DALARNA UNIVERSITY

Course Syllabus

Web-based Geographic Information Systems (GIS) 7.5 Credits*, First Cycle

Learning Outcomes

Knowledge and understanding
After completing the course, students will be able to:

- Explain basic theories relating to GIS
- Explain the properties of different projection systems and their mutual differences
- Describe the characteristics of different reference systems
- Describe different web-based GIS
- Describe the GeoJSON standard
- Describe the development of different services that have been developed using geodata

Skills and abilities
After completing the course, students will be able to:

- Create thematic maps
- Build topologies
- Use the GeoJSON standard and tools to structure collected geodata and its non spatial attributes
- Use both front end and back end programming techniques to add, delete, update, and present spatial data and its non spatial attributes
- Use JavaScript libraries to create mobile friendly web applications with interactive web maps where both third party geodata from the Internet and self created geodata are presented

Evaluation ability and approach
After completing the course, students will be able to:

- Evaluate, assess, and improve a GIS in terms of its usability, functionality, and meaningful and technical quality.

Course Content

The course provides an introduction to basic theoretical and practical knowledge in web-based geographical information systems in which technology for the description and analysis of geographical data is covered. It uses different tools and programming libraries for web-based GIS, as well as geographical data and the way it can be used to create public services and maps using geodata. Various ways to code in web-based GIS are used to create public services and maps using geographical data.

Assessment
Seminars 1.5 credits, project work 4 credits and a written examination 2 credits.

Forms of Study
Lectures, seminars, excersices, project work

Grades
The Swedish grades U–VG.

Seminars U-G.

Prerequisites
Database management, 7,5 credits or equivalent knowledge
Object Oriented Programming, 7,5 credits First Cycle
Dynamic Web Applications, 7.5 credits

Other Information
Can be taught in English.
Replaces Introduktion till Geografiska Informations System (GIS), IK1056.

Subject:
Information Systems

Group of Subjects:
Informatics/Computer and Systems Sciences

Disciplinary Domain:
Technology, 100%

This course can be included in the following main field(s) of study:
1. Computer Engineering
2. Information Systems
3. Microdata Analysis

Progression Indicator within (each) main field of study:

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1. G1F
2. G1F
3. G1F

Approved:
Approved 24 September 2020
Valid from 25 November 2020