

Planning and Quality Assurance Affairs

Form (A)

Course Specifications

General Information

Course name	Genetics
Course number	BIOL3313
Faculty	
Department	
Course type	College Needs
Course level	3
Credit hours (theoretical)	3
Credit hours (practical)	0
Course Prerequisites	

Course Objectives

- 1 - To define the terms of genetics, hereditary, heritability and how these relate to various conditions
- 2 - To Discuss the different approaches for studying genetics and genes
- 3 - To provide a chronological timeline about the use and knowledge of heredity.
- 4 - To discuss basic structure and function of chromosomes and genes
- 5 - To provide an understanding of the basic principles of genetics in different living organisms
- 6 - To understand how traits are transmitted and to use this knowledge in solving genetic problem and analyzing human pedigrees analyses
- 7 - To understand probability and biostatistics concepts (Chi square test) and use these concepts
- 8 - to solve genetics problems. To recognize the different inheritance patterns and how gene defects may lead to disease
- 9 - To provide an awareness of the interaction between genetic and environmental factors To elaborate on how modern genetic was used in medicine and crop production

Course Contents

- 1 - Introduction to Genetics Review of cell structure, organelles and function
- 2 - Chromosomes and DNA Structure DNA Organization in Chromosomes DNA Replication
- 3 - Cell division Mitosis and Meiosis Gametogenesis (spermatogenesis and oogenesis)
- 4 - Primary and secondary non disjunctions
- 5 - The Chromosomal Basis of Heredity Transmission
- 6 - Genetics Mendelian Genetics Extensions of Mendelian Genetics (None Mendelian Genetics)
- 7 - Gene Linkage, crossover, and Genetic Mapping
- 8 - Sex Determination and Sex Chromosomes Mutations

Teaching and Learning Methods

- 1 - PowerPoint and whiteboard for solving genetic problems and more explanations

Teaching and Learning Methods for the Disabled Students

1 - Will be treated and addressed individually according to the type of disability.

Students Assessment

<u>Assessment Method</u>	<u>TIME</u>	<u>MARKS</u>
First hour Exam	60 Mins	20 %
Second Hour exam	60 Mins	20 %
Attendance, participation and quizzes		10 %
Final Exam	120 mins	50 %

Books and References

Essential books	Concepts of Genetics 11th Edition. by William S. Klug , Michael R. Cummings , Charlotte A. Spencer , Michael A. Palladino
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