Ilia State University
Faculty of Business, Technology and Education
Bachelor Program: Computer Science (Major)
Curriculum

Faculty	**Faculty of Business, Technology and Education**
Program Title	**Civil Engineering (Major)**
Awarded Academic Degree/Qualification	**The Degree of Bachelor of Civil Engineering**
Program Duration/ECTS Credits	**For local accreditation:** **8 Semesters, 252 ECTS** (1 ECTS: 25 hours) ● Free-elective Component: General Module – 76 ECTS; ● Major - 176 ECTS (including 36 ECTS electives). **For International (ABET) Accreditation:** 8 Semesters, 252 ECTS (1 ECTS- 25 hours): ● General Education - 44 ECTS; ● Maths, Physics and Chemistry - 66 ECTS (including 8ECTS electives); ● Major program -142 ECTS.
Language of Instruction	**English**
Head of the Program	**Vakhtang Jgamaia, Associate Professor**
The Date of Program development and Update	**The program is developed in 2019 and updated in 2026, program can be subject to periodic revision for continuous improvement.**

Admission Requirements to the Program

Georgian citizens must pass the Unified National Exams. Admission for the program requires minimal competence levels in the following Unified National Exams:

- English Language - 60% + 1;
- Georgian Language determined by National Assessment and Examinations Center;
- Mathematics - 35% + 1 or Physics - 35%+1.

International applicants should follow the rules and terms defined by the Ministry of Education, Science, Culture and Sports of Georgia (http://www.mes.gov.ge/content.php?id=1131&lang=geo) according to the order №224/N (December 29, 2011). The Applicant should prove English language qualification equivalent to CEFR level B2 or higher. To prove the English qualification, the applicant must submit one of the following:

a) an official international language certificate (the main certificates and minimum scores accepted are given below*);

b) an English Proficiency Statement from the university, high school or college, confirming that English was the language of instruction;

c) a certificate issued by a local or international English language instruction provider (e.g. language school), confirming the acquisition of B2 level as a result of a language course the applicant attended.

d) Or apply and take University's institutional paper-based or online language test aligned with CEFR level B2.

Note: The English language requirement may be waived if the applicant is a native of or graduated from an English medium high school/university in countries, the official language of which is English.

*** The following are the minimum English test scores for admission: TOEFL**

- paper-based PBT 513
- internet-based iBT 65
- computer-based CBT 183

IELTS

Academic (Band 5.5)

Cambridge ESOL (English for Speakers of Other Languages)

- Certificate of Advanced English CAE: 160/Level B2 (also grades A/B/C)
- First Certificate in English FCE: 160/Grade C (also grades A/B)
- Business English Certificate (Higher) BEC: 45/Level B2 (also grades A/B/C)
- Business English Certificate (Vantage) BEC: 60/Grade C (also grades A/B)
- Business Language Testing Service BULATS: 60 overall
- PTE (General level 3)
- PTE Academic (59-75 points)

TELC (The European Language Certificates)

TELC English B2: Pass

Michigan (Cambridge Michigan)

- Examination for the Certificate of Proficiency in English ECPE: Low Pass
- Examination for the Certificate of Competency in English ECCE: Pass
- MELAB: B2

International Students shall undergo a paper or online-based entry test in Mathematics or Physics - Entry-Level Test 35% + 1 . The test will be administered by the University to a similar level as required by Georgian students.

Program Objectives

Mission of the Program:

The mission of the Civil Engineering at Ilia State University is to prepare our students for careers in their chosen area of specialisation. As such, the program aims to provide quality instruction, advisory services and student support to ensure students achieve their goals and gain the knowledge and experience required to succeed in the demanding field of civil engineering.

The Program Educational Objectives of the Civil Engineering program are closely aligned with Ilia University's mission of advancing science to the benefit of society locally and internationally. This is especially true in a people serving profession such as civil engineering which is entirely focused on bettering the standard of living of society at large. With an internationalised focus and teaching in English language with the aim to involve both local and international students in the program, we hope for a high level of internationalisation and future cooperation between the graduates across borders.

This program focuses on the delivery of interdisciplinary courses to create well rounded holistic thinkers, problem solvers and future leaders in the civil engineering fields of water, transport, structural and geotechnical engineering. To complement the interdisciplinary learning promoted by this program, students will have the ability to take business administration courses to acquire managerial skills that are instrumental to a successful professional career.

Within the programme, fundamental courses in maths, physics, chemistry and additional natural science electives build to later courses in engineering design. The program is structured to ensure adequate incremental practical and theoretical knowledge in the field of Civil Engineering. Programme graduates will be competitive professionals in Georgia or abroad in areas of project and engineering design and management. They will also be able to continue their education at the master level of studies.

In addition, the programme is oriented towards the development of transferable skills such as effective oral and written communication in at least one other non-native speaking language so as to develop multicultural awareness. We expect that our graduates will use these skills in whichever sector they consider advancing their careers, whether it be in the private, government or educational sector.

Program Educational Objectives:

Graduates of the Ilia University Civil Engineering Program will meet the following Program Educational Objectives:

PEO 1: Graduates apply fundamental and advanced civil engineering knowledge to analyze, design, and manage engineering projects in accordance with national and international standards.

PEO 2: Graduates establish professional practice as civil engineers in national or international settings or pursue advanced graduate studies, demonstrating continuous professional development and adaptability to evolving industry needs.

PEO 3: Graduates perform effectively as practicing civil engineers in industry or public agencies, demonstrating professional responsibility, effective communication, and the ability to work independently and in multidisciplinary teams.

Learning Outcomes and Competencies

The following Learning Outcomes will be assessed for each student:

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics;
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors;
3. An ability to communicate effectively with a range of audiences;
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts;
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives;
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions;
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Teaching Methods

- Lectures and Seminars/Written and verbal method;
- Laboratory Work;
- Practical Work;
- Project Work Individually and in Teams.

Note: Specific teaching methods are identified for each individual program component and are listed in relevant syllabi.

Program Structure

All students enrolled in the Bachelor's Program are required to complete **256 ECTS credits** in order to be awarded a **Bachelor's degree in Civil Engineering**.

The standard duration of the program is **8 semesters**, comprising **252 ECTS credits** (**1 ECTS = 25 hours**).

- **Free Component: General Module – 76 ECTS credits;**
- **Major Field of Study – 176 ECTS credits**
  (including **36 ECTS credits from elective courses**)

For International (ABET) Accreditation:

8 Semesters, 252 ECTS (1 ECTS- 25 hours):

- General Education - 44 ECTS;
- Maths, Physics and Chemistry - 66 ECTS (including 8 ECTS Electives)
- Major program -142 ECTS.

Capstone Design Project:

During the last semester of study, students must participate in a Senior Capstone Design Project (6 ECTS). The main purpose of the design experience is to prepare students for the real-world challenges in the field of Civil Engineering by exposing them to industry and allowing them to use their developed problem-solving skills to find engineering design solutions to industry problems. The students will also develop their managerial skills through planning, design and meeting deadlines together with industry participation. Finally, students will improve their communication, presentation and teamwork skills during these practical components of the programme.

Senior-design teams will generally consist of 3 to 6 students under the direction of a faculty mentor/supervisor and with an agreed industry sponsor that will be involved in the forerunning semester for collaboration with the students in the Project Concept Development phase and in the final semester as Project Reviewer. Even though students will be working in groups, each student will need to submit an individual activity report showing which tasks they have were assigned by the group and agreed by the Faculty advisor and how they have managed to complete their individual tasks. All group members will also evaluate each other anonymously as to each group members active involvement, availability and ability to meet team set deadlines.

Student Evaluation

Student assessment should be based on a 100-point grading scale:

(A) Excellent – 91–100 points;

(B) Very Good – 81–90 points;

(C) Good – 71–80 points;

(D) Satisfactory – 61–70 points;

(E) Sufficient – 51–60 points;

(FX) Fail – 41–50 points, which means the student requires additional work and is granted one opportunity to retake the exam through independent study;

(F) Fail – 40 points and less than the maximum of grades, meaning the student's effort is not enough and he has to learn the subject anew.

Note: *The detailed assessment components and criteria are described in more detail in the respective syllabus of each course of the program.*

Employment Opportunities

Graduated students can be employed in a variety of organizations related to planning, design, construction, management, maintenance, repair and renewal of infrastructure components such as building, transportation, energy and water systems. The employment scope can include:

- Construction management and engineering design of houses and industrial buildings;
- Transportation construction and asset management of roads and railways with associated tunnels and bridges, Traffic analysis and transportation planning;
- Water supply, sewerage, wastewater treatment and reservoirs design and construction;
- Inspection and assessment of existing buildings and strengthening of them;
- Public Enterprises such as Municipalities, and government owned infrastructure companies;

- Diagnostics and repair of a wide range of engineering equipment (household, medical, military, etc.);
- Renewable energy systems design and construction management.

Necessary Auxiliary Conditions /Resources For Learning

The faculty has the **material resources** that are used in teaching and technical preparation:

- Auditoriums for lecture;
- Civil Engineering teaching laboratories;
- Computer classes;
- University Library;
- Electronic platform of the University – Argus;
- Teaching and Learning Staff Development Center.

Partner organizations, supporting development and implementation of the program:

- San Diego State University Georgia;
- PROGRESI Ltd. (Engineering Center of Computer Aided Design);
- Caucasus Road Project Ltd. (Road Construction Company);
- Saunders Group Ltd Infrastructure Consultants;
- Cubicon LTD Structural Engineering Design;
- ILF Consulting Engineers;
- EPTISA Consulting Engineers;