This major provides students with core instruction and excellent research opportunities, including the opportunity to engage in a research project with scientists in the Chemistry department. Students may select a Bachelor of Arts degree or one of four Bachelor of Science degrees, giving them the chance to focus in the areas of Research, Chemical Nanoscience, or Chemical Biology.

Opportunities for Students

- **The Trojan Chemistry Club:** A very active student-run undergraduate organization, the Trojan Chemistry Club organizes student-faculty luncheons, hosts receptions for new students, and participates in on-campus events for visiting local high school students.

- **Study Abroad:** Learn about trends in research and discovery around the world by spending a semester or year in Europe, Africa, Australia, or South America.

- **National Science Foundation Research Experience for Undergraduates:** A 10-week summer program offered to undergraduate students who work one-on-one in a lab with a faculty advisor and a graduate student mentor.

- **Supplemental Instruction:** This academic support program provides regularly scheduled, peer-led study sessions for common Biology, Chemistry, Math, and Physics courses.

Notable Courses

- **CHEM 300: Analytical Chemistry** — Theory and practice in chemical analysis, emphasizing instrumental techniques; error analysis, fractional distillation, extraction; chromatography; visible, ultraviolet, and infrared spectroscopy; introductions to electrochemistry and nuclear magnetic resonance spectroscopy.

- **CHEM 332: Physical Chemical Measurements** — Experimental study of topics such as adsorption, magnetic susceptibility; electron spin resonance, kinetics, equilibria, molecular spectra and structure, viscosity, dielectric properties.

- **CHEM 453: Advanced Inorganic Chemistry** — Atomic structure, theory of bonding, molecular structure, metallic state, coordination compounds, transition and nontransition metals, magnetic and optical properties, crystal field theory, mechanism of reactions.

- **CHEM 465: Chemical Instrumentation** — Principles of operation of instruments used in physical sciences. Basic electronics, interconnection of building blocks, data acquisition and data reduction, noise, instrument systems.
Bachelor of Arts (BA) Requirements

Lower Division Requirements*
- CHEM 105: General Chemistry A & B
  or CHEM 115: Advanced General Chemistry A & B
- MATH 125: Calculus I
- MATH 126: Calculus II
- MATH 225: Linear Algebra and Linear Differential Equations
  or MATH 226: Calculus III
- PHYS 151: Fundamentals of Physics I — Mechanics and Thermodynamics with Lab
- PHYS 152: Fundamentals of Physics II — Electricity and Magnetism with Lab
- PHYS 153: Fundamentals of Physics III — Optics and Modern Physics with Lab

Upper Division Requirements*
- CHEM 300: Analytical Chemistry
- CHEM 325: Organic Chemistry A & B
- CHEM 430: Physical Chemistry A & B
- One additional (1) 300/400-level science course

Elective Requirement (select one)*
- CHEM 332: Physical Chemical Measurements
- CHEM 423: Advanced Laboratory Techniques in Organic and Inorganic Chemistry
- CHEM 453: Advanced Inorganic Chemistry
- CHEM 490: Directed Research

Additional Bachelor of Sciences (BS) Requirements**
- CHEM 332: Physical Chemical Measurements
- CHEM 426: Advanced Organic Chemistry
- CHEM 453: Advanced Inorganic Chemistry
- CHEM 465: Chemical Instrumentation
  or CHEM 423: Advanced Laboratory Techniques in Organic and Inorganic Chemistry
- CHEM 490: Directed Research

*This information is offered as a partial overview only. For additional information, including all major requirements, please consult the USC Catalogue or http://chemistry.usc.edu/. Updated as of August 2015.

**This does not represent all options in this category. For a complete list, please consult the USC Catalogue.