AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title	Secondary Metabolite Production and Biotechnology								
Course Code	TBY411		Couse Level	First Cycle (Bachelor's Degree)					
ECTS Credit	4	Workload	104 *(Hours)*	Theory	2	Practice	0	Laboratory	2
Objectives of the Course	In the production of secondary metabolites on an industrial scale; strategies, metabolic pathways, regulation of secondary metabolite production of plant-microbial origin and applications and a variety of secondary metabolites of biotechnological production is planned to be examined by considering.								
Course Content	Secondary metabolism overview importance of drugs as secondary metabolites, secondary metabolites production of the regulation, secondary metabolites road marks, antibacterial, antifungal and antiviral specialty secondary metabolites, plant origin secondary metabolites, new medical applications of plant secondary metabolites, plant origin secondary metabolites, of plant cell culture secondary metabolite production, antibiotic, bacterial antibiotic production regulation of ß-lactam, peptides, Lantibiotic, glycopeptide, polyketide antibiotics, phenols, polyphenols and tannins sulfur containing compounds, terpenes and alkaloids, acetylene and psoralen , flavonoids, antitumor agent, classical anticancer drugs , non-classical approaches antitumor drug								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Discussion, Individual Study								
Name of Lecturer(s)									

Assessment Methods and Criteria		
Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	70

Recommended or Required Reading	
1	H.-J. Rehm, G. Reed, Biotechnology: Products of Secondary Metabolism, Volume 7, Second Edition, Wiley Company, 2008
2	M. Wink, Functions and Biotechnology of Plant Secondary Metabolites, Second Edition, Blackwell Publishing Ltd, 2010.

Week	Weekly Detailed Course Contents	
1	Theoretical	Secondary Metabolism Overview
2	Theoretical	Importance of Drug Secondary Metabolites as, Regulation of Secondary Metabolite Production, Secondary Metabolites Road Tracks
3	Theoretical	Antibacterial, antifungal and antiviral specialty secondary metabolites
4	Theoretical	Plant Secondary Metabolites
5	Theoretical	antibiotics
6	Theoretical	ß-lactam, peptides, Lantibiotic, glycopeptide, polyketide antibiotics
7	Theoretical	Phenols and polyphenols
8	Intermediate Exam	Midterm exam
9	Theoretical	Sülfür-containing compounds
10	Theoretical	Terpenes and alkaloids
11	Theoretical	Acetylene and psoralen
12	Theoretical	flavonoids
13	Theoretical	Antitumor Agents
14	Theoretical	Assignments and presentations
15	Final Exam	Final exam

Workload Calculation				
Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	4	3	98
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 of secondary metabolites and discuss the idea of the importance of producing secondary metabolites production.
2	Students will be able to examine is the knowledge about the microbial production of secondary metabolites.
3	Students will be able to examine the economic production of secondary metabolites
4	Learn the importance of secondary metabolites from plants
5	The importance of medicinal plants found in Turkey

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	3	4	4	4
P2	4	3	3	5	5
P3	4	4	3	3	4
P4	2	2	2	2	2
P5	3	3	3	4	4
P6	2	2	2	3	3
P7	2	2	2	2	2
P8	2	2	2	2	2