





#### Overview

- Profile of Faculty of Geodesy
- Structure of Curriculum
- TEMPUS CARDS project "GIST-CroHE"
- Alignment with UCGIS BoK
- Bologna Process
- Conclusion
- Future work







### Profile of FG graduates

- surveying education at the University of Zagreb since 1919
- Faculty of Godesy independent since 1962
- "old" curriculum adopted 1994:
  - □ monolithic study with duration of 9 semesters
  - □ three "specializations" after 6th semester
  - □ ending with "Dipl.-Ing. in Geodesy"
  - □ only a couple of GISc&T courses
  - □ most of staff with strong surveying background

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# BSc curriculum procedure

- February 2005: "Body of Knowledge" for BSc (3 years, 180 ECTS) defined
- BoK from "UCGIS Strawman Report" used for GISc&T part
- Redundant (duplicated) topics and "19th Century stuff" dropped out
- Curriculum prepared without the names of teaching staff







## MSc curriculum procedure

- March 2005: immediately after BSc completion, reviewed by National Board of Education
- unfortunately, NOT derived from competencies of future graduates
- Body of Knowledge concept not used
- two branches/specializations:
  - □ geodesy
  - □ geoinformatics
- a list of courses divided in two groups

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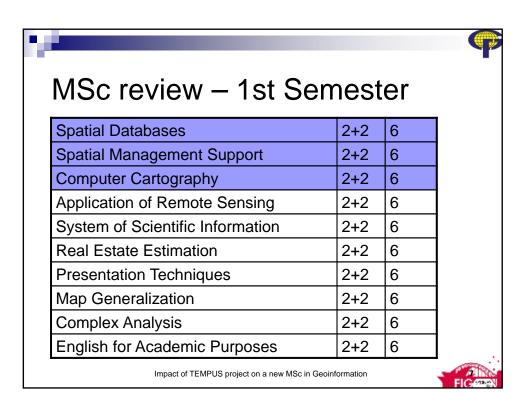


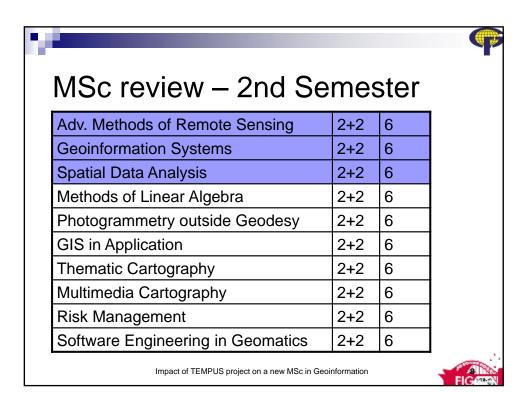


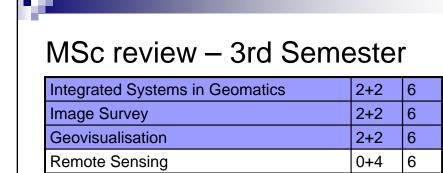
### **GIST-CroHE**

- Geoinformation Science and Technology in Croatian Higher Education
  - □ a two-years project funded by TEMPUS III, 2007-2009, EU programme promoting academic cooperation between EU and non-EU countries
  - □ grantholder: Centre for Geoinformatics, University of Salzburg
  - □ partner: Jageillonian University of Krakow
  - □ beneficiary: Faculty of Geodesy, University of Zagreb
  - external experts: Jim Petch (UK) and Bela Markus (Hungary)









Select. Chap. in Photogr. and GIS Practical Cartography 0+4Cartography and new Technologies 0+4Programming in GIS 0+4 6

Land Information Management 6 0+4Generalization of Geoinformation 0+46

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0+4

6

6 6





### MSc review – 4th Semester

Diploma Thesis	10+10	30

- altogether 4 Sem x 30 ECTS = 120 ECTS
- formally everything is fine
- content questionable ...
- what is in an ECTS (European Credit Transfer System)?







## MSc review - Summary

- 18 ECTS in obligatory courses
- 12 ECTS in optional courses
- each course has the same number of teaching hours and the same number of ECTS points
- sometimes overlapping content
- based on available personnel, not on the quality of outcome

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# **MSc Expectations**

- MSc students with different background than FG BSc – "nice to have"
- some key skills are missing: interoperability, mobile GIS, other emerging technologies, programming ("tweaking" GIS software)
- lack of literature, international cooperation and exchange, language barriers



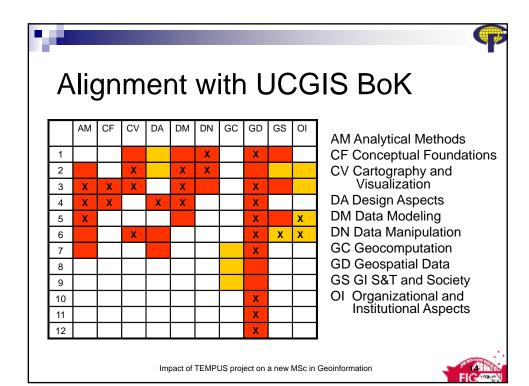




## MSc: new "TEMPUS" topics

- Four modules:
  - □ interoperability and spatial data infrastructure
  - □ mobile GIS and distributed services
  - □ advanced remote sensing (selected by FG)
  - □ close-range photogrammetry (selected by FG)
- Four PhD students used TEMPUS grants in Salzburg and Krakow









## Implementation (1)

- 2008/2009: 12 students enrolled (5 with IT background)
- problem-solving approach, continuous assessment, new teaching materials
- students with IT background had problems with cartography and georeferencing but excelled in programming and database technology
- students with FG background noted more projects and practical work than in BSc

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# Implementation (2)

- 2009/2010: 53 students enrolled (2 with background in geography)
- Mobile GIS lab:
  - □ 19 laptops, 2 projectors, 3 GPS/GIS PDAs
  - □ wireles network, 100 textbooks
  - □ ArcGIS 9.3, ArcPad
- Students with background in geography had no problems with cartography and georeferencing but had problems wih programming and database technology







## Bologna process

- Sept 2008: ECTS defined university-wide as 1 ECTS = 29 hours of student workload,
  - □ two months after TEMPUS Bologna Workshop at FG
- April 2009: new Law on Quality Assurance in Higher Education passed
  - □ one month after TEMPUS Quality Assurance Workshop at FG
- Sept 2010: teaching in English will be supported by the University
  - two years after first courses and workshops started in English within TEMPUS GIST-CroHE

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# Conclusion and perspectives

- TEMPUS CARDS JEP GIST-CroHE raised awareness on many aspects of teaching and learning in the new Bologna framework
- Students response to the new content and forms of delivery is very positive
- Awareness of comparability with other GISc&T curricula is encouraging incoming and outgoing mobility.
- FG is strengthening the role of regional leader in geodesy and geoinformatics.

