

BSC - Bioscience Technology

Courses

BSC 100 Survey of Bioscience and Biotechnology **2 Credits. 2 Lecture Hours. 0 Lab Hour.**

An introductory course on the disciplines and scope of bioscience and biotechnology. Topics include: applications of bioscience and biotechnology, medical advances, bioethics, current developments, and career opportunities.

Prerequisites: None

BSC 115 Introduction to Bioscience **4 Credits. 3 Lecture Hours. 3 Lab Hours.**

An introductory course on techniques, methodology, skills, and regulations used in bioscience/biotechnical laboratory settings. Topics include: standard operating procedures (SOPs) including record-keeping and data analysis, aseptic technique, solution and media preparation, laboratory management, and foundational elements of microscopy, microbiology, spectroscopy, genetic engineering, animal models in research, and troubleshooting experiments and protocols. Prerequisites: BIO 111 or BIO 131, and CHE 110 or CHE 121 and CHE 131 (minimum grade C for all)

BSC 120 Cell Culture **2 Credits. 0 Lecture Hour. 6 Lab Hours.**

A course on skills and techniques necessary to perform cell culture. Topics include: cell counts, biosafety, plant culture, yeast culture, mammalian cell culture, and fermentation techniques.

Prerequisites: BSC 115

BSC 150 Scientific Literacy for Bioscience **2 Credits. 2 Lecture Hours. 0 Lab Hour.**

A course on reading, writing, and speaking skills for science professionals. Topics include: style and structure for scientific journal articles, the peer review process, and oral presentations of scientific information.

Prerequisites: ENG 101

BSC 160 Quality and Compliance in Biomanufacturing **3 Credits. 3 Lecture Hours. 0 Lab Hour.**

A course on quality assurance elements in biomanufacturing industries. Topics include: current Good Manufacturing Practices (cGMPs), lean manufacturing and Six Sigma, root cause analysis, validation and calibration, and regulatory compliance. Students must attend field trips to local biomanufacturing companies.

Prerequisites: BSC 108

BSC 191 Part-Time Cooperative Education 1: Bioscience **1 Credit. 1 Lecture Hour. 20 Lab Hours.**

Students seeking an associate's degree or certificate participate in their first part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures in order to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: BSC 115, and BSC 205 or BSC 210 (minimum grade C for all)

BSC 192 Part-Time Cooperative Education 2: Bioscience **1 Credit. 1 Lecture Hour. 20 Lab Hours.**

Students seeking an associate's degree participate in their second part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures in order to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: BSC 191

BSC 205 Molecular Genetics in Bioscience **5 Credits. 2 Lecture Hours. 6 Lab Hours.**

A course on molecular genetics techniques. Topics include: DNA and RNA isolation and purification, constructing screening libraries, electrophoresis, vector construction, Southern blot, PCR, DNA sequencing, and microarrays.

Prerequisites: BSC 115 (minimum grade C)

Instructor Consent Required

BSC 210 Proteomics in Bioscience **5 Credits. 2 Lecture Hours. 6 Lab Hours.**

A course on isolation, purification, and analysis of proteins from cells. Topics include: chromatography, electrophoresis, Western blot, enzyme assays, proteomics, ELISA, and other immunochemistry methods for detecting proteins.

Prerequisites: BSC 115 (minimum grade C)

BSC 230 Introduction to Bioinformatics **3 Credits. 3 Lecture Hours. 0 Lab Hour.**

A course on computer applications, statistics, and genetics used in computational biology and bioinformatics. Topics include: the Human Genome and Human Proteome projects, multiple sequence analysis, genetic conditions and trends, and use of databases such as BLAST, FASTA, and Entrez.

Prerequisites: BIO 111 or BIO 131

BSC 280 Bioscience Capstone Project **2 Credits. 0 Lecture Hour. 4 Lab Hours.**

Students design and perform a project under the supervision of a Bioscience instructor. Topics include: planning a budget, and documenting project results.

Prerequisites: BIO 132, and (BSC 205 or BSC 210)

BSC 291 Full-Time Cooperative Education 1: Bioscience **2 Credits. 1 Lecture Hour. 40 Lab Hours.**

Students seeking an associate's degree participate in their first full-time field learning experience related to their degree. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: BSC 115, and BSC 205 or BSC 210 (minimum grade C for all)

BSC 294 Internship 1: Bioscience **2 Credits. 1 Lecture Hour. 40 Lab Hours.**

Students seeking an associate's degree participate in their first unpaid field learning experience related to their degree. Students must follow applicable policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: BSC 115, and BSC 205 or BSC 210 (minimum grade C for all)