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Course Information

COURSE INFORMATION

Course Title	Code	Semester	L+U Hour	Credits	ECTS
Interacting Binary Stars I	FZ5054		3 + 0	3.0	7.5

Prerequisites	None
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Language of Instruction	Turkish
Course Level	Second Cycle
Course Type	Elective
Mode of delivery	Face to face
Course Coordinator	Assoc. Prof. Dr. Esin SOYDUGAN
Instructors	Assoc. Prof. Dr. Esin SOYDUGAN
Assistants	
Course Objectives	Understanding physical processes and evolutions of interacting binary stars.
Course Content	A detailed look to species of interactive binary stars-I. A detailed look to species of interactive binary stars-II. Observational features of interacting binary stars. Light, radial velocity and period variation of interacting binary stars-I. Light, radial velocity and period variation of interacting binary stars-II. Mass transfer and mass loss in interacting binary systems. Evolution of binaries with small and medium mass-I. Evolution of binaries with small and medium mass-II. The evolution of supermassive interacting couples. Last stages of evolution of interacting binaries-I. Last stages of evolution of interacting binaries-II. X-ray binaries. Evolution models of binary stars-I Evolution models of binary stars-II.
Course Learning Outcomes	1) Have knowledge about evolution of interacting binary stars 2) Explain physical mechanisms in interacting binary stars

WEEKLY COURSE CONTENT

Week	Topics	Teaching and Learning Methods and Techniques	Study Materials
1. Week	A detailed look to species of interactive binary stars-I.	Oral lectures, homework, practice.	
2. Week	A detailed look to species of interactive binary stars-II.	Oral lectures, homework, practice.	
3. Week	Observational features of interacting binary stars.	Oral lectures, homework, practice.	

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

4. Week	Light, radial velocity and period variation of interacting binary stars-I.	Oral lectures, homework, practice.	
5. Week	Light, radial velocity and period variation of interacting binary stars-II.	Oral lectures, homework, practice.	
6. Week	Mass transfer and mass loss in interacting binary systems	Oral lectures, homework, practice.	
7. Week	Evolution of binaries with small and medium mass-I.	Oral lectures, homework, practice.	
8. Week	Mid-term exam.	Written exam.	
9. Week	Evolution of binaries with small and medium mass-II.	Oral lectures, homework, practice.	
10. Week	The evolution of supermassive interacting couples.	Oral lectures, homework, practice.	
11. Week	Last stages of evolution of interacting binaries-I.	Oral lectures, homework, practice.	
12. Week	Last stages of evolution of interacting binaries-II.	Oral lectures, homework, practice.	
13. Week	X-ray binaries.	Oral lectures, homework, practice.	
14. Week	Evolution models of binary stars-I	Oral lectures, homework, practice.	
15. Week	Evolution models of binary stars-II	Oral lectures, homework, practice.	
16. Week	Final exam	Written exam.	

RESOURCES

Recommended Sources
-"Evolutionary Processes in Binary and Multiple stars", Peter Eggleton, 2006, Cambridge University Press
-"An Introduction to close binary stars", R.W. Hilditch, 2001, Cambridge University Press.
-"Çift Yıldızlar", Cafer, İbanoğlu, 2004, Ege Üniversitesi Fen Fakültesi Yayınları No:192.

ASSESSMENT

Measurement and Evaluation Methods and Techniques		
Mid-term exam (40 percent), Final exam (60 percent).		
In-Term Studies	Quantity	Percentage
Mid Term Exam 1	1	40
Total	1	40
End-Term Studies	Quantity	Percentage
Final Exam	1	60
Total	1	60
Contribution Of In-Term Studies To Overall Grade		40

End-Term Studies	60
Total	100

COURSE CATEGORY

Course Category	Percentage
Core Courses	% 100

CONTRIBUTION OF COURSE LEARNING OUTCOMES TO PROGRAMME OUTCOMES

Programme Outcomes	Contribution Level	DK1	DK2
<u>PY1</u>	5	4	5
<u>PY2</u>	3	4	3
<u>PY3</u>	5	4	5
<u>PY4</u>	5	5	4
<u>PY5</u>	5	4	5
<u>PY6</u>	5	4	5
<u>PY7</u>	5	4	5
<u>PY8</u>	5	4	5
<u>PY9</u>	4	4	4
<u>PY10</u>	3	3	3
<u>PY11</u>	3	3	3
<u>PY12</u>	5	4	5
<u>PY13</u>	4	3	4
<u>PY14</u>	4	4	3
<u>PY15</u>	5	4	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	47	47
Mid Term Exam Preparation	1	45	45
Laboratory	3	8	24
Final Exam	1	3	3
Mid Term Exam 1	1	3	3
Further Study	14	2	28
Total Workload			192
Total Workload / 25.5 (s)			7.53
ECTS Credit of the Course			8

