

# PhD in Translational Biosciences with Emphasis in Biochemistry and Biophysics

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The PhD in Translational Biosciences will span the entire breadth of the biomedical research spectrum, from basic science discoveries to improved clinical outcomes. Through close collaborations with the outstanding scientists and clinicians of the Precision Health Institute, the Translational Biosciences PhD program will provide state-of-the-art training to young biomedical scientists at the beginning of their scientific careers.

## Degree Requirements

All PhD graduate students in the Translational Biosciences program will complete a total of 72 credit hours, including formal coursework and research credit hours. A minimum of 15 credit hours of formal coursework at the 8000 or 9000 level is required. Graduate students must maintain a GPA of 3.0 in their formal coursework. Research credit hours will be graded on a S/U basis.

A modular course structure will focus on Principles and Methodologies and be tailored to the student's Doctoral Plan of Study. Each module will typically be a ½ semester course, for 1-3 credit hours. Examples of topics that will be covered in the modular courses include: Molecular Cell Biology; Biomolecular NMR; X-Ray Diffraction and Scattering; Fluorescence Probes in Biological Systems; Modern Analytical Biochemistry; Protein Structure Determination by Electron Microscopy. All PhD students will be required to complete at least two modules, along with additional electives.

### Additional Course Options

BIOCHM 8434	Signaling in Molecular Cell Biology	3
BIOCHM 8432	Enzymology and Metabolic Regulation	3
BIOCHM 9432	Molecular Biology II	4
BIO_SC 7982	Human Inherited Diseases	3
BIO_SC 8982	Advances in Human Genetic Disorders	1
AN_SCI 8415	Survey of Epigenetics	3
BIO_SC 8300	Advanced Plant Genetics	3
BIOCHM 8362	Introduction to Plant Metabolism	2
PLNT_SCI 9415	Advanced Plant Physiology	1-3
BIOCHM 9468	Molecular Biology of Plant Growth and Development	3
PLNT_SCI 9540	Genetics of Plant-Microorganism Interaction	3
CHEM 8150	Organic Reaction Mechanisms	3
CHEM 8240	Mass Spectrometry	3
CHEM 8160	Organic Spectroscopy	3
CHEM 8265	Fluorescence Spectroscopy	3
INFOINST 8005	Applications of Bioinformatics Tools in Biological Research	3
PLNT_SCI 8430	Introduction to Bioinformatics Programming	4