



## Application of the Bologna Process in Higher Geodetic Education in Slovakia

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### Outlines for the harmonisation of the higher education in EU countries



- heterogeneous student population
- progressive number of students
- economical background of EU countries
- new structure of the university education in Europe (Sorbone and Bologna declaration 1999, Prague 2001, Berlin 2003)
- aim - to build the homogeneous European education space

### Berlin outlines



- project realisation to 2010
- start the 3-level system at 2005
- up to 2005 – to define the national system of quality control (tasks, institutions, student participation, external institutions, accreditation, international co-operation, networks atc.)
- joint the EHEA a ERA
- number of member countries – 40
- Bergen 2005 (Norway)



### State of the art in Geodesy and Cartography



- FIG C2 – pregradual, post-gradual education (PCD), quality assurance (QA)
- CLGE - licence politic, QA of the „results“
- CLGE/FIG Seminar - Delft, november 2000,
- EUCEET – EU ERASMUS project civil engineering faculties - 1999
- EEGECS – EU ERASMUS – geodesy, cartography, geomatics and geography - 2002
- BSc. – 6 - 8 semester
- MSc. – 3 - 4 semester
- PhD. – 6 or more semester

### EEGECs Topics



#### EEGECs – European Education in Geodetic Engineering, Cartography and Surveying 2002

- WG1 – Pregradual education
- WG2 – Research and PhD study programs
- WG3 – European dimensions, e-learning
- WG4 – Enterprise, private sector
- WG5 – Mobility of Students and Uni Staff
- WG6 – Quality assurance

The screenshot shows the EEGECs website interface. At the top, there's a navigation bar with links like 'Home', 'Library', 'Zborník', 'Ošaržena politika', 'Hlasenie', and 'Ponuka'. The main content area features the EEGECs logo and the text 'European Education in Geodetic Engineering, Cartography and Surveying'. Below this, there's a group photo of people at the '2nd General Assembly 20th-21st February (Valencia)'. The website also mentions 'EEGECs is also member of the TechnoTN Forum: TechnoTN 2004' and displays the visitor number '3627'.

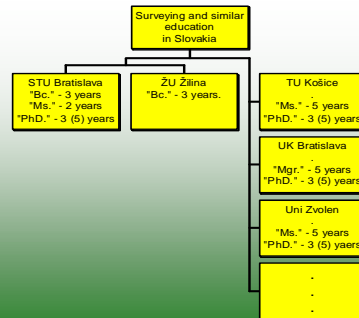
### History of the surveying education in Slovakia



- Mining Academy – Banská Štiavnica (16. Century)
- University of Technology Bratislava – 1938  
Construction Engineering  
Hydrotechnical Construction Engineering  
Surveying Engineering
- University of Technology Košice - 1952
- Uni of Žilina – 1996



### Present state of the surveying, mining and geographical education in Slovakia

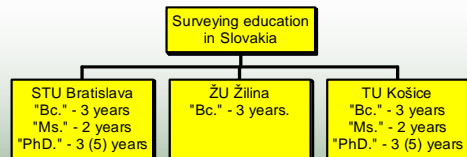


### Outlines for the harmonisation in Slovakia



- university law Nr.131/2002
- 3 level education (BSc.,MSc. or eq., PhD.)
- credit system (eq. to ECTS)
- structure of specialisations (eq. to EU)
- accreditation of new study programs
- QA (obligatory quality measur. system, co-operation of students, membership in EUA)
- aim - mobility of students in SR (EU), diploma (degree) acceptance in EU

### Surveying education started in September 2004



### Geodesy and cartography courses at the SUT Bratislava



- BSc. - 6 semesters of common study
- MSc. - 1 semester of common study  
3 semesters study of optional fields
- PhD. - 6 (10) semester individual study,  
6 semester "internal" study,  
10 semester "distance" study

### Optional fields at SUT Bratislava



- geoinformatics
- global geodesy
- engineering surveying
- cadastre and land management
- geography and cartography

3 common subjects and 2 - 3 optional subjects in each semester

### Curriculum of the BSc. course at the SUT Bratislava



Mathematics I,II,III	9/9	20	Engin. surveying I	2/3	5
Physics I,II	4/4	8	Cadastral mapping	3/3	6
Computer techniq.	2/3	6	Physical geodesy I	3/2	6
Geology and morph.	2/2	4	Build.constr., urban.	2/1	3
Politics	0/2	2	Soil manag.	2/1	3
Surveying I,II,III	9/9	20	Cartography I	3/3	6
Cartography techn.	0/2	2	Water constructions	1/1	2
Geometry	4/4	8	Transport construc.	1/1	2
Adjustment	4/6	10	Cadastré I	3/3	5
Geoinformatics I	3/3	6	Land management I	3/3	5
Geod.networks I	3/3	6	Photog. and remot. I	2/3	5
Software develop.	2/3	4	Astronomy, satell.		
Civil and business law0/2		2	geodesy I	2/3	5
Topography	2/2	4	Management	1/2	3
Geodesy I	3/2	5	Bc. thesis		

### Curriculum of the MSc. course at the SUT Bratislava



Mathematics IV	2/3	6	<u>Geo-informatics:</u>		
Physics III	2/2	5	Envir. land model	2/2	5
Engin. surveying II	2/3	6	GIS design	2/2	5
Astronomy, satell.			GPS for GIS app.	2/2	5
geodesy II	3/2	6	Cadastral data anal.	2/3	5
Land management II	2/2	5	Photo. and remote		
Space inform.manag.	3/3	7	sensing for GIS	2/3	5
Personal and comm.			Digital cart. model	3/3	6
management	2/1	3			
Photog. and remot. II	2/3	5	<u>Global geodesy:</u>		
Cadastral law	2/1	4	Data processing	2/2	5
Mat. cartography	2/3	5	GPS technology	2/2	5
Surveying metrology	2/2	4	Satellite geodesy	2/2	5
Geo-ecology	1/2	2	Geoid det. methods	3/2	5
Seminars	1/9	8	Integrated geodesy	3/2	5
Geodetic project	1/4	3	Geo-dynamics	3/3	6
Diploma thesis					

### Curriculum of the MSc. course at the SUT Bratislava



<u>Engineering surveying:</u>			<u>Cadastré and land management:</u>		
Underground surv.	2/2	5	Envir. land model	2/2	5
Industry surveying	2/2	5	High scale maps	2/2	5
Mes.systems in			Cartometry	2/2	5
engineering surv.	2/2	5	Cadastral data anal.	2/3	5
Data processing	2/2	5	Ground valuation	2/3	5
App. analyt.			Digital cart.model	3/3	6
photogrammetry	2/3	5			
Legislation, norms	2/1	3	<u>Geography and cartography:</u>		
Building construction			Cartogr. modelling	2/2	5
modelling	2/1	3	Digital terrain model	2/2	5
			Digital model of space		
			structures	2/2	5
			Statistical analysis	3/2	5
			Geograf.regional an.	3/2	5
			Map language	3/3	6

### QA in Slovakia



- transformation process - new legislative surrounding since 2002, April 01<sup>st</sup>
- accreditation of all study programmes
- university evaluation:
  - research universities
  - universities
  - BSc. schools
- continual (obligatory) quality control by students
- student and staff mobility
- acceptance of students (diploma)

### Post-gradual education in Slovakia



- PhD study programmes
- PG courses offered by Uni's
  - cadastre
  - engineering surveying
  - new technology (laser scanning)
  - local networks
  - valuation

### Statistics - SUT Bratislava



- 3 departments
- 5 professors
- 7 assoc. professors
- 21 lecturers and 14 PhD. students
- ca 350 students at Bc. courses
- ca 200 students at MSc. courses
- graduate students:
  - ca 60 per year Bc.
  - ca 80-90 per year MSc.

- [www.svf.stuba.sk](http://www.svf.stuba.sk)

**Thank you for attention!**