



Çanakkale Onsekiz Mart University

Education Information System

[DEGREE PROGRAMMES](#)[BOLOGNA](#)[THE INSTITUTION](#)[INFO FOR STUDENTS](#)You are here : [Home](#) [Bachelor's Degree \(First Cycle\)](#) [Physics](#) [Biophysics](#) **[Course Information](#)**

Course Information

COURSE INFORMATION

Course Title	Code	Semester	L+U Hour	Credits	ECTS
Biophysics	FZK357	5. Semester	2 + 2	3.0	7.0

Prerequisites	None
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Language of Instruction	English
Course Level	Bachelor's Degree (First Cycle)
Course Type	Elective
Mode of delivery	Face to face
Course Coordinator	Assist. Prof. Dr. Mustafa KURT
Instructors	Assoc. Prof. Dr. Hilal GÖKTAŞ
Assistants	
Course Objectives	The aim of this course is to introduce the physical principles underlying several processes of living systems.
Course Content	The applications of Newton Mechanics and Modern Physics to biophysics; bioenergetics properties, bioelectric application tools, biological effects of electromagnetic waves and their applications, electromagnetic spectrum and their biological effects and applications
Course Learning Outcomes	<ol style="list-style-type: none"> 1) Applying the fundamental physics rules to biological system 2) Gain knowledge about general properties of biometric measurement 3) Define the biological effects of electromagnetic waves 4) Explain the water based life 5) Interpret biomechanics of the human body

WEEKLY COURSE CONTENT

Week	Topics	Teaching and Learning Methods and Techniques	Study Materials
1. Week	Biophysics, an introduction	Oral lectures with interactive discussions	
2. Week	Atomic structure and atomic models	Oral lectures with interactive discussions, homeworks	
3. Week	Chemical bonds	Oral lectures with interactive discussions, homeworks	

Quick Access

Physics

- Qualification Awarded
- Level of Qualification
- Qualification Requirements and Regulations
- Specific Admission Requirements
- Recognition of Prior Learning
- Profile of the Program
- Program Key Learning Outcomes
- Occupational Profile of Graduates
- Access to Further Studies
- Course Structure & Credits
- Exam Regulations & Assessment & Grading
- Graduation Requirements
- Mode of Study
- Programme Director(or Equivalent)
- Evaluation Questionnaire
- TYYÇ

Course Information

- Course Information
- Weekly Course Content
- Resources
- Assessment
- Course Category
- CONTRIBUTION OF COURSE LEARNING OUTCOMES TO PROGRAMME OUTCOMES
- ECTS credits and course workload

4. Week	Macromolecules	Oral lectures with interactive discussions, homeworks	
5. Week	The water's physical and chemical properties	Oral lectures with interactive discussions, homeworks	
6. Week	Biomechanics of the human body	Oral lectures with interactive discussions, homeworks	
7. Week	Biomechanics of the human body	Oral lectures with interactive discussions, homeworks	
8. Week	Elasticity and strength	Oral lectures with interactive discussions, homeworks	
9. Week	Electrostatic effects, biological membranes	Oral lectures with interactive discussions, homeworks	
10. Week	Bioenergetics	Oral lectures with interactive discussions, homeworks	
11. Week	Rules of thermodynamics	Oral lectures with interactive discussions, homeworks	
12. Week	Heat and kinetic energy	Oral lectures with interactive discussions, homeworks	
13. Week	The motion of fluid	Oral lectures with interactive discussions, homeworks	
14. Week	Electromagnetic waves and their biological effects	Oral lectures with interactive discussions, homeworks	
15. Week	Review of the semester	Oral lectures with interactive discussions, homeworks	
16. Week	Final exam	Written exam	

RESOURCES

Recommended Sources
R. Glaser, Biophysics, Springer Verlag, Berlin Heidelberg, 2005
P. Davidovits, Physics in Biology and Medicine, Academic Press 2000
B H Brown, et. al., Medical Physics and Biomedical Engineering, IOP Publishing Ltd, 1999

ASSESSMENT

Measurement and Evaluation Methods and Techniques
Mid-term exam, final exam, homework

In-Term Studies	Quantity	Percentage
Mid Term Exam 1	1	30
Presentation/Seminar	1	40
Total	2	70
End-Term Studies	Quantity	Percentage
Final Exam	1	30
Total	1	30
Contribution Of In-Term Studies To Overall Grade		70
End-Term Studies		30
Total		100

COURSE CATEGORY

Course Category	Percentage
Core Courses	% 100

CONTRIBUTION OF COURSE LEARNING OUTCOMES TO PROGRAMME OUTCOMES

Programme Outcomes	Contribution Level	Contribution Level				
		DK1	DK2	DK3	DK4	DK5
PY1	4	4	4	5	4	4
PY2	4	4	4	4	4	4
PY3	4	5	4	4	5	5
PY4	4	4	4	4	4	4
PY5	0	3	3	3	3	3
PY6	4	4	4	4	4	4
PY7	3	3	4	5	4	3
PY8	0	2	3	3	3	3
PY9	0	4	4	5	4	5
PY10	0	3	3	3	3	3
PY11	0	2	2	3	3	2
PY12	0	2	3	2	2	2
PY13	0	2	2	2	2	2
PY14	0	2	2	2	2	2
PY15	4	4	4	4	4	4

*DK = Course's Contribution.

	0	1	2	3	4	5
Level of contribution	None	Very Low	Low	Fair	High	Very High

ECTS CREDITS AND COURSE WORKLOAD

Event	Quantity	Duration (Hour)	Total Workload (Hour)
Final Exam	1	3	3
Class Hours (14 weeks)	14	4	56
Presentation/Seminar	1	10	10

Final Exam Preparation	1	30	30
Mid Term Exam Preparation	1	28	28
Preliminary Study	14	2	28
Mid Term Exam 1	1	3	3
Assignment 1	1	16	16
Total Workload			174
Total Workload / 25.5 (s)			6.82
ECTS Credit of the Course			7