

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

Course Information

COURSE INFORMATION

Course Title	Code	Semester	L+U Hour	Credits	ECTS
Stellar Sismology I	FZ5052		3 + 0	3.0	7.5

Prerequisites	None
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Language of Instruction	Turkish
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Course Level	Second Cycle
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Course Type	Elective
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Mode of delivery	Face to face
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Course Coordinator	Assoc. Prof. Dr. Esin SOYDUGAN
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Instructors	Prof. Dr. Osman DEMİRKAN Assoc. Prof. Dr. Esin SOYDUGAN
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Assistants	
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Course Objectives	Understanding pulsating star species and pulsating mechanism.
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Course Content	Equilibrium and pulsations in stars. Pulsation mechanism in stars and stars like sun. Nature of radial and non-radial pulsations. Line profile changes resulted from non-radial pulsations. Pulsation of early spectral class O, B variables. Fast pulsating Ap stars. Pulsating stars in the instability strip –I. Pulsating stars in the instability strip –II. Degenerated variable stars. The Sun as a pulsating star Pulsating stars like sun. Observational techniques of pulsating stars-I. Observational techniques of pulsating stars-II. Aliasing effect.
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Course Learning Outcomes	1) Recognize species of pulsating stars 2) Explain pulsation mechanism. 3) Explain nature of radial and non-radial pulsation.
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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](#)[Course Category](#)[CONTRIBUTION OF COURSE LEARNING OUTCOMES TO PROGRAMME OUTCOMES](#)[ECTS credits and course workload](#)

WEEKLY COURSE CONTENT

Week	Topics	Teaching and Learning Methods and Techniques	Study Materials
1. Week	Equilibrium and pulsations in stars.	Oral lectures, homework, practice.	
2. Week	Pulsation mechanism in stars and stars like sun.	Oral lectures, homework, practice.	
3. Week	Nature of radial and non-radial pulsations.	Oral lectures, homework, practice.	

4. Week	Line profile changes resulted from non-radial pulsations.	Oral lectures, homework, practice.	
5. Week	Pulsation of early spectral class O, B variables.	Oral lectures, homework, practice.	
6. Week	Fast pulsating Ap stars.	Oral lectures, homework, practice.	
7. Week	Pulsating stars in the instability strip –I.	Oral lectures, homework, practice.	
8. Week	Mid-term Exam.	Written exam.	
9. Week	Pulsating stars in the instability strip –I.	Oral lectures, homework, practice.	
10. Week	Degenerated variable stars.	Oral lectures, homework, practice.	
11. Week	The Sun as a pulsating star	Oral lectures, homework, practice.	
12. Week	Pulsating stars like sun.	Oral lectures, homework, practice.	
13. Week	Observational techniques of pulsating stars-I.	Oral lectures, homework, practice.	
14. Week	Observational techniques of pulsating stars-II.	Oral lectures, homework, practice.	
15. Week	Aliasing effect.	Oral lectures, homework, practice.	
16. Week	Final exam.	Written exam.	

RESOURCES

Recommended Sources
-"Methods in helio and asteroseismology", Frank, P. Pijpers, 2006, Imperial College press
-"Asteroseismology", Conny, Aerts, 2007-2008 academic year, Lectures notes
-"Değişen Yıldızlar", 2009, Ege Üniversitesi Fen Fakültesi Yayınları No. 179.

ASSESSMENT

Measurement and Evaluation Methods and Techniques
Mid-term exam (40 percent), Final exam (60 percent).

COURSE CATEGORY

Course Category	Percentage
Core Courses	% 100

CONTRIBUTION OF COURSE LEARNING OUTCOMES TO PROGRAMME OUTCOMES

Programme Outcomes	Contribution Level	DK1	DK2	DK3

<u>PY1</u>	5	5	5	5
<u>PY2</u>	3	3	3	4
<u>PY3</u>	5	5	5	5
<u>PY4</u>	5	5	5	5
<u>PY5</u>	5	5	5	5
<u>PY6</u>	5	5	5	5
<u>PY7</u>	5	5	5	5
<u>PY8</u>	5	5	5	5
<u>PY9</u>	4	4	5	4
<u>PY10</u>	3	3	4	3
<u>PY11</u>	3	3	4	3
<u>PY12</u>	5	5	5	5
<u>PY13</u>	4	4	5	4
<u>PY14</u>	4	4	4	5
<u>PY15</u>	5	5	5	5

*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	39	39
Final Exam	1	3	3
Mid Term Exam Preparation	1	35	35
Further Study	14	2	28
Mid Term Exam 1	1	3	3
Preliminary Study	14	3	42
Total Workload			192
Total Workload / 25.5 (s)			7.53
ECTS Credit of the Course			8