**Republic of Iraq**

**The Ministry Of Higher Education**

**& Scientific Research**

بسم الله الرحمن الرحيم


**University:** Diyala
**College:** Agriculture
**Department:** Science Field Crops
**Stage: Fourth**
**Lecturer name:** Nadir Flayh Ali
**Academic Status:** prof.
**Qualification:Post Doc.**
**Place of work:** College of Agriculture/ University of Diyala

# Flow up of implementation celli pass

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| ***Course Instructor*** | ***Nadir Flayh Ali Almubarak*** | | | | |
| ***E_mail*** | **nadiralmubarak@uodiyala.edu.iq** | | | | |
| ***Title*** | ***Field crop management*** | | | | |
| ***Course Coordinator*** | ***Autumn course*** | | | | |
| ***Course Objective*** | ***Teaching crop students familiarity with the applied scientific dimensions of crop and field management*** | | | | |
| ***Course Description*** | ***1-The student will learn about food production in the world and compare it to population growth.***<br>***2-he student should know the extent of the food gap and measure it by productivity factors.***<br>***3-That the student understands the processes of soil service, such as tillage, its importance, its relationship to crop growth, smoothing and its role in crop growth, the process of leveling, and the modern scientific methods used to increase crop production.***<br>***4- The student will be familiar with modern irrigation systems and compare them with traditional methods and their role in increasing yield and quality.*** | | | | |
| ***Textbook*** | ***Lectures and scientific articles*** | | | | |
| ***References*** | **Library Genesis**<br>**The field crops _ principles and a practice**<br>**Agronomy journal. Websites, Articles, FAO reports** | | | | |
| ***Course Assessment*** | ***Final*** | ***Report*** | ***coz*** | ***Lab*** | ***Semester*** |
| | ***%50*** | ***%10*** | ***%5*** | ***%15*** | ***%20*** |
| ***General Notes*** | | | | | |

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## Course weekly Outline Field crop management

| week | Date | Topics Covered | Lab. Experiment Assignments | Notes |
|---|---|---|---|---|
| | | Theoretical | Lab. | |
| 1 | 1 st week | Humans and food: food production, population increase, food gap, productivity factors | Conduct plowing and observe its specifications after identifying its defects in terms of soil moisture, the size of the dirt masses, and the distance between the plowing lines. | |
| 2 | 2 nd week | Serving the land: plowing, its importance and depth, and its relationship to growth of different crops and increasing water conservation in the soil. Softening: The depth of thinning and the machines used for this in growing the crop | Dividing the field and leveling it for planting the following week. Students can be divided into several groups, each group working together to grow a specific crop. | |
| 3 | 3 rd week | Field division: land settlement and its relationship to field division | Planting one or more crops at the same time and plant density using seeding, lines and spread methods, recording notes of growth and yield in the following weeks, collecting data and classifying them according to each studied field characteristic of the plant. | |
| 4 | 4 th week | Irrigation channels: irrigation systems, the nature of irrigation waterways, and water loss during irrigation according to the method used and the method appropriate to the nature of the land and the crop. | Planting a crop at several times and recording the data to know the effect of the dates. | |
| 5 | 5 th week | Crop service: planting dates and their impact on calculating the thermal units needed for crop growth and light energy and their relationship to planting dates and temperature. The difference in the effect of planting dates for winter and summer crops on changing the harvest date and harvest quantity. | Growing a crop with several plant densities and recording the data to know the effect of the densities. | |
| 6 | 6 th week | Plant density and seed quantities | Growing a crop with several doses | . |

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| | | according to the crop, the role of plant density in intercepting light and increasing yield, the optimal densities for the main crops, the optimal planting distances for crops planted in lines, and how to calculate plant densities and their relationship to the leaf area index. | of nitrogen and recording the data to know the effect of the nitrogen doses. | |
| First exam | | | | |
| 8 | 8 th week | Fertilization - the role of major, secondary, and rare fertilizers in growth and increasing yield, symptoms of element deficiency on plants, the relationship of types of elements to metabolic processes in plants and the synthesis of various plant compounds, names of some elements for plants, and the optimal quantities for using the elements. | Growing a crop with several doses of NPK to compare it with nitrogen fertilization only. | |
| 9 | 9 th week | Seeds - seed quality, seed quantities, plant densities and their calculations. | Planting a crop and irrigating it with several different irrigations (5 and 10 days) or every week or two, recording data on growth to know the role of water in this, and recording signs of water deficiency. | |
| 10 | 10 th week | Soil amendments - using animal manure and green manure, adding gypsum and agricultural sulfur to repair saline and saline-alkali soils, and their relationship to the electrical conductivity and pH of the soil solution, the readiness of the elements for the plant, and the equations for estimating the quantities of gypsum and sulfur according to soil analysis specifications. | Cultivation of two crops using two factors, one of which removes the bush manually and the other without removing it (although it is possible to use a pesticide for comparison and taking notes). | |
| 11 | 11 th week | Weed control - the most important weed pesticides common in major crops. Pesticides for weed control Broadleaf weeds pesticides. Recommended pesticides in Iraq to control weeds of major crop plants. | Pulling leguminous plants to study bacterial complexity, nodule size, and rhizobia activity. | |
| 12 | 12 th week | Crop irrigation - the role of water in dissolving elements, absorption and plant growth. The number of irrigations for the crop, determining the irrigation depth, and how to calculate it. Water rationing for major crops. Calculate the amount of water needed for the field on | Each group of students records the rate of insect and disease infestation and attempts to diagnose it for each cultivated crop. | |

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| | | the farm | | |
| Second exam | | | | |
| 14 | 14 th week | Disease and insect control - the main insect diseases that affect field crops, how to prevent them before they appear and control them when they appear, and the pesticides recommended in Iraq for that. | Choose a research topic about managing a specific crop for each student and write it according to the professor's guidance. | |
| 15 | 15 th week | Plant organs and their functions - plant cell and its organelles, root, stem, leaves and leaf area. Maturity and harvest - how to harvest and the appropriate time for the crop, and estimating losses from the crop. Storage of crops - types of stores and storage, stores of seeds and grains, their specifications, storage conditions in them such as heat, humidity, and protective pesticides, methods of drying crops in the field and in the store, and measuring the humidity in seeds before and during storage. | Each student presents his report to the students, discusses it, and gives it a grade | |

**Instructor Signature**
**Prof. Dr. Nadir Flayh Ali**
**15/1/2025**

**Dean Signature**
**Prof.Dr. Raaed Ibrahim Khalil**
**15/1/2025**