



Faculty of Health, Science and Technology
Geo-Science

Syllabus

Project course in remote sensing and digital image processing

Course Code:	NGGC01
Course Title:	Project course in remote sensing and digital image processing <i>Projektarbete i fjärranalys och digital bildbehandling</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:

MAT (Surveying and Mapping)
NGA (Physical Geography)

Course Approval

The syllabus was approved by the Faculty of Health, Science and Technology 2021-09-08, and is valid from the Autumn semester 2022 at Karlstad University.

Prerequisites

60 ECTS credits completed in the Surveying Technology and Geographical IT Engineering programme or the Surveying and Mapping programme, including Remote Sensing and Photogrammetry, 7.5 ECTS credits, or equivalent

Learning Outcomes

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

- give an account of and describe the main parts of a remote sensing project,
- search for relevant literature,
- identify research questions relevant for a remote sensing project,

- specify data requirements and methods for analysis in relation to the issues that have been identified,
- conduct a remote sensing project in a group within given time limits,
- document a project in writing,
- present and defend a project orally,
- assess, compare, and offer constructive criticism on a project completed by other students, and
- take issues of sustainability and gender equality into account when planning and completing a remote sensing project.

Content

The aim of the course is for students to develop the ability to carry out all aspects of a small remote sensing project. Students develop or select a real-world issue in the field of remote sensing and identify the relevant steps required to complete the project. The first mandatory assignment is a project plan, which typically includes the following steps: data collection, preliminary treatment of raw data, image processing, image classification, and accuracy assessment. Students justify the research question as well as the selection of method and data to answer it through a literature study. The entire process and the final results are documented and presented in a midterm seminar and a final seminar, including peer review of the work of other students. Projects are completed in groups.

Project groups are created based on a gender equality perspective.

Reading List

See separate document.

Examination

Assessment is based on 3 mandatory components:

1. Submission of a project plan
2. Participation in a midterm seminar and a final seminar, including peer review
3. Submission of a project report and a peer review report

Submissions for assessment must clearly indicate individual contributions.

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 5 (Pass with Distinction), 4 (Pass with Some Distinction), 3 (Pass), U (Fail) 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.

