Surveying Education:
Facing the Challenges of the Future

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NAVIGATING THE FUTURE OF SURVEYING EDUCATION
FIG COMMISSION 2 WORKSHOP, VIENNA, 26-28 FEBRUARY 2009

Welcome to beautiful Vienna

Current FIG Policies

Is the role of the Surveyors changing ?

The big swing

- **From Measurement**

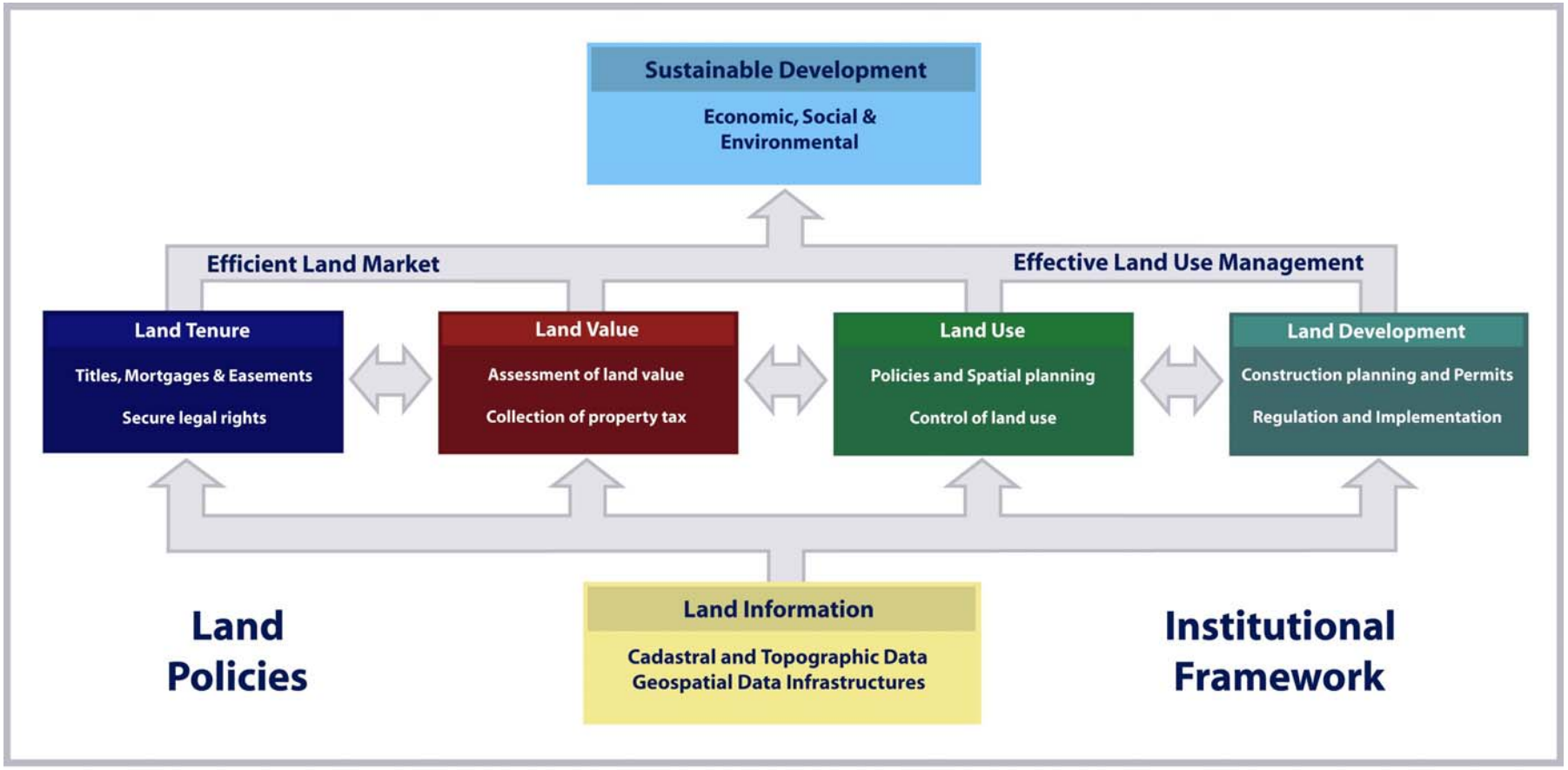
  Surveyors will still be high level experts within measurement science, but due to technology development the role is changing more into managing the measurements

- **To Management**

  Surveyors will increasingly contribute to building sustainable societies as experts in managing land and properties

The Land Professionals

Land Governance



A Global Land Management Perspective. Stig Enemark, April 2004.

Current FIG Policies

Do Surveyors have a role to play in the future ? – and in the global agenda?

No development will take place without having a spatial dimension

No development will happen without the footprint of the surveyor

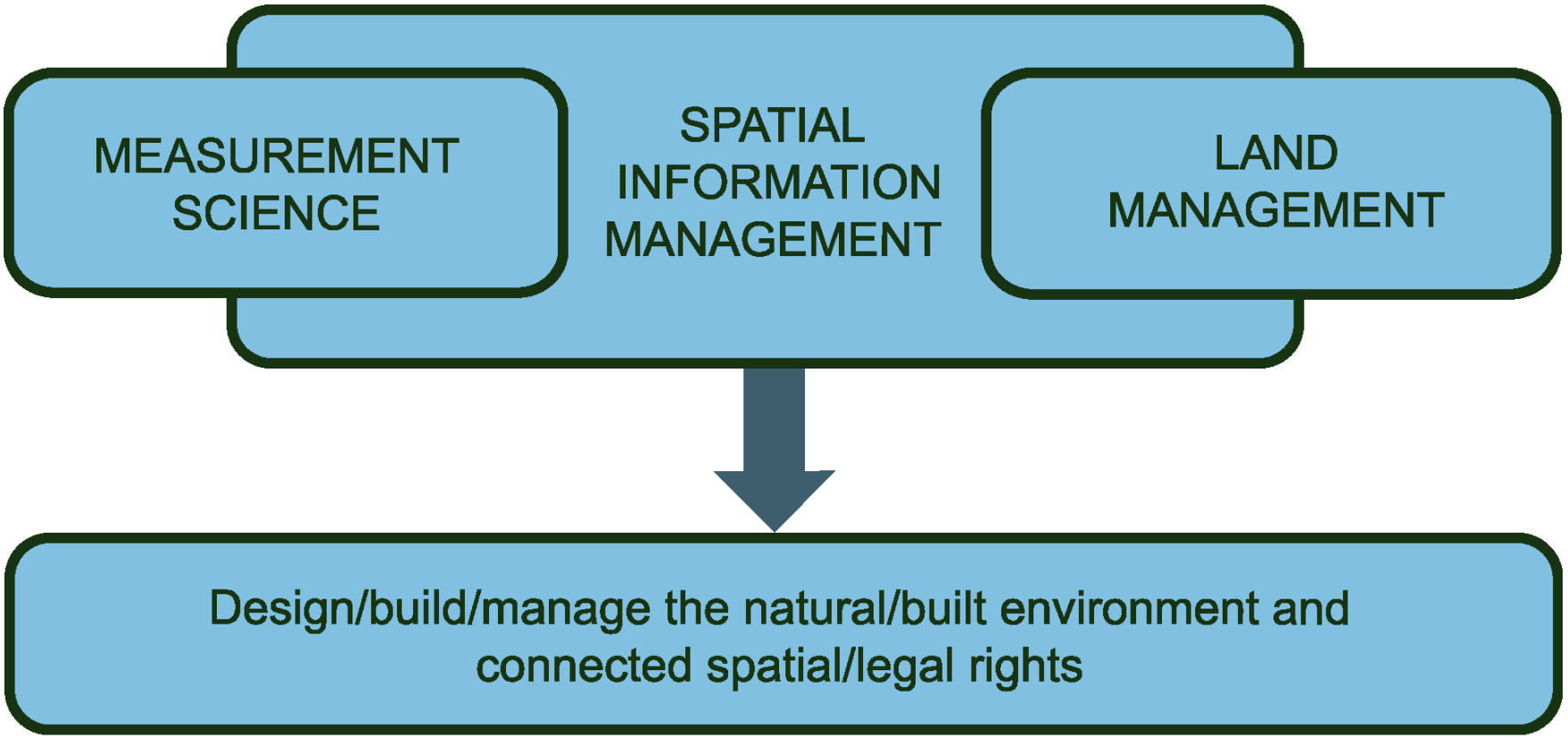
The role of the land professionals

Dealing with the land issue will require skills in the following areas:

- High level geodesy models to predict future change
- Modern surveying and mapping tools to support management and implementation
- Spatial data infrastructures to support decision making on the natural and built environment
- Secure tenure systems
- Sustainable systems for land valuation, land use management and land development
- Systems for transparency and good governance

Land governance is an interdisciplinary and cross-cutting area mixing technical, natural and social science

The Educational Profile of the Future



Trends and Challenges in Surveying Education (1) ...

- **Management Skills - versus specialist skills**

  from traditional technical skills and push button technologies

  to interpretation and management of data for meeting the needs of the clients – towards the Land professionals

- **Project Organised Education - versus subject based**

  from traditional technical skills (knowing how)
  add-on approach

  to management and problem solving skills (knowing why)
  focus on ”learning to learn”

...Trends and Challenges in Surveying Education (2)…

- **Flexible Curriculum - versus fixed course structure**

  from fixed disciplines and lecture courses
  to flexible course curriculum that can accommodate the ongoing change in disciplines and professional practice.

- **Virtual Academy - versus classroom lecture courses**

  from traditional on-campus activities
  to Web based course delivery and a more open role of serving the profession and society

...Trends and Challenges in Surveying Education (3)

- **Quality Assurance - versus fixed standards**

  from traditional course delivery

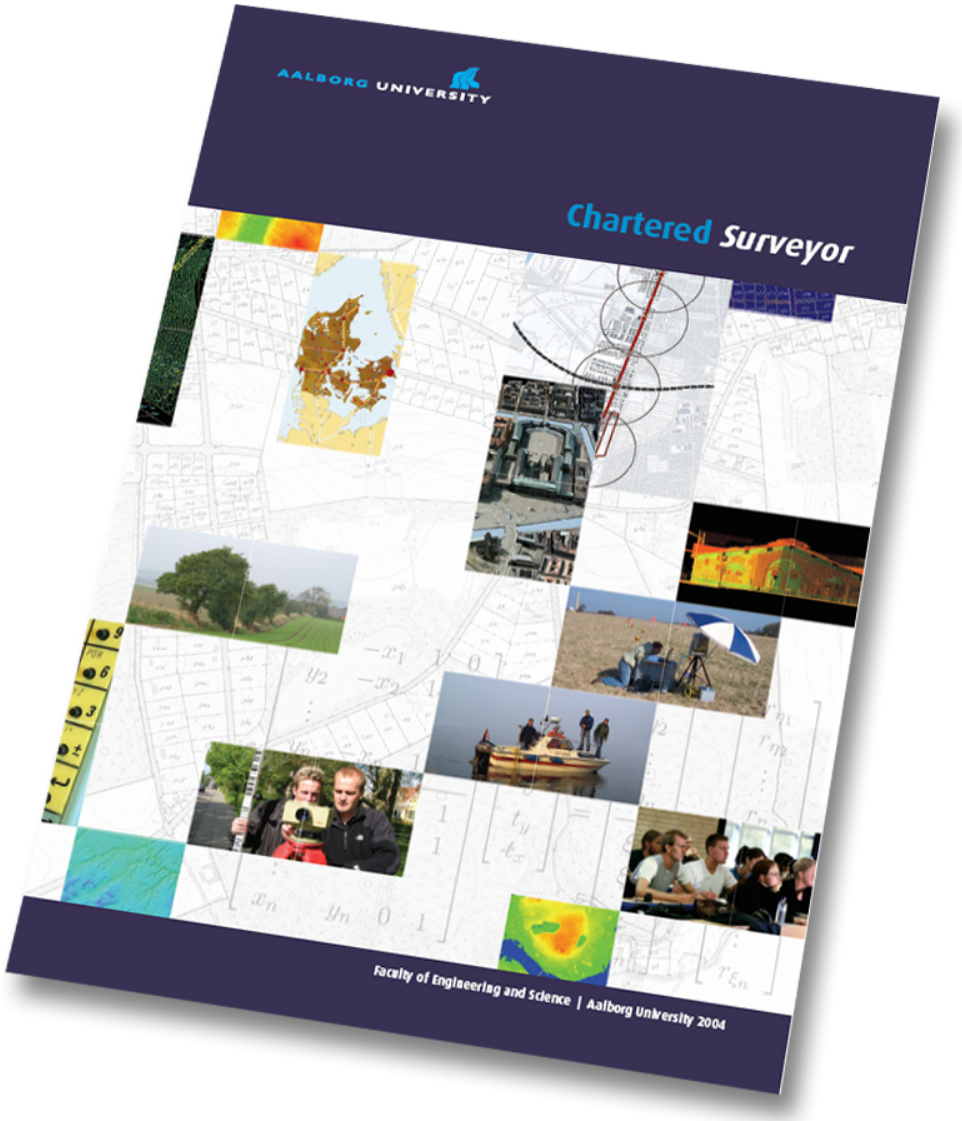
  to ongoing monitoring and evaluation for constant improvement and innovation

- **Lifelong Learning - versus vocational training**

  from learning for life through university graduation

  to lifelong learning through CPD-strategies and distance learning

And….promotion for attracting students



Facing the challenges

- Lack of students
- Too big a gap between supply and demand
- Option for double degree and new specialisations
  in cooperation with Lund University, Sweden
- Option for offering a range of specialisations as master programmes under the Bologna agreement.
- Option for offering the program also in Copenhagen

Year	Enrol	Grad.
2000	52	17
2001	39	23
2002	38	30
2003	35	30
2004	32	35
2005	25	46
2006	26	35
2007	28+21	25
2008	25+19	20
2009	.....	(30)

Rate of unemployment
< 1%

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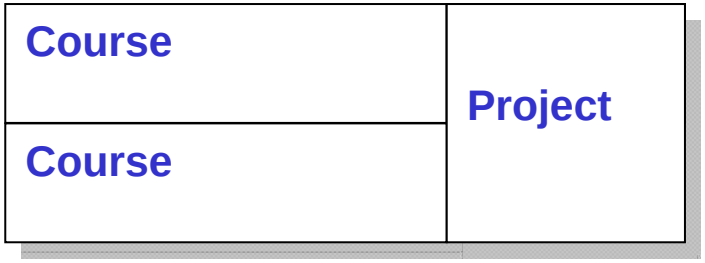
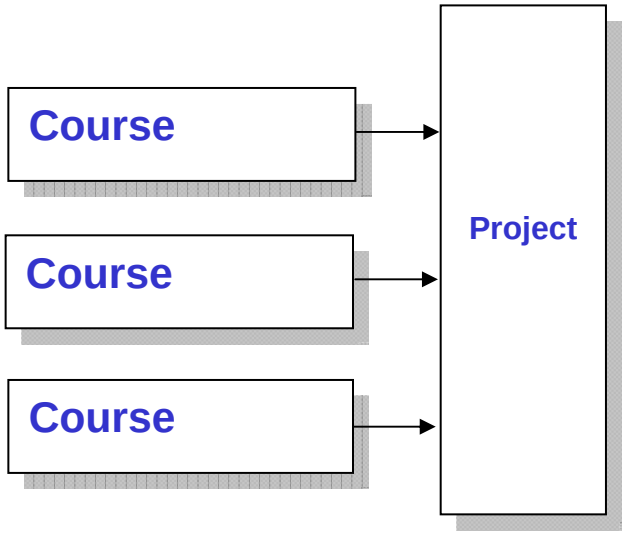
Learning to Learn

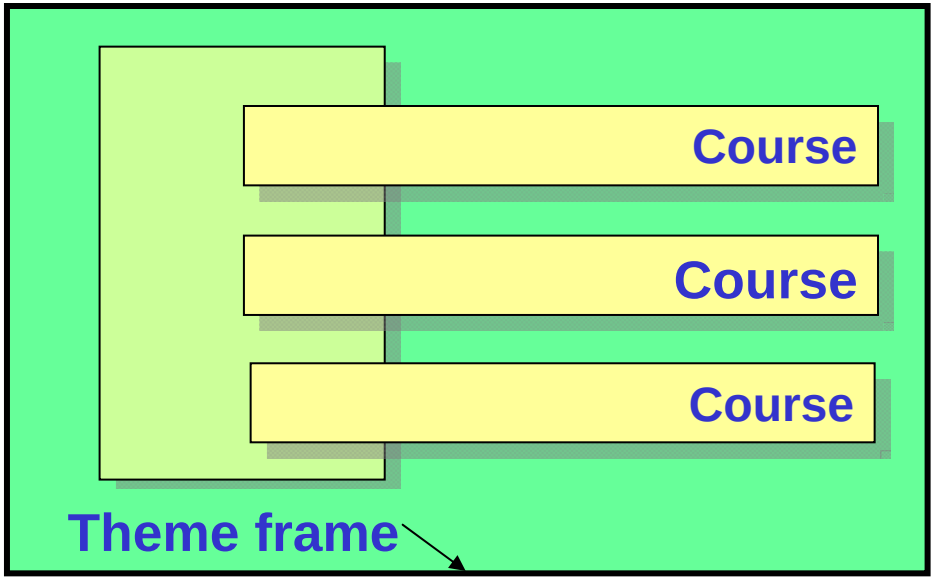
Professional and technical skills can be acquired and updated later in ones carrier, while skills for problem solving and skills for learning to learn can only be established through the process of academic training at the universities.

Skills of dealing with the unknown problems of the future

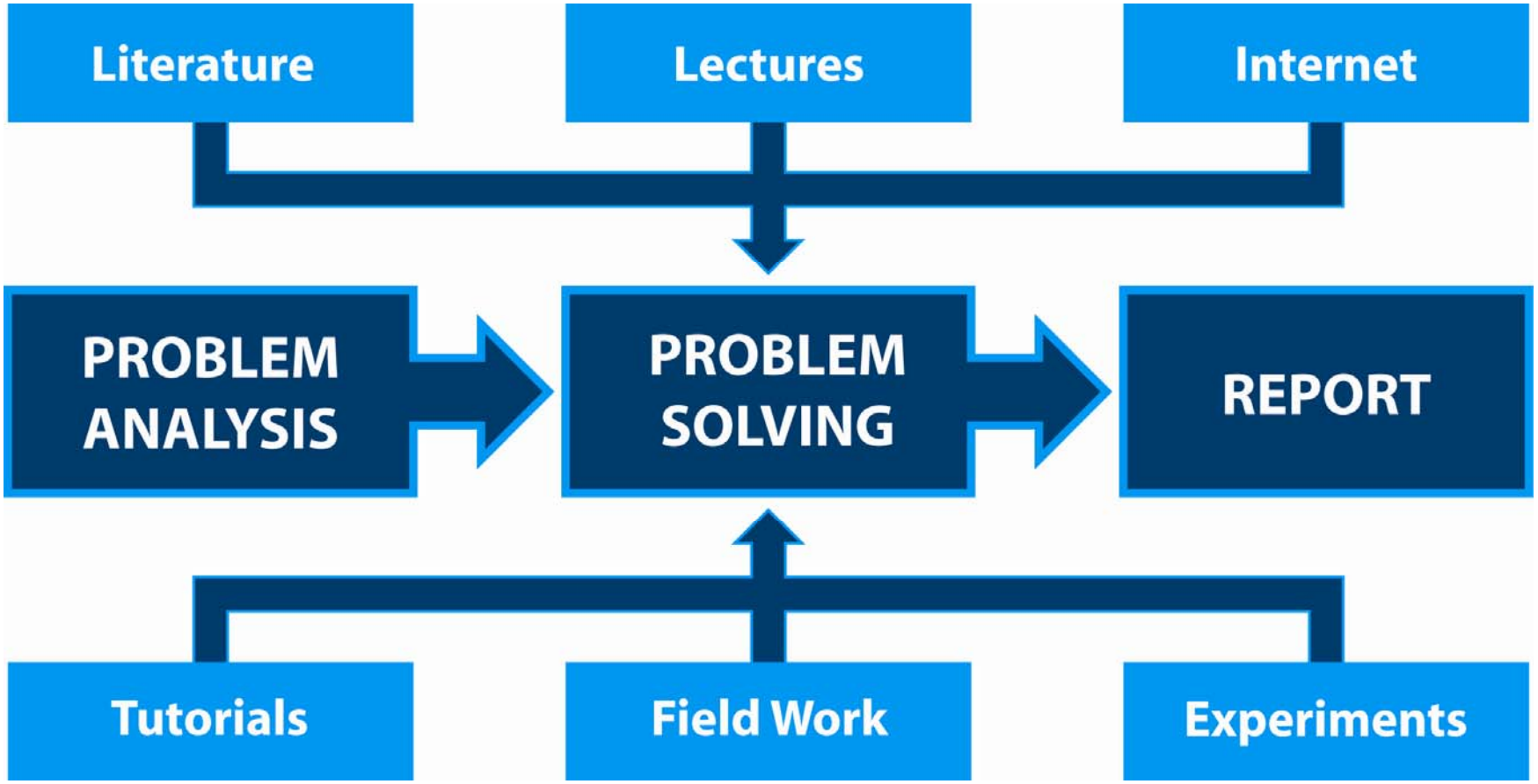
Lecture courses – project work …



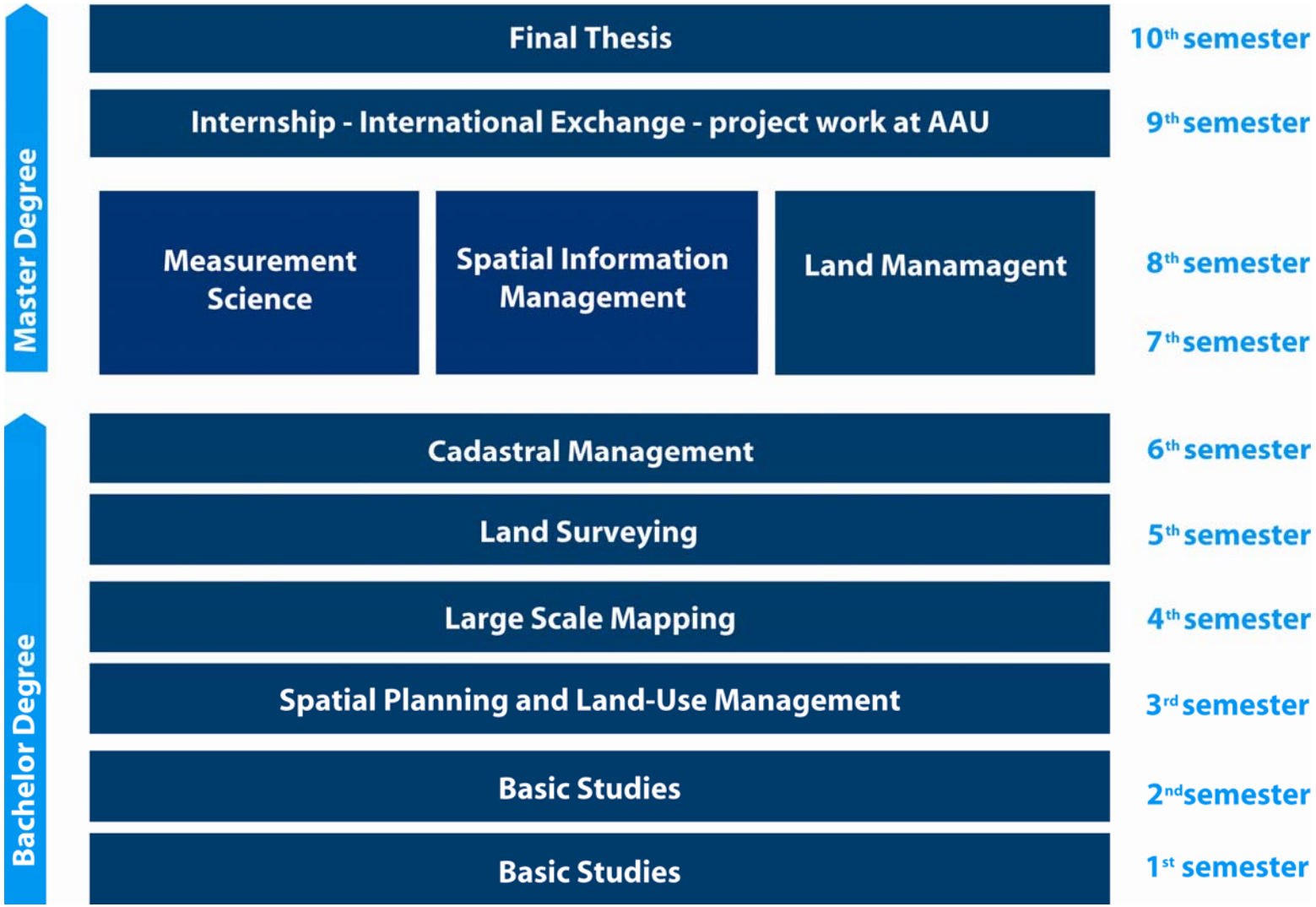




Project-organised and Problem-based Learning



The Aalborg Curriculum



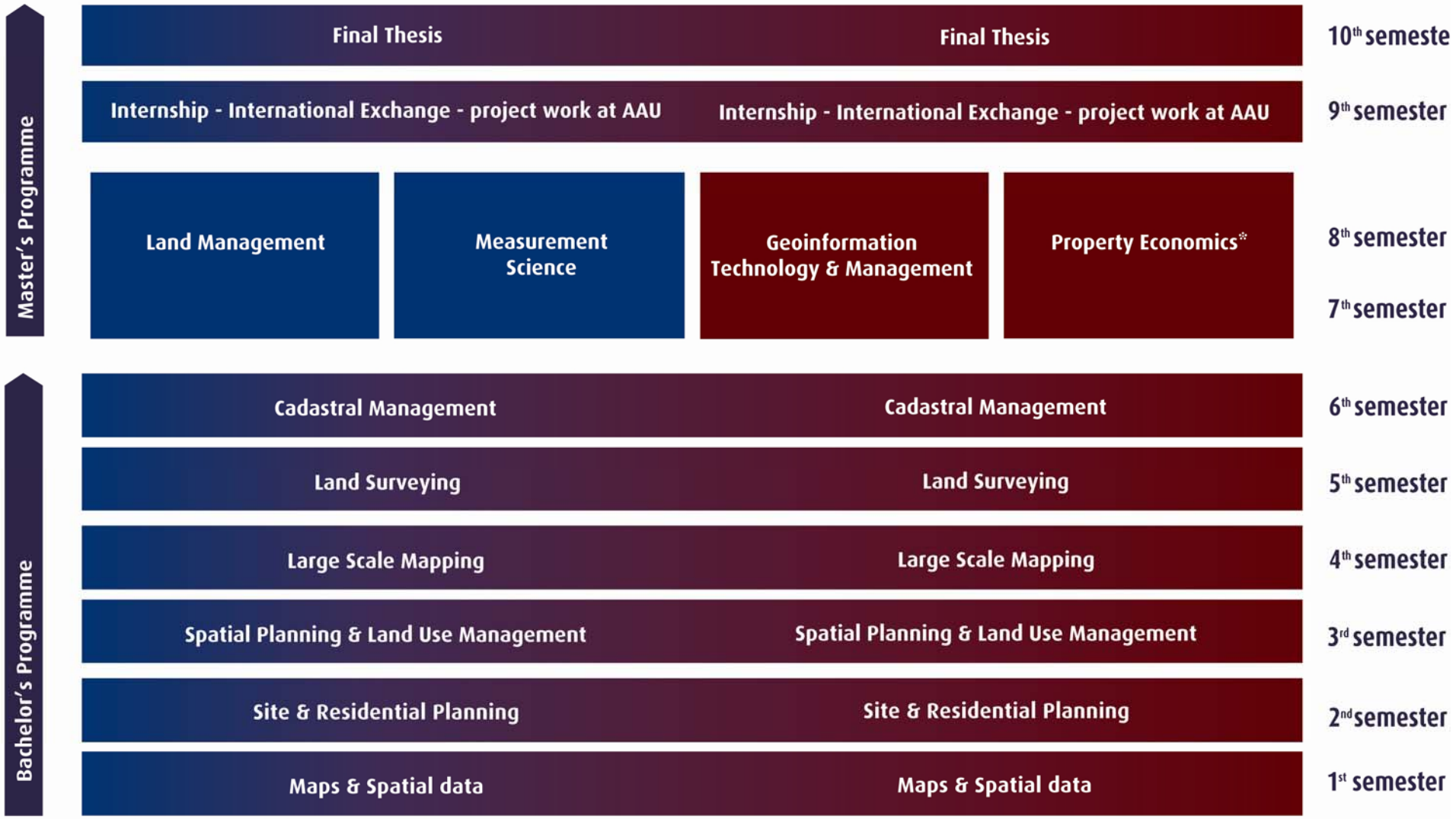
M. Sc. - Chartered Surveyor Study Propgramme

AALBORG UNIVERS

New Curriculum September 2007

AALBORG

COPENHAGEN



* In co-operation with Faculty of Engineering LTH / Lund University

Project-organise and problem-based learning

- Problem Based Learning
  - Based on real-life engineering problems
- Project Organised Education
  - Project work supported by lecture courses
- Group Work
  - groups of four to six students
  - supervised by the teachers
- Interdisciplinary Studies
  - Integration of theory and practice
  - Focus on Learning to Learn

Facilitating the learning process of the students

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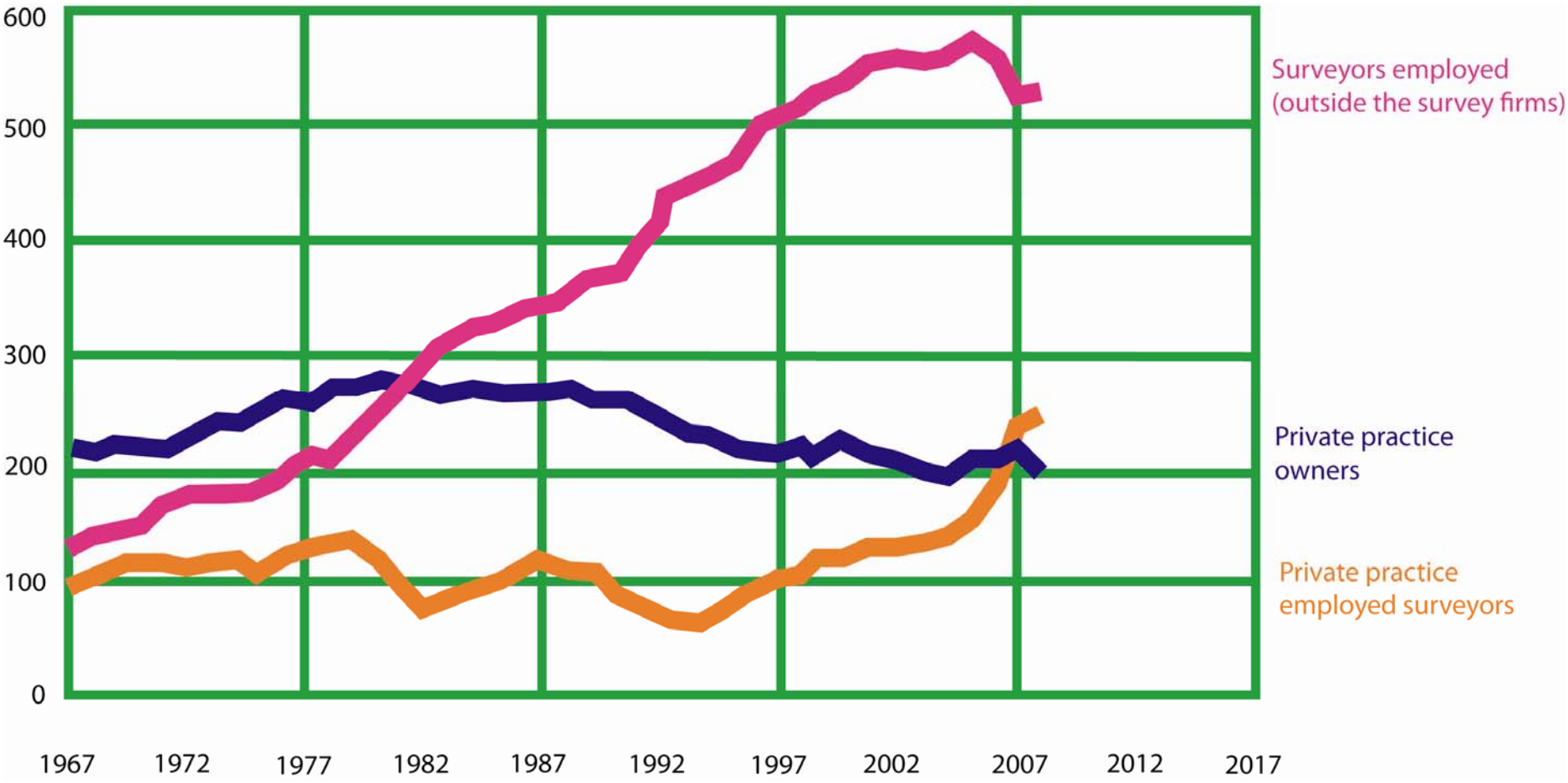
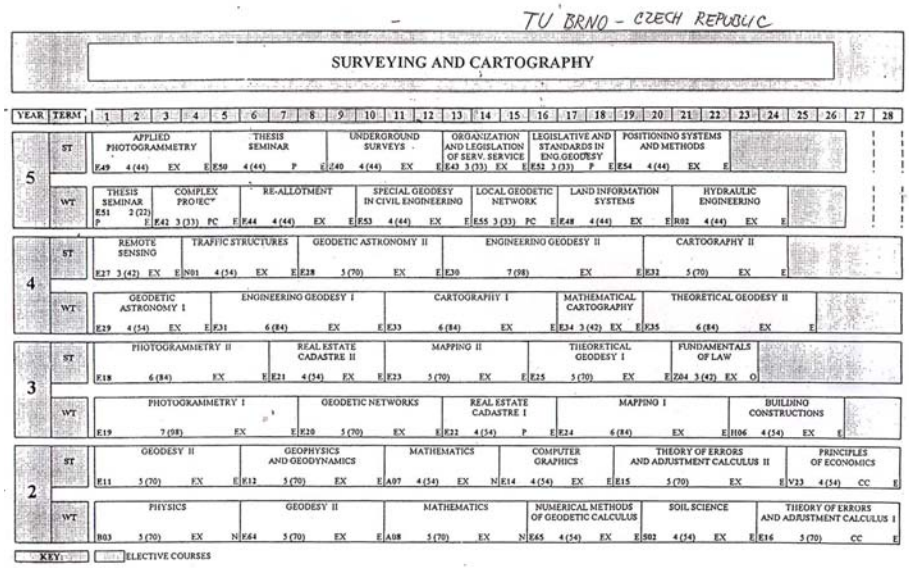
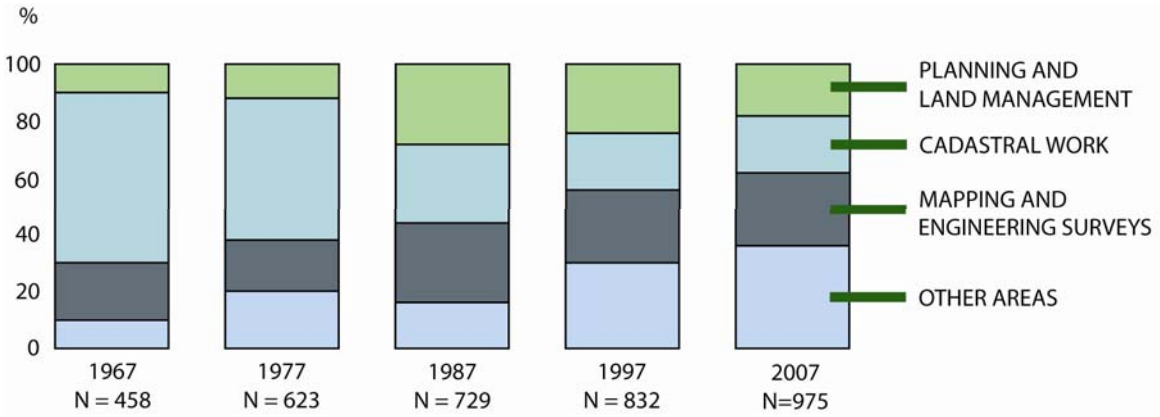
Monitoring change…



Evolution of the surveying profession in DK over 40 years

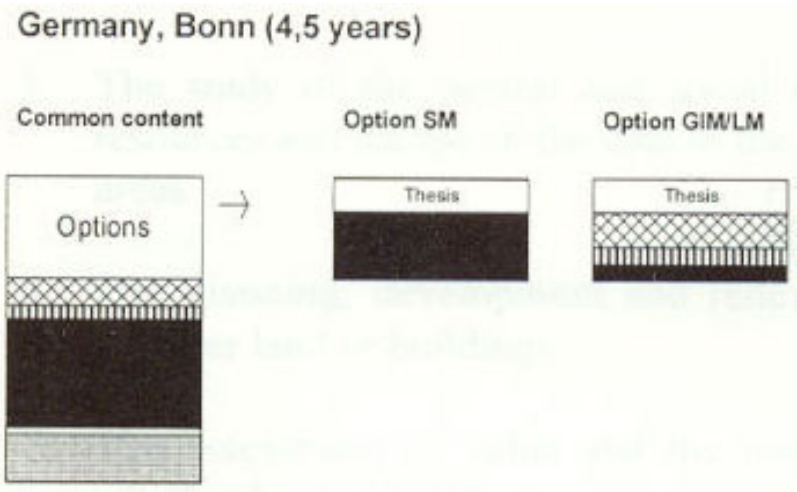
Flexible curriculum to accommodate change

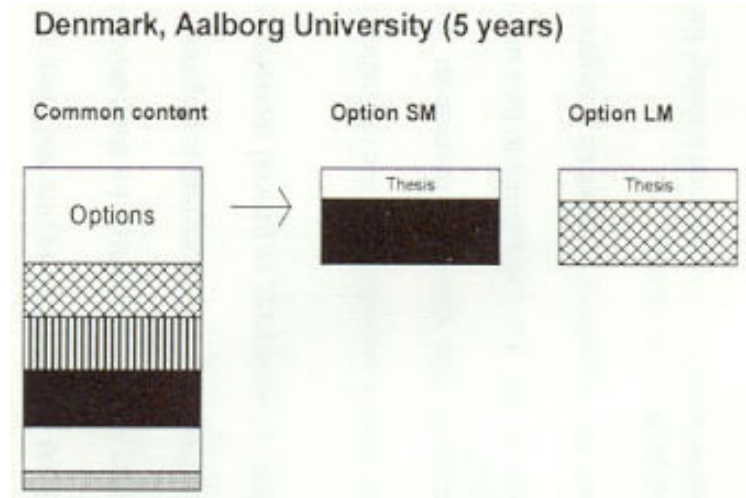


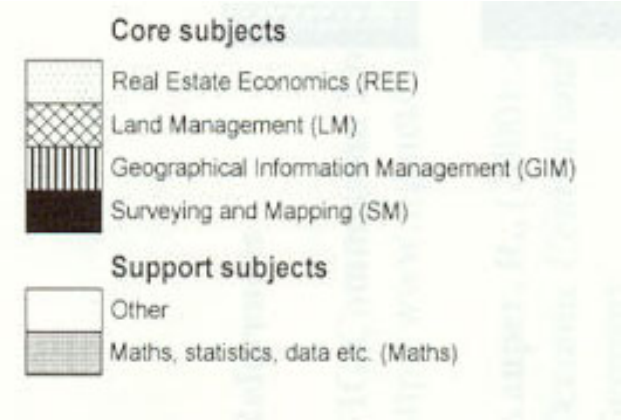


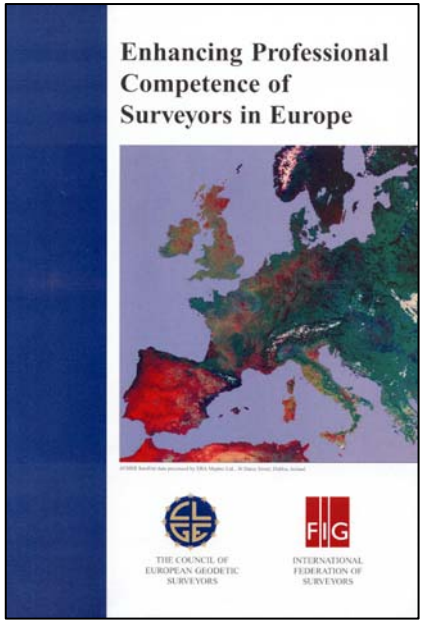
Evolution of the professional profile in DK over 40 years

Educational Profiles in Europe









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Virtual Academy

- Web-based course provision
  - Lecturing based on virtual learning documents
- Wed-based course libraries
  - Available for ongoing improvement
  - Available for professional practice
- Web-based spatial data libraries
  - Available for courses and project work
- Web-based distant learning courses
  - Offered as CPD activities, summer schools etc.
  - Integrated platforms for professional knowledge

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Quality Management

- Structural Challenges
  - Local level: Department structures
  - National level: Performance criteria, resources
  - International level: Agreements such as Bologna
  - Call for leadership, focus on the professional competence of the graduates
- Accreditation, monitoring and assessment
  - Evaluation towards minimum standard criteria
  - Monitoring the labour market of the graduates
  - Establishing and Advisory Boards of stakeholders
- Creating a quality culture
  - Internal monitoring
  - Handbook of Quality Management
  - Quality circle

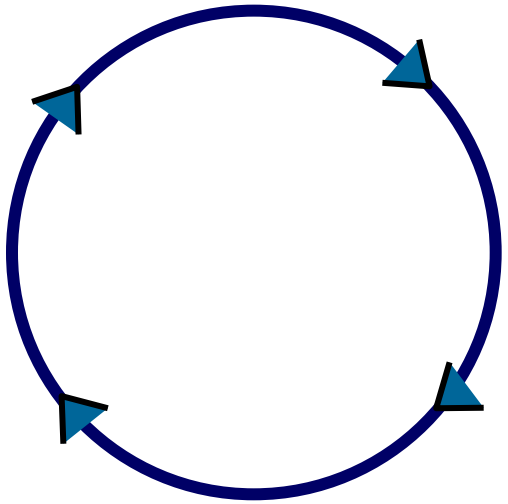
The Quality Circle

Planning for the upcoming semester

Ongoing evaluation and evaluation of lecture courses

Final evaluation from the students

Assessment and decisions by the Board of Studies



Without assessment of the completed semester - the students cannot expect to commence on a well-planned and improved semester

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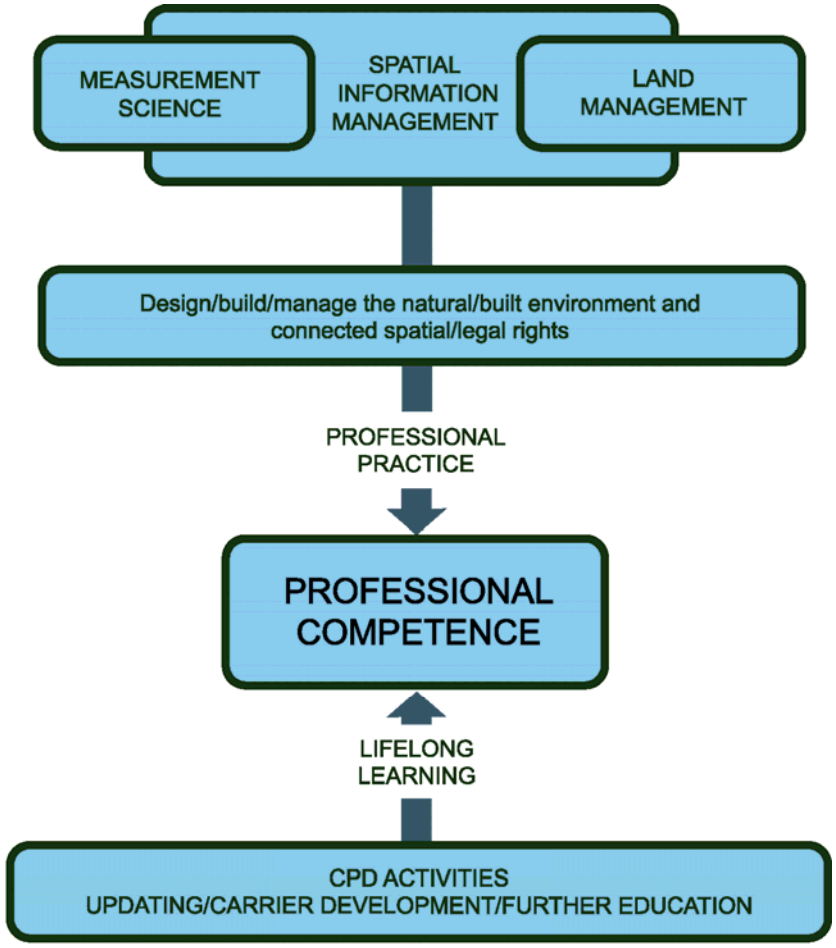
Lifelong Learning



THE PROFESSIONAL COMPETANCE MODEL

Professional competence relates to the status as an expert.

This status cannot be achieved only through university graduation and it cannot be achieved solely through professional practice.

The idea of “learning for life” is replaced by the concept of lifelong learning.

All graduates must have access to the newest knowledge throughout their professional life.

E-Learning and innovative interaction between education, research and professional practice is essential in this regard

Key Message

Facing the challenges requires an innovative and adaptable approach to both curriculum design and course delivery within the framework of an overall quality culture.

The success will eventually depend on an efficient interaction between education, research, and professional practice.

COMMISSION 2

Thank you for your attention