REPUBLIC OF UZBEKISTAN

MINISTRY OF HIGHER EDUCATION, SCIENCE AND INNOVATIONS

FERGANA STATE TECHNICAL UNIVERSITY

Introduction to civil engineering

MODULE HANDBOOK

Field of knowledge:	700000	- Engineering, manufacturing and construction
Field of education:	730 000	- Architecture and construction
Education program (Major):	60730300	- Civil engineering

Fergana 2025

Module title	Introduction to civil engineering
Code (if available)	ICET34
Semester(s) of module teaching	3
Responsible for the module	*Gulomov Dilmuhammad Gayratjon ugli - Assistant lecturer, department of civil engineering*
Language of instruction	*Uzbek*
Connection to the curriculum	*Elective*
Teaching methods	*Lectures, practical classes, assessments, and independent study*
Study load (including classroom and independent study hours)	*Total hours: 120* *Auditorium hours: 48* *Lectures – 16 hours* *Practical classes – 32 hours* *Independent study: 72 hours*
Credit units	*4 ECTS*
Required and recommended prior knowledge for studying the module	*Technical drawing, architecture*
Module objectives/intended learning outcomes	**Module Objective:** The aim of this module is to provide students with in-depth and systematic knowledge of the construction industry, its components, fundamental concepts, and the essence of the engineering profession. Through this course, students will become acquainted with the theoretical foundations, practical aspects, development stages, and modern trends of civil engineering. Furthermore, the course is designed to foster essential professional skills required for future engineers, including technical thinking, engineering ethics, a sense of integrity, precision, responsibility, teamwork, problem-solving, and decision-making abilities. Within the scope of the course, students will gain a general understanding of construction materials, types of structures, basics of design, construction technologies, and management systems. The course also aims to increase students' interest in the field, prepare them for initial research activities, promote self-development, support career orientation, and cultivate competitiveness in the labor market. Upon successful completion of the module**, students** should be able to: – Understand the field of civil engineering, its origins, and historical stages of development; – Explain the role of construction in the national economy and its socio-economic significance; – Describe the main materials used in construction (cement, concrete, reinforcement, bricks, etc.); – Identify modern construction technologies and techniques; – Provide information about the main types of construction equipment and machinery and their application; – Understand the professional functions, duties, and societal role of a civil engineer;

	– Learn engineering ethics, professional responsibility, integrity, and relevant legal norms; – Understand the stages of structure design and the components of project documentation; – Explain the processes and technological sequences involved in construction activities; – Classify structures and understand structural types (monolithic, prefabricated, frame structures, etc.); – Recognize the importance of geodesy, geology, and climatic conditions in construction; – Study safety regulations, labor protection, and environmental safety in construction; – Acquire skills to work with construction standards and codes (SNIP, GOST, KMK, etc.); – Understand the role of quality control and technical supervision in construction processes; – Become familiar with modern construction-related software (AutoCAD, Revit, LIRA-SAPR, etc.); – Develop teamwork, leadership, coordination, and communication skills; – Form the ability to identify and solve problems using engineering approaches; – Cultivate creativity, innovative thinking, and openness to technological advancements; – Strengthen interdisciplinary connections of civil engineering with mathematics, physics, and mechanics; – Foster a spirit of self-improvement, self-assessment, and pursuit of professional growth; – Gain initial research competencies, including topic selection, data searching, and analytical skills.
Content	**Module 1. Civil engineering** The emergence of Civil engineering as an academic discipline and its significance; The role and functions of the construction industry in the national economy. **Module 2. Construction structures** Types of construction structures and their structural characteristics; Construction materials: types, properties, and applications. **Module 3. Construction technologies** Construction technologies and modern construction methods. **Module 4. Technical safety and labor protection** Fundamentals of technical safety and labor protection in construction; Professional ethics and legal responsibility of civil engineers. **Module 5. Fundamentals of design** Construction documentation and its components. **Module 6. Information technologies in construction** The role of information technologies in construction (AutoCAD, BIM, Revit).
Forms of assessment	Oral exams, presentations, written assignments, practical tasks, and final examinations.
Requirements for study and assessment	To successfully complete the module, the student must attend classes and obtain the minimum required scores in current, midterm and final assessments.
Bibliography	1. Nabiyev M. Architecture of civil and industrial buildings. study

	guide. Fergana: "Classik", 2020. 184 pages. 2. N.J. Tuychiyev. Structures of buildings and constructions. Textbook. “Waris publishing house” LLC, 2010. 240 pages. 3. Vakhitov M.M., Sh.R. Mirzayev. Architecture I, II, III parts. Textbook. “Tafakkur” Publishing house, Tashkent, 2010. 255 pages. 4. G.A. Hakimov. Architecture (Architecture of civil buildings). Study guide. Tashkent, 2021. 266 pages. 5. Y.M. Makhkamov, J.D. Akhmedov. Architectural structures. Textbook. Fergana, 2021. 242 pages. 6. M.M. Miralimov, S. Sayfiddinov. Architecture of buildings and constructions. Tashkent, 2024. 7. S. Sayfiddinov. Architecture of industrial and civil buildings. Textbook. Tashkent, 2024. 8. Ching, Francis D.K. Building construction illustrated. Hoboken, New Jersey: Wiley, 2014. 9. Goncharova N.I., Abobakirova Z.A., Davlyatov Sh.M. Architecture of buildings and constructions. Textbook. Fergana, 2019. 10. M.M. Miralimov. Architecture of industrial buildings. Tashkent, 2019. 11. M.M. Miralimov. Architecture of industrial and civil buildings. Study guide. Tashkent, 2018. 12. SHNQ 2.08.01-19 "Residential buildings", Tashkent, 2019. 13. SHNQ 2.03.10-19 "Roofs and roofing", Tashkent, 2019. 14. QMQ 2.01.03-19 "Construction in seismic zones", Tashkent, 2019. 15. QMQ 2.01.05-19 "Natural and artificial lighting", Tashkent, 2019.
Reviewers	M. Nabiyev – Associate professor, department of civil engineering, Fergana state technical university; O. J. Rakhmonov – Head of the department for construction testing laboratory and technical assessment of buildings and structures, territorial inspection for supervision in the field of construction and housing and communal services of Fergana region.