# Exchange programme Vrije Universiteit Amsterdam

Vrije Universiteit Amsterdam - Exchange programme Vrije Universiteit Amsterdam - 2024-2025

Exchange

Vrije Universiteit Amsterdam offers many English-taught courses in a variety of subjects, ranging from arts & culture and social sciences, neurosciences and computer science, to economics and business administration.

The International Office is responsible for course approval and course registration for exchange students. For details about course registration, requirements, credits, semesters and so on, please visit the exchange programmes webpages.

# Geo Data

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| Course Code | AB_1086 |
| Credits | 6 |
| Period | P1 |
| Course Level | 300 |
| Language Of Tuition | English |
| Faculty | Faculty of Science |
| Course Coordinator | dr. E. Simao Da Graca Dias |
| Examiner | dr. E. Simao Da Graca Dias |
| Teaching Staff | dr. E. Simao Da Graca Dias |
| Teaching method(s) | Seminar, Computer lab, Written partial exam, Excursion |

## Course Objective

Geo Data (a.k.a. Geospatial data, spatial data or geographic information) is data referenced to a place recorded as a set of geographic coordinates). Everything happens somewhere and often taking into account the location of an event or phenomena is important in understanding it. We use Geographic Information systems to capture, manipulate, analyse and visualize data. In this course you will get an insight into the ways in which the geo data is obtained and learn in a structured way to assess the applicability of the geo data. You will use Open Data and Remote Sensing and assess, among other, its thematic and spatial quality. You will be able to identify the requirements of the geo data in order to solve a spatial problem. In addition, you will prepare your geo data so that it is suitable for the geographic analysis and visualization.

After completing this course, students should be able to:

- define and implement a systematic approach to a spatial problem as PPDAC cycle, this course focuses on Problem, Plan and Data.
- understand the relevant geographic data and techniques for sourcing data depending on the purpose of the question to answer.
- determine possible and appropriate data models based on characteristics of data, such as spatial unit and scale.
- understand the consequences of the choice of data, data models and pre-processing with respect to the (final) result.
- Apply techniques to collect and harvest data and transform it for analysis.

## Course Content

The topics are introduced and discussed in lectures in the morning. In the afternoon, we will apply the theory in practical assignments. The practical exercises can be used for the case study as an example and input.

The following topics are covered:

- Spatial data models;
- Data sources;
- Introduction to python (collecting data via APIs);
- Data preprocessing;
- Earth Observation using Remote Sensing;
- Data quality theory.

## Additional Information Teaching Methods

The topics are introduced and discussed in lectures in the morning. In the afternoon, we will apply the theory in practical exercises. The practical exercises can be used for the case study, as examples or direct input. The exercise are mandatory and graded with pass/fail.

## Method of Assessment

Your skills will be assessed via an exam with open and closed questions (weighting 40%) and 60% of the grade via

a case study (40% for the report of the case study and 10% for the poster and its presentation). The minimum score on each of the components (poster, case study report and exam) is 5.0.

## Entry Requirements

Basic knowledge of GIS is required. For example, you have followed a GIS introductory course or cartography course. If you have not followed any GIS courses previously, you can catch up by following online courses during the summer. Please contact the Minor coordinators for more info.

## Literature

Text book:
Longley, P. A., Goodchild, M. F., Maguire, D. J., & Rhind, D. W. (2015). Geographic information science and systems. John Wiley & Sons. ISBN: 978-1-118-67695-0

## Additional Information Target Audience

This course is part of the GIS minor (Nationale Geo-Information Minor) at the VU. You can only take this course in parallel with the Geographic Analysis and Visualization course.

## Custom Course Registration

Third year students of universities and applied universities in the Netherlands can apply. To register, please email Eduardo Dias (esss580@vu.nl) with a list of your grades and an explanation of your previous experience with GIS.

## Recommended background knowledge

Problem solving attitude (if it is not working, search for a solution independently), affinity with computers, basic statistics.