

Biotechnology (BIOT)

BIOT 5007 Lab Applications of BIOTECH 3 Credits

This is a comprehensive hands-on, laboratory-based course that introduces students to core techniques such as electrophoretic analysis of nucleic acids and proteins, polymerase chain reaction (PCR), Southern and Western blotting, ELISA, protein purification, tissue culture, DNA cloning, cell culture and Bioinformatics.

Prerequisites: None

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

BIOT 5008 LAB APPLICATIONS OF BIOCHEM 3 Credits

This is a comprehensive hands-on, laboratory-based course that introduces students to core techniques such as electrophoretic analysis of nucleic acids and proteins, polymerase chain reaction (PCR), Southern and Western blotting, ELISA, protein purification, tissue culture, DNA cloning, cell culture and Bioinformatics.

Prerequisites: None

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

BIOT 5009 Intro to Biotech Industry 3 Credits

The course will cover in-depth various aspects of the Biotechnology Industry. Emphasis will focus on established Biotechnology and BioPharma companies. Topics covered will include intellectual property, products and their market shares, and career opportunities in Biotechnology. Contributions will be made from senior scientists from academia, and business managers from the biotechnology industry and government agencies. Prerequisites: None

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

Mutual exclusion: BCHB 509

Course registration restrictions:

Enrollment is limited to students with a major in Biotechnology, Biotechnology, Biotechnology or Biotechnology.

BIOT 5100 Entrepreneurial Biotechnology 3 Credits

This course gives an introduction to problems and opportunities of start-up biotechnology companies and provides in-depth look at starting a biotechnology company to exit strategies for investors. Students will develop and report assigned case studies based on their ideas for start up biotechnology companies. Contributions will be made from senior venture capitalists, industrial scientists and business managers. Prerequisites: None

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

Mutual exclusion: BCHB 510

Course registration restrictions:

Enrollment is limited to students with a major in Biotechnology, Biotechnology, Biotechnology or Biotechnology.

BIOT 5160 Molecular Medicine 2 Credits

This course provides students with an overview of the entire Drug Development process, from inception of discovery to the final marketed product and review of the principles underlying preclinical and clinical development of new therapeutic drugs and procedures. Presentations will describe and evaluate specific examples, and discussions to include regulatory, financial and ethical regulations that apply to Drug Development. Prerequisites: None

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

Mutual exclusion: BCHB 516

Course registration restrictions:

Enrollment is limited to students with a major in Biochemistry Molecular Biol, Biochemistry Molecular Biol, Biochemistry Molecular Biol, Biochemistry Molecular Biol, Biotechnology, Biotechnology, Biotechnology or Biotechnology.

BIOT 5190 Medical Toxicology 2 Credits

This course will introduce students to the foundational concepts of Toxicology and Pharmacology. Topics to be discussed will include major classifications of toxicants and drugs as they relate to organ systems or major pathophysiological disease effects such substances are likely to engender. Toxic substances in Foods, Water and Medicines will be discussed as well as in Industrial chemical substances that can be encountered in environments at work, home and at leisure. This course has a lab component. Prerequisites: None

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

BIOT 5200 Financial Matrix in Biotech 1 Credit

The course focuses on the importance of financials and how it directs various aspects of a biotechnology company. Emphasis will be on the basics of accounting and establishing a company budget.

Prerequisites: None

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

Mutual exclusion: BCHB 520

Course registration restrictions:

Enrollment is limited to students with a major in Biotechnology, Biotechnology, Biotechnology or Biotechnology.

BIOT 5220 DRUG TARGETS/DRUG DESIGN 2 Credits

This course is designed to provide students with a comprehensive background in the history of pharmacology and therapeutics leading to the current theory and practice of drug design and basic pharmacology, biochemistry, molecular biology and bioinformatics concepts that drive it. An understanding of fundamental biological and biotechnological concepts required to assess current and future approaches to drug discovery along the "critical path" from basic biomedical research to identification of cellular and molecular mechanisms of disease, drug targets, and rational design and high throughput screening of drug candidates will be gained. Prerequisites: None

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

BIOT 5230 Intellectual Property 2 Credits

The course provides an opportunity for students to learn about intellectual property rights and their uses in biotechnology.

Topics addressed include: rights conferred by different types of intellectual property; the uses of biotechnology patents; determining "patentability," interpreting the rights conferred by a patent; the patent-granting system in the US and elsewhere, patent costs and values; and the post grant processes for enforcing and challenging US patents. Prerequisites: None

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

Mutual exclusion: BCHB 523

Course registration restrictions:

Enrollment is limited to students with a major in Biochemistry Molecular Biol, Biochemistry Molecular Biol, Biochemistry Molecular Biol, Biochemistry Molecular Biol, Biotechnology, Biotechnology, Biotechnology or Biotechnology.

BIOT 5250 Immunobiotechnology 2 Credits

Immunobiotechnology introduces students to applications of immunology and immunochemistry in biotechnology. The applications range from antibodies as tools in Over-The-Counter and research immunoassays to genetic and molecular modifications of cells reactive in cancer immunotherapy. The immunological and immunochemical basis for these applications are stressed. Prerequisites: None

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

BIOT 5260 CORE METHODS IN BIOTECHNOLOGY 3 Credits

This course introduces the student to the scientific methodology of biotechnology and biochemistry. Topics include analysis, purification, and quantification of nucleic acids and proteins, PCR and qPCR applications, DNA microarrays, next generation sequencing, basic and advanced cloning techniques, protein-protein interactions, molecular diagnostics, protein and nucleic acid therapeutics, molecular vaccines, bionanotechnology, plant biotechnology, and product development.

Prerequisites: None

Level: Graduate, Undergraduate

Course attribute:

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

BIOT 5270 Food, Agri. Env. Biotech. 1 or 2 Credits

The Food Biotechnology course provides an introduction to the fascinating field of biotechnology and its role in the food industry. With broad-brush strokes, it covers many facets of the world of foods, which is very diverse yet very personal to all of us. The topics covered relate to food ingredients, fermentations, bioterrorism, FDA regulations, rapid detection techniques of foodborne pathogens, chemical senses, nutrigenomics and nutraceuticals. Laboratory component is provided as part of the course. Prerequisites: None

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

Mutual exclusion: BCHB 527

Course registration restrictions:

Enrollment is limited to students with a major in Biochemistry Molecular Biol, Biochemistry Molecular Biol, Biochemistry Molecular Biol, Biochemistry Molecular Biol, Biotechnology, Biotechnology, Biotechnology or Biotechnology.

BIOT 5310 DNA Damage, Repair Hmn Thrpy 1 Credit

DNA is the most important biological macromolecule in the cell. As such, it is the only macromolecule that can be repaired, all others are simply resynthesized. These DNA maintenance pathways are a hotbed of current medical research. Indeed, DNA damage and repair are used in next-generation genome editing (CRISPR/TALEN/ Zinc finger), cancer therapies (DNA damaging agents) and synthetic lethality (DNA repair inhibitors). The focus of this course will be the current and emerging clinical approaches that use DNA modification for therapeutic advantage. Because of the cutting-edge nature of the subject matter, a series of weekly readings and related current news items will augment lecture material.

Pre-requisites: Some familiarity with molecular biology and genetics through either formal coursework or tutorials will be helpful in understanding course.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

BIOT 5370 Protein Prod. Bioprocessing 3 Credits

This is an intense hands-on course that will cover various aspects of fermentation and bioprocessing. Students will use bioreactors to grow cells for purification of different biologics. Permission of the Instructor

Level: Graduate, Undergraduate

Prerequisites: (BCHB 507 or BIOT 5007) or (BCHB 508 or BIOT 5008)

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

BIOT 5390 Basic Laboratory Safety

This is a required course for any student who will be in a course with a lab component. *Prerequisites:* None

Level: Graduate, Undergraduate

Grading: Pass/Fail Default

Course registration restrictions:

Enrollment is limited to students with a major in Biochemistry Molecular Biol, Biochemistry Molecular Biol, Biochemistry Molecular Biol, Biochemistry Molecular Biol, Biotechnology, Biotechnology, Biotechnology or Biotechnology.

Enrollment is limited to Graduate level students.

BIOT 5400 Vaccine Development 1 Credit

This one credit course will discuss the following: Vaccine types, history of vaccine development, laboratory development and scale up of vaccines, delivery systems, adjuvants, quality risk management during the vaccine development and manufacturing process, immune response monitoring, antibody development and efficacies.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to students with a program in Biotechnology, Biotechnology, Biotechnology or Biotechnology.

BIOT 5430 Intro to GMP, CMC Reg Policy 1 Credit

This course is designed to familiarize students with Current Good Manufacturing Practices (cGMP), Current Good Laboratory Practices (cGLP), and the regulations that guide the manufacture of FDA-approved biopharmaceutical and biotechnology products.

Prerequisites: Basic background in Biochemistry and/or Biotechnology

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

Mutual exclusion: BCHB 543

Course registration restrictions:

Enrollment is limited to students with a major in Biochemistry Molecular Biol, Biochemistry Molecular Biol, Biochemistry Molecular Biol, Biochemistry Molecular Biol, Biotechnology, Biotechnology, Biotechnology or Biotechnology.

BIOT 5490 Basic Radiation Safety

This is a required course for any student who will be in a lab that uses radioactive isotopes. *Prerequisites:* None

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to students with a major in Biochemistry Molecular Biol, Biochemistry Molecular Biol, Biochemistry Molecular Biol, Biochemistry Molecular Biol, Biotechnology, Biotechnology, Biotechnology or Biotechnology.

Enrollment is limited to Graduate level students.

BIOT 5500 Management Strats: Biotech 1 Credit

The complex, multi-disciplinary nature of the biotechnology industry requires that managers develop effective strategies for key aspects of their business. This course examines how biotechnology company executives approach strategic issues that are critical to their firm's success: Developing pipeline assets, making portfolio investment decisions, creating a culture of high-performing individuals and cross-functional teams, and ensuring supply of clinical and commercial product while continually driving process innovation. *Prerequisites:* None

Level: Graduate, Undergraduate

Prerequisites: (BIOT 509 (may be taken concurrently) or BIOT 5009 (may be taken concurrently)) or (BIOT 510 (may be taken concurrently) or BIOT 5100 (may be taken concurrently))

Grading: Main Campus (UGrad, Grad)

Mutual exclusion: BCHB 550

Course registration restrictions:

Enrollment is limited to students with a major in Biotechnology, Biotechnology, Biotechnology or Biotechnology.

Enrollment limited to students in the MS-BCHB or MS-BIOT programs.

BIOT 5510 Commercialization:Biotech Ind 1 Credit

The course will provide an overview of the commercialization process for complex biologics. It will focus on the key tools, analytics, strategies and tactics that apply in healthcare sales and marketing. By the end of the course students will have a basic understanding of the following: The role of Commercial Operations in a biopharmaceutical company; The relationship between marketing, sales, commercial operations and managed markets; How commercial operations impact research and development as early as Candidate Drug nomination; The differences in promoting medicines versus consumer goods; How technology drives disease awareness and product choice by educating the provider and patient communities. *Prerequisites:* None

Level: Graduate, Undergraduate

Prerequisites: (BIOT 509 (may be taken concurrently) or BIOT 5009 (may be taken concurrently)) or (BIOT 510 (may be taken concurrently) or BIOT 5100 (may be taken concurrently))

Grading: Main Campus (UGrad, Grad)

Mutual exclusion: BCHB 551

Course registration restrictions:

Enrollment is limited to students with a major in Biotechnology, Biotechnology, Biotechnology or Biotechnology.

Enrollment limited to students in the MS-BCHB or MS-BIOT programs.

BIOT 5520 Marketing Applications:Biotech 1 Credit

Discovery drives the life science industry but how value is determined in the inventor's laboratory can be different than in the marketplace. The role of marketing allows for the value of a product to be described in terms of the customer. The value of that product is key to projecting sales, obtaining investments, finding partners and launching the product. This course provides an introduction to the strategic and tactical considerations employed by marketing to create customer value. Students will be exposed to basic marketing and sales concepts with examples that draw from participants and situations in the life science industry. The course provides an approach for understanding the marketplace as a basis for developing, pricing, promoting and distributing products and services that satisfy customer needs.

Prerequisites: None

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

Mutual exclusion: BCHB 552

Course registration restrictions:

Enrollment is limited to students with a major in Biotechnology, Biotechnology, Biotechnology or Biotechnology.

BIOT 5550 Biotech, the Fed. Govt and You 1 Credit

Biotechnology intersects many agencies in the U.S. Federal government in unexpected ways. There are many types of careers across these agencies in science, science administration, program management and analysis, technology development and more. The U.S. government hires not only U.S. citizens, but also permanent residents, trainees, and contractors, which can include foreign talent. Learn how the executive branch of U.S. government is structured, the ins and outs of where Federal and contractor jobs are posted, preparing a federal resume, and how to apply and get hired for various positions. Guest speakers will include experts in the federal hiring process, NIH administrators and science administrators and experts from other agencies that will explain their part in the federal workforce, hiring strategies and specifics, and how you fit into that. The class will also include interactive sessions.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

Mutual exclusion: BCHB 555

Course registration restrictions:

Enrollment is limited to students with a major in Biochemistry Molecular Biol, Biochemistry Molecular Biol, Biochemistry Molecular Biol or Biochemistry Molecular Biol.

BIOT 5570 Strategic Leadership:Sci Tech 1 Credit

This course is designed to give an overview of strategic leadership in science and technology and prepare individuals take on these roles. An understanding and appreciation of Strategic Leadership in Science and Technology will position students to make the most of their career opportunities starting at the MS level and in the future. Therefore, this program is aimed at Master-level student who aspire to leadership roles in research. The program is based on the 5R's model (Dormer) of Scientific and Technology leadership and will include learning concepts of strategic thinking, organizational context, understanding your leadership style, team dynamics, decision-making, conflict management, change management and project and portfolio management.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to students with a major in Biochemistry Molecular Biol, Biochemistry Molecular Biol, Biochemistry Molecular Biol, Biochemistry Molecular Biol, Biotechnology, Biotechnology, Biotechnology or Biotechnology.

BIOT 5590 New Frontiers of Biotechnology 1 Credit

This course will examine new technologies and ways to license them from the Lawrence Livermore National Laboratory. A majority of the presentations will be teleconferenced. Prerequisites: None

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

Mutual exclusion: BCHB 559

Course registration restrictions:

Enrollment is limited to students with a major in Biochemistry Molecular Biol, Biochemistry Molecular Biol, Biochemistry Molecular Biol, Biochemistry Molecular Biol, Biotechnology, Biotechnology, Biotechnology or Biotechnology.

BIOT 5660 Drug Dev. to Post Approval 1 Credit

A one credit course delivered over two weekends and 14 hours of class time. Assignments covering two of the segments of development. No textbook. Assignments and research from a rich public domain. Instructor will guide students in research and provide relevant articles, cases and personal experience.

Level: Graduate, Undergraduate

Prerequisites: (BIOT 509 (may be taken concurrently) or BIOT 5009 (may be taken concurrently)) and (BIOT 510 (may be taken concurrently) or BIOT 5100 (may be taken concurrently))

Grading: Main Campus (UGrad, Grad)

Mutual exclusion: BCHB 566

Course registration restrictions:

Enrollment is limited to students with a major in Biotechnology, Biotechnology, Biotechnology or Biotechnology.

Enrollment limited to students in the MS-BCHB or MS-BIOT programs.

BIOT 5690 Essentials: Med. Toxicology 1 Credit

This course will introduce students to the foundational concepts of Toxicology and Pharmacology. Topics to be discussed will include major classifications of toxicants and drugs as they relate to organ systems or major pathophysiological disease effects such substances are likely to engender. Toxic substances in Foods, Water and Medicines will be discussed as well as in Industrial chemical substances that can be encountered in environments at work, home and at leisure. This course has NO LAB component. Prerequisites: None

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to students with a major in Biotechnology, Biotechnology, Biotechnology or Biotechnology.

BIOT 5700 Gene Cell Therapy Strategies 1.5 Credits

Provide students with a high-level understanding of selected strategic considerations for GCT which are distinct from traditional drug development modalities (antibodies, vaccines, small molecules, etc.).

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to students with a major in Biochemistry Molecular Biol, Biochemistry Molecular Biol, Biochemistry Molecular Biol, Biochemistry Molecular Biol, Biotechnology, Biotechnology, Biotechnology or Biotechnology.

BIOT 6002 Intro: Tools Entrepreneurship 2 Credits

Successful entrepreneurship requires understanding and mastering basic tools that are essential to initiating and building a successful company. While the path for each company is unique, this course will concentrate on core principles that are ingredients for success. Many startup companies are known to fail for one or more reasons that can be avoided. Several guests who have successfully started biotechnology companies will present their individual paths to building their companies. Independent studies will include analysis of successes and failures of startups. Exposure to NIH SBIR and SBA funding and independently writing of a business plans will be included. Students will identify internships in startup small companies and with individuals who have started companies that have been able to succeed in bringing products to market.

Level: Graduate

Prerequisites: BIOT 604

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Students cannot enroll who have a program in Biotechnology, Biotechnology, Biotechnology or Biotechnology.

Enrollment is limited to Graduate level students.

BIOT 6007 Research Applications: Biotech 3 Credits

This course will give students an opportunity to expand their Biotechnology Laboratory Skills beyond the basic level introduced in BCHB-507, 508. Students will apply common biotechnology techniques used in research. They will also receive "hands on" experience in advanced laboratory techniques that includes gene cloning, protein expression and purification, protein assays, cell culture, flow cytometry, qPCR and ELISA. Permission of the Instructor Required. Prerequisites: Molecular biology laboratory experience

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

BIOT 6008 Research Applications:Biotech 3 Credits

This course will give students an opportunity to expand their Biotechnology Laboratory Skills beyond the basic level introduced in BCHB-507, 508. Students will apply common biotechnology techniques used in research. They will also receive "hands on" experience in advanced laboratory techniques that includes gene cloning, protein expression and purification, protein assays, cell culture, flow cytometry, qPCR and ELISA. Permission of the Instructor Required. Prerequisites: Molecular biology laboratory experience

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

BIOT 6100 Biomed.Tiss.Eng. 3D Cell Cul 2 Credits

3-dimensional (3D) cell culture system is an important study model in drug discovery pipeline for its better mimicry of cellular microenvironment in vivo. This course will introduce students to essential cell culture concepts and techniques. In particular, it will focus on hands-on laboratory training of spheroid culture from tumor cells and organoid culture from primary cells. Different 3D culture techniques will be introduced including scaffold based and non-scaffold based. High throughput drug toxicity screening will be performed to examine effects in tumor proliferation, apoptosis, and invasion. Students will be exposed to the biomedical assays to screen for personalized medicine.

Level: Graduate

Prerequisites: (BCHB 507 or BIOT 5007) or (BCHB 508 or BIOT 5008)

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to students with a major in Biochemistry Molecular Biol, Biochemistry Molecular Biol, Biochemistry Molecular Biol, Biochemistry Molecular Biol, Biotechnology, Biotechnology, Biotechnology or Biotechnology.

Enrollment is limited to Graduate level students.

BIOT 6300 Broad Aspects of AI in Biotech 1 Credit

Artificial Intelligence (AI) is rapidly transforming biotechnology industries with the potential to change medicine, chemical manufacturing, food production, and beyond. Many of the applications require biotech companies to understand the potential of AI as well as their limitations. This course is designed to provide students with a high-level understanding of key industry trends in AI, broad description of all the different AI techniques and concepts (Machine learning, neural networks, computer vision, overfitting, big data, strategic considerations for the development and commercialization of successful data pipelines and paradigm changes for biotech, health care providers, and regulators. This course will not include in-depth discussion of the scientific and technical aspects of AI. Rather, we will focus on key areas of AI where companies must think differently about strategies for developing and delivering these products.

Level: Graduate

Grading: Main Campus (UGrad, Grad)

BIOT 6430 Regulatory Affairs in Biotech 1 Credit

To work in the pharmaceutical industry, familiarity with Federal Regulations that govern the field is required. Final drug product regulations from 21 CFR 211, otherwise known as the current Good Manufacturing Practices and other regulations will be covered using real-life examples from the pharmaceutical industry. Current hot topics and FDA areas of concern will be highlighted. Prerequisites: None

Level: Graduate

Prerequisites: (BIOT 509 (may be taken concurrently) or BIOT 5009 (may be taken concurrently)) or (BIOT 510 (may be taken concurrently) or BIOT 5100 (may be taken concurrently))

Grading: Main Campus (UGrad, Grad)

Mutual exclusion: BCHB 643

Course registration restrictions:

Enrollment is limited to students with a major in Biotechnology, Biotechnology, Biotechnology or Biotechnology.

Enrollment is limited to Graduate level students.

BIOT 6590 Intro Biotechnology Internship

This required course serves to inform, advise and prepare Biotechnology students to securing an Internship for their capstone course (BCHB-502, BCHB-538). Prerequisites: MS Biotechnology students only

Level: Graduate

Grading: Pass/Fail Default

Mutual exclusion: BCHB 590

Course registration restrictions:

Enrollment is limited to students with a major in Biotechnology, Biotechnology, Biotechnology or Biotechnology.

Enrollment is limited to Graduate level students.

BIOT 7000 Scientific Presn. English 1 Credit

This course involves development and enhancement of the ability to write and revise a scientific poster presentation. Instruction regarding data organization, scientific grammar and vocabulary will be emphasized. *Credit NOT included in the 30-credit degree requirement

Level: Graduate

Grading: Pass/Fail Default

Course registration restrictions:

Enrollment is limited to students with a major in Biotechnology, Biotechnology, Biotechnology or Biotechnology.

Enrollment is limited to Graduate level students.

BIOT 7003 Convrs Engl for Int'l Students 1 Credit

This Conversational English course allows you to practice simple conversational techniques that will give you confidence when meeting and greeting people using the English language as well as reviewing basic auxiliary verbs, main verbs, adjectives and open questions. It is ideal for those who want to improve their basic conversational English and will help learners on their way to becoming more confident when communicating during employment interviews and course presentations.

Level: Graduate

Grading: Pass/Fail Default

Course registration restrictions:

Enrollment is limited to students with a major in Biotechnology, Biotechnology, Biotechnology or Biotechnology.

Enrollment is limited to Graduate level students.

BIOT 7130 Principles of Biochemistry 3 Credits

This course covers various biochemistry topics with emphasis on principles of biochemical reactions, nucleic acid and protein production and function, molecular signal transduction and biotechnology.

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to students with a major in Biotechnology, Biotechnology, Biotechnology or Biotechnology.

Enrollment is limited to Graduate level students.

BIOT 7950 Biotech Capstone Intrnshp 4 Credits

This is the capstone course in which students will be working to pursue defined objectives at companies in the biotechnology industry, at government agencies and at institutions in the Washington, DC Metropolitan area. Internships can be in basic research, business functions, industrial and biomedical sciences, law or finance .

Prerequisites: BCHB-590 Introduction to Biotechnology Internship

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

Mutual exclusion: BCHB 502

Course registration restrictions:

Enrollment is limited to students with a major in Biotechnology, Biotechnology, Biotechnology or Biotechnology.

Enrollment is limited to Graduate level students.

BIOT 7951 FNLCR - Summer Internship

The opportunity to be a Georgetown University Frederick National Laboratory for Cancer Research (GU/FNLCR) Summer Scholar in Frederick, MD is available to fall and spring MS in Biotechnology students. This is a 10-week full-time internship. Internship projects are available in research labs as well as the Industrial Partnerships Office. Selection of students is done in March. By Invitation Only.

Level: Graduate

Prerequisites: (BIOT 502 or BIOT 7950)

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

BIOT 7952 LLNL Summer Internship

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Mutual exclusion: BCHB 612

Course registration restrictions:

Enrollment is limited to Graduate level students.

BIOT 8000 Spec.Top: Adv. Biotech Reading 2 Credits

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

BIOT 8001 Portfolio Project Management 1 Credit

Biopharmaceutical companies frequently face a strategic dilemma – too many potential projects and not enough resources to pursue them all. This course will provide students with an overview of the key analyses, processes and decisions companies take to optimize their portfolio of product development projects. It will draw from real-world examples and incorporate industry professionals as guest lecturers, and students will gain “hands on” experience from simulations and small group project teams. Prerequisites: None

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Mutual exclusion: BCHB 801

Course registration restrictions:

Enrollment is limited to students with a major in Biotechnology, Biotechnology, Biotechnology or Biotechnology.

Enrollment is limited to Graduate level students.

BIOT 9991 Continuous Registration

Level: Graduate, Undergraduate

Grading: No Grade

Course registration restrictions:

Enrollment is limited to Graduate level students.

BIOT 9992 Continuous Registration

Level: Graduate, Undergraduate

Grading: No Grade

Course registration restrictions:

Enrollment is limited to Graduate level students.

BIOT 9993 Continuous Registration

Level: Graduate, Undergraduate

Grading: No Grade

Course registration restrictions:

Enrollment is limited to Graduate level students.

BIOT 9994 Continuous Registration

Level: Graduate, Undergraduate

Grading: No Grade

Course registration restrictions:

Enrollment is limited to Graduate level students.