Students should have the following:

Specific requirements are listed under each of these graduate programs.

The GEMS Program offers students integrated training in the biomedical sciences. PhD programs include the areas of Anatomy, Biochemistry, Biophysics, Cell and Molecular Biology, Genetics, Immunology, Microbiology, Neurosciences, Pathology, Pharmacology, and Physiology. Students have the flexibility to choose a mentor from among more than 150 funded research faculty in all departments and PhD programs of the College of Medicine. Areas of research excellence within the broader disciplines include: Biochemistry and Molecular Biology, Cancer Biology, Cardiovascular Biology, Cell and Developmental Biology, Genetics and Gene Regulation, Immunology, Informatics and Genomics, Lung Biology, Metabolism and Metabolic Disorders, Microbiology, Neurobiology, Stem Cell Biology and Regenerative Medicine, Structural/Computational Biology and Biophysics, Systems Physiology, and Virology. Brief descriptions of each research interest and UIC faculty associated with the interests can be found on the College of Medicine website.

Admission Requirements

Students apply using the GEMS PhD program code (20FS5375NONE). They list in order of preference up to three Research Interests and up to five faculty members whose research interests them. PhD degrees are granted by the degree-granting department. Students must pass a preliminary examination in a format specified by their chosen department.

Degree Requirements

GEMS students, during their first semester of study, engage in a core curriculum that focuses on the fundamentals of biochemistry, cell biology, molecular biology, and physiology. Beginning with the second semester, students choose from a variety of courses with the goal of concentrating more on their chosen area of interest.

During the first year, students additionally engage in three or four laboratory rotations of 10 weeks each. The students select from among the GEMS faculty potential mentors for their thesis research. At the end of the first year, students select their mentor and department from within the College of Medicine. The PhD is granted by the degree-granting program that the student selects.

Course

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<td>Required Courses</td>
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Students must take or show proficiency in three of the following four core courses:

- GEMS 500 Physiology
- GEMS 501 Biochemistry
- GEMS 502 Molecular Biology
- GEMS 503 Cell Biology

Students must take or show proficiency in the following research methods courses:

- GEMS 504 Research Methods I
- GEMS 505 Research Methods II

Select 500-level courses as specified by chosen PhD program.

Preplicated Examination During the second year of graduate study, students must pass a preliminary examination in a format specified by their chosen department.
• **Dissertation** Required. Students must earn at least 52 hours in Research in their department (599).

• **Other Requirements**: Journal clubs and research seminars as specified by the student’s chosen department.