Course Description Form

1. Course Name:	
Genetics	
2. Course Code:	
GENT212	
3. Semester / Year:	
First semester/ 2024-2025	
4. Description Preparation Date:	
1/9/2024	
5. Available Attendance Forms:	
Built_in	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2 theoretical hours/3 practical hours(5 hours)/ 3.5 units	
7. Course administrator's name (mention all, if more than one name)	
Name: Dr. Shaymaa Dhayaa Ali Name: Dr. Faiza Ali Rasheed	
8. Course Objectives	
Course Objectives - 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 - 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	practical: - 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	
Strategy - Interactive lecture - Brainstorming - Dialogue and discussion - Assigning tasks and reporting	practical: - Assigning group work to reveal leadership skills - Assigning tasks and reporting for each experimer

- Presentations of models of soil horiz and their detailed study	

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2+3	A1Lecture: 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	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

		experiments, and 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: الـDNA , 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: 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.	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
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	Lecture: Mendelian inheritance Practical:	Auditory methods, writing style on the blackboard, direct dialogue method	Assignments, discussions, Quiz

		development, and its connections to other sciences C9 Practical: Explains Mendelian characteristics and their correspondence with imperfect masters	Incomplete dominance	Practical: Assigning tasks and writing a report	
11	2+3	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 C10 Practical: Explains Mendelian traits and their association with co-dominance	Lecture: Probability laws and their uses in genetic issues - cell mechanics Practical: Shared sovereignty	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz
12	2+3	C4 Lecture: identifies genetic traits associated with sex determination D1 Practical: shows its definition, functions, transfer of genetic information, and building proteins	Lecture: Sex-linked traits Practical: Nucleus in plant cell	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz
13	2+3	C5 Lecture: Names the bacteria, the nature of the associations, and their association with multiple linked alleles D2 Practical: shows the blood	Lecture: New associations in bacteria with multiple alleles Practical: Method of probability and inheritance of blood groups in humans	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz

		group, the antigen on the surface of the blood cell, and the antibody in the serum, with examples			
14	2+3	C6 Lecture: The structure of the DNA strand explains its 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	Lecture: Structure of the DNA molecule Practical: Permeability and expressiveness	Auditory methods, writing style on the blackboard, direct dialogue method Practical: Assigning tasks and writing a report	Assignments, discussions, Quiz
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	

Teacher of Theory : Dr. Shaymaa Dhayaa Ali

Teacher of Practical : Dr. Faiza Ali Rasheed

Chairman of the Scientific Committee : Dr. Mohammed Younes Al – Alaf

Head of the Dept. of Forestry Sciences: Dr. Mozahim Said Younes

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كلية الزراعة والغابات
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