

Kurdistan Region Government

Ministry of Higher Education and Scientific Research

Erbil Polytechnic University

**Module (Course Syllabus) Catalogue**

**2023-2024**

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| **College/ Institute** | **Khabat Technical Institute** | |
| **Department** | **Plant protection** | |
| **Module Name** | **Field crops diseases** | |
| **Module Code** | **FCD302** | |
| **Degree** | **Technical Diploma Bachelor High Diploma Master PhD**  **/** | |
| **Semester** | **3** | |
| **Qualification** | **MSc. Plant Protection** | |
| **Scientific Title** | **Lecture** | |
| **ECTS (Credits)** | **6** | |
| **Module type** | **Prerequisite Core Assist.**  **/** | |
| **Weekly hours** | **5** |  |
| **Weekly hours (Theory)** | **( 1 )hr Class** | **( 2 )Total hrs Workload** |
| **Weekly hours (Practical)** | **( 3 )hr Class** | **( 4.5 )Total hrs Workload** |
| **Number of Weeks** | **12** | |
| **Lecturer (Theory)** | **Ayoub Ibrahim Ahmed** | |
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| **Lecturer (Practical)** | **Ayoub Ibrahim + Runj Mouhmednajat+ Sahdulla Ali** | |
| **E-Mail & Mobile NO.** | [**ayoub.ahmed@epu.edu.iq**](mailto:ayoub.ahmed@epu.edu.iq) **07729846699** | |
| **Websites** | **https://epu.edu.iq/** | |

**Course Book**

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| **Course Description** | Describe and covered the different field crop disease and pathogens with the favourite climate for pathogens and their control. | | | | | | | |
| **Course objectives** | General objective / aim The general aim of this course is to equip students with knowledge and skills to develop and implement disease name (common name), pathogen name and management strategies for crop plants. Introduce students to the most important field crop losses caused by the disease and to isolate and diagnose pathogens in laboratory   * Describe a range of pathological problems that affect plants. * Describe symptoms of a range of diseases that affect plants. * Describe disease life cycles and explain how this knowledge can be applied in disease control * Explain the methods used to control diseases * Demonstrate a comprehensive knowledge of a particular plant pathogen. * Identify and describe a range of non-infectious diseases and problems that affect plants * Identify and describe a range of common pathogens that affect ornamental plants.   Identify and describe a range of common pathogens that affect crop plants | | | | | | | |
| **Student's obligation** | 1- Seminar  2- Presentation  3- Homework  4- Group Report  5- Quiz  6- Collecting Samples | | | | | | | |
| **Required Learning Materials** | Chemical materials to prepare slides to see plant pathogens such as fungi, nematodes and bacteria  Microscope | | | | | | | |
| **Evaluation** | ‌ **Task** | | **Weight (Marks)** | | | **Due Week** | | **Relevant Learning Outcome** |
| Paper Review | |  | | |  | |  |
| Assignments | Homework | 5 | | | 4 | | 5% |
| Class Activity | 2 | | | 2 | | 2% |
| Report | 5 | | | 4 | | 5% |
| Seminar | 5 | | | 4 | | 5% |
| Essay |  | | |  | |  |
| Project |  | | |  | |  |
| Quiz | | 8 | | | 6 | | 8% |
| Lab. | | 10 | | | 4 | | 10% |
| Midterm Exam | | 25 | | | 5 | | 25% |
| Final Exam | | 40 | | | 12 | | 40% |
| Total | | 100 | | |  | | 100% |
| **Specific learning outcome:** | 1- 1- **Theory:** lecture, group discussion, seminar, pair work, group work, role play, case-based learning  **2-Laboratory practice**: Lecture, group discussion, workshop, skill demonstration, group work, role play, team teaching, case-based learning, self-training  **3-Field practice:** skill demonstration, case-based learning, group work, group discussion, clinical facilitation and debriefing, collecting samples, seminar, workshop.  4- **General:** library, computer suite with internet access  5- Laboratory with equipment for training, white board, computer with equipment for PowerPoint presentations, overhead projector, posters | | | | | | | |
| **Course References‌:** | **Agrios, G.N. 2005. Plant Pathology. 5th Edition. Academic Press, New York.**  **Parthasarathy, S., Thiribhuvanamala, G. and Prabakar, K., 2020. Diseases of Field Crops and their Management. CRC Press.**  **Sharma, I. 2012. Disease Resistance in Wheat. CABI 334 pp.**  **Thind, T.S., 2005. Diseases of field crops and their management. Daya Books.** | | | | | | | |
| **Course topics (Theory)** | | | | | **Week** | | | **Learning Outcome** |
| **Introduction to field crop disease with some definition and history of plant disease** | | | | | 1 | | |  |
| **The economic importance of plant diseases.** | | | | | 2 | | |  |
| **Classification of Fungi and Virus** | | | | | 3 | | |  |
| **Classification of** **Bacteria and Nematode** | | | | | 4 | | |  |
| **Cereal disease (Stem Rust (Black Rust) of wheat, Stripe Rust (Yellow Rust) of wheat** | | | | | 5 | | |  |
| **Common and Dwarf Bunt (Stinking Smut) of wheat and Loose Smut of wheat)** | | | | | 6 | | |  |
| **Cereal disease continue (Ergot of wheat and barley, Powdery Mildew of wheat, powdery mildew of Barley)** | | | | | 7 | | |  |
| **Cereal disease continue (Helminthosporium (Spot Blotch), Fusarium Head Blight (scab) of Wheat and Barley, Bacterial blight (barley)** | | | | | 8 | | |  |
| **Cereal disease continue (Septoria spot, Barley yellow dwarf, Tan spot (yellow leaf spot))** | | | | | 9 | | |  |
| **Corn disease** | | | | | 10 | | |  |
| **Corn disease continue** | | | | | 11 | | |  |
| **Rice disease** | | | | | 12 | | |  |
| **Practical Topics** | | | | | **Week** | | | **Learning Outcome** |
| **Introduction to laboratory instruments** | | | | | 1 | | |  |
| **Plant symptoms** | | | | | 2 | | |  |
| **Fungi and Virus and disease severity index** | | | | | 3 | | |  |
| **Bacteria and Nematode and disease incidence** | | | | | 4 | | |  |
| **Stem Rust (Black Rust) of wheat, Stripe Rust (Yellow Rust) of wheat and their management** | | | | | 5 | | |  |
| **Common and Dwarf Bunt (Stinking Smut) of wheat and Loose Smut of wheat) and their management** | | | | | 6 | | |  |
| **Ergot of wheat and barley, Powdery Mildew of wheat, powdery mildew of Barley) and their management** | | | | | 7 | | |  |
| **Helminthosporium (Spot Blotch), Fusarium Head Blight (scab) of Wheat and Barley, Bacterial blight (barley) and their management** | | | | | 8 | | |  |
| **Septoria spot, Barley yellow dwarf, Tan spot (yellow leaf spot) and their management** | | | | | 9 | | |  |
| **Corn disease and their management** | | | | 10 | | |  | |
| **Corn disease and their management continue** | | | | 11 | | |  | |
| **Rice disease and their management** | | | | 12 | | |  | |

Question examples

. Define the following terms?

1. Parasite 2-Disease cycle 3-Incubation period 4-Symptoms 5-Biotroph

Q2. Write scientific name of the following diseases?

1. Powdery Mildew of barley
2. Ergot of wheat and barley
3. Yellow smut of wheat
4. Loose Smut of wheat
5. Barley powdery mildew

Q3. Classify fungi on the basis of hyphae, spore type and reproduction?

Q4. Count environmental condition related to plant disease and explains one of them?

Q5. Write about the following diseases and how do they overwinter or dormant?