



**The University of Jordan**

**Accreditation & Quality Assurance Center**

**COURSE Syllabus**

1	Course title	Human Genetics
2	Course number	0334282
3	Credit hours (theory, practical)	3 Credit Hour
	Contact hours (theory, practical)	3 Credit Hour
4	Prerequisites/corequisites	Biology 0304101
5	Program title	Bachelor of Biological Sciences
6	Program code	0304
7	Awarding institution	The University of Jordan
8	Faculty	Faculty of Science
9	Department	Department of Biological Sciences
10	Level of course	Third Year
11	Year of study and semester (s)	First and Second semesters 2016
12	Final Qualification	B.Sc. in Biological Sciences
13	Other department (s) involved in teaching the course	None
14	Language of Instruction	English
15	Date of production/revision	First semester 2016

**16. Course Coordinator:**

Office numbers, office hours, phone numbers, and email addresses should be listed.

Dr. Belal Azab

Office No.: Stem Cell Center

Office Hour: Sun/ Tue/ Thu 08:00 a.m – 9:00 a.m.

Email address: b.azab@ju.edu.jo

**17. Other instructors:**

*Office numbers, office hours, phone numbers, and email addresses should be listed.*

None.

**18. Course Description:**

*As stated in the approved study plan.*

**19. Course aims and outcomes:**

**A- Aims:**

Gaining the knowledge and the skills of applying genetics concepts to explain how phenotypes are transmitted from one generation to another in different organisms including plant, animal and human.

**B- Intended Learning Outcomes (ILOs):** Upon successful completion of this course students will be able to

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- 1- Understand the basic concepts and applications of Mendelian genetics.
- 2- Understand the basic concepts and applications of Non-Mendelian genetics.
- 3- Understand the basic concepts of extranuclear Inheritance.
- 4- Understand the basic concepts of karyotyping and chromosomal aberrations
- 5- Recognize the main types of chromosomal aberrations.
- 6- Understand the principles, mechanisms and classification of congenital anomalies
- 7- Understand the principles of chromosomal disorders.
- 8- Know how to draw a family pedigree with comprehensive information.
- 9- Differentiate between the main patterns of single-gene inheritance.
- 10- Understand the basic principles of imprinting and trinucleotide repeat

## 20. Topic Outline and Schedule:

Text book: Essential Medical Genetics, Tobias et. al. 6<sup>th</sup> edition

**Tentative Course Schedule (that means subject to change)**

Wks	TOPIC
1	The cell cycle, mitosis and disorders of accelerated aging
2	Meiosis, Spermatogenesis and Oogenesis
3	Laws of segregation and independent assortment, Nature and Nurture, fetal testing
4	chromosomes, mitosis, and meiosis
5	Mendelian inheritance and Chromosomal Basis of Sex, Alterations of Chromosomes numbers and structure
6	The Molecular Basis of Inheritance, from gene to protein
7	Regulation and Differential Gene Expression
8	Examples and Features of Mendelian Inheritance
9	Non-Mendelian inheritance I: Phenotypic Expression, Penetrance, Expressivity, Variable age of onset, Pleiotropy, Genetic heterogeneity, Sex-limited and Sex-influenced disorders, Sex Linkage, X-Inactivation, trinucleotide repeat expansion and imprinting
10	Non-Mendelian inheritance II: Phenotypic Expression, Penetrance, Expressivity, Variable age of onset, Pleiotropy, Genetic heterogeneity, Sex-limited and Sex-influenced disorders, Sex Linkage, X-Inactivation, trinucleotide repeat expansion and imprinting
11	Introduction to cytogenetics
12	Probability and Risk assessment
13	Probability and Risk assessment
14	Exam 3

## Exams

First	25%
Second	25%
Final	50%

**21. Teaching Methods and Assignments:**

Development of ILOs is promoted through the following teaching and learning methods:  
Lectures, Discussions, Reports and Projects.

**22. Evaluation Methods and Course Requirements:**

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:

Written exams, reports, and projects.

**23. Course Policies:**

A- Attendance policies:

Students are allowed to not attend seven lectures (15%) in the whole semester  
B- Absences from exams and handing in assignments on time:

If a student does not attend an exam, he/she will get zero grade in that exam, unless, he/she have excruciating circumstances such as health emergency. In that case a medical report that proves he/she could not attend the exam. In this case, a makeup exam will be offered to the student as soon as possible.

C- Health and safety procedures:

Students need to be aware of the basic safety procedure.

D- Honesty policy regarding cheating, plagiarism, misbehavior:

University regulations will be implemented for any cheating attempt, plagiarism and misbehavior.

E- Grading policy:

<b>Evaluation</b>	<b>Grade</b>
<b>Fist test</b>	25
<b>Midterm test</b>	25
<b>Final test</b>	50

F- Available university services that support achievement in the course:

**24. Required equipment:**

Mobile devices such as laptops or tablets.

**25. References:**

A- Required book (s), assigned reading and audio-visuals:

Essential Medical Genetics, Tobias et. al. 6<sup>th</sup> edition

Hand-outs and articles.

B- Recommended books, materials, and media:

**Genes in Medicine.** Istvan Rasko and C. Stephen Downes.

**26. Additional information:**

Name of Course Coordinator: الدكتور بلال العزب

Signature:

د. بلال العزب

Head of curriculum committee/Department:

Signature: -----

Head of Department:

Signature: -----

Head of curriculum committee/Faculty:

Signature: -----

Dean:

Signature: -----

Copy to:

Head of Department

Assistant Dean for Quality Assurance

Course File