Jordan University of Science and Technology

Faculty of Science & Arts

Biotechnology & Genetic Engineering Department

BT441 Human Genetics

First Semester 2023-2024

Course Catalog
3 Credit Hours. The course covers topics in human genetics such as: Human genetic diseases, mapping the human genome; the molecular analysis of single gene disorders; the genetic analysis of complex diseases; gene therapy, gene testing; the human genome project; human population genetics and evolution; DNA fingerprinting; human genetics and society

Text Book	
Title	Genetics & Genomics in Medicine
Author(s)	Cohn, Scherer, Hamosh
Edition	9th Edition
Short Name	Ref # 1
Other Information	

Instructor	
Name	**Prof. Asem Alkhateeb**
Office Location	PH1-L1
Office Hours	Sun : 08:00 - 10:00 Mon : 08:00 - 08:30 Mon : 11:00 - 11:30 Tue : 08:00 - 10:00 Wed : 08:00 - 08:30 Wed : 11:00 - 11:30
Email	asemalkhateeb@just.edu.jo

Class Schedule & Room

Section 1:
Lecture Time: Mon, Wed : 10:00 - 11:00
Room: NB72

Prerequisites		
Line Number	**Course Name**	**Prerequisite Type**
963413	BT341 Molecular Genetics	Prerequisite / Pass

Tentative List of Topics Covered		
Weeks	**Topic**	**References**
Week 1	Gene structure & function	**Chapter 3** From **Ref # 1**
Week 2	Mutation & Polymorphism	**Chapter 4** From **Ref # 1**
Week 3	Cytogenetics & Genome analysis	**Chapter 5** From **Ref # 1**
Weeks 4, 5	Patterns of Single-Gene Inheritance	**Chapter 7** From **Ref # 1**
Week 6	Complex Inheritance of common Multi-factorial disorders	**Chapter 8** From **Ref # 1**
Week 7	Genetic variation in populations	**Chapter 9** From **Ref # 1**
Week 8	Identifying the Genetic Basis of Human Disease	**Chapter 10** From **Ref # 1**
Week 9	Molecular Basis of Genetic Disease-Hemoglobinopathies	**Chapter 11** From **Ref # 1**
Weeks 10, 11, 12	Molecular, Biochemical, & Cellular Basis of Genetic Disease	**Chapter 12** From **Ref # 1**
Weeks 13, 14, 15	Developmental Genetics & Birth Defects	**Chapter 14** From **Ref # 1**

Mapping of Course Outcomes to Program Outcomes	**Course Outcome Weight (Out of 100%)**	**Assessment method**
Describe the organization of the human genome and explain the molecular mechanisms that contribute to genetic variation and gene mutations [1A]	20%	
Explain the chromosomal and molecular basis for simple and complex genetic disease in individuals and populations [1A]	30%	
Use mapping and sequencing analysis to predict the genetic basis for a disease and the risk of inheritance [3A, 1F]	20%	
Understand the molecular, biochemical, and cellular basis of genetic diseases [2A, 2C]	30%	

Relationship to Program Student Outcomes (Out of 100%)					
A	B	C	D	E	F
80		15			5

Evaluation	
Assessment Tool	**Weight**
First exam	30%
Second Exam	30%
Final exam	40%

Policy	
Class Attendance	Class attendance is mandatory. Absences in excess of 20% of the total lecture hours will result in dismissal from the course with a failing grade.
Makeup Exams	Make-up exam appeals should be filed within one week of the missed exam.
Cell Phones	Cell phones are prohibited during examinations according to university regulations
Cell Phones	Cell phones must be turned off during lectures. No incoming or outgoing calls or text messages are allowed.
Cheating	Unethical conduct, including cheating during examinations, will result in punishment by the university administration

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