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**Department of Horticulture**

**College of Agricultural Engineering Sciences**

**University of Salahaddin**

**Subject: Winter Vegetable Production /practical part**

**Course Book – 3rd Year students**

**Lecturer's name: Dleen Monawar Saeed**

**BSc, MSc.**

**Bayan Rokan Aziz**

**BSc, MSc.**

**Academic Year: 2023/2024 (First Semester)**

**Course Book**

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| **1. Course name** | Winter Vegetable Production /Practical part | |
| **2. Lecturers in charge** | Dleen Monawar Saeed  Bayan Rokan Aziz | |
| **3. Department/ College** | Horticulture / Agricultural Engineering Sciences | |
| **4. Contact** | e-mail: dleen.saeed@su.edu.krd  e-mail: bayan.aziz@su.edu.krd | |
| **5. Time (in hours) per week** | Practice: 6 hours | |
| **6. Office hours** | Monday (8.30- 4:00) and Wednesday (8:30- 2:30) | |
| **7. Course code** |  | |
| **8. Teacher's academic profile** | For Further Information, please visit the link below:  [dleen.saeed@su.edu.krd](mailto:dleen.saeed@su.edu.krd) & [bayan.aziz@su.edu.krd](mailto:bayan.aziz@su.edu.krd) | |
| **9. Keywords** | Winter Vegetable Production, introduction of vegetables, Planting of vegetables, Vegetable disease and insects, climatic and environmental requirements, fertilization, irrigation, harvesting. | |
| **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 prepare students to successfully grow vegetables commercially. * To get the important information about vegetables varieties and how we can improve and increase the quantity and quality of them. * To be able to distinguish vegetable crops morphologically and it is benefits for human health * To get knowledge about environmental and cultural production requirements of vegetables | | |
| **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**;   * Lectures (presentation), classroom teaching (class discussion), integrating technology (Google class room and electronic mail). * Visits to vegetable production sites in Erbil to learn from growers. | | |
| **14.Assessment scheme:**  **-Grades of practical part are distributed as following:**   * Two seasonal exams 25 mark * Quizzes, reports and student activity 10 mark | | |
| **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 Vermicast 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** | | |
| **-**  **Practical Topics**  **1stweek:** Vegetable crops production definition, Principles of vegetable crop production, Problems of vegetable production and Vegetable nursery establishment techniques.  **2ndweek:** Factors Determining Nursery location, Nursery Tools and their uses. Planting of winter vegetable crops.  **3rdweek: Morphology of some cold season vegetable crops:**  **Brassicaceae (cruciferae family)**  **1-Cabbage**  The main points:  - Botanical description  - Varieties  - Reproductive methods  - Planting methods  - Management of diseases and insect pests  **4th week:**  **2-** **Cauliflower**  The main points: -  - Botanical description  - Varieties  - Reproductive methods  - Planting methods  - Management of diseases and insect pests  **5th week: 1st\_ Examination**  **6th week:** **Fabaceae (Leguminosae)Family**  **1-** **Broad bean**  The main points: -  - Botanical description  - Varieties  - Reproductive methods  - Planting methods  - Management of diseases and insect pests  **7th week:**  **2-Pea**  The main points: -  - Botanical description  - Varieties  - Reproductive methods  - Planting methods  - Management of diseases and insect pests  **8th week: Liliaceae (Alliaceae) (Onion family)**  **1- Onion**  The main points: -  - Botanical description  - Varieties  - Reproductive methods  - Planting methods  - Management of diseases and insect pests  **9th week: -**  **2- Garlic**  The main points: -  - Botanical description  - Varieties  - Reproductive methods  - Planting methods  - Management of diseases and insect pests  **10th week: 2nd exam**  **11th week:**  **Asteraceae (Composite) family**  **Lettuce**  The main points: -  - Botanical description  - Varieties  - Reproductive methods  - Planting methods  - Management of diseases and insect pests  **12th week: - Apiaceae (Umbeliferae) family**  **Carrot**  The main points: -  - Botanical description  - Varieties  - Reproductive methods  - Planting methods  - Management of diseases and insect pests  13th week: **Family: Chenopodiaceae**  **Beet:**  The main points: -  - Botanical description  - Varieties  - Reproductive methods  - Planting methods  - Management of diseases and insect pests | | Dleen Monawar Saeed and  Bayan Rokan Aziz  (6hrs)  11/9/ 2023  (6hrs)  18/9/2023  (6hrs)  25/9/2023    (6hrs)  2/10/2023    9/10/2023  (6hrs)  16/10/2023  (6hrs)  23/10/2023  (6hrs)  30/10/2023  (6hrs)  6/11/2023    13/11/2023  (6hrs)  20/11/2023  (6hrs)  27/11/2023  4/12/2023 |
| **19. Examinations:**  **Quality of the exam questions:**  Q1/ Define the following  Q2 / Numerate the following Q3 / What are the differences between the following Q4 / what are the reasons of the following Q5 / complete the following blanks  Q6/Explain or talk about the following  Q7/ 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 | | |

**Salahaddin University-Erbil winter Vegetable production –College of Agriculture Engineering sciences 3rd stage/Horticulture**

**Monthly Exam**

**Q1/Complete the following blanks**:

1- Problems of vegetable production may be 1------------------- 2------------.3-----------.

2- Transplanting process is harmful because they---------- and -------- the plant.

3- The plants that belonged to fabaceae family are characterized by---------.

4- The vegetables of leguminous family are an important source of ------------- in human diet.

5- Cauliflower grow best in soils with the pH about ----------.

**Q2/Define the following terms:**

1- Seed dormancy 2 - Transplanting 3-Blanching

**Q3/Write the scientific name, family name and the quantity of yield for the following vegetables**:

1- Lettuce 2- Garlic 3- Carrot 4-Pea 5- Cauliflower

**Q4**/ **Numerate the following:**

1-Conditions success vegetable cultivation in certain region

1- Advantages of transplanting

3- Varieties of carrot

**Q5/ Explain the management of disease and insect pests in Cabbage.**

Dleen M. Saeed

Assist. Lecturer