



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 \(PhD\)](#) [Advanced Plasma Physics](#) **Course Information**

Course Information

COURSE INFORMATION

Course Title	Code	Semester	L+U Hour	Credits	ECTS
Advanced Plasma Physics	FZ6033		3 + 0	3.0	7.5

Prerequisites	None
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Language of Instruction	Turkish
Course Level	Third Cycle
Course Type	Elective
Mode of delivery	Face to face
Course Coordinator	Assoc. Prof. Dr. Hüseyin ÇAVUŞ
Instructors	Assoc. Prof. Dr. Hüseyin ÇAVUŞ
Assistants	
Course Objectives	In this course, the kinetic description of plasma and the properties of hot plasma are explained.
Course Content	The students who succeeded in this course; get the knowledge about kinetic theory (Vlasov and Boltzmann equations). have the knowledge about hot plasma and waves in hot plasma in order make advanced level research.
Course Learning Outcomes	1) get the knowledge about kinetic theory (Vlasov and Boltzmann equations). 2) have the knowledge about hot plasma and waves in hot plasma in order make advanced level research.

WEEKLY COURSE CONTENT

Week	Topics	Teaching and Learning Methods and Techniques	Study Materials
1. Week	Distribution functions	Oral lectures Homework Interactive discussions	
2. Week	Kinetic representation of plasma: Boltzmann equation	Oral lectures Homework Interactive discussions	
3. Week	Kinetic representation of plasma: Vlasov equation	Oral lectures Homework Interactive discussions	

Quick Access

Physics (PhD)

- 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
- Course Category
- CONTRIBUTION OF COURSE LEARNING OUTCOMES TO PROGRAMME OUTCOMES
- ECTS credits and course workload

4. Week	Moments of Vlasov equations (0 ve 1. moments)	Oral lectures Homework Interactive discussions	
5. Week	Moments of Vlasov equations (2. moment)	Oral lectures Homework Interactive discussions	
6. Week	Waves in hot plasma	Oral lectures Homework Interactive discussions	
7. Week	Waves in hot plasma	Oral lectures Homework Interactive discussions	
8. Week	Wave-particle interaction	Oral lectures Homework Interactive discussions	
9. Week	Wave-particle interaction: Landau damping	Oral lectures Homework Interactive discussions	
10. Week	Waves in magnetised hot plasma	Oral lectures Homework Interactive discussions	
11. Week	Plasma dispersion relations	Oral lectures Homework Interactive discussions	
12. Week	Perpendicular and parallel propagation waves.	Oral lectures Homework Interactive discussions	
13. Week	Perpendicular and parallel propagation of waves.	Oral lectures Homework Interactive discussions	
14. Week	Investigation of papers previously given to students	Oral lectures Homework Interactive discussions	
15. Week	General Review	Oral Lectures	
16. Week	Final Exam	Written Exam	

RESOURCES

Recommended Sources
F.F. Chen, 1974, Introduction to Plasma Physics, Plenum Press.
Landau, L.D. ve Lifshitz, E.M. 1960, Electrodynamics of Continuous Media, Pergamon Press
A.R. Choudhuri, 1998, The Physics of Fluids and Plasmas, Cambridge University Press

ASSESSMENT

Measurement and Evaluation Methods and Techniques
40% Mid Term Exam 60% Final Exam

COURSE CATEGORY

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Course Category	Percentage
Core Courses	% 100

CONTRIBUTION OF COURSE LEARNING OUTCOMES TO PROGRAMME OUTCOMES

Programme Outcomes	Contribution Level	DK1	DK2
PY1	5	5	5
PY2	4	4	4
PY3	4	4	4
PY4	3	3	3
PY5	3	3	3
PY6	4	4	4
PY7	4	4	4
PY8	3	3	3
PY9	3	3	3
PY10	3	3	3
PY11	3	3	3
PY12	4	4	4
PY13	4	4	4
PY14	4	4	4
PY15	3	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)
Presentation/Seminar	2	2	4
Class Hours (14 weeks)	14	3	42
Assignment 1	1	10	10
Mid Term Exam Preparation	1	21	21
Final Exam Preparation	1	25	25
Further Study	14	2	28
Preliminary Study	14	1	14
Mid Term Exam 1	1	3	3
Final Exam	1	3	3
Research&Project	2	16	32
Assignment 2	1	10	10
Total Workload			192
Total Workload / 25.5 (s)			7.53
ECTS Credit of the Course			8

