

Chemistry (English)			
Bachelor	TR-NQF-HE: Level 6	QF-EHEA: First Cycle	EQF-LLL: Level 6

Course Introduction and Application Information

Course Code:	UNI379						
Course Name:	Mystery of Life:Bioelectricity						
Semester:	Fall Spring						
Course Credits:	<table border="1"> <tr> <td>ECTS</td> </tr> <tr> <td>5</td> </tr> </table>			ECTS	5		
ECTS							
5							
Language of instruction:	English						
Course Condition:							
Does the Course Require Work Experience?:	No						
Type of course:	University Elective						
Course Level:	<table border="1"> <tr> <td>Bachelor</td> <td>TR-NQF-HE:6. Master`s Degree</td> <td>QF- EHEA:First Cycle</td> <td>EQF-LLL:6. Master`s Degree</td> </tr> </table>			Bachelor	TR-NQF-HE:6. Master`s Degree	QF- EHEA:First Cycle	EQF-LLL:6. Master`s Degree
Bachelor	TR-NQF-HE:6. Master`s Degree	QF- EHEA:First Cycle	EQF-LLL:6. Master`s Degree				
Mode of Delivery:	Face to face						
Course Coordinator:	Dr. Öğr. Üy. ESMA NUR OKATAN						
Course Lecturer(s):	Esmâ Okatan						
Course Assistants:							

Course Objective and Content

Course Objectives:	Increase knowlege and awareness regarding bioelectricity
Course Content:	Definition of bioelectricity, electric properties of living beings, examples from plants, animal cells, organs, bioelectricity coordinated cell functions, bioelectricity linked diseases and bioelectricity

Learning Outcomes

The students who have succeeded in this course;

- 1) Able to describe the concepts of the bioelectricity
- 2) Able to explain the impacts of the bioelectricity on biological functions

Course Flow Plan

Week	Subject	Related Preparation
1)	Overview of the lecture	-
2)	Definition of Bioelectricity, Examples from the Nature	-
3)	Mechanisms underlying the bioelectricity, Introduction to Ion Channels	Ion Channels of Excitable Membranes 3rd Edition by Bertil Hille (Author)
4)	Electrochemical Driving Force	Ion Channels of Excitable Membranes 3rd Edition by Bertil Hille (Author)
5)	Bioelectricity induced biological functions-I	https://pubmed.ncbi.nlm.nih.gov
6)	Bioelectricity induced biological functions-II	https://pubmed.ncbi.nlm.nih.gov
7)	Overview of the topics	-
8)	Midterm Exam	-
9)	Diseases related with Bioelectricity	https://pubmed.ncbi.nlm.nih.gov
10)	Diagnostic use of Bioelectricity	https://pubmed.ncbi.nlm.nih.gov
11)	Therapeutic use of Bioelectricity	https://pubmed.ncbi.nlm.nih.gov
12)	Experiments to Study Bioelectricity	https://pubmed.ncbi.nlm.nih.gov
13)	Overview of the topics	-
14)	Final Exam	-

Sources

Course Notes / Textbooks:	https://pubmed.ncbi.nlm.nih.gov
References:	https://pubmed.ncbi.nlm.nih.gov

Course - Program Learning Outcome Relationship

Course Learning Outcomes	1	2
Program Outcomes		
1) Knows the basic concepts related to the theory and applications of chemistry, uses theoretical and applied knowledge, can select, develop and design methods.		
2) Makes experimental planning and application for analysis, synthesis, separation and purification methods, provide solutions to the problems encountered and interpret the results.		
3) Expresses the basic principles of sample preparation techniques and instrumental analysis methods used in qualitative and quantitative analysis of items, discusses their application areas.		
4) Has knowledge about the sources, production, industrial applications and technologies of chemical substances.		
5) Makes structural analyzes of chemical substances and interprets the results.		
6) Work individually and in multidisciplinary groups, take responsibility, plan their tasks and use time effectively.		
7) Follows the information in the field and communicates with colleagues by using English at a professional level.		
8) Uses information and communication technologies along with computer software at the level required by the field.		
9) Follows the national and international chemistry literature, transfers the knowledge gained orally or in writing.		
10) Determines self-learning needs, manages/directs his/her learning.		
11) Takes responsibility and adheres to the ethical values required by these responsibilities.		

Course - Learning Outcome Relationship

No Effect	1 Lowest	2 Average	3 Highest

	Program Outcomes	Level of Contribution
1)	Knows the basic concepts related to the theory and applications of chemistry, uses theoretical and applied knowledge, can select, develop and design methods.	

2)	Makes experimental planning and application for analysis, synthesis, separation and purification methods, provide solutions to the problems encountered and interpret the results.	
3)	Expresses the basic principles of sample preparation techniques and instrumental analysis methods used in qualitative and quantitative analysis of items, discusses their application areas.	
4)	Has knowledge about the sources, production, industrial applications and technologies of chemical substances.	
5)	Makes structural analyzes of chemical substances and interprets the results.	
6)	Work individually and in multidisciplinary groups, take responsibility, plan their tasks and use time effectively.	
7)	Follows the information in the field and communicates with colleagues by using English at a professional level.	
8)	Uses information and communication technologies along with computer software at the level required by the field.	
9)	Follows the national and international chemistry literature, transfers the knowledge gained orally or in writing.	
10)	Determines self-learning needs, manages/directs his/her learning.	
11)	Takes responsibility and adheres to the ethical values required by these responsibilities.	

Assessment & Grading

Semester Requirements	Number of Activities	Level of Contribution
Midterms	1	% 40
Final	1	% 60
total		% 100
PERCENTAGE OF SEMESTER WORK		% 40
PERCENTAGE OF FINAL WORK		% 60
total		% 100

Workload and ECTS Credit Calculation

Activities	Number of	Preparation for the	Spent for the	Completing the Activity	Workload
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	Activities	Activity	Activity Itself	Requirements	
Course Hours	14	7	2		126
Quizzes	1	1	3	1	5
Final	1	1	3	1	5
Total Workload					136