

	<p style="text-align: center;">UNIVERSITAS PADJADJARAN FACULTY OF MATHEMATICS AND NATURAL SCIENCES</p> <p style="text-align: center;">MASTER OF SCIENCE IN BIOLOGY</p>	<p>COURSE CODE: D02D2111</p>
Module designation	Biological Control	
Semester(s) in which the module is taught	2	
Person(s) responsible for the module	Dr. Mia Miranti Rustama, M.P. Prof. Dr. Wawan Hermawan Dr. Melanie, M.Si.	
Medium of instruction	English and Indonesian	
Relation to curriculum	Compulsory Master of Science in Biology	
Teaching methods	Lecture, discussion, cooperative learning and problem base learning	
Workload	<p>Total workload: 8160 minutes (90,67 hours)</p> <p>CLASS</p> <p>Lecture, discussion, cooperative learning and problem based learning : 2 x 50'x 16 weeks = 1600 minutes (26.67 hours)</p> <p>Exercise : 2 x 60'x 16 weeks = 1920 minutes (32 hours)</p> <p>Private study : 2 x 60'x 16 weeks = 1920 minutes (32 hours)</p>	
Credit points	2.00 SKS (3.62 ECTS)	

<p>Required and recommended prerequisites for joining the module</p>	<p>-</p>
<p>Module objectives/intended learning outcomes</p>	<ol style="list-style-type: none"> 1. Able to explain the concepts of pest insect population control in natural or artificial environments (greenhouses), biologically. 2. Able to explain the 'mode of action' of biological control using chemical compounds from plants and microbial agents. 3. Able to analyze the way of isolation and production of chemical compounds from plants, and the production of microbial agents simply. 4. Able to study the concept of applying biological agents to control pest insect populations in the field.
<p>Contents</p>	<p>This course studies the understanding, exploration, and application of pest insect population control concepts in natural or artificial environments (greenhouses), biologically. Control of pest insect populations with biological materials includes the use of plants that are biopesticides (produce chemical compounds that are toxins, antifeedants, repellents) and the use of microorganism agents derived from fungi, bacteria and viruses. This course also studies the 'mode of action' of each biological material against target insects by studying the mortality, histological and physiological of infected insects. In addition, it is also studied how to isolate and produce these biological compounds and microbial agents in simple terms and the application of these biological agents in the field</p>

Examination forms	Essay and written examination
Study and examination requirements	Minimum attendance at lectures is 80%. Final score is evaluated based on assignment and group case study reports (20%), Assignment (20%), mid semester exam (30%), and end semester exam (30%).
Reading lists	<ol style="list-style-type: none"> 1. Purnomo, H.(2010) Pengantar Pengendalian Hayati. Penerbit Andi. Yogyakarta 2. Debach, P.(1991) Biological Control by Natural Enemies 2nd Edition, Cambridge University Press, Cambridge 3. Pedigo, L. (1999), Entomology and Pest Management, MacMillan Pub. Co 4. Tanada, Y., and Kaya, H. K. (1993), Insect Pathology. Academic Press, Inc. California. 5. Boucias, D.G and Pendland, J.C. (1998), Principles of Insect Pathology, Kluwer Academic Publishers, Massachusetts.