



**LUND**  
UNIVERSITY

Faculty of Science

## **NGEA03, Physical Geography: Remote Sensing for Landscape Studies, 15 credits**

*Naturgeografi: Fjärranalys för landskapsstudier, 15 högskolepoäng*  
**First Cycle / Grundnivå**

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### **Details of approval**

The syllabus was approved by Study programmes board, Faculty of Science on 2007-06-14 to be valid from 2007-07-01, autumn semester 2007.

### **General Information**

*Language of instruction:* Swedish and English

*Main field of studies*

Physical Geography

*Depth of study relative to the degree requirements*

G2F, First cycle, has at least 60 credits in first-cycle course/s as entry requirements

### **Learning outcomes**

The aim of the course is that students upon its completion should have acquired the following knowledge and skills:

*Knowledge and understanding*

The student is expected to:

- describe at a general level the basic principles of photographic remote sensing
- account for the basic technical principles of the air photo as information carrier
- summarise information contents in various types of digital images and the influence of different film types on information contents and image quality
- describe the air photo geometry and geometric correction
- summarise reflection characteristics for different objects
- account for the process of image interpretation and a systematic approach to this
  
- describe application fields for photographic remote sensing within research, society and private activities

## *Skills and abilities*

The student is expected to:

- independent or in groups plan, carry out and report an image interpretation project
- use air photos from different years of recording to carry out studies of changes and development in a specified study area area

## **Course content**

The course aims to highlight using photographic remote sensing (air photos) and image interpretation to collect information about different phenomena in the landscape.

The course consists of five subparts.

1. Theoretical knowledge acquisition. This part runs through the entire course period and contain more traditional lectures, but also parts in the form of assignments where the students individually or in groups search, evaluate and present theoretical teaching subject matter.
2. Image interpretation and spectral properties. In this part air photos of different type and from different parts of the world and from different time periods is used to illustrate and obtain a conception about image quality and information content.
3. Applied image interpretation. This part tries use a real world example within research/planning and comprises mapping of a study area regarding different landscape elements, analysis of changes in the landscape, field data collection, validation and accuracy estimations of maps and interpretations and oral and written presentation results.
4. Vegetation-Climat-Satellite data. In this part, relations between different landscape elements over a larger area through modelling is studied and the results are compared with various types of satellite images.
5. Research articles/literature studies. This part of the course consists of critical reviewing of published articles and reports of for the course relevant topics.

## **Course design**

The teaching consists of lectures, laboratory sessions, field exercises, seminars, group work and project work. Participation in laboratory sessions, field exercises, seminars, group work and project work and thereby integrated other teaching is compulsory.

## **Assessment**

Examination takes place via written assignments and project presentations during the course and via written examination. Students who have not passed the ordinary examination are offered a re-examinations shortly after.

*Subcourses that are part of this course can be found in an appendix at the end of this document.*

## **Grades**

Marking scale: Fail, Pass, Pass with distinction.

To pass the entire course, approved examination and passed results of written assignments are required as well as completed project presentations and participation in all compulsory parts.

## **Entry requirements**

Admission to the course:

General entry requirements and 60 credits natural science studies. 60 credits in geography, archaeology, urban planning and landscape planning are also valid as entry requirements. Furthermore English B, or the equivalent is required.

## **Further information**

The course may not be included in a higher education qualification together with NGEA05 Remote sensing and GIS with environment orientation, 15 credits, NGE012 Remote sensing and GIS with environment orientation, 10 p, NGE605 Remote sensing for landscape studies, 10p, VFT051

## Subcourses in NGEA03, Physical Geography: Remote Sensing for Landscape Studies

Applies from V20

- 2001 Image interpretation project: Verka river, 6,0 hp  
Grading scale: Fail, Pass, Pass with distinction
- 2002 Exercises, 1,5 hp  
Grading scale: Fail, Pass
- 2003 Project work, 4,5 hp  
Grading scale: Fail, Pass
- 2004 Written exam, 3,0 hp  
Grading scale: Fail, Pass

Applies from V08

- 0701 Remote Sensing for Landscape Studies, 15,0 hp  
Grading scale: Fail, Pass, Pass with distinction