

PROJECT II

ENGE 461

Credits: 4

Year: IV

Part: II

Course Objective:

The objective of Project II is to enable students to complete a comprehensive geomatics engineering project by applying surveying, GIS, remote sensing, photogrammetry, cartography, geospatial data science, web mapping, land administration, and related technologies to real-world problems. Students will develop skills in data processing, spatial analysis, model development, application implementation, validation, technical reporting, and professional presentation of project outcomes.

Project Requirements

Building upon the work completed in Project I, students will complete the following tasks according to the nature of their project.

1 Design and Application-Type Project

- 1.1 Data processing and quality assessment
- 1.2 Geospatial database development and management
- 1.3 Spatial analysis and model implementation
- 1.4 Development of GIS, Web GIS, mobile GIS, BIM-GIS integration, decision support tools, or geospatial applications
- 1.5 Preparation of thematic maps, visualizations, dashboards, and outputs
- 1.6 Validation and performance evaluation of the developed system
- 1.7 Technical documentation and user guidelines
- 1.8 Conclusions, recommendations, references, and appendices

2 Dissertation-Type Project

- 2.1 Data processing and preparation
- 2.2 Development of analytical framework or model
- 2.3 Spatial, statistical, or geospatial analysis
- 2.4 Results and validation
- 2.5 Comparative analysis with existing studies or datasets
- 2.6 Discussion of findings
- 2.7 Conclusions and scope for further research
- 2.8 References

3 Experimental-Type Project

- 3.1 Instrument calibration, testing, or experimental execution
- 3.2 Data acquisition and processing
- 3.3 Accuracy assessment and error analysis
- 3.4 Statistical analysis and performance evaluation

- 3.5 Comparison with standard methods or benchmarks
- 3.6 Interpretation and discussion of results
- 3.7 Practical applications and recommendations
- 3.8 References, appendices, and photographic documentation

Activities and Timeline

1. Continuation of Project I

The project group will continue the work initiated in Project I under the guidance of the assigned supervisor. The project will focus on completing data acquisition, processing, analysis, model development, validation, interpretation, and reporting activities identified during Project I.

As students may be engaged in internship activities during the semester, project coordination and supervision may be conducted through both physical and online meetings. Students are encouraged to maintain regular communication with team members and supervisors throughout the project period.

2. Start of Project II

Students shall independently execute the proposed methodology, process and analyze data, develop models or applications, evaluate results, and prepare project deliverables. Supervisors shall provide technical guidance and monitor project progress.

3. Mid-term Progress Presentation

A mid-term presentation will be conducted approximately 4 weeks before the end of the semester. Each group will present project progress, preliminary results, challenges encountered, and future work plans. The presentation, technical contribution, and viva voce will be evaluated by the supervisor and carry 50 marks.

4. Draft Report Submission and Presentation to Supervisor

Students will prepare a consolidated draft report incorporating the work completed in both Project I and Project II. The draft report shall be submitted to the supervisor for review and comments before final submission.

5. Final Report Submission to Department

After incorporating comments and corrections, the final project report shall be submitted to the Department following the prescribed departmental formatting guidelines.

6. Final Evaluation by Supervisor

The supervisor will evaluate the project based on technical quality, innovation, methodology, data analysis, project outcomes, report quality, presentation, viva voce performance, and individual contribution of each student. The supervisor's evaluation will carry 50 marks.

7. Final Examination

The final examination will be conducted by an external examiner or an evaluation committee during the last week of the semester. Students will deliver an oral presentation and defend their project through a viva voce examination. The final examination will carry 50 marks.