

# BSC

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## 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: AFM 085 and AFM 095, or appropriate placement test scores

### **BSC 105 Laboratory Skills for Bioscience**

**3 Credits. 2 Lecture Hours. 3 Lab Hours.**

A course on skills required for safe and regulated work in a laboratory environment. Topics include: lab documentation, safety, measurements and calculations, making solutions, and aseptic technique.

Prerequisites: BIO 111, or AFL 085 and AFM 095 or appropriate placement test scores, and HS biology within the last 7 years (minimum grade C)

### **BSC 110 Biomanufacturing Workplace Regulations**

**3 Credits. 3 Lecture Hours. 0 Lab Hour.**

A course on the regulatory environment of biomanufacturing. Topics include: scope of the biomanufacturing industry; regulations such as CRF 21, GMP, GLP, and GCP; and writing and following SOPs, batch records, and FDA warning letters and 483 notices.

Prerequisites: AFL 085 and AFM 095, or appropriate placement test scores

### **BSC 115 Bioscience Laboratory Methods**

**3 Credits. 2 Lecture Hours. 3 Lab Hours.**

A course on techniques used in Bioscience laboratories. Topics include: microscopy, aseptic technique, growth and identification of microbes, spectroscopy, genetic transformation, DNA isolation, and troubleshooting experiments.

Prerequisites: BSC 105, and ( BIO 111 or BIO 131), and CHE 100 or high school chemistry within the past 7 years and (ENG 101 or ENG REQC) (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: None

### **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 110

### **BSC 191 Part-Time Cooperative Education 1: Bioscience**

**1 Credit. 1 Lecture Hour. 20 Lab Hours.**

Students seeking an associate's degree 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: BIO 132 and (BSC 205 or BSC 210) (minimum grade C for all)

### **BSC 198 First Year Special Topics in Bioscience**

**1-9 Credits. 0 Lecture Hour. 0 Lab Hour.**

A course on selected topics related to Bioscience, which gives students opportunities to study information not currently covered in other courses. Grades issued are A, B, C, D, or F.

Prerequisites: None

### **BSC 199 First Year Independent Project in Bioscience**

**1-9 Credits. 0 Lecture Hour. 0 Lab Hour.**

A project related to Bioscience that is completed by one or more students to meet specific educational goals. Projects must have prior approval and supervision by Bioscience faculty. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: Vary by section

**BSC 205 Molecular Genetics Laboratory**

**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, and MAT 121 or MAT 151 (minimum grade C for all)

**BSC 210 Protein Purification and Analysis**

**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, and MAT 121 or MAT 151 (minimum grade C for all)

**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: BIO 132 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 issues are Satisfactory or Unsatisfactory.

Prerequisites: BIO 132, BSC 205, or BSC 210 (minimum grade C for all)

**BSC 298 Second Year Special Topics in Bioscience**

**1-9 Credits. 0 Lecture Hour. 0 Lab Hour.**

A course on selected topics related to Biology, which gives students opportunities to study information not currently covered in other courses. Grades issued are A, B, C, D, or F.

Prerequisites: None

**BSC 299 Second Year Independent Project in Bioscience**

**1-9 Credits. 0 Lecture Hour. 0 Lab Hour.**

A project related to Bioscience that is completed by one or more students to meet specific educational goals. Projects must have prior approval and supervision by Bioscience faculty. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: Vary by section