University of Gadjah Mada
Faculty of Forestry
Study Program of Doctor in Forestry Science
Module Handbook

Name (Code)	: Management of Tropical Forest Pest and Diseases (KTDS22810)
ECTS | Type | Status	: 7.5 | Class lecture | Elective
Semester | OfL: OnL Ratio | LMS	: 2 | 60:40 | elok.ugm.ac.id
Pre-Requisite	: -
Description of content	This course discusses the theories, concepts, and principles as the basis for integrated management of tropical forest plant pests and diseases. Further discussion on how to integrate chemical, biological, physical, and other silvicultural management techniques so that economically, ecologically, and socially profitable. Management of important pests and diseases that attack leaves, crowns, stems and branches, roots as well as seeds and fruits both in the ecosystems of plantation forests, production natural forests, urban forests and community forests are the main topics in developing pest management programs in order to develop an integrated pest and disease management program that supports the sustainability of tropical forest ecosystems.
Course Outcomes and PLO mandated	Finishing this course, student will be able to integrate concepts, theories, and principles of decision making in integrated pest and disease management of tropical forests in a systematic manner obtained through reasoning in the process of learning, research, and community service (CO1/PLO3), to provide appropriate solutions in the management of important pests and diseases in plantation forests, production natural forests, urban forests, and community forests in tropical region (CO2/PLO4), and to develop appropriate integrated pest and disease management programs in order to support the sustainability of tropical forest ecosystems. (CO3/PLO7).
Lecturer(s)	1. Dr. Ir. Sri Rahayu MP. 2. Dr. Musyafa, M.Sc. 3. Ananto Triyogo, S.Hut., M.Sc., Ph.D.
Workload	: Total workload per semester is for 14 weeks, with weekly activities: 2*(50' lectures, 60' structured activities, 60' independent study), and 2 mid exam and final exam weeks.
Learning Method	: Class Lecture and Discussion
Student Learning Experience	: Actively discuss the class material and research cases, structured assignment, group work, quiz, material reflection, review of literature and problem in forestry sectors

Mapping CO-syllabus

CO	Syllabus	Learning form	Meetings
1	1. Introduction 2. The concept of integrated pest and disease management (IPM). 3. Economic threshold in IPM	Class lecture, collaborative learning, and discussion	3
2	4. Principles and strategies for preventing damage to tropical forest plants by pests 5. Principles and strategies for preventing damage to tropical forest plants by disease-causing pathogens. 6. Principles, strategies, and application of biological, chemical, physical, and technical silviculture control of forest plant diseases.	Class lecture, collaborative learning, and discussion	3
3	7. Principles, strategies and applications of integrated disease management in urban forests 8. Principles, strategies and applications of integrated disease management in community forests 9. Principles, strategies and applications of integrated disease management in production natural forests 10. Principles, strategies and applications of integrated disease management in plantation forests	Class lecture, collaborative learning, and discussion	8

Assessment method

Base of Evaluation	Component of Evaluation	CO1	CO2	CO3	Total (%)
Participative activity	Assignment	√	√	√	50
Cognitive & Psychomotoric	Mid exam	√	√	√	50

References

1. Arya A and Perelló AE. 2010. Management of Fungal Plant Pathogens. CABI. Publishing. 403 p..
2. FAO. 2009. Global Review of Forests Pests and Diseases. Series: FAO Forestry Paper. Food and Agriculture Organization, Vol. 56. 222 p.
3. Forest Health – Prevention and Treatment of Diseases and Infestations. https://www.fairfaxcounty.gov/publicworks/trees/forest-health
4. Good practices for forest health protection. https://www.fao.org/3/i2080e/i2080e03.pdf
5. Integrated pest and disease management, uploaded by: CGIAR, Mar 10, 2021, 1.52K This webinar, the

	third in a series of four by CGIAR for the 2020 International Year of Plant Health, will examine integrated approaches for sustainable management. https://www.youtube.com/watch?v=2ny-1dD5Ht0 6. J.M. Waller, J.M. Lenné & S.J. Waller. 2001. Plant pathologist's pocketbook. 3rd edition. Wallingford, UK. 7. Pedigo, L. P., S. H. Hutchins, and L. G. Higley. 1986. Economic injury levels in theory and practice. Annu. Rev. Entomol. 31:341368. 8. PRINCIPLES FOR PREVENTING DAMAGE AND DISEASE IN PLANTATION FORESTS. https://slideplayer.com/slide/10339200/ 9. Tree Health and Plantation Forestry Consultants Report2 February, 2007. file:///C:/Users/Sri%20Rahayu/Downloads/FTRtreehealthKalimantan.pdf