



Course Number	BIOL 2410L Principles of Biology: Genetics Lab
Course Name	
Credit Value (Breakdown of theory and lab credits)	1 Lab
Catalog Course Description	You will experiment in genetics with a focus on bacterial, yeast, plant, and Drosophila models, with an emphasis on supporting concepts from the lecture.
Course Student Learning Outcomes/Objectives /Competencies	<ol style="list-style-type: none"> 1. Be able to conduct library-based research to produce an annotated bibliography or research paper that demonstrates the ability to distill and synthesize the primary literature. 2. Be able to verbally present a synthesis and interpretation of a published paper from the primary literature. 3. Be able to demonstrate critical thinking skills by interpreting scientific data, formulating a scientific hypothesis, and proposing an experiment to test a scientific hypothesis. (HED Area 3, Competency 1,2,4,5) 4. Be able to solve genetics problems involving single-gene, X-linked, and non-Mendelian inheritance patterns. 5. Be able to conduct Chi-Square statistical analysis on genetics data. 6. Be able to describe the processes of DNA replication, transcription and translation. 7. Be able to compare and contrast the processes of gene regulation in prokaryotes versus eukaryotes. 8. Be able to understand how high-throughput experiments are carried out and analyzed. (HED Area 3, Competency 3,4) 9. Be able to apply understanding of recombinant DNA techniques and RNA-sequencing analysis in the biomedical sciences, biotechnology and/or bioengineering. 10. Be able to describe applications of structural, functional or comparative genomics in the biomedical sciences, biotechnology and/or bioengineering.
College-Wide Student Learning Outcomes measured (General education courses only)	
Program Student Learning Outcomes measured	<ol style="list-style-type: none"> 1. Provide students with broad conceptual background in biological sciences which will enable them to attain an understanding of organismal form, function, diversity, evolution, ecology, mendelian and molecular genetics, cell structure, function and physiology and molecular processes.