

**SCHOOL OF ENGINEERING (SOE)**

**DEPARTMENT OF CIVIL, ENVIRONMENTAL AND GEOMATICS  
ENGINEERING**

**BSc DEGREE PROGRAMME IN SURVEYING AND GEOMATIC  
ENGINEERING**

**PROGRAMME LEARNING OUTCOMES**

**A. Knowledge and Understanding**

At the end of the 4 year programme students should be able to demonstrate knowledge and understanding of:

- A i. Computer skills for desirable computer literacy and competence in handling further modules, assignments and tasks in Surveying and Geomatics
- A ii. Analytical, technical report writing and presentation skills
- A iii. Geodesy and Geodynamics
  - Geometry of the earth, gravity, dynamics of solid earth. Earth movements monitoring systems
- A iv. Topometry and measurement systems
  - Basic principles and concepts in surveying measurements and surveying measurement instruments
  - Topographical, engineering, hydrographic and cadastral surveying
- A v. Positioning and Navigation
  - Concepts and applications of Global Navigation Satellite Systems (GNSS); GPS, GLONASS, GALILEO
- A vi. GeoInformatics and Visualizations
  - Concepts and applications of GIS, and Remote Sensing Technologies, web based mapping, cartography, Photogrammetry, 3D mapping, Spatial Data Infrastructures
- A vii. Land Management and Infrastructure Management

- Land Information Systems, Land Law, application of Information technology in facility management
- A viii. Application areas of Surveying and Geomatic Engineering in socio-economic development and environmental management

**B. Cognitive/Intellectual Skills/ Applications of knowledge**

At the end of the programme students should be able

- B i. Carry out surveying measurements and leveling practical assignments
- B ii. Produce cross- section and longitudinal profiles in engineering surveys
- B iii. Carry out angular observations, bookings and reductions
- B iv. Carry mapping using Remote sensing and photogrammetric technologies
- B v. Produce site plans, maps using CAD and GIS software in the market
- B vi. Professional practice and work ethics

**C. Communication/ICT/Numeracy/Analytic Techniques/ Practical Skills**

At the end of the programme students should be able to:

- C i. Appreciate ICT application in Surveying and Geomatic Engineering
- C ii. Use grammatical skills to communicate and convey information, concepts, ideas, and facts in surveying
- C iii. Apply some of numerical/mathematical and graphical skills in relevant tasks in surveying

**D. General transferable skills**

At the end of the programme students should be able to:

- D i. Work with little or no supervision.
- D ii. Work with others to achieve defined objectives
- D iii. Take responsibility for their own work.
- D iv. Take a leadership role in group work.