Agricultural Nematology

Obligatory module or Selective module	**Agricultural Nematology**	**PNH 2106**
Semester	III	
Module level	Undergraduate	
Module Coordinator	Dr. Ir. Siwi Indarti, M.P.	
Lecturer(s)	Dr. Ir. Siwi Indarti, M.P.	
Type of Module	Lecture: 1 hour and 40 minutes Laboratory work/Practical	
Status	C (Compulsory courses)	
Exam	Written	
Number of participants	64	
Credit Points:	2/1 (5.02 ECTS)	
Description:	The objective to be achieved in this course is to develop graduate competencies in the field of nematology and apply them to agriculture, especially in the concept of plant protection. After completing this lecture, students can explain the importance of nematodes in agricultural ecosystems. Students' understanding and soft skills in mastering lecture content are assessed based on the results of evaluations of UTS (Mid Semester Exam), UAS (Final Semester Examination), independent assignments, as well as student creativity in discussions, class participation, presentations, and disciplined task collection.	
Academic goal (competency):	After attending this lecture, students are expected to be able to explain the importance of parasitic nematodes and non-parasitic plant nematodes and how to manage them in supporting sustainable agriculture.	

Course outcomes:

CO1 = Explains the scope and significance of nematology in agriculture

CO2 = Describe the morphology and anatomy of nematodes, both parasitic and non-parasitic in plants,

CO3 = Mastering the methodology in the field of nematology, so that it can carry out handling of nematodes which includes ways of collection (sampling and extraction-isolation of nematodes), fixation, painting and making of nematode preparations,

CO4 = Explain the classification of nematodes,

CO5 = Explain the abiotic and biotic factors that influence the growth and development of nematodes,

CO6 = Explain the mechanism of parasitization and nematode predation as well as linking it to the signs or signs of the attack caused,

CO7 = Distinguishing important nematode genera / species that belong to a group of parasites and not plant parasites, as well as explaining their biology and economic significance,

CO8 = Explains the principles of managing non-plant parasitic nematodes and their benefits in an agricultural ecosystem.

CO9 = Explains management principles and techniques for controlling plant parasitic nematodes, as well as the concept of integrated management of plant parasitic nematodes.

Contents:

The contents of the lecture cover morphology, classification, biology and management of plant parasitic nematodes, as well as the use of plant non-parasitic nematodes in support of sustainable agriculture. Learning methods are given by lectures, discussions, questions and answers, and assignments through case studies that are relevant to the field of nematology to be presented or summarized by students.

Which previous course required? Plant Protection

Literature:

Anonim, 2001. *Handbook of Laboratory Techniques forUse with Plant, Soil and Entomophilic Nematodas.* The Univ. of adelaide and CSIRO div. Of Entomology. 26p.

Ayoub, Sadek M.1977. Plant Nematology “An agricultural training Aid”. State of California, Dept. of Food and Agriculture Division Services. Sacramento, California

Barker, K.R.; C.C. carter; and J.N. Sasser. 1985. *An Advanced Treatise on Meloidogyne, Vol. II: Methodology.* North Carolina State Univ. Graphics. 223p.

Bedding, R.; R. Akharst; & H. Kaya. 1993. Nematodas and the Biological Control of Insect Pests. CSIRO Public. Victoria, Australia. 177p

Decker, H. 1981. Plant Nmatodes and Their Control. Amerind publishing co.pvt.Ltd. New Delhi. 540p

Luc, M.; R.A. Sikora; & J. Bridge. 1990. Plant Parasitic Nematodas in Subtropical and Tropical Agriculture. C.A.B. Internatioal Inst. of Parasitology. Wallingford, UK. 629p

Norton, D.C. 1978. Ecology of Plant Parasitic Nematodas. John Wiley & Son, Inc. USA. 268p.

Singh, R.S & K. Sitaramaiah. 1993. *Plant Pathogens: The plant Parasitic Nematodas*. Science Publ. U.S.A.

Southey, J.F. 1986. *Laboratory Methods for Work with Plant and Soil Nematoda.* London: her Majesty’s Stat. Office. 202p.

Veech, J.A.and D.W. Dickson. 1987. Vistas on Nematology: A commemoration of the twenty-fifth anniversary of the Society of Nematologists. Soc. of Nematologists Inc. Hyattsville, Maryland. 509p.

Materials provided: PPT

Requirements for exam:75% attendance set by the Faculty of Agriculture

Teaching method(s)	Classes, Discussion, Assignments