Course Title: Spatial Analysis for Sustainable Urban Planning and Management

SYLLABUS

Description *This course introduces the students to key concepts of spatial analysis from the point of view of several problems of urban planning. These range from optimal site location to qualitative GIS. Parallel to the conceptual part, the course aims at building technical skills on the field GIS using the Open Source Software QGIS.*

Course objectives & structure

Learning Outcomes

At the end of the course, the student is expected to:

a) Explain what spatial analysis and spatial data are within the context of sustainable urban planning and management;
b) Translate variables and indicators into a spatial analysis workflow;
c) Use different GIS techniques and data types to assess urban planning problems

Student Workload

56 hours (2 ECTS) Note: one ECTS credit equals a workload of 28 hours

Task type	Total hours
Reading and panel discussion	18H
Practical exercises	38H
Total	**100%**

Course Structure *[frequency, duration, format, etc.]*

Prerequisites

Prior to admission, students should:

a) Have a bachelor degree, preferably on related fields like geography, urban planning or architecture;
b) The student can be exempted of the previous if relevant professional experience is demonstrated;
c) Good command of English (at least C1 level);
d) Some knowledge of GIS is advisable, but it is not mandatory.

Assignments

Reading assignments and panel discussion (6x)

Practical GIS exercises (7x)

Grading *[assessment criteria and their weight]*

Stages & details	evaluation weights (%)
1. Panel discussion on the reading exercises (5% * 6)	30%
3. Deliver the final output of the GIS exercises (10%*7)	70%
Total	**100%**

Course evaluation

Evaluation forms and oral feedback at the end of the course

Session planning

The mandatory readings are chapters **7, 10, 13, 15, 18** and **19** of the book **GIS in Sustainable Urban Planning and Management.**

The mandatory exercises are the exercises that accompany those chapters. Both the chapters and the exercises are available at https://www.itc.nl/urbangis/

In addition to the above, the course also covers a final GIS exercise entitled **Multicriteria Analysis to Identify the best locations for constructing photovoltaic centrals in Addis Ababa.**

The practical part of the course is based on the Open Source Software QGIS, so it might be handy to keep the software documentation at hand: https://docs.qgis.org/3.10/en/docs/user_manual/

Session 1

Activity	Hours
Reading and panel discussion (chapter 7)	3H
Practical GIS exercise (chapter 7)	2H
Total	**5H**

Session 2

Activity	Hours
Reading and panel discussion (chapter 10)	3H
Practical GIS exercise (chapter 10)	2H
Total	**5H**

Session 3

Activity	Hours
Reading and panel discussion (chapter 13)	3H
Practical GIS exercise (chapter 13)	2H
Total	**5H**

Session 4

Activity	Hours
Reading and panel discussion (chapter 15)	3H
Practical GIS exercise (chapter 15)	2H
Total	**5H**

Session 5

Activity	Hours
Practical GIS exercise (chapter 15)	2H
Reading and panel discussion (chapter 18)	3H
Total	**5H**

Session 6

Activity	Hours
Practical GIS exercise (chapter 18)	2H
Reading and panel discussion (chapter 19)	3H
Total	**5H**

Session 7

Activity	Hours
Practical GIS exercise (chapter 19)	5H
Total	**5H**

Session 8

Activity	Hours
Practical GIS exercise (chapter 19)	2H
Practical GIS exercise (Multicriteria Analysis to Identify the best locations for constructing photovoltaic centrals in Addis Ababa)	6H
Total	**8H**

Session 9

Activity	Hours

Practical GIS exercise (Multicriteria Analysis to Identify the best locations for constructing photovoltaic centrals in Addis Ababa)	5H
Total	**5H**

Session 10

Activity	Hours
Practical GIS exercise (Multicriteria Analysis to Identify the best locations for constructing photovoltaic centrals in Addis Ababa)	4H
Final review of exercises and course wrap up	4H
Total	**8H**