AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title	Bioinformatics								
Course Code	TBY408		Couse Level	First Cycle (Bachelor's Degree)					
ECTS Credit	5	Workload	125 *(Hours)*	Theory	2	Practice	0	Laboratory	2
Objectives of the Course	It is aimed to provide an understanding of the techniques used to understand and organize information from biology databases.								
Course Content	Bioinformatics concept and application areas, information theory, information collection, processing and sharing, database creation and use, analysis of protein and nucleotide databases, primary design, evaluation of nucleotide and protein sequence analysis results.								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Demonstration, Individual Study								
Name of Lecturer(s)	Lec. Murat Kemal AVCI								

Assessment Methods and Criteria		
Method	Quantity	Percentage (%)
Final Examination	1	100

Recommended or Required Reading	
1	Introduction to Bioinformatics, Arthur M. Lesk, Oxford University Press, New York, 2002.
2	Bioinformatics : A Practical Approach, Shui Qing Ye, Chapman and Hall/CRC, London, 2007.
3	Bioinformatics, ed. Jonathan M. Keith, Humana press, London, 2008.

Week	Weekly Detailed Course Contents	
1	Theoretical	The Concept of Bioinformatics
2	Theoretical	Areas of bioinformatics
3	Theoretical	Information theory
4	Theoretical	Collection and processing of information
5	Theoretical	Collection and processing of information
6	Theoretical	Creating and using data banks
7	Theoretical	Nucleic acid and protein biochemistry
8	Theoretical & Practice	General review and applications
9	Theoretical	Investigation of nucleic acid databases
10	Theoretical	Investigation of protein databases
11	Theoretical	Investigation of RNA databases
12	Theoretical	Primary design-1
13	Theoretical	Primary design-2
14	Theoretical	Evaluation of nucleotide sequence analysis results
15	Theoretical	General review and applications
16	Final Exam	Final exam

Workload Calculation				
Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	15	2	2	60
Lecture - Practice	15	2	2	60
Final Examination	1	4	1	5
			Total Workload (Hours)	125
			[Total Workload (Hours) / 25*] = **ECTS**	5
**25 hour workload is accepted as 1 ECTS*				

Learning Outcomes	
1	Biyoinformatik kullanım alanlarını öğrenilmesi

2	Learning the collection and processing of bioinformatics
3	Biyolojik veri bankalarının kullanabilmesi
4	To be able to evaluate the results of sequence analysis
5	To learn primer design and gene manipulation techniques

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