



Çanakkale Onsekiz Mart University

Education Information System

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Course Information

COURSE INFORMATION

Course Title	Code	Semester	L+U Hour	Credits	ECTS
Dynamics Of Close Binary Stars	FZ-6029		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. Faruk SOYDUGAN
Instructors	Assoc. Prof. Dr. Faruk SOYDUGAN
Assistants	
Course Objectives	The aim of this lecture is to learn some basic information about binary stars and their dynamical properties and also to provide improving the ability of problem solving in this area.
Course Content	The lecture includes main properties of close binary stars and their dynamical calculations and also related applications.
Course Learning Outcomes	<ol style="list-style-type: none"> 1) Interpret the properties of close binaries 2) Explain the effects that annihilate dynamic equilibrium in close binary systems. 3) Solve the equations related to Roche geometry. 4) Investigate dynamically the close binary systems in a comprehensive manner.

WEEKLY COURSE CONTENT

Week	Topics	Teaching and Learning Methods and Techniques	Study Materials
1. Week	Equipotential surfaces.		
2. Week	Distortion caused by rotation, tidal distortion, interaction between rotation and tides		
3. Week	Effects of internal structure.		
4. Week	Dynamical gravitational effects.		
5. Week	General properties of close binaries - classifications		
6. Week	Dynamical properties of close binaries - dynamical mass		
7. Week	Radial velocity variations of close binaries - proximity effect		

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

8. Week	Midterm exam		
9. Week	Roche model		
10. Week	Orbital period variations of close binaries		
11. Week	Perturbations caused by third body.		
12. Week	Stabilities of the components of close binary systems.		
13. Week	Orijin of the binary stars		
14. Week	Evolution of the binary stars		
15. Week	Paper discussions - applications		
16. Week	Final exam		

RESOURCES

Recommended Sources
Kopal, Z., Dynamics of Close Binary Systems, Edited by J.E. Blamont, Kluwer Language of Science, Published by D.Reidel Publishing Company, P.O.Box 17, Dordrecht, Holland.
An Introduction to Close Binary Stars, R.W. Hilditch, Cambridge University Pres, 2001

ASSESSMENT

Measurement and Evaluation Methods and Techniques		
Midterm 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
Area of?Specialization Courses	% 100

CONTRIBUTION OF COURSE LEARNING OUTCOMES TO PROGRAMME OUTCOMES

Programme Outcomes	Contribution Level	DK1	DK2	DK3	DK4
PY1	5	5	5	5	5
PY2	5	5	5	5	5
PY3	5	5	5	5	5
PY4	4	4	4	4	4
PY5	3	3	3	3	3
PY6	4	4	4	4	4
PY7	5	5	5	5	5

PY8	4	4	4	4	4
PY9	5	5	5	5	5
PY10	4	4	4	4	4
PY11	4	4	4	4	4
PY12	3	3	3	3	3
PY13	4	4	4	4	4
PY14	5	5	5	5	5
PY15	5	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)
Final Exam	1	3	3
Class Hours (14 weeks)	14	3	42
Final Exam Preparation	1	46	46
Mid Term Exam Preparation	1	41	41
Preliminary Study	14	3	42
Mid Term Exam 1	1	3	3
Application/Practice	5	3	15
Total Workload			192
Total Workload / 25.5 (s)			7.53
ECTS Credit of the Course			8

