



NEW MASTER STUDY PROGRAMME IN LAND LAW AND ECONOMY AT THE FACULTY OF CIVIL ENGINEERING THE UNIVERSITY OF BELGRADE

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FIG Working Week 2008
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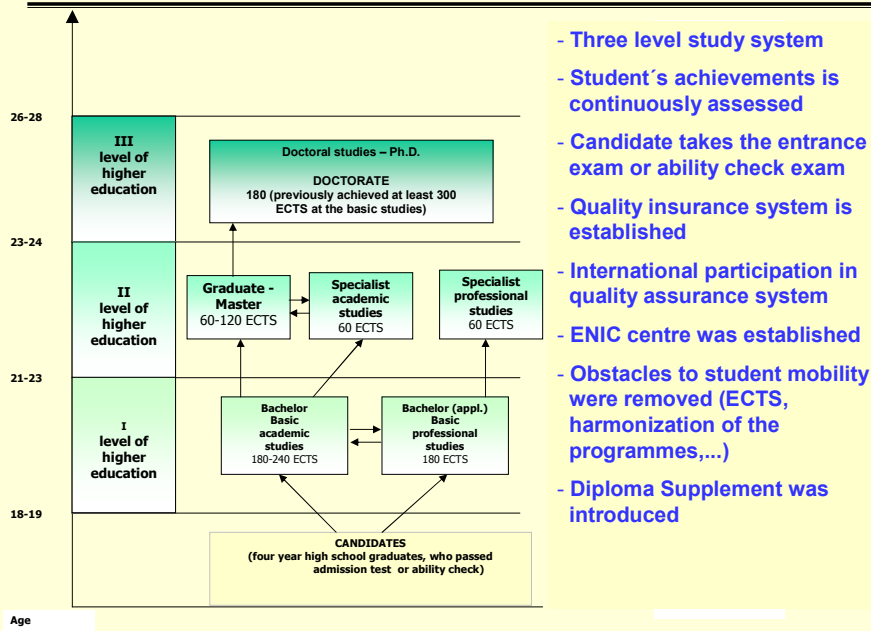
TS 7H – Education Case Studies II

GENERAL FACTS

- SERBIA has about 10 000 000 inhabitants
- SERBIA signed the Lisbon Convention in 2001
- The Law on Higher Education (LHE) came into effect on September 2005
- Standards and the procedure for accreditation were adopted on October 2006
- There are 7 state and 6 private universities
- 100 000 students in 2006/2007 school year, 58% - basic academy studies, 11% graduate academy studies and 31% colleges



ORGANIZATION OF STUDIES IN SERBIA

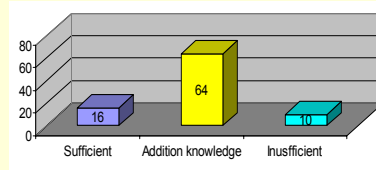
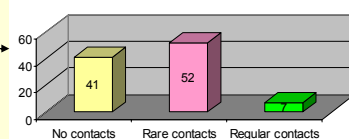
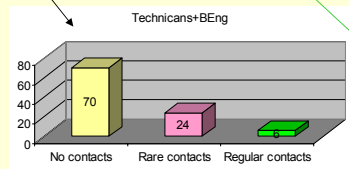
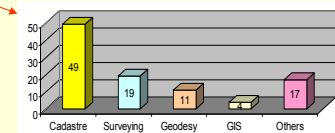
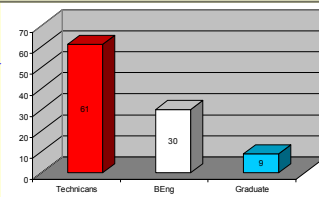


- Three level study system
- Student's achievements is continuously assessed
- Candidate takes the entrance exam or ability check exam
- Quality insurance system is established
- International participation in quality assurance system
- ENIC centre was established
- Obstacles to student mobility were removed (ECTS, harmonization of the programmes,...)
- Diploma Supplement was introduced

RESEARCHING OF THE NEEDS OF THE SURVEYOR'S PROFESSION IN SERBIA

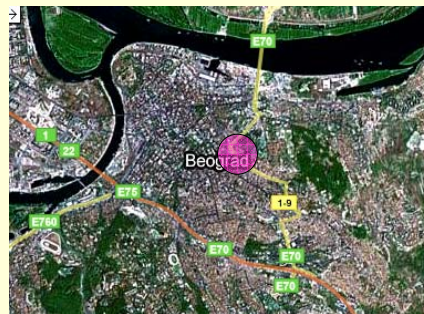
8 REAL ESTATE CADASTRE CENTERS, WITH AROUND 300 PARTICIPANTS (15%)

- Education levels
- Field of work
- Ratio of knowledge acquired in school and work requirements:
- Contacts with schools



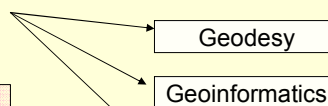
THE FACULTY OF CIVIL ENGINEERING / DEPARTMENT OF GEODESY AND GEOINFORMATICS

- The Department of Geodesy and Geoinformatics was established in 1935
- The Faculty has 170 teaching and technical staff and more than 2000 students
- The Department of Geodesy and Geoinformatics has 25 teachers and about 400 students within a five year educational programme
- Since October 2005, the Faculty adopted new curricula in accordance with the Bologna objectives



THE NEW BSc and MSc PROGRAMMES


- BSc programme – follow the previous started at 2005.
- MSc programme




Under **Tempus III**

Consortium members:


Royal Institute of Technology – Stockholm



Faculty of Technology – Helsinki




University of Ljubljana



Faculty of Civil Engineering – Serbia


Republic of Geodetic Authority – Serbia

Land Law and Economy



Project Manager:

Prof. Hans Mattsson

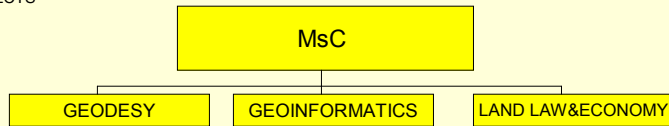


STRUCTURE OF GEODETIC EDUCATION PROFILE AT THE DEPARTMENT OF GEODESY

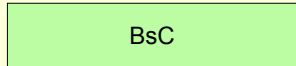
3 years = 180 ECTS



2 years = 120 ECTS

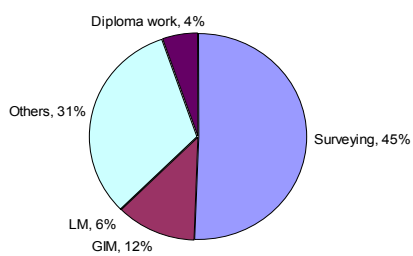


3 years = 180 ECTS



28+2 field works + 1 practice +
1 finished work = 32 courses
6 + 1 project = 7 courses } **39**

NEW BSc STUDY PROGRAMME



GIM
Basic programming
Geoinformatics 1
Geoinformatics 2
Informatics

LAND Law&Econ.
Real Estate Cadastre 1
Land Development
Choice subject 2 : Basic economy, Basic Law

Others
Mathematics 1
Mathematics 2
Mathematics 3
Technical Physics 1
Technical Physics 2
Calculus geometry
Basic Geosciences
Basic Management
Theory of errors in geodetic measurements
Adjustmant Calculus – basic
Choice subject 1 : Foreign language, Professional Foreign Language

SURVEYING
Technics of Geodetical Measurements
Surveying 1
Surveying 2
Field Work – Surveying
Geodetic Metrology
Theoretical Geodesy
Satellite Geodesy
Photogrametry and Remote Sensing 1
Photogrametry and Remote Sensing 2
Cartography 1
Cartography 2
Engineering Surveying 1
Engineering Surveying 2
Professional practice
Field Work – Engineering Surveying
Choice subject 3 : Surveying 3, Engineering Photogrametry
Choice subject 4 : Digital image processing, Geodesy in space and urban planning
Choice subject 5 : DMT, Methods of measurements of Physical Geodesy
Choice subject 6 : State surveying ,Global Navigation Systems
Choice subject 7 : Practical work in metrology, Practical work in Geoinformatics, Practical work in photogrametry, Practical work in cartography

20%
choice
courses

STRUCTURE OF THE MSc STUDY PROGRAMME

	Geodesy	Geoinformatics	LM
10	Master thesys (compulsory) - 30		
	Practical work out of School (compulsory) - 2		
	Project management (choice) - 5		
	Information systems of Engineering objects (choice + compulsory) - 5		Infrastruktur (choice) - 5
	Remote sensing (choice + compulsory) - 5		Natural resources (choice) - 5
	Object oriented programming (choice) - 6	WEB GIS (choice + choice) - 5	
	Project in Surveying (choice) - 6	Land development and consolidation - continuous course (compulsory+compulsory) - 5	
	Geodetic Reference Systems (choice) - 6	Property valuation and taxation (choice +compulsory) - 5	
	Satellite and inertial navigation (choice) - 6	State cartography (compulsory) - 5	Real Estate Project (choice) - 4
9	Astrometric methods (choice) - 6	WEB cartography (choice) - 5	Geodesy in urban work Project (choice) - 4
	Numeric methods of physical geodesy (choice) - 6	Project in geoinformatics (choice) - 5	Professional English (choice) - 4
	Geodetic geodynamics (choice) - 6	Project in photogrammetry (choice) - 5	Environmental protection (choice) - 4
	Geodesy in industry (choice) - 5	Project in cartography (choice) - 5	Geodesy in space and urban planning (choice) - 5
	Project in Engineering geodesy (choice) - 6	GIS programming (compulsory) - 3	
	Project in Geodesy (choice) - 6		
	Quality assurance of geodetic measurements (choice) - 5		
	Project methodology (compulsory) - 5		
	Physical geodesy (compulsory) - 5	Real Estate Cadastre - continuous (compulsory + compulsory) - 5	
	Geodetical reference networks (compulsory) 5	Information systems projecting (compulsory) - 5	Land development and consolidation - basic (compulsory) - 5
8	Deformation analysis (compulsory) - 5	WEB programming (choice) - 5	Real Property Investment Analysis (compulsory) - 5
	Projecting Engineering works (compulsory) - 5	Digital photogrammetry (compulsory) - 6	Urban Land Management (compulsory) - 5
	Geodesy Field work (compulsory) - 3	LBS (choice) - 5	Rural Land Management (choice) - 5
		Map projections (choice) - 5	Negotiation and communication (choice) - 5
		Information technologies in cartography (compulsory) - 5	
	Digital signal processing (compulsory + choice) - 6		Real property Law (compulsory) - 7
	Electronic in geodesy - (choice + choice) - 6		Property market (compulsory) - 5
	Theory of Satellite Positioning - (compulsory + choice) - 5		Environmental and Planning Law (compulsory) - 6
	Adjustment calculation - advanced (compulsory + choice) - 5		
7	Technical mechanics (choice) - 6	Geographic information systems (compulsory+compulsory) - 7	
	Optimization in Surveying (compulsory) - 5	Geodesy in space and urban planning (choice + choice) - 5	
	Geodetical astronomy (compulsory) - 5	Object oriented programming (compulsory) - 6	Project management (choice) - 5
		Digital image processing (choice) - 5	WEB GIS (choice) - 5
		Engineering photogrammetry (choice) - 5	

Surveying

GIM

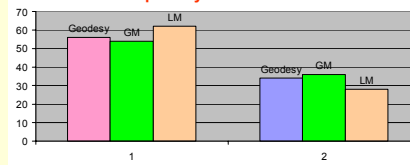
LM

THE MAIN CHARACTERISTICS OF THE MSc PROGRAMME

Compulsory and choice courses in ECTS value

	GEOD	GM	LM	
Compulsory	56	54	62	
Choice	34	36	28	
Sum	90	90	90	
%	38	40	31	36 %

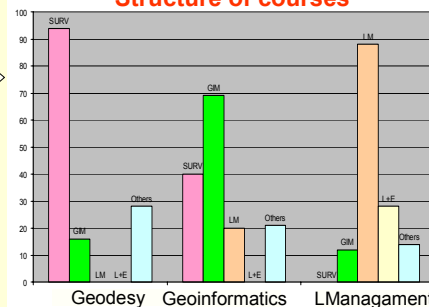
Compulsory and choice courses



Structure of courses by nature in ECTS values

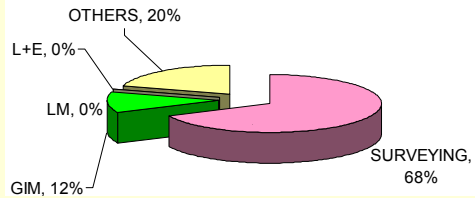
Profile/ECTS	Geodesy	GIM	LM
SURV	94	40	0
GIM	16	69	12
LM	0	20	88
L+E	0	0	28
Others	28	21	14
	138	150	142

Structure of courses



STRUCTURE OF THE MSc STUDY PROGRAMME – GEODESY PROFILE

Geodesy	
SURV	Optimization in Surveying (compulsory) - 5
	Geodetical astronomy (compulsory) - 5
	Physical geodesy (compulsory) - 5
	Geodetical reference networks (compulsory) - 5
	Deformation analysis (compulsory) - 5
	Projecting Engineering works (compulsory) - 5
	Geodesy Field work (compulsory) - 3
	Project in Surveying (choice) - 6
	Geodetic reference systems (choice) - 6
	Satellite and inertial navigation (choice) - 5
	Astrometrics methods (choice) - 5
	Numeric methods of physical geodesy (choice) - 5
	Geodetic geodynamics (choice) - 6
	Geodesy in industry (choice) - 5
	Project in Engineering geodesy (choice) - 6
	Quality assurance of geodetic measurements (choice) - 5
	Theory of Satellite Positioning - 5
	Practice - 2
	Remote sensing - 5
	GIM
Object oriented programming (compulsory) - 5	
Information systems of Engineering objects - 5	
LM	
P+E	
Others	Project methodology - 5
	Adjustment calculation - continuous - 5
	Project Management - 5
	Technical Mechanics - 6
	Electronic in Geodesy - 6

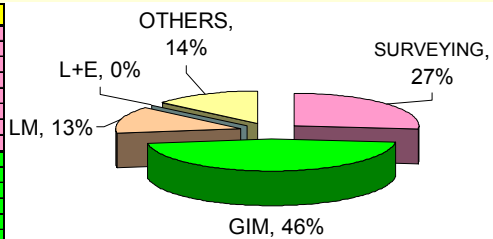


Number of courses per semester

	GEOD	GM	LM
10	1	1	1
	0	0	0
9	1	4	3
	5	3	4
8	6	5	5
	0	1	1
7	5	2	4
	1	3	1
N.subj.	19	19	19

STRUCTURE OF THE MSc STUDY PROGRAMME – GIM PROFILE

GIM	
SURV	Theory of Satellite Positioning - 5
	Engineering photogrammetry (choice) - 4
	Map projections - 5
	Digital Photogrammetry - 6
	State Cartography - 5
	Remote sensing - 5
	Project in photogrammetry - 5
	Project in Cartography - 5
GIM	Digital signal processing (choice) - 6
	Object oriented programming (compulsory) - 5
	Information systems of Engineering objects (choice) - 5
	Information systems projecting - 6
	LBS - 5
	WEB Cartography - 5
	GIS Programming - 3
	WEB programming - 5
	Digital image processing (choice) - 5
	Project in Geoinformatics - 5
Information technologies in cartography - 5	
Geographic Information Systems - 7	
Practice - 2	
WEB GIS - 5	
LM	Real Estate Cadastre (continuous) - 5
	Property Valuation and Taxation - 5
	Geodesy in space and urban planning (choice) - 5
	Land Development and Consolidation (continuous) - 5
L+E	
Others	Project methodology - 5
	Adjustment calculation - continuous - 5
	Project Management - 5
	Electronic in Geodesy - 6

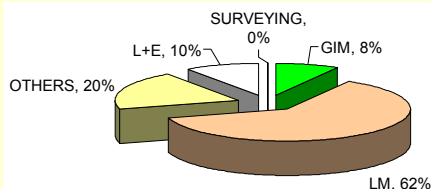


Number of courses per semester

	GEOD	GM	LM
10	1	1	1
	0	0	0
9	1	4	3
	5	3	4
8	6	5	5
	0	1	1
7	5	2	4
	1	3	1
N.subj.	19	19	19

STRUCTURE OF THE MSc STUDY PROGRAMME – LM PROFILE

LM	
SURV	Geographic Information Systems - 7
GIM	WEB GIS - 5
LM	Real Estate Cadastre - continuous - 5
	Land Development and Consolidation - basic - 5
	Land Development and Consolidation - continuous - 5
	Urban Land Management - 6
	Rural Land Management - 5
	Real Estate Project - 4
	Infrastructure - 5
	Natural Resources - 5
	Geodesy in space and urban planning (choice) - 5
	Geodesy in Urban work Project - 4
L+E	Environmental Protection - 4
	Practice - 2
	Negotiation and Communication - 5
	Real property Law (compulsory) - 7
	Environmental and Planning Law (compulsory) - 6
	Property market (compulsory) - 5
	Real Property Investment Analysis (compulsory) - 5
	Property Valuation and Taxation - 5
	Project Methodology - 5
	Professional English - 4
Project Management - 5	



● Technical Block - 7
● Legal Block - 2
● Economy Block - 3

TEMPUS courses (12)

Number of courses per semester

	GEOD	GM	LM
10	1	1	1
0	0	0	0
9	1	4	3
5	5	3	4
8	6	5	5
0	0	1	1
7	5	2	4
1	1	3	1
N.subj.	19	19	19

16 courses+1project+External practice + MSc work =19

Faculty of Civil Engineering
 Faculty of Law
 Faculty of Architecture
 Faculty of Organizational Sciences

THE RESULTS OF TEMPUS PROJECT

www.landlaw.grf.bg.ac.yu

Faculty of Civil Engineering
University of Belgrade

Department of Geodesy and Geoinformatics

Master study programme in Land Law and Economy

- Faculty of Civil Engineering
- Department
- Background
- Curriculum
- General information
- List of courses
- Teachers
- Center for Land Management

Education and Culture
TEMPUS

About Faculty

The Faculty of Civil Engineering, University of Belgrade is the oldest and highest education and science institution in the area of civil engineering and geodesy in Serbia. Faculty of Civil Engineering has a long and rich tradition. The first lectures on subject of civil engineering and geodesy on this territory are connected to June 18th, 1844, when Serbian ruler, Aleksandar Karađorđević had founded "Engineering School" in Belgrade by his Decree. Therefore, this year is written in the Faculty of Civil Engineering shield, together with Latin words: scientia, seclificatio symbolizing the line of work of Faculty in area of lecturing, science and profession.

News

20.11.2007 - First news News, checked me to measure the new order

26.11.2007 - Second news News, measured me an measure the new order

Course schedule

Class:

Class:

MASTER STUDY
LAND LAW
AND
ECONOMY

Faculty of Civil Engineering
Education and Culture
TEMPUS

1. New curriculum
2. Establishment and equipping a new PC laboratory -Land Management Centre
3. Training and retraining 11 teachers from four UB Faculties
4. Preparation of new teaching material
5. Introduction of new teaching methods

**THANK YOU FOR
YOUR ATTENTION**

