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**Department of Horticulture**

**College of Agricultural Engineering sciences**

**University of Salahaddin**

**Summer Vegetable Production**

**Theoretical and Practical part**

**Course Book – 3rd Year students**

**Lecturers’ names: Dr. Kharman Khalid Qader**

 **Dr. Arshad Yassen**

 **Msc: Dleen Monawarr Saeed**

 **Msc: Shayma Fathulla Mohammed**

**Academic Year: 2022/2023 (Spring Semester)**

 **Course Book**

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| **1. Course name** | Summer Vegetable Production (1) |
| **2. Lecturers in charge** |  Kharman Kh. Qader, Arshad Y., Dleen M. And Shayma F. |
| **3. Department/ College** | Horticulture / Agriculture |
| **4. Contact** | e-mail: kharman.qader@su.edu.krdTel: 0704994192 |
| **5. Time (in hours) per week**  | Theory: 2 hoursPractical: 3 hours |
| **6. Office hours** | Monday (10:30 – 12:30) |
| **7. Course code** |  |
| **8. Teacher's academic profile**  | For Further Information, please visit the link below:[https://sites.google.com/a/su.edu.krd/](https://sites.google.com/a/su.edu.krd/dleen-saeed/)  |
| **9. Keywords** | Commercial Vegetable Production , origin and introduction of vegetables , health benefits and uses of vegetables, climatic and environmental requirements, fertilization ,irrigation  |
| **10-Course overview:**Vegetables are herbaceous plants that have been part of the human diet from [time immemorial](https://en.wikipedia.org/wiki/Time_immemorial). Some are staple foods but most are accessory food stuffs adding variety to meals with their unique flavors and at the same time, adding nutrients necessary for health. Some vegetables are [perennials](https://en.wikipedia.org/wiki/Perennial_plant) but most are [annuals](https://en.wikipedia.org/wiki/Annual_plant) and [biennials](https://en.wikipedia.org/wiki/Biennial_plant) .Vegetables need attention especially during the cultivation, production, handling , storage, and growing areas .This course book complies many fundamental issues of vegetable production such as site selection, preparation of land, propagation methods, using of modern techniques and equipment in planting, fertilization, harvesting, storage, marketing, diseases and pest management, that all help the students to getthe acquired knowledge about the vegetable production.  |
|  **11. Course objective:** * To know the Importance of Vegetable crops for human diet.
* To get the important information about vegetables verities and how we can improve and increase the quantity and quality of them.
* Understand the history, classification, culture, post-harvest handling, storing and marketing of selected vegetables within worldwide production system.
* To get knowledge about environmental and cultural production requirements of vegetables
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| **12. Student's obligation:** Students must take into consideration the presence of them in the class and pay attention to the lecturer and writing notes, and committed to the date and time of exams when it has been fixed and the lecture papers should be with them in the class before the beginning of lectures and the mobiles should be closed.  |
| **13. Forms of teaching**;Different forms of teaching conducted to gain the objectives of the course such as**:** 1. Using white board to clarify any related subjects.
2. Power point presentation including video show.
3. Using online programs (zoom, Moodle, Google classroom)
4. Field experiments
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| **14.Assessment scheme:****-Grades of theoretical part are distributed as following:*** Two seasonal exams 10 mark
* Quizzes and student activity 5 mark
* Final exam 50 mark

**-Grades of practical part are distributed as following:*** Two seasonal exams 25 mark
* Quizzes, reports and student activity 10 mark
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| **15. Student learning outcome:**With successful completion of this course, the student will obtain the following learning outcomes: 1-Demonstrate proficiency in the cultural and management considerations of successful 2-sustainable vegetable crop production. 3-Be familiar with the physiological aspects of vegetable crops growth and development. 4-Be familiar with vegetable crops environmental modification and plastic culture systems.5-Be familiar with successful vegetable crops harvest and marketing. |
| **16. Course Reading List and References‌****-Abdel Moneim, A.** Technology for Producing VegetablesFundamentals of Horticulture, 4th editions**-Delate, K. et al.** 2008. Evaluation of Soil Amendments in Organically Managed Peppers and Tomatoes – Armstrong Trial, 2008. Iowa State University. Vol. 13.**- Matloub**, A. W., E. S. Mohammed and K. S. Abdul (1989). Vegetable crop production. 1st part 2nd edition. Ministry of higher Education and Scientific Research. Mosul University – Iraq. p.399. (In Arabic).- **Politud, E.R.R.** (2016). Growth and Yield Performance of Radish (*Raphanus sativus* L.) ‘cv’ 'SNOW WHITE' in Response to Varying Levels of Vertmicast Applications. International Journal of Scientific and Research Publications, Volume 6, Issue 5. **- Salunkhe**, D.K., B.B. Desai, and N.R. Bhatt (1987). Vegetable and flower seed production. Agricore Publishing Academy. New Delhi, India. 144– 150. pp.**- Zohary,** D. and M. Hopf. 2000. Domestication of plants in the old world, (3rd Ed.) Oxford: University Press, pp. 139.**- Zohary, D.; Hopf, M. and Weiss, E.,** (2012). Domestication of plants in the Old World: the origin and spread of domesticated plants in Southwest Asia, Europe, and the Mediterranean Basin (4th ed.). Oxford: University Press, p. 139.**- Some internet webs which are related with the subjects.** |
| **17. The Topics:****1 -The Theoretical Topics:**1stweek: Morphology of some Warm season vegetable crops: -**-**Solanaceae (night shade) Family: -**1-Potato:** The main points:1-Introduction2-Stages of growth and developments of potato3-Enviromental conditions (growth requirements)4-Soil conditions5-Irrigation6-Fertilization7-Rippening and harvesting 8- Tuber dormancy9- Storing2nd week: **1-Tomato :** The main points:1-Introduction2- Health benefits3-Enviromental conditions (growth requirements)4-Soil conditions5-Irrigation6-Fertilization7-Rippening and harvesting8- Storing3rd week: **1-Eggplant :** The main points:1-Introduction2- Health benefits3-Enviromental conditions (growth requirements)4-Soil conditions5-Irrigation6-Fertilization7-Rippening and harvesting8- Storing4th week: **4-Pepper :** The main points:1-Introduction2-Enviromental conditions (growth requirements)3-Soil conditions4-Irrigation5-Fertilization6-Rippening and harvesting7- Storing5th week: **Fabaceae (Leguminosae) Family****1-Common bean :**The main points:1-Introduction2-Enviromental conditions (growth requirements)3-Soil conditions4-Irrigation5-Fertilization6-Rippening and harvesting7- Storing6th week: Monthly exam7th week:**2-Cow pea :**The main points:1-Introduction2-Enviromental conditions (growth requirements)3-Soil conditions4-Irrigation 5-Fertilization6-Rippening and harvesting7- Storing8th week: **Cucurbitaceae**( **gourd family):-****1-Cucumber :**The main points:1-Introduction2-Enviromental conditions (growth requirements)3-Soil conditions4-Irrigation 5-Fertilization6-Rippening and harvesting7- Storing9th week:**2-Water melon :**The main points:1-Introduction2-Enviromental conditions (growth requirements)3-Soil conditions4-Irrigation 5-Fertilization6-Rippening and harvesting7- Storing10th week:**3-Pumpkin:**The main points:1-Introduction2-Enviromental conditions (growth requirements)3-Soil conditions4-Irrigation 5-Fertilization6-Rippening and harvesting7- Storing11th week:**Okra:**The main points:1-Introduction2-Enviromental conditions (growth requirements)3-Soil conditions4-Irrigation 5-Fertilization6-Rippening and harvesting7- Storing12th week: Monthly exam**2- Practical Topics** **First week**: Mulching of Vegetable crops, Kinds of mulches, Advantages and disadvantages of mulching, Plastic mulch application, Planting Considerations, Removing Plastic Mulches**-Second week: Solanaceae Family** **1-Potato:** The main points: -- Botanical description- Varieties- Reproductive methods - Planting method - Green sprouting- Diseases and insect pests**Third week:** **2-Tomato:**The main points: -- Botanical description- Varieties - Reproductive methods- Planting methods- Agricultural practices- Diseases and insect pests**Fourth week:****3-Eggplant:**The main points: -**-** Botanical description- Varieties - Reproductive methods- Planting methods-Agricultural practices- Diseases and insect pests**Fifth week:**4- **pepper:**The main points: -- Botanical description- Varieties - Reproductive methods- Planting methods-Agricultural practices- Diseases and insect pests**Sixth week: Monthly exam****Seventh week: - Leguminosae(Fabaceae) Family****1-Bean:**The main points: -- Botanical description- Varieties - Reproductive methods- Planting methods-Agricultural practices- Diseases and insect pests**Eighth week: -** **2-Cowpea:**The main points: -- Botanical description- Varieties - Reproductive methods- Planting methods-Agricultural practices- Diseases and insect pests**Ninth week: - Cucurbitaceae Family****1-Cucumber:**The main points: -- Botanical description- Varieties- Reproductive methods- Planting methods-Agricultural practices- Diseases and insect pests**Tenth week: -****2-Watermelon:** The main points: -- Botanical description- Varieties - Reproductive methods - Planting methods-Agricultural practices- Diseases and insect pests**Eleventh week: -** **3-Pumpkin:**The main points: -- Botanical description- Varieties - Reproductive methods - Planting methods-Agricultural practices- Diseases and insect pests**Twelfths week: - Malvaceae Family****-Okra;**The main points: -- Botanical description- Varieties - Reproductive methods - Planting methods-Agricultural practices- Diseases and insect pestsThirteenth week: Monthly exam 2**Fourteenth week:** Field  | **Dr. Kharman Khalid** (2hrs)16/1/ 2023  (2hrs)23/1/2023  (2hrs)  30/1/2023  (2hrs)6/2/2023 (2hrs) 13/2/2023  (2hrs) 20/2/2023  (2hrs)27/2/2023 (2hrs)6/3/2023  (2hrs) 13/3/2023 (2hrs)  20/3/2023 (2hrs)27/3/2023 (2hrs)3/4/2023**Dleen Monawar Saeed**  (3hrs) 17/1/2023 (3hrs) 24/1/2023 (3hrs)  31/1/2023(3hrs)7/2/2023  (3hrs) 14/2/2023   (3hrs) 21/2/2023 (3hrs)28/2/2023 (3hrs)7/3/2023  (3hrs) 28/3/2023 (3hrs)  4/4/2023 (3hrs)11/4/2023 (3hrs)18/4/202325/4/2023 |
| **19. Examinations:****Quality of the exam questions:**Q1/ Define the following Q2 / Numerate the followingQ3 / What are the differences between the followingQ4 / what are the reasons of the followingQ5 / complete the following blanks Q6/Explain or talk about the followingQ7/ List or Describe two ways of Q8/Write the scientific, family name and the quantity of yield for the following vegetables.Q9/ What are the advantages and disadvantages of -------Q10/ Mention the followings |