Işık University
Faculty of Arts and Sciences
Department of Physics

PHYS 494 - Project II

COURSE SYLLABUS

Course Name	Code	Semester	Theory (hour/week)	Application (hour/week)	Laboratory (hour/week)	Local Credits	ECTS
Project II	PHYS 494	Spring	0	0	4	2	6

Prerequisities	None

Course Language	English
Course Type	Required
Course Level	First Cycle
Course Coordinator	-
Course Lecturer(s)	-
Course Assistants	-
Course Objectives	Project II is a one semester course in which students carry out individual research projects on a specific topic in an area of interest under the guidance of a faculty member. By the end of the course, students should • recognize the principles of scientific research. • develop skils in collecting, analyzing, and presenting scientific data. • demonstrate an understanding of at least one advanced topic in theoretical or experimental physics. • appraise the need for good ethical standards in a scientific research project.
Course Learning Outcomes	On successful completion of this course students will be able to 1. recognize current and interesting research topics in physics; 2. demonstrate an understanding of one advanced topic of interest in theoretical or experimental physics; 3. establish research skills, including library research, time management, independent working, initiative, flexibility and systematic planning and carrying out a research project; 4. develop written and oral presentation skills; 5. justify the importance and practice of good ethical standards; 6. appraise the need for and an ability to engage in life-long learning.
Course Content	Design and development of a project for an experimental or theoretical physics problem, which may or may not be a continuation of the one addressed in PHYS 493, under the supervision of an academic advisor; submission of the results in the form of a project report and oral presentation.

WEEKLY SUBJECTS AND RELATED PREPARATION STUDIES

Week	Subject
1	Selection of the topic for the research project
2	Writing a statement of purpose about the selected topic.
3	Literature survey
4	Literature survey
5	Literature survey
6	Performing experiments or theoretical work
7	Performing experiments or theoretical work
8	Performing experiments or theoretical work
9	Performing experiments or theoretical work and collecting data
10	Performing experiments or theoretical work and collecting data
11	Performing experiments or theoretical work and collecting data
12	Writing the project and preparing the oral presentation
13	Writing the project and preparing the oral presentation
14	Writing the project and preparing the oral presentation
15	Written and oral presentation of the project

TEXTBOOKS

Required Textbook(s)	-
Recommended Readings	-

EVALUATION SYSTEM

Semester Requirements	**Number**	**Percentage of Grade**
Attendance/Participation	-	-
Laboratory	-	-
Application	-	-
Field Work	-	-
Special Course Internship (Work Placement)	-	-
Quizzes/Studio Critics	-	-
Homework Assignments	-	-
Presentation/Jury	1	20
Project	1	80
Seminar/Workshop	-	-
Midterms/Oral Exams	-	-
Final/Oral Exam	-	-
Total	2	100

Percentage of Semester Work	1	80
Percentage of Final Work	1	20
Total	2	100

COURSE CATEGORY

ISCED GENERAL FIELD CODE	GENERAL FIELDS	ISCED MAIN AREA CODE	MAIN EDUCATIONAL AREAS	%
1	Eğitim	14	Öğretmen Yetiştirme ve Eğitim Bilimleri	0
2	Beşeri Bilimler ve Sanat	21	Sanat	0
2	Beşeri Bilimler ve Sanat	22	Beşeri Bilimler	0
3	Sosyal Bilimler, İşletme ve Hukuk	31	Sosyal ve Davranış Bilimleri	0
3	Sosyal Bilimler, İşletme ve Hukuk	32	Gazetecilik ve Enformasyon	0
3	Sosyal Bilimler, İşletme ve Hukuk	38	Hukuk	0
4	Bilim	42	Yaşam Bilimleri	0
4	**Bilim**	**44**	**Doğa Bilimleri**	**80**
4	**Bilim**	**46**	**Matematik ve İstatistik**	**10**
4	Bilim	48	Bilgisayar	0
5	**Mühendislik, Üretim ve İnşaat**	**52**	**Mühendislik**	**10**
5	Mühendislik, Üretim ve İnşaat	54	Üretim ve İşleme	0
5	Mühendislik, Üretim ve İnşaat	58	Mimarlık ve Yapı	0
6	Tarım	62	Tarım, Ormancılık, Hayvancılık ve Su Ürünleri	0
6	Tarım	64	Veterinerlik	0
7	Sağlık ve Refah	72	Sağlık	0
7	Sağlık ve Refah	76	Sosyal Hizmetler	0
8	Hizmet	81	Kişisel Hizmetler	0
8	Hizmet	84	Ulaştırma Hizmetleri	0
8	Hizmet	85	Çevre Koruma	0
8	Hizmet	86	Güvenlik Hizmetleri	0

THE RELATIONSHIP BETWEEN COURSE LEARNING OUTCOMES AND PROGRAM OUTCOMES

Number	Program Outcomes	Level of Contribution*				
		1	2	3	4	5
1	To have a comprehension of the core areas of physics, including classical and quantum mechanics, electromagnetism, statistical and thermal physics.					X
2	To have a comprehension of basic mathematics, including differential and integral calculus, linear algebra, differential equations and complex analysis.					X
3	To have a comprehension of computer programming and chemistry.				X	
4	To have a comprehension of the importance and practice of good ethical standards.					X
5	To have a recognition of contemporary issues in science and its applications.					X
6	To have an ability to construct theoretical models, solve problems, design and conduct experiments, as well as to analyze and interpret data.					X
7	To have an ability to demonstrate their understanding of at least one advanced topic in theoretical or experimental physics.					X
8	To have an ability to function on multi-disciplinary teams					
9	To have an ability to effectively communicate information in both written and verbal form					X
10	To have a recognition of the need for and an ability to engage in life-long learning.					X
11	To have an ability to use modern physics techniques, skills, and computing tools necessary for physics practice (use laboratory and workshop equipment to generate data, prepare technical drawings, prepare technical reports, give technical presentations, take notes effectively, write computer programs, use mathematics and/or computational tools and packages to make models) .					X

*1 Lowest, 2 Low, 3 Average, 4 High, 5 Highest

Contribution of Course Learning Outcomes to Program Outcomes	The class contributes to the student development in terms of providing the principles of scientific research and the importance of good ethical standards. Students should develop problem solving abilities and enhance critical thinking and improve their written communication skills.

ECTS / WORKLOAD TABLE

Activities	**Number**	**Duration (Hour)**	**Workload (Hour)**
Course Hours (Including Exam Week: 16 x Total Hours)	15	2	30
Laboratory	-	-	-
Application	-	-	-
Special Course Internship (Work Placement)	-	-	-
Field Work	-	-	-
Study Hours Out of Class	15	3	45
Presentations / Seminar	1	1	15
Project	15	4	60
Homework Assignments	-	-	-
Quizzes	-	-	-
Midterms / Oral Exams	-	-	-
Final / Oral Exam	-	-	-
		Total Workload	**150**
		Total Workload/25	**6**