



## Course Specifications

<b>Course Title:</b>	Genetics
<b>Course Code:</b>	2012201-2
<b>Program:</b>	Bachelor in Microbiology
<b>Department:</b>	Biology Department
<b>College:</b>	College of Sciences
<b>Institution:</b>	Taif University

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## A. Course Identification

<b>1. Credit hours:</b> 2 hr
<b>2. Course type</b>
a. University <input type="checkbox"/> College <input type="checkbox"/> Department <input checked="" type="checkbox"/> Others <input type="checkbox"/>
b. Required <input checked="" type="checkbox"/> Elective <input type="checkbox"/>
<b>3. Level/year at which this course is offered:</b> 6 <sup>th</sup> level / 2 <sup>nd</sup> year
<b>4. Pre-requisites for this course (if any):</b> Cytology 2012102-3
<b>5. Co-requisites for this course (if any):</b> None

## 6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	5 hr/Week	100%
2	Blended	-	-
3	E-learning	-	-
4	Distance learning	-	-
5	Other	-	-

## 7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	Lecture	20
2	Laboratory/Studio	30
3	Tutorial	-
4	Others (specify)	-
	<b>Total</b>	50

## B. Course Objectives and Learning Outcomes

<b>1. Course Description:</b> This course introduces students to the principles of traditional and modern genetics, Mendelian genetics, types of dominances and its applications, lethal genes, Epistasis, sex determination, sex-linked genetics, human genetics and diseases and the molecular bases of heredity.
<b>2. Course Main Objective:</b> Recognize the principles of traditional and modern genetics, Mendelian genetics, types of dominances and its applications, lethal genes, Epistasis, sex determination, sex-linked genetics, human genetics and diseases and the molecular bases of heredity.

## 3. Course Learning Outcomes

CLOs		Aligned PLOs
1	<b>Knowledge and Understanding:</b>	
1.1	Recognize the basics and concepts of mendelian genetics and quantitative heredity.	K1
2	<b>Skills:</b>	
2.1	Apply the main fundamental laws and theories of genetics.	S1
2.2	Diagram functions of cellular macromolecules in genetics.	S4

CLOs		Aligned PLOs
<b>3</b>	<b>Values:</b>	
3.1	Demonstrate commitment to professional and leadership standards.	V1
3.2	Manage tasks and activities related to the discipline effectively and efficiently.	V2

## C. Course Content

No	List of Topics	Contact Hours
1	Introduction to genetics	2L+3P
2	Mendelian inheritance and Mendel laws	4L+6P
3	Genetics and environments, genes modifications	2L+3P
4	Types of dominance	2L+3P
5	Sex determination, sex-linked genetics	2L+3P
6	Quantitative heredity	2L+3P
7	Human genetics and diseases.	2L+3P
8	Molecular bases of heredity	2L+3P
9	General Revision	2L+3P
<b>Total</b>		<b>20L+30P</b>

## D. Teaching and Assessment

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

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
<b>1.0</b>	<b>Knowledge and Understanding:</b>		
1.1	Recognize the basics and concepts of mendelian genetics and quantitative heredity.	Lectures Open discussion	Paper-based exams
<b>2.0</b>	<b>Skills:</b>		
2.1	Apply the main fundamental laws and theories of genetics.	Lectures Interactive learning	Paper-based exams
2.2	Diagram functions of cellular macromolecules in genetics..	Mind mapping	Paper-based exams Practical exam
<b>3.0</b>	<b>Values:</b>		
3.1	Demonstrate commitment to professional and leadership standards.	Small group activities	Practical reports
3.2	Manage tasks and activities related to the discipline effectively and efficiently.	Student presentation Small group activities	Assignments

### 2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
<b>1</b>	Assignments and activities: 1- Written Assignment 2- Power-point presentation	Variable	10
<b>2</b>	Midterm Exam	5 <sup>th</sup>	20

#	Assessment task*	Week Due	Percentage of Total Assessment Score
3	Periodic Exam	7 <sup>th</sup>	10
4	Practical Reports	Continuous	15
5	Final Practical Exam	11 <sup>th</sup>	5
6	Final Exam	12 <sup>th</sup>	40

\*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:

6 hours per week (as defined in the teaching schedule of the faculty member) for academic advice and consultations.

Teaching staff is also available using Blackboard web site and Taif University “Edugate” System.

## F. Learning Resources and Facilities

### 1. Learning Resources

<b>Required Textbooks</b>	<ul style="list-style-type: none"> <li>- Anthony J.F. Griffiths, Jeffrey H. Miller, David T. Suzuki, Richard C. Lewontin, and William M. Gelbart (2000). Introduction to Genetic Analysis 7<sup>th</sup> edition, New York, W.H. Freeman.</li> <li>- Ahmed Elshehawi and Mohamed Elsebhy (2011). Basics of Modern Genetics, KSA, King Fahd National Library (In Arabic),</li> </ul>
<b>Essential References Materials</b>	- James D. Watson (2017). Molecular Biology of the Gene, 7 <sup>th</sup> edition, Pearson India.
<b>Electronic Materials</b>	Blackboard website Website of Saudi digital Library
<b>Other Learning Materials</b>	Computer-based programs and professional software

### 2. Facilities Required

Item	Resources
<b>Accommodation</b> (Classrooms, laboratories, demonstration rooms/labs, etc.)	- Classrooms for 40 students\lecture. - Laboratory for 20 students\ lab activity
<b>Technology Resources</b> (AV, data show, Smart Board, software, etc.)	- Data show.
<b>Other Resources</b> (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	- Slide projector. - Permanent slides.

## G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effectiveness of teaching and assessment	Students	Indirect
Quality of learning resources	Peer Reviewer	Direct

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Extent of achieving the course learning outcomes	Students	Indirect
	Peer Reviewer	Direct
	Students	Indirect

**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	Biology Department
Reference No.	Committee number 14 - Academic Year 1442-1443H
Date	22\5\2022G – 21\10\1443H

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