

Course Description Form

1. Course Name:	
Genetics	
2. Course Code:	
GENT212	
3. Semester / Year:	
Autumn 2 nd semester/ 2023-2024	
4. Description Preparation Date:	
1/2/2024	
5. Available Attendance Forms:	
Life in person	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2 + 3 / 3.5	
7. Course administrator's name (mention all, if more than one name)	
Name: Prof. Dr . Omar mdafar Name: Shaymaa dhayaa Email: shaymaa_dhayaa@uomosul.edu.iq	
8. Course Objectives	
<p>Course Objectives</p> <ul style="list-style-type: none"> - Enable the student to understand and comprehend what is related to soil morphology and its relationship to soil science and water resources - Enable the student to know the most important features of the stove - Enable the student to become familiar with the most important factors affecting the development of horizons <ul style="list-style-type: none"> - Empowering the student with the ability to detect diagnostic horizons - The student can explain the development of horizons and address the differences in results for the future over time 	<p>practical:</p> <ul style="list-style-type: none"> - Enabling the student to become familiar with the most important laboratory methods in studying macro- and micro-morphological characteristics and the important chemical and physical analyzes in distinguishing and studying soil horizons.
9. Teaching and Learning Strategies	
<p>Strategy</p> <ul style="list-style-type: none"> - Interactive lecture - Brainstorming - Dialogue and discussion - Assigning tasks and reporting 	<p>practical:</p> <ul style="list-style-type: none"> - Assigning group work to reveal leadership skills - Assigning tasks and reporting for each experimen

- Presentations of models of soil horizons and their detailed study

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2+3	A1 Lecture: Explains a general overview of genetics, the important basic rules, and its relationships with other sciences A9 Practical: The student knows primitive (undeveloped) cells and true cells (nucleus)	Lecture: Introduction to genetics Practical: Plant cell structure - functions - properties	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz
2	2+3	A2 Lecture: Explains how gender determines interest, importance, and other effects A5 Practical: Know the gene (transmitted from parents to offspring), test the pea plant, and Mendel's gene collection.	Lecture: Determine gender Practical: The gene is transmitted from parents to offspring, testing the pea plant and Mendel's collection of genes	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz
3	2+3	A3 Lecture: Distinguish the characteristics of genetic material, determine its nature, and the factors affecting its nature A11 Practical: Define Mendel's first law, the law of free distribution, with examples and experiments, and	Lecture: The nature of the genetic material Practical: The modern scientist Gregor Mendel founded genetics and modifications	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz

		inverse (backward) multiplication.			
4	2+3	A4 Lecture: lists the development of the concept of the gene, its hereditary nature, its importance and its basic function A12 Practical: Knows the gene, its basis and importance	Lecture: Development of the concept of the gene Practical: Development of the concept of the gene and lethal genes	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz
5	2+3	A5 Lecture: lists permeability, expressivity, and permeable and impermeable cell membranes A13 Practical: Explains chromosomes, genes, and nucleic acids	Lecture: Permeability and expressiveness Practical: Genetic mutations	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz
6	2+3	A6 Lecture: Understands identifying genetic mutations, their importance and how they occur - chromosomes - amino acids A14 Practical: lists their importance and the difference between them with functions and importance	Lecture: Genetic mutations Practical: DNA , RNA	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz
7	2+3	Lecture: A7: Knows the basic substance of protoplasm, its importance, function, and the factors affecting it A15 Practical:	Lecture: The nature and characteristics of genetic material Practical: Cytoplasmic inheritance binomial theory	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz

		Knows the cytoplasm, which is the basic substance that makes up the protoplasm, and the factors affecting its effectiveness and the functions of the cytoplasm.			
8	2+3	A8 Lecture: Summarizes the genetics and evolution of populations C7 Practical: explains indirect mitosis and its stages and meiosis and its stages	Lecture: Population genetics--heredity and evolution Practical: Cell division	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz
9	2+3	C1 Lecture: Variation in chromosomes explains their importance and functions C8 Practical: Defines incomplete dominance, its absence, and its divisions with examples	Lecture: Variation in chromosome number Practical: Non-Mendelian characteristics and modifications in proportions	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz
10	2+3	C2 Lecture: Explains the foundations of Mendelian genetics, its development, and its connections to other sciences C9 Practical: Explains Mendelian characteristics and their correspondence with imperfect masters	Lecture: Mendelian inheritance Practical: Incomplete dominance	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz

11	2+3	<p>C3 Lecture: defines the plant cell cycle, its working mechanism, and its importance - the laws of probability and how to use them in Mendelian genetic issues</p> <p>C10 Practical: Explains Mendelian traits and their association with co-dominance</p>	<p>Lecture: Probability laws and their uses in genetic issues - cell mechanics</p> <p>Practical: Shared sovereignty</p>	<p>Auditory methods, writing style on the blackboard, direct dialogue method</p> <p>Practical: Assigning tasks and writing a report</p>	Assignments, discussions, Quiz
12	2+3	<p>C4 Lecture: identifies genetic traits associated with sex determination</p> <p>D1 Practical: shows its definition, functions, transfer of genetic information, and building proteins</p>	<p>Lecture: Sex-linked traits</p> <p>Practical: Nucleus in plant cell</p>	<p>Auditory methods, writing style on the blackboard, direct dialogue method</p> <p>Practical: Assigning tasks and writing a report</p>	Assignments, discussions, Quiz
13	2+3	<p>C5 Lecture: Names the bacteria, the nature of the associations, and their association with multiple linked alleles</p> <p>D2 Practical: shows the blood group, the antigen on the surface of the blood cell, and the antibody in the serum, with examples</p>	<p>Lecture: New associations in bacteria with multiple alleles</p> <p>Practical: Method of probability and inheritance of blood groups in humans</p>	<p>Auditory methods, writing style on the blackboard, direct dialogue method</p> <p>Practical: Assigning tasks and writing a report</p>	Assignments, discussions, Quiz
14	2+3	<p>C6 Lecture: The structure of the DNA strand explains its</p>	<p>Lecture: Structure of the DNA molecule</p> <p>Practical:</p>	<p>Auditory methods, writing style on the blackboard, direct</p>	Assignments, discussions, Quiz

		structure and importance from a genetic standpoint D3 Practical: draws the permeable and impermeable cell membranes and their role in expression within the plant cell	Permeability and expressiveness	dialogue method Practical: Assigning tasks and writing a report	
15	2+3	D1 Lecture: shows relevant genetic associations that are important in determining genetic relatedness and evolution D4 Practical: draws the cell cycle, its phases, divisions, and time periods	Lecture: Inheritance link Practical: Cell cycle	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz

Course Evaluation

No	Evaluation methods	Evaluation date	Grade	Relative weight
1	Theoretical final report + practical experience reports	week 15 week 15	7 + 6	13 %
2	Quiz (1)	Week 3	4 + 2	6 %
3	Midterm Exam	Week 9	10+ 5	15 %
4	Quiz (2)	Week 12	4 + 2	6 %
5	Final practical Exam	Exam week	20	20 %
6	Final Exam	Final Exam week	40	40 %
	Total		100	100 %

Learning and Teaching Resources

Required textbooks (curricular books, if any)	Genetics
Main references (sources)	Researches
Recommended books and references (scientific journals, reports...)	Papers
Electronic References, Websites	

Prof. Dr. Omar modafer

Assi.Lectu. Shaymaa dhayaa

Prof. Dr. Mohammed AL-Alaf

Pro. Dr. Mozahim Younis

Head of Scientific Member

Head of Department