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| **Obligatory module or**  **Selective module** | **Ecology of Plant Pests and Diseases (Ekologi Hama dan Penyakit Tumbuhan)** | | **PNH 3160** |
| **Semester** | **V** | | |
| **Module Level** | **Bachelor** | | |
| **Module Coordinator** | **Dr. Ir. Witjaksono, M.Sc.** | | |
| **Lecturer(s)** | Dr. Ir. Witjaksono, M.Sc.  Dr. Ir. Arif Wibowo, M.Agr.Sc | | |
| **Type of Module** | **1 hour and 40 minutes lecture**  **Practical** | | |
| **Status:** | **C (compulsory courses)** | | |
| **Exam** | Written and presentation | | |
| **Number of participants** | **49** | | |
| **Credit Points:** | **2/1** | | |
| **Learning outcomes:**  **Students are excepted able to explain:**   1. understanding biotic and abiotic environment 2. the environment as predisposition and environment as disease agent or pathogen 3. disease triangle, disease square, disease pyramid and destroy triangle 4. environmental role toward pathogen development 5. environmental role toward pest and disease development 6. utilization of environmental factor toward pest and disease pressing | | | |
| **Contents:**  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. | | | |
| **Which previous course required?** Principles of Crop Protection, Principles of Plant Pathology, Principles of Plant Pest Science, Plant Pathogen, Plant Pests Identification | | | |
| **Literature:**  1. Price. P.W. 1975. Insect Ecology  2 Semangun, H. 2000. Pengantar Ilmu Penyakit Tumbuhan  3. van der Plank. 1984. Plant Diseases Epidemiology.  4. Journal Economic Entomology Journal Environment Entomology | | | |
| **Material provided:** whiteboard, LCD, laptop | | | |
| **Requirements for exam:** assignment | | | |
| **Teaching method(s)** | | Student Center Learning | |
| Workload (hrs).   1. Theoretical of course: 15 times x 50 minutes 2. Lab work: 10 times x 50 minutes 3. Home studies: 10 x 50 minutes | | | |