

Course name: Integrated plant protection

ECTS	5.0
Course status	<i>facultative</i>
Course final assessment /evaluation of outcomes)	<i>written test, oral presentation, and individual reports from laboratory activities</i>
Prerequisite	-

The main field of study:

Agriculture and Horticulture (Erasmus+)

Educational profile	<i>general academic</i>
Code of studies and education level	<i>bachelor/engineer (SI) or master of science (SM)</i>
Semester of Studies	<i>winter and summer semester</i>
Language of instruction	<i>English</i>

Course offered by:

Name of faculty offering the course	Faculty of Biotechnology and Horticulture
Name of the department offering the course	Department of Botany, Physiology and Plant Protection
Course coordinator	dr hab. inż. Maria Pobożniak, prof. URK; dr hab. inż. Jacek Nawrocki

Learning outcomes:

Symbol of outcome	Description of the learning outcome	Reference to the main field of study outcomes	Area symbol*
KNOWLEDGE – student knows and understands:			
IPP_W1	the basic definitions in the field of Integrated Plant Protection (syn. Integrated Pest Management)	OGR1_W01	R
IPP_W2	rules for forecasting diseases and pests of fruit and vegetable crops	OGR1_W05	R
IPP_W3	methods of integrated protection of fruit plants and vegetables against diseases and pests	OGR1_W05	R
IPP_W4	selection of appropriate pesticides and biopesticides in IPP	OGR1_W06	R
IPP_W5	combining elements from the biology and development of pest populations and the etiology of diseases to correctly select monitoring methods and choose the most beneficial techniques of pest prevention and control from the point of view of integrated plant protection	OGR1_W05	R
SKILLS – student is able to:			
IPP_U1	prepare programs for the protection of fruit plants and vegetables against diseases and pests	OGR1_U02	R
IPP_U2	identify pathogens, pests, damage, and beneficial organisms found in fruit and vegetable crops	OGR1_U03	R
IPP_U3	define risk limits for pathogens and pests of fruit and vegetable crops	OGR1_U06	R
IPP_U4	correctly use appropriate equipment used for pest forecasting and monitoring (pheromone, sticky, and odor traps)	OGR1_U07	R
IPP_U5	prepare reports on topics presented as part of the course	OGR1_U04	R
SOCIAL COMPETENCIES – student is ready to:			
IPP_K1	work in a group on a specific task	OGR1_K02	R
IPP_K2	recognition of the importance of social, professional, and ethical responsibility for the production of high-quality food	OGR1_K01	R
IPP_K3	risk assessment resulting from not applying the principles of good practice	OGR1_K03	R
IPP_K4	openness to new knowledge and awareness of its practical application	OGR1_K04	R

Teaching contents

Lectures:		25 hours
Topics	Integrated pest management - definition, history, evaluation, and principles. Principles of Good Agricultural Practice. Principles of forecasting pests and diseases. Pesticides and non-chemical protection in Integrated Plant Protection (Integrated Pest Management). Principles of biological control.	
Accomplished learning outcomes	IPP_W1-W5, IPP_K2-K4	
Means of verification, rules, and criteria of assessment	the written test (40 % contribution to the final grade)	
Classes and seminars:		20 hours
Topics	Identification of main pests occurring in vegetable crops. Identification of main pathogens occurring in vegetable crops. Identification of main pests occurring in orchard crops. Identification of main pathogens occurring in orchard crops. Protection methods recommended in IPP (IPM) quarantine, agrotechnical, physical, biological, and rearing methods). Selection and rules for the use of plant protection substances in IPM. Integrated protection of selected crops (economically important) in the student's country of origin.	
Accomplished learning outcomes	IPP_U1-U5, IPP_K1-K4	
Means of verification, rules, and criteria of assessment	individual reports from laboratory activities (contribution to the final grade from the course – 20 %); oral presentation on a given subject (contribution to the final grade from the course 40%)	

References:

Basic	Abrol. D.P., Shankar U. 2012. <i>Integrated Pest Management: Principles and Practice</i> . CABI, Electronic books – 512 pp Agrios G. N.: <i>Plant Pathology</i> . Academic Press. San Diego, London, Boston, N. York, Sydney. Tokyo, Toronto 1997, ss. 635 Chakravaryhy A. K. 2015. <i>New horizons in Insect Science: Towards Sustainable Pest Management.</i> , Springer Nature
Supplementary	Peshin, Rajinder; Dhawan, Ashok K. (Eds.). <i>Integrated Pest Management. Volume 1</i> . 2009

Structure of learning outcomes

Area of academic study: agriculture and horticulture	5.0 ECTS**
Area of academic study: biological sciences	

Structure of student activity

Contact hours	50	hrs.	2.0	ECTS**
Including:	lectures	25	hrs.	
	classes and seminars	20	hrs.	
	consultations	3	hrs.	
	participation in research	...	hrs.	
	obligatory traineeships	...	hrs.	
	participation in examination	2	hrs.	
e-learning	...	hrs.	...	ECTS**
student own work	75	hrs.	3.0	ECTS**

*areas of academic study in the fields of P – biological sciences; R – agriculture and horticulture

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