Tallinn University of Technology

VMV0730 Geograafilise info süsteemid

Extended syllabus

Autumn 2025

General information

ECTS: 6 ECTS

Language of instruction: English

Lecturer: Ott Küüsmaa, ott.kuusmaa@taltech.ee

Course aims: Course gives basic knowledge on geographic information systems concepts, structure, application fields and technologies used. Student learn to work with ArcMap software (also ArcMAp for Maritime application) for preparation maps

Brief description of the content of the subject(s): Geoinformatics and GIS concepts, GIS functions, tasks and areas of application, map data management using ArcMap software, geodata modeling using ArcGIS, analysis of spatial relationships.

Learning outcomes:

- Knows the structure of geographic information systems, data collection, analysis and processing methods and is able to prepare maps using ArcMap software;
- Can discuss the important issues of Geographical Information Systems;
- Can prepare bathymetric maps using ArcGIS Maritime Bathymetry application.

Evaluation and constructive alignment

Evaluation method	Teaching methods	Relationship with learning outcomes
Tests (1-2)	• The student studies the theory of geographic information systems based on the lecturer's presentations and textbooks; • To pass the test, at least 50% must be achieved.	• Knows the structure of geographic information systems, data collection, analysis and processing methods; • Can discuss the important issues of Geographical Information Systems.
Assignments (1-6)	• The student completes 6 practical professional exercises based on the instructions, mainly using ArcGIS software; • The assignments are mandatory and all must be passed with a positive grade (50%).	• Knows the structure of geographic information systems, data collection, analysis and processing methods and is able to prepare maps using ArcGIS software.

Formation of the final score: To receive a final grade, all tests and assignments must be passed with a positive result. The tests and exercises together account for 100%, and the grade is determined according to the actual percentage:

"0" – learning outcomes are not acquired (final grade percentage <50%);

"1" – the learner has acquired all the learning outcomes of the subject, has passed the tests and exercises with a positive result, final grade percentage 50–60%;
"2" – the learner has acquired all the learning outcomes of the subject, has passed the tests and exercises with a positive result, final grade percentage 61–70%;
"3" – the learner has acquired all the learning outcomes of the subject, has passed the tests and exercises with a positive result, final grade percentage 71–80%;
"4" – the learner has acquired all the learning outcomes of the subject, has passed the tests and exercises with a positive result, final grade percentage 81–90%;
"5" – the learner has acquired all the learning outcomes of the subject, has passed the tests and exercises with a positive result, final grade percentage 91–100%

Alignment with the curriculum

Required prior knowledge and/or prerequisite subjects: No requirements

Relationship to the curriculum: The course provides skills to collect, process, and analyze data that support the planning, design, development, and maintenance of shipping routes and vessel traffic using GIS software.

Learning aids

E-support for the subject: https://moodle.taltech.ee/course/view.php?id=31373

Educational literature: Book „Geoinformaatika“ (Jüri Roosaare, Kiira Mõisja, Raivo Aunap)

Resources required: Esri’s software ArcGIS Pro

Getting in touch with the lecturer: The preferred method of contact email, answered 3 during the working day.