

1. Ecology of Plant Pests and Diseases

Obligatory module or Selective module	Ecology of Plant Pests and Diseases	PNH 3115
Semester	V	
Module Level	Undergraduate	
Module Coordinator	Dr. Ir. Arif Wibowo, M.Agr.Sc	
Lecturer(s)	Dr. Ir. Arif Wibowo, M.Agr.Sc Dr. Ir. Arman Wijonarko, M.Sc.	
Type of Module	1 hour and 40 minutes lecture Practical	
Status:	C (compulsory courses)	
Exam	Written and presentation	
Number of participants	64	
Credit Points:	2/1 (5.02 ECTS)	
Description:	<p>Pest Ecology and Plant Disease are compulsory courses of study programs. This lecture discusses the concept of triangle destroyer plants, macro and micro environments that affect the life and development of pests and plant pathogens. Interaction between bodies in the environment. Population dynamics of pests and pathogens and their observations. To be more easily understood by students taken a variety of cases of pests and diseases that are developing during the lecture period.</p> <p>This course practicum describes theoretical lecture material into practical forms, which include environmental influences on the development of causes of disease and the breeding of plant pests in the laboratory scope and followed by biotic and abiotic environmental influences on the development of diseases and the spread of plant pests.</p>	
Academic goal (competency):	<p>After completing the lecture, students can understand the role of ecology in the development of pests and plant diseases and are able to develop pest and plant disease control tactics based on ecological principles. Students can understand the role of weather factors, especially relative humidity and rainfall, temperature on the development of disease and pest causes and the occurrence of attack explosion. By conducting practicum of this course students are able to conduct experiments involving the influence of humidity and temperature on the release of pathogenic fungal spores, disease development in various conditions, the spread of insects under various conditions and the level of pest and disease attacks in various conditions.</p>	
Course outcomes:		

<p>Students are expected able to explain:</p> <ol style="list-style-type: none"> understanding biotic and abiotic environment the environment as predisposition and environment as disease agent or pathogen disease triangle, disease square, disease pyramid and destroy triangle environmental role toward pathogen development environmental role toward pest and disease development utilization of environmental factor toward pest and disease pressing 	
<p>Contents:</p> <p>The understanding about ecology, and level of ecological organization, triangle concept, macro and micro-environment that influence in life and the development of plant pest and disease, dynamic of plant pathogen population, co-evolution and the dynamic of prey and predator population, growth and pest population dynamics, the population in pesticide pressure, ecology of plant pest and disease biological control, inter and intraspecific competition, diversity and stability, crop management ecology.</p>	
<p>Which previous course required? Plant Protection, Phytopathology, Agricultural Entomology, Agricultural Nematology, etc.</p>	
<p>Literature:</p> <ol style="list-style-type: none"> Price. P.W. 1975. Insect Ecology Semangun, H. 2000. Pengantar Ilmu Penyakit Tumbuhan van der Plank. 1984. Plant Diseases Epidemiology. Journal Economic Entomology Journal Environment Entomology 	
<p>Material provided: whiteboard, LCD, laptop</p>	
<p>Requirements for exam: assignment, 75% attendance</p>	
<p>Teaching method(s)</p>	<p>Student Center Learning Lectures, Discussion, Assignments</p>
<p>Workload (hrs).</p> <ol style="list-style-type: none"> Theoretical of course: 15 times x 50 minutes Lab work: 10 times x 50 minutes Home studies: 10 x 50 minutes 	