

BIOTECHNOLOGY & ENTREPRENEURSHIP (BTE-GY)

BTE-GY 950X Project in Biotechnology and Entrepreneurship (0.5-3 Credits)

Typically offered Fall, Spring, and Summer terms

This practical course offers students the opportunity to apply practically their knowledge and skills to analyzing technology, preparing their own business plans or working at an early-stage biotech company. | Prerequisite: Adviser's approval.

Grading: Grad Poly Graded

Repeatable for additional credit: Yes

BTE-GY 6023 Biotechnology and Health Care (3 Credits)

Typically offered Fall

The contribution of biotechnology to modern health care stretches far beyond developing therapeutic entities. This course provides an overview of key cutting-edge technologies such as stem-cell research and therapeutic cloning and demonstrates how their applications change "the conventional" for the availability of new treatments, monitoring services and diagnostics. The course examines the Human Genome Projects and its implications for health care and epigenetic modifications of the genome and their role in disease. The course also highlights the role of biotechnology in managing several sociologically high-impact diseases, in developed and developing countries. | Prerequisite: Adviser's approval.

Grading: Grad Poly Graded

Repeatable for additional credit: No

BTE-GY 6033 Biosensors and Biochips (3 Credits)

Typically offered Fall

Biosensors and biochips are two of the most exciting, complex and fast-growing areas of biotechnology today—the interface between biotechnology, nanotechnology and micro-electronics industries. The course covers conventional biosensors based on whole cells, nucleic acids, antibodies and enzymes (e.g. enzymatic glucose monitoring) as well as new and emerging technologies related to designing, fabricating and applying multi-array biochips and micro-fluidic systems (lab-on-the-chip). The goal is to familiarize students with basic principles of biosensors design and applications. The course also covers practical applications of this technology in health care, medical diagnostics, defense and other areas. | Prerequisite: Adviser's approval.

Grading: Grad Poly Graded

Repeatable for additional credit: No

BTE-GY 6043 Biocatalysis in Industry (3 Credits)

Typically offered Spring

The course focuses on the commercial use of biological catalysts across various industry segments, including pharmaceuticals, health care, fine chemicals and food. The course combines a broad overview of cutting-edge technologies with industrial insights into the economics of bio-processing and deals with newly emerging trends in biomaterials. Case studies are presented to facilitate analysis, formulate trends and underline major challenges. | Prerequisite: Adviser's approval.

Grading: Grad Poly Graded

Repeatable for additional credit: No

BTE-GY 7023 Pharma Asset Strategy (3 Credits)

Typically offered Fall

Pharmaceutical drug development can take years and billions of dollars to place one drug into the market. At the core of any drug development strategy is expectation of how well the therapy of interest would perform and what financial returns are to be expected. This course is aimed at familiarizing students with understanding pharma asset strategy, including understanding the potential of the indication, the therapy's differentiation, and projected financial returns. The course will mimic real-world asset strategy development as applied in industry. | Prerequisites: BT-GY 6013

Grading: Grad Poly Graded

Repeatable for additional credit: No

Prerequisites: BT-GY 6013.

BTE-GY 8733 Capstone Innovation Experience Course (3 Credits)

Typically offered Fall and Spring

The Capstone Innovation Experience course is designed to bridge the gap between academic learning and real-world application for graduate students. This capstone course prepares students by equipping them with essential multidisciplinary prototyping skills and entrepreneurial thinking. Through hands-on labs, customer discovery processes, and collaborative team formation, students will be primed to develop innovative prototypes and understand the journey of transforming ideas into viable commercial ventures. The course exposes students to a broad range of multidisciplinary technologies while providing an entrepreneurial lens leading to innovations culminating into a capstone.

Grading: Grad Poly Graded

Repeatable for additional credit: No

BTE-GY 9513 Project in Biotechnology and Entrepreneurship (3 Credits)

Typically offered Fall, Spring, and Summer terms

This practical course offers students the opportunity to apply practically their knowledge and skills to analyzing technology, preparing their own business plans or working at an early-stage biotech company. Students can enroll in this course after a minimum of two full time semesters in the program. | Prerequisite: Adviser's approval.

Grading: Grad Poly Graded

Repeatable for additional credit: No