

Course	<b>Principal of Plant Protection</b>
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Course number	PNH2110C
Course structure	Lectures and field trip
Course credits	2/0 credits
Course overview	This lecture provides students with knowledge of the principles of crop protection, and technology that can be applied in the field. Lecture is divided into three parts, namely (1) an introduction that discusses the definition of plant protection and plant classification of harmful organisms, (2) a method to recognize the type of pests and plant diseases, as well as methods of observations in the field, and (3) the principle of crop protection in harmony with nature, namely Integrated Management of Pest and Disease.
Academic goal (competency)	Student understand the principles of crop protection and how to arrange suitable strategies to manage the pests and diseases.
Course schedule	
Week	
Week 1	Introduction : 1. Preface 2. Problem of pests and diseases in agricultural field. 3. Understanding the importance of crop protection to minimize the impact of pests and diseases on crops.
Week 2	Pests problem in crop protection: 1. Pests, host plant, and environment problems 2. Human efforts to control the pests
Week 3	Plant diseases problem in crop protection. 1. Determination of plant disease 2. Factors influence plant disease 3. Examples of important plant disease
Week 4	Post harvest management in crop protection. 1. Why post harvest is important 2. Problem of Post harvest pests and diseases
Week 5	Classification of pest and impact of environmental factors on pests performance.

Week 6	<p>Introduction about pathogens, characteristic and factors influence their development.</p> <ol style="list-style-type: none"> <li>1. Introduction about pathogens : Fungi, Bacteria and Virus</li> <li>2. Characteristic of pathogens</li> <li>3. Factors influence their development</li> </ol>
Week 7	Integrated Management of Pest and Plant Disease
Week 8	Midterm
Week 9	Introduction about plant quarantine, its importance and role in crop protection.
Week 10	<p>Introduction of biotechnological approaches in crop protection.</p> <ol style="list-style-type: none"> <li>1. Introduction of biotechnology in crop protection</li> <li>2. Molecular technique in plant disease diagnosis</li> <li>3. Gene expression and plant resistance against pest and disease</li> <li>4. GMO</li> </ol>
Week 11	<p>Differences of agricultural activities and crop protection management in tropic and subtropic.</p> <ol style="list-style-type: none"> <li>1. Agricultural activities in tropic and subtropic</li> <li>2. Plant factory</li> </ol>
Week 12	<p>Impact of human activity against pests and disease toward crop protection management.</p> <ol style="list-style-type: none"> <li>1. Changing ecosystem and influence toward plant and disease</li> <li>2. Conventional and organic cultivation</li> </ol>
Week 13	<p>The role of crop protection in international trading.</p> <ol style="list-style-type: none"> <li>1. Crop protection in high commercial products</li> <li>2. Sanitary and phytosanitary</li> </ol>
Week 14	Field excursion : Organic and conventional paddy field in Yogyakarta
Week 15	Field excursion : Fruit and vegetable in Yogyakarta traditional market
Week 16	Final examination
Textbooks, references and supplementary material	<ol style="list-style-type: none"> <li>1. Agrios, G.N., 2005. Plant Pathology (5th edition). Elsevier Academic Press, Burlington.</li> <li>2. Abrol, D.P., 2014. Integrated Pest Management. Current concepts and ecological perspective. Elsevier-Academic Press, Amsterdam.</li> <li>3. Metcalf, R.L. &amp; W.H. Luckman. 1975. Introduction of insect pest management. A Wiley-Interscience Publication. New York.</li> </ol>
Assignment	
Methods of evaluation	Evaluation of learning outcomes is a combination of various components of the assessment include: student discipline (attendance, punctuality of tasks collection),

	creativity (class discussion and assignment) and mastery (task reports, mid and final exam results) also report of field trip
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