BIOLOGY

BI-921 Biotechnology and DNA
Applications of recombinant DNA technology, together with business and industry information and government regulations. Includes a three hour laboratory.
Every year. 4 Credits

BI-927 Tissue Culture Techniques
Presents the most important techniques used for mammalian tissue culture by lecture and laboratory demostration and practice. The course also includes topics in plant tissue culture. (Prereq: BS in biological science)
Spring only and every year. 4 Credits

BI-930 Biological Chemistry
Concerns the physical, chemical, and biological properties and metabolism of carbohydrates, proteins, lipids, DNA and RNA.
3 Credits

BI-936 Immunology
Recent advances in understanding the immune system will be covered. B.S. in a biological science is required. This course integrates both lecture and lab activities.
3 Credits

BI-937 Molecular Virology
A study of virus families with emphasis on replication and and regulation of gene expression. B.S. in biology science required. This course integrates both lecture and lab activities.
3 Credits

BI-938 Toxicology
A theoretical course presenting the principles and mechanisms of toxic damage to cells, organs and organisms.
3 Credits

BI-942 Biostatistical Analysis
Prerequisites: Undergraduate degree in Biology, Chemistry or related field Math at the level of college-level pre-calculus or higher.
Provides a foundation in biological data analysis and interpretation. Topics include probability, distribution, estimation, hypothesis testing, analysis of variance, simple and multiple regression, basic multivariate techniques and vital statistics.
Fall only and every 2-3 years. 3 Credits

BI-943 Experimental Design
Prerequisites: Undergraduate degree in Biology, Chemistry or related field completion of a college course in statistics and completion of math which includes pre-calculus or higher level courses.
The underlying principles of how scientific investigations are conducted in order to maximize the validity of the results will be discussed. This course will cover the philosophy of science as it pertains to experiments, methods of experimental design, statistical inference, analysis and presentation of data, and clear communication of scientific results.
Fall only and every 2-3 years. 3 Credits

BI-950 Physiological Ecology
Considers the physiological adjustments which animals make in response to environmental factors; emphasizes the physiological basis of animal evolution and distribution.
3 Credits

BI-980 Selected Topics: Advanced Biology
Each topic is a timely and exciting new lecture and/or laboratory course. Topics will be announced in advance and will service needs in growth areas; e.g., biotechnology.
1-4 Credits

BI-981 Independent Study in Biology/ Biotechnology
Independent study or directed study on a topic of interest to both the student(s) and the instructor.
Other or on demand. 1-6 Credits

BI-985 Graduate Internship in Biology/ Biotechnology
Requires successful completion of a minimum of twelve graduate credits toward the degree and approval of the Biology faculty. Provides Master of Science candidates the chance to gain practical experience at off-campus agencies where technical and analytical skills can be gained.
3-4 Credits

BI-990 Seminar in Biology/Biotechnology
Study and discussion of current researches, books, and periodicals in the field of biology; includes reports of research in progress.
3 Credits

BI-995 Research in Biology/Biotechnology
Original research in biology under faculty supervision. Requires an acceptable written thesis or paper in publishable format.
1-6 Credits

BI-996 Thesis Research I
Prerequisites: Completion of at least four courses in the program, completion of BI-942 Biostatistical Analysis or BI-943 Experimental Design (or taken concurrently) and permission of the Program Coordinator. Matriculated students only.
Original research in biology or biotechnology under faculty supervision, leading to a thesis, written in an approved format. A research problem will be identified and a literature search conducted. Experiments will be designed, planned and preliminary research work performed.
Fall and Spring and every year. 3 Credits

BI-997 Thesis Research II
Prerequisites: BI-996 Thesis Research I, permission of Program Coordinator. Matriculated students only.
Original research in biology or biotechnology under faculty supervision, leading to a thesis, written in an approved format. Experimental laboratory work will be performed and results evaluated. This course is a continuation of BI 996 Thesis Research I.
Fall and Spring and every year. 4 Credits

BI-998 Thesis Writing
Prerequisites: BI-997 Thesis Research II, permission of Program Coordinator. Matriculated students only.
Original research in biology or biotechnology under faculty supervision, leading to a thesis, written in an approved format. The results of the project experiments will be organized and the findings will be communicated by writing a thesis in the approved format and presenting in an oral defense. This course is a continuation of BI 997 Thesis Research II.
Fall and Spring and every year. 2 Credits