UNIVERSITY NORTH, UNIVERSITY CENTRE VARAŽDIN, DEPARTMENT OF GEODESY AND GEOMATICS

Undergraduate study program in geodesy and geomatics (Bachelor program)

1st year **Instruments and sensors in Geodesy and Geomatics**

- recognize the types and methods of instruments - sensors used in geodesy and geomatics
- carry out the collection and processing of geospatial data
- choose a measurement method depending on the tasks and needs
- implement instruments in geomatics business processes

1st year **Geospatial data and geoinformation**

- explain the geoinformation domain and describe its content, and the difference between geospatial data and geoinformation
- explain the differences between fields and objects
- distinguish geometric objects and basic types of spatial relationships
- explain the representation of geospatial data with mosaics
- explain the elements of geospatial data quality

2nd year **Geoinformation Systems (GIS)**

- identify the necessary geospatial data and reliability for further application
- describe the application domains and types of GIS
- interpret the differences in technological platforms for GIS
- identify data collection methods for GIS
- explain how the basic GIS functionality works for vector data and raster data

3rd year **Selected chapters of Physical geodesy**

- recognize physical parameters
- interpret the Earth's gravity field
- demonstrate methods of gravimetric measurements
- perform processing and equalization of gravimetric measurements
- illustrate the application of gravimetry in engineering sciences

3rd year **Geoinformation Infrastructure**

- explain the geoinformation infrastructure and its parts
- recognize the levels of spatial data infrastructure
- describe and search spatial data and services
- distinguish and use geoinformation services
- monitor and adopt new technologies (artificial intelligence)

3rd year **Space visualization**

- recognize the basic concepts of maps and cartography
- explain the mathematical principles of cartography
- describe the principles of symbolization of geometric objects
- interpret methods and techniques for visualizing position, thematic attributes, and time
- perform visualization of geospatial data using SLD