



Faculty of Health, Science and Technology
Geo-Science

Syllabus

Geographic Information Systems analysis

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| Course Code: | NGGC68 |
| Course Title: | Geographic Information Systems analysis <i>GIS analys</i> |
| Credits: | 7.5 |
| Degree Level: | Undergraduate level |
| Progressive Specialisation: | First cycle, has at least 60 credits in first-cycle course/s as entry requirements (G2F) |

Major Field of Study:
NGA (Physical Geography)

Course Approval

The syllabus was approved by the Faculty of Health, Science and Technology 2023-03-03, and is valid from the Autumn semester 2023 at Karlstad University.

Prerequisites

90 ECTS credits completed in the Surveying Technology and Geographical IT Engineering programme, including Geographic Information Systems II, 7.5 ECTS credits, Scientific Methods in Geomatics, 7.5 ECTS credits, and Raster GIS, 7.5 ECTS credits, or equivalent

Learning Outcomes

Upon completion of the course, students should be able to:

- describe some application areas in society and research where GIS analysis is used,
- explain why GIS analysis makes it possible to improve the efficiency of activities and operations in society and provides a better understanding of spatial relationships in nature and society,
- present a written report on various theories, methods, approaches, and results of GIS analysis,
- analyse and model spatial relations and courses of events, and

- write an academic report on GIS analysis.

Content

Instruction is in the form of lectures, laboratory work, and project tasks. The course requires previous knowledge and basic skills in using GIS software, primarily ArcGIS. The course includes analyses and model designs using GIS software and students are shown examples of applications of those methods. Much of the laboratory work consists of data preparation before various analyses are carried out. Forms of analysis covered in the course include: network analysis, spatial analysis, and hydrological modelling, such as accessibility across a roadnet or the importance of topography for different natural processes. Students find, read, and summarise academic articles.

Reading List

See separate document.

Examination

Assessment is based on individual project reports presented in seminars.

If students have a decision from Karlstad University entitling them to Targeted Study Support due to a documented disability, the examiner has the right to give such students an adapted examination or to examine them in a different manner.

Grades

One of the grades Pass with Distinction (5), Pass with Some Distinction (4), Pass (3), or Fail (U) is awarded in the examination of the course.

Quality Assurance

Follow-up relating to learning conditions and goal-fulfilment takes place both during and upon completion of the course in order to ensure continuous improvement. Course evaluation is partly based on student views and experiences obtained in accordance with current regulations and partly on other data and documentation. Students will be informed of the result of the evaluation and of any measures to be taken.

Course Certificate

A course certificate will be provided upon request.

Additional information

The local regulations for studies at the Bachelor and Master levels at Karlstad University stipulate the obligations and rights of students and staff.