UNIVERSITY OF GOTHENBURG

DEPARTMENT OF EARTH SCIENCES

NGEO306 Automate your GIS - Scripting in Python, 5 credits

Automatisera ditt geografiska informationssystem med hjälp av Python, 5 högskolepoäng

Third-cycle level / Forskarnivå

Confirmation

This syllabus was confirmed by the Department of Earth Sciences on 2019-10-26, and is valid from Autumn semester 2019.

Responsible Department
Department of Earth Sciences, Faculty of Science

Entry requirements

Admitted to third cycle education.

Learning outcomes

The aim of this course is to:

- acquire programming skills and concepts on how to perform automated analysis and data handling processes within Geographical Information Systems (GIS)
- increase general knowledge in GIS and GIT (GITechnology)

Knowledge and understanding

After completion of the course, the student is expected to be able to:

- understand and explain the concept of GIS scripting and programming
- describe the use and characteristics of different spatial data file formats

Competence and skills

After completion of the course, the student is expected to be able to:

- to develop automated processes using GIS tools and software
- to perform basic geographical analyses and format transformation using GIS
- to perform python computer programming related to GIS

- create simple user-friendly GIS tools

Judgement and approach

After completion of the course, the student is expected to be able to:

- assess when to make use of GIS scripting and programming
- assess pros and cons of GIS scripting, programming and tool development both seen from a user and scientific perspective

Sustainability labelling

The course is sustainability-related, which means that at least one of the learning outcomes clearly shows that the course content meets at least one of University of Gothenburg's stipulated criteria for sustainability labelling.

Course content

The aim of this course is to acquire programming skills and concepts on how to perform automated processing within a geographical information system. The focus is mainly on the techniques and methods but also on the concept of the interaction between GIS and programming. Development of user-friendly open source GIS tools is also incorporated in the course.

Types of instruction

In detail, the course content includes:

- one introductive week of lectures and practical exercises
- 1 project work (appr. 3 weeks fulltime)
- Written paper and seminar

Language of instruction

The course is given in English.

Grades

The grade Pass (G) or Fail (U) is given in this course.

Types of assessment

To pass the course the project work has to be submitted in due time and graded with G (pass).

Course evaluation

The course evaluation is carried out together with the Ph.D. students at the end of each course.