

## Course Description Form

1. Course Name:	Genetics
2. Course Code:	GENT212
3. Semester / Year:	First fall semester 2024–2025
4. Description Preparation Date:	1/9/ 2024
5. Available Attendance Forms:	My presence
6. Number of Credit Hours (Total) / Number of Units (Total)	Theoretical 2 + 3 practical/3.5 units
7. Course administrator's name (mention all, if more than one name)	Name: A.M.D. Esraa Abd-al huseein Jasim Email:- Esraa.AJ@uomosul.edu.iq M. M. Sahar Ali Khalo Email:- sahar_khalw@uomosul.edu.iq Safwan Hazem
8. Course Objectives	<p>It aims to provide relevant knowledge and skills</p> <p>Genetics in plants, and teaching students about the concept</p> <p>Genetics, explaining the nature of genetic material,</p> <p>Replication and reproduction of genetic material,</p> <p>Gene expression, Mendelian and Non–Mendelian inheritance</p> <p>Learn about chromosomes and their characteristics</p> <p>Draw a genetic map and identify the concept</p> <p>Mutations and their types, and learning about the concept of genetic engineering.</p>



## 9. Teaching and Learning Strategies

- Interactive lecture
  - Brainstorming
  - Dialogue and discussion
  - Assigning tasks and reporting
  - Presentations of scientific films about plant genetics
- Meiosis and the nature of chromosomes
- He is assigned to prepare a report entitled from his diligence
- He prepares it for discussion with students.


## 10. Course Structure


Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	• 2Theoretical	A1: Learn about the concept of plant genetics	Plant genetics	interactive lecture Brainstorming, Dialogue and discussion, Self-education Slide show PowerPoint, movies Scientific	Short exams, assignments, discussions
	• 3 practical	A2: The student knows the types of nucleic acids	Introduction to genetics	practical Assigning tasks And report	Short exams Assignment of d discussions
2	• 2Theoretical	A1: identify Cytological foundations	Cytological basis for Mendelian inheritance	interactive lecture Brainstorming, Dialogue and discussion, Self-education Slide show PowerPoint, movies	Short exams, assignments, discussions


		for Mendelian inheritance		Scientific	
	• 3 practical	A4:practical The student compares A primitive and developing cell	practical Plant Cell	practical Assigning tasks And report	Short exams Assignment of duty discussions
3	• 2Theoretical	A3: Shows how knowledge Chromosomes Under the microscope And distinguish it	Chromosomes	interactive lectu Brainstorming, Dialogue and discussion, Self-education Slide show PowerPoint, movies Scientific	Short exams, assignments, discussions
	• 3 practical	practical Electron microscopy technology	A2A4practical Classifies the student Microscopes and their types The student compares Optical microscope And electron microscope	practical Assigning tasks And report	Short exams Assignment of duty discussions
4	• 2Theoretical	Plant Cell	C1: shows organelles The cell and its component And a job Every part of it	interactive lectu Brainstorming, Dialogue and discussion, Self-education Slide show PowerPoint, movies Scientific	Short exams, assignments, discussions



	<ul style="list-style-type: none"> <li>3 practical</li> </ul>	practical Cell division	A1B2:practical The student explains the stages Division The student gets to know Genetic importance For meiosi	practical Assigning tasks And report	Short exams Assignment of duty discussions
5	<ul style="list-style-type: none"> <li>2Theoretic</li> </ul>	Cell division	C3: recognizes phases Cell division The genetic importance of each Split in inheritance Characteristics and number of phases	interactive lectu Brainstorming, Dialogue and discussion, Self-education Slide show PowerPoint, movies Scientific	Short exams, assignments, discussions
	<ul style="list-style-type: none"> <li>3 practical</li> </ul>	practical Standard deviation and square X2	A2:practical The student understands the importance Chi-square test	practical Assigning tasks And report	Short exams Assignment of duty discussions


6	• 2Theoretic	Assumptions 	B1: Explains how to conduct Statistical analyses Genetic	interactive lectu Brainstorming, Dialogue and discussion, Self-education Slide show PowerPoint, movies Scientific	Short exams, assignments, discussions
	• 3 practical	practical A field visit	A1:Practical doing a report	practical Assigning tasks And report	Short exams Assignment of duty discussions
7	• 2Theoretical	superiority	C1: Demonstrates superiority Its importance in analysis Vaccination results Among plant species And hybridization	interactive lectu Brainstorming, Dialogue and discussion, Self-education Slide show PowerPoint, movies Scientific	Short exams, assignments, discussions
	• 3 practical	practical Inheritance of linked traits With sex	A2:practical The student gets to know Mutation and its types	practical Assigning tasks And report	Short exams Assignment of duty discussions
8	• 2Theoretical	Anomalies Synthetic chromosomes	B2: Explains the abnormalities Chromosome structure Increase and decrease	interactive lectu Brainstorming, Dialogue and discussion, Self-education Slide show	Short exams, assignments, discussions

			And replace	PowerPoint, movies Scientific	
	• 3 practical	practical  The exam is the first month		practical Assigning tasks And report	Short exams  Assignment of duty discussions
9	• 2Theoretical	The relationship between the gene (genetics and environment)	D1: Extract the most important factors Genetic affected by environment conditions	interactive lecture Brainstorming, Dialogue and discussion, Self-education Slide show PowerPoint, movies Scientific	Short exams, assignments, discussions
	• 3 practical	practical Chromosomes 	practical Get to know the student Methods of distinguish between chromosomes	practical Assigning tasks And report	Short exams  Assignment of duty discussions
10	• 2Theoretical	Clarify inheritance	A5: Describes a phenomenon  Clan genetics is compared  Among Mendel's laws  To specify steps  Genetic improvement	interactive lecture Brainstorming, Dialogue and discussion, Self-education Slide show PowerPoint, movies Scientific	Short exams, assignments, discussions
	• 3 practical	practical Associated genes	practical	practical Assigning tasks And report	Short exams  Assignment of duty

			<p>The student explains the study of T</p> <p>Gene formation in plants</p> <p>And its types</p>		discussions
11	• 2Theoretical	<p>Deadly genes</p> 	<p>C4: Recognizes a concept</p> <p>Deadly genes</p> <p>And its types and how many Alleles in Genetic Engineering</p>	<p>interactive lecture</p> <p>Brainstorming, Dialogue and discussion, Self-education</p> <p>Slide show PowerPoint, movies</p> <p>Scientific</p>	Short assignments, discussions
	• 3 practical	<p>practical</p> <p>Descriptive and quantitative adjectives</p>	<p>A2:practical</p> <p>Student knowledge is important</p> <p>Improvement step</p> <p>Geneic</p>	<p>practical</p> <p>Assigning tasks</p> <p>And report</p>	<p>Short exams</p> <p>Assignment of duty</p> <p>discussions</p>
12	• 2Theoretical		<p>A5: describes</p> <p>Mechanicalinheritance</p> <p>Cytoplasm way out</p> <p>The nucleus and knowledge of the concept</p> <p>Cytoplasmic genetics</p>	<p>interactive lecture</p> <p>Brainstorming, Dialogue and discussion, Self-education</p> <p>Slide show PowerPoint, movies</p> <p>Scientific</p>	Short exams, assignments, discussions
	• 3 practical	practical	<p>A2:practical</p> <p>The student</p>	<p>practical</p> <p>Assigning tasks</p> <p>And report</p>	Short exams

		Genetic analysis of fingerprints Fingers	learns about the practical steps in fingerprinting		Assignment of duty discussions
13	<ul style="list-style-type: none"> <li>2 Theoretical</li> </ul>	A mutation	<p>C5: recognizes</p> <p>The most important mutations and distinguishes the most important</p> <p>Types of mutations in Plants explains</p> <p>Benefits and harms</p> <p>Mutations occur in the plant</p>	<p>interactive lecture</p> <p>Brainstorming, Dialogue and discussion, Self-education</p> <p>Slide show</p> <p>PowerPoint, movies</p> <p>Scientific</p>	<p>Short exams, assignments, discussions</p>
	<ul style="list-style-type: none"> <li>3 practical</li> </ul>	practical Technology cytological studies	<p>B4: practical</p> <p>The student brings slides</p> <p>The growing tips of roots</p> <p>Onions</p>	<p>practical</p> <p>Assigning tasks</p> <p>And report</p>	<p>Short exams</p> <p>Assignment of duty</p> <p>discussion</p>



14	• 2Theoretical	Descriptive and quantitative adjectives	Extract the most important characteristics  Descriptive and quantitative  Inherited in plants  And how to measure it	interactive lecture Brainstorming, Dialogue and discussion, Self-education Slide show PowerPoint, movies Scientific	Short exams, assignments, discussions
	• 3 practical	practical  Mendelian road	practical  The student learns applications of Mendel's laws	practical Assigning tasks And report	Short exams  Assignment of duty  discussions
15	• 2Theoretical	discussions	Conducts discussion panels In genetics Plant and vocabulary Genetic Engineering	interactive lecture Brainstorming, Dialogue and discussion, Self-education Slide show PowerPoint, movies Scientific	Short exams, assignments, discussions
	• 3 practical	practical  with exam		practical Assigning tasks And report	Short exams  Assignment of duty  discussions

### 11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily or monthly, or written exams, reports .... etc

### 12. Learning and Teaching Resources

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

مدرس المادة العملي

م.م. سحر علي خلو

م.م. صفوان حازم



مدرس المادة النظري

أ.م.د. إسراء عبدالحسين جاسم

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