1. KentVision Code and title of the module

GEOG5004 Geographic Information Systems (GIS): Principles and Methods

## Division and School/Department or partner institution which will be responsible for management of the module

Division of Human and Social Sciences, School of Anthropology and Conservation

## The level of the module (Level 4, Level 5, Level 6 or Level 7)

Level 5

## The number of credits and the ECTS value which the module represents

15 credits (7.5 ECTS)

## Which term(s) the module is to be taught in (or other teaching pattern)

Autumn

## Prerequisite and co-requisite modules and/or any module restrictions

None

## The course(s) of study to which the module contributes

**Compulsory** to the following courses:

* BSc Wildlife Conservation
* BSc Human Geography (and associated programs)

**Optional** to the following courses:

* BA Environmental Social Sciences
* BSc Anthropology
* BSc Biological Anthropology (and associated programs)

Also available as an elective module

## The intended subject specific learning outcomes. On successfully completing the module students will be able to:

8.1 Demonstrate knowledge of the generic concepts of GIS and an understanding of the application of GIS and remote sensing in geography, environmental sciences, biodiversity conservation and other disciplines using real world examples

8.2 Apply knowledge of main concepts of GIS to solve practical problems in geography, environmental sciences, wildlife conservation and other disciplines

8.3 Understand the main principals underlying the analysis of spatial data and remote sensing data

8.4 Gain practical knowledge of the main GIS analytical techniques and how to use them to generate maps and analyse and describe spatial data

8.5 Understand GIS and remote sensing outcomes and write reports on GIS mapping and analysis.

## The intended generic learning outcomes. On successfully completing the module students will be able to:

9.1 Develop quantitative and IT skills in the context of the use of GIS software

9.2 Combine different methods and techniques to produce effective research designs and analysis

9.3 Communicate research findings effectively

9.4 Understand how to manage study/work time effectively

9.5 Improve report-writing and presentation skills

## A synopsis of the curriculum

The overall aim of this module is to provide students with an outline of the principals of Geographic Information Systems (GIS) and to introduce a range of methods for collection and analysis of spatial data. Particular attention is paid to the development of students’ analysis skills through the use of remote sensing techniques and Geographic Information Systems (GIS). GIS are increasingly being used in many disciplines, including geography, wildlife conservation, animal behaviour and environmental sciences to help solve a wide range of “real world” problems. As the current trend in these disciplines moves towards the acquisition manipulation and analysis of large datasets with explicit geographic reference, employers often report shortages of relevant GIS skills to handle spatial data. Thus, this module will introduce the use of GIS as a means of solving spatial problems and the potential of GIS and remote sensing techniques for geography, environmental sciences and wildlife conservation providing the student with marketable skills relevant to research and commercial needs. Topics will include:

* + - understanding the major concepts in GIS
    - introduction to remote sensing
    - data structures in GIS
    - data sources and methods of data acquisition
    - georeferencing, co-ordinate systems and projections
    - working with raster and vector data
    - mapping (how to create and transform maps)
    - overview of ArcGIS Pro
    - GIS operations
    - manipulation, spatial data query and analysis of a wide range of geographic, environmental and socio-economic information.

These topics will be taught using a combination of lectures and practicals. The practical classes will provide hands-on experience using a GIS software. Students will be able to use knowledge and skills acquired in this module in practical project work.

## Reading list

## The University is committed to ensuring that core reading materials are in accessible electronic format in line with the Kent Inclusive Practices.

## The most up to date reading list for each module can be found on the university's [reading list pages](https://kent.rl.talis.com/index.html).

## Contact Hours

Private Study: 126

Contact Hours: 24

Total: 150

## Assessment methods

13.1 Main assessment methods

* Practical Report 20% (400 words)
* Group Project 20%
* Individual Report 60% (900 words)

13.2 Reassessment methods

100% coursework (1,500 words)

## Map of module learning outcomes (sections 8 and 9) to learning and teaching methods and methods of assessment (section 13)

**Module learning outcomes against learning and teaching methods:**

| **Module learning outcome** | 8.1 | 8.2 | 8.3 | 8.4 | 8.5 | 9.1 | 9.2 | 9.3 | 9.4 | 9.5 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Private Study | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| Lectures | **x** | **x** | **x** |  | **x** |  | **x** |  |  | **x** |
| Practicals |  | **x** |  | **x** |  | **x** | **x** | **x** | **x** | **x** |

**Module learning outcomes against assessment methods:**

| **Module learning outcome** | 8.1 | 8.2 | 8.3 | 8.4 | 8.5 | 9.1 | 9.2 | 9.3 | 9.4 | 9.5 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Practical Report | **x** |  |  | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| Group Project | **x** | **x** | **x** | **x** | **x** |  |  | **x** | **x** | **x** |
| Individual Report | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |

## Inclusive module design

The Division recognises and has embedded the expectations of current equality legislation, by ensuring that the module is as accessible as possible by design. Additional alternative arrangements for students with Inclusive Learning Plans (ILPs)/declared disabilities will be made on an individual basis, in consultation with the relevant policies and support services.

The inclusive practices in the guidance (see Annex B Appendix A) have been considered in order to support all students in the following areas:

a) Accessible resources and curriculum

b) Learning, teaching and assessment methods

## Campus(es) or centre(s) where module will be delivered

Canterbury

## Internationalisation

The module will serve as a compulsory module to the BSc Human Geography and BSc Wildlife conservation programmes to enable students apply the skills of GIS mapping to physical landscapes and environments around the world. These skills are internationally transferable and so students will be equipped with the tools to conduct GIS mapping in whichever country they choose to work.

**DIVISIONAL USE ONLY**

**Module record – all revisions must be recorded in the grid and full details of the change retained in the appropriate committee records.**

| **Date approved** | **New/Major/Minor revision** | **Start date of delivery of (revised) version** | **Section revised (if applicable)** | **Impacts PLOs (Q6 & 7 cover sheet)** |
| --- | --- | --- | --- | --- |
| 20.01.22 | Minor | Autumn 2022 | 1, 8, 9, 10 | No |
|  |  |  |  |  |