



Course Description Form

1. Course Name:
Genetics
2. Course Code:
GENT212
3. Semester / Year:
First fall semester 2024-2023
4. Description Preparation Date:
2024/2/1
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)
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8. Course Objectives
It aims to provide relevant knowledge and skills Genetics in plants, and teaching students about the concept Genetics, explaining the nature of genetic material, Replication and reproduction of genetic material, Gene expression, Mendelian and Non-Mendelian inheritance

Learn about chromosomes and their characteristics

Draw a genetic map and identify the concept

Mutations and their types, and learning about the concept of genetic engineering.

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	• 2 Theoretical	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	Introduction to genetics	practical Assigning tasks And report	Short exams Assignment of duty

		types of nucleic acids			discussions
2	• 2 Theoretical	A1: identify Cytological foundations for Mendelian inheritance	Cytological basis for Mendelian inheritance	interactive lecture, Brainstorming, Dialogue and discussion, Self-education, Slide show, PowerPoint, movies, Scientific	Short exams, assignments, discussions
	• 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	• 2 Theoretical	A3: Shows how knowledge Chromosomes Under the microscope And distinguish it	Chromosomes	interactive lecture, Brainstorming, Dialogue and discussion, Self-education, Slide show, PowerPoint, movies, Scientific	Short exams, assignments, discussions

	<ul style="list-style-type: none"> 3 practical 	<p>practical</p> <p>Electron microscopy technology</p>	<p>A2A4practical</p> <p>Classifies the student</p> <p>Microscopes and their types</p> <p>The student compares</p> <p>Optical microscope</p> <p>And electron microscope</p>	<p>practical</p> <p>Assigning tasks</p> <p>And report</p>	<p>Short exams</p> <p>Assignment of duty</p> <p>discussions</p>
4	<ul style="list-style-type: none"> 2Theoretical 	<p>Plant Cell</p>	<p>C1: shows organelles</p> <p>The cell and its components</p> <p>And a job</p> <p>Every part of it</p>	<p>interactive lecture,</p> <p>Brainstorming,</p> <p>Dialogue and discussion,</p> <p>Self-education</p> <p>Slide show</p> <p>PowerPoint</p> <p>movies</p> <p>Scientific</p>	<p>Short exams,</p> <p>assignments,</p> <p>discussions</p>
	<ul style="list-style-type: none"> 3 practical 	<p>practical</p> <p>Cell division</p>	<p>A1B2:practical</p> <p>The student explains the stages</p> <p>Division</p> <p>The student gets to know</p>	<p>practical</p> <p>Assigning tasks</p> <p>And report</p>	<p>Short exams</p> <p>Assignment of duty</p> <p>discussions</p>

			Genetic importance For meiosis		
5	• 2 Theoretic	Cell division	C3: recognizes phases Cell division The genetic importance of each Split in inheritance Characteristics and number of phases	interactive lecture, Brainstorming, Dialogue and discussion, Self-education Slide show PowerPoint movies Scientific	Short exams, assignments, discussions
	• 3 practical	practical Standard deviation and square X ²	A2: practical The student understands the importance Chi-square test	practical Assigning tasks And report	Short exams Assignment of duty discussions
6	• 2 Theoretic	Assumptions	B1: Explains how to conduct Statistical analyses	interactive lecture, Brainstorming, Dialogue and discussion,	Short exams, assignments, discussions

			Genetic	Self-educat Slide show PowerPoint movies Scientific	
	<ul style="list-style-type: none"> 3 practical 	practical A field visit	A1:Practical doing a report	practical Assigning tasks And report	Short exams Assignment of duty discussions
7	<ul style="list-style-type: none"> 2Theoretical 	superiority	C1: Demonstrates superiority Its importance in analysis Vaccination results Among plant species And hybridization	interactive lecture, Brainstormi , Dialogue an discussion, Self-educat Slide show PowerPoint movies Scientific	Short exams, assignments, discussions
	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> • 2 Theoretical 	<p>Anomalies</p> <p>Synthetic chromosomes</p>	<p>B2: Explains the abnormality</p> <p>Chromosome structure</p> <p>Increase and decrease</p> <p>And replace</p>	<p>interactive lecture,</p> <p>Brainstorming,</p> <p>Dialogue and discussion,</p> <p>Self-education</p> <p>Slide show</p> <p>PowerPoint</p> <p>movies</p> <p>Scientific</p>	<p>Short exams,</p> <p>assignments,</p> <p>discussions</p>
	<ul style="list-style-type: none"> • 3 practical 	<p>practical</p> <p>The exam is the first month</p>		<p>practical</p> <p>Assigning tasks</p> <p>And report</p>	<p>Short exams</p> <p>Assignment of duty</p> <p>discussions</p>
9	<ul style="list-style-type: none"> • 2 Theoretical 	<p>The relationship between the gene (genetics and environment)</p>	<p>D1: Extract the most important factors</p> <p>Genetic affected by environmental conditions</p>	<p>interactive lecture,</p> <p>Brainstorming,</p> <p>Dialogue and discussion,</p> <p>Self-education</p> <p>Slide show</p> <p>PowerPoint</p> <p>movies</p> <p>Scientific</p>	<p>Short exams,</p> <p>assignments,</p> <p>discussions</p>
	<ul style="list-style-type: none"> • 3 practical 	<p>practical</p> <p>Chromosomes</p>	<p>practical</p> <p>Get to know student</p> <p>Methods distinguishing between chromosomes</p>	<p>practical</p> <p>Assigning tasks</p> <p>And report</p>	<p>Short exams</p> <p>Assignment of duty</p> <p>discussions</p>
10	<ul style="list-style-type: none"> • 2 Theoretical 	<p>Clan inheritance</p>	<p>A5: Describes a phenomenon</p>	<p>interactive lecture,</p> <p>Brainstorming,</p>	<p>Short exams,</p> <p>assignments,</p>

			<p>Clan genetics is compared</p> <p>Among Mendel's laws</p> <p>To specify steps</p> <p>Genetic improvement</p>	<p>Dialogue and discussion, Self-education, Slide show, PowerPoint, movies, Scientific</p>	<p>discussions</p>
	<ul style="list-style-type: none"> 3 practical 	<p>practical Associate genes</p>	<p>practical</p> <p>The student explains the study of T</p> <p>Gene formation in plants</p> <p>And its types</p>	<p>practical</p> <p>Assigning tasks</p> <p>And report</p>	<p>Short exams</p> <p>Assignment of duty</p> <p>discussions</p>
11	<ul style="list-style-type: none"> 2 Theoretical 	<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, Brainstorming, Dialogue and discussion, Self-education, Slide show, PowerPoint, movies, Scientific</p>	<p>Short exam assignment, discussion</p>
	<ul style="list-style-type: none"> 3 practical 	<p>practical</p> <p>Descriptive and quantitative</p>	<p>A2:practical</p> <p>Student</p>	<p>practical</p> <p>Assigning tasks</p> <p>And report</p>	<p>Short exams</p> <p>Assignment of duty</p>

		adjectives	knowledge is important Improvement step Geneic		discussions
12	• 2 Theoretical		A5: describes Mechanical inheritance Cytoplasm way out The nucleus and knowledge of the concept Cytoplasmic genetic	interactive lecture, Brainstorming, Dialogue and discussion, Self-education Slide show PowerPoint movies Scientific	Short exams, assignments, discussions
	• 3 practical	practical Genetic analysis of fingerprints Fingers	A2: practical The student learns about practical steps of fingerprinting	practical Assigning tasks And report	Short exams Assignment of duty discussions
13	• 2 Theoretical	A mutation	C5: recognizes The most important mutations and	interactive lecture, Brainstorming, Dialogue and discussion, Self-education	Short exams, assignments, discussions

			distinguishes the most important Types of mutations in Plants explains Benefits and harms Mutations occur in the plant	Slide show PowerPoint movies Scientific	
	<ul style="list-style-type: none"> 3 practical 	practical Technolo of cytologica studies	B4:practical The student brings slides The growing tips of roots Onions	practical Assigning tasks And report	Short exams Assignment of duty discussion
14	<ul style="list-style-type: none"> 2Theoretica l 	Descriptive and quantitative adjectives	Extract the most important characteristics Descriptive and quantitative Inherited in	interactive lecture, Brainstormi , Dialogue an discussion, Self-educat Slide show PowerPoint movies Scientific	Short exams, assignments, discussions

			plants And how to measure it		
	• 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	• 2Theoretica	discussions	Conducts discussion panels In genetic Plant and vocabulary Genetic Engineering g	interactive lecture, Brainstormi , Dialogue an discussion, Self-educat Slide show PowerPoint movies Scientific	Short exams, assignments, discussions
	• 3 practical	practical Second month 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 oral, 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	


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