



**AYDIN ADNAN MENDERES UNIVERSITY
SULTANHISAR VOCATIONAL SCHOOL
PLANT AND ANIMAL PRODUCTION
SEEDLING PRODUCTION
COURSE INFORMATION FORM**

Course Title	Nursery Biotechnology								
Course Code	FY118			Course Level		Short Cycle (Associate's Degree)			
ECTS Credit	3	Workload	75 (Hours)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course	Have knowledge about basic informations relation to plant biotechnology teorically, the use of biotechnology in crop production.								
Course Content	Having knowledge about Organogenesis Somatic embryogenesis, Micropropagation Germplasm Storage, Gene Isolation and Cloning, Agrobacterium-mediated gene transfer of Direct Gene Transfer Techniques, Herbicides, Insecticides and Development of Resistant Transgenic Plants Insect Development of Stress Resistant Transgenic Plant Genetic Markers and Analysis Methods								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Discussion, Individual Study, Problem Solving								
Name of Lecturer(s)									

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	60

Recommended or Required Reading

1	Course notes of Lecturers
2	Internet

Week	Weekly Detailed Course Contents	
1	Theoretical	Organogenesis Somatic embryogenesis
2	Theoretical	Protoplast culture and somatic hybridization, haploid plant production
3	Theoretical	Secondary Metabolites Production
4	Theoretical	Micropropagation Germplasm Storage
5	Theoretical	Embryo Culture somaclonal variation
6	Theoretical	Molecular Structure of DNA and chromosomes
7	Theoretical	Molecular Structure of Genes and Proteins
8	Theoretical	Exam
9	Theoretical	Gene Isolation and Cloning
10	Theoretical	Direct Gene Transfer Techniques Gene Transfer Through Agrobacterium
11	Theoretical	Development of Herbicide Resistant Transgenic plants resistant to insects Development of Transgenic Plants
12	Theoretical	Development of Transgenic Plants Resistant Viruses Increasing Resistance to Disease
13	Theoretical	Stress Tolerance in Plants Physiology
14	Theoretical	Genetic Markers and Analysis Methods
15	Theoretical	Genetic Markers and Analysis Methods

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	3	42
Assignment	3	5	1	18
Midterm Examination	1	6	1	7
Final Examination	1	7	1	8
Total Workload (Hours)				75
[Total Workload (Hours) / 25*] = ECTS				3

*25 hour workload is accepted as 1 ECTS



Learning Outcomes

1	Understanding the plant biotechnology applications
2	encountered in crop production and effective use of biotechnology in solving the problems can not be solved by traditional farming techniques
3	Learning the gene transfer technique
4	Having knowledge about GMOs and food safety
5	To have information about the tissue culture

Programme Outcomes (Seedling Production)

1	Having knowledge of physiology and morphology characteristics, growth, development and biochemical events occurred in fruits, vegetables and ornamentals plants
2	Having knowledge of soil, climate and irrigation conditions grown fruits, vegetables and ornamentals plants
3	Having knowledge of identification, classification and the use areas of fruits, vegetables and ornamentals plants
4	Having practical and theoretical knowledge of production techniques of fruits, vegetables and ornamentals plants
5	Having ability to identify and to maintain diseases and pests of fruits, vegetables and ornamentals plants
6	Having knowledge of marketing techniques, standards, contributions to the economy of fruits, vegetables and ornamentals plants, legal issues
7	Having knowledge of facilities and builds grown fruits, vegetables and ornamentals plants, and tools and materials used.
8	Having ability to use effective own language and having knowledge of language in order to communicate own colleagues and own customers,
9	Having knowledge of Atatürk Principle and Revolutions and, ability to assimilate Atatürk Principle and Revolutions
10	Having an enough foreign language to able to follow new development in relation with nursery production

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	4	4	4	4	4
P4	5	5	5	5	5

