Course Specification
(Postgraduate)

Course Title:	Principle of Human gentics
Course Code:	373501-3
Program:	Master in clinical laboratory sciences: Molecular Diagnostics Techniques
Department:	Clinical Laboratory Sciences
College:	Applied medical Sciences
Institution:	Taif University
Version:	No 3
Last Revision Date:	18/01/2024

Table of Contents

A. General information about the course:

1. Course Identification:

1. Credit hours: (3 hrs)				
2. Course type				
A.	☐ University	☐College	☒ Department	☒ Track
B.	☒ Required		☐Elective	
3. Level/year at which this course is offered: (1st level/1styear)				
4. Course general Description:				
On completion of this course, the students will be able to: • Recognize fundamentals of human genetics as applied to health and disease. • Understand the basic principles of genetics that underlie modern principles for molecular diagnostic.				
5. Pre-requirements for this course (if any)**:**				
None				
6. Pre-requirements for this course (if any)**:**				
None				
7. Course Main Objective(s):				
The purpose of this course is to allow students to develop a principle understanding of the structure and function of chromosomes, DNA, RNA, pattern of in inheritance and gene mapping and nucleic acid sequencing which are complementary approach for analysis of the structure and organization of the genome.				

2. Teaching Mode: (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	3 hours /week= 45 hours/semester	100
2	E-learning	N/A	0
3	Hybrid • Traditional classroom • E-learning	N/A	0
4	Distance learning	N/A	0

3. Contact Hours: (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures**	45
2.	**Laboratory/Studio**	N/A
3.	**Field**	N/A
4.	**Tutorial**	N/A
5.	**Others (specify)……**	N/A
	Total	45

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods:

Code	Course Learning Outcomes	Code of PLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	**Knowledge and understanding**			
1.1	State the mechanisms that underpin human inheritance.	**K1**	Lecture	Exams Assignments
1.2	Discuss the role of genetic factors in health and disease	**K2**	Lectures, group discussion	Exams (Group Discussion)
1.3	Recognize the role of modern techniques of molecular genetics and their potential in clinical diagnosis.	**K2**	Lectures, group discussion	Exams - Demonstration
2.0	**Skills**			
2.1	Apply subject-specific concepts and principles of human genetics to inherited conditions.	**S2**	Lectures, group discussion	- Exams - Case-study
3.0	**Values, autonomy, and responsibility**			

C. Course Content:

No	List of Topics	Contact Hours
1.	The history and impact of genetics in medicine	4
2.	Chromosomes and cell division	4
3.	Nucleic acid structure and function	4
4.	Mutations and mutagenesis	4
5.	Patterns of inheritance I	4
6.	Patterns of inheritance II	4
7.	Genetic tools and databases	4
8.	Clinical Genetics I	2
9.	Clinical Genetics II	4
10.	Population Genetics	3
11.	Modern trends in human genetics	4
12.		
Total		45

D. Students Assessment Activities:

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Group Discussion	7TH	20%
2.	Case Demonstration	12TH	20%
3.	Case study	16TH	20%
4.	Final Exam	20TH	40%
	Total		100%

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.)

E. Learning Resources and Facilities:

1. References and Learning Resources:

Essential References	- Essential Medical Genetics. By Michael Connor & Malcom Ferguson-Smith, Fifth Edition - EMERY's, Elements of medical genetics. By Peter Turnpenny and Sian Ellard. - Human Molecular Genetics. By Tom Strachan & Andrew P.Read,Third edition
Supportive References	-
Electronic Materials	Websites, Search engines (Saudi Digital Library, PubMed, Google Scholar)
Other Learning Materials	Journals, Scientific Magazines and Articles.

2. Educational and Research Facilities and Equipment Required:

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classrooms and Laboratories
Technology equipment (Projector, smart board, software)	Data show, Blackboard and A/V
Other equipment (Depending on the nature of the specialty)	None

F. Assessment of Course Quality:

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Peer evaluators	Direct: Peer evaluation
Effectiveness of student's assessment	Students	Indirect: Questionnaire Survey at the end of each semester.
Quality of learning resources	Program Leaders /Teaching staff/ Development and accreditation committee	Indirect: Review by Department Committee
The extent to which CLOs have been achieved	Program Leaders /Teaching staff/ Development and accreditation committee	Indirect: Review course reports and program annual reports by Department Committee
Other	-	-

Assessor (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)

Assessment Methods (Direct, Indirect)

G. Specification Approval Data:

COUNCIL /COMMITTEE	**Department council**
REFERENCE NO.	**06**
DATE	**21/01/2024**