

**GEOINFORMATICS – NEW STUDY ON
UNIVERSITY OF MOSTAR AS A
PLATFORM FOR USERS SPATIAL DATA
INFRASTRUCTURES**

- ❑ Geographical studies are organized at almost all universities in Europe and around the world.
- ❑ Geography as a scientific discipline is particularly well developed at Anglo-Saxon (British and American) and German universities.
- ❑ Internationally acknowledged geography studies are also a part of many French, Italian, Spanish, Dutch, etc. universities.

□ Although there are certain particularities and specializations with- in geographical science, but general university education is almost the same at all studies.

Geographic knowledge and skills should serve as an important basis for **all those activities that take place in space**, I.E. wherever spatial relations are of utmost interest.

**In the last fifty years, the
traditional role of geography as a
science that should only make
inventory or describe certain
natural, social and economic
spatial occurrences and processes
HAS BEEN SURPASSED**

- ❑ Considering the existence of Study of informatics and Study of geography on Faculty of Science and Education in University of Mostar, it has become viable to organize new Study of geoinformatics, ie master study of geoinformatics in duration of two years

Why Geoinformatics on FPMOZ?

- 1- There is already Study of informatics on FPMOZ
- 2- On University of Mostar there is informatics on Faculty of civil engineering and Faculty of Humanities and Social Sciences.
- 3- On University Džemal Bijedić in Mostar there is Study of Geodesy and Geoinformatics, as a result of european Erasmus project GEOWEB.
- 4-We have new experiences and lecturers through BESTSDI

New computer room



28.06.18

DATA BASES

- Users - all

ANALYSIS, MEASUREMENTS, CALCULATION
SHARING

WHO CAN BE OUR PARTNERS OUTSIDE THE HIGHER EDUCATION SYSTEM

Physical planning

Army

Cartographic and geoinformation institutes

State and local administration

Public institutions

Public companies

Tourist organization and agencies

Other public and private institutions and companies

Physical planning institutes and companies should employ geographers-scientists; the experiences show (e.g. in Germany, France, Italy, Great Britain, etc.) that physical planning institutes and private companies should not only employ architects, who are dominant experts in physical planning, but also geographers;

Cartographic and geoinformation institutes and private companies – until recently, geographers had subsidiary roles in cartographic and geoinformation domain; geographers should contribute to improved quality of cartographic products by **editing geographic (spatial) data bases and selecting relevant contents** for graphic presentation of spatial relations

State and local administration –
departments for physical planning,
environment protection, statistics,
education, social affairs, etc.

Public institutions for environment
protection (especially national parks,
geoparks, and nature parks)

❑ Public companies for space management
B&H Waters, B&H Forests (in our case it
means **a lot of companies, for example**
Forest of Herceg Bosna, Forests of
Republika Srpska, forests of the Federation
of BiH, forests of Brcko District, forests of
all cantons ...), Roads, etc.);

❑ Tourist organizations and agencies –to analyze spatial aspects of tourist turnover;



❑ Various other public and private institutions and companies that realize their activities in space (investigating the influence of different activities on the environment, assessment of natural-geographic and socio-geographic factors for spatial development, media, etc.).

That is :

in those institutions where it **should be notice,
recognize and explain the PROCESS**

The general competences of a graduate student in the geoinformatics are:

- General perceptions and knowledge of academic areas, developing the ability to **set, understand and solve creative problems** through professional principles and theories,
- **critical reading and understanding of the text, independent acquisition of knowledge and resource seeking,**
- **developing the ability of critical, analytical thinking**
- **the ability to transfer and use theoretical knowledge in practice and to solve professional and work problems,**

- developing professional and ethical responsibilities,
- development of language and numerical literacy, public speaking and communication with clients,
- ability to use foreign language skills in written and spoken communication,
- the ability to use information and communication technology,
- qualifications for interdisciplinary integration;

- taking into account safety, functional, economic, nature protection and environmental aspects in its work,
- the development of high ethical criteria (honesty for working with clients, impartial advice, independence and professionalism in accordance with the applicable law),
- creating an objective view of the environment and society and
- accepting duties towards clients, employers and the entire company.

ANALYSIS-OTHERS

SYNTHESIS-GEOGRAPHIES-

geographers give answers to the question WHY

- In all geodetic definitions of geoinformatics it is spoken without a synthetic aspect - that is precisely the task of geography
- Information should be analyzed, but the processes in it recognize and synthesize

Geographical information system or geoinformation system

- Definition: It is not easy to define unambiguously. For some, the GIS is a set of program tools, and others are the philosophy, ie the way of making decisions about the data collected in one central database.
- **Geography:** This is not a decision about the data, it is:
- **Identify the process and synthesize causes, consequences and more.**

Program of bachelor study in Geodesy and geoinformatics at University of Džemal Bijedić

I godina

			Predmet	P	V	ECTS		
I semestar	1	O	Inženjerska geologija	2	1	4		
	2	O	Nacrtna geometrija	2	2	4		
	3	O	Primjena računara u građevinarstvu	1	2	4		
	4	O	Inženjerska matematika I	5	5	9		
	5	O	Uvod u građevinarstvo	2	1	4		
	6	O	Praktična geodezija I	2	3	5		
UKUPNO:				12	13	30		

			Predmet	P	V	ECTS		
II semestar	1	O	Inženjerska matematika II	4	4	8		
	2	O	Elementi visokogradnje	3	2	6		
	3	O	Vjerovatnoća i statistika	2	1	3		
	4	O	Engleski jezik u građevinarstvu*	1	0	1		
	5	O	Osnovi geoinformacija	2	2	5		
	6	O	Praktična geodezija II	3	3	7		
UKUPNO:				12	11	30		

*obavezan potpis nastavnika

II godina

			Predmet	P	V	ECTS		
I semestar	1	O	Građevinska regulativa	2	0	3		
	2	O	Geoprostorne baze podataka	3	3	6		
	3	O	Teorija izjednačenja I	2	2	5		
	4	O	Kartografija	2	2	5		
	5	O	Programiranje	2	2	5		
	6	O	Praktična geodezija III	3	3	6		
			UKUPNO:	12	15	30		

			Predmet	P	V	ECTS		
II semestar	1	O	Ceste	3	2	6		
	2	O	Praktična geodezija IV	3	4	6		
	3	O	Modeliranje neninformacijske	2	2	5		
	4	O	Teorija izjednačenja II	2	2	5		
	5	O	Kartografske projekcije	2	2	5		
	6	O	Stručna praksa	0	8	3		
			UKUPNO:	11	14	30		

III godina

			Predmet	P	V	ECTS		
I semestar	1	O	Inženjerska geodezija I	2	3	5		
	2	O	Geodetski planovi	1	3	4		
	3	O	Katastar nekretnina	2	2	4		
	4	O	Diskretna matematika	2	2	5		
	5	O	Geodetski referentni okviri	2	3	6		
	6	O	Satelitska geodezija	2	3	6		
			UKUPNO:	11	16	30		

			Predmet	P	V	ECTS		
II semestar	1	O	Geoinformacijski sistemi	2	2	6		
	2	O	Osnovni geodetski radovi	2	2	5		
	3	O	Fotogrametrija i daljinska detekcija	2	3	6		
	4	O	Inženjerske građevine	2	0	3		
	5	O	Završni rad prema izboru	0	5	10		
			UKUPNO:	8	7	30		

I. semester

[illegible]

II. semester

[illegible]

III. semester

[illegible]

IV. semester

[illegible]

V. semestar

[illegible]

VI. semester

[illegible]

1	Šifra	Predmet				
	50363	Baze prostornih podataka				
	50364	Podrška upravljanju prostorom				
	50365	Digitalna kartografija				
	Izborni predmeti					
	Šifra	Grupa				
3525		Geoinformatika - izborni predmeti u 1. semestru > Bira se minimalno 12 ECTS-a u izbornim predmetima				
Semestar	Obvezni predmeti					
2	Šifra	Predmet				
	50387	Napredna daljinska istraživanja				
	50388	Geoinformacijski sustavi				
	50389	Analiza prostornih podataka				
	Izborni predmeti					
	Šifra	Grupa				
3526		Geoinformatika - izborni predmeti u 2. semestru > Bira se minimalno 12 ECTS-a u izbornim predmetima				
Semestar	Obvezni predmeti					
3	Šifra	Predmet	P	PK	T	
	50403	Integrirani sustavi u geomatici	30	0	0	
	50404	Izmjera snimki	30	0	0	
	50405	Geovizualizacija	30	0	0	
	73162	Diplomski rad	150	150	0	
	Izborni predmeti					
Šifra	Grupa					
3527		Izborni projekti u 3. semestru > Bira se minimalno 12 ECTS-a u izbornim projektima				

New computer room



28.06.18

Considering the above, there is a need to achieve the same level of student education and introduction of three types of new courses is predicted in order to achieve that:

- ❑ 1. **distinguishing courses** for informatics and for geographers,
- ❑ 2. **elective courses** for informatics and geographers,
- ❑ 3. **mandatory courses** which are common for both groups of students, and they will be dealing with themes related to spatial data infrastructures

Basis course in SDI - Basics of SDI for non-geodetic study programs distinguishing courses for informatics

distinguishing courses for informatics	General cartography	A for informatics	10	2 + 3 + 2	1	
	Applied cartography	A for informatics	5	2 + 2 + 0	2	

Basis course in SDI - Basics of SDI for geographer study programs distinguishing courses for geographers

distinguishing courses for geographers	Mathematics	A for geographers	5	2 + 2 + 0	1
	Basics of informatics	A	5	2 + 1 + 0	1

Mandatory courses which are common for both groups of students, and they will be dealing with themes related to spatial data infrastructures

VII s	Topography	C				
	Visualization of spatial data	C				
	Freeware and Open source	A za geografe	5	0 + 3 + 1	2	
VIII s	SDI at work- obligatory	B - both	5	2 + 2 + 0	2	
Suggested in BESTSDI	SDI Concepts and principles- obligatory	B- both	5	2 + 1 + 0	2	

Elective courses for informatics and geographers

Elective					
Suggested in BESTSDI	Modeling of geoinformation	A	5	1 + 2 + 0	2
	Geospatial database	A	5	2 + 1 + 0	2
	Data analysis				

Elective (specialist) courses

Spatial data in tertiary activities	C				
Geographic project	C	5	0 + 0 + 3	3	
Spatial planning	C	5	2 + 1 + 0	3	

- ❑ The introduction of new studies at the Department of Geography of the University of Mostar **enables and encourages** the realization of **new concepts in teaching** for our society, public institutions, enterprises and more elective courses that suit the interests of entrepreneurs, quality and efficiency, etc.

Thank You for Your attention!