



Çanakkale Onsekiz Mart University

Education Information System

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Course Information

COURSE INFORMATION

Course Title	Code	Semester	L+U Hour	Credits	ECTS
Radyo Astronomy II	FZ-6030		3 + 0	3.0	7.5

Prerequisites	None
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Language of Instruction	English
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Course Level	Third Cycle
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Course Type	Elective
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Mode of delivery	Face to face
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Course Coordinator	Assist. Prof. Dr. Gülnur GÜN
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Instructors	Prof. Dr. Osman DEMİRKAN
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Assistants	
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Course Objectives	The aim of this course is to give students the knowledge about the radio astronomy techniques, the galactic and extragalactic radio sources, types of radiation and spectra, pulsars, quasars, superluminal sources ,radio searches and SETI Project.
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Course Content	Radio astronomical fundamentals, Electromagnetic wave propagation fundamentals, Wave polarization, Signal processing and receivers, Fundamentals of antenna theory, Observational methods, Interferometers, Continuous radiation emission mechanisms , Galactic radio sources, Extragalactic radio sources, Types of radiation and spectraof Radio sky, Pulsars and Quasars, Radio searches, SETI project.
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Course Learning Outcomes	<ol style="list-style-type: none"> 1) Explain the fundamental variables of radio astronomy. 2) Define the propagation of electromagnetic radiation and wave polarization. 3) Compare the properties of the devices used in radio astronomy. 4) Interpret galactic and extragalactic radio sources and their properties. 5) Recognise the radio telescopes used in different part of the world. 6) Explain SETI Project which is performed with radio telescopes.
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Physics (PhD)

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Course Information

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WEEKLY COURSE CONTENT

Week	Topics	Teaching and Learning Methods and Techniques	Study Materials
1. Week	Radio astronomical fundamentals	(Face to face lecture and the relevant part of the course materials is studied by the students)	
2. Week	Electromagnetic wave propagation fundamentals	(Face to face lecture and the	

		relevant part of the course materials is studied by the students)	
3. Week	Wave polarization	(Face to face lecture and the relevant part of the course materials is studied by the students)	
4. Week	Signal processing and receivers	(Face to face lecture and the relevant part of the course materials is studied by the students)	
5. Week	Fundamentals of antenna theory	(Face to face lecture and the relevant part of the course materials is studied by the students)	
6. Week	Observational methods	(Face to face lecture and the relevant part of the course materials is studied by the students)	
7. Week	Interferometers	(Face to face lecture and the relevant part of the course materials is studied by the students)	
8. Week	Midterm exam	Written or test exam	
9. Week	Continuous radiation emission mechanisms	(Face to face lecture and the relevant part of the course materials is studied by the students)	
10. Week	Galactic radio sources	(Face to face lecture and the relevant part of the course materials is studied by the students)	
11. Week	Extragalactic radio sources	(Face to face lecture and the relevant part of the course materials is studied by the students)	
12. Week	Types of radiation and spectra of Radio sky.	(Face to face lecture and the relevant part of the course materials is studied by the students)	
13. Week	Pulsars and Quasars	(Face to face lecture and the relevant part of the course materials is studied by the students)	
14. Week	Radio searches	(Face to face lecture and the relevant part of the course materials is	

		studied by the students)	
15. Week	SETI project	(Face to face lecture and the relevant part of the course materials is studied by the students)	
16. Week	Final Exam	written exam	

RESOURCES

Recommended Sources
Kraus, J.D., 1986, Radio Astronomy, Cygnus-Quasars Books.
Wilson, T.L., Hüttemeister, S.,2005, Tools of Radio Astronomy,Problems and Solutions, Springer Media
Lashley, J., 2010, The Radio Sky and How to Observe It,Springer.

ASSESSMENT

Measurement and Evaluation Methods and Techniques
Midterm exam+ Assignment + Presentation (40 %) Final exam (60 %)

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	DK5	DK6
<u>PY1</u>	5	5	5	5	5	5	5
<u>PY2</u>	3	3	3	3	3	3	3
<u>PY3</u>	5	5	5	5	5	5	5
<u>PY4</u>	5	5	5	5	5	5	5
<u>PY5</u>	1	1	1	1	1	1	1
<u>PY6</u>	5	5	5	5	5	5	5
<u>PY7</u>	1	1	1	1	1	1	1
<u>PY8</u>	3	3	3	3	3	3	3
<u>PY9</u>	1	1	1	1	1	1	1
<u>PY10</u>	5	5	5	5	5	5	5
<u>PY11</u>	3	3	3	3	3	3	3
<u>PY12</u>	2	2	2	2	2	2	2
<u>PY13</u>	5	5	5	5	5	5	5
<u>PY14</u>	5	5	5	5	5	5	5
<u>PY15</u>	5	5	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)
Class Hours (14 weeks)	14	3	42
Final Exam Preparation	1	11	11
Mid Term Exam Preparation	1	9.25	9.25
Further Study	14	7	98
Final Exam	1	2	2
Mid Term Exam 1	1	1	1
Preliminary Study	14	1	14
Presentation/Seminar	1	10	10
Assignment 1	1	4	4
Total Workload			191.25
Total Workload / 25.5 (s)			7.50
ECTS Credit of the Course			8

