EXPERIMENTAL BIOTECHNOLOGY, GRADUATE CERTIFICATE

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Credential: Graduate Certificate
Field of Study: Experimental Biotechnology

Program Overview
The Certificate Program in Experimental Biotechnology program prepares students for employment opportunities in biotechnology as researchers in academia or the biotechnology industry. It provides hands-on experience and marketable skills in biochemistry, molecular biology, and biotechnology. The program can be completed in one year of full-time study or two years of part-time study. Part-time study is ideal for those who wish to pursue the certificate while they are working.

The certificate is offered by the Biochemistry Department. For more information please visit the Certificate in Experimental Biotechnology page on the department's website.

Graduate Policies
For graduate policies and procedures, please review the School of Graduate Studies section of the General Bulletin.

Program Requirements
The program has the following components:

• Classroom courses provide a strong academic foundation in biochemistry and molecular biology (BIOC 407 and BIOC 408, 8 hours).
• Classroom courses about experimental design and the practice of biotechnology (BIOC 501 and BIOC 511, 4 credit hours), cover experimental design, documentation of experiments, and professional skills.
• Laboratory courses (BIOC 500, BIOC 502A, BIOC 502B, and BIOC 502C, 6 credit hours) provide hands-on experience in recombinant protein production, mammalian cell culture, molecular and cell biology, protein detection, immunocytocchemistry, and mass spectrometry. During these courses, students receive expert mentoring to help them become proficient in these areas.

Sample Plan of Study
Full Time Schedule
First Year
Fall
BIOC 407 Introduction to Biochemistry: From Molecules To Medical Science 4
BIOC 500 Biotechnology Laboratory: Molecular Biology Basics ** 1

Spring
BIOC 501 Biochemical and Cellular Techniques for Biotechnology 3
BIOC 511 Practice and Professionalism in Biotechnology 1

Total Hours 18

Part Time Schedule
First Year
Fall
BIOC 500 Biotechnology Laboratory: Molecular Biology Basics ** 1
BIOC 501 Biochemical and Cellular Techniques for Biotechnology 3
BIOC 511 Practice and Professionalism in Biotechnology 1

Spring
BIOC 502A Biotechnology Laboratory: Molecular Biology and Biochemical Techniques 2
BIOC 502C Biotechnology Laboratory: Mass Spectrometry Techniques 1

Total Hours 18

Second Year
Fall
BIOC 407 Introduction to Biochemistry: From Molecules To Medical Science 4

Spring
BIOC 502B Biotechnology Laboratory: Eukaryotic Molecular and Cellular Biology 2
BIOC 408 Molecular Biology * 4

Total Hours 6

* Students who have taken equivalent courses at other institutions can substitute other Biochemistry courses (BIOC 412, BIOC 434, BIOC 450) or suitable electives offered by other programs.

** Students may be excused from BIOC 500 if they have taken an equivalent course elsewhere or have learned the material covered in this course through hands-on experience.
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