Human and Genetic Engineering

Course Code	Course Num.	Course Name	Credit Hours	Lec	Lab	Tut	Prerequisites
BIO	436	Human and Genetic Engineering	3	2	2	0	BIO333

Objectives:

Genetic engineering, also called genetic modification, is the direct manipulation of an organism's genome using biotechnology. It is therefore a set of technologies used to change the genetic makeup of cells, including the transfer of genes within and across species boundaries to produce improved or novel organisms. An organism that is generated through genetic engineering is considered to be a genetically modified organism (GMO). So, by the successful completion of the course the student will be able :

- To gain an understanding of basic principles and new advances in genetics.
- To gain appreciation of how genetics can impact humans.
- To evaluate the risks and benefits of different applications of genetic Knowledge..

Syllabus

- Formal Analysis of the Transmission of Genes from Generation to Generation
- Manipulation of Genes
- Molecular Mechanisms of Genetic Processes
- Human Genetics
- Genetic Disease
- Methods and issues relating to micro-organisms a genetic engineer
- Methods and topics related to genetic engineered plants
- Organisms of Genetic engineering techniques (cloning)
- Applications for engineer genetic beings

References:

- Rasko C.S. Downes ,Genes in Medicine: Molecular biology and human genetic disorders, Publisher: Springer; 1st edition (1994) ISBN-10: 0412373408.
- Desmond S. T. Nicholl, An Introduction to Genetic Engineering, Cambridge University Press, (2008). Recombinant DNA (Paperback), ISBN-13: 978-0521615211
- Stefan Surzycki Human Molecular Biology Laboratory Manual 1st Edition. (2003). ISBN-13: 978-0632046768 .