

## MSc. program, Biomedical Engineering Department

<b>Course Unit Title</b>	Biomedical Research Methods	
<b>Course Unit Code</b>	BME562	
<b>Type of Course Unit</b>	Compulsory	
<b>Level of Course Unit</b>	Master of Science	
<b>National Credits</b>	3	
<b>Number of ECTS Credits Allocated</b>	10	
<b>Theoretical (hour/week)</b>	4	
<b>Practice (hour/week)</b>	-	
<b>Laboratory (hour/week)</b>	-	
<b>Year of Study</b>	-	
<b>Semester when the course unit is delivered</b>	-	
<b>Course Coordinator</b>	Assoc. Prof. Dr. Terin Adalı	
<b>Name of Lecturer (s)</b>	Assoc. Prof. Dr. Terin Adalı	
<b>Name of Assistant (s)</b>	-	
<b>Mode of Delivery</b>	Face to Face.	
<b>Language of Instruction</b>	English	
<b>Prerequisites</b>	-	
<b>Recommended Optional Programme Components</b>	-	
<b>Course description:</b>		
<p>The course defines the understanding of science and engineering and describes the links between the interrelated technical subjects. Further, it considers the methods of scientific research and focuses on the five methods mostly widely used for natural sciences and engineering, giving much emphasis on experimental and field studies research methods. It also stresses the importance of integrated research methods. It stresses the important aspects of writing research proposal, presenting and report (thesis) writing. Finally, it provides some information on research ethics and on resolving controversies in research.</p>		
<b>Objectives of the Course:</b>		
<p>To introduce some of the major issues in understanding of natural and technical sciences, to gain understanding of the nature of research, to make distinction among several research methods and their applications, to gain some experience in writing research proposals, to provide some skills on reporting, to encourage the class to develop their own research methods for their further studies.</p>		
<b>Learning Outcomes</b>		
At the end of the course the student should be able to		Assessment
1	Understand major paradigms in scientific and engineering research, their central concepts and problems.	1,2

2	Have awareness of the significant research methods within several research fields,	1, 2,3	
3	Analyse scientific and pseudo- scientific texts written by the others	1, 2,3	
4	Write research proposal and present it	1, 2,3	
5	Contrast scientific presentation	1,2,3	
6	Organize, conduct and manage scientific research with a special emphasis on ethics	1,2,3,4,	
7	Improve the skills in thesis writing and dissertation.	1,2,3,4,5	
Assessment Methods: 1. Written Exam, 2. Assignment, 3. Project/Report, 4. Presentation, 5. Lab. Work			
<b>Course's Contribution to Program</b>			
		CL	
1	Apply the rules of scientific research and ethics	4	
2	Discuss complex biomedical engineering issues as well as own research results comprehensively and in the context of current international research and present these in writing and orally	4	
3	Solve problems by systems analytical thinking both in subject specific and interdisciplinary concepts	4	
4	Combine specialized knowledge of various component disciplines	3	
5	Carry out in dependent scientific work and organize (capacity of teamwork), Conduct and lead more complex projects	4	
6	To assess the social and environment-related effects of their actions	4	
CL: Contribution Level (1: Very Low, 2: Low, 3: Moderate, 4: High, 5: Very High)			
<b>Course Contents</b>			
Week	Chapter	Topics	Assessment
1		Introduction	
2		Research Planning	
3		Sampling methods	
4		Research skills	

5		Experimental Design Surveys	
6		Qualitative field research	
7		Review Exam	
8		Qualitative field research	
9		Data collection	
10		Questionnaire design/ Measurement and Instrumentation	
11		Descriptive statistics	
12		Inferential statistics	
13		Review	
14		FINAL EXAM	Final Exam.

**Recommended Sources**

**Textbook:**

Lecture notes

**Assessment**

Project	15%	
Midterm Exam	30%	Written Exam
Final Exam	50%	Written Exam
Attendance	5%	
Total	100%	

**Assessment Criteria**

Final grades are determined according to the Near East University Academic Regulations for Undergraduate Studies

**Course Policies**

1. Attendance to the course is mandatory.
2. Late assignments will not be accepted unless an agreement is reached with the lecturer.
3. Students may use calculators during the exam.
4. Cheating and plagiarism will not be tolerated. Cheating will be penalized according to the Near East University General Student Discipline Regulations

**ECTS allocated based on Student Workload**

Activities	Number	Duration (hour)	Total Workload(hour)
Course duration in class (including Exam weeks)	15	4	60
Labs and Tutorials	10	10	100
Assignment	-	-	-
Project/Presentation/Report	3	10	30
E-learning activities	-	-	-
Quizzes	-	-	-
Midterm Examination	1	6	6
Final Examination	1	12	12
Self Study	15	7	105
Total Workload			313
Total Workload/30(h)			10.4
ECTS Credit of the Course			10