

<b>Department</b> Department of Mathematics			<b>Academic Year</b> 2022-2023	<b>Date</b> 01/12/2022	
<b>Course Unit Code</b> MATH4112	<b>Course Unit Title</b> Astronomy		<b>Semester/Year</b> Spring / 4	<b>Number of ECTS Credits</b> 3	
<b>Language of Instruction</b>	Turkish				
<b>Type of Course Unit</b>	Elective				
<b>Prerequisites and co-requisites</b>	-				
<b>Address of course</b>	-				
<b>Local Credit</b>	<b>Theoretical</b>	<b>Practical</b>	<b>Laboratory</b>	<b>Presentation</b>	<b>Project</b>
2	2	0	-	-	-
<b>Name of Lecturers</b>	Professor Gülden ALTAY SUROĞLU				
<b>Assistants</b>	-				

<b>Course content</b>	The relation of astronomy science to other basic disciplines. Prehistoric, early age, Islamic period, renaissance and later development of astronomy. Definitions, daily movement, Sun, Moon and visible movements of planets. Kepler's law, explaining the visible movements of the planets. Spherical coordinate systems, horizon, clock, equator, ecliptic and galaxy coordinate system. Events affecting coordinate systems, atmospheric refraction, parallax, aberration, precession and nutation. Time, day, month, year definitions and calendars. The shape, dimensions, mass, internal structure, magnetic field, atmosphere, age and movements of the Earth. Observational evidences of the wandering movement of the Earth. The shape, dimensions, mass, structure, parallax, movements and tide of the moon. The shape, dimensions, parallax, motions, structure of the Sun and events in the atmosphere of the Sun. Solar and lunar eclipses, ecliptic limitations, eclipses (Saros period) and number. General characteristics of planets, orbits, distances, periods, masses and radii, Stars, distances of stars, luminosity
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Weekly Detailed Course Contents	
Week	Topic
1	The relation of astronomy science to other basic disciplines
2	Prehistoric, early age, Islamic period, renaissance and later development of astronomy
3	Definitions, daily movement, sun, moon and visible movements of planets
4	Kepler's law, explaining the visible movements of the planets
5	Spherical coordinate systems, horizon, clock, equator, ecliptic and galaxy coordinate system
6	Events affecting coordinate systems, atmospheric refraction, parallax, aberration, precession and nutation
7	Time, day, month, year definitions and calendars, the shape, dimensions, mass, internal structure, magnetic field, atmosphere, age and movements of the Earth
8	Observational evidences of the wandering movement of the Earth. The shape, dimensions, mass, structure, parallax, movements and tide of the moon
9	General application
10	The shape, dimensions, mass, structure, parallax, movements and tide of the moon. The shape, dimensions, parallax, motions, structure of the Sun and events in the atmosphere of the Sun
11	Solar and lunar eclipses, ecliptic limitations, eclipses (Saros period)
12	General characteristics of planets, orbits, distances, periods, masses and radius
13	Stars, distances of stars, luminosity
14	A brief evaluation of the course content and topics

<b>Course Resources</b>	Büyük Gök Bilimciler, Robert Stawell Bell, 2015 Gökyüzü ve Bilim Tarihi, Donald R. Hill, Boyut Yayınları, 2010
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	<b>In-Term studies</b>	Quantity	<b>Percentage (%)</b>
	<b>Mid-Term Exams</b>	1	40

<b>Assessment Methods and Criteria</b>	<b>Quizzes</b>	-	-
	<b>Assignments</b>	-	-
	<b>Projects</b>	-	-
	<b>Term assignment</b>	-	-
	<b>Laboratory</b>	-	-
	<b>Other</b>	-	-
	<b>Final exam</b>	1	60
<b>On Assessment Methods and Criteria</b>	A grade of success; is determined by using the relative evaluation system or the discretion of the instructor. In order to be able to evaluate the courses in which the relative evaluation system and the teaching staff member's discretion are applied, the final exam score of the student must be at least YSAS. Students who fall below this score are considered to fail directly. For the courses that can not be evaluated with the relative evaluation system, the distribution of the final grade of the final grade and the letter grades which are the equivalents of the success grades are determined by the consent of the instructor who gives the lesson using the table prepared by the Senate with 100 points. A student who has received a grade AA, BA, BB, CB or CC grade is deemed to have completed that course. A student who has received one of the grade DC or DD grades is deemed to have fulfilled that course condition. In order for a student who takes DD and DC letters to be counted as successful, the GNO must be at least 2.00. A student who receives a graded FF grade is considered to have failed that course.		

<b>Percentage of Course Category (%)</b>	<b>Mathematics and Basic Sciences</b>	100
	<b>Computer Sciences</b>	0
	<b>Programming Design</b>	0
	<b>Social sciences</b>	0

<b>Course Outcome</b>	Students will have basic knowledge about the history of astronomy, planets and stars
<b>Aims of the course</b>	1. To provide students with the necessary information infrastructure for astronomy lesson. 2. To provide the students with the technical knowledge that is relevant to the course of astronomy and which can produce the most appropriate solution for the problems requiring solving.
<b>The way of processing course</b>	Face to face

<b>Relation of the course with program outcomes</b>				
Learning outcomes		1	2	3
1	To have advanced theoretical and applied knowledge in a way to prioritize the scientific approach supported by textbooks containing up-to-date information in the field, application tools and other resources		X	
2	Adapting and transferring the knowledge gained in the field to secondary education		X	
3	Ability to independently carry out an advanced study in the field			
4	Be aware of the necessity of lifelong learning and continuously improve their professional knowledge and skills.			X
5	Using a foreign language at least at the European Language Portfolio B1 General Level, following the information in the field and being able to communicate with colleagues			
6	To be able to use information and communication technologies together with computer software at minimum advanced level of European computer license required by the field.			
7	Have the ability to make oral and written presentation in native language			
8	Having the ability to understand spoken English and use English at reading level			
9	To have the ability to assimilate mathematical concepts and understand the relationships between them, to recognize different aspects of the same concepts and relationships			
10	To have the ability to define and formulate the relationships between items in non-mathematical disciplines in the language of mathematics.			
11	To have the ability to use mathematical knowledge in different problems			
12	Having the ability to develop computer programs using mathematical knowledge			
<b>Contribution of the course: 1:No 2:Partially 3:Completely</b>				

**Preparer:** Professor Gülden ALTAY SUROĞLU  
**Preparation date:** 01/12/2022