

# BIOTECHNOLOGY & ENTREPRENEURSHIP (BTE-GY)

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## **BTE-GY 950X Project in Biotechnology and Entrepreneurship I (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. The student can sign up for three projects. | Prerequisite: Adviser's approval.

**Grading:** Grad Poly Graded

**Repeatable for additional credit:** Yes

## **BTE-GY 6013 Biotechnology and the Pharmaceutical Industry (3 Credits)**

*Typically offered Spring*

The course looks in depth at the modern process of drug development—from the early stage of target identification and generation of lead compounds to the modern methods of drug delivery, and the role of biotechnology in this complex process. The course, featuring significant participation by industry professionals, looks at all key aspects, including preclinical development, clinical trials and regulatory requirements. Real-life case studies illustrate critical points in the development process. M major classes of biotech drugs are discussed. Many lectures are delivered by scientists from major U.S. pharmaceutical companies. | Prerequisite: Adviser's approval.

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**Grading:** Grad Poly Graded

**Repeatable for additional credit:** No

## **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 9513 Project in Biotechnology and Entrepreneurship II (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. The student can sign up for three projects. | Prerequisite: Adviser's approval.

**Grading:** Grad Poly Graded

**Repeatable for additional credit:** No

## **BTE-GY 9523 PROJECT IN BIOTECHNOLOGY AND ENTREPRENEURSHIP III (3 Credits)**

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. The student can sign up for three projects. | Prerequisite: Adviser's approval.

**Grading:** Grad Poly Graded

**Repeatable for additional credit:** No