PROGRESSIVE MASTER’S DEGREE
PROGRAM COURSE PLAN

USC SCHOOL
Dornsife

ACADEMIC DEPARTMENT
Biological Sciences

GRADUATE PROGRAM
Developmental Origins of Health & Disease

POST CODE

TERM EFFECTIVE DATE
Fall 2024

PROGRAM DESCRIPTION
A brief description of the graduate program.

The Developmental Origins of Health & Disease (DOOHD) program is timely, as it builds on new mechanistic insights, and is a topic not covered directly by current programs. Adverse genetic and environmental insults before and during intrauterine life can result in permanent changes in the offspring’s physiology and metabolism, leading to increased risks of disease in adulthood. The period from conception to birth is a time of rapid growth, cellular replication and differentiation, and functional maturation of organ systems. These processes are susceptible to alterations in the intrauterine milieu. Prenatal health and disease programming investigates the molecular mechanisms whereby a stimulus or insult at a critical period of development impacts postnatal health and chronic disease incidence with attendant economic burdens. Relevant diseases include cardiovascular disease, psychiatric, allergy, obstructive lung disease, obesity, diabetes, osteoporosis, and certain cancers.

COMMON BACHELOR DEGREE PROGRAM PATHWAYS
A list of common bachelor’s degrees that undergraduate students pursue in advance of pursuing a progressive degree option with this graduate program. Some programs are restricted to certain majors while others are open to all students.

<table>
<thead>
<tr>
<th>Biological Sciences</th>
<th>Environmental Science and Health</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Biology</td>
<td>Global Health Studies</td>
</tr>
<tr>
<td>Chemical Biology</td>
<td>Biochemistry</td>
</tr>
<tr>
<td>Neuroscience</td>
<td></td>
</tr>
</tbody>
</table>

PREPARATORY UNDERGRADUATE COURSES
A list of courses at the undergraduate level that prepare students for the graduate program. Required coursework is listed first, followed by recommended courses. If not applicable, this section will be blank.

<table>
<thead>
<tr>
<th>Dept. Prefix - Course #</th>
<th>Course Title</th>
<th>Required or Recommended</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BISC 120Lg</td>
<td>General Biology: Organismal Biology and Evolution</td>
<td>Required</td>
<td>4.0</td>
</tr>
<tr>
<td>BISC 121Lg</td>
<td>Advanced General Biology: Organismal Biology and Evolution</td>
<td>Required</td>
<td>4.0</td>
</tr>
<tr>
<td>BISC 220Lg</td>
<td>General Biology: Cell Biology and Physiology</td>
<td>Required</td>
<td>4.0</td>
</tr>
<tr>
<td>BISC 221Lg</td>
<td>Advanced General Biology: Cell Biology and Physiology</td>
<td>Required</td>
<td>4.0</td>
</tr>
<tr>
<td>BISC 320L</td>
<td>Molecular Biology</td>
<td>Required</td>
<td>4.0</td>
</tr>
<tr>
<td>Dept. Prefix - Course #</td>
<td>Course Title</td>
<td>Units</td>
<td></td>
</tr>
<tr>
<td>------------------------</td>
<td>--------------------------------------------------</td>
<td>-------</td>
<td></td>
</tr>
<tr>
<td>BISC 330L</td>
<td>Biochemistry</td>
<td>Required 4.0</td>
<td></td>
</tr>
<tr>
<td>BISC 325</td>
<td>Genetics</td>
<td>Recommended 4.0</td>
<td></td>
</tr>
<tr>
<td>BISC 407</td>
<td>Cellular and Molecular Neuroscience</td>
<td>Recommended 4.0</td>
<td></td>
</tr>
<tr>
<td>BISC 421</td>
<td>Neurobiology</td>
<td>Recommended 4.0</td>
<td></td>
</tr>
<tr>
<td>BISC 315L</td>
<td>Introduction to Ecology</td>
<td>Recommended 4.0</td>
<td></td>
</tr>
<tr>
<td>BISC 305</td>
<td>Introduction to Statistics</td>
<td>Recommended 4.0</td>
<td></td>
</tr>
</tbody>
</table>

**UNDERGRADUATE COURSES USED TO REDUCE GRADUATE LEVEL UNITS**

A list of undergraduate level courses that may be used to reduce the number of graduate level units required for the graduate program. If there are none, that is specified instead.

<table>
<thead>
<tr>
<th>Dept. Prefix - Course #</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BISC 480</td>
<td>Developmental Biology</td>
<td>4.0</td>
</tr>
<tr>
<td>BISC 438</td>
<td>Nutritional Biochemistry</td>
<td>4.0</td>
</tr>
<tr>
<td>HBIO 435</td>
<td>Neurobiology of Feeding Behavior and Obesity</td>
<td>4.0</td>
</tr>
<tr>
<td>BISC 490X</td>
<td>Directed Research</td>
<td>1.0-8.0</td>
</tr>
</tbody>
</table>

**CORE GRADUATE PROGRAM REQUIREMENTS (# units required)**

A list of all required graduate courses for the graduate program. None of these courses may be used toward satisfying undergraduate degree requirements.

*If special exceptions for any of these courses are made by the academic department, the course # is marked with an asterisk (*) and the exception is explained in the “Department Notes” section at the end of this course plan template.*

<table>
<thead>
<tr>
<th>Dept. Prefix - Course #</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BISC 550a</td>
<td>Developmental Origins of Health &amp; Disease</td>
<td>4.0</td>
</tr>
<tr>
<td>BISC 550b</td>
<td>Developmental Origins of Health &amp; Disease</td>
<td>4.0</td>
</tr>
<tr>
<td>BISC 552a</td>
<td>Bioethics, Health Policy, and Human Development</td>
<td>2.0</td>
</tr>
<tr>
<td>BISC 552b</td>
<td>Bioethics, Health Policy, and Human Development</td>
<td>2.0</td>
</tr>
<tr>
<td>BISC 554</td>
<td>The Developing Human</td>
<td>2.0</td>
</tr>
<tr>
<td>BISC 555</td>
<td>Epidemiology of developmental origins of disease</td>
<td>1.0</td>
</tr>
<tr>
<td>BISC 556</td>
<td>Human Nutrition and DOOHD</td>
<td>1.0</td>
</tr>
<tr>
<td>BISC 557</td>
<td>Emerging technologies and studies in DOOHD</td>
<td>2.0</td>
</tr>
<tr>
<td>BISC 558a</td>
<td>Practical Survey &amp; Research Methods in DOOHD</td>
<td>2.0</td>
</tr>
<tr>
<td>BISC 558b</td>
<td>Practical Survey &amp; Research Methods in DOOHD</td>
<td>6.0</td>
</tr>
<tr>
<td>BISC 559</td>
<td>DOOHD Seminar Series (Fall &amp; Spring)</td>
<td>2.0 + 2.0</td>
</tr>
<tr>
<td>JOUR XXX</td>
<td>Communicating your health story</td>
<td>2.0</td>
</tr>
<tr>
<td>BISC 587</td>
<td>Communicating Science &amp; Health</td>
<td>4.0</td>
</tr>
</tbody>
</table>
PRE-APPROVED ELECTIVE COURSEWORK

Elective coursework is approved at the discretion of the academic department. Note the following details about the total number and units required of elective coursework.

| TOTAL ELECTIVE COURSES REQUIRED FOR THE TRADITIONAL GRADUATE DEGREE |
| TOTAL ELECTIVE UNITS REQUIRED FOR THE TRADITIONAL GRADUATE DEGREE |

TOTAL UNIT COUNTS AND REQUIRED GRADUATE UNITS

| 32 | TOTAL UNITS REQUIRED FOR THE TRADITIONAL GRADUATE DEGREE |
| 10 | TOTAL GRADUATE UNITS THAT MAY BE WAIVED (IF ANY) |
| 22 | MINIMUM NUMBER OF GRADUATE UNITS THAT MUST BE AT THE 500 LEVEL OR ABOVE |

NOTES FROM THE DEPARTMENT

This section highlights any unique considerations, exceptions, or requirements for the graduate program. If a program has specific restrictions (courses, majors, etc.), they are detailed below.

_______________________________________________________________________________________

Name of Authorizing Master’s Program Dean

Date Approved

Authorizing Dean’s Title