GEOG-322 Remote sensing 2

2. Course code

GEOG-322

3. Course status: compulsory or optional

Optional for students specializing in geoinformatics and those in the geography degree programme.

geography

GEOG-300

The course is available to students from other degree programmes, but the number of students may be limited. Priority is given first to students specializing in geoinformatics, then geography and then students of other degree programmes.

4. Course level (first-, second-, third-cycle/EQF levels 6, 7 and 8)

Master's level, EQF level 7

advanced studies

5. Recommended time/stage of studies for completion

1. year of M.Sc. Studies

6. Term/teaching period when the course will be offered

spring term, period 4.

7. Scope of the course in credits

5 cr

8. Teacher coordinating the course

Petri Pellikka & Janne Heiskanen

9. Course learning outcomes

Remote Sensing 2 course provides the students: 1) familiarity with the recent developments in remote sensing methods, and skills to search further knowledge from scientific literature and relevant forums; 2) skills of advanced image processing and interpretation techniques to characterize land cover and land cover change; 3) ability to develop replicable image processing and analysis paths; 4) skills to apply remote sensing methods in MSc thesis research, and ability to communicate the results following the scientific and technical conventions in the field.

10. Course completion methods

Lectures (16 h), practical exercises (32 h), learning diary, individual work

11. Prerequisites

Remote Sensing 1

12. Recommended optional studies

Imaging Spectroscopy

13. Course content

The course builds on Remote sensing 1, and introduces the students with topical issues and methods in remote sensing of land cover and vegetation, and improves students' ability to use remote sensing methods in their MSc theses and research. The lecture topics include: review of topical issues in remote sensing of land cover and vegetation; pre-processing satellite imagery; estimation of vegetation biophysical attributes; basics of lidar data and its use for characterization of vegetation structure; and methods in land cover change detection and modelling. Topics for practical work include: satellite image processing and analysis in R software environment; forest attribute mapping using airborne lidar.

14. Recommended and required literature

A list of recommended journal articles is provided on the course Moodle.

15. Activities and teaching methods in support of learning

The course is organized in a weekly lecture + exercise session format. The exercise sessions allow students to develop their remote sensing skills and receive help from course assistants. Some independent work is also expected. In addition, students keep learning diary to summarize, analyze, comment and reflect on the content of the course.

16. Assessment practices and criteria, grading scale

The grade is based on learning diary and reports of the assignments, evaluated on scale 0-5.