment
Continuous assessment in courses shall be based on tests and/or design, assignments, and where applicable laboratory reports and field reports.

The ratio of continuous assessment to formal examination shall be 2:3. Overall performance in a course shall be as specified in the General Regulation 00.84.

Final Examinations
There shall be a supplementary examination. A student who fails a core or pre-requisite course shall retake the course when offered again. A student who has failed an optional/elective/generic education course may retake the course or its equivalent.

Progression from Semester to Semester
General Regulation 00.90 shall apply.

Award of the Degree
12.81 The UMR General Regulation for awarding the degree shall apply.

Professional Training
Students shall undergo Professional Training (Internship) of 8 weeks duration after levels 200 and take a 2-week Mine Tour after level 300 as specified in the Special Regulations for the Professional Training and Mine Tour for the Bachelor of Science (Mining Engineering) Programme.

Assessment of Professional Training
Professional Training shall be assessed as specified in the Special Regulations for the Professional Training and Mine Tour for the Bachelor of Science (Mining Engineering) Programme.

Special Regulations for Professional Training and Mine Tour for the Bachelor of Science (Mining Engineering) Programme

Preamble
Subject to the provisions of the General Regulations 00.0 and 20.00, the following Faculty Special Regulations for the Bachelor of Science (Mining Engineering) Degree shall apply.

Degree Programmes
The following degree programme is offered:

BSc (Eng) Mineral Engineering Degree
Entrance Requirements
Admission to the Bachelor of Science (Mineral Engineering) Degree shall be as stipulated in the Faculty Special Regulations 21.10.

The normal minimum requirements for admission to level 200 for a degree program shall be satisfactory completion of level 100 of the Bachelor of Science (General) degree of the Faculty of Science or equivalent institution with at least C grades in Mathematics, Chemistry and Physics.

Applicants in possession of an appropriate ‘A’ level qualification with at least C grades in Mathematics, Chemistry and Physics may be admitted directly to Level 200 of the programme. Applicants in possession of a relevant Diploma may be admitted directly into Level 200 of the degree programme.

Duration of the Programme
The duration of the programme shall be:
A minimum of 10 and a maximum of 12 semesters on a full-time basis.

Degree Structure
The curriculum for Level 100 shall be stipulated in the Faculty Special Regulation 21.20.

Level 200 Mineral Engineering shall consist of the following courses:

Semester 3
Core Courses
MAT 291 Engineering Mathematics I (3)
CCB 211 Engineering Materials (2)
CCB 212 Statistics (2)
MIN 211 Introduction to Mining Engineering (2)
EEB 211 DC Circuit Principles (2)
MMB 211 Engineering Drawing (2)
CHE 211 Introduction to Analytical Chemistry (2)
CHE 213 Analytical Chemistry Lab 1(1)
Total 16

Semester 4
Core Courses
MAT 292 Engineering Mathematics II (3)
CCB 221 Strength of Materials (2, pre-req. CCB212)
MIN 221 Introduction to Mining Technology (3)
EEB 221 AC Circuit Principles (2)
MMB 221 Computer Aided Draughting (2)
MMB 222 Dynamics (2)
GEC 250 Earth processes, mineral resources and development (2)
Totals 16

MIP 220 Professional Training (8 weeks) (4)
Level 300 Mineral Engineering shall consist of the following courses:

Semester 5
Core Courses
MAT 391 Engineering Mathematics III (3)
MIN 312 Introduction to Geology (2)
MIN 313 Introduction to Mineral Processing (3)
MIP 311 Process Metallurgy (3)
MIP 316 Elements of Mining (3)
ECO 111 Basic Microeconomics (3)
Totals 16

Semester 6
Core Courses
CHE 221 Atomic Structure, Bonding and Main Group Chemistry (2)
CHE 223 Inorganic Chemistry Lab 1 (1)
CCB 322 Fluid Mechanics and Hydraulics (3, pre-req. CCB212)
MIP 321 Physical Metallurgy (3)
MIN 324 Botswana Mining Law (2)
ECO 112 Basic Macroeconomics (3)
GEC 253 Energy and Society (2)
Totals 16

Level 400 Mineral Engineering shall consist of the following courses:

Semester 7
Core Courses
MIP 411 Computer Applications in Mineral Processing (3)
MIP 412 Flotation and Other Concentration Methods (3)
MIP 413 Extractive Metallurgy (3)
MIN 413 Systems and Control Engineering (3)
MGT 202 Small Business Management (3)
Totals 15

Semester 8
Core Courses
MIPI421 Coal Preparation (3)
MIPI422 Processing of Precious Metals (3)
MIPI423 Diamond Processing Technology (3)
MIPI424 Mineral Economics (3)
MIPI425 Mine Management (3)
Totals 15

Level 500 Mineral Engineering shall consist of the following courses:

Semester 9
Core Courses
MIPI511 Mineral Separation Processes (3)
MIPI512 Plant Process and Flow Sheet Design (3)
MIPI513 Process Control and Instrumentation for Mineral Engineers (3)
MIPI514 Project I (3)
Electives
MMBS12 Project Management or MMBS13 Industrial Relations (3)
Totals 15

Semester 10
Core Courses
MIPI521 Processing Plant Equipment Selection & Maintenance (3)
MIPI522 Material Handling and Transport(3)
MIPI523 Tailings and Wastewater Disposal(3)
MIPI 524 Project II (3)
Electives
IMB 523 Professional Ethics or IMB 526 Environmental Engineering (3)
Totals 15

A course may consist entirely of fieldwork, project work, practical work, design, and seminars. In addition to work during the semester, a subject may include prescribed fieldwork or assignments during the vacation periods.

Assessment
Continuous assessment in courses shall be based on tests and/or design, assignments, and where applicable laboratory reports and field reports.

The ratio of continuous assessment to formal examination shall be 2:3

Overall performance in a course shall be as specified in the General Regulation 00.84.

Final Examinations
There shall be no supplementary examinations. A student who fails a core or pre-requisite or co-requisite course shall retake the course when offered again. A student who has failed an optional elective/general education course may retake the course or its equivalent.

Progression from Semester to Semester
General Regulation 00.90 shall apply.

Award of the Degree
General Regulation 00.85 shall apply. Classification of the degree shall be in accordance with the provisions of General Regulation 20.4

Professional Training
Students shall undergo Professional Training (Internship) of 8 weeks duration after levels 200 and take a 2 weeks Tour of Mine Treatment Plants after level 300 as specified in the Special Regulations for the Professional Training and Tour of Mine Treatment Plants for the Bachelor of Engineering (Mineral Processing) Programme.

Assessment of Professional Training
Professional Training shall be assessed as specified in the Special Regulations for the Professional Training and Tour of Mine Treatment Plants for the Bachelor of Engineering (Mineral Engineering) Programme.

Special Regulations for Professional Training and Tour of Mine Treatment Plants for the Bachelor of Engineering (Mineral Processing) Programme.

Assessment of Professional Training
Professional Training shall be assessed as specified in the Special Regulations for the Professional Training and Tour of Mine Treatment Plants for the Bachelor of Engineering (Mineral Engineering) Programme.

Structure
A student shall undergo supervised Professional Training of 8 weeks duration after level 200 (MIPI 220).

29.922 A student shall undergo a 2 week Mine Tour after level 300 (MIPI 320).

During the Professional Training students shall be subjected to such codes, procedures, laws, rules, and other regulations as applicable to the mining industry/organisation.

Assessment
Continuous assessment in courses shall be based on tests and/or design, assignments, and where applicable laboratory reports and field reports.

A student's performance will be assessed by means of:

Confidential report from the student's immediate supervisor at location of placement.

Professional Training reports and logbook submitted by the student at the end of each Internship period.

Professional Training visits by an assessor from the relevant Department of Faculty of Engineering and Technology.

The Professional Training session shall be evaluated as specified in 2.2. The ratio of Confidential Report marks to Professional Report marks to Professional Training Visits shall be based on the FET industrial training regulations.

Assessment of the Tour of Mine Treatment Plants shall be by submission of a written report.

A student who has an incomplete grade shall be by submission of a written report.

Repeating Professional Training
A student who fails to meet the requirements of Professional Training shall be required to repeat the training at a time recommended by the Faculty.

Special Regulations for Bachelor's Degree in Geomatics (BGgeom)

Preamble:

Subject to the provisions of the General Regulations 000 and 200, the following Faculty Special Regulations for the Bachelor of Geomatics Degree shall apply.

Entrance Requirements
Admission into the Bachelor of Geomatics Degree Programme shall be as stipulated in the General Admission Regulations.

Applicants who are in possession of an appropriate Diploma in Geomatics, Land Surveying, Cartography, GIS, or equivalent and have GPA of at least 2.5 and its equivalent may be admitted directly into Level 200 of the Degree Programme.

A student admitted directly to Level 200 Geomatics who has not completed Level 100 Geomatics courses must take them during their first year at the University of Botswana.

Programme Structure
The programme for the degree in Geomatics will be a single major programme that will extend over 8 semesters of Full time studies. It shall consist of a single subject called Geomatics consisting of the courses shown below:

Degree Structure
Level 100 shall consist of the following courses:

Semester One
MAT111 Introductory Mathematics I(4 credits, core)
PHY111 Geometrical Optics, Mechanics, Vibrations and Waves(3 credits, core)
PHY119 Physics Practical 1.1 (1 credit, core)
CS111 Geomatics I (4 credits, core)

In addition students will take the following GEC Courses
COMS131 Communication and Academic Literacy (3)
ICT121 Computer Skills Fundamentals (2)

Semester Two
MAT122 Introductory Mathematics II (4 credits, core, pre-req. MAT111)
Level 200 shall consist of the following courses:

**Semester Three**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT271</td>
<td>Introduction to Mathematical Statistics (3 cr, core)</td>
</tr>
<tr>
<td>MAT291</td>
<td>Engineering Mathematics I (3 credits, core)</td>
</tr>
<tr>
<td>CS241</td>
<td>Structured Programming (4 credits, core)</td>
</tr>
<tr>
<td>CGB213</td>
<td>Principles of Cartography (2 credits, core)</td>
</tr>
<tr>
<td>CGB211</td>
<td>Elements of Photogrammetry (3 credits, core)</td>
</tr>
<tr>
<td>URP200</td>
<td>Introduction to Town Planning (2 credits, core)</td>
</tr>
</tbody>
</table>

The students will also take the following winter course:

**Semester Four**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT292</td>
<td>Engineering Mathematics II (3, core, pre-req. MAT291)</td>
</tr>
<tr>
<td>CGB221</td>
<td>Digital Photogrammetry (3, core)</td>
</tr>
<tr>
<td>CGB222</td>
<td>Theory of survey adjustments (3 credits, core, pre-req. MAT271, CGB212)</td>
</tr>
<tr>
<td>CGB223</td>
<td>Digital Cartography (3, core, pre-req. CGB213)</td>
</tr>
<tr>
<td>CGB224</td>
<td>Programming for Geomatics (3 credits, core, pre-req. CS241)</td>
</tr>
</tbody>
</table>

The students will also take the following winter course:

**Semester Five**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT391</td>
<td>Engineering Mathematics III (3, core)</td>
</tr>
<tr>
<td>CGB311</td>
<td>Engineering Surveying (3, core, pre-req. CGB121, CGB222)</td>
</tr>
<tr>
<td>CGB312</td>
<td>Geodesy I (3, core)</td>
</tr>
<tr>
<td>LAW254</td>
<td>Land Law for Geomatics (3, core)</td>
</tr>
<tr>
<td>ENV330</td>
<td>(3, exempt from pre-req. ENV215)</td>
</tr>
</tbody>
</table>

**Semester Six**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>CGB321</td>
<td>Introduction to Land Administration (3, core, pre-req. CGB313)</td>
</tr>
<tr>
<td>CGB322</td>
<td>Principles of GIS (3, core, pre-req. CGB213, CGB223)</td>
</tr>
<tr>
<td>CGB323</td>
<td>Satellite Positioning Systems (3 credits, core, pre-req. CGB312)</td>
</tr>
<tr>
<td>CGB324</td>
<td>Geodesy II (3, core, pre-req. CGB312)</td>
</tr>
</tbody>
</table>

CS362 Database Concepts (3, core)

In addition students will take the following winter courses:

**Semester Seven**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>CGB321</td>
<td>Survey Camp I (2 credits, core, pre-req. CGB111, CGB121, 2 weeks)</td>
</tr>
</tbody>
</table>

Level 400 shall consist of the following courses:

**Semester Eight**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBB522</td>
<td>GIS Applications (4, option, pre-req. CGB224)</td>
</tr>
<tr>
<td>CBB523</td>
<td>Special Studies in Land administration (3 option, pre-req. CGB413)</td>
</tr>
<tr>
<td>CGB425</td>
<td>Location-based Services (3, option, pre-req. CGB224)</td>
</tr>
<tr>
<td>MIN326</td>
<td>Mining Surveying (2 option, pre-req. CGB121)</td>
</tr>
</tbody>
</table>

In addition the students will choose 2 options from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBB524</td>
<td>GIS Applications (4, option, pre-req. CGB224)</td>
</tr>
<tr>
<td>CBB525</td>
<td>Special Studies in Land administration (3 option, pre-req. CGB413)</td>
</tr>
<tr>
<td>CGB425</td>
<td>Location-based Services (3, option, pre-req. CGB224)</td>
</tr>
<tr>
<td>MIN326</td>
<td>Mining Surveying (2 option, pre-req. CGB121)</td>
</tr>
</tbody>
</table>

A course may consist entirely of fieldwork, project work, practical work, design, and seminars. In addition to work during the semester, a subject may include prescribed fieldwork or assignments during the vacation periods.

**Assessment**

Continuous assessment in courses shall be based on tests and assignments, and where applicable laboratory reports and field reports. The ratio between tests and assignment shall be 1:1.

The ratio of continuous assessment to formal examination shall be 2:3.

A project shall be evaluated by continuous assessment, oral presentation and/or demonstration and a written report. The ratio of the marks for continuous assessment, presentation assessment and written report shall be 2:1:1.

In addition students will take the following winter courses:

**Semester Nine**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS362</td>
<td>Database Concepts (3, core)</td>
</tr>
</tbody>
</table>

In addition students will take the following winter courses:

**Semester Ten**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS362</td>
<td>Database Concepts (3, core)</td>
</tr>
</tbody>
</table>

In addition students will take the following winter courses:

**Semester Eleven**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS362</td>
<td>Database Concepts (3, core)</td>
</tr>
</tbody>
</table>

In addition students will take the following winter courses:

**Semester Twelve**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS362</td>
<td>Database Concepts (3, core)</td>
</tr>
</tbody>
</table>

In addition students will take the following winter courses:
Social Science II (3 credits, core, pre-req. STA101)

In addition students will take the following GEC Courses

COMS132 Communication and Academic literacy II (3)  
ICT122 Computer Skills Fundamentals (2)

Level 200 shall consist of the following courses:

Semester Three

BLM211 Methods of valuation (3 credits, core)  
URP200 Introduction to Town Planning (2 credits, core)  
LAW354 Land Law for Geomatics (3 credits, core)  
MGT100 Principles of Management (3 credits, core)  
STA111 Elementary Statistics (3 credits, core)  

In addition the students will choose 2 options from the following:

BLM412 Real Estate Development (3 credits, option)  
BLM413 Property Management (3 credits, option)  
CGB416 GIS Design and Implementation (3 credits, option)  
CGB418 Principles and Practice of SDI Development (3 credits, option)

Semester Four

CB231 Introduction to Land Administration (3 credits, core)  
CGB322 Principles of GIS (3 credits, core)  
CGB323 Construction Principles (3 credits, core)  
MGT200 Organisation Design and Development (3 credits, core)  
PAD202 Public Administration in Botswana (3 credits, core)  

GEC in Area 3/4/5/6 (2 credits)

In addition students will choose any 2 options from the following:

CGB424 Special Studies in Land Administration (3 credits, core, pre-req. CGB413)  
CBB529 Professional Ethics (3 credits, core)  
CBB521 Research Project I (3, core)  

STM100 Industrial T121 Training (6 shifts/week, 48 weeks, 15 core)

A course may consist entirely of fieldwork, project work, practical work, design, and seminars. In addition to work during the summer, a subject may include prescribed fieldwork or assignments during the vacation periods.

Assessment

Continuous assessment in courses shall be based on tests and assignments, and where applicable laboratory reports and field reports. The ratio between tests and assignment shall be 1:1.

The ratio of continuous assessment to formal examination shall be 2:3.

A project shall be evaluated by continuous assessment, oral presentation and/or demonstration and a written report. The ratio of the marks for continuous assessment, presentation assessment and written report shall be 2:1:1.

Progression from Semester to Semester

General Regulation 00.90 shall apply.

Award of the Degree

General Regulation 00.85 shall apply. (A minimum of 144 credits).

Classification of the degree shall be in accordance with the provisions of General Regulation 20.4.

Departmental Special Regulations for the Diploma in Mining Engineering

Subject to the provisions of General Regulations 000 and Faculty Special Regulations 110 for Diploma Programmes, the following Special Regulations shall apply:

Entrance Requirements

The normal minimum entrance requirements to the Diploma in Mining Engineering Programme shall be the Botswana General Certificate of Secondary Education (BGCSE) or its equivalent, with passes in Mathematics and at least 1 Science subject.

Preference will be given to candidates with relevant industrial experience.

Medical requirements are:

a) Applicants must be in possession of a satisfactory medical certificate required under University Regulations Governing Admissions (Regulation 1.41) and must also comply with the health and fitness requirements in accordance with Regulations 91 and 92 of the Mines, Quarries, Works and Machinery Regulations (CAP. 44:02);

b) A student who becomes permanently medically unfit to be employed at a mine as specified in the Mines, Quarries, Works and Machinery Regulations (CAP. 44:02) will be required to withdraw from the Programme.

Programme Structure

The Programme will be a Single Major that will normally extend over 6 semesters of full-time study, of which 40 weeks shall be spent on Industrial Training. It shall contain 1 subject called Mining Engineering consisting of courses shown below.

Students who have been in full-time employment within the mining sector may be exempted from part or all of the Industrial Training requirements at the discretion of the Departmental Board.

Level 100

Diploma in Mining Engineering

Semester 1

Core Courses

CMD111 Introduction to Mining Engineering (2)  
CB2112 Introduction to Engineering Drawing (2)  
CGB411 Plane Surveying (3)  
SED111 Engineering Science (2)  
SMO111 Mathematics 1 (2)  
COMS131 Communication and Academic Literacy (3)  
ICT121 Computer Skills Fundamentals (2)

Semester 2

Core Courses

CMD121 Mining Methods (3, pre-req. CMD111)  
GED104 Introduction to Geology for Mining Engineering (2)

CMD123 Mining Safety and Health (2)  
SMD121 Mathematics II (2)  
CMD124 Introduction to Mineral Processing (2)  
COMS131 Communication and Academic Literacy (3)  
ICT121 Computer Skills Fundamentals (2)

In addition all students shall select at least 1 from the following 2-credit options:

MED120 Engineering Materials  
CMD125 Mine Ventilation

Industrial training shall be taken prior to Level 200 and shall consist of the following courses:

ITD100 Industrial Training (6 shifts/week, 48 weeks, 15 core)

CMD200 Mine Tour (1, core, pre-req. CMD 111, CMD 121)

Level 200
Diploma in Mining Engineering
Semester 3
Core Courses
CMD211 Advanced Mining Methods and Production Control (2, pre-req. CM111, CMD121)
CMD212 Principles of Ground Control (2, pre-req. CMD111, CMD 122)
CMD213 Mining Plant, Equipment Selection and Maintenance (2)
CMD214 Explosives, Drilling and Blasting (3)
CMD215 Computer Applications in Mining Problems (2)

In addition all students shall select at least 1 from the following 2-credit options:
CMD216 Small Scale Mining (pre-req. CMD111, CMD124)
CMD217 Mining Surveying (pre-req. CGD111)
CMD218 Mining Environmental Management
CBD217 Soil Mechanics I

Semester 4
Core Courses
CMD221 Mine Planning and Design (2, pre-req. CMD 211)
CMD222 Mining, Health and Safety and Environmental Laws (2)
CMD223 Mine Supervision and management (2)
CMD224 Project (3)

In addition all students shall select at least 2 from the following options:
CMD225 Advanced Explosives, Drilling and Blasting (2, pre-req. CMD124)
CMD226 Advanced Mine Geotechnics (2, pre-req. CMD122)
CMD227 Introduction to Mine Design Software (2, pre-req. CMD121, CMD214, Co-requisite CMD221) (2)
CMD228 Extractive Metallurgy (2, pre-req. CMD124)
CMD229 Ore Reserve Management (3, pre-req. CMD122)

Assessment
All courses shall be assessed as stipulated in the Faculty Special Regulation 11.30.

Special Regulations for Diploma in Mineral Engineering

Preamble
Subject to the provisions of General Regulations 000 and 100, Faculty Special Regulations 110 and Faculty Industrial Training Regulations for Diploma Programmes the following Special Regulations shall apply.

Objectives of the programme. The programme is designed to provide the mining industry with competent and safety conscious Engineering Technicians. Further to this, the programme will:
i) Provide students with a broad grounding in the theory and practical aspects of science, engineering and ancillary disciplines relating to mining.
ii) Equip students with knowledge and skills that will add value in the mining related operations.
iii) Facilitate students progressing into technical and supervisory roles.
iv) Strengthen the communication skills and supervisory potential of students
v) Facilitate the process of life-long learning.
vi) Highlight best practice in areas of relevance to the minerals industry, including issues of sustainable development.

Entrance Requirements
The normal minimum entrance requirements to the Diploma in Mining Engineering Programme shall be the Botswana General Certificate of Secondary Education (BGCE) or its equivalent, with passes in Mathematics and at least one science subject.

All candidates are required to pass an aptitude test.

Preference will be given to candidates with relevant industrial experience.

Medical Requirements
The satisfactory medical certificate required under General Regulation 1.41 must also comply with the requirement for being fit to be employed at a mine in accordance with Regulations 91 and 92 of the Mines, Quarries, Works and Machinery Regulations [CAP. 44:02].

A student who becomes permanently medically unfit to be employed at a mine as specified in the Mines, Quarries, Works and Machinery Regulations [CAP. 44:02] will be required to withdraw from the programme.

Programme Structure
The programme shall consist of a single subject
Mineral Engineering.

The full-time programme shall extend over three years, one of which shall be spent on industrial training.

If taken part-time the programme must be completed within 10 semesters.

Students who have been in full-time employment within the mining sector may be exempted from part or all of the industrial training requirements at the discretion of the Departmental Board.

Level 100 shall consist of the following courses:

Semester 1
CMD111 Introduction to Mining Engineering (Core, 2 Credits)
CBID12 Introduction to Engineering Drawing (Core, 2 Credits)
CGD 110 Plane Surveying (Core, 3 Credits)
SED11 Engineering Science (Core, 2 Credits)
CMD111 Mathematics I (Core, 2 Credits)
I CT121 Computer Skills Fundamentals
CM 131 Communication and Academic Literacy (3)

Semester 2
CMD211 Mining Methods (Core, 3 Credits)
GEO104 Introduction to Geology for Mining Engineering (Core, 2 Credits)
CMD123 Mining Safety & Health (Core, 2 Credits)
SMD 124 Mathematics II (Core, 2 Credits)
CMD124 Introduction to Mineral Processing (Core, 2 Credits)
COMS132 Communication and Academic Literacy (3)
ICT122 Computer Skills Fundamentals (2)

In addition all students shall select one from the following courses:
MED120 Engineering Materials (Elective, 2 Credits)
CMD125 Mine Ventilation (Elective, 2 Credits)

Industrial training shall be taken prior to Level 200 and shall consist of the following courses:
MPD100 Industrial Training (Core, 6 shifts/week. 40 weeks, 15 Credits)

Level 200 shall consist of the following courses:

Semester 3
MPD211 Process Mineralogy (Core, 3 Credits)
MPD212 Processing of Gold Ores (Core, 3 Credits)
MPD213 Comminution (Core, 3 Credits)
MPD214 Processing Plant, Equipment Selection and Maintenance (Core, 2 Credits)
CMD215 Computer Applications in Mining Problems (Core, 2 Credits)

In addition, all students shall select one from the following courses:
CMD 218 Mining Environmental Management (Elective, 2 Credit)
CMD 216 Small Scale Mining (Elective, 2 Credits)

Semester 4
MPD221 Coal Preparation(Core, 3 Credits)
MPD 222 Flotation (Core, 3 Credits)
MPD223 Processing of Diamonds (Core, 2 Credits)
MPD224 Project (Core, 3 Credits)
CMD228 Extractive Metallurgy (Core, 2 Credits)

In addition all students shall select one from the following courses:
CMD222 Mining Health, Safety and Environmental Laws (Elective, 2 Credits)
CMD 223 Mine Supervision and Management (Elective, 2 Credits)

Assessment
Assessment of all courses shall be in accordance with the Academic General Regulations 00.86 and Faculty Special Regulation for Diploma Programmes 1.30.

Progression
Progression shall be in accordance with the Academic General Regulations 00.9.

Industrial Training
Conduct of the Industrial Training shall be in accordance with the Faculty Special Regulations for Diploma Programmes 1.80.

Award of the Diploma
The Diploma shall be awarded in accordance with the Special Faculty Regulations for Diploma Programmes 1.70.

Departmental Special Regulations for the Diploma in Land Management
Subject to the provisions of Academic General
**Semester 3**

**Core Courses**

- BLM211: Methods of Valuations (3 credits, core)
- URP200: Town Planning (2 credits, core)
- LAW364: Land Law for Geomatics

**Level 200**

**Diploma in Land Management**

**Programme Structure**

Students who have been in full-time employment within the Land Management sector may be exempted from part or all of the Industrial Training requirements at the discretion of the Departmental Board.

**Level 100**

Diploma in Land Management

**Semester 1**

**Core and GEC Courses**

- MGT100: Principles of Management (3 credits)
- ECO111: Basic Microeconomics (3 credits)
- DAB111: Business Mathematics and Statistics (3)
- CGB112: Geomatics I (4 credits)
- COMS131: Communication and Academic Literacy (3)
- ICT122: Computer Skills Fundamentals (2)

**Semester 2**

**Core and GEC Courses**

- BLM122: Land Economics (3 credits, core)
- DAB314: Management Information Systems (3 credits, core)
- CGB321: Introduction to Land Administration (3 credits, core)
- CGB322: Principles of GIS (3 credits, core)
- CCB323: Construction Principles (3 credits, core)
- BLM212: Alternative Dispute Resolution in Land Administration (3 credits, core)
- PAD202: Public Administration in Botswana (3 credits, core)

**Assessment**

All courses shall be assessed as stipulated in the Faculty Special Regulation 11.30.

Departmental Special Regulations for the Certificate in Land Administration

**Programme Structure**

The programme for the Certificate in Land Administration will be a single major programme that will extend over 2 semesters of full-time studies done during the winter break. It shall also consist of 1 year in-service project work to be conducted between August and May at the places of work.

The single subject called Certificate in Land Administration will consist of the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DAB314</td>
<td>Management Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>BLM122</td>
<td>Land Economics</td>
<td>3</td>
</tr>
<tr>
<td>CGB321</td>
<td>Introduction to Land Administration</td>
<td>3</td>
</tr>
<tr>
<td>CGB322</td>
<td>Principles of GIS</td>
<td>3</td>
</tr>
<tr>
<td>CCB323</td>
<td>Construction Principles</td>
<td>3</td>
</tr>
<tr>
<td>BLM212</td>
<td>Alternative Dispute Resolution in Land Administration</td>
<td>3</td>
</tr>
<tr>
<td>PAD202</td>
<td>Public Administration in Botswana</td>
<td>3</td>
</tr>
</tbody>
</table>

**Level 100**

Certificate in Land Administration

**Semester 1**

**Core and GEC Courses**

- CCB111: Introduction to Land Administration (3 credits)
- CCB112: Planning and Environmental Studies (3 credits)
- CCB113: Land Records and Information Management (3 credits)
- COMS131: Communication and Academic Literacy (3)
- ICT122: Computer Skills Fundamentals (2)

In addition, students will register for a one-year project course CGC115 – Special project in industry (8 credits, core)

**Semester 2**

**Core and GEC Courses**

- CGC122: Land Policies and Law (3 credits, core)
- CGC123: Land Use Planning (3 credits, core)
- CGC124: Land Surveying and Measurements (3 credits, core)
- CGC125: Introduction to Public Administration (3 credits, core)
- CGC127: Introduction to Valuation (3 credits, core)

**Course Listing**

FOR ALL OTHER COURSES NOT OFFERED BY THE DEPARTMENT PLEASE CONSULT THE RELATED DEPARTMENT FOR THE SYNOPSIS

**Course Listing**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CGC111</td>
<td>Introduction to Land Administration</td>
<td>3</td>
</tr>
<tr>
<td>CGC112</td>
<td>Planning and Environmental Studies</td>
<td>3</td>
</tr>
<tr>
<td>CGC113</td>
<td>Land Records and Information Management</td>
<td>3</td>
</tr>
<tr>
<td>COMS131</td>
<td>Communication and Academic Literacy</td>
<td>3</td>
</tr>
<tr>
<td>ICT122</td>
<td>Computer Skills Fundamentals</td>
<td>2</td>
</tr>
</tbody>
</table>

**Core and GEC Courses**

- CGC122: Land Policies and Law (3 credits, core)
- CGC123: Land Use Planning (3 credits, core)
- CGC124: Land Surveying and Measurements (3 credits, core)
- CGC125: Introduction to Public Administration (3 credits, core)
- CGC127: Introduction to Valuation (3 credits, core)

**Course Listing**

FOR ALL OTHER COURSES NOT OFFERED BY THE DEPARTMENT PLEASE CONSULT THE RELATED DEPARTMENT FOR THE SYNOPSIS

**Course Listing**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CGC111</td>
<td>Introduction to Land Administration</td>
<td>3</td>
</tr>
<tr>
<td>CGC112</td>
<td>Planning and Environmental Studies</td>
<td>3</td>
</tr>
<tr>
<td>CGC113</td>
<td>Land Records and Information Management</td>
<td>3</td>
</tr>
<tr>
<td>COMS131</td>
<td>Communication and Academic Literacy</td>
<td>3</td>
</tr>
<tr>
<td>ICT122</td>
<td>Computer Skills Fundamentals</td>
<td>2</td>
</tr>
</tbody>
</table>

**Core and GEC Courses**

- CGC122: Land Policies and Law (3 credits, core)
- CGC123: Land Use Planning (3 credits, core)
- CGC124: Land Surveying and Measurements (3 credits, core)
- CGC125: Introduction to Public Administration (3 credits, core)
- CGC127: Introduction to Valuation (3 credits, core)

**Course Listing**

FOR ALL OTHER COURSES NOT OFFERED BY THE DEPARTMENT PLEASE CONSULT THE RELATED DEPARTMENT FOR THE SYNOPSIS

**Course Listing**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CGC111</td>
<td>Introduction to Land Administration</td>
<td>3</td>
</tr>
<tr>
<td>CGC112</td>
<td>Planning and Environmental Studies</td>
<td>3</td>
</tr>
<tr>
<td>CGC113</td>
<td>Land Records and Information Management</td>
<td>3</td>
</tr>
<tr>
<td>COMS131</td>
<td>Communication and Academic Literacy</td>
<td>3</td>
</tr>
<tr>
<td>ICT122</td>
<td>Computer Skills Fundamentals</td>
<td>2</td>
</tr>
</tbody>
</table>

**Core and GEC Courses**

- CGC122: Land Policies and Law (3 credits, core)
- CGC123: Land Use Planning (3 credits, core)
- CGC124: Land Surveying and Measurements (3 credits, core)
- CGC125: Introduction to Public Administration (3 credits, core)
- CGC127: Introduction to Valuation (3 credits, core)

**Course Listing**

FOR ALL OTHER COURSES NOT OFFERED BY THE DEPARTMENT PLEASE CONSULT THE RELATED DEPARTMENT FOR THE SYNOPSIS

**Course Listing**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CGC111</td>
<td>Introduction to Land Administration</td>
<td>3</td>
</tr>
<tr>
<td>CGC112</td>
<td>Planning and Environmental Studies</td>
<td>3</td>
</tr>
<tr>
<td>CGC113</td>
<td>Land Records and Information Management</td>
<td>3</td>
</tr>
<tr>
<td>COMS131</td>
<td>Communication and Academic Literacy</td>
<td>3</td>
</tr>
<tr>
<td>ICT122</td>
<td>Computer Skills Fundamentals</td>
<td>2</td>
</tr>
</tbody>
</table>

**Core and GEC Courses**

- CGC122: Land Policies and Law (3 credits, core)
- CGC123: Land Use Planning (3 credits, core)
- CGC124: Land Surveying and Measurements (3 credits, core)
- CGC125: Introduction to Public Administration (3 credits, core)
- CGC127: Introduction to Valuation (3 credits, core)

**Course Listing**

FOR ALL OTHER COURSES NOT OFFERED BY THE DEPARTMENT PLEASE CONSULT THE RELATED DEPARTMENT FOR THE SYNOPSIS

**Course Listing**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CGC111</td>
<td>Introduction to Land Administration</td>
<td>3</td>
</tr>
<tr>
<td>CGC112</td>
<td>Planning and Environmental Studies</td>
<td>3</td>
</tr>
<tr>
<td>CGC113</td>
<td>Land Records and Information Management</td>
<td>3</td>
</tr>
<tr>
<td>COMS131</td>
<td>Communication and Academic Literacy</td>
<td>3</td>
</tr>
<tr>
<td>ICT122</td>
<td>Computer Skills Fundamentals</td>
<td>2</td>
</tr>
</tbody>
</table>

**Core and GEC Courses**

- CGC122: Land Policies and Law (3 credits, core)
- CGC123: Land Use Planning (3 credits, core)
- CGC124: Land Surveying and Measurements (3 credits, core)
- CGC125: Introduction to Public Administration (3 credits, core)
- CGC127: Introduction to Valuation (3 credits, core)

**Course Listing**

FOR ALL OTHER COURSES NOT OFFERED BY THE DEPARTMENT PLEASE CONSULT THE RELATED DEPARTMENT FOR THE SYNOPSIS

**Course Listing**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CGC111</td>
<td>Introduction to Land Administration</td>
<td>3</td>
</tr>
<tr>
<td>CGC112</td>
<td>Planning and Environmental Studies</td>
<td>3</td>
</tr>
<tr>
<td>CGC113</td>
<td>Land Records and Information Management</td>
<td>3</td>
</tr>
<tr>
<td>COMS131</td>
<td>Communication and Academic Literacy</td>
<td>3</td>
</tr>
<tr>
<td>ICT122</td>
<td>Computer Skills Fundamentals</td>
<td>2</td>
</tr>
</tbody>
</table>

**Core and GEC Courses**

- CGC122: Land Policies and Law (3 credits, core)
- CGC123: Land Use Planning (3 credits, core)
- CGC124: Land Surveying and Measurements (3 credits, core)
- CGC125: Introduction to Public Administration (3 credits, core)
- CGC127: Introduction to Valuation (3 credits, core)

**Course Listing**

FOR ALL OTHER COURSES NOT OFFERED BY THE DEPARTMENT PLEASE CONSULT THE RELATED DEPARTMENT FOR THE SYNOPSIS
Valuation (2)
account; Delays; Claims; Insurance; Insolvency; Risk
of interim certificates and set-off; Variations; Final
techniques; Value engineering and management.
and control: elemental and comparative cost
limits, cost indices and cost analysis, Cost planning
Design economics; cost implications of design
and value in development projects, Construction
the of construction industry; its role and
information; Value engineering and management:
Nature, role and market issues of the construction
strategy.

Design Estimating and Tendering (3)
Estimating processes; Methods of estimating;
Cost estimation; Calculation of unit rates; Tender
documents; Pre-tender functions; Methods of
tendering; Selection of contractor; Bidding
strategy.

Building Economics
Nature, role and market issues of the construction
industry, construction project economics; Design
economics, Cost planning and control, Cost
information; Value engineering and management;
Construction industry - Nature and organisation
the of construction industry; its role and
contribution to the national economy, construction
industry in Botswana; its products and the present
status and future within the region and national
economic growth and development; Construction
project economics -Requirements of various
clients and their impact on the construction
process; relationship between cost, time, quality
and value in development projects, Construction
Design economics; cost implications of design
factors, construction methods and site factors, Cost
information; sources and reliability of cost data, cost
limits, cost indices and cost analysis, Cost planning
and control; elemental and comparative cost
planning, practical applications and cost control
practices; Value engineering and management.

Contract Administration (2)
Tendering and procurement systems; Preparation
of interim certificates and set-off; Variations; Final
account; Delays; Claims; Insurance; Insolvency; Risk
management.

Construction Management II (2)
Contract planning; Work-study; Application of
planning techniques; Project control; Benchmarking
and partnering; Employment and industrial
relations.

Construction Technology III (2)
Construction plant; Formwork and false work;
Maintenance; Modular co-ordination.

Property Management and Valuation (2)
Property Valuation; Valuation Theory and Methods;
Property Management Framework; Property
management function.

Construction Dispute Resolution (2)
Nature and forms of construction dispute;
Procedure for arbitration & dispute resolution;
Alternative dispute resolution methods.

Facilities Management (2)
Operational Services; Assets management; Life Cycle
Costing; Services; Maintenance and Feedback.

Engineering Materials (2)
This course covers the following: Types of materials;
Atomic structure; and imperfections; Mechanical
and physical properties of materials; Principles
of solidification and phase diagrams; Ferrous
and non-ferrous alloys; Ceramic materials; Polymers;
Composite materials; Wood; The environmental
stability of materials; The failure in materials in
stress.

Statics (2)
This course covers the following: Introduction to
statics; Force vectors; Force systems; Equilibrium;
Structures; Distributed forces and moment of
inertial; Friction; Virtual work.

Theory Of Structures I
Types of structural systems - trusses, beams, frames,
arches, cable roofs, plate and shell structures, masonry
structures; Supports and connections:
types of supports and connections of structural
components; Actions, reactions and equilibrium;
Loads, force systems and equilibrium. Stresses and
strains; Hooke's law, state of stress and strain at
a point, principal stresses: Stress resultants, free
body diagram and types of internal forces; Section
properties: centroid of area, moment of inertia,
parallel-axis theorem, sectional principal axes;
Trusses: Axial tensile and compressive forces in
plane trusses; Beams: bending moments and shear
forces, diagrams; Frames: bending moments, shear
forces and axial forces; Stability: initial stability,
instability under loads, buckling of compression
members, local buckling of member thin walls.

Strength of Materials (2)
This course covers the following basic principles:
Beams; Stresses and strains; Bending; Torsion;
Composite sections; Buckling.

Theory Of Structures II
Basic principles of limit states design of steel,
reinforced concrete, steel-concrete composite and
timber elements according to present codes and
standards. Reinforced concrete structures - form
shaping and materials used. Basic assumptions
and principles of reinforced concrete design.
Simply supported and continuous beams. One way
and two way slabs. Columns. Foundations. Basic
principles of limit states design: ultimate limit
state criteria (strength, stability) and serviceability
criteria (deflections, vibration, fatigue, cracking)
for elements made of different materials. Limit
states design standards: reference to steel,
reinforced concrete, steel-composite and timber.
Reinforced concrete design: reinforced concrete
structures, types of structural elements, materials.
Section design for moment: types of beam sections,
behaviour of beam sections. Deflection and cracking:
cracking limits and control. Simply supported
and continuous beams: typical reinforcement
layouts, curtailment and anchorage of longitudinal
reinforcing bars, examples of simple beam design.
Slabs: One-way and two way spanning solid slabs,
typical reinforcement layouts, examples of simple
slab design. Design for shear: shear reinforcement
in beams, shear resistance of solid slabs, shear
due to concentrated loads on slabs. Columns and
foundations: typical reinforcement layouts, simple
design examples.

Geomechanics I (3)
This course is a general introduction to soil
mechanics including soil formation, physical
properties, soil classification, soil compaction and
stress distribution.

Surveying (3)
Basic concepts covered in this course are as follows:
Distances: Tape and optical square, optical distance
measurement, Electronic distance measurement, GPS
measurement; Levelling concepts and applications:
types of levelling surveys, types of instruments
(including digital level), error sources, corrections,
checking and adjustment, field procedures;
Areas and volumes: computation from plans, co-
ordinates, measurement, intersections, gradients,
indivisibility; Theodolite: concepts, error sources,
checking, temporary and permanent adjustment,
observation procedures, booking and calculation;
Use of angles: single point determination, multiple
point determination, triangulation, trilateration,
traversing; Tachymeter: polar radiation, instrument
types, free set up, plotting, total stations,
demonstration of software for manipulating survey
data; Setting out: buildings, sewer lines, roads. This
course consists of field practices.

Environmental Engineering (2)
Ecology, surface water pollution and control,
groundwater pollution and control, air pollution,
noise pollution and environmental regulations.

Cad for Civil Engineers (2)
Creating and maintaining cost and specification
database; Design of prototypes; Mini projects in
designs.

Engineering Geology (2)
This course gives an introduction to planet
Earth, including but not limited to Minerals,
Rocks, Structural geology, Surface processes and
soils, Groundwater systems, Natural resources,
Engineering geology and environmental geography.

Principles of Mining Engineering (2)
Mineral resources; Life-of-mine and mining
cycles; Mining production optimisation; Mine
design fundamentals; Ore preparation; Ancillary
engineering services.

Theory Of Structures III
The course begins with the basic principles of limit
state design of steelwork connections, and tensile
and compression structural elements to BS5950.
The application of those principles to design
of roof trusses and spatial grid systems constitutes
the main course content. Other types of long span
structures, and tensile and shell like structures are
also covered. The course stresses reference to case
studies in existing and historical buildings, and
combines critical analysis of such solutions with
the students' work comprising a partial computer-
aided design of large span structural system.
Steelwork design to BS5950: types of connections
and joints, design of bolted and welded joints with an emphasis put special grid structures, design of steel tension and compression members. Roof trusses: types and uses, design of truss members and joints. Large span spatial grid structures: flat (plate like) and curved (shell like), form-finding and design principles. Tensile, textile and hybrid structures: basic concepts and examples of existing structures.

CCB321 Structural Analysis (3)
Determinate frames; Force displacement relations; Influence lines of determinate beams; Analysis of indeterminate beams; Influence diagrams and critical load conditions; Approximate methods of frame analysis.

CCB322 Fluid Mechanics & Hydraulics (3)
Concept of real and ideal fluid; Fluid properties; Measurement instruments; Fluid at rest; Kinematics of fluid flow; Hydrodynamics; Flow through pipes; Flow through open channels; Reciprocating pumps; Centrifugal pumps.

CCB323 Construction Principles (3)
Structure of the construction industry, site organisation and investigation, basic construction techniques, ground treatment methods, framed structures, construction plant, maintenance, repair and alteration.

CCB324 Construction Materials (3)

CCB325 Geomechanics II (2)
Soil permeability and seepage analysis; Seepage pressures on structures; Piping in soils; Soil Stabilization; Soil Exploration.

CCB329 Architectural Design (2)
Architectural design principles; Design program; Site planning; Functional organisation; Room Planning; Masing.

CCB411 Structural Design (3)
Basic principles of reinforced concrete design; Section design for moment; Shear; Deflection and cracking; Simply supported and continuous beams; Slabs; Columns; Foundations; Retaining walls; Examples of design of reinforced concrete structures.

CCB412 Water Engineering (3)
Fundamentals to drinking water supply; Water demand; Water quality assessment; Water treatment.

CCB413 Traffic and Highway Engineering (3)
Geometric design; Design of off-street parking facilities; Road safety; Traffic management; Road construction materials; Earthworks and earthworks equipment; Drainage; Road construction technology; Pavement design; Highway construction; Highway maintenance and road reconstruction and rehabilitation procedures; Use of computer software.

CCB414 Geotechnics (2)
Consolidation; Shear strength; Stability of slopes; Earth pressure; Earth retaining structures; Reinforced earth.

CCB415 CML Engineering Construction (2)
Land reclamation techniques; Tunnel construction; Offshore Construction; Construction of concrete structures; Managing construction equipment.

CCB416 Structural Steelwork (2)
Steel connections; Design of steel beams; Design of steel compression members; Design of steel tension members; Steel trusses; Examples of structural steelwork design.

CCB418 Hydrology and Water Resources (2)
Simplified hydrologic cycle; Precipitation; Surface waters; Dams and reservoirs; Underground waters. Evapotranspiration; Water resources.

CCB419 Engineering Surveying (2)
Principles of setting out; Definitions; Curve Ranging.

CCB511 Foundation Structural Engineering (2)
Soil Formation; Index Properties of Soils; Engineering Characteristics of Soils; Various Types of Foundations. Soil Formation, Residual and Transported Soils; Void Ratio, Porosity, Water Content, Degree of Saturation and Unit Weights of Soils; Classification Tests and Classification of Soils; Compaction and Consolidation Characteristics of Soils; Shear Strength of Soils; Bearing Capacity of Soils; Various types of Shallow and Deep Foundations. This course consists of a project proposal, written progress report and presentation.

CCB515 Transportation Engineering (2)
Introduction to traffic flow theory; Traffic surveys; Principles of transport analysis and forecasting; Transport planning strategies; Public transport; Transportation systems management.

CCB516 Foundation Design (2)
Bearing capacity of soils; Types of foundations; Shallow foundation; Deep foundation; Improving site soil for foundation use; Field tests.

CCB517 Structural Dynamics (2)
Oscillatory motion; Single-degree of freedom system; Resonance and related matters; Introduction to multi-degree of freedom systems; Normal mode vibration.

CCB518 Public Health Engineering (2)
Environmental sanitation, solid waste management and public health practice.

CCB521 WASTE WATER Engineering (2)
Wastewater characteristics, primary treatment, secondary treatment, sludge treatment and disposal, advanced treatment and wastewater effluent disposal and reuse.

CCB523 Timber and Pre-stressed Concrete Structures (2)
Timber Design; Design of Beams; Wood Columns; Trusses; Building design examples; Pre-stressed concrete; Basic principles; Design of members; Loss of pre-stress; Deflections and shear.

CCB524 Project II (3)
This course consists of collecting, compiling, analysing data and interpreting results to write and orally present the report.

CCB525 Advanced Transportation Engineering (2)
Design principles of pedestrian and bicycle facilities; planning for disabled people; Geometric design of railways; Airport layout and runway design; Belt conveyor design; Transportation forecast and modelling; Transportation systems impact assessment.

CCB526 Foundation on Problematic Soils (2)
Expansive soils; Foundation design on expansive soils; Collapsible Soils; Foundation design in collapsible soils; Laboratory tests.

CCB527 Construction Costs And Financial Control (2)
Characteristics and classification of construction costs; Financial costs and expenditures; Preparation, analysis and interpretation of management information.

CCB528 Estimating and Tendering (2)
Estimating purposes and functions; Cost estimation; Types of estimates; Calculation of unit rates for civil engineering works, day works and prorata rates; Tendering procedures, Tender documents, Pre-tender Functions and Methods of Tendering; Selection of contractor; Bidding strategy.

Bachelor Of Geomatics

CGB111 Geomatics I (4)
Introduction to Geomatics and review of the necessary mathematics; measurements of land: plane surveying; geodesy; the scientific foundation; measurements from space: satellite positioning and navigation. Mapping and managing geographic information.

CGB122 Survey Camp I (2)
The survey camp covers fundamental principles of field methods; errors and field checks; optical distance measurement; trig heighting; taping; adjusting angles; levelling; traverses; horizontal circular curves; vertical curves; measuring longitudinal and cross-sections, and report writing. Emphasis is placed on practical experience. Students will be divided into groups of four or five persons.

CGB121 Geomatics II (4)
Introduction to survey standards and specifications; survey network design and adjustment; operational and quality control aspects of electronic distance measurement (EDM), angle measurement, trig heighting and precise levelling; introduction to satellite positioning, observation techniques and data processing; advanced positioning techniques including automated field surveying, laser levels and reflectorless total stations to capture topographic data; data processing and analysis; setting out.

CGB211 Elements of Photogrammetry (3)
The course aims at introducing the student to the geometry of aerial photographs, stereo photogrammetry, mapping with analogue photogrammetric instruments, analytical and digital photogrammetry.

CGB213 Principles of Cartography (3)
The course aims at introducing the student to the basic concepts of cartography such as reference surfaces, coordinate systems and map projections, map design and layout, topographic and thematic cartography.

CGB221 Digital Photogrammetry (3)
This course deals with concepts and applications of analytical photogrammetry, digital photogrammetry and satellite photogrammetry.

GB222 Theory of Survey Adjustment (3)
The course aims at introducing the student to methods of survey adjustment, linearization of equations, propagation of errors in survey measurements, least square methods, observation equations, condition equations and statistical analysis.

GB223 Digital Cartography (3)
This course deals with digital coordinates, digital representation of cartographic data, map digitisation, coordinate systems and datums, coordinate transformation, digital elevation models, geographic data acquisition, computer-aided statistical and thematic mapping

GB224 Programming for Geomatics (3)
The course aims at introducing the student to object-oriented programming, activeX, networks, It World Wide Web, spatial data structures, geographic software components; Open GIS specifications, MapObjects and ArcObjects.

ITB200 Industrial Training (4)
During the course of industrial training, students shall undergo 8 weeks of supervised industrial training. Students shall be subjected to such codes, procedures, laws, rules and regulations as applicable to the industry.

GB311 Engineering Surveying (3)
The course aims at introducing the student to methods of data collection in engineering projects. It covers curves, route surveys, and earthworks, DTMs in engineering surveys, construction surveying, deformation surveys and application of Lasers

GB312 Geodesy I (3)
This course covers an introduction to geodesy, Coordinate transformations, Geodetic Astronomy, Geodetic computations and the geodetic control network in Botswana.

LAW354 Land Law for Geomatics (3)
The course aims at presenting the various laws that impact on land administration. It covers concepts of Property law, Landownership, Rights in land, Conveyancing and introducing the Various Acts on land in Botswana

GB321 Introduction to Land Administration (3)
The course introduces the concepts of land; spatial organization; evolution of land tenure systems and concept of property; the cadastre concept and land information systems; land tenure systems in Botswana; land registration systems; cadastral surveying systems: boundary delimitation processes; survey systems; written legal descriptions; retracement surveys; subdivision surveys; boundary evidence and possessory rights; land reform; land redistribution, land tenure reform, and land restitution in southern Africa.

GB322 Principles of GIS (3)
The course aims to familiarize the students with the basic concepts of GIS. It covers the basic Concepts, Data Sources, Data Capture Methods, Data Structure and models, Hardware and software Configuration, Spatial relationships, GIS Analysis Functions, GIS and Remote Sensing, and a review of GIS software.

GB323 Satellite Positioning Systems (3)
The objective of the course is to teach the basic principles of GPS, GLONASS and Galileo as means of position using satellite methods. It introduces the historical development of the three systems, the Signal Structure, GPS positioning concepts of resection from space, Point positioning, Relative positioning, Static positioning, Kinematic positioning RTK. Surveying and other mapping applications are also introduced

GB324 Geodesy II (3)
This course deals with the theoretical concepts of Satellite Geodesy and their use in positioning. It introduces students to concepts of Physical Geodesy leading to geopotential models, Orthometric and Geodetic Heights

GB325 Survey Camp II (2)
This is a field course covering planning and logistics of survey operations, horizontal control network, cadastral survey design; DTM modelling, precise engineering surveys, GPS surveys; production of final plan(s) using Geomatics software and report writing.

ITB300 Industrial Training (4)
After level 300, students shall further undergo 8 weeks of supervised industrial training. Students shall also be subjected to such codes, procedures, laws, rules and regulations as applicable to the industry.

GB413 Advanced Land Administration (3)
The course introduces modern issues in land tenure, land policy, land management and administration; survey law and practice: a profession for the 21st century; land information management: principles and applications. The role of property systems in land management, natural resource management, and parcel-based information systems. Comparative analysis of land tenure, land reform, and land administration systems

GB415 Advanced Cartographic Visualisation (3)
The course aims at introducing cartographic visualisation techniques. The course content will include cartographic visualisation processes; different visualisation strategies in Geospatial Data infrastructure; exploratory cartography using the intranet and WWW; Web Map Design and Multimedia

GB416 GIS Design and Implementation (3)
The course aims at teaching student how to design and implement a GIS system. The course content includes analysis of requirement; system planning and specifications; implementation of system; Legal and Policy issues.

GB417 - Digital Image Processing (3)
The course is designed to introduce digital image processing concepts with specific reference to Remote Sensing data. It covers the basic concepts of Digital Image, Source of data, Data formats; Image Pre-processing; Image Enhancement; Information Extraction; Image Processing System Considerations.

GB418 Principles and Practice of SDI Development (3)
This course introduces the principles and practice of implementing national spatial data infrastructures, challenges and opportunities for developing NSDI.

GB422 Cadastral Surveying Practice (3)
The course aims at preparing the students to have sound knowledge of the legal and technical requirements for making a cadastral survey. The course content includes cadastral surveying; methods of performing cadastral surveys; role of a land surveyor in resolving boundary disputes and as an expert witness; cadastral surveying computations; cadastral layout design and implementation; Land Survey Act and regulations; Sectional Titles Act and regulations; Tribal Land Act and regulations; Town and Country Planning Act and regulations; Deeds Registry Act and regulations; Survey of mining leases.

GB423 GIS Applications (3)
The course aims at familiarizing the students with various real life applications of GIS. The content includes guided study topics in the following fields (Topographic Mapping, Environment, Forestry; Biology; Geology; Mining; Utilities, AM/FM Systems, LIS; GIS in developing countries. Other relevant application areas can be discussed here and will depend on student interest.

GB424 Special Studies in Land Administration (3)
The course introduces the concepts of land management and land administration from economic and institutional perspectives; evolving concepts of property and land tenure systems; Design, implementation, monitoring and evaluation of land reforms; Post-settlement support interventions.

GB425 Remote Sensing Applications (3)
The course aims at familiarizing the students with various mapping applications of remote sensing. The course content will include guided study of various applications of remote sensing such as earth science, agriculture and land use and water resources.

GB426 Location Based Services (3)
The objective of the course is to present the use of mobile technology to the students as possible utility in both field and office automation in a survey practice. The course synopsis covers Introduction to LBS, Databases, Linear referencing, and Data transmission.

(Mining Engineering courses offered in the junior years at UB)

MIN 211 Introduction to Mining Engineering

MIN 221 – Introduction to Mine Safety & Health
Health and safety issues in mining: common mining hazards relating to machinery, electricity, explosives and non-explosive gas and dust, radiation, heat and humidity; diesel exhausts; mine ventilation;
noise; illumination; elements of safe working environment; hazardous materials. Hazards, accidents & emergencies: hazard control. Fires: Fire types, causes and effects, fire-fighting techniques.

MIN 311 Introduction to Mine Surveying  

MIN 312 Introduction to Geology  
Introduction to the planet Earth: earth’s structure, the role of plate tectonics in geological systems and processes; the tectonic and oceanic basins, geological time. Minerals, rocks and soils: crystallography, crystal chemistry and crystal properties of the main rock forming minerals; characteristics, formation, identification and classification of igneous, sedimentary and metamorphic rocks; weathering processes. Structural geology: primary structures, mechanical principles of brittle and ductile rock deformation; the recognition, characterisation and interpretation of common structural types.

MIN 313 Introduction to Mineral Processing  
Review of physical and chemical principles: review of the properties of minerals that are of use in mineral processing unit operations; Principles of liberation, concentration and separation; Communion methods, crushing and grinding, Ore handling and sampling; Screening and particle size analysis. Classification: separation by gravity concentration (including dense medium separation), flotation, electrostatic and magnetic methods; Coal preparation technology: washing, briquetting. Slimes: the production, effect and treatment of slimes including thickeners and filters. Water use and recovery in mineral processing: Calculations of plant efficiency.

MIN 314 Computer Applications in Mining  

MIN 315 Small Scale Mining  
Botswana Mining Law: provisions of the Mines and Minerals Act as it relates to mineral rights acquisitions and the various permits and licences will be introduced. Appropriate technologies for the artisanal miner; The business plan: The basic concept and development of the business plan; elements of a bankable feasibility study. Mine financing and the time value of money: Safety and health in small-scale mining: issues of safety and health facing the small-scale miner, special problems and possible solutions. Specific applications: panning, quarrying; basic metallurgical treatment, including leaching.

MIN 316 Elements of Mining Environmental Management  

MIN 321 Elements of Mining Methods  
Deciding on a mining method: geological factors, treatment factors for exposure to contaminants; surface and underground mining. Surface mining methods: open pit operations, open cast coal mining; comparison of surface mining methods. Underground mining methods: unsupported and supported mining; back-fill methods; caving methods; comparison of underground mining methods. Quarrying methods: sand and aggregate production; dimension stone extraction.

MIN 322 Elements of Mine Safety and Health  
General hazards in the mining industry: identification and control of hazards; safe handling, transportation and storage of hazardous materials. Mine safety and health: mine rescue, emergency evacuation procedures and escape routes; emergency management; machine guarding; the types of protective equipment, their usage and limitations. Accidents: theory and principles of accident prevention; accident reporting, investigation and analysis. Inspection procedures: review of standard auditing systems, e.g., NOSA. Emergency preparedness: causes and effects of emergencies; escape routes; drills; teams. Fire: fires types, causes and effects; special instances of underground fires; fire-fighting techniques.

MIN 323 Elements of Mine Ventilation  
The fundamentals of airflow: introduction to fluid dynamics as it relates to ventilation, total pressure components and pressure losses; pressure measurement and surveying techniques; gas laws; airflow measurement. Basic fan engineering: fan construction, characteristics and selection; regulation and control of ventilation. Atmospheric contaminants: the properties, origins and effect of dust and gases in mines; radiation; concepts of threshold values for hazardous substances; basic treatment procedures for exposure to contaminants; sampling methods; statutory requirements. Air conditioning: fundamentals of heat transfer; heat measurement and human heat stress; refrigeration technology; physiological effects of heat and humidity.

MIN 324 Botswana Mining Legislation  

MIN 325 - Introduction to Mine Supervision & Management  
Effective communication in the workplace: basic communication theory; effective communication including meetings; communication technologies. Human resource management: selection and placement of staff, job analysis and performance appraisal; training and human resource development. Principles of supervision and management: characteristics of an effective supervisor, leadership styles and organisational control. Project management skills: defining, planning, implementing and completing projects; time management. Industrial relations: stakeholders including unions, employers, employer associations and the role of the State; employer-employee relationship; worker compensation; industrial action; conflict management, delegation, motivation.

MIN 326 Mine Surveying  
Review of plane surveying methods. Operational surveying: characteristics of surface and underground mine surveying tasks, horizontal and vertical curves, area and volume calculation, stockpile measurement, survey requirements of civil construction including dams, roads, transportation systems and service positioning. Surface and Underground traversing: double angle, azimuth and compass traverses, distance measurement in traversing, detailed boundaries of mine workings, steeply incline lines, side slope calculations, traverse calculation, corrections and reduction. Preparation of Maps and Sections: field notes, manual and computer calculations, drawing plans and sections, working plans.

DEPARTMENT OF ELECTRICAL ENGINEERING

Bachelor of Electrical and Electronic Engineering

Entrance Requirements

Admission to the B.Eng. (Electrical and Electronic) shall be as stipulated in Faculty Special Regulations 21.20. Applicants in possession of a Diploma in Electrical and Electronic Engineering, or its equivalent, with a minimum of Credit including a Credit in Mathematics, may be admitted directly into Level 200. Applicants in possession of a Higher Diploma in Electrical and Electronic Engineering, or its equivalent, with a minimum of Credit including a Credit in Mathematics, may be admitted directly into Level 300.

Level 300  
Semester 5  
Core Courses  
MAT391 Engineering Mathematics III (3 pre-req. MAT 292)  
EEB131 Network Theory I (4)  
EEB231 Computer Programming (2)  
EEB316 Electrical Measurements and
FACULTY OF ENGINEERING AND TECHNOLOGY

EEB 317 Instrumentation I, (3) (pre-req. EEB221) Principles of Telecommunications (3) (pre-req. MAT 292)

Level 300
Semester 6
Core Course
MAT 392 Engineering Mathematics IV (3, pre-req. MAT 391)
EEB 322 Digital Electronics I (3) (pre-req. EEB211)
EEB 323 Analogue Electronics (3) (pre-req. EEB221)
EEB 326 Electrical Machines I (3) (pre-req. EEB311)
EEB 327 Electromagnetic Field Theory (3) (pre-req. MAT 391)

Optional Courses
EEB 517 Computer Aided Electrical Machine Analysis (3) (pre-req. EEB414)

Level 500
Semester 10
Core courses
EEB 520 Project II (3, pre-req. EEB 510)

Optional courses:
At least three from
EEB 521 Digital Signal Processing II (3, pre-req. EEB 512)
EEB 523 Digital Electronic System Design (3, pre-req. EEB 412)
EEB 524 Process Control Systems (3, pre-req. EEB 511 & EEB 514)
EEB 525 Power Systems Analysis (3) (pre-req. EEB 413)
EEB 526 Electrical Machines and Drives (3, pre-req. EEB 516)
EEB 527 Computer Aided Power Systems Analysis (3, pre-req. EEB 515)
EEB 528 Antennas and Propagation (3, pre-req. EEB 518)
EEB 529 Computer Networks (3, pre-req. EEB 519)

Assessment
As per Special Faculty Regulations 21.40.

Progression
As per General Regulations 00.90.

Award of the Degree
The award of the BEng in Electrical and Electronic Engineering shall be in accordance with the Faculty Special regulations 21.80.

Combined Bachelor of Engineering
(B-Eng Major)

Degree Structure
The major shall be a minimum of 53 credits over 10 semesters of full-time study. The major may be combined with a second major or minor. The curriculum for Level 100 and 200 shall be as stipulated in the Faculty Special Regulations 21.30.

Level 300
Semester 5
Core Courses
MAT 391 Engineering Mathematics III (3, pre-req. MAT 291)
EEB 311 Network Theory (4) (pre-req. EEB221 & MAT 292)
EEB 316 Electrical Measurements and Instrumentation I (3) (pre-req. EEB221)

Level 300
Semester 6
Core courses
MAT 392 Engineering Mathematics IV (3, pre-req. MAT 391)

Optional courses:
At least two from
EEB 322 Digital Electronics I (3)
EEB 323 Analogue Electronics (3)
EEB 326 Electrical Machines I (3)
EEB 327 Electromagnetic Field Theory (3)

Level 400
Semester 7
Core courses
EEB 418 Control Theory I (3) (pre-req. EEB311 & MAT 392)
MMB 414 Engineering Management (3)

Optional courses: At least three from
EEB 411 Electronic Devices and Circuits (3) (pre-req. EEB 322)
EEB 412 Digital Electronics II (3) (pre-req. EEB 322)
EEB 413 Power Generation and Distribution (3) (pre-req. EEB 326 & MAT 392)
EEB 414 Electrical Machines II (3) (pre-req. EEB 326 & MAT 392)
EEB 415 Digital Communication and Telephony (3) (pre-req. EEB 317)
EEB 416 Electrical Measurements and Instrumentation II (3) (pre-req. EEB 316)
EEB 417 Microprocessor Based Systems (3) (pre-req. EEB 322)

Level 400
Semester 8
ITB 400 Industrial Training II (Vacation, 20 weeks) (10 Credits, Core, pre-req ITB 200)

Level 500
Semester 9
Core courses
EEB 510 Project I (3) (pre-req. EEB 316, EEB 327 & EEB 418) and either (EEB 411 & EEB 412) or (EEB 413 & EEB 414)

Optional courses: At least two from
EEB 512 Digital Signal Processing I (3, pre-req. MAT 392)
EEB 513 Analogue Electronic System Design (3) (pre-req. EEB 323)
EEB 514 Process Instrumentation (3) (pre-req. EEB 416 & EEB 418)
EEB 515 Power System (3) (pre-req. EEB 413 & EEB 414)
EEB 516 Power Electronics (3) (pre-req. EEB 323)

Level 500
Semester 10
Core courses
EEB 520 Project II (3, pre-req. EEB 510)

Optional courses: At least two from
EEB 521 Digital Signal Processing II (3, pre-req. EEB 512)
EEB 523 Digital Electronic System Design (3, pre-req. EEB 412)
EEB 524 Process Control Systems (3, pre-req. EEB 511 & EEB 514)
EEB 525 Power Systems Analysis (3, pre-req. EEB 413)
EEB 526 Electrical Machines and Drives (3, pre-req. EEB 516)

Assessment
As per Special Faculty Regulations 21.40.

Progression
As per General Regulations 00.90.
Degree Structure
The Minor shall be a minimum of 23 credits over 8 semesters of full-time study. The minor may be combined with a major or minor. The curriculum for Level 100 shall be as stipulated in the Faculty Special Regulations 21.30.

Level 200 Semester 3
Core Courses
EEB216 Electrical Principles (2)
MMB211 Engineering Drawing (2)

Level 200 Semester 4
Core Courses
EEB 226 AC Circuit Principles, (2)

Level 300 Semester 5
Core Courses
A minimum of 5 credits from:
EEB311 Network Theory (4)
(pre-req. EEB221 & MAT292)
EEB315 Computer Programming (2)
EEB316 Electrical Measurements and Instrumentation I (3) (pre-req. EEB211)
EEB317 Principles of Telecommunications (3) (pre-req. MAT292)

Level 300 Semester 6
Core Courses
A minimum of 5 credits from:
EEB322 Digital Electronics I (3)
(pre-req. EEB221)
EEB323 Analogue Electronics (3)
(pre-req. EEB211)
EEB326 Electrical Machines I (3)
(pre-req. EEB211)
EEB327 Electromagnetic Field Theory (3) (pre-req. MAT391)

Level 400 Semester 7
Optional Courses
A minimum of 5 credits from:
EEB411 Electronic Devices and Circuits, (3) (pre-req. EEB211)
EEB412 Digital Electronics II (3)
(pre-req. 322)
EEB413 Power Generation and Distribution, (3)
(pre-req. EEB326 & MAT392)
EEB414 Electrical Machines II (3) (pre-req. EEB326 & MAT392)
EEB417 Microprocessor Based Systems (3)
(pre-req. EEB322)

Higher Diploma in Electrical and Electronic Engineering

Entrance Requirements
Diploma in Electrical and Electronic Engineering or its equivalent. At least one year of industrial work experience in the field of Electrical and Electronic Engineering.

Level 100 Semester 1
Core Courses
SMH 111 Mathematics I (2)
EEH 111 Circuit Theory (3)
EEH 112 Analogue Electronics (3)
EEH 113 Measurement and Instrumentation (2)
EEH 114 Computer Aided Electrical Drafting (2)

Level 100 Semester 2
Core Courses
EEH 129 Mathematics II (2, pre-req SMH 111)
EEH 121 Network Theory (3)
EEH 122 Digital Electronics (2)
EEH 123 Computer Programming (2)
EEH 124 Electromagnetic Field Theory (2)
EEH 125 Electrical machines I (2)

Level 200 Semester 3
Core courses
EEH 211 Control Theory (3)
Optional courses
At least four from:
EEH212 Fundamentals of Computer Networks, (3)
EEH 213 Process Instrumentation (3)
EEH 214 Analogue and Digital Communication (3, pre-req. EEH 124)
EEH215 Troubleshooting Digital Systems, (3)
EEH 216 Electrical Machines II (3)
EEH 217 Power Transmission and Distribution (3)
EEH 218 Power Electronics (3)
EEH 219 Electrical Power Production (3)

Level 200 Semester 4
Core courses
EEH 221 Project (2)
EEH 222 Electrical Maintenance and Repair (2)
Optional courses
At least three from:
EEH223 Motor Drive Applications (3, pre-req. EEH 125, EEH 216)
EEH 224 Computer Engineering (3, pre-req. EEH 124)
EEH225 Process Control Systems (3, pre-req. EEH 213)
EEH226 RF Transmission and Propagation (3, pre-req. EEH 124)
EEH227 Audio Visual Engineering (3)
EEH228 Power System Protection (3)
MDH225 Renewable Energy (3)

All courses shall be assessed as stipulated in the Faculty Regulation 13.30.130 In addition to the above, the department of Electrical and Electronic Engineering also offers the following General Education Courses (GEC)

GEC 255 Electrical Energy and Rural Development (2)
GEC354 Domestic Use of Electrical Energy (2)
GEC355 Telecommunications and Society

Course Listing

For all other courses not offered by the department please consult the relevant department for the synopsis

EEB311 Network Theory
Review of Circuit laws and theorems; Network topology; Time and frequency domain analysis; Three phase circuits; Computer simulation; Two-port networks; Application of Fourier Analysis to electrical networks; Application of Laplace transforms methods in electrical networks; Network functions; Active and passive filter theory and design; Synthesis of two-element type one port networks; State-variable analysis.

EEB 315 Computer Programming
Algorithms and Flowcharting, Program Structure, Data types, Data Input and Output, Control constructs, Subprograms, User-Defined data and Arrays, Records, Files, Introduction to Object-oriented programming.

EEB 316 Electrical Measurements & Instrumentation I
Standards, Units and Measurement Errors, Deflection Instruments, Measurement Methods, DC Potentiometer and Bridge Measurements, AC Potentiometer and Bridge Measurements.

EEB317 Principles of Telecommunications
Receivers, Transmitters, Noise in Analogue Communications Systems.

EEB322 Digital Electronics I
The basic logic functions; Derived logic functions; Boolean Algebra; Minimization techniques; NAND and NOR gates Universal function; Number Systems; Signed numbers; Arithmetic circuits; Combinational Circuits with MSI devices; Integrated Circuit Technologies; Digital to Analogue and Analogue to Digital Converters; Sequential Circuits.

EEB323 Analogue Electronics
Diode semiconductor theory; Diode applications & circuits; Bipolar Junction Transistor (BJT); Field Effect Transistors (FET); Transistor Small Signal Amplifiers; Amplifier Frequency Response; Feedback.

EEB326 Electrical Machines I

EEB327 Electromagnetic Field Theory
Introductory Vector Analysis; Electrostatics; Magnetostatics; Waves and Applications

EEB418 Control Theory 1
Introduction to control systems; System analogies; Mathematical representation; Controllers; Time domain analysis; System stability

EEB411 Electronic Devices and Circuits
Operational Amplifiers theory; Op-amp circuits; Positive feedback; Power Amplifiers; Power devices; converters and inverters, Optoelectronic devices, analogue filters.

EEB412 Digital Electronics II
Combinational circuits; Sequential circuits; Shift Register circuits and operation; Application Specific Integrated Circuits (ASICs).

EEB313 Power Generation and Distribution
Transmission Lines; Power generation; Power control; Distributors; Distribution equipment; Supply irregularities.

EEB414 Electrical Machines II

EEB415 Digital Communications and Telephony

EEB416 Electrical Measurements and Instrumentation II
Electronic Instruments, Oscilloscope measurements, Calibration of Instruments, Transducers, Signal Conditioning

EEB417 Microprocessor Based Systems
Microprocessor based system components; Microprocessor Instruction and Programming; Microprocessor Applications

ITB420 Industrial Training II
Structure and layout of the organization; All/ selected topics from: Office/site organisation and layout; purchasing and warehousing; manufacture, fabrication and assembly; building and construction; costing, estimating and tendering; operations; maintenance; plant erection, installation and testing, information system/design studio, involvement in small design assignments and projects.

EEB511 Control Theory II
State-space models of linear systems; Solution of state equations; Digital control systems; Discrete time systems stability analysis; Non-linear systems

EEB512 Digital Signal Processing I
Types of Signals; Time Domain Analysis; Frequency Domain Analysis; Z-Transform; Design of Non-recursive Digital Filter; Design of Recursive Digital Filter.

EEB513 Analogue Electronic System Design
Approximate Diode Models; BJF Small-Signal Amplifiers; Large-Signal Amplifiers; Operational Amplifiers; Compensation Amplifier Systems; Oscillator and Timing Circuits; Power Supply Circuits; Electronic Equipment Reliability and Fault Diagnosis.

EEB514 Process Instrumentation
Analog/digital signal conditioning and transmission; Optical measurements; Measurements of process parameters; Analytical Measurements; Control valves and actuators; Instrumentation systems; Smart/intelligent transducer systems

EEB515 Power Systems

EEB516 Power Electronics
Rectifier circuits; Thyristor circuits and controls; Converters; Inverters, Filters.

EEB517 Computer-Aided Electrical Machine Analysis
Modeling of Electrical Machines. Multi-machine System Analysis. Simulation and Applications

EEB518 Guided Electromagnetic Waves
Microwave Transmission Lines; Microwave Waveguides; Passive Microwave Devices; Active Microwave Devices; Introduction to Optical Fibres.

EEB519 Computer Architecture and Design
Design methodology; AU design; Memory organization and design; Control organization and design; RISC processing and pipelining.

EEB510 Project (Stage 1)
Selection of project type, its area and scope. Defining the problem and working out a scheduled action plan. Knowledge and technical data retrieval form relevant literature and other information sources. date analysis. Working out project methodology. Project pre-design. Acquiring the required materials, software and instrumentation (for experimental studies). Alternatively it may include preliminary data collection at an industrial plant. Writing a literature overview and a progress report. Project presentation.

EEB520 Project (Stage II)
This is the continuation of the course EEB510

EEB522 Digital Signal Processing II
Filters derived from analogue designs; Fourier Transform; FFT Processing; Adaptive Filtering; Hardware Implementation of Digital Filters; DSP applications to Communications; DSP applications in Multi-Media

EEB523 Digital Electronic System Design Course Synopsis:
Programmable Devices; Finite State Machines; System Design Using Programmable devices. Asynchronous Circuits. Reed-Muller algebraic description.

EEB524 Process Control Systems
Process control principles; Techniques for process control; Controllers; Computer Control systems; Control Communications; Statistical process and quality control systems (SPC-SPQ); Expert Systems

EEB525 Power Systems Analysis

EEB526 Electrical Machines and Drives

EEB527 Computer-Aided Power Systems Analysis

EEB528 Antennas and Propagation
Fundamental parameters of Antennas; Radiation Integrals and Potential Functions; Linear Wave Antennas; Loop Antennas; Array Antennas; Horn Antennas; Reflector Antennas; Propagation of Electromagnetic waves in Infinite Media. Radar Systems.

EEB529 Computer Networks
Network architecture and topology, ISO reference model, Network layer for point-to-point networks, Wide Area Network, Internetworking concept and architecture model, Internet.

In addition to the above, the department of Electrical and Electronic Engineering also offers the following General Education Courses (GEC)

GEC255 Electrical Energy and Rural Development (2 credits)
GEC34 Domestic Use of Electrical Energy (2 Credits)
GEC355 Telecommunications and Society (2 Credits)

DEPARTMENT OF INDUSTRIAL DESIGN AND TECHNOLOGY

Special Regulations for the Degree in Bachelor of Design Subject to the provisions of the General Regulations 000, 100 and 200, the following Special Regulations shall apply:

Entrance Requirements
Admission into Level 100 of the Bachelor of Design Degree Programme shall be as stipulated in the General Admission Regulations.

Admission into Level 100 shall be possession of BGCSE/equivalent with a minimum of grade D in English Language and a grade C in Mathematics. Physics and Chemistry or a minimum of grade BB in Science Double Award or equivalent. OR

Admission into Level 200 of the Bachelor of Design Degree Programme shall be as stipulated in General Admission Regulations.

Admission into Level 200 of the BDes Degree Programme shall be satisfactorily completion of level 100 of Bachelor of Science with at least the equivalent of C grades in Mathematics and Physics. OR

Applicants in possession of an appropriate A-Level qualification with at least C grades in Mathematics and any one of Physics, Chemistry, or Design and Technology may be admitted directly into Level 200 of the Degree Programme. OR

Applicants in possession of an appropriate Diploma may be admitted directly into Level 200 of the Degree Programme. OR

For admission into Level 300 of the Degree Programme, applicants must have an appropriate Higher (or a 3 Year) Diploma with Mathematics, Physics, Chemistry and Engineering Drawing.

Degree Structure
Level 100 courses shall be as specified in the Faculty of Science Special Regulations for the Bachelor of Science Degree. Level 200 shall consist of the following courses:

Semester 3
Core Courses
DB210 Elements of Design (3)
DB211 Workshop Technology I (2)
MM211 Engineering Drawing (2)
CC211 Engineering Materials (2)
CC212 Statics (2)
EEB211 Electrical Principles I (2)
### Semester 4

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTB220</td>
<td>Designing Artifacts (3, pr-req: DTB210)</td>
</tr>
<tr>
<td>DTB221</td>
<td>Workshop Technology II (2, pr-req: DTB211)</td>
</tr>
<tr>
<td>MMB221</td>
<td>Computer Aided Drafting (2, pr-req: MMB211)</td>
</tr>
<tr>
<td>CCB221</td>
<td>Dynamics (2)</td>
</tr>
<tr>
<td>DTB222</td>
<td>Graphics (2)</td>
</tr>
</tbody>
</table>

Students registered for a Bachelor of Design Degree Programme shall undergo industrial training as specified under Departmental Special Regulations.

At Levels 300, 400 and 500 each student shall register for General Education Courses as prescribed by General Regulation 00.2124. Departmental prescribed number of core, optional and elective courses per semester, unless exempted.

The availability of optional and elective courses offered by a Department shall be at the discretion of the Department.

A student shall register for a Single Major or a Combined Degree Programme in the third semester.

A subject may include courses consisting entirely of fieldwork, project work, practical work, and seminars. In addition to work during the semester, a student may include prescribed fieldwork or assignments during the vacation periods.

### Assessment

Continuous assessment in Levels 200, 300, 400 and 500 courses shall be based on tests and/or assignments, and where applicable laboratory reports/field reports.

Except for a project and courses with 100 percent continuous assessment, the ratio of continuous assessment to end of semester examination shall be 2:1, unless otherwise specified in the Departmental Special Regulations.

### Project Assessment

a) A Design Project shall be assessed through documentation (folio, report and diary) of the Design Process and presentation. The ratio of marks for documentation to presentation shall be 2:1.

b) A Major Make and Evaluate Project shall be assessed through Product and its Evaluation and presentation. The ratio of marks for documentation to presentation shall be 2:1.

c) A Design and Make Project shall be evaluated as per the following: 23.33a and 23.33b.

23.34 The Level 500 Project Report must be submitted to the co-ordinator at least 2 weeks before the beginning of the end of semester examinations.

Where a course includes a written final examination, a course with a credit value of 3 or more shall be examined by an end of semester examination of duration 2 hours, and 1 hour for a course with less than 3 credits.

Courses having a practical component or drawing that include a written examination shall be examined by an end of semester examination of duration 3 hours.

### Due Dates and Tests

a) Failure without good cause to submit an item of continuous assessment within 24 hours of the due date shall carry a penalty of 5 percent marks per day. Failure to submit the assignment before the end of 1 week from the due date shall incur a zero mark.

b) A student who fails to sit a continuous assessment test without documented valid reason shall score a zero mark for that test. A student absent from a test with documented legitimate reason shall be entitled to a special test.

### Departmental Regulations for the Bachelor of Design (Design and Technology Education) Degree

Subject to the provisions of the General Regulations 200 and 200 and the Faculty Special Regulation 230, the following Departmental Regulations for the Bachelor of Design (Design and Technology Education) Degree shall apply:

#### Entrance Requirements

90.11 Admission to the Bachelor of Design (Design and Technology Education) Degree shall be as stipulated in Faculty Special Regulation 2310.10, i.e., 23.11 to 23.17.

#### Programme Structure

The Programme shall consist of the Major Subject called ‘Design and Technology’ and the Minor Subject called Education.

The curriculum for Levels 100 and 200 shall be stipulated in the Faculty Special Regulations.

### Level 300 Design and Technology Education

#### Semester 5

<table>
<thead>
<tr>
<th>Core Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTB311</td>
</tr>
<tr>
<td>DTB312</td>
</tr>
<tr>
<td>DTB313</td>
</tr>
<tr>
<td>DTB314</td>
</tr>
<tr>
<td>EDT311</td>
</tr>
</tbody>
</table>

In addition, all students shall select at least two of the following optional courses:

- DTB315 Internet for Designers (2)
- DTB317 Textiles and Leather Technology (2)
- HEE345 Food Technology (3)

#### Semester 6

<table>
<thead>
<tr>
<th>Core Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTB 321</td>
</tr>
<tr>
<td>EEB328</td>
</tr>
<tr>
<td>DTB323</td>
</tr>
<tr>
<td>DTB324</td>
</tr>
<tr>
<td>EDT321</td>
</tr>
<tr>
<td>DTB300</td>
</tr>
</tbody>
</table>

### Level 400 Design and Technology Education

#### Semester 7

<table>
<thead>
<tr>
<th>Core Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTB410</td>
</tr>
<tr>
<td>DTB411</td>
</tr>
<tr>
<td>DTB412</td>
</tr>
<tr>
<td>EDT411</td>
</tr>
</tbody>
</table>

In addition, all students shall select at least two of the following optional courses:

- DTB413 Special Human Needs (2) |
- DTB414 School Design and Technology Projects (2) |
- DTB415 Design for Sustainable development (2) |
- DTB416 Interior Design (2, pr-req: DTB312) |
- ETP300 School Teaching Practice (Vacation, 7 weeks) (3)

#### Semester 8

<table>
<thead>
<tr>
<th>Core Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTB422</td>
</tr>
<tr>
<td>DTB423</td>
</tr>
</tbody>
</table>

In addition, all students shall select at least two of the following optional courses:

- EDT421 Educational Testing and Evaluation (2) |
- EDT422 Curriculum Studies (2) |
- EDT423 Philosophy of Education (2) |

In addition, all students shall select at least one of the following optional courses:

- DTB424 Safety and First Aid (2) |

### Level 500 Design and Technology Education

#### Semester 9

<table>
<thead>
<tr>
<th>Core Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTB511</td>
</tr>
<tr>
<td>EDT511</td>
</tr>
</tbody>
</table>

In addition, all students shall select at least two of the following optional courses:

- EDT512 School Organisation and Management (2) |
- DTB512 Design and Technology School Curriculum Innovations (2) |
- DTB513 Product Design III (2) |
- DTB514 Industrial Product Design (2) |
- DTB515 Microcomputer Controls (2) |

#### Semester 10

<table>
<thead>
<tr>
<th>Core Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTB521</td>
</tr>
</tbody>
</table>

In addition, all students shall select at least one of the following optional courses:

- DTB522 Case Studies in Designing (2) |
- DTB524 Environmental Factors in Design (2) |

In addition, all students shall select at least two of the following optional courses:

- EFA500 School Management (2) |
- EFF430 Philosophical Analysis of Educational Concepts and Policies (3) |
- EHJ500 Guidance and Counselling (3) |
- EFR500 Measurement and Evaluation (3) |

### Assessment

For courses DTB220, DTB300, DTB312, DTB315, DTB400, DTB321, DTB413, DTB414, DTB416, DTB422, DTB423, DTB424, DTB511, DTB514, DTB521 and DTB522 the assessment mode shall be continuous.
Semester 7

In addition, all students shall select at least one of the following optional courses:

- Design for Sustainable Development (2)
- Interior Design (2)
- Eco-Product Design (2)
- Universal Design (2)

Semester 8

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDB400</td>
<td>Industrial Training for Industrial Design (20 Weeks, 10 Credits)</td>
</tr>
</tbody>
</table>

Level 500

**Industrial Design**

Semester 9

In addition, all students shall select at least three of the following optional courses:

- Design Management (2)
- Occupational Health and Safety (2)
- Study Design (2)
- Optimisation in Design (2)

Semester 10

In addition, all students shall select at least two of the following optional courses:

- Case Studies in Designing (3)
- Design for Automation (3)
- Multimedia for Industrial Designers (3)
- Packaging Design, (3)

**Assessment**

For DTB220, DTB300, DTB312, DTB315, DTB313, DTB321, IDB324, IDB400, IDB411, IDB413, IDB511, IDB515, IDB516, IDB517, IDB522, IDB524 and IDB525, the assessment mode shall be continuous assessment only.

**Service Courses**

- DTC21 Entrepreneurial Skills (2): This course is available for students who are undertaking certificate or diploma programmes in FET. GEC357 Advances in Technology (2):
  - Examining: CA:Exam Ratio as per FET Regulations GEC 258 Art and Science of Design (2):
  - Examining: CA:Exam Ratio as per FET Regulations

**Industrial Training Regulations for the Degree of Bachelor of Design Preamble**

Subject to the provisions of General Regulations 000 and 200 the following Industrial Training Regulations shall apply to students on the following Programmes:

a) Bachelor of Design (Design and Technology Education)

b) Bachelor of Design (Industrial Design)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTB210</td>
<td>Elements of Design (3)</td>
</tr>
<tr>
<td>DTB211</td>
<td>Workshop Technology I (2)</td>
</tr>
<tr>
<td>DTB220</td>
<td>Designing Artefacts (3)</td>
</tr>
</tbody>
</table>

**COURSE LISTING**

**FOR ALL OTHER COURSES NOT OFFERED BY THE DEPARTMENT PLEASE CONSULT THE RELAVENT DEPARTMENT FOR THE SYNOPSIS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTB210</td>
<td>Elements of Design (3)</td>
</tr>
<tr>
<td>DTB211</td>
<td>Workshop Technology I (2)</td>
</tr>
<tr>
<td>DTB220</td>
<td>Designing Artefacts (3)</td>
</tr>
</tbody>
</table>
Value addition; Graphical, mathematical and physical modelling; Design brief; Brainstorming; group discussion and overcoming mind blocks; Alternative solutions; Design folio and diary; Employing manufacturing techniques; Evaluating the artefact. (1-hr lecture, 1-hr tutorial, 4-hrs practical per week)

DTB221 Workshop Technology III(2)
Joining processes: Welding, soldering and brazing; Plastic welding; Fasteners; Casting processes; Forming processes: forge working, extrusion, drawing and rolling, vacuum forming, bending, injection moulding and blow moulding; machining; Heat Treatment Processes; Finishing. (1-hr lecture, 2-hr practical per week)

DTB222 Graphics (2)
This course covers the following: Materials and equipment; freehand sketching; three-dimensional drawing; perspective drawing; rendering colour; working drawings; presenting information; shape and form; colour; Advertising: logos and trademarks, packaging, display and exhibition design; Computer inputs and outputs: computer art, computer aided modelling. (1-hr lecture, 4-hrs practical per week)

DTB300 Industrial Training (3)
This course covers the following: Relationship between education, industry and society; Types of industries and production systems; Organisation and management strategies; Impact of mass production on society and environment: Culture, work ethics and discipline in industries; Role of labour organisation; Effects of technology changes on employment; Students will also complete a 7-week Industrial Training. (Vacation Course)

DTB311 Design, Technology and Society (2)
This course covers the following: Cultural Influences; Environmental issues – pollution, waste disposal, recycling; Economic influences on design and manufacturing; Case Studies; Contemporary Design Issues. Conservation of natural resources; Obsolescence; The role of the designer in industry; (2-hrs lecture per week)

DTB312 Aesthetics (2)
This course covers the following: Philosophical basis of aesthetics: Visual and tactical impact; Styling products; Balance and symmetry; Colour combinations and appeal; Harmonious and complimentary colours; The Golden Mean and the Fibonacci series; Environmental synergy; Analysis of existing products vis-a-vis aesthetics. (1-hr lecture, 2-hrs practical per week)

DTB313 Ergonomics (2)
This course covers the following: General principles and dimensions of ergonomics; Anthropometrics; Body size and human diversity, human reach and use of anthropometric data, and the need for personal space; Muscular work, occupational stress and fatigue; Means of ensuring stress free environment; Time and motion study for some tasks; Mental activity, boredom and efficiency considerations; Design of workplace and utilization of space; Workstations for computers, driving, office, industry and domestic purposes. (1-hr lecture, 2-hrs practical per week)

DTB314 Materials Processing (3)
This course is a comparative study of different wasting techniques, covering the following; fabrication techniques for wooden structures; tolerances and fits for assemblies; selection of joints; Silver Soldering; Forming techniques; Plastics fabrication processes; Die casting; Model making techniques and tools for different materials. (1-hr lecture, 4-hrs practical per week)

DTB315 Internet For Designers (2)
This course is an introduction to Internet and Inter- nets structures. Course contents include: Setting up Internet; Search engines; Surfing the web; Use of multimedia tools; Interactive web sites and exchange of information; Creating and editing HTML documents; Creation of web sites; Alternative web designs; Design on an interactive web site. (1-hr lecture, 2-hrs practical per week)

DTB317 Textile and Leather Technology (2)
This course covers the following: Properties of textile materials; Classification; Selection; Properties of leathers; Dying and tanning. Design of articles; Cutting, joining and finishing processes; Use of computers in textile and leather design; Field visits and studies. (1-hr lecture, 2-hrs practical per week)

DTB321 Computer Aided Design (3)
This course covers the following: Different software for modelling and design; Two-dimensional drafting; Three-dimensional modelling with isometric, oblique and axonometric views; Software packages for design; Use of packages for several selected applications; Innovations in the use of computers for designing. (1-hr lecture, 4-hrs practical per week)

DTB323 Pneumatic Controls (2)
This course covers the following: Input process-output for pneumatics systems; Closed-loop control and feedback; Basic Fluid mechanics: Incompressible flow; Pressure transmission and types of pneumatic systems; Elements of pneumatic systems and circuit controls: Compressed air-supply; Steps in configuring filters, moisture removal, and lubricant addition; Operation and application of pneumatic components. (1-hr lecture, 2-hrs practical per week)

DTB324 Product Analysis (3)
This course covers the following: Analysing the need and functions of a variety of products and colour on their design; Value analysis; Identifying the component/function relationship and material characteristics; Product function analysis; Studies on several existing industrial and domestic designs; Field visits and studies. (1-hr lecture, 1-hr tutorial, 4-hrs practical per week)

DTB410 Computer Based Manufacturing (2)
This course covers fundamental concepts of computerised manufacturing: Computer modelling for manufacture; CNC machine tools including lathes, multi axis machines and special machines; Programming semi industrial CNC machines and manufacturing simple components; Introduction to computer integrated manufacture for mass production. (1-hr lecture, 2-hrs practical per week)

DTB411 Hydraulic Controls (2)
This course covers the following: Basic hydrostatics; Forces on submerged bodies; Piezometric head; Manometers; Applications of hydrostatics: Bernouilli's equation applied to incompressible flow; Reaction forces; Momentum and moment of momentum principles: Fluid control circuits and systems; Fluid logic devices: Principles of hydraulic devices. (1-hr lecture, 2-hrs practical per week)

DTB412 Product Design 1 (3)
This course covers the following: Types of products with alternative structures; Structures, equilibrium and Pin-jointed structures; Types of mechanisms: Products with transmission of motion and forces; Change of type of motion: Lifting machines and their efficiency; Factor of safety in design. (1-hr lecture, 1-hr tutorial, 2-hrs practical per week)

DTB413 Special Human Needs (2)
This course covers the following: Maslow's hierarchy of needs; Design in the context of special human need; Basic principles of ergonomics and anthropometrics for special human needs; Anthropometrics data collection, analysis and application; Design, detail, make, test and evaluate the Product Design. Client involvement and evaluation. (1-hr lecture, 2-hrs practical per week)

DTB414 School Design Projects (2)
This course covers the following: Factors to be considered and classification of projects by level and difficulty index; Formulation of project tasks and detailing of learning events; Alternative methods of project supervision and their comparison; Role-playing; Motivation and incentives. (1-hr lecture, 2-hrs practical per week)

DTB415 Design For Sustainable Development (2)
The course covers the following: the relation between Design and Sustainable Development, various models of Development, and the relation between Design, Technology, Development and Economics. Community products in the rural context: Field visits; Design for durability; Use of indigenous materials; appropriate technology; Sound social and ecological design; Design for lifelong use and serviceability; Design for recycling and evolution; Miniaturisation; Dematerialisation; Design for re-use and re-manufacture, new theories on Design for Sustainable Development. (1-hr lecture, 2-hrs practical per week)

DTB416 Interior Design (2)
This course covers the following: Physiological, psychological, sociological, aesthetic and ecological aspects of person–interior environment interaction; Conceptual design and documentation; classification of interior spaces; Primary and secondary functions of different interiors; Alternative design solutions. (1-hr lecture, 2-hrs practical per week)

DTB421 Ceramics, Glass and Stone Technology (3)
This course covers the following: Equipment and tools: Clay and its properties; Natural ceramics: Working properties of ceramics; Shaping clay, Firing, and Glazing; Making glass: Working properties of glass; Engraving. Painting. Heat forming. Staining. Working properties of stone. Carving. Masonry. (1-hr lecture, 1-hr tutorial, 2-hrs practical per week)

DTB422 Product Design 2 (2)
DTB423 Minor Design-and-Make Project (2)
This course guides students through the process of designing a product project from the initial stage of choosing an appropriate, thorough selection of what research to undertake, selection of appropriate forms of modelling ideas, selection of appropriate means of realisation and objective product evaluation: (1-hr lecture, 1-hr tutorial, 2-hrs practical per week)

DTB424 Safety and First Aid (2)
This course covers the following: Safety rules; Safety practices; Safety symbols and their interpretations; Causes and types of accidents in the workplace; Measures of giving First Aid to different cases of accident/injuries; First Aid and personal safety; First aid demonstrations and certification by the Red Cross Society of Botswana. (1-hr lecture, 1-hr tutorial, 2-hrs practical per week)

DTB511 Major Design Project (3)
Students will proceed by way of their preferred design methodologies by conceiving alternative solutions, designing, selection of appropriate process, research, data analysis, etc. Students will select appropriate forms of modelling ideas and present a design folio at the completion of the course. (1-hr lecture, 4-hrs practical per week)

DTB513 Product Design 3 (2)
This course covers the following: Psychology of creativity: Brain maps and lateral thinking for alternative solutions; Properties of newer materials, processes and advantages in terms of cost, etc.; Design Protection: Patent law, Design registration. Copyright, Design right, Trademarks, Brand names, Company symbols, logotypes and Passing off (2-hrs lecture, 1-hr tutorial per week)

DTB514 Industrial Product Design (2)
This course covers the following: Product and process design; Product development, Integrated product development, Product development groups, Design for mass production, Mass-customisation, Performance design, Technical parameters of products. (2-hrs lecture, 1-hr tutorial per week)

DTB515 Microcomputer Control (2)
This course covers the following: Computer systems and control (e.g. control sensors); motorised control system (e.g. Stepper and DC electrical motors); Pneumatics as control system; analogue to digital conversion; microprocessor and micro controller systems (e.g. PIC 16F84 or STAMP controller); system design and development tools. (1-hr lecture, 2-hrs practical per week)

DTB521 Major 'Make and Evaluate' Project (3)
Realisation of the designed artefact: Selection of appropriate means of manufacturing and finishing; Incorporating necessary design modifications; Product evaluation by revisiting the need and the consumer; Completion of the 'Design folio' to include manufacturing aspects and product evaluation. (6-hrs practical per week)

DTB522 Case Studies in Designing (2)
Critique of several cases with design problems: Problems encountered in manufacturing; Maintainability and meeting the desired functional; Safety and quality standards; Improving designs and conceiving newer designs. (1-hr lecture, 2-hrs practical per week)

DTB524 Environmental Factors In Design (2)
This course covers the following: Human environment, Factors influencing environment, the nature of pollution: Population growth with automation and new materials. Human waste and disposal: Industrial pollution and control: Effects of new materials and processes on environment. Global aspects and control of environment. Designing for environment friendliness: (2-hr lecture)

IDB311 Industrial Design: Concept and Practice (2)
Origins of Industrial Design, Practising Industrial Design, Design Consultancy, Freelance Design, In-house Designer, Industrial Design theory and practice, Industrial Design in relation to other professions, Industrial Design in relation to other bodies of knowledge. A critique of the role of Industrial Design in the following type of companies: home appliances, home-ware, toys, recreational products, interior products, medical and health care, furniture, transport, computers, product package, exhibition design, signage systems, product graphics, presentation techniques and applied photography. Strategies for successful design practice. (2-hr lecture per week)

IDB312 Design of Mechanism and Structures
Analysis and design of products with regard to different types of pin-jointed plane and space structures and equilibrium. Types of loading and forces in members. Factory of safety in design and its selection criteria. Types of motion and basic mechanisms for products.

Function and design aspects of different elements in products, e.g., levers, shafts, pulleys, threaded elements, helical springs, belt and rope drive, coupling, slider, chain, ratchet, brake and clutch. Design of bell crank lever and toggle mechanism. Design of linear, rotary and rocking motion linkages. Cam and follower mechanisms. Design of simple lifting machines and their characteristics. (1-hr lecture, 2-hr practical per week)

IDB313 History of Industrial Design (2)
This course explores, intellectual and philosophical framework that have shaped design, the relationship of design to the wider patterns of production and consumption, the effects of changes in materials and technology on the form and material culture, development of the design profession and design education, and the major design styles in history, design paradigms, The Bauhaus Movement, Modernism, Post-modernism, relation between design and technological and socio-economic change, Industrial design as a mirror of social and economic changes. (1-hr lecture per week)

IDB 321 Computer Aided 3-D Design (2)
Role of CAD in Industrial Design. Fundamentals of CAD, CAD software and operating systems, workstation environment, data storage and input devices, data exchange standards, graphic processors, graphic terminals, 2D and 3D graphic elements, 2D and 3D translation, hidden line algorithms, mass property algorithm. Wireframe modelling, solid modelling, constructive solid geometry, surface modelling, methods of surface construction, surface of revolution. Overview of rapid prototyping, virtual reality. (1-hr lecture, 2-hr practical per week)

IDB 322 Product Design (2)
Product Design models; total design method versus partial design method, concurrent versus linear and cyclic methods, techniques of deciding the brief, concept generation, concept selection procedures, concept refinement, product architecture, concept synthesis techniques, product systemisation, quality control, determinants of design specification, production system design, performance design, Designing ornamental products versus designs, technical products, functionalist design versus form dominated design, form follows function dictum, product styling techniques, product semantics theory. Man-machine interface design, product interactivity, design for the client versus design for users, design for mass production, design for manual assembly, design for automatic assembly. (1-hr lecture, 2-hr practical per week)

IDB 323 Basic Control Systems (2)

IDB 324 Ceramics, Glass and Stone Technology (2)
Equipment and tools, Clay and its properties, Natural ceramics, Working properties of ceramics, Shaping clay, Firing, Glazing, Equipment and tools, Making glass, Working properties of glass, Engraving, Painting, Heat forming, Staining, Equipment and tools, Working properties of stone, Carving, Masonry, Computers in ceramics, glass and stone technology, Design and manufacture of articles appropriate to ceramics, glass and stone. (1-hr lecture, 2-hr practical per week)

IDB 411 Computer Aided Manufacturing (2)

IDB 412 Research Methods in Industrial Design (2)
Research Methodology, choosing a topic, fact finding, assessment of information, problem definition and bounding, problem solving, project planning, forecasting and report writing, major research library and especially its resources such as abstracts, indices, computer databases, problem solving (synetics, brainstorming). Research methods for practical design problems, users needs analysis.
focus groups, experimental research, observation techniques, product usability evaluation techniques, practice-based research, research through design. (1-hr lecture, 2-hr Tutorials per week)

IDB 413 Minor Project (3)
Selection of the process which is appropriate to the type of project, selection of what research to undertake, selection of appropriate forms of modelling ideas, selection of appropriate means of realisation, objective product evaluation. Application of design concepts to identified problems and rationalisation and justification of selected design intervention approach vis-a-vis various possible alternatives. (1-hr lecture, 4-hr practical per week)

IDB 414 Eco-product Design (2)

IDB 415 Universal Design (2)
Universal Design Principles, Universal Design and inclusiveness, usability, equitable use, design for people of all ages and abilities, barrier free design, Design for flexibility in use, simple and intuitive use, perceptible information, tolerance for error, design for low physical effort, size and space for approach and use, trans-generational design strategies, design for the ageing methods, design for the disabled strategies, usability principles. Universal design assessment and checklist, usability assessment methods and checklist, analysis of products that meet the universal design criteria, Problems and limbs obstacles. Universal Design (2-hr lecture per week)

IDB 400 Industrial Training (3)

IDB 511 Major Project-design (3)
Students will proceed by way of their preferred design methodologies by conceiving alternate solutions, designing, selection of appropriate process, research, data analysis etc. Selection of appropriate forms of modelling ideas and presentation of design with a design folio. (1-hr lecture, 4-hr practical per week)

IDB 512 Contemporary Issues in Industrial Design (2)
Controversies surrounding industrial design includes; Social Responsibility, Environmental Responsibility, gender, equity and equality, Poverty alleviation, Ethics, Industrial Design in the Post-Material Society, Universal Access of Products and Facilities, Design and the Ageing population, Problems of Developing Countries, North-South Divide, Botswana's problems, the form and function debate, consumerism, electronic-futures (e-futures), National Economy, Globalisation as a determinant of discourse, Cultural considerations in design, Nano-technology, mass-customisation, Virtual Reality, Virtual Product Design, Remote Design. (2-hr lecture, 1-hr practical, 1-hr tutorial per week)

IDB 513 Advanced Product Design (2)
Product Development, Product Development Teams, Innovation Process, mass personalisation, product differentiation, flexible product development, advanced paradigms for Product Development, mass customisation process, the reactive process, best practices in niche and mass-customised products and part commonality approach, optimizing product architecture, standardisation, order fulfilment, customisation and configuration costs, design for manufacturability, mistake proof design, modular design strategy, concurrent product design, co-designing. Customisation of products for advanced manufacturing, product line architecture, process infrastructures, Technology Push products, Market-pull products, platform products, design for niche markets, Invention databases, collaborative technologies, Limitations, problems and challenges of customisation. (1-hr lecture, 3-hr practical per week)

IDB 514 Design Management (2)
Design Management in companies, Managing the design process, managing the corporate identity, managing company environmental graphics, managing new product development, managing design teams, design as strategic corporate tool, role of design management in turning a company to a Design-Driven business, managing design resources, managers and designers, managing design across organisational boundaries, managing the product innovation process, design and product evaluation, cultivating information and idea network. Design management tools and strategies. (2-hr lecture per week)

IDB 515 Occupational Health and Safety (2)
Ergonomics of work, Occupational hazards and preventative measures, Legal considerations, Health and Safety standards, Safety symbols and colours, Protective equipment and work practice controls, Design of hand tools, Construction activities, Fire prevention and protection, Seating and seat design, Workstation design, Lighting, colour and visual, Noise and vibration, Heat and ventilation, Manual material handling, Applied human kinematics and anthropometrics, Hazardous processes, Environmental pollution. (1-hr lecture, 2-hr practical per week)

IDB 516 Design Studies (2)
Cultural influences in design, Political and economic implications on design, Philosophical debates in design, Design and its impact on development, Social analyses of design, Identification of core issues that are significant to the area of design studies being investigated, Application of research methods to design studies, Application of design studies to related areas such as technology, engineering, art, architecture and photography. (1-hr lecture, 2-hr practical per week)

IDB 517 Optimisation in Design (2)
Systems approach to design. Optimisation and synergy of subsystems and components for materials, costs, quality, time, manufacturability, maintenance and energy conservation. Need-technology-customer matrix and diversification-capability matrix; optimisation of differentiation. Failure modes and effects analysis for optimisation. Quality function deployment aspect of optimisation. QFD model formulation and optimiser analysis. Value analysis and optimisation. Case studies of design optimisation. (2-hr lecture per week)

IDB 521 Major Project-production (3)
Realisation of the designed artefact. Selection of appropriate means of manufacturing and finishing. Incorporating necessary design modifications. Product evaluation by revisiting the need and the design process. Construction of a 'Design folio' to include manufacturing aspects and product evaluation. (1-hr lecture, 4-hr practical per week)

IDB 523 Professional Practice (2)
Various models of design practice, reflective practitioner, developing a corporate approach, managing product design and development process, strategic planning, time and people management, computer-based time schedules, presentation and communication skills, writing skills for design-related discourses such as, briefs, research papers, reports and resumes. Tendering for jobs, authority approvals, publicity, techniques for improving productivity. Pricing and costing of design projects, quality assurance, staff resource allocation, staff salaries and associated costs. Legal classifications of industrial designs, design protection, ownership of designs, contract and administration, sub-contracting, design registration, patenting designs, copyright, product liability, franchise, design protection in Botswana. Design ethics, moral obligations, analysis of design practice firms around the world, problems of design practice. (1-hr lecture, 2-hr practical per week)

IDB 522 Design for Automation (3)
Elements of automation, Need and rationale for time and motion study and its applications in automation. Different types of jigs and fixtures and their relative merits. Jigs and fixtures design for precision and their indexing. Tool design for automation. Tool geometry, ie, dimensions, angles and clearances and tolerances. Tool materials selection. Modular tooling system, tool holders and adapters. Tool locating and clamping, fasteners, etc. Use of dies; elements of die design. Tooling for numerical controls. Integrated computer aided design and manufacture with examples. Design of artefacts for integrated design and manufacture. Introduction to robotics and simple applications in design for automation. (2-hr lecture, 2-hr practical per week)

IDB 524 Multimedia for Industrial Designers (3)
Need for multimedia in Industrial design and dissemination. Role of multimedia in effective communication and presentations. Range of multimedia hardware and software. Digital electronics and use in still and video cameras. Digital recording and editing. Computer Animation, Interactivity and computer generated digital movies. Industry-standard multimedia-authoring tools to develop design presentations. Integration of media
objects, including: edited scanned images, rendered images (produced using CAD technology), line drawings, animation, video (captured off VHS) and sound. Production and application of multimedia in portfolio and major design presentation. (1 hr lecture, 4 hr practical per week)

IBB 525 Packaging Design (3)

Packaging principles and practices in design, Materials handling and distribution, Production, Testing and evaluation, Printing and labelling, Regulatory practices, and environmental concerns, Paper, metal and wood packaging, Plastics, composites and glass packaging, Pharmaceutical, medical and cosmetics packaging, Packaging and the environment, Packaging production systems, Engineering of protective packaging, Distribution systems, and Environmental systems and sustainable technological development. (3 lecture, 4 hr practical per week)

In addition, all students shall select two of the following optional courses:

- MMB515 Building and Factory Services (4)
- MMB523 Industrial Engineering (4, pre-req. MMB414)
- MMB527 Thermofluid system design (4, pre-req. MMB 421, MMB 417)
- MMB526 Computational Mechanics (4)

Assessment
Except for MMB211 (Engineering Drawing), MMB411 (Engineering Design), MMB511 (Project I), MMB521 (Project II), and MMB526 (Computational Mechanics), all courses shall be assessed as stipulated in the Faculty Special Regulations 21.30. For MMB411 the ratio of marks for continuous assessment to examination shall be 1:1. For MMB211, MMB511, MMB521, and MMB526, the assessment mode shall be by continuous assessment only.

Departmental Regulations for the Bachelor of Engineering (General) Degree

Subject to the General Regulations 000 and 200 and the Faculty Special Regulations 210, the following Departmental Regulations for the Bachelor of Engineering Degree (Major in Mechanical Engineering) shall apply:

Entrance Requirements
Admission to the Bachelor of Engineering (Mechanical Engineering) Degree Programme shall be as stipulated in Faculty Special Regulations 21.10.

Programme Structure
The Programme for the Degree in Mechanical Engineering will be a Single Major that will extend over 10 semesters of full-time study. It shall contain one subject called Mechanical Engineering consisting of courses shown below. The curriculum for Levels 100 and 200 shall be as stipulated in Faculty Special Regulation 21.20.

Level 300
Mechanical Engineering

Semester 5
Core Courses
- MAT391 Mathematics III (3, pre-req. MAT291)
- MMB311 Solid Mechanics (3, pre-req. CCB221)
- MMB312 Materials (2, pre-req. CCB211)
- MMB313 Mechanics of Machines (3, pre-req. MMB222)
- MMB314 Measurement and Instrumentation (2)

Semester 6
Core Courses
- MMB322 Machine Component Design (2, pre-req. MMB 311)
- MMB323 Thermodynamics I (3)
- MMB324 Fluid Mechanics (3)
- MMB325 Manufacturing (2)
- EEB326 Electrical Machines I (3)

Level 400
Mechanical Engineering

Semester 7
Core Courses
- MMB411 Machine and Industrial Design (2, pre-req. MMB322)
- MMB421 Heat Transfer (2, pre-req. MMB323, MMB324)
- MMB413 Systems and Control Engineering I (3)
- MMB414 Engineering Management (3)
- MMB417 Thermodynamics II (2, pre-req. MMB323)

In addition, all students shall at least select one of the following optional courses:

- MMB416 Mechatronics (2, pre-req. MMB314)
- MMB418 Pneumatics and Hydraulics (2)
- MMB410 Advanced Manufacturing (2, pre-req. MMB325)

Semester 8
ITB420 Industrial Training II [20 Weeks], (10 credits, core, pre-req. ITB 200)

Level 500
Mechanical Engineering

Semester 9
Core Courses
- MMB511 Project I (3)
- MMB512 Plant Engineering (3)

In addition, all students shall select at least two of the following optional courses:

- MMB513 Manufacturing Systems (4)
- MMB514 Systems and Control Engineering II (4)
- MMB515 Energy Conversion (4, pre-req. MMB412, MMB417)
- MMB524 Refrigeration and Air conditioning (4, pre-req. MMB412, MMB417)

Semester 10
Core Courses
- MMB521 Project II (3, pre-req. MMB511)
- MMB522 Production and Operations Management (3, pre-req. MMB414)

In addition, all students shall select two of the following optional courses:

- MMB516 Building and Factory Services (4)
- MMB523 Industrial Engineering (4, pre-req. MMB414)
- MMB527 Thermofluid system design (4, pre-req. MMB 421, MMB 417)
- MMB526 Computational Mechanics (4)

Assessment
Except for MMB211 (Engineering Drawing), MMB411 (Engineering Design), MMB511 (Project I), MMB521 (Project II), and MMB526 (Computational Mechanics), all courses shall be assessed as stipulated in the Faculty Special Regulations 21.30. For MMB411 the ratio of marks for continuous assessment to examination shall be 1:1. For MMB211, MMB511, MMB521, and MMB526, the assessment mode shall be by continuous assessment only.

Departmental Regulations for the Bachelor of Engineering (General) Degree

Subject to the General Regulations 000 and 200 and the Faculty Special Regulations 210, the following Departmental Regulations for the Bachelor of Engineering Degree (Major in Mechanical Engineering) shall apply:

Entrance Requirements
Admission to the Bachelor of Engineering Degree (Major in Mechanical Engineering) shall be as stipulated in Faculty Special Regulations 21.10.

Programme Structure
The Combined Programme shall extend over 10 semesters of full-time study. It shall consist of one major subject (Mechanical Engineering) and one minor subject selected outside the major subject. The curriculum for Levels 100 and 200 shall be as stipulated in the Faculty Special Regulations 21.20. At Levels 300, 400 and 500 students shall be required to follow a selected minor subject outside the major subject. The courses from the minor subject shall have a minimum credit value of 23. Subject to Regulation 31.22, students must achieve a minimum of 53 credits from the major subject courses listed below. In cases where a similar course appears in both the minor and the major subject, there shall be no double crediting of the course. Students shall be required to undertake Industrial Training as per Faculty of Engineering and Technology Special Regulations 220.

Level 300
Major in Mechanical Engineering

Semester 5
Core Course
- MAT391 Mathematics III (3, pre-req. MAT291)

In addition, all students shall select at least three of the following optional courses:

- MMB311 Solid Mechanics (3)
In addition, students shall select at least one of the following optional courses:

- MMB322 Machine Component Design (2)
- MMB323 Thermodynamics I (3)
- MMB324 Fluid Mechanics (3)
- MMB325 Manufacturing (2)

**Level 400**

**Major in Mechanical Engineering**

**Semester 7**

Students shall select and follow at least two of the following core courses:

- MMB411 Machine and Industrial Design (2, pre-req. MMB322)
- MMB527 Thermal Fluid System Design (2, pre-req. MMB421, MMB417)
- MMB413 Systems and Control Engineering I (3)
- MMB414 Engineering Management (3)
- MMB417 Thermodynamics II (2, pre-req. MMB323)

In addition, all students shall select at least one of the following optional courses:

- MMB416 Mechatronics (2, pre-req. MMB314)
- MMB418 Pneumatics and Hydraulics (2)
- MMB410 Advanced Manufacturing (2, pre-req. MMB325)

**Semester 8**

**Core Course**

ITB420 Industrial Training II [20 Weeks] (10)

**Level 500**

**Major in Mechanical Engineering**

**Semester 9**

**Core Course**

MMB511 Project I (3)

In addition, all students shall select at least two of the following options:

- MMB512 Plant Engineering (3)
- MMB513 Manufacturing Systems (4)
- MMB514 Systems and Control Engineering II (4)
- MMB515 Energy Conversion (1, pre-req. MMB412, MMB417)
- MMB524 Refrigeration and Air Conditioning (4, pre-req. MMB412, MMB417)

**Semester 10**

**Core Course**

MMB521 Project II (3, pre-req. MMB511)

In addition, students shall select at least one of the following courses:

**Core Course**

MMB522 Production and Operations Management (3, pre-req. MMB414)

**Optional Courses**

- MMB516 Building and Factory Services (4)
- MMB523 Industrial Engineering (4, pre-req. MMB414)
- MMB525 Process Engineering II (4)

**MMB526** Computational Mechanics (4)

**Assessment**

Except for MMB211 [Engineering Drawing], MMB411 [Machine and Industrial Design], and MMB526 [Computational Mechanics], all courses shall be assessed as stipulated in the Faculty Special Regulations 21.30. For MMB411 the ratio of marks for continuous assessment to examination shall be 1:1. For MMB211 and MMB526 the assessment mode shall be by continuous assessment only.

**Departmental Regulations for the Combined Degree Programme**

Subject to the General Regulations 000 and 200 and the Faculty Special Regulations 210, the following Departmental Regulations for the Minor in Mechanical Engineering shall apply:

**Entrance Requirements**

Applicants shall have successful registration in a Combined Major Degree Programme in Science, Engineering or Technology. Courses in Mathematics must be covered in the major subject with at least two such courses in Level 200.

** Programme Structure**

The Minor Programme shall extend over 8 semesters and shall be part of a Combined Major in another subject. It shall consist of one such course in Level 200.

**Level 500**

**Major in Mechanical Engineering**

**Semester 3**

**Core Courses**

CCB212 Statics (2)

MMB211 Engineering Drawing (2)

**Semester 4**

**Core Courses**

CCB221 Strength of Materials (2)

MMB222 Dynamics (2)

**Level 300**

**Minor in Mechanical Engineering**

**Semester 5**

Students shall attain a minimum of four credits from any of the following core courses:

- MMB311 Solid Mechanics (3, pre-req. CCB221)
- MMB312 Materials (2, pre-req. CCB211)
- MMB313 Mechanics of Machines (3, pre-req. MMB222)
- MMB314 Measurement and Instrumentation (2)

**Semester 6**

Students shall attain a minimum of four credits from any of the following optional courses:

- MMB322 Machine Component Design (2)
- MMB323 Thermodynamics I (3)
- MMB324 Fluid Mechanics (3)
- MMB325 Manufacturing (2)

**Level 400**

Minor in Mechanical Engineering

Students shall attain a minimum of six credits from any of the following optional courses:

- MMB326 Machine and Industrial Design (2)
- MMB412 Heat Transfer (2, pre-req. MMB323, MMB324)
- MMB413 Systems and Control Engineering I (3)
- MMB414 Engineering Management (3)
- MMB416 Mechatronics (2)
- MMB417 Thermodynamics II (2)
- MMB418 Pneumatics and Hydraulics (2)
- MMB410 Advanced Manufacturing (2)

**Assessment**

Except for MMB211 [Engineering Drawing] and MMB411 [Machine and Industrial Design] all courses shall be assessed as stipulated in the Faculty Special Regulations 21.30. For MMB411 the ratio of marks for continuous assessment to examination shall be 1:1. For MMB211 the assessment mode shall be by continuous assessment only.

**Departmental Special Regulations for the Bachelor of Engineering (Industrial Engineering)**

**General provisions**

Subject to the provisions of the General Regulations 000, and 200, the following Departmental Special Regulations shall apply:

**Entrance Requirements**

Admission into Level 100 of the Programme shall be governed by General Regulation 20.2.

Admission into Level 200 of the Degree programme shall be satisfactorily completion of Level 100 of Bachelor of Science with at least the equivalent of C grades in Mathematics, Chemistry, and Physics. OR Applicants in possession of an appropriate A-Level qualification with at least C grades in Mathematics and any one of Physics or Chemistry may be admitted directly into Level 200 of the Degree Programme. OR Applicants in possession of an appropriate Diploma in Mechanical Engineering may be admitted directly into Level 300 of the Degree Programme.

**Bachelor of Industrial Engineering**

**Degree Structure**

The Programme shall consist of a single major subject called Industrial Engineering.

Level 100 courses shall be as specified in the Faculty of Science Special Regulations for the Bachelor of Science Degree.

Level 200 courses shall be as specified in the Faculty Special Regulations for the Bachelor of Engineering Degree.

**Level 300 Semester 5**

**Core Courses**

MAT271 Introduction to Mathematical Statistics (3 credits, core)

LAW251 Foundations of Business Law
Level 300 Semester 6
Core Courses
IMB321 Information System Design (3 credits, core)
IMB322 Technological Entrepreneurship (3 credits, core)
ACC203 Cost Accounting Applications (3 credits, core)
IMB324 Productivity and Technology Management (3 credits, core)
EEB315 Computer Programming (3 credits, core)

Progression from Semester to Semester
261.41 Progression from one semester to the next shall be as per General Regulations 00.09.

Award of the Degree
The Degree shall be awarded in accordance with the provisions of General Regulation 00.85.

Classification of the degree shall be in accordance with the provisions of General Regulation 20.4

Level 400 Semester 7
Core Courses
IMB411 Industrial Logistics (3 credits, core)
IMB412 Manufacturing I (3 credits, core, prerequisite IMB312)
IMB413 Simulation Modelling (3 credits, core)
IMB414 Organical Ergonomics (3 credits, core)
IMB415 Facilities planning and Value engineering (3 credits, Core, prerequisite ECO313)

Level 400 Semester 8
Core Courses
MKT100 Principle of Marketing (3 credits, core)
MKT222 Manufacturing II (3 credits, core, prerequisite IMB412)
IMB423 Process Planning and cost Estimation (3 credits, core, prerequisite ECO313)
IMB424 Industrial Quality Control (3 credits, core, prerequisite MAT271)
IMB425 Operations Research I (3 credits, core)
ITB400 Industrial Training II (Vacation, 8 weeks duration, 4 credits, core, prerequisite ITB200).

Level 500 Semester 9
Core Courses
IMB511 Project I (6 credits, core)
IMB515 Operations Research II (4 credits, core, prerequisite IMB425)

In addition, all students shall select at least two of the following optional courses:

Optional Courses:
IMB522 Project Management (3 credits, option, prerequisite ECO313, IMB321)
IMB523 Industrial Relations (3 credits, option)
IMB516 Industrial Analysis (3 credits, option, prerequisite IMB413)

Level 500 Semester 10
Core Courses
IMB521 Project II (6 credits, core)
IMB522 Computer Aided (4 credits, core,)

In addition, all students shall select at least two of the following optional courses:
Optional Courses:
IMB523 Professional Ethics (3 credits, option, prerequisite IMB322)
IMB522 Production and Operations Management (3 credits, option, prerequisite, ECO313 and IMB324)

Course Listing
FOR ALL OTHER COURSES NOT OFFERED BY THE DEPARTMENT PLEASE CONSULT THE RELATANT DEPARTMENT FOR THE SYNOPSIS

IMB211 Engineering Drawing (2)
Introduction to basic constructions and mechanisms. Orthographic Projection is taught with examples from all fields of engineering. Students will also have some practice on engineering drawings with reference to the appropriate standards.

IMB221 Computer Aided Drafting (2)
The course introduces students to basic Computer Aided Drafting: Two dimensional and three-dimensional drafting systems; Use of CAD to generate Assembly and Detail engineering drawings; Title Block and plotting.

IMB222 Dynamics (2)
Kinematics of particles; Newton’s Laws; Kinetics of rigid body; Impulse and momentum; Work, power and energy.

IMB311 Solid Mechanics (2)
Deflection of beams; combined stresses; buckling; metal fatigue; creep; stress strain analysis; strain rosettes; strain energy; failure criteria; torsion of non-circular sections; plastic deformation.

IMB312 Materials (2)
This course is a study of engineering materials; this includes heat treatment, behaviour in service, evaluation of materials and designing.

IMB313 Mechanics Of Machines (3)
Crank-effort diagram; General plane motion; Kinematics of machines; Balancing; Lagrange's equation; Gyroscopic motion; Vibration.

IMB314 Measurement and Instrumentation (2)
This course covers the following: Basis of measurement and international standards; Electronics used in instrumentation systems; Methods of measurement; Calibration.

IMB322 Machine Component Design (2)
Phases of Design; Uniaxial and biaxial stress conditions; Deflection and Stiffness considerations; Design for static strength; Design for fatigue strength; Design of threaded elements; Rolling contact bearings; Flexible elements; Shaft and associated parts; Design of helical springs.

IMB323 Thermodynamics (3)
1st and 2nd laws of thermodynamics; thermodynamic processes with ideal gas; cycles of heat engines; energy systems.

IMB324 Fluid Mechanics (3)
Fluids and their properties; fluid statics; Basic fluid kinematics and fluid dynamics; viscous flow in pipes; flow in pipes and duct systems; flow around a body; open channel flow; and fluid machinery.

IMB325 Manufacturing (2)
Introduction to manufacturing technologies, cold manufacturing processes, measurements and quality control.

IMB410 Advanced Manufacturing (2)
Difference between conventional manufacturing and software driven manufacturing; CNC Technology and Part programming; Group technology; Computer aided process planning; Industrial robots; Discrete Control.

IMB411 Machine and Industrial Design (2)
Lubrication and journal bearings; Spur, helical, worm and bevel gears design; Industrial design: assessing the need for industrial design; The impact of industrial design; Product: risk and reliability, probability concepts, interaction of materials, processing and design.

IMB421 Heat Transfer (3)
Thermal properties, the Fourier’s law, heat diffusion equation, Newton’s Law of cooling, External and external flow forced convection, heat exchangers, thermal radiation

IMB413 Systems and Control Engineering I (3)
Linearised system models; applications of Laplace transforms; transfer function models; spline, transient performance and inverse Laplace transforms; frequency response analysis: Bode, Nyquist, etc.

IMB414 Engineering Management (3)
This is an introductory course to management science and engineering economics covering management theory, social responsibility of an industrial engineer, health safety, engineering project appraisal, financial control systems, and impact of information technology on organizations.

IMB415 Materials Technology (2)
Study of theoretical and practical aspects of materials processing; Further consideration of casting, forming, powder processing, joining processes and surface treatments.

IMB416 Mechatronics (2)
An introduction to mechatronic systems, including uses and simple design; Simple microprocessor programming; Mechanical aspects of mechatronic systems.

IMB417 Thermodynamics II (2)
Cycles and principle of operation; cycles and analysis; combustion and emission control; fuel process; wear, lubrication, steam, nozzles, heat transfer and refrigeration.
MB514B Pneumatics & Hydraulics (2)
Provides an introduction to the basic principles and control of pneumatic and hydraulic systems including electro-pneumatic and electro-hydraulic systems; Circuit and system design for function and capacity; Function sequencing diagrams; Introduction to control of such systems using programmable logic controllers.

MB519V Vibrations (2)
Vibration of multi-degree of freedom systems; modal testing; noise control.

MB511 Project (Stage I) (3)
Defining the project problem; working out an action plan and project methodology; information retrieval and analysis; project predesign; writing a literature overview and a progress report.

MB512 Plant Engineering (3)
This course covers design, selection, operation, maintenance and control of engineering plant; Power plant, combined heat and power, process plants; Planned maintenance; Safety, costs, energy conservation, pollution and environmental factors.

MB513 Manufacturing Systems (4)
Introduction to manufacturing systems, Single station manufacturing cells, Cellular manufacturing, Flexible Manufacturing systems, Transfer lines.

MB514 Systems and Control Engineering 11(4)
Modelling and analysis of system dynamics; continuous and digital control system design; elements of non-linear control.

MB515 Energy Systems (4)
Energy resources; Conventional and renewable energy systems; Energy system design; Energy management and rational energy utilisation.

MB516 Building and Factory Services (4)
Design, layout, installation, efficient operation and maintenance of building and factory services, such as heating, ventilation and air conditioning, water, steam compressed air, fire-fighting, lifts and escalators, electricity and lighting systems, for buildings and factories as efficient utilisation and provision of these services.

MB521 Project (Stage II) (3)
This is the continuation of the course MB511.

MB522 Production and Operations Management (3)
Forecasting, production control, plant location, maintenance costing, personnel and productivity, work study and operations management tools.

MB523 Industrial Engineering (4)
Total systems intervention; System dynamics modelling; Cybernetics; Viable Systems Modelling; Interactive management; Productivity; Quality.

MB524 Refrigeration And Air Conditioning (4)
This course covers the theories and practice of refrigeration and air conditioning. This includes application of thermodynamics, fluid flow, heat and mass transfer to refrigeration processes; Plant components, controls, plant layout, air conditioning processes, psychometric design, and acoustics; Installation, commissioning and operation of a refrigeration plant.

MB527 Thermal Fluid System Design
Thermal design systems, system components aspects of design, exergetic analysis, heat transfer, economic analysis, optimization.

MB526 Computational Mechanics (4)

MB514B Bachelor of Industrial Engineering

IMB 321 Information System Design
System requirement analysis, data flow charts, database design and normalization, software design.

IMB 322 Technological Entrepreneurship
Basic concepts of Entrepreneurship, Organizations, Funding, and Legal aspects in Entrepreneurship.

IMB 324 Productivity and Technology Management
Productivity engineering, Measurement of productivity, productivity evaluation, technology management and technology transfer.

IMB 411 Industrial Logistics
Importance of Logistics management, customer service, Forecasting logistics information systems, inventory management, strategic purchasing, packaging, transportation, warehousing, Supply chain management

IMB 412 Manufacturing I
Materials in design and manufacturing, Sheet-metal working processes, Machining, Manufacturing systems and Competitive aspects of manufacturing processes.

IMB 413 Simulation Modelling
Introduction to simulation technique, methodology, problem formulation, discrete simulation models, simulation software.

IMB 414 Organizational Ergonomics
Productivity engineering, human factors in work-study, method study, work measurements, Incentive system, and Ergonomics.

IMB 415 Facilities Planning and Value Engineering
Facilities planning, plant layout, computerized layout, material handling, value engineering, value analysis, and reporting.

IMB 422: Manufacturing II
Metal casting; Plastic deformation of metals; Bulk deformation processes; Powder metallurgy; Joining processes and Surface treatments.

IMB 423 Process Planning and Cost Estimation
Process planning, estimation and costing, product cost estimation, Element of cost, estimation of machining time.

IMB 424 Industrial Quality Control
Process control, control charts for variables and attributes, product inspection, OC curve, and sampling methods.

IMB 425 Operations Research – I
Operations Research, Linear Optimization Models, The transportation model, and Assignment problem