

Identification	Subject	CIV344, Concrete Technology, 6 ECTS	
	Department	Engineering and Applied Sciences	
	Program (Undergraduate, Graduate)	Undergraduate	
	Term	Fall 2025	
	Instructor	Samid Shahmarov	
	Email:	shahmarovsamid2@gmail.com	
	Classroom/hours	407N / 18:40-20:10 20:20-21:00	
Prerequisites	Concrete Technology, Ingredients of Concrete, Mix Design of Concrete		
Language	English		
Compulsory/Elective	Compulsory		
Textbooks and course materials	Slides and the lectures will be shared by group e-mail on the intructor’s dropbox. As the textbooks, reference can be made to the followings: 1. A.M.Neville, J.J.Brooks “Concrete Technology” UK, 2010. 2. N.M.Agabeyli “Construction Materials and Products” Baku, 2007		
Course description	Theoretical and Practical methods of concrete technology aspects of construction. Every other week, series homework’s will be assigned, to be completed within subsequent two weeks.		
Course objectives	The success of any concrete structure depends on the designer’s knowledge of concrete and its behavior under load, under temperature and humidity changes, and under exposure to the relevant environment and industrial conditions. This subject gives students a thorough understanding of all aspects of concrete technology from first principles. It covers concrete, concrete Mix Design, ingredients for making concrete, physical and mechanical properties and so on.		
Learning Outcomes	Concrete as a structural materials; Cement; Types of Portland cement; Normal aggregate; The sieve analysis of normal aggregates; Determination of water absorption of normal aggregates; Quality of water; Fresh concrete; Strength of concrete; mixing, handling, placing and compacting concrete; Admixtures; Temperature problems in concreting; Mix design of concrete; Development of strength; Deformation and cracking independent of load; Permeability and durability; Sulfate attack; Alkali-aggregate reaction; Corrosion of reinforcement; Resistance to freezing and thawing; Testing; Strength tests; Lightweight concrete; Special concretes; Roller compacted concrete; High performance concrete; Self-consolidating (self-compacting) concrete		
Teaching methods	Case analysis		x
	Group discussion		x
	Lecture		x
	Simulation		x
Evaluation Criteria	Methods	Date/deadlines	Percentage (%)
	Midterm Exam	TBA	30
	Quizzes		
	Practical Assignments		20
	Activity		5
	Attendance		5
	Final Exam	TBA	40
	Total		100
Class Policy	Preparation for class		

	<p>The structure of this course makes your individual study and preparation outside the class extremely important. The lecture material will focus on the major points introduced in the text. Reading the assigned chapters and having some familiarity with them before class will greatly assist your understanding of the lecture. After the lecture, you should study your notes and work relevant problems and cases from the end of the chapter and sample exam questions.</p> <p>1. Withdrawal (pass/fail) This course strictly follows grading policy of the School of Engineering and Applied Science. Thus, a student is normally expected to achieve a mark of at least 60% to pass. In case of failure, he/she will be required to repeat the course the following term or year.</p> <p>2. Cheating/plagiarism Cheating or other plagiarism during the Quizzes, Mid-term and Final Examinations will lead to paper cancellation. In this case, the student will automatically get zero (0), without any considerations.</p> <p>3. Professional behavior guidelines The students shall behave in the way to create favorable academic and professional environment during the class hours. Unauthorized discussions and unethical behavior are strictly prohibited.</p> <p>4. Ethics Students should not arrive in late to class. All cell phones must be turned off and stowed away before entering class. Use of any electronic devices is not allowed in the classroom and violators will be punished accordingly. Lessons are conducted in English that's why questions and their answers must be in English.</p>
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Tentative Schedule

Week	Date/Day (tentative)	Topics	Textbook/Assignments
1	20.09.25	Concrete as a Structural material. Cement	A.M.Neville, J.J.Brooks "Concrete Technology" UK, 2010. N.M.Agabeyli "Construction Materials and Products" Baku, 2007
2	27.09.25	Types of Portland Cement. Normal aggregates	A.M.Neville, J.J.Brooks "Concrete Technology" UK, 2010. N.M.Agabeyli "Construction Materials and Products" Baku, 2007
3	04.10.25	The sieve analysis of normal aggregates Determination of water absorption of normal aggregates	A.M.Neville, J.J.Brooks "Concrete Technology" UK, 2010. N.M.Agabeyli "Construction Materials and Products" Baku, 2007
4	11.10.25	Quality of water. Fresh concrete	A.M.Neville, J.J.Brooks "Concrete Technology" UK, 2010. N.M.Agabeyli "Construction Materials and Products" Baku, 2007

5	18.10.25	Strength of concrete. Mixing, handling, placing and compacting concrete	A.M.Neville, J.J.Brooks “Concrete Technology” UK, 2010. N.M.Agabeyli “Construction Materials and Products” Baku, 2007
6	25.10.25	Admixtures. Temperature problems in concrete	A.M.Neville, J.J.Brooks “Concrete Technology” UK, 2010. N.M.Agabeyli “Construction Materials and Products” Baku, 2007
7	01.11.25	Midterm Exam	
8	08.11.25	Mix design of concrete	A.M.Neville, J.J.Brooks “Concrete Technology” UK, 2010. N.M.Agabeyli “Construction Materials and Products” Baku, 2007
9	15.11.25	Development of strength. Deformation and cracking independent of load	A.M.Neville, J.J.Brooks “Concrete Technology” UK, 2010. N.M.Agabeyli “Construction Materials and Products” Baku, 2007
10	22.11.25	Permeability and durability. Sulphate attack	A.M.Neville, J.J.Brooks “Concrete Technology” UK, 2010. N.M.Agabeyli “Construction Materials and Products” Baku, 2007
11	29.11.25	Alkali-aggregate reaction corrosion of reinforcement	A.M.Neville, J.J.Brooks “Concrete Technology” UK, 2010. N.M.Agabeyli “Construction Materials and Products” Baku, 2007
12	06.12.25	Resistance to freezing and thawing testing	A.M.Neville, J.J.Brooks “Concrete Technology” UK, 2010. N.M.Agabeyli “Construction Materials and Products” Baku, 2007
13	13.12.25	Strengt tests. Lightweight concrete	A.M.Neville, J.J.Brooks “Concrete Technology” UK, 2010. N.M.Agabeyli “Construction Materials and Products” Baku, 2007

14	20.12.25	Review all of the topic	A.M.Neville, J.J.Brooks “Concrete Technology” UK, 2010. N.M.Agabeyli “Construction Materials and Products” Baku, 2007
15	27.12.25	Final Exam	