**Course Syllabus**

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| **1** | **Course title** | **Basics of Fruit Trees**  |
| **2** | **Course number** | **0601210** |
| **3** | **Credit hours** | 3 |  |
| **Contact hours (theory, practical)** | 2 lectures / 3hrs. lab session: A week |
| **4** | **Prerequisites/corequisites** | Principles Plant Production (0661101) |
| **5** | **Program title** | Bachelor in Horticulture and Crop Science |
| **6** | **Program code** | 071 |
| **7** | **Awarding institution**  | University of Jordan |
| **8** | **School** | Agriculture |
| **9** | **Department** | Horticulture and Crop Science |
| **10** | **Course level**  | Undergraduate |
| **11** | **Year of study and semester (s)** | 2021/2022 |
| **12** | **Other department (s) involved in teaching the course** | - |
| **13** | **Main teaching language** | English |
| **14** | **Delivery method** |  √ Face to face learning ☐Blended ☐Fully online |
| **15** | **Online platforms(s)** | ☐Moodle √ Microsoft Teams ☐Skype ☐Zoom ☐Others………… |
| **16** | **Issuing/Revision Date** | 2021 |

**17 Course Coordinator:**

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| Name: Prof. Nihad AlSmairat Contact hours: upon requestOffice number: 143 Phone number: 22333Email: drnihad@ju.edu.jo |

**18 Other instructors:**

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| None |

**19 Course Description:**

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| As stated in the approved study plan.This course deals with the basics of fruit science including importance and classification of fruit trees, orchard establishment (site selection, fruit tree selection, planting systems), fruit tree reproduction (flowering, fruit set, fruit drop and fruit growth and maturation), cultural practices (pruning and training, fruit thinning, fertilization, irrigation, and use of plant growth regulators), new topics (temperature and wind management, orchard floor management, organic fruit production, and varieties improvement |

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| **20 Course aims and outcomes:**A- Aims:1. To introduce the students to the botanical and physiological science of fruit trees
2. To introduce the students to the facts, theories and hypotheses about cultural practices utilized in fruit production.
3. To introduce the students to take advantage of their knowledge and information to find solutions to any problem.

B- Students Learning Outcomes (SLOs): Upon successful completion of this course, students will be able to:

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| Program SLOsSLOs of the course | SLO (1) | SLO (2) | SLO (3) | SLO (4) | SLO (5) | SLO (6) | SLO (7) | SLO (8) | SLO (9) | SLO (10) | SLO (11) |
| **A. Knowledge and Understanding:**A1. Understand the basics and principles of modern tree fruit production. | √  |  |  |  | √  |  |  |  |  |  |  |
| A2. Understand the cultural practices in the orchard (pruning and training, fruit thinning, fertilizer application, irrigation, and use of plant growth bioregulators) | √  | √  | √  |  |  |  |  |  |  |  | √  |
| **B. Intellectual Analytical and Cognitive Skills:**B1. Be able to apply knowledge and to find information to formulate a reasonable solution to any problem. |  | √  |  |  | √  | √  |  |  | √  | √  |  |
| **C. Subject- Specific Skills:**C1. Be able to identify tree fruit species. | √  |  | √  |  |  |  |  |  |  |  |  |
| C2. Be able to design and establish an orchard. | √  | √   |  |  |  |  |  |  |  |  |  |
| C3. Able to do cultural practices properly. | √  |  |  |  | √  |  |  |  |  |  |  |
| **D. Transferable Key Skills:**D1. provide students with a range of transferable skills (such as writing, speaking, conversation, contend with deadlines, and internet searching) which prepare students for a wide range of careers and job specifications. |  | √  |  |  | √  |  | √  | √  |  |  | √  |

Program Learning Outcomes:1. Demonstrate a deep understanding of basic agricultural information and practical skills and employing these concepts efficiently in different work locations.
2. Apply modern concepts of agricultural systems in horticulture and crop science.
3. Prepare and manage plants precisely.
4. Improve and develop new horticulture and field crops.
5. Apply modern mechanization techniques and employ it in agricultural sector.
6. Analyze and present solutions for related problems in the production process.
7. Develop thoughtful, clear, and consistent perspectives on ethical issues with minimal damage to environment.
8. Communicate and work efficiently with farmers, investors and agricultural institutions at the local, regional and international levels.
9. Employ creative ideas and use production programs that fit the prevailing conditions and meet the needs of the local, regional and international markets.
10. Apply concepts of research to select, manage and improve plants and their products.
11. Commit to sustainable learning and critical thinking
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**21. Topic Outline and Schedule:**

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| **Week** | **Lecture** | **Topic** | **Intended Learning Outcome** | **Learning Methods (Face to Face/Blended/ Fully Online)** | **Platform** | **Synchronous / Asynchronous Lecturing** | **Evaluation Methods** | **Resources** |
| 1 | **Introduction:** | 1. Temperate & Sub-tropical Fruit Production.2. Temperate-zone Pomology. |
| 1.1 | Role of fruit trees | A1 |  Face to face | Teams |  | Lec. Quizzes  |
| 1.2 | Classification of fruit trees. | A1 |   Face to face | Teams |  |
| 2+3 | **Botany of Fruit tress:** |
| 2.1 | Structure | A1 |  Face to face | Teams |  | Lec. Quizzes  | 1. Temperate & Sub-tropical Fruit Production.2. Temperate-zone Pomology. |
| 2.2 |  Identification | C1 |  Face to face | Teams |  |
| 2.3 |  Bearing habits | D1 |  Face to face | Teams |  |
|  | **Reproduction of Fruit Trees:** |
| 456 | 3.1 | Propagation | A1B1C3D1 |  Face to face | Teams |  | Lec. Quizzes  | 1. Temperate & Sub-tropical Fruit Production.2. Temperate-zone Pomology.3.Hartmanns Plant Science |
| 3.2 | Developmental phases  |  Face to face | Teams |  |
| 3.3 | Flowering |  Face to face | Teams |  |
| 3.4 | Pollination |  Face to face | Teams |  |
| 3.5 | Fruit growth and development |  Face to face | Teams |  |
|  | **Orchard Establishment:** |
| 789 | 4.1 | Element of the orchard | A1B1C2C3D1 |  Face to face | Teams |  | Lec. Quizzes  | 1. Temperate & Sub-tropical Fruit Production.2. Temperate-zone Pomology.3.Hartmanns Plant Science4. Pennsylvania Tree Fruit Guide |
| 4.2 | Selection of cultivars and rootstocks |  Face to face | Teams |  |
| 4.3 | Orchard layout |  Face to face | Teams |  | Lec. Quizzes  |
| 4.4 | Ordering and planting fruit trees |  Face to face | Teams |  |
| 4.5 | Planting systems and Plant spacing |  Face to face | Teams |  |
|  | **Training and pruning:** |
| 101112 | 5.1 |  Apical dominance | A1A2B1C3D1 |  Face to face | Teams |  | Lec. Quizzes  | 1. Horticulture Principles and Practices.2. Temperate and Sub-tropical Fruit Production.3. Temperate-Zone Pomology   |
| 5.2 | Objectives of pruning  |  Face to face | Teams |  |
| 5.3 | Pruning tools |  Face to face | Teams |  |
| 5.4 | Pruning techniques |  Face to face | Teams |  |
| 5.5 | Central leader training |  Face to face | Teams |  |
| 5.6 | Open center or vase training |  Face to face | Teams |  |
| 5.7 | Trellis training systems |  Face to face | Teams |  |
|  | **Cultural Practices:** |
| 1314 | 6.1 | Protection against temperature and wind stresses  | A1A2B1C3D1 |  Face to face | Teams |  | Lec. Quizzes  |  1. Temperate & Sub-tropical Fruit Production.2. Temperate-zone Pomology.3 Pennsylvania Tree Fruit Guide   |
| 6.2 |  Fruit thinning |  Face to face | Teams |  |
| 6.3 | Fertilizer application and irrigation  |  Face to face | Teams |  |
| 6.4 | Use of plant growth regulators |  Face to face | Teams |  |
| 6.5 | Orchard floor management |  Face to face | Teams |  |

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**22 Evaluation Methods:**

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| Opportunities to demonstrate achievement of the SLOs are provided through the following assessment methods and requirements:

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| **Evaluation Activity** | **Mark** | **Topic(s)** | **SLOs** | **Period (Week)** | **Platform** |
| **Quizzes** | 20 | Upon weeks | A1 , C1 | Every week | None |
| **Project** | 10 | Will be determined | B1 | Once |  |
| **Midterm Exam** | 20 | After 10 weeks | A , C | Once |  |
| **Final Exam** | 50 | At the end of semester  | A, B, C, D | once |  |

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**23 Course Requirements**

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| **(e.g: students should have a computer, internet connection, webcam, account on a specific software/platform…etc):** Account on Microsoft teams |

**24 Course Policies:**

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| Determined by Registration Dept.A- Attendance policies:B- Absences from exams and submitting assignments on time:C- Health and safety procedures:D- Honesty policy regarding cheating, plagiarism, misbehavior:E- Grading policy:F- Available university services that support achievement in the course: |

**25 References:**

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| A- Required book(s), assigned reading and audio-visuals:* + - Temperate-Zone Pomology, By M. Westwood, Third Edition, 1993, Timber Press, Oregon

B- Recommended books, materials, and media:* + - Hartmanns Plant Science 4th ed
		- Horticulture Principles and Practices 4th ed
		- Pennsylvania Tree Fruit Production Guide, 2010-2011 edition, (<http://agsci.psu.edu/tfpg>)
		- Temperate and Subtropical Fruit Production. By D.I. Jackson and N.E. Looney, 2nd Edition, 1999, CAB International
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**26 Additional information:**

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| None |

Name of Course Coordinator: -----------------------------------Signature: ----------------------- Date: -------------------

Head of Curriculum Committee/Department: ---------------------------- Signature: ------------------------------------

Head of Department: ------------------------------------------------------------ Signature: ------------------------------

Head of Curriculum Committee/Faculty: ---------------------------------------- Signature: ---------------------------

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