Managing curriculum development and enhancing quality

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The problem

There are many ineffective educational development projects

- Superficial needs analysis
- Sketchy stakeholder analysis
- Missing stakeholder management plan
- Poor coordination between partners, developers
- Weak quality management
- Lack of business plan
Aims & Outline

Aims

• to share some practical ideas, which were usefully applied in GIS curriculum development, and
• to discuss some aspects of educational management and quality enhancement.

Outline

• Management tools
• Needs analysis
• Competency matrix
• Quality tools
Tempus GE-UZ

Objectives

• Develop a successful MSc in Geoinformatics
• Ensure qualified staff for course delivery
• Build a sustainable educational network
• Support UZ in sustainable development
eENVplus
Management tools

• Proposal writing
  • LFM

• Implementation phase
  • As-is analysis
  • Stakeholders power interest matrix
  • Needs analysis – market demands
  • Competency matrix
  • Quality manual

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As-is analysis

Where we are?

• Current situation (internal & external)
  • Organizations
  • People
  • Processes
  • Systems
Needs analysis

Where should we go?

The needs analysis should

- describe the problems, what gaps exist;
- determine the needs for education or training; find out what are the main trends and driving forces;
- evaluate existing programmes;
- assess the potential learning possibilities;
- discover information about logistical concerns and constraints, and
- define the expected skills and competences.
Stakeholder management process

Identify → Evaluate → Implement → Plan → Review

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Stakeholders: power / interest

- Cabinet of Ministers
- HE Ministry
- ENV Ministry
- Academy of Science
- State Committee for Standards and Metrology
- Rector
- TEMPUS Office
- GE-UZ Advisory Board
- Scientific & Professional Community
- Tutors
- Students
- Surveying / GIS Companies
- Other universities
- ALUMNI

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## Stakeholder management plan

<table>
<thead>
<tr>
<th>Stakeholder Type</th>
<th>What to do?</th>
<th>When to do?</th>
<th>How to do?</th>
<th>Where to do?</th>
<th>Whom to do?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students</td>
<td>To organize student unions and assign leaders</td>
<td>Starting from September</td>
<td>Organizing meetings for students to communicate with each other</td>
<td>National Partner universities</td>
<td>Coordinators and teachers</td>
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<tr>
<td>Include in research and applied activity</td>
<td>Include in research and applied activity</td>
<td>During project implementation and after</td>
<td>Promote international projects and international cooperation, including study abroad</td>
<td>In all partner universities</td>
<td>Partner participants, teachers and developers. EU Partners</td>
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<table>
<thead>
<tr>
<th>COMPETENCES</th>
<th>MODULES</th>
<th>Geoinformation Systems and Services</th>
<th>Remote Sensing</th>
<th>Data Acquisition and Data Interpretation</th>
<th>Cartography and Geovisualization</th>
<th>Spatial Data Modelling</th>
<th>Spatial Analysis</th>
<th>Geodatabases and Distributed Architectures</th>
<th>Project Management and Organisation</th>
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<td>have knowledge of contemporary issues</td>
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<td>understanding of management GIS projects</td>
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<td>understanding of professional and ethical responsibility</td>
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<td>originality in application of scientific knowledge</td>
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<td>apply remote sensing and photogrammetric knowledge</td>
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<td>apply cartographic knowledge</td>
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<td>apply GIS knowledge</td>
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<td>ability to comprehend legal issues and standards in geographic information</td>
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<td>ability to communicate effectively</td>
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<td>have critical awareness of current problems and/or new insights</td>
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<td>comprehensive understanding of new techniques and technologies</td>
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<td>ability to evaluate critically current research</td>
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<td>ability to evaluate methods and propose new approaches</td>
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<td>ability to deal with complex issues creatively and systematically</td>
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<td>demonstrate self direction and originality in tackling and solving problems</td>
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<td>ability to act autonomously in planning and implementing tasks</td>
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<td>ability to communicate to specialist and non specialist audiences</td>
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<td>apply knowledge of economics</td>
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Competency matrix

Competency matrix is connecting modules, like entablature in a Greek temple
Short specificatton

Module title
Introduction to Geoinformation Systems and Science

Compulsory or optional
Compulsory

Prerequisites
- 

Aims and objectives
The module aims to introduce Geoinformation Science and Geographical Information Systems; to develop basic knowledge and comprehension. By completing the module, the student should:
- Be familiar with key GI concepts and terms
- Recognize spatial decision and spatial operation problems
- Discuss reasons why spatial perspective provides value added in many fields
- Identify major components of GIS as technical as well as organisational systems
- Understand aspects of integrating spatial information into general ICT

Content
- Introduction to spatial thinking; how to solve geographical problems and classical use of GIS
- GIS terminology and scope
- GI as tool; GI as infrastructure; GIS for decision support
- GIS software, categories (desktop, mobile, server) and fields of application
- Spatial reference systems: coordinate reference systems and projections
- GIS in action: where, when and how GIS solution are being used (case studies)
- Current trends

Bibliography
Selection of articles from magazines

Teaching and learning methods
Lectures, computer exercises, self-learning on articles in magazines

Required infrastructure
Class room with computer projector, computer laboratory with GIS software

Assessment
To pass this module, the students are required to complete all the exercises; and pass the written exam

Credit allocation
6 ECTS (2 ECTS for lectures, 2 ECTS for labs, 2 ECTS for self-study)
2. EARLIER REGISTERS OF LAND AND PROPERTY (L/P)

CONTENTS

2.1. Cadastre of Land Property Tax in Hungary
2.2. Introduction of the Cadastre of Land Property Tax
2.3. Registration of Land Property
2.4. The Land Register
2.5. Reasons of the Development of the Land and Property (L/P) Registration
2.6. Land and Property Registration Systems of Europe

OBJECTIVES

In the historic review of Chapter 2, the registration types kept earlier in Hungary, as cadastre of land property tax, the public land property register, the land register and the reasons of calling into being the L/P registration are discussed. The main characteristics of the L/P registration systems are also presented.

WHAT STUDENT WILL LEARN

✧ the cadastre of property tax in Hungary,
✧ the public land-register,
✧ the cadastral register,
✧ the reasons of creating the land and property register,
✧ the L/P registration systems of Europe.

LEARNING OUTCOMES

By the end of this chapter, students should be able to

✧ define the essence of the registration systems kept in Hungary earlier and the reasons of their calling into being,
✧ understand the differences between the different registers,
✧ justify the necessity of setting up the present Hungarian land and property registration,
✧ distinguish the foreign land and property registration systems.

REVIEW QUESTIONS

1. What was the essence of the land tax system planned by the Emperor Joseph the Second?
2. What is the land tax cadastre?
3. What is the aim of the land register?
4. What was the justification for the establishment of the land and property registration?
Quality management

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Quality enhancement

1. Quality policy, strategy and quality procedures
2. Course initiation, regular monitoring, internal evaluation
3. Marking
4. The teaching conditions: staff and infrastructure
5. Student support and services
6. Internal information system
7. Publicity

ENQA: European Association for Quality Assurance in Higher Education Standards and Guidelines for Quality Assurance in the European Higher Education Area (http://www.enqa.eu/)

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Conclusions

• When we plan any educational development, we should look carefully both the current needs of the society, and look into the future.
• The curriculum must be based on the needs of stakeholders, founded on clearly defined skills and competences.
• In the design of detailed content the competency matrix can help to harmonize the work of the development team.
• Quality is omnipresent—like the ubiquitous cloud of computers. Quality enhancement should be part of our everyday life.
• There is a strong demand for international cooperation in educational developments.