DOCTOR of PHILOSOPHY

MAJOR: Chemistry and Biochemistry

CONCENTRATION: Chemistry

DISCIPLINARY EMPHASIS: Organic Chemistry

Program effective Fall 2015

Graduate courses that are a part of Programs of Study in the Department of Chemistry and Biochemistry are denoted as CHEM G5XYZ, where X is the program of study, Y is the sequence of number within that Program of Study (for Y= 0-9), and Z is the number of credit hours as follows:

- **X = 0** Departmental Requirements
- **Y = 0-2** Introductory Instruction
- **Z = 0-4** Credit Hours

### Department Courses and Seminar Requirements

- **CHEM 5011** Fundamentals I ................................................................. 1 hour
- **CHEM 5021** Fundamentals II .............................................................. 1 hour
- **CHEM 5080** Laboratory Rotations ..................................................... 2 hours
- **CHEM 549** Seminar in Organic Chemistry ........................................ 1-12 hours

Continuous enrollment in 549 is required after the first semester, up to 12 credits.

**Total** ........................................................................................................ 5-16 hours

### Focus Area/Breadth Course Requirements

Minimum of 16 credit hours in letter-graded courses in the CHEM course inventory at the G5XYZ level (X≠0, Y=0-8) including:

- **CHEM 5400** Organic Chemistry I: Mechanisms and Reactivity .............................. 2+ hours
- **CHEM 5430** Organic Chemistry II: Reactions and Synthesis .............................. 2+ hours

- Minimum 4 hours from:
  - **CHEM 5450** Structural Characterization of Organic Compounds, and/or
  - **CHEM 5460** Special Topics in Chemical Reactivity and Physical Organic Chemistry, and/or
  - **CHEM 5470** Special Topics in Bioorganic and Specialized Organic Compounds, and/or
  - **CHEM 5480** Practicum in Organic Chemistry ........................................... 4+ hours

**Breadth Course Requirement**

- Minimum 4 hours CHEM 5XY0 (X≠0 or 4, Y=0-8) ........................................... 4+ hours

### Directed Studies/Dissertation Research

2 hours minimum CHEM 6980 Research for Doctoral Dissertation.

Up to 9 credits CHEM 5990 Independent Studies. Up to 6 credits CHEM 5960 Directed Readings in Chemistry.

**TOTAL** ........................................................................................................ 90 hours