

## Course Description Form

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| <b>1. Course Name:</b>  |  |
| Gardening principles  |  |
| <b>2. Course Code:</b>  |  |
| PRHS116   |  |
| <b>3. Semester / Year:</b>  |  |
| First semester (autumn)/2023-2024   |  |
| <b>4. Description Preparation Date:</b>   |  |
| 1/9/2023  |  |
| <b>5. Available Attendance Forms:</b>   |  |
| Attendance lesson   |  |
| <b>6. Number of Credit Hours (Total) / Number of Units (Total): units</b>   |  |
| 2 theoretical + 3 practical / 3.5 units   |  |
| <b>7. Course administrator's name (mention all, if more than one name):</b>   |  |
| Name: Dr. Aysar mohammed salim saeed - M.M. Zuhoor Fouad Al-Obaidi<br>Email: <a href="mailto:aysaralsalim@uomosul.edu.iq">aysaralsalim@uomosul.edu.iq</a>   |  |
| <b>8. Course Objectives</b>   |  |
| <p>The learner should be able to understand and comprehend what is related to the subject of principles horticulture and its relationship to other sciences</p> <p>Their selection of important agricultural processes in horticultural plants</p> <p>Differentiating between different planning systems and the appropriate ones</p> <p>Understand the basics and concepts of horticulture</p> <p>Distinguish between processes that are suitable for fruit vegetable and ornamental crops</p> | <p>Familiarity with the information the farmer need and what is available to him to understand the science of horticulture and its divisions</p> <p>Agricultural awareness of the factors affecting yield</p> <p>Determine methods of producing seeds in horticultural crops and methods of caring for them in terms of storage and marketing</p> <p>A comprehensive study on how to establish vegetable farms or fruit orchards and establish nurseries for horticultural plants.</p> |
| <b>9. Teaching and Learning Strategies</b>  |  |
| <p>Interactive lecture</p> <ul style="list-style-type: none"> <li>Brainstorming</li> <li>Dialogue and discussion</li> <li>Field Training</li> <li>Practical exercises</li> <li>Field project</li> <li>Self-education</li> </ul>   |  |

## 10. Course Structure

| Week   | Hours        | Required Learning Outcomes   | Name of Unit or subject  | Learning method  | Evaluation method  |
|--------|--------------|--|--|--|--|
| First  | 2Theoretical | A1: Learn about the concept of horticulture, its divisions and definition<br>B1: He possesses practical and mental knowledge and concepts that help him increase his knowledge of the divisions of horticulture<br>D3: Community members participate in field work to educate them about the economic and nutritional importance of vegetable crops<br>E1: Contributes to knowing the number and types of divisions of vegetable crops | An overview of the concept of horticulture, its benefits, and an introduction and definition of horticulture             | <b>Interactive lecture, brainstorming, dialogue discussion, self-learning</b>  | Interactive lecture, brainstorming, dialogue discussion, self-learning |
|        | 3Practical   | C3: Uses the information the farmer needs and what is available to him to master his work  | Learn about practical concepts and agricultural operations related to horticulture principles                            | Interactive lecture, brainstorming, dialogue and discussion, field training, and self-learning                           | Short practical test 1   |
| Second | 2Theoretical | A2: Determines the factors affecting the growth of vegetable crops<br>B1: He possesses the practical and mental knowledge and concepts that help him carry out the necessary agricultural operations<br>C5: Successfully balances the investment and use of fruit, vegetable and ornamental plants and employs them in a way that is compatible with the important agricultural operations carried out on crops.                       | Factors affecting the growth of vegetable crops  | Interactive lecture, brainstorming, dialogue and discussion, self-learning   | Scientific tour of horticultural facilities                            |
|        | 3Practical   | C3: It uses the information the farmer needs to divide vegetable crops to facilitate studying the production of these crops<br>A2 Determines methods of growing horticultural crops  | How to identify horticultural facilities and detect agricultural environments  | Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, and self-learning      | Scientific tour of horticultural facilities                            |
| Third  | 2Theoretical | A2: Determines methods of propagation of vegetable crops and their specifications  | Sexual reproduction and its specifications   | Interactive lecture, brainstorming, dialogue and discussion, self-learning   | Semester exam 1, final exam  |
|        | 3Practical   | C3: Uses the information the farmer needs and what is available to him to master his work<br>A1: List the most prominent methods of vegetative propagation with plant examples<br>D1: Acquire the communication skills necessary to deal with confidence and certainty on all topics related to crop production  | How to train to carry out some important agricultural operations to increase and improve production                      | Interactive lecture, brainstorming, dialogue and discussion, field training, and self-learning                           | Short test   |
| Fourth | 2Theoretical | A2: It defines a definition of regionalization, what its methods are, how it is conducted<br>C4: Draw plans and methods for planting hybrid seeds<br>D3: Community members participate in field work to educate them about the economic importance of vegetable crops<br>E1: It contributes to enhancing the benefits of conducting important agricultural operations and their benefit in increasing and improving production         | The general foundations and principles used in carrying out agricultural operations                                      | Identify the benefits of acclimatization and its effect on plants and their resistance to harsh environmental conditions | Semester test 1, final test report                                     |
|        | 3Practical   | C3: Uses the information the farmer needs and what is available to him to master his work<br>C4: Draws up plans and programs for development in the field of irrigation and the application of its various methods<br>C5: Successfully balances investment and use of vegetable and fruit crops and employs them in accordance with market requirements  | Identify the benefits of acclimatization and its effect on plants and their resistance to harsh environmental conditions | Interactive lecture, brainstorming, dialogue and discussion, field training, practical exercises, and self-learning      | Short practical test 2   |

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| Fifth   | 2Theoretical | C4: Draws up plans and programs for reproductive divisions and their benefits<br>D3: Community members participate and work to educate them about the importance of solving all problems related to vegetable production in Iraq<br>E1: It contributes to enhancing the economic importance of vegetable and fruit crops by increasing economic returns   | Climatic conditions and their impact on garden landscaping, the choice of plants, and the factors on which garden design depends | Interactive lecture, brainstorming, dialogue and discussion, self-learning | Semester test 1, final test report |
|         | 3Practical   | C3: Uses the information the farmer needs and what is available to him to master work<br>C4: Draw a diagram and a brief overview of the hierarchical shape of trees<br>D1: Acquiring the communication skills necessary to deal with confidence and certainty at the individual and collective levels between the farmer and the beneficiary of the crop  | Different methods of raising trees and pruning   | Interactive lecture, brainstorming, dialogue and discussion, self-learning | writing a report                   |
| Sixth   | 2Theoretical | A2: Determines flowering systems in vegetable crops<br>C4: Draw plans and programs to determine flowering systems in vegetable crops<br>D1: Acquiring the communication skills necessary to deal with confidence and certainty at the individual and group levels<br>D3: Community members participate and work to educate them about the importance of plant crops and increase the level of production<br>E1: It contributes to mentioning the factors influencing the success of the transplantation process | Nutritional value of vegetable crops   | Interactive lecture, brainstorming, dialogue and discussion, self-learning | Short test, final test             |
|         | 3Practical   | C2: Innovates methods for breeding and improving different types of varieties designed for harsh environmental conditions<br>C3: Uses the information the farmer needs and what is available to him to master work<br>C4: Draws up plans and programs for development in the field of agricultural operations   | The basic factors that increase the quality of the yield   | Interactive lecture, brainstorming, dialogue and discussion, self-learning | Write a report and homework        |
| Seventh | 2Theoretical | A3: It employs structural and technical facilities to divide the fruit into several distinct areas<br>C4: Draws up plans and programs for development in the field of applying important agricultural operations to fruit and vegetable trees   | Uses of greenhouses and wooden canopies in the production of various crops   | Interactive lecture, brainstorming, dialogue and discussion, self-learning | Semester exam 2, final exam        |
|         | 3Practical   | C3: Uses the information the farmer needs and what is available to him to master work<br>C5: Successfully balances the effects of harmful low temperatures and beneficial low temperatures<br>D1: Acquiring farmers' communication skills necessary to deal with confidence and certainty at the individual and collective levels   | A scientific visit to one of the horticultural facilities  | Interactive lecture, brainstorming, dialogue and discussion, self-learning | Short test                         |
| eighth  | 2Theoretical | A3: Employs horticultural facilities to carry out agricultural operations<br>C4: Draws up plans and programs for development in the field of crop cultivation of fruit trees, vegetables, and ornamental plants   | Available horticultural facilities and surrounding weather conditions  | Interactive lecture, brainstorming, dialogue and discussion, self-learning | Semester exam 2, final exam        |
|         | 3Practical   | C3: Uses the information the farmer needs and what is available to him to master work<br>C4: Draws up plans and programs for development in the field of crop cultivation, fruit trees, vegetables, and ornamental plants<br>C5: Successfully balances investment and employment of fruit trees to suit agricultural service operations   | Practical steps on how to plant fruit trees  | Interactive lecture, brainstorming, dialogue and discussion, self-learning | writing a report                   |

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| Ninth      | 2Theoretical | E4 determines the difference between the rest phase and the rest phase<br>C3: Uses the information the farmer needs and what is available to him to master work  | The concept of the effect of temperature on the growth of fruit trees    | Interactive lecture, brainstorming, dialogue and discussion, self-learning | Semester exam 2, final |
|            | 3Practical   | C3: Uses the information the farmer needs and what is available to him to master work<br>C4: Draws up plans and programs for development in the field of agricultural operations important for crop production<br>C5: Successfully balances how to design semi-intensive cropping cycle                          | Designing an agricultural cycle to improve production and crop visit     | Interactive lecture, brainstorming, dialogue and discussion, self-learning | short exam             |
| Tenth      | 2Theoretical | A2: Determines what are the effects of weather factors on growing fruit trees<br>C5: Successfully balances the investment use and employment of facilities with service operations   | Types of horticultural facilities  | Interactive lecture, brainstorming, dialogue and discussion, self-learning | Semester test2         |
|            | 3Practical   | C3: Uses the information the farmer needs and what is available to him to master work<br>C4: Draws up plans and programs to produce and produce seedlings in the nursery<br>C5: Successfully balances the conditions for successful nursery production   | Practical steps for designing and establishing a nursery                 | Interactive lecture, brainstorming, dialogue and discussion, self-learning | short exam             |
| Eleventh   | 2Theoretical | A2: Determines what are the effects of weather factors on growing fruit trees<br>C5: Successfully balances the investment use and employment of facilities with service operations   | Types of horticultural facilities  | Interactive lecture, brainstorming, dialogue and discussion, self-learning | Semester test2         |
|            | 3Practical   | C3: Uses the information the farmer needs and what is available to him to master work<br>C4: Draws up plans and programs to produce and produce seedlings in the nursery<br>C5: Successfully balances the conditions for successful nursery production   | Practical steps for designing and establishing a nursery                 | Interactive lecture, brainstorming, dialogue and discussion, self-learning | short exam             |
| Twelfth    | 2Theoretical | A2: Determines the reproductive system between sexual reproduction and vegetative reproduction<br>C5: Successfully balances the division of Iraq in terms of planting fruit trees and their divisions  | Divisions of areas in terms of growing fruit trees                       | Interactive lecture, brainstorming, dialogue and discussion, self-learning | Final test             |
|            | 3Practical   | C3: Uses the information the farmer needs and what is available to him to master work<br>C4: Draws up plans and programs on the most prominent methods of growing vegetable crops in Iraq  | Practical steps for growing vegetable crops                              | Interactive lecture, brainstorming, dialogue and discussion, self-learning | writing a report       |
| Thirteenth | 2Theoretical | A2: Defines the difference between pruning and layering<br>C3: Uses the information the farmer needs and what is available to him to master work   | How to carry out agricultural operations, including thinning and pruning | Interactive lecture, brainstorming, dialogue and discussion, self-learning | Final test             |
|            | 3Practical   | C3: Uses the information the farmer needs and what is available to him to master work<br>C4: Draws up plans and programs for development in the field of cultivation of deciduous and perennial fruit trees<br>C5: Successfully balances investment and employment of facilities to suit agricultural operations | Methods of growing vegetable crops in Iraq                               | Interactive lecture, brainstorming, dialogue and discussion, self-learning | Wooden canopy tour     |
| Fourteenth | 2Theoretical | C3: Uses the information the farmer needs and what is available to him to master work<br>C5: Successfully balances investment use of horticultural facilities and employ them appropriately to the crops grown within the facility.  | Designing an agricultural cycle for vegetable crops                      | Interactive lecture, brainstorming, dialogue and discussion, self-learning | Short test, final test |
|            | 3Practical   | C3: Uses the information the farmer needs and what is available to him to master work<br>C4: Draws up plans and programs for   | Designing an agricultural cycle for fruit trees                          | Interactive lecture, brainstorming, dialogue and discussion, self-learning | Short practical test3  |

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|-----------|--------------|---|--|--|---|
|           |              | development in the field of growing vegetables, fruits, and ornamental plants<br>C5: Successfully balances investment and employment of facilities to suit agricultural operations<br>D2: Dealing with modern technology efficiently enables it to produce high yields  |  |  |   |
| Fifteenth | 2Theoretical | C4: Draws up plans and programs for development in the field of growing vegetable, fruit and ornamental crops within horticultural facilities<br>C5: Successfully balances investment and employment of facilities to suit agricultural operations  | Practical steps for dividing the nursery and distributing the plan within it | Interactive lecture, brainstorming, dialogue and discussion, self-learning | Short test, final test                                    |
|           | 3Practical   | C3: Uses the information the farmer has and what is available to him to master work<br>C4: Draws up plans and programs for development in the field of cultivation and production of trees and various plants<br>C5: Successfully balances investment and employment of facilities to suit agricultural operations<br>D1: Acquiring the communication skills necessary for the farmer to deal with confidence and certainty at the individual and collective levels with the labor market and product disposal.<br>D2: Dealing with modern technology efficiently that enables him to accomplish his scientific and practical tasks | The effects of environmental conditions on yield                             | Interactive lecture, brainstorming, dialogue and discussion, self-learning | A tour of the canopy and greenhouse inside the university |

## 11. Course Evaluation

Distribution of the grade out of 100 according to the tasks assigned to the student, such as daily preparation, daily, oral, monthly, written exams, and reports.

## 12. Learning and Teaching Resources

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| Required textbooks (methodology, if any)                           | Learning and teaching resources<br>Gardening principles book, Part 1 and Part 2  |
| Main references (sources)  | Scientific references specialized in fruit trees, vegetables, greenhouses, and books related to nurseries                          |
| Recommended books and references (scientific journals, reports...) | Principles of horticulture Dr. Karim Saleh Al and Dr. Saad Zaghloul Principles of Horticulture written by Dr. Faisal Rashid Nasser |
| Electronic References, Websites                                    | <a href="https://exa.unne.edu.ar/">https://exa.unne.edu.ar/</a> Principles of Horticultural Science                                |

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