

## DOCTORAL DEGREE REQUIREMENTS

General policies for all University of Oklahoma doctoral programs are available in the [Graduate College Bulletin](#).

### DOCTOR of PHILOSOPHY

D170/R101

**MAJOR:** Chemistry and Biochemistry

**CONCENTRATION:** Chemistry

**DISCIPLINARY EMPHASIS:** Physical 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:

<b>X =</b>	0 Departmental Requirements	5 Physical	<b>Y =</b>	0-2 Introductory Instruction	<b>Z =</b>	0-4 Credit Hours
	1 Analytical	6 Chemical Education		3-5 Advanced Instruction		(modules)
	2 Biochemistry	7 Structural Biology		6-7 Special Topics or Electives		
	3 Inorganic	8 Unused		8 Practicum		
	4 Organic	9 Interdisciplinary or custom		9 Seminar		

## COURSEWORK REQUIREMENTS

### Department Courses and Seminar Requirements

Continuous enrollment in CHEM 5090 Departmental Colloquium is required (0 credit hours).

- ☐ CHEM 5011 Fundamentals I ..... 1 hour
- ☐ CHEM 5021 Fundamentals II ..... 1 hour
- ☐ CHEM 5080 Laboratory Rotations ..... 2 hours
- ☐ CHEM 5591 Seminar in Physical Chemistry ..... 1-12 hours

Continuous enrollment in 5591 is required after the first semester, up to 12 credits.

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

- ☐ **Focus Area/Breadth Course Requirements** ..... **16+ hours**

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

*Focus Area Course Requirements*—Up to 3 credits of student advisory committee-approved graduate coursework outside the department may count for focus area credit.

- ☐ Minimum 6 hours from:
  - CHEM 5500 Topics in Quantum Chemistry, and/or
  - CHEM 5530 Topics in Statistical Thermodynamics ..... 6+ hours
- ☐ Minimum 4 hours from:
  - CHEM 5510 Topics in Molecular Symmetry, and/or
  - CHEM 5520 Topics in Physical Chemistry Kinetics, and/or
  - CHEM 5560 Topics in Nanotechnology and Bionanotechnology, and/or
  - CHEM 5570 Selected Topics in Physical Chemistry, and/or
  - CHEM 5580 Practicum in Physical Chemistry ..... 4+ hours

*Breadth Course Requirement*

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

- ☐ **Directed Studies/Dissertation Research** ..... **2+ hours**

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**