Course Description Form
Genetics

1. Course Name:	
Genetics	
2. Course Code:	
GENT212	
3. Semester / Year:	
Frist semester/third stage/2024-2025	
4. Description Preparation Date:	
1-9-2024	
5. Available Attendance Forms:	
My presence + Electronic	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2 theoretical hours / 3 practical hours (5 hours) / 3.5 units /75 hours	
7. Course administrator's name (mention all, if more than one name)	
Pro.Dr. Wiam Yahya Rasheed Al-Shakarchy **Abdullah Khder Mohammad**	
8. Course Objectives	
Course Objectives	• Enable the student to understand and understand plant genetics • Realizing the relationship of this science to the possibility of developing horticultural plants by providing the student with theoretical and practical materials on plant genetics. • Familiarity with how to exploit this science in developing horticultural crops • A comprehensive study of Mendel's genetic laws • Exploring the most important theories of geneticists and their role in developing this science
9. Teaching and Learning Strategies	
Strategy	- Interactive lecture -Brainstorming - Dialogue and discussion -Field Training - Practical exercises - Field project -Self-education

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 Theoretical	a1: Learn about the most important science of plant genetics	Introduction to genetics and its relationship to other sciences	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Short test, final test
	3 practical	b5: Discovers the functions and importance of plant cell components	Plant cell and its components	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, and self-learning	Short practical test1
2	2 Theoretical	c1: Explains the dominant and recessive traits in plants	Genetic terms and definitions	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Final test
	3 practical	b6: Enumerate the stages of meiosis in the first stage of division	Division in the plant cell	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, and self-learning	Viewings and homework
3	2 Theoretical	b1: Explains the law of isolation	Mendel's first law	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Final test
	3 practical	b7: Tests for backcrossing	Mendel's first law	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, and self-learning	Homework
4	2 Theoretical	a2: Learn about the law of free distribution of genetic factors	Mendel's seco law	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Short test, final test
	3 practical	b8: Determine the dominant genotypes from hybridization according to Mendel's second law	Mendel's seco law	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, and self-learning	Field evaluation
5	2 Theoretical	a3: He is familiar with the most important types of hereditary sovereignty	Modifications in Mendelian ratios	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Final test
	3 practical	b9: Discover the difference between incomplete dominance and complete dominance	Incomplete dominance	Interactive lecture, brainstorming, dialogue and discussion, field training, practical	Viewings and homework

				exercises, and self-learning	
6	2 Theoretical	c2: Explains the types of lethal genes and their effect on plants	Deadly genes	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Semester exam 1, final exam
	3 practical	b10: Explain the genes that cause the death of an organism	Deadly genes	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, and self-learning	Semester exam 1, final exam
7	2 Theoretical	a4: Describes the most important types of excellence	superiority	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Final test
	3 practical	c4: Distinguishes cases of superiority	superiority	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, and self-learning	Viewings and homework
8	2 Theoretical	a5: Identify examples and characteristics of multiple alleles	Multiple alleles	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Final test
	3 practical	c5: Shows the color of fur in wild rabbits	Multiple alleles	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, and self-learning	Short practical test 2
9	2 Theoretical	b2: Explains the concept of blood groups in humans and the comparison between them	Blood groups in humans	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Final test
	3 practical	b11: Tests blood groups and types	Blood groups in humans	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, and self-learning	Viewings and homework
10	2 Theoretical	b3: Distinguish the classification of types of chromosomal maps	Chromosomal maps	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Final test
	3 practical	c6: Explains how to draw a chromosomal map	Chromosomal maps	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, and self-learning	Viewings and homework
11	2 Theoretical	b4: Determines genetic crossing over	Gene correlation and genetic crossing over	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Short test, final test

	3 practical	b12: Distinguish between crossing over and genetic relatedness through a diagram	Connection and crossing	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, and self-learning	Viewings and homework
12	2 Theoretical	e1: Identifying and diagnosing the types of flowers available in college fields for pollination	Solve the problem	Interactive lecture, brainstorming, dialogue and discussion, self-learning	a report
	3 practical	e2: Determines the appropriate time to perform castration and vaccination operations	Solve the problem	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, and self-learning	Field evaluation
13	2 Theoretical	c3: Explains the types and forms of traits affected by sex	Traits influenced and linked to sex	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Semester exam 1, final exam
	3 practical	c7: Identify the most important traits affected by sex	Sex-influenced traits	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, and self-learning	Semester exam 1, final exam
14	2 Theoretical	d1: He conducts discussion sessions on training students on the use of multiplication tools	Report and discuss	Interactive lecture, brainstorming, dialogue and discussion, self-learning	a report
	3 practical	c8: Identify the most important characteristics associated with sex	Sex-linked traits	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, and self-learning	Short practical test 3
15	2 Theoretical	a6: Learn about the nature and components of genetic material	The nature of the genetic material	Interactive lecture, brainstorming, dialogue and discussion, self-learning	Short test, final test
	3 practical	d2: Conducts discussion panels to learn about kaisma and its relationship to the chromosome	Reports and discussion	Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, and self-learning	Field project

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

NO.	Calendar methods	Calendar date (week)	Class	Relative weight%
1	Report 1	12	2.5	2.5
2	Report 2	14	2.5	2.5
3	Quiz (1)	1	2	2
4	Quiz (2)	11	2	2
5	Quiz (3)	15	1	1
6	Semester test 1	6	7.5	7.5
7	Semester test 1	13	7.5	7.5
8	Final theoretical test	Final semester exams	40	40
9	Practical field project	15	5	5
10	Field evaluation	4 , 12	2	2
11	Practical Quiz 1	1	1	1
12	Practical Quiz 2	8	0.5	0.5
13	Practical Quiz 3	14	1	1
14	Homework	2,3,5,7,9,10,11	5.5	5.5
15	Final practical test	Final semester exams	20	20
	The total	100	%100	%100

12-Learning and Teaching Resources

Required textbooks (curricular books, if any)	A- Book: Basics of Genetics (Dr. Adnan Hassan Muhammad Al-Adhari) / Ministry of Higher Education - University of Mosul
Main references (sources)	A- Book: General Inheritance (Dr. Abdul Hussein Al-Faisal)
Recommended books and references (scientific journals, reports...)	A. Book: Genetics (Dr. Makram Diaa Shakara)
Electronic References, Websites	Nothing

Theoretical Lecturer
Pro.Dr. Wiam Yahya Rasheed Al-Shakarchy

Practical Lecturer
Abdullah Khder Mohammad

Chairman of the Scientific Committee
Prof.Dr.Wiam Yahya Rasheed Al-Shakarchy

Head of Field Crops Dep.
Assist.Prof.Dr. Moyassar Mohammed Aziz