هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

Course Specifications

Course Title:	**Principle of medical genetics**
Course Code:	**4810110-2**
Program:	**Medical track**
Department:	**Department of Medical Genetics**
College:	**Preparatory year**
Institution:	**Umm Al-Qura university**

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A. Course Identification

1. Credit hours:
2. Course type **a.** University [ ] College [×] Department [ ] Others [ ] **b.** Required [×] Elective [ ]
3. Level/year at which this course is offered: 1st year
4. Pre-requisites for this course (if any)**:** No pre-requisites
5. Co-requisites for this course (if any)**:** No co-requisites

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**	12	50%
2	**Blended**	8	34%
3	**E-learning**	4	16%
4	**Distance learning**	0	0
5	**Other**	0	0

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	24
2	**Laboratory/Studio**	0
3	**Tutorial**	0
4	**Others** (specify)	0
	Total	24

B. Course Objectives and Learning Outcomes

1. Course Description

At the end of this semester, students supposed to understand the main molecular processes in the cell regarding DNA and chromosomes, like DNA replication, genome organization, gene expression, cell division, mutations and pattern of inheritance.

2. Course Main Objective

Principle of Human Medical Genetics is one of the basic science courses that comprise The preclinical curriculum of the first three years of medical school. The overall goal of these courses is to provide students with the knowledge and understanding of the scientific principles that are the basis of current approaches to the diagnosis and Management of disease. The application of these scientific principles and knowledge to The practice of medicine, including the development of life-long learning and problem solving Skills, is emphasized. This goal is consistent with the objectives of the United States Medical Licensing Examination (USMLE), Step 1.

The Medical Genetic course consists of 15 lectures and covers topics that are basic principal of human genetics
Lecturers from both basic science and clinical disciplines teach the fundamental principles of genetic and how these principles apply to the diagnosis and treatment of These diseases.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	**Knowledge and Understanding**	
1.1	Understand DNA & RNA molecular structure	K2
1.2	Describe molecular mechanism related to DNA and chromosomes	K1
1.3	Understand cell cycle and types of cellular divisions	K1
2	**Skills :**	
2.1	recognize the pattern of inheritance for many hereditary diseases	S1
2.2	Describe types, causes and consequences of DNA & chromosomal mutations	S1
3	**Values:**	
3.1	Students should be able to evaluate the consequences of many errors in DNA replication or cell divisions.	V1
3.2	Students should be able to define and mention functions of many cellular enzymes and mechanisms.	V1

C. Course Content

No	List of Topics	Contact Hours
1	DNA and RNA	2 hours
2	DNA replication	2 hours
3	Genome regulation	2 hours
4	Transcription	2 hours
5	Translation	2 hours
6	Chromosomes	2 hours
7	Cell division – Mitosis	2 hours
8	Cell division – Meiosis	2 hours
9	Mutation I	2 hours
10	Mutation II	2 hours
11	Pattern of inheritance I	2 hours
12	Pattern of inheritance II	2 hours
Total		24

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	**Knowledge and Understanding**		
1.1	Understand DNA&RNA Molecular structure	Blended instructions	Midterm and Final exams (numeric marks)
1.2	Describe molecular mechanisms related to DNA and chromosomes	Traditional classroom	Final exam (numeric marks)
1.3	Understand cell cycle and types of cellular divisions	Traditional classroom	Final exam (numeric marks)
2.0	**Skills**		
2.1	recognize the pattern of inheritance for many hereditary diseases	Continuous discussions and questions during lectures	Final exam (numeric marks)
2.2	Describe types, causes and consequences of DNA & chromosomal mutations	Continuous discussions and questions during lectures	Final exam (numeric marks)
2.1	recognize the pattern of inheritance for many hereditary diseases	Continuous discussions and questions during lectures	Final exam (numeric marks)
3.0	**Values**		
3.1	Students should be able to evaluate the consequences of many errors in DNA replication or cell divisions.	Discussion collectively and then individually for developing thinking and analysis skills	Those gained skills will positively reflect on periodic exam results
3.2	Students should be able to define and mention functions of many cellular enzymes and mechanisms.	Discussion collectively and then individually for developing thinking and analysis skills	Those gained skills will positively reflect on periodic exam results
3.1	Students should be able to evaluate the consequences of many errors in DNA replication or cell divisions.	Discussion collectively and then individually for developing thinking and analysis skills	Those gained skills will positively reflect on periodic exam results

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Home work	5-10	10%
2	Midterm theoretical exam	9	40%
3	Final theoretical exam	16	50%

***Assessment task** (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice : Students informed by defined weekly office hours. Students are allowed to contact lecturers by email, messages or phone any time during and after working hours.

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	1- Emery's Elements of Medical Genetics: With Student CONSULT Online Access (Paperback) by Peter Turnpenny and Sian Ellard 2- Human molecular genetic by tom Strachan and Andrew Read
Essential References Materials	
Electronic Materials	
Other Learning Materials	At the end of many lectures. Students been supplied with website links for video animations to improve understanding molecular mechanisms

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classrooms equipped with Datashow and sound system
Technology Resources (AV, data show, Smart Board, software, etc.)	Blackboard E-learning system
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Student feedback on effectiveness of teaching	Students	Questionnaire of the lecturer at the end of the semester
Evaluation of teaching by the instructor or by the department	Head of the department	By getting feedback from students individually.
Processes for Improvement of Teaching	Medical genetics department teaching staff	Reviewing and implementing appropriate changes in the course based on student feedback and evaluations.

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)
Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	Medical genetics department teaching staff
Reference No.	
Date	03.02.2020