



GÖTEBORGS UNIVERSITET

## Automate your GIS - Scripting in Python, 5 credits (hp)

### Preparing yourself for the course I – Software and computer resources

The main GIS software used in the course will be **QGIS** (version 3.22). This is an open source software and can be downloaded from [www.qgis.org](http://www.qgis.org). You can follow the instructions from our webpage to set up your system (Windows) correctly: [https://umep-docs.readthedocs.io/en/latest/Getting\\_Started.html](https://umep-docs.readthedocs.io/en/latest/Getting_Started.html). There are also videos from our YouTube-channel available for you to follow regarding installation and configuration: <https://www.youtube.com/watch?v=b9FwI0GyAGQ> and <https://www.youtube.com/watch?v=R3QQQt7zWU&t=1s>

The preferred Python IDE (Integrated Development Environment) used during the course is **VSCode** (<https://code.visualstudio.com/>). Configuration of this software will be explained in the beginning of the course. IMPORTANT: We will make use of **Windows OS** and especially iOS (Mac) is NOT recommended.

ESRI products will also briefly be used in the course so if possible, make sure to have **ArcGIS Pro** installed on your computer.

### Preparing yourself for the course II – prior knowledge

The course is designed so it is possible to participate without any previous completed courses in Python programming. However, if you have no prior knowledge in the subject it is strongly recommended to prepare by yourself by completing the tasks below.

#### 1. GIS competence

The course will mainly be using QGIS ([www.qgis.org](http://www.qgis.org)). Have a look at the official QGIS training manual before the course, make sure you master basic (green), and intermediate (yellow) categories in the QGIS training manual (Chapter 1-12 in [QGIS Training manual](#)).

#### 2. Programming competence

The course will be using Python 3.X programming language. There are many good online resources for learning the basics e.g.:

- <https://docs.python.org/3.8/tutorial/index.html>
- <https://geo-python-site.readthedocs.io/en/latest/> (seems to be a very good online open course)

#### 3. Recommended reading

If you are new to GIS we recommend you to go through one of the text books below to get familiar with the basic concepts of GIS.

- Heywood I, Cornelius S, Carver S 2011. An Introduction to Geographical Information Systems. *Pearson Education Limited*.
- Harrie L. (ed.) 2021. Geografisk Informationsbehandling. *Formas* (in Swedish)