

**BACHELOR OF SCIENCE  
POST-BACCALAUREATE  
BIOTECHNOLOGY**

**2011-2012**

B.A. or B.S. in \_\_\_\_\_

Student's Name: \_\_\_\_\_

From \_\_\_\_\_

Entrance Date: \_\_\_\_\_

The Department of Natural Sciences and Engineering Technology has designed a Post-Baccalaureate program leading to the Bachelor of Science degree with a major in Biotechnology. This program, requiring a total of thirty (30) credits make it possible for students with Baccalaureate degrees in other areas to complete requirements in a second field with a minimum expenditure of time. This makes the programs attractive to the mature student because he/she can utilize his/her past education and experience.

<b>PREREQUISITES TO THE PROGRAM</b>				<b>20</b>	<b>Program Requirements</b>				<b>30</b>
___	BIOL	216	Introductory Microbiology	4	___	BIOL	350	Molecular/Cellular Biology	4
___	BIOL	222	Introduction to Genetics	4	___	BTEC	300	Receptors, Signaling Pathways and Cellular Control Mechanisms	3
___	CHEM	221	Organic Chemistry	3	___	BTEC	310	Emerging Life Science Technology	3
___	BIOL	222	Organic Chemistry/Biochemistry	3	___	BTEC	350	Genomics and Proteomics	3
___	MATH	175	Elementary Statistics	3	___	BTEC	400	Animal Modeling of Disease	3
___	CMPS	___	_____	3	___	BTEC	410	Biotechnology Laboratory I	2
			100 Level		___	BTEC	420	Biotechnology Laboratory II	3
					___	BTEC	450	Drug Discovery and Development	3
					___	BMGT	101	Introduction to Business	3
					___	CMPS	204	C Programming for Science and Technology	3

# Program Objectives

## B.S. Post-Baccalaureate in Biotechnology

**Upon successful completion of this program, a student will be able to:**

1. Gain an understanding and appreciation of the complexity of biological pathways that are fundamental to living organisms.
  - a. Identify signaling cascades that allow cells to respond appropriately to changes in their environment.
  - b. Understand the role of enzymes and how their structure is related to their function.
  - c. Learn how genes work and understand the concepts underlying gene technology.
  - d. Gain an understanding of the organization of the cell.
2. Gain hands on experience with key scientific principles through laboratory exercises.
  - a. Describe the significance of the experimental application and apply the information to the model tested.
  - b. Collect and track data through the course of an experiment, using accurate conversions and units.
  - c. Report laboratory results in a comprehensive summary of significance, methods, results, and conclusions.
  - d. Draw conclusions accurately based on the results of experimental data.
3. Learn to speak fluently in the scientific languages of Information Technology
  - a. Convert conceptual problems to a format that binary logic can be applied to solve.
  - b. Communicate the results of computer-based queries orally with the aid of computer-generated graphics.
  - c. Utilize software to analyze scientific data, generate statistics, and generate graphs.
  - d. Operate on biological information stored in databases to answer experimental questions.
4. Develop entrepreneurial skills that will promote the goals of a Biotechnology company/industry.
  - a. Identify needs that can be met with a Biotechnology solution.
  - b. Balance the cost of a project with the potential gain to be realized.
  - c. Develop communication skills that promote interaction with professionals from a wide variety of backgrounds, including engineers, computer science, business, in addition to scientists.
  - d. Establish goals and describe concrete steps for recording progress, documenting obstacles, and reporting the outcome.