

# MINOR GEOGRAPHIC INFORMATION SYSTEMS (GIS)



The world is facing environmental and social challenges on a global, national, local, and individual level, while also moving deeper into the information age. Availability of reliable and up to date information is more and more important for making informed decisions addressing global challenges. Very often, the data required to tackle these challenges are geographical.

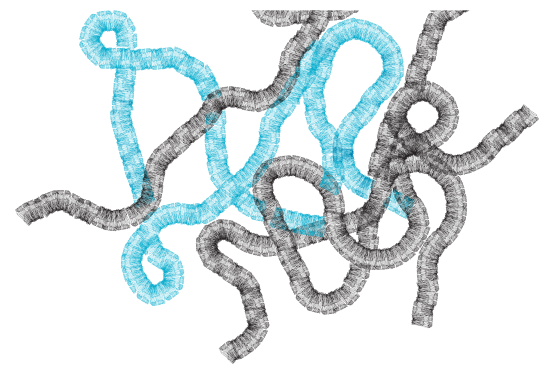
## WHAT IS A HTHT MINOR?

A HTHT-minor fits within the UT profile: High Tech, Human Touch. The minor is offered in English and accessible for both national and international students. The goal of the HTHT-minor is to illuminate specific societal themes for which the UT develops High Tech Human Touch solutions. These solutions are created by conducting high-quality research. Both the form and the content of the minors are High Tech Human Touch (multidisciplinary) and are profiling for the student.

The UT offers most HTHT-minors in a coherent package of 2 (30 EC). There are also HTHT minors of 15 EC that do not belong to a package. You can choose one of these minors and combine this with one minor of a package. If possible, you can even choose 2 minors from different packages.

This module introduces students to Geographic Information Systems (GIS): methods, software and tools used to collect, inventory, analyze, and visualize spatial data in order to answer geographical questions. GIS can be used to study and visualize natural or human-made patterns and processes. Common application areas include urban planning, public administration, defence, public health management, environmental monitoring, utilities, telecommunications, transportation, hazard analysis, cartography, and the management of agriculture, forests, and water resources.

After learning the basics of GIS theory and technologies, we investigate the ways it can be used to address real problems around the world. The module consists of three stages: the first introduces fundamental GIS concepts, the second applies the knowledge to a diversity of world issues, and the third give students practical experience in the form of a small-group project, on a topic of their selection, and with increased depth and focus.



## *Geography matters: everything happens somewhere!*

In the first two stages of the course, students will get lectures in combination with practical exercises. These will cover and practice the basics of storing, accessing, analyzing and visualizing geospatial information. Students are encouraged to find creative solutions in the use, design, and analysis of GIS functionalities.

The final part of this module consists of an interdisciplinary group project on a topic proposed by an ITC scientific researcher. Various projects will be proposed on a diversity of themes, such as natural hazards, resource management, urban planning or spatial information management, with each project supervised by the relevant ITC faculty proposer. Projects address specific, concrete problems and research questions, and typically have an international flavor related to various societal benefit areas. The focus is on how GIS and spatial data can be used effectively to provide solutions for real issues, and to allow efficient communication with stakeholders.

### **Part of an HTHT package**

This module on GIS is the first part of the HTHT package GIS & Earth Observation, although it can be taken independently.

### **Target group**

The package is designed to meet the needs of students from both the technical and social sciences, as it provides an introduction to both the technological aspects of GIS, as well as the social aspects. We will introduce a broad diversity of topics, such as software, data formats, computation and visualization, as well as spatial decision making, societal impacts, and communication of spatial issues.

### **About ITC**

The Faculty of Geo-Information Science and Earth Observation (ITC) of the University of Twente provides international postgraduate education, research, and project services in the fields of geo-information science and earth observation using remote sensing and GIS. A

critical aim of ITC's activities is the international exchange of knowledge, focusing on capacity building and institutional development in developing countries and emerging economies.

### **MORE INFORMATION**

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[www.utwente.nl/minor](http://www.utwente.nl/minor)