

# Biochemistry (PhD)

The Department of Biochemistry and Molecular Biology offers the Doctor of Philosophy degree in Biochemistry. Additionally, the department considers applications for the M.D., Ph.D. combined degree program. The primary objective of the Ph.D. program is to prepare candidates for research and teaching careers. The first few semesters are devoted primarily to core course work designed to give the student a broad background in the fundamental theories and techniques of biochemistry. During this time, the student gains exposure to methods for the solution of research problems by working in the laboratories of various faculty members. During the remaining part of the programs, students become increasingly involved in laboratory research and in the critical analysis of biochemical literature. Emphasis is placed on giving candidates rigorous standards of scholarship and critical attitudes toward the solution of research problems. A broad range of research interests exists within the department. An active seminar program conducted by visiting scientists gives students and faculty opportunities to broaden their outlook on current scientific problems.

**Program:** Biochemistry

**Type:** PhD

## Core Biochemistry Credits Required

\*Note: BIOC-201 Seminar in Biochemistry (a total of 5 credit hours of the seminar course must be completed = 5 semester enrollment). The content of each course will be changed based on current research in biochemistry.

\*\*Choose from options below (38 crs Total Required)

Item #	Title	Credits
BIOC-170	General Biochemistry	7
BIOC-203	Biochemistry Laboratory	3
BIOC-211	Orientation to Research	3
BIOC-201	Seminar in Biochemistry	1-5
BIOC-240	Enzymology	3
BIOC-270	Molecular Biology	3
BIOC-272	Metabolic Regulation	3
BIOC-208	Protein Structure and Function	3
BIOC-101	General Biochemistry	4
	<b>Sub-Total Credits</b>	<b>38</b>

## Advanced Biochemistry Credits Required

\*Choose from options below (3crs Total Required)

Item #	Title	Credits
CHEM-231	Advanced Analytical Chemistry	3
CHEM-243	Advanced Organic Chemistry	3
CHEM-278	Advanced Physical Chemistry I	3
	<b>Sub-Total Credits</b>	<b>3</b>

## Statistics Course

<b>Item #</b>	<b>Title</b>	<b>Credits</b>
BIOG-430	Biostatistics Lec/Lab	4
	<b>Sub-Total Credits</b>	<b>4</b>

## Electives

\*Electives (Options: Courses under subject codes BIOG, CHEM, or BIOL level 200 or above)

<b>Item #</b>	<b>Title</b>	<b>Credits</b>
	Elective Course - Biochem.	9
	<b>Sub-Total Credits</b>	<b>9</b>

## Research & Dissertation

\*Research Courses - Only one research course can be taken per semester; A maximum of 9 PhD Research credits may be taken per semester. In addition, a maximum of 18 PhD Research credits may be counted toward the 72 required for program completion.

\*\*Dissertation- Nine credit hours may be awarded per semester for this course. A maximum of nine credit hours may be counted toward the 72 needed for program completion; Only one dissertation course can be taken per semester.

<b>Item #</b>	<b>Title</b>	<b>Credits</b>
BIOC-300	Research for PhD Candidates	1-9
BIOC-205	Directed Research	1-9
	<b>Sub-Total Credits</b>	<b>18</b>
	<b>Total credits:</b>	<b>72</b>