

Course name:

Ecological Methods of Plant Protection

ECTS	4
Course status	facultative
Course final assessment /evaluation of outcomes	The grade based on Student's work
Prerequisite	<i>Course of biology, fundamental information about pests and diseases of plants</i>

Main field of study:

Agriculture and Horticulture (Erasmus+)

Educational profile	General academic
Code of studies and education level	bachelor/engineer (SI) or master of science (SM)
Semester of studies	winter or summer
Language of instruction	English

Course offered by:

Name of faculty offering the course	Faculty of Biotechnology and Horticulture
Name of department offering the course	Department of Botany, Physiology and Plant Protection
Course coordinator	Dr hab. Elżbieta Wojciechowicz-Żytko, dr hab. Jacek Nawrocki

Learning outcomes:

Symbol of outcome	Description of the learning outcome	Reference to main field of study outcomes	Area symbol*
KNOWLEDGE – student knows and understands			
EMPP-W1	Understands the principles of ecological plant protection	OGR_R2- W02	RR
EMPP-W2	Knows ways of non-chemical protection of plants against pathogens and pests	OGR_R2- W02	RR
EMPP-W3	Understands the importance of biodiversity and its impact on the stability of the agroecosystem	OGR_R2- W03, OGR_R2- W04	RR
SKILLS – student is able to			
EMPP-U1	Choose alternative protection methods that limit chemization	OGR_R2-U02	RR
EMPP-U2	Interpret the results of experiments and draw conclusions	OGR_R2-U02, OGR_R2-U04	RR
EMPP-U3	Organize activities towards increasing environmental resistance	OGR_R2-U03	RR
SOCIAL COMPETENCIES – student is ready to:			
EMPP-K1	Providing objective information regarding the principles of Good Agricultural Practice	OGR_R2-K01	RR
EMPP-K2	Presenting the negative effects of agricultural chemisation and ways to limit them	OGR_R2-K02	RR

Teaching contents

Lectures	15. hours
Topics	

	<ol style="list-style-type: none"> 1. Basic information on organic production and plant protection. Biodynamic, organic, ecological agriculture. 2. The importance of biodiversity of species of plants and animals in ecological plant protection against pests and pathogens. The role of wild plants. 3. Agronomic and mechanical method in the protection plants against agrophages. The use of mixed crops, water extracts, natural pesticides plant protection and products qualified for use in organic farming in reducing pests and pathogens. 4. Other non-chemical methods of plant protection. Methods for detection and forecasting of pests and pathogens. 5. Beneficial organisms limiting the number of pests and pathogens. The impact of pesticides on beneficial organisms.
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Accomplished learning outcomes	EMPP-W1, EMPP-W2, EMPP-W3, EMPP-K1
Means of verification, rules and criteria of assessment	Exam (50%)
Classes:	15 hours

Topics	<ol style="list-style-type: none"> 1. Preparation of selected plant preparations / liquid manure, extracts, decoctions, infusions / for pest and pathogens control - testing their effectiveness. 2. Study of the impact of applied preparations of natural origin on the development of selected plant pathogens in laboratory conditions. 3. Making and setting simple traps for protecting plants and catching pests. 4. Field exit - to learn about the functioning of an organic farm.
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Accomplished learning outcomes	EMPP-U1, EMPP-U2, EMPP-U3, EMPP-K2
Means of verification, rules and criteria of assessment	preparing an essay / presentation, report on laboratory work (50%)

References:

Basic	<p>van Emden H. F., 1989. Pest control. Edward Arnold. A division of Hodder&Stoughton.</p> <p>Agrios G. 2005. Plant Pathology. Academic Press.</p> <p>BioControl, Journal of the International Organization for Biological Control. Springer.</p>
Supplementary	<p>van Emden H.F. , Harrington R., 2007. Aphids as crop pests. CAB International.</p>

Structure of learning outcomes

Area of academic study: R – Agricultural, forestry and veterinary sciences	4 ECTS
Area of academic study: T – technological sciences	ECTS**

Structure of student activity

Contact hours	... 40	hrs.	1.6. ECTS
Including: lectures	... 15	hrs.	

classes and seminars	...	15	hrs.	
consultations	...	5	hrs.	
participation in research	...		hrs.	
obligatory traineeships	...		hrs.	
participation in examination	...	5	hrs.	
e-learning	...		hrs. ECTS**
student own work	...	60	hrs.	2.4 ECTS

*Areas of academic study in the fields of: H- humanities; S - social studies; P – biological sciences; T – technological sciences; M- medical, sport and health sciences; R – Agricultural, forestry and veterinary sciences; A – the arts

** stated with an accuracy to 0.1 ECTS, where 1 ECTS = 25 - 30 hours of classes