Study program	Study cycle	Undergraduate study program (first study cycle)
	Orientation	Geography in Education

SUBJECT

Subject name	**Mathematical geography**			
Subject code	Semester	Subject status	ECTS credits	Contact hours
FG-108-1	I	mandatory	5	125
Prerequisites				
Assigned professors and assistants	Subject Leaader	Dr. Sc. . Edin Hrelja, assistant professor		
	Teaching Assistants			
Subject objectives	To give a complete mathematical representation of the Earth as a planet, but in the context of geography in relation to the phenomena and processes that occur on the Earth's surface. The acquisition of basic education about the universe, the solar system, the movement of planets and satellites, measuring the time. Students should acquire knowledge about the Earth and the celestial sphere observed from the point into space and on the Earth's surface, the orientation of the Earth and the celestial sphere and about the Earth in space and time. Introduction to basic astronomical instruments.			

SUBJECT CONTENT

#	Teaching units	Contact hours			
		L	P	S	C
1.	Introductory lecture.	2	2	2	
2.	Definition, object, subject and task of mathematical geography. A brief overview of the development of the basic ideas of mathematical geography.	2	2	2	1
3.	Universe - Earth in the Universe. Basic characteristics, formation and development of the universe. Sun - structure, composition and source of Sun's heat. Planets and other celestial bodies in the solar system.	2	2	2	1
4.	Earth and the celestial sphere observed from the point on the Earth's surface.	2	2	2	
5.	Horizon and the celestial sphere. The positioning of objects on the horizon.	2	3	3	1
6.	Orientation on the celestial sphere. The coordinate system of horizon. The coordinate system of the equator I. Coordinate system of the equator II. Ecliptic coordinate system.	2	3	3	1
7.	Daily circles of stars and the Sun relative to the horizon and the celestial sphere.	2	2	2	1
8.	Partial exam	2			
9.	The shape and size of the Earth - the astronomical surveying. The geographic coordinate system.	2	2	2	1
10.	Earth movements (rotation and evidence for the Earth's rotation, Earth's revolution and evidence for the revolution).	2	2	2	
11.	Secular movements of the Earth.	2	2	2	1
12.	Moon and his movement.	2	2	2	1
13.	Eclipses	2	2	2	
14.	Time	2	2	2	1
15.	Year. Calendars.	2	2	2	1

STUDENT WORKLOAD (HOURS)

Contact Hours	60	Practical work		Seminars	10	Exam study time	25
Literature – reading	10	Written papers	10	Other (state)	5	TOTAL	125

LITERATURE

Mandatory:

1. Burnham, R., Dyer, A.,Kanipe, J. (2003): Astronomija, Dušević & Kršovnik, Rijeka.
2. John D. Fix (1999). Astronomy: Journey to the Cosmic Frontier, McGraw Hill.
3. Ratimir Gašparović (1969). Matematička geografija,

EVALUATION OF KNOWLEDGE AND CRITERIA

	PARAMETERS	Maximum Points	Minimum points
1.	Attendance	5	3
2.	Participation on lectures	5	3
3.	Midterm exams	40	22
4.	Seminar	10	5

Geografsko društvo SRBiH, Optional: 1. Hadžibegović, Z., Mujić, N. i Mindoljević, V. (2009). Astronomija (Priručnik za nastavnike i studente), skripta. 2. Arny, T.T. (1996). Explorations-An Introduction to Astronomy, McGraw Hill 3. Vladis Vujnović (1994). Astronomija I, Astronomija II, Školska knjiga, Zagreb.	5.	Students project		
	6.	Final exam	40	22
	Total		100	55