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**Department of Field Crops**

**College of Agriculture Engineering Sciences**

**University of Salahaddin- Erbil**

**Subject: Cereal Crops - practice**

**Course Book: Year 3**

**Lecturer's name: Sumaya Ahmed Abdullah**

**Academic Year: 2022/2023**

**Course Book**

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| **1. Course name** | **Cereal Crops – practice** |
| **2. Lecturer in charge** | **Sumaya Ahmed Abdullah** |
| **3. Department/ College** | **Field Crops/ Agriculture** |
| **4. Contact** | **e-mail:** **sumaya.abdullah@su.edu.com****Tel: (optional): 07504904124** |
| **5. Time (in hours) per week**  | **Practical: 8**  |
| **6. Office hours** | **8** |
| **7. Course code** |  |
| **8. Teacher's academic profile**  | Date of Birth**:** 1 June 1985* Place of Birth**:** Erbil
* Nationality**:** Iraqi
* Marital status**:** Single
* Sex**:** Female

**Education:** * **B.Sc:** Plant Production / College of Agriculture ( 2007-2008) / University of Salahaddin / Kurdistan Region/ Iraq.
* **M.Sc:** Field Crops/ Seed Technology/ College of Agriculture (2014)/ University of Salahaddin/ Kurdistan Region/ Iraq.

**Work History:**1. College of Agriculture, Field Crops department/ University of Salahaddin /Iraq

July 2014 until date ( Assistant Lecturer)As an assistant lecturer, I have teaching:1. I was assisting assistant lecturer in teaching Cereal Crops for Third year student, from 2014-2015.
2. I was assisting assistant lecturer in teaching Rang Management for Fourth year student, from 2014-2015.
3. I was member in examination committee 2nd trial 2014-2015.
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| **9. Keywords** | Cereals, Classification, Morphological, Growth Stages, Differentiate between Cereals.  |
| **10. Course overview:** 1. The grasses, or Gramineae, are ecologically and agriculturally the most important family of plants in the world. Cereal grasses and herbage grasses are the main sources of food for human beings and domesticated animals. The cereals are annual grasses whose relatively large grains allowed the development of technologies as diverse as milling, baking, malting and brewing. All cereals belong to the family of plants known as the Gramineae, the grasses. Cereals are grown in virtually all regions of the world where plants grow and 70% of the world's cultivated acreage is devoted to cereal production. The component of the cereal plant of economic interest is the grain, which is a fruit in the strict botanical sense.2. Since refined cereal products have had the bran removed, you need to eat whole- grain products if you want to reap the health benefits of bran. Grains can also provide protein; they provide almost half (47%) of the dietary protein needs of the world population. 3. Although no individual grain provides the full complement of essential amino acids (protein building-blocks), the combination of grain foods with a reasonable variety of other foods such as beans can be a complete protein source. This is true even for people who don't eat meat or dairy foods. |
| **11. Course objective:** The cereals are annual common grass members of the grass family (a monocot family Poaceae, also known as Gramineae), which usually have long, thin stalks, such as wheat, rice, maize, sorghum, millet, barley and rye, whose starchy grains are used as food.  The term cereal is not limited to these grains, but, also refers to food stuff prepared from the starchy grains of cereal like flours, breads and pasta. Cereal science is a study concerned with all technical aspects of cereal. It is to study the nature of the cereals and the changes that occur naturally, and as a result of handling and processing. Amazingly, the foods human beings eat most are grasses all around the world. |
| **12. Student's obligation** This manual is meant to aid in the identification of cereal crops, as well as characterize specific growth stages using the Zadoks Scale or other features.  |
| **13. Forms of teaching****Teaching Methods** 1. Lecture 2. Self‐study **Teaching Media** 1. PowerPoint presentations 2. Texts and teaching materials  |
| **14. Assessment scheme** We will start most class periods with a short quiz. The quizzes could cover any information presented before that date, but will usually cover information presented in the most recent lectures. The quizzes will be given during the first 5 to 7 minutes of the class period.Exams will consist of a variety of questions, including multiple choices, true/false, matching, and reasons for, occasionally short answer. **Note:** Number of exams and lectures for each exam did not specify. **Each student attends a report within the lecture program at the end of the lecture.**‌ |
| **15. Student learning outcome:**  Develop an appreciation for general knowledge about cereal and be able to describe and differentiation between cereals. Examine environmental and other factors that needed during sowing to performance. Be exposed to cereal issues concerning bio fuel crops. Become acquainted with the crop industry. Be able to solve problems in the context of crop and agriculture application.  The component of the cereal plant of economic interest is the grain, which is a fruit in the strict botanical sense. Grains can also provide protein; they provide almost half (47%) of the dietary protein needs of the world population. |
| **16. Course Reading List and References‌:**1. Department of Primary Industries, 2006. Identification of Cereal Seedlings. Australian Department of Agriculture.
2. Kling, Jennifer G. and Gregory Edmeades. 1997. Morphology and growth of maize. IITA/CIMMYT Research Guide 9. Int’l Institute of Tropical Agriculture.
3. Larsen, J.; Smith, P.; Cowbrough, M.; Falk, D.; Quesnel, G.; Baute, T.; Tenuta, A.; Johnson, P. 2012. A Field Guide to Cereal Staging. Ontario Ministry of Agriculture, Good and Rural Affairs, University of Guelph and Bayer Crop Science.
4. Pool, N.; Hacking, C.; Bolton, D.; Arnott, W.; Dean G.; van Rees, H; Bell, C.; Thompson, B.; Wright, J.; Hamblin, P. GRDC Cereal Growth Stages Guide. Australian Governmen: Grains Research and Development Corporation.
5. Simmons, S. R.; Oelke, E. A.; Anderson, P. M. 1995.Growth and Development Guide for Spring Wheat. University of Minnesota: Extension.
6. Strand, L. L. et al. 1990. Integrated Pest Management for Small Grains. Oakland: Univ. Calif. Agric. Nat. Res. Publ. 3333.

 1. Science Photo. 2012. a. Available at http://www.sciencephoto.com/media/103347/view. [URL accessed January 2012].
2. University of Idaho Extension. 2012. Spring Barley and Spring Wheat Weekly Growth Stages. University of Idaho South Central and South Eastern Extension Cereals Program.
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| **17. The Topics:** | **Lecturer's name** |
|   In this section The lecturer shall write titles of all practical topics he/she is going to give during the term. This also includes a brief description of the objectives of each topic, date and time of the lecture | Lecturer's nameex: (3 hrs) |
| **18. Practical Topics (If there is any)** |  |
| **1st week:** Brief history of Cereal Crops, Important Features of Cereals, Botanical Classification of Grain Crop  **2nd week:** Morphological Characteristic, Growth Stages of Cereal Crops **3rd week:** Zodoks Scale**,** Differentiating between Cereals **4th week:** Wheat,Botanical characteristics, Genetics of wheat species, Wheat species, Wheat types, Wheat Requirement**5th week:** Barley, Botanical characteristics, Classification of barley species, Types of barley, Climatic requirement **6th week:** Oat,Botanical characteristics, Oat species, Oat Requirement**7th week:** Corn, Botanical characteristics, Classificationof corn type, Types of corn, Climatic requirement**8th week:** Sorghum, Botanical characteristics, Types of sorghum, Climatic requirement **9th week:** Rice, Botanical characteristics, Types of Rice, Climatic requirement**10th week**: Rye, Botanical characteristics, Climatic requirement**11th week**: Millet, Botanical characteristics, Climatic requirement | : (3 hrs.) |
| **19. Examinations:****1.Compositional*:*** **Write** scientific name of Tribe Hordeae.**2.Define the following:** Spike 2. Caryopsis 3. Shattering 4. Winter Barley 5. Lodging **2- Differentiate between:**  **a –** Seminal root **&**  Adventitious root in oat. **b –** Bread wheat **&** Durum wheat.**3.****Numerate** the growth stage for cereal crops and write about two of them? |
| **20. Extra notes:** Some of the lectures will be presented in Power Point lecture will be provided in class. Two textbooks (optional) are recommended for the Cereal Crops of the course. Also, the best wishes to the development of Lab. in the department. |
| **21. Peer review پێداچوونه‌وه‌ی هاوه‌ڵ**   This course book has to be reviewed and signed by a peer. The peer approves the contents of your course book by writing few sentences in this section.*(A peer is person who has enough knowledge about the subject you are teaching, he/she has to be a professor, assistant professor, a lecturer or an expert in the field of your subject).*  |