



## AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Variety Development							
Course Code		TBY418		Course Level		First Cycle (Bachelor's Degree)			
ECTS Credit	4	Workload	104 ( <i>Hours</i> )	Theory	2	Practice	2	Laboratory	0
Objectives of the Course		Students learn improve ne varieties by using traditional and new plant breeding methods							
Course Content		The importance of cultivar development, pollination mechanisms in plants, classical breeding methods used in cultivar development, biotechnological methods used in plant breeding, molecular plant breeding							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Demonstration, Discussion					
Name of Lecturer(s)									

### Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	30
Final Examination	1	70

### Recommended or Required Reading

1	Lecture notes
2	Bitki Islahı, 2015, Orhan KURT, OMÜ, Ziraat Fakültesi Ders Kitabı, No:43
3	Principles of Plant Genetics and Breeding, 2009, George Acquaah, Blackwell Publishing

Week	Weekly Detailed Course Contents	
1	Theoretical	Crop production and plant breeding
2	Theoretical	Importance of improve new varieties
3	Theoretical	Genetic importance of pollination mechanism
4	Theoretical	Hybridization techniques
5	Theoretical	Selection
6	Theoretical	Breeding methods used in self-pollinated plants
7	Theoretical	Breeding methods used in cross-pollinated plants
8	Intermediate Exam	Midterm exam
9	Theoretical	Mutation breeding methods
10	Theoretical	Biotechnological methods used in plant breeding I
11	Theoretical	Biotechnological methods used in plant breeding II
12	Theoretical	Gene transfer methods used in plant breeding
13	Theoretical	Molecular plant breeding
14	Theoretical	Marker techniques used in plant breeding
15	Theoretical	Marker-based selection
16	Final Exam	Final exam

### Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	2	2	56
Lecture - Practice	14	1	2	42
Midterm Examination	1	2	1	3
Final Examination	1	2	1	3
Total Workload (Hours)				104
[Total Workload (Hours) / 25*] = ECTS				4

\*25 hour workload is accepted as 1 ECTS



**Learning Outcomes**

1	Students learn improve new varieties
2	Students learn classical breeding methods used to develop cultivars
3	Students learn modern techniques used to develop cultivars
4	Have knowledge about the importance of plant breeding
5	Have an idea on how to shorten the plant breeding process by putting biotechnological processes in place

**Programme Outcomes (Agricultural Biotechnology)**

1	To be able to develop skills in identifying, modeling and solving problems in agricultural biotechnology
2	To be able to synthesize life and engineering sciences for the effective resource planning of agricultural biotechnology applications
3	To be able to interpret about living organisms structure, metabolic and physiological processes in order to propose biotechnological solutions to the agricultural problems
4	To be able to analyze genomic, metabolomic and proteomic information via bioinformatic tools.
5	To have the ability to analyze collected data and interpret the results.
6	To have the ability of individual working ability and to make independent decisions, to work in inter-disciplinary and interdisciplinary teamwork, to communicate by expressing their ideas orally and in writing, clearly and concisely
7	To have the awareness of professional liabilities and ethics
8	To be able to follow current national and international problems

**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	2	2	1	4
P2	4	2	4	2	4
P3	4	2	4	2	4
P4	2	2	2	1	4
P5	2	2	2	1	4
P6	3	3	3	1	4
P7	2	3	2	2	3
P8	2	3	2	2	3

