

**TISHK INTERNATIONAL UNIVERSITY**  
**FACULTY OF APPLIED SCIENCE**  
**Department of MEDICAL ANALYSIS,**  
**-2022 Spring**  
**Course Information for MA 206 HUMAN GENETICS**

<b>Course Name:</b> HUMAN GENETICS					
<b>Code</b> MA 206	<b>Regular Semester</b> 4	<b>Theoretical</b> 2	<b>Practical</b> 2	<b>Credits</b> 3	<b>ECTS</b> 4
<b>Name of Lecturer(s)- Academic Title:</b> Shatha Jumaah - Lecturer					
<b>Teaching Assistant:</b> Mr. Adam Jalal Mohammed					
<b>Course Language:</b> -					
<b>Course Type:</b> Main					
<b>Office Hours</b> SUNDAY 11-13					
<b>Contact Email:</b> shatha.saadi@tiu.edu.iq Tel:07731329529					
<b>Teacher's academic profile:</b> PhD Holder					
<b>Course Objectives:</b> This course will cover hereditary and molecular genetics as it applies to humans, with a strong genomics and human disease perspective. It will cover transmission genetics, the Human Genome Project, identification, modern technologies for genome analysis, personal genomics and cancer genomics. We will also discuss current topics such as genetic testing, gene therapy and embryonic stem cells. The objectives are to 1) provide a solid understanding of the concepts and scientific methods of modern genetics as it applies to humans. 2) develop a better appreciation of the power and the limitations of a genetics2centric view of human biology and disease. 3) develop conceptual skills to address questions in genetics research and clinical practice 4) develop critical thinking with regard to news reports of advances in genetics and their social implications.					
<b>Course Description (Course overview):</b> The discovery of genes and subsequent decryption of the genome was one of the greatest scientific advancements in human biology. A substantial number of diseases are influenced by the genetic code and some occur exclusively from genetic disorders. Contemporary medical practice employs the analysis of the genetic code frequently and is an essential part of medical practice and disease diagnosis. The evolving field of genetics encompasses a wide range of sub-specialties and this course aims to introduce students to this fascinating and important subject. Medical Analysts will frequently conduct genetic testing and we aim to prepare students for future practice and academic practice through this course.					

**COURSE CONTENT**

Week	Hour	Date	Topic
1	2	6-10/2/2022	.....
2	2	13-17/2/2022	Gene structure & Organization I
3	2	20-24/2/2022	Gene structure & Organization II
4	2	27/2-3/3/2022	RNA Splicing
5	2	6-10/3/2022	Translation & Genetic Code
6	2	27-31/3/2022	Signal Transduction
7	2	3-7/4/2022	
8	2	10-14/4/2022	Midterm Exam
9	2	17-21/4/2022	Pedigree Analysis
10	2	24-28/4/2022	Genetic Disease
11	2	8-12/5/2022	Chromosome linked disease
12	2	15-19/5/2022	Apoptosis

13	2	22-26/5/2022	Cancer
14	2	29/5-2/6/2022	revision
15	2	5-9/6/2022	Final Exam
16	2	12-16/6/2022	Final Exam

### COURSE/STUDENT LEARNING OUTCOMES

- 1 compare the genetic structure of human gonosomes.
- 2 explain the organization of the DNA in human genome.
- 3 illustrate gene families.
- 4 question human genome about size and functional activity.evaluate genetic diseases.
- 5 illustrate autosomal and gonosomal genetic diseases.

### COURSE'S CONTRIBUTION TO PROGRAM OUTCOMES

(Blank : no contribution, I: Introduction, P: Profecient, A: Advanced )

#### Program Learning Outcomes

**Cont.**

1	Evaluate clinical laboratory data by interpreting laboratory results and relating the data to various disease states.	A
2	apply principles of evidence-based medicine to determine clinical diagnoses.	P
3	apply the basic principles of gross and microscopic anatomy, physiology, biochemistry, immunology, microbiology/virology.	A
4	formulate and implement acceptable treatment modalities to various disease states.	P
5	use technology effectively in the delivery of instruction, assessment, and professional development.	I
6	exhibit essential employability qualities by demonstrating laboratory safety, analyzing laboratory results, and displaying professional conduct.	I
7	exhibit organizational skills, accountability, and ethical behavior.	A
8	apply skills needed in operating laboratory equipment for testing, assessing quality assurance for lab equipment, and adhering to standard safety practices in the laboratory environment.	I
9	apply problem-solving and decision-making skills.	P
10	apply and promote health policies and regulatory standards in the field career.	P
11	develop research in the field of medical analysis using qualitative and quantitative methods.	

#### Prerequisites (Course Reading List and References):

1.Human Molecular Genetics ByTom Strachan,Andrew Read Copyright Year 2019  
2.Nussbaum, Robert L.; McInnes, Roderick R.; Willard, Huntington F. (2007). 3. .Genetics in Medicine (7th ed.). Philadelphia: Saunders. McKusick, Victor A.; Lopez, A (30 July 2010

#### Student's obligation (Special Requirements):

1.They have t o attend all the classes of human genetics 2. doing all the assessments procedures. 3.The course activity will gonna be presentation & they have to prepare. 4.Doing all the classroom activities. Genetics has a reputation for being hard to teach and hard to learn. ... But \"simple\" does not necessarily mean \"easy.\" Genetics is \"simple\" because it can be reduced to an abstract formalism. General principles can explain many specific observations, and predictions can be made with probabilities that can be calculated.

#### Course Book/Textbook:

VOGEL AND MOTULSKY'S HUMAN GENETICS. Medical genetics and genomics 2016

#### Other Course Materials/References:

Wooding, Stephen (28 June 2004). "Natural selection at work in genetic variation to taste". Medical News Today. Archived from the original on 2007-12-13. McKusick, Victor A. (10 February 2009). "Widow's Peak". Online Mendelian Inheritance in Man. Johns Hopkins University. 194000. Archived from the original on 9 December 2015. Nussbaum, Robert L.; McInnes, Roderick R.; Willard, Huntington F. (2007). Genetics in Medicine (7th ed.). McKusick, Victor A. (10 February 2009). "Widow's Peak". Online Mendelian Inheritance in Man. Johns Hopkins University. 194000. Archived from the original on 9 December 2015. "Mendelian Traits in Humans" (PDF). Human Genetics. San Diego Supercomputer Center (SDSC). McKusick, Victor A. (23 March 2013). "Cleft Chin". Online Mendelian Inheritance in Man. Johns Hopkins University. 119000. Archived from the original on 29 April 2017.

#### Teaching Methods (Forms of Teaching):

Lectures, Presentation, Seminar, Assignments, , ,

### COURSE EVALUATION CRITERIA

Method	Quantity	Percentage (%)
Attendance	1	5
Participation	1	5

Quiz	2	5
Midterm Exam	1	20
Laboratory	1	5
Laboratory	1	5
Lab/Practical Exam(s)	1	10
Final Exam	1	40
<b>Total</b>		<b>100</b>

**Examinations:** Essay Questions, True-False, Fill in the Blanks, Multiple Choices, Short Answers, Matching, , ,

**Extra Notes:**

**ECTS (ALLOCATED BASED ON STUDENT) WORKLOAD**

<b>Activities</b>	<b>Quantity</b>	<b>Workload Hours for 1 quantity*</b>	<b>Total Workload</b>
Theoretical Hours	16	2	32
Practical Hours	16	2	16
Final Exam	1	40	40
Attendance	1	10	10
Participation	1	5	5
Quiz	2		0
Midterm Exam	1		0
Laboratory	1		0
Laboratory	1		0
Lab/Practical Exam(s)	1		0
<b>Total Workload</b>			<b>103</b>
<b>ECTS Credit (Total workload/25)</b>			<b>4.12</b>

**Peer review**

Signature:

Name:

Lecturer

Signature:

Name:

Head of Department

Signature:

Name:

Dean