# Course Information

**Course Code:** GBE 213  
**Course Title:** INTRODUCTION TO GENETICS AND BIOENGINEERING  
**Level:** Undergraduate  
**Year:** II  
**Semester:** III  
**ECTS Credits:** 4  
**Status:** Compulsory  
**Hours/Week:** 5  
**Total Hours:** 75  

## Instructor

COURSE DESCRIPTION

Introduction to the engineering profession in general biology and bioengineering in particular; careers in bioengineering; and problem solving strategies.

## COURSE OBJECTIVES

This course is an introduction to biotechnology including career possibilities, history and applications of DNA/RNA technology, molecular biology, bioethics, and laboratory safety practices. It will provide the student with general knowledge about the field of biotechnology, and will enable the student to analyze situations or phenomena related to the biological world. The purpose of this course is to provide the student with an understanding of the different disciplines within the realm of biotechnology and applications of biotechnology in the laboratory environment.

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

1. Cite a general history of the field of biotechnology, including a basic knowledge of the important researchers within the field and their major contributions and discoveries.
2. Explain the basics of classical genetics, and understand the role of DNA in inheritance.

## COURSE CONTENTS

- An Introduction to Genes and Genomes
- Recombinant DNA Technology and Genomics
- Proteins as Products
- Microbial Biotechnology
- Plant Biotechnology
- Animal Biotechnology
- Expression Analysis and Characterization of Proteins
- DNA Fingerprinting and Forensic Analysis
- Bioremediation
- Medical Biotechnology
- Engineering drawing

## TEACHING/ASSESSMENT

<table>
<thead>
<tr>
<th>Teaching Methods</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Interactive lectures and communications with students</td>
<td></td>
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<tr>
<td>2. Tutorials</td>
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<table>
<thead>
<tr>
<th>Student Assessment Methods</th>
<th>Description(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quizzes</td>
<td>10%</td>
</tr>
<tr>
<td>Homework</td>
<td>10%</td>
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<tr>
<td>Project</td>
<td>20%</td>
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<tr>
<td>Midterm Examination</td>
<td>20%</td>
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<tr>
<td>Final Examination</td>
<td>40%</td>
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## Learning Outcomes

- Actively participate in courses and begin to take responsibility for learning
- Begin to work effectively as part of a team, developing interpersonal, organisational and problem-solving skills within a managed environment, exercising some personal responsibility.
- Present information in oral, written or graphic forms in order to communicate effectively with peers and tutors.

## Language of Instruction

English

## Textbook(s)

2) Instructors lecture notes. 2009. Current literature