

**ABDULLAH GUL UNIVERSITY  
GRADUATE SCHOOL OF ENGINEERING & SCIENCE  
BIOENGINEERING DEPARTMENT  
COURSE DESCRIPTION AND SYLLABUS**

Course Name	CODE	SEMESTER	T+L Hour	CREDIT	ECST
Recent topics in biotechnology	BENG512	FALL-SPRING	3+0	3	10

<b>Prerequisite Courses</b>	None
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<b>Course Type</b>	Elective
<b>Course Language</b>	English
<b>Course Coordinator</b>	Assist. Prof. Dr. Aysun Cebeci Aydın
<b>Lecturers</b>	Assist. Prof. Dr. Aysun Cebeci Aydın
<b>Course Assistants</b>	None
<b>Course Objectives</b>	Explanation of biosafety issues in biotechnology, biological risk assessment and management, information about preventive measures
<b>Learning Outcomes</b>	Student will learn about <ul style="list-style-type: none"> <li>• Broad understanding of the biotechnological fields</li> <li>• Recent biotechnological problems and solution to these problems</li> </ul>
<b>Course Content</b>	Biotechnology and biosafety, national and international agreements and protocols, risk analysis, bioethics, stem cell and cancer research, biological terrorism, accidents, management of biological waste, transfer of biological materials

<b>WEEKLY SUBJECTS AND RELATED PRELIMINARY PAGES</b>		
Week	Subjects	Preliminary
1	Introduction	Main course book and related articles
2	National and international agreements and protocols	Main course book and related articles
3	Risk analysis and management	Main course book and related articles
4	Bioethics	Main course book and related articles
5	Basics of laboratory biosafety	Main course book and related articles
6	Risks of recombinant DNA and GMO	Main course book and related articles
7	Stem cell research	Main course book and related articles
8	Cancer research	Main course book and related articles
9	Pathogens	Main course book and related articles
10	Midterm	Main course book and related articles
11	Biological terrorism and biological weapons	Main course book and related articles
12	Accidents, contamination, and their inactivation	Main course book and related articles
13	Management of biological waste	Main course book and related articles
14	Management of biosafety program	Main course book and related articles
15	Transfer of biological materials	Main course book and related articles
16	Final exam	Main course book and related articles

<b>RESOURCES</b>	
<b>Course Notes</b>	Lecture notes and slides
<b>Other Resources</b>	Course main book: "Bioethics and Biosafety" M K Sateesh (2008) I K International Pvt Ltd

<b>MATERIAL SHARING</b>	
<b>Documents</b>	Lecture notes and slides
<b>Homework</b>	1 homework / week
<b>Exams</b>	1 MT and 1 Final

<b>RATING SYSTEM</b>		
<b>SEMESTER WORKS</b>	<b>NUMBER</b>	<b>CONTRIBUTION</b>
Midterm	1	20
Homework	1	25
Presentation	1	25
<b>TOTAL</b>		70
<b>Success Rate of Semester</b>		70
<b>Success Rate of Final</b>	1	30
<b>TOTAL</b>		100

<b>Course Category</b>		
Basic Sciences and Mathematics		%80
Engineering Sciences		%00
Social Sciences		%20

<b>THE RELATIONSHIP BETWEEN THE LEARNING OUTCOMES AND PROGRAM COMPETENCE</b>						
	No Program Outcomes	Contribution Level				
		1	2	3	4	5
1	Understanding of Life Sciences, Mathematics and Engineering at the post-graduate level, and being able to implement of this knowledge into bioengineering problems					<b>X</b>
2	Having the ability of developing a new scientific method or a technological product or process, and, designing experiments, implementing, collecting data and evaluating regarding these issues					<b>X</b>
3	Choosing technical equipment used in the applications related to bioengineering, having sufficient knowledge in adopting and using new technological equipment					<b>X</b>
4	Having the ability of reaching the information, using resources, contributing to the literature by transferring the process and results of scientific studies as written or verbally in the national and international environments					<b>X</b>
5	Having the ability of working as an individual or a team, in the teams composed of discipline or different disciplines, gaining awareness of leadership and taking responsibility				<b>X</b>	
6	Having advanced level of foreign language knowledge to manage efficient verbal, written and visual communication in the major field				<b>X</b>	
7	Having the understanding of ethics in science and the responsibility in profession with the awareness of lifelong learning, being beneficial to society and sensitiveness to global issues					<b>X</b>
8	Being aware of the social impacts of the solutions and applications of the challenges regarding Bioengineering					<b>X</b>

\*From 1 to 5, it increasingly goes.

<b>ECTS / WORK-LOAD TABLE</b>			
Activities	Activities	Duration (Hour)	Total (Work-Load)
Course Duration (Including exam week: 16x total course hour)	16	3	48
Out of Class Exercise Time (Pre-study, reinforcement)	16	7	112
Searching on Internet, library study	16	3	48
Presentation	5	3	15
Homework	16	3	48
15Midterms	1	15	15
Final	1	15	15

<b>Total Work-Load</b>			301
<b>Total Work-Load / 30</b>			301/30
<b>Course ECTS Credit</b>			10