REPUBLIC OF UZBEKISTAN

MINISTRY OF HIGHER EDUCATION, SCIENCE AND INNOVATIONS

FERGANA STATE TECHNICAL UNIVERSITY

Construction mechanics

SCIENCE PROGRAM

Field of Knowledge :	700000	- Engineering, construction and construction industries
Field of education:	730,000	- Architecture and construction
Education program:	60730300	- Civil Engineering

Fergana 2025

Module title	***Construction mechanics***
Code (if available)	*CM1M56, CM2M66*
Semester(s) of module teaching	*5.6*
Responsible for the module	*Dusmatov Abdurakhim , Construction engineering Department , Associate Professor , Akhmedov Akhadjian Ormonjonovich , Construction engineering Department PhD, Senior teacher , Solijonov Foziljan Sadiqjon son , Construction engineering , assistant*
Language of instruction	*Uzbek , Russian*
Connection to the curriculum	*Mandatory*
Teaching methods	*lecture , practical training , independent education .*
Study load (including classroom and independent study hours)	*Total hours : 360 hours* *Auditorium Hours : 144 hours* *lecture – 60 clock , practical training – 84 hours , independent 216 hours of education .*
Credit units	*12*
Required and recommended prior knowledge for studying the module	*Theoretical Mechanics , Materials resistance*
Module objectives/intended learning outcomes	***The purpose of the module:*** *to teach students methods for determining stresses and deformations in structural elements and structures, as well as methods for calculating these structures for strength, stiffness, and stiffness.* *To achieve this goal, undergraduates are provided with theoretical knowledge, practical skills, a methodological approach to practical work and processes, and the formation of a scientific worldview.* *The task of science is to help its students:* *- practical calculations of building structures are performed and the necessary dimensions are determined;* *- in science, along with analytical calculation methods, study the results of experiments obtained in laboratory and natural conditions;* *- science is one of the most complex subjects studied in higher technical educational institutions, the process of conducting classes in this course necessarily involves the development of a synopsis and solving problems. To achieve this goal, science performs the tasks of providing students with theoretical knowledge, practical skills, the history of architecture, architectural achievements, a methodological approach to architectural processes, and the formation of a scientific worldview*
Content	***Module 1. Static clear systems*** *Construction mechanics science essence and methods , briefly development history and other sciences with dependency .* *Supports and external loads .* *Facilities calculation schemes cinematic analytical* ***Module 2. Impact lines theory*** *Impact lines about concept* *Support reactions and internal of tensions impact line .* *Nodes when the load is transferred through impact the lines build and tensions to determine .*

	Many intermittent static clear hammers for impact lines and internal tensions to determine . ***Module 3. Many intermittent static clear maybe and farms*** *Many intermittent static clear hammers for interfloor schemes build , immovable and moving loads to the effect calculation* *Static clear farms about concept* *Farms types .* *Farms immovable and moving loads to the effect calculation* ***Module 4. Three hinged arch and frames*** *General concepts .* *Support reactions to determine .* *Three hinged arch and frames unmovable and moving loads from the influence internal their tensions calculation* ***Module 5. Statically uncertain systems*** *Understanding migrations.* *Migrations of determination Mor and Vereshchagen in methods to determine .* *Power method .* *Static unclear systems and their Features .* *Power method essence .* *Frames power in the way calculation* *Static unclear systems freedom level .* *Power method main system , canonical equations .* *Unity and external from the loads sketches build* *Equations system solution and the unknown detection . Fixed unity their outlines build* *Final internal tension their outlines build* ***Module 6. Continuous beam calculation*** *Select the main system.* *Formulating the three moment equations and their internal stresses* *Constructing diagrams and checking their accuracy.* ***Module 7. Calculation of statically uncertain systems by the displacement method.*** *The essence and basic system of the migration method.* *Canonical equations of the displacement method.* *Canonical equation coefficients and free terms to determine .* *Corrected unity and internal tension their outlines build and check .* *Static unclear arch and farms account .*
Forms of assessment	*oral, presentation, written work, practical assignments, calculation work, and final exams.*
Requirements for study and assessment	*To successfully complete the module, the student must attend classes and achieve the minimum scores set in the current, midterm, and final assessments.*
Bibliography	*32.Do‘smatov A.D., Axmedov A.O‘. Qurilish mexanikasi Darlik.-Farg‘ona: ALPHA BRAND, 2024. -212bet.* *33.Do‘smatov A.D., Axmedov A.O‘. Qurilish mexanikasidan misol va masalalar. O‘quv qo‘llanma.-Farg‘ona: Classic, 2022. -376bet* *34.A. A. Borisevich, E. M. Sidorovich, K. V. Yurkova. Structural Mechanics. – Minsk: BNTU, 2020. – 509 p* *35.S.A. Saidiy. Qurilish mexanikasi.-T.: «Fan va texnologiya». 2019.272-bet.*

	36. *А. А. Поляков, Ф. Г. Лялина, Р. Г. Игнатов. Строительная механика: учебное пособие. Под общ. редакцией А. А. Полякова. - Екатеринбург : 2018. - 459 с.* 37. *To'rayev X.Sh., Ismatov M.X., Yo'ldashev F.X., Javliyev B.K. "Qurilish mexanikasi". Nazariy asoslar va amaliy masalalar-Toshkent, Moliya, 2002* 38. *Abdurashidov Q.S., Xobilov B.A., To'ychiev N.J., Raximboyev A.F., Qurilish mexanikasi. T "O'zbekiston",1999.-384bet.* 39. *Nabiyev A. Materiallar qarshiligi. Oliy o'quv yurtlari uchun darslik.-Toshkent: Yangi asr avlodi, 2008.-380bet.*
Reviewers	*M.M.Bakhromov - Fergana State Technical University, Department of " Civil Engineering " associate professor;* *T.M.Sobirjonov - Fergana State Technical University, Department of " Applied Mechanics " associate professor;*