

## Course Description Form

1. Course Name: Cereal and Legume crops	
2. Course Code: <a href="#">AGEX24_F1031</a>	
3. Semester / Year: 2023/2024	
4. Description Preparation Date: 1/9/2023	
5. Available Attendance Forms: presence	
6. Number of Credit Hours (Total) / Number of Units (Total) (75 hours) (3.5 units)	
7. Course administrator's name (mention all, if more than one name)	
Name: Muthanna Abdulbaset Ali Email: <a href="mailto:drmothanaalameri86@uomosul.edu.iq">drmothanaalameri86@uomosul.edu.iq</a> Name: Saddam Ibrahim alobaidi Email: <a href="mailto:saddam.alobaidi@uomosul.edu.iq">saddam.alobaidi@uomosul.edu.iq</a>	
8. Course Objectives	
<b>Course Objectives</b> theoretical: - Enabling the student to understand and understand what is related to leguminous crops and their relationship to the formation of bacterial nodules and nitrogen fixation symbiotically and how they grow. - Enabling the student to know the most important ways to distinguish between different legume crops. - Enabling the student to become familiar with the most important sources of improving these crops in order to increase productivity and improve quality. - Enabling the student to discover the mechanisms of fixing atmospheric nitrogen and reducing the use of chemical fertilizers. - The student can judge the most important problems and obstacles facing increasing t	<ul style="list-style-type: none"> <li>• .....</li> <li>• .....</li> <li>• .....</li> </ul>

productivity of leguminous crops.

### 9. Teaching and Learning Strategies

<b>Strategy</b>	<p>theoretical:</p> <ul style="list-style-type: none"> <li>- Interactive lecture</li> <li>- Brainstorming</li> <li>- Dialogue and discussion</li> <li>- Assigning tasks and reporting</li> <li>- Presentations of models of nitrogen fixation and different legu crops</li> </ul>
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### 10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 Theoretical 3 practical	Theoretical: Explains the concept of crop plant development and how the introduction process is carried out practical : Examines vari samples of legumin crops and seed legumes their importance in growth conditions leguminous crops examines and detects formation of bacte nodules and fixation nitrogen symbiotically.	Theoretical: learning ab the development of c plants and how to perfe the introduction process. Practical	Theoretical: Audio methods, writing style on t blackboard , dialog style Direct practical : Assigning tasks a reporting	Short exams, assignments, discussions
2	2 Theoretical 3 practical	Theoretical: Explains the most important climatic and soil needs of legumes practical : Determin which samples of bacte nodules and symbi nitrogen fixation are best	Theoretical: Climatic and needs of legumes. practical : Mutually pollinated p groups	Theoretical: Audio methods, writing style on t blackboard , dialog style Direct practical : Assigning tasks a reporting	Short exams, assignments, discussions
3	2 Theoretical 3 practical	Theoretical: Knowledge of t most important factors affecting the formation of bacterial nodules and nitrog fixation symbiotically practical : Discover how seed legu spread and the causes nutritional and agricult problems	Theoretical: Factors affecting the formation of bacterial nodules and nitrogen fixation symbiotically. practical : Spread of seed legumes	Theoretical: Audio methods, writing style on t blackboard , dialog style Direct practical : Assigning tasks a reporting	Short exams, assignments, discussions
4	2 Theoretical	Theoretical: It judges the	Theoretical: Agricult	Theoretical:	Short exams,

	3 practical	extent of consumers' exposure to agricultural problems and some nutritional problems of leguminous crops practical : Measures with types of rhizobia infect roots of legumes promotes their spread their most appropriate for food preservation	problems and so nutritional problems leguminous crops. practical : Types of rhizobia that in the roots of legumes enhancing their spread use	Audio methods, writing style on the blackboard , dialog style Direct practical : Assigning tasks and reporting	assignments, discussions
5	2 Theoretical 3 practical	Theoretical: Mastering methods of protecting and preserving legumes using various materials and methods practical : It distinguishes the parts of the bean crop from other plants	Theoretical: Bean crop Practical Bean crop	Theoretical: Audio methods, writing style on the blackboard , dialog style Direct practical : Assigning tasks and reporting	Short exams, assignments, discussions
6	2 Theoretical 3 practical	Theoretical: Learn about economic importance of chickpeas - appropriate environmental conditions and operations to service the land and prepare the land for planting - date of planting - quantity of seeds / methods of cultivation and operations to service crop after planting - diseases and pests that affect the crop and ways to combat them practical : It distinguishes plant parts of chickpea crop from other plants	Theoretical: chickpea crop practical : Chickpea crop	Theoretical: Audio methods, writing style on the blackboard , dialog style Direct practical : Assigning tasks and reporting	Short exams, assignments, discussions
7	2 Theoretical 3 practical	Theoretical: Learn about economic importance of lentils - appropriate environmental conditions, soil service operations and preparing the land for cultivation - planting date - seed quantity/d - cultivation methods - crop service operations after planting - diseases and pests that	Theoretical: Lentil crop practical : Lentil crop	Theoretical: Audio methods, writing style on the blackboard , dialog style Direct practical : Assigning tasks and reporting	Short exams, assignments, discussions

		affect the crop and ways to combat them - harvesting the crop practical : It distinguishes the parts of the lentil crop from other plants			
8	2 Theoretical 3 practical	Theoretical: Explains the most important microorganisms (bacteria) and their relationships to beans and their products practical : Testing types of canned beans	Theoretical: Bean yield practical : Phaseolus crop	Theoretical: Audio methods, writing style on the blackboard , dialog style Direct practical : Assigning tasks and reporting	Short exams, assignments, discussions
9	2 Theoretical 3 practical	Theoretical: knowledge of economic importance of soybeans - appropriate environmental conditions - service operations preparing the land cultivation - planting date - quantity/d - cultivation methods - crop service operations after planting, diseases and pests that affect the crop and ways to combat them - harvesting the crop practical : He experiments with different types of media specific to soybean crop practical : He experiments with different types of media specific to the soybean crop	Theoretical: soybean crop practical : Soybean crop	Theoretical: Audio methods, writing style on the blackboard , dialog style Direct practical : Assigning tasks and reporting	Short exams, assignments, discussions
10	2 Theoretical 3 practical	Theoretical: Learn about economic importance of mung bean appropriate environmental conditions - soil service operations and preparing the land cultivation - planting date - quantity/d - cultivation methods crop service operations planting - diseases and pests affect the crop and ways to combat them - harvesting the crop He examines various samples of field's pistachio crop to determine their suitability for cultivation	Theoretical: Mung bean crop Practical: Field pistachio crop	Theoretical: Audio methods, writing style on the blackboard , dialog style Direct practical : Assigning tasks and reporting	Short exams, assignments, discussions
11	2 Theoretical 3 practical	Theoretical: It determines the appropriate environmental conditions	Theoretical: pea crop practical : Mung crop	Theoretical: Audio methods, writing style on the	Short exams, assignments, discussions

		for growing peas - soil service operations and preparing the land for planting - planting date - seed quantity/d - cultivation methods - crop service operations after planting diseases and pests that affect the crop and ways to combat them - harvesting the crop practical : Shows the plant parts of the mung crop		blackboard , dialog style Direct practical : Assigning tasks and reporting	
12	2 Theoretical 3 practical	Theoretical: Runs discussion panels on leguminous crops and ways to improve production practical : Shows the parts of the cowpea crop	Theoretical: report and discussion practical : Cowpea crop	Theoretical: Audio methods, writing style on the blackboard , dialog style Direct practical : Assigning tasks and reporting	Short exams, assignments, discussions
13	2 Theoretical 3 practical	Theoretical: Identifying health risks from the use of chemicals and their impact on human health and the impact of negligence on public health practical : Determines the validity of different samples from the jar	Theoretical:: Solving a problem practical : Harthman crop	Theoretical: Audio methods, writing style on the blackboard , dialog style Direct practical : Assigning tasks and reporting	Short exams, assignments, discussions
14	2 Theoretical 3 practical	Theoretical: It proposes a suitable method for growing beans and foods that can be produced and applied in food production institutions practical : Explains the parts of the pea crop	Theoretical: solving a problem practical : Pea crop	Theoretical: Audio methods, writing style on the blackboard , dialog style Direct practical : Assigning tasks and reporting	Short exams, assignments, discussions
15	2 Theoretical 3 practical	Theoretical: It proposes a suitable method for growing beans and foods that can be produced and applied in food production institutions practical : Aware of the major problems facing the cultivation and production of leguminous crops	Theoretical: solving a problem practical : Solve the problem	Theoretical: Audio methods, writing style on the blackboard , dialog style Direct practical : Assigning tasks and reporting	Short exams, assignments, 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

Calendar methods	Calendar date (week)	Degree	Relative weight %
Theoretical final report + practical experience reports	Theoretical week 15 practical week 1 - 15	7 Theoretical 6 practical	13
Short test (1) Quiz	3 Weeks	4 Theoretical 3 practical	6
Midterm Exam (theoretical and practical)	9 Weeks	10 Theoretical 5 practical	15
Short test (2) Quiz	12 Weeks	4 Theoretical 2 practical	6
Final practical test	Exams week Practical	20	20
Final theoretical test	The week of theoretical exams	40	40
the total		100	100

## 12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Legume crops (theoretical and practical parts) I Majeed Mohsen Al Ansari
Main references (sources)	Field crop production d. Mohsen Al-Janabi and Younis Abdel Qader Ali 1997.
Recommended books and references (scientific journals, reports...)	Lectures compiled from recent books posted on Internet
Electronic References, Websites	Wikipedia encyclopedia (online)

Theoretical subject teacher: Assaint. prof. Dr.. Muthanna Abdul baseit Ali, practical subject teacher: M.M. Saddam Ibrahim alobaidi

Chairman of the Scientific Committee. Dr Talal Saeed Hamid, Agricultural Extension Department:. Dr.. Talal

Saeed Hamid