



Çanakkale Onsekiz Mart University

Education Information System

[DEGREE PROGRAMMES](#)[BOLOGNA](#)[THE INSTITUTION](#)[INFO FOR STUDENTS](#)You are here : [Home](#) [Master's Degree& Doctorate Degree](#) [Physics \(Master\)](#) [Partical Physics And Applications](#) **Course Information**

Course Information

COURSE INFORMATION

Course Title	Code	Semester	L+U Hour	Credits	ECTS
Partical Physics And Applications	FZ5026		3 + 0	3.0	7.5

Prerequisites	None
----------------------	------

Language of Instruction	Turkish
Course Level	Second Cycle
Course Type	Elective
Mode of delivery	Face to face
Course Coordinator	Assist. Prof. Dr. Ayşe KÜÇÜKARSLAN
Instructors	Assist. Prof. Dr. Ayşe KÜÇÜKARSLAN
Assistants	
Course Objectives	General properties of particles, Particles interactions, Reactions and interactions, Conservation laws.
Course Content	Introduction, The weak interaction I, Helicity and left-handed particles, Semileptonic weak decays, Quarks and the weak current, Strangeness, K masons, Kaons and parity violation, Hyperons, Cabibbo mixing, Kaon mass and CP eigenstates, The strange problem, CP violation in two pion decays, The weak interaction II.
Course Learning Outcomes	<ol style="list-style-type: none"> 1) Study the Particle interactions 2) Make calculation cross section 3) Study the two body reactions 4) Define the three body reactions 5) Calculate decay rates 6) Calculate the transition probability 7) Explain properties of different reactions

WEEKLY COURSE CONTENT

Week	Topics	Teaching and Learning Methods and Techniques	Study Materials
1. Week	Introduction	Lecture, Problem solving, Homework	
2. Week	The weak interaction I	Lecture, Problem solving, Homework	
3. Week	Helicity and left-handed particles	Lecture, Problem solving, Homework	
4. Week	Semileptonic weak decays	Lecture, Problem	

Quick Access

Physics (Master)

- 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

		solving, Homework	
5. Week	Quarks and the weak current	Lecture, Problem solving, Homework	
6. Week	Strengeness	Lecture, Problem solving, Homework	
7. Week	K masons	Lecture, Problem solving, Homework	
8. Week	Midterm exam	Exam	
9. Week	Kaons and parity violation	Lecture, Problem solving, Homework	
10. Week	Hyperons	Lecture, Problem solving, Homework	
11. Week	Cabibbo mixing	Lecture, Problem solving, Homework	
12. Week	Kaon mass and CP eigenstates	Lecture, Problem solving, Homework	
13. Week	The strange problem	Lecture, Problem solving, Homework	
14. Week	CP violation in two pion decays	Lecture, Problem solving, Homework	
15. Week	The weak interaction II	Lecture, Problem solving, Homework	
16. Week	Final exam	Exam	

RESOURCES

Recommended Sources	
D.Griffiths, Introduction to Elamantary Particle, second edition, revised edition, 2009, Wiley VCH Verlag GmbH Co., Germany	
F.Halzen and A.D.Martin, Quarks and Leptons, 1984, John Wiley&sons, Canada	
Symmetries and Conservation Laws in Particle Physics, Stephen Haywood, 2011,	Imperial College Press, London

ASSESSMENT

Measurement and Evaluation Methods and Techniques		
Midterm exam, Homework, Final exam		
In-Term Studies	Quantity	Percentage
Mid Term Exam 1	1	30
Assignment 1	1	20
Total	2	50
End-Term Studies	Quantity	Percentage
Final Exam	1	50
Total	1	50
Contribution Of In-Term Studies To Overall Grade		50
End-Term Studies		50
Total		100

COURSE CATEGORY

Course Category	Percentage

Support Courses

% 100

CONTRIBUTION OF COURSE LEARNING OUTCOMES TO PROGRAMME OUTCOMES

Programme Outcomes	Contribution Level	DK1	DK2	DK3	DK4	DK5	DK6	DK7
PY1	3	4	4	2	2	3	3	3
PY2	4	5	5	4	3	3	4	4
PY3	3	4	4	3	2	3	2	3
PY4	3	3	3	3	3	3	3	3
PY5	3	3	3	3	3	3	3	3
PY6	4	4	4	4	4	4	4	4
PY7	0	0	0	0	0	0	0	0
PY8	3	4	4	3	3	3	2	2
PY9	4	4	4	4	4	4	4	4
PY10	0	0	0	0	0	0	0	0
PY11	3	3	3	3	3	3	3	3
PY12	3	4	3	3	3	2	3	3
PY13	0	0	0	0	0	0	0	0
PY14	2	2	3	2	2	1	2	2
PY15	0	0	0	0	0	0	0	0

*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)
Class Hours (14 weeks)	14	3	42
Final Exam Preparation	1	30	30
Mid Term Exam Preparation	1	25	25
Further Study	14	3	42
Assignment 1	3	15	45
Final Exam	1	4	4
Mid Term Exam 1	1	3	3
Total Workload			191
Total Workload / 25.5 (s)			7.49
ECTS Credit of the Course			7