

## **Tárgy neve: Spatial process model building**

Tárgyfelelős neve: Dr. Gede Mátyás

Tárgyfelelős tudományos fokozata: habil. PhD

Tárgyfelelős MAB szerinti akkreditációs státusza: AT

### **Objectives:**

- o Knowledge of the main contexts and laws of the field of geoinformatics, and of the simple IT procedures applied to them.
- o Knowledge of the concepts and terminology of geoinformatics in his/her mother tongue

### **Ability to:**

- o Ability to produce and professionally use a variety of spatial databases
- o Ability to perform **complex** analyses and to publish the results in an understandable way
- o Understand the processes and scientific (**geoinformatic**) problems that can be investigated and then test them using appropriate methods accepted in scientific practice.
- o Ability to map and visualise data in geospatial information systems, organise spatial and relational data into databases, operate databases, perform spatial analysis, and perform simple analyses using statistical methods and geoscientific tools.
- o Ability to carry out subtasks of research projects.

### **Attitude:**

- o Checks and realistically evaluates the results of his/her own work.
- o Open to professional exchange.
- o Open to continuing education in science and non-science.
- o Committed to learning new competences, to expanding his/her worldview and knowledge of his/her field.
- o Open to new perspectives in science and technology, and to open communication and exchange of ideas.

### **Autonomy and responsibility:**

- o Ability to think independently about basic professional questions and to answer them on the basis of given sources.
- o Assumes responsibility for a scientific worldview.
- o Collaborate responsibly with professionals in science and in other disciplines.
- o Consciously embrace ethical standards of the profession.

### **Content of education [concise description of the knowledge to be acquired]:**

During the course, students are introduced to FME software (Feature Manipulation Engine) that is able to create complex workflows of geospatial processes, visualize and reproduce results of geospatial analyses. By the end of the course, students are familiar with and proficient in the use of the listed file formats (shp, csv, laz, proj) and certain geoprocessing procedures (trimming, merging, linking). The aim of the course is to enable students to see not only subtasks when developing a project, but to be able to see the whole process with its spatial and theoretical context. The course requires a complex use of data manipulation in Qgis and in ArcGIS, and also database management in SQL language.

### **Examination and assessment scheme: practical mark based on course work**

Independent completion of a semester assignment based on given parameters, including: database construction, data collection, relational database design, use of transformers, data acquisition and interpolation.

## Literature

### Obligatory:

- <https://engage.safe.com/training/recorded/fme-desktop-basic-2022-1/>
- <https://s3.amazonaws.com/gitbook/Desktop-Intro-2020/Desktop-Intro-2020.pdf>

### Recommended:

- Roger Tomlinson: Thinking about GIS. ESRI Press, Redlands, USA, 2007
- <https://desktop.arcgis.com>