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**Department of Plant Protection**

**College of Agricultural Engineering Sciences**

**University of Salahaddin**

**Subject: Plant Nematology**

**Course Book – (Year 3)**

**Hasan Hussein Ali/ Asst. Prof.**

**Academic Year: 2019/2020**

**Course Book**

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| **1. Course name** | **Plant Nematology**  |
| **2. Lecturer in charge** | **Hasan Hussein Ali/ Asst. Prof.** |
| **3. Department/ College** | **Plant Protection/ Agriculture** |
| **4. Contact** | **e-mail:** **hasanhusein292@yahoo.com****Tel: 00 964 750 339 7130** |
| **5. Time (in hours) per week**  | **For example Theory: 2** **Practical: 3**  |
| **6. Office hours** | **Saturday to Thursday** |
| **7. Course code** |  |
| **8. Teacher's academic profile**  | Hasan Hussein Ali is an asst. Prof. of Plant Pathology at the College of Agriculture, Salahaddin University, in the majority of his 40-year professional career. He graduated with first Class Honours in Plant Protection/Collage of Agriculture and Forestry from university of Mosul in 1983, ranking second in a class of around 57 graduates. In 1988 he was awarded a master degree in Plant Pathology/ Collage of Agriculture and Forestry from university of Mosul, he was started teaching as an Asst. lecturer from 1983-1990. And in 1990 he was promotion to Lecturer, as well as he is an Asst. Prof. since 1996. He got many awarded by Minster of Agriculture in Iraq and Chancellor and President of Mosul Uni. He published around 27 technical papers in journals, two of them were represented as first recorded in Iraq. He has been teaching some different subjects to Undergrad such as Mycology, Nematology, Plant Pathology, Field Crop Diseases, Orchard & Veg. Diseases, Horticulture Diseases and post Harvest Diseases, and for Postgrad Seed Pathology, Root Diseases, Advanced Mycology, Advanced Nematology and Advanced Plant Pathology, He also delivered around 8 keynote seminars and presentations at local conferences. He supervised to so many Students in the final year of Undergrad; he also supervised to successful completion of 5 Master students at the University of Salahaddin. He organized, participated and contributed to a number of higher education conferences in Iraq and Kurdistan Reign. In addition to his academic posts. |
| **9. Keywords** | **Nematode , structure of it , plant diseases**  |
| **10. Course overview:** Considering the prevalence of various kinds of nematodes that affect plants at Kurdistan reign, caused by nematodes it is necessary to find ways to control these diseases through recognize and diagnosis them and then provide particular facilities to control them via cooperate with many companies around the word to find nematicides needed to control. It comes through the identification of these problems and diagnoses them to reach the goal which is how to increase the products in both quality and quantity. |
| **11. Course objective:**After successfully completing this course, you should be able to:* Introduction on the history of plant hematologic and effects on the economics .
* Study of the nematode structures, systems as digestive system nervous system reproductive system.
* Describe a range of pathological problems that affect plants with nematodes. .
* 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
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| **12. Student's obligation** Weekly quizzes, 1 exam |
| **13. Forms of teaching** Data show, Handouts, Power Point, Whiteboard  |
| **14. Assessment scheme** Students are evaluated during the semester by:* Short exams (quizzes) 5%
* 1 exam 20%
* Subtotal total 25%
* Final exams 40%
* Totalfor the theoretical part 65%
* The practical part is given 35 marks in total including exams and final exams
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| **15. Student learning outcome:**Students are expected to learn the significant of the most common diseases that effects and attack plants caused by nematodes and identify that causes these diseases throughout the life cycle, classification and its control. Finally the students will learn how to protect plants from the diseases and how to treat control them and to indentify on the most nematecides that used to control of diseases.  |
| **16. Course Reading List and References‌:**Suggested References 1- Agrio*s,* G. N. (2005). Principles of Plant Pathology 5th. / Elsevier Academic Press. New York, 922pp.2- Bird, A. F. (1971). The structure of nematodes. Academic Press. New York,317 pp.3- Dropkin. V. H. (1980). Introduction to plant nematology. A wiley insterscince publication. John Wiley and sons, New York, 293pp.4- Luc, M; R. A. Sikora and J. Bridge (2005). Plant parasitic nematodes in subtropical and tropical agriculture, 2nd. Edition. CABI Publishing, 871pp.5- Siddiqi, M. R. (2000). Tylenchiad parasites of, CABI Publishing, 833pp.ematode control. University press.6- Whitehead, A. G. (1998). Plant CAB International, 483pp. |
| **17. The Topics: (Subjects Covered)** | **Week** |
| General Characters of nematodes and development of plantNematology | **1st** |
| Economic importance of plant parasitic nematodes.Morphology, anatomy, body, structure, and body cavity of nematodes. | **2nd** |
| Digestive system of nematodes. | **3rd** |
| Excretory system, reproductive system of nematodes. | **4th** |
| Nervous system of nematodes | **5th** |
| General classification of plant parasitic nematodes.  | **6th** |
| Main groups of plant parasitic nematodes, Ecological factorsaffecting nematodes development, reproduction, and distribution. | **7th** |
| Symptoms of diseases caused by plant parasitic nematodes. | **8th** |
| Root- knot nematodes, Cyst nematodes. | **9th** |
| Citrus nematodes, Lesion nematodes. | **10th** |
| Wheat gall nematodes, Bulb and steam nematodes. | **11th** |
| Bulb and leaf nematodes. | **12th** |
| General methods of nematode | **13th** |
| control ( preventive methods, cultural methods, Biological methods) | **14th** |
| **18. Practical Topics (If there is any)** |  |
| * Identify of nematodes cause plant diseases
* Identify of Symptoms and Signs of the diseases.
* Identify of the Pathogens which cause the diseases.
* Methods of how to control the diseases

  |  3 Hours labs   |
| **19. Examinations:**1- Define the following:2- Mention the main characters of plant parasitic nematodes.3- Write four of the symptoms which may appear on the roots of a plant infected with …….. nematode.4- Compare between disease caused by ………… and disease caused by ….. .5- Enumerate (write) the function of …….6- Choose the correct answer from the following.7- Full in the blanks with correct (sutable word/s).8- Re-assort the following according to the sequence of their use.**9-** Explain …… |
|  **Extra notes**  |
| **21. Peer review**   |