

COURSE SYLLABUS

COURSE: **BIO 280** **BIOTECHNOLOGY**

HOURS: Lecture: 2 Lab: 3 Shop/Clinical: 0 Credits: 3

COURSE DESCRIPTION:

This course provides experience in selected laboratory procedures. Topics include proper laboratory techniques in biology and chemistry. Upon completion, students should be able to identify laboratory techniques and instrumentation in basic biotechnology. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

PREREQUISITE(S): BIO 111, CHM 131 OR CHM 151

COREQUISITE(S): None

TEXTBOOK(S) & OTHER SPECIAL REQUIREMENTS:

Daugherty, Ellyn. *Biotechnology: Science for the New Millennium First Edition Revised Text with Encore CDs Hardback*. Saint Paul, MN: Paradigm Publishing Inc., 2012. Print. ISBN 9780763842857
Readability Level: 11.7

Daugherty, Ellyn. *Biotechnology: Science for the New Millennium First Edition Revised Text Lab Manual*. Saint Paul, MN: Paradigm Publishing Inc., 2012. Print. ISBN 9780763844790
Readability Level: 12

OR **Bundle:** *Biotechnology: Science for the New Millennium First Edition Revised Text with Encore CD and Lab Manual*. Saint Paul, MN: Paradigm Publishing Inc., 2012. Print. ISBN 9780763842888

Or e-text **and** lab manual (Encore CD information is online)
ISBN 9780763842932 (e-text) **and**
ISBN 9780763844790 (lab manual)

STUDENT LEARNING OUTCOMES:

Upon successful completion of this course, the student will be able to:

1. Demonstrate laboratory skills required in the field of biotechnology, such as fermentation, production of foods and biological products.
2. Discuss DNA structure and function, and demonstrate skills working with DNA in a laboratory setting; isolation, gel electrophoresis and PCR techniques.

3. Describe protein structure and function; develop laboratory skills in basic protein production and analysis.
4. Identify key instruments used in biotech product development, utilize equipment in a laboratory setting and show how the instrumentation functions.
5. Discuss applications of recombinant organisms in biotechnology; demonstrate laboratory skills in utilizing this technique.
6. Identify and discuss different applications of biotechnology in the marketplace, such as protein products and chromatography.
7. Discuss biotechnology applications in agriculture, pharmaceuticals and plant genetics and breeding.

SYLLABUS INFORMATION:

The Student Learning Outcomes listed in this syllabus are those required actions that a student who successfully completes the course must be able to perform. The educational experience, however, is a two-way, interactive process involving both the student and the instructor. The student must play an active role in the learning process in order to be successful. Instructors will provide an Instructor's Syllabus at the first class meeting explaining how they measure each of the Student Learning Outcomes. A student who is unable to accomplish the outcomes will not receive a passing grade in the course.

The information in this BCC Syllabus may not be accurate beyond the current semester. Textbooks and other course materials are subject to change. Students should verify the textbooks at the first class meeting with their instructor prior to purchasing.

GRADING SYSTEM:

Brunswick Community College employs a system of letter grades and corresponding quality points per grade to evaluate a student's performance in meeting the stated goals and objectives for each course. The grading system is published in the [BCC Catalog and Student Handbook](#).

ATTENDANCE POLICY:

Each student has individual responsibility for attending class regularly and for meeting course objectives. A student is expected to attend all class meetings in a course. Rules on tardiness and leaving class early are addressed in each instructor's syllabus addendum. Instructors are required to record absences and report excessive absenteeism to the Registrar.

If a student is absent for any reason in excess of 20 percent of the class hours, he or she is in violation of the Brunswick Community College attendance policy. Unless the student officially withdraws from the course prior to the 65 percent point of the 16 week semester (or equivalent days for courses of other duration), he or she may receive a grade of "F."

Students who receive an "EXCESSIVE ABSENTEEISM NOTICE" are advised to contact their instructors immediately to review the conditions for withdrawing from the course or for continuing the course.

STUDENTS WITH DISABILITIES:

Brunswick Community College complies with the Americans with Disabilities Act and Section 504 of the Rehabilitation Act, which require that no qualified student with a disability be excluded from participation in or be denied the benefits of any services, programs or activities on the basis of his or her disability. If a student has a disability that is covered by the Americans with Disabilities Act and requires accommodations in the classroom and/or in extracurricular activities, the student must request the accommodations in writing and submit the request to the Disability Services Coordinator. Instructors will not provide accommodations without notification from the Disability Services Coordinator. Brunswick Community College will make every effort to provide reasonable accommodations.