

Surveying and Topography P

Purpose of education

a) knowledge

- know the types of geodetic measurements, the most commonly used methods and instruments;
- knowledge of the technical content of spatial data obtained by modern geodetic methods, their applicability in the process of creating map databases.
- knowledge of the structure and content of topographic maps and map databases;
- knowledge of the tools and processes of topographic survey and database construction;
- is familiar with the Hungarian state topographic map databases and the possibilities of using state data.

b) abilities

- is able to select the most appropriate geodetic data acquisition method for the given task, based on the technical accuracy requirements of the task;
- be able to evaluate the technical content of spatial data generated by geodetic methods and their incorporation into map databases, and to use spatial data obtained by geodetic methods.
- be able to select the most appropriate state topographic mapping data for the task in hand, depending on the complexity of the task;
- be able to participate in the production of topographic maps and map databases.

c) attitude

- Familiarisation with geodetic survey methods and tools, data acquisition technologies and the acquisition of a map database approach will help to develop the right attitude towards professional cooperation with professionals working with public cartographic data in related fields.
- Open and committed to critical feedback and evaluation based on self-reflection. Adopts and enforces with co-workers ethical principles of work and organizational culture, with particular attention to the copyright environment related to cartography and geoinformatics.
- It is committed to meeting and enforcing quality standards (accuracy, commitment).

d) autonomy and responsibility

- Able to work independently in IT, carrying out tasks, thinking through and developing technical issues in a self-directed manner and at a pace.
- Responsible for meeting and enforcing deadlines. Assumes responsibility for his/her own work and that of his/her colleagues working under his/her direction and with him/her (in a project).
- In the case of mission-critical mapping and geoinformatics systems, may be given development and operational responsibility appropriate with his/her professional competences.

Content of education:

- planning and execution of field measurements and data collection
- objective and subjective sources of danger, emergency management
- map reading, use of maps, orienteering on field
- theory and practice of GNSS
- sub-metre and sub-mm level satellite-based positioning
- errors in field measurements and how to eliminate/reduce them
- mapping of sampling locations and GI data collection
- how to navigate on field
- UAV/drones in fieldwork
- mobile mapping equipment and solutions

Evaluation system: practical mark based on course work

Literature:

Obligatory:

- Csepregi Szabolcs–Gyenes Róbert–Tarsoly Péter: GEODÉZIA I. NyME, Székesfehérvár, 2013 (digitális jegyzet)
- Dr. Tarsoly Péter: GEODÉZIA II. NyME, Székesfehérvár, 2013 (digitális jegyzet)
- Mélykúti Gábor: Topográfia, NyME, Geoinformatikai Kar 2010, digitális jegyzet

- Mélykúti Gábor: Topográfiai adatbázisok, BMEE OFTASJ3 segédlet a BME Építőmérnöki Kar hallgatói részére, BME 2007. digitális jegyzet
- 2/2014. (I. 10.) VM rendelet az állami topográfiai térképi adatbázisról
- 15/2013. (III. 11.) VM rendelet a térképészetért felelős miniszter felelősségi körébe tartozó állami alapadatok és térképi adatbázisok vonatkoztatási és vetületi rendszeréről, alapadat-tartalmáról, létrehozásának, felújításának, kezelésének és fenntartásának módjáról, és az állami átvétel rendjéről
- 39/2014. (XII. 18.) FM rendelet az állami alapadatok adatbázisainak selejtezési és archiválási rendjéről, valamint a földügyi és távérzékelési levéltárról

Recommended:

- Bácsatyai László: Geodézia erdő és környezetmérnököknek, Geomatika Közlemények VI. MTA GGKI, Sopron, 2002
- Kállai Attila: Topográfia (Egyetemi jegyzet) 1999. Zrínyi Miklós Nemzetvédelmi Egyetem, pp. 243