



## AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Biological Control of Plant Diseases							
Course Code		ZBK520		Course Level		Second Cycle (Master's Degree)			
ECTS Credit	8	Workload	200 ( <i>Hours</i> )	Theory	2	Practice	2	Laboratory	0
Objectives of the Course		To teach fundamentals of biological control of plant pathogens.							
Course Content		The course focuses on student understanding of the basic principles of biological control of plant diseases and its role in plant protection. The major biocontrol mechanisms, which include antibiosis, competition, colonization, lyzsis, PGPR, SIR and hypovirulence, are demonstrated by in vitro and in vivo assays.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Experiment, Demonstration, Discussion					
Name of Lecturer(s)									

### Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	40
Assignment	1	20

### Recommended or Required Reading

1	Bitki Hastalıklarıyla Biyolojik Savaş. Bora T., Özaktan H.
2	Pal, K. K. and B. McSpadden Gardener, 2006. Biological Control of Plant Pathogens. The Plant Health Instructor DOI: 10.1094/PHI-A-2006-1117-02.
3	Fitopatolojide biyolojik mücadele. Türk. biyo. müc. derg., 2010, 1 (1): 61-78

Week	Weekly Detailed Course Contents	
1	Theoretical	Plant protection methods. What is biological control?
	Practice	Lab Introduction
2	Theoretical	What is biocontrol of plant pathogens? Biological control in Turkey and World
	Practice	Preparing lab tests
3	Theoretical	Is Biological control really alternative of chemical control What is negative effects of chemical control
	Practice	Lab tests
4	Theoretical	Biological control terms
	Practice	Lab tests
5	Theoretical	Mechanisms of biocontrol
	Practice	Lab tests and measuring/evaluation results
6	Theoretical	Mechanisms of biocontrol
	Practice	Lab tests and measuring/evaluation results
7	Intermediate Exam	Exam
8	Theoretical	process of obtaining biocontrol agents
	Practice	Lab tests and measuring/evaluation results
9	Theoretical	Properties of biocontrol agents
	Practice	Evaluation of the all lab experiment results
10	Theoretical	Where, When, How can we isolate biological control agents
	Practice	Mass production studies
11	Theoretical	How to determine antagonist effect of biocontrol agents in in-vitro and in-vivo
	Practice	Studies on formulation
12	Theoretical	How to determine antagonist effect of biocontrol agents in in-vitro and in-vivo
	Practice	Measuring of Climate room experiments
13	Theoretical	Biopesticides in Turkey and World
	Practice	Measuring of field experiments (In strawberry fields)



14	Theoretical	reviewing and discussion
	Practice	Statistical analysis
15	Theoretical	Recent studies on biocontrol in the World
	Practice	Discussion and making decision on isolates
16	Final Exam	Exam

### Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	3	2	70
Lecture - Practice	14	3	2	70
Assignment	6	3	2	30
Quiz	1	5	1	6
Midterm Examination	1	10	2	12
Final Examination	1	10	2	12
Total Workload (Hours)				200
[Total Workload (Hours) / 25*] = <b>ECTS</b>				8

\*25 hour workload is accepted as 1 ECTS

### Learning Outcomes

1	Understanding the concept of biological control
2	Understanding of biological control mechanisms
3	Learning the terms used in biological control
4	Predict which biological agents will be concentrated in many isolates
5	Having an idea about minimizing the mistakes that may be encountered in establishing and evaluating in-vitro / in-vivo experiments on the subject

### Programme Outcomes (Plant Protection Master)

1	To develop knowledge and abilities that gained during undergraduate education
2	To gain ability to search and pursue current literature
3	To gain ability to plan and write projects that help solving problems in field of study.
4	To gain ability to conduct research, analyze data, evaluate research results scientifically and prepare reports and thesis writing.
5	Students will be able to learn and apply the laboratory test and analysis methods
6	To recognize occupational and ethical responsibility

### Contribution of Learning Outcomes to Programme Outcomes 1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High

	L1	L2	L3	L4	L5
P1	2	4	3	4	4
P2	4	5	4	3	5
P3	3	5	3	3	5
P4	2	4	3	3	5
P5	3	3	3	4	4
P6	3	4	3	3	4

