

COURSE DESCRIPTION FORM	
Course Code and Title	CE231 CONSTRUCTION MANAGEMENT AND TECHNOLOGY
Semester	3
Catalog Description	Construction Project Preparation and Process, Tender/Bid Preparation and Process, Construction Contracts, Construction Cost Estimation and Calculations, Construction and Project Planning, Establishment of Construction Sites, Construction and Technology Knowledge, Site Preparation and Process, Construction Machinery, Health and Safety
Required Reading	K.Sunguroğlu , ‘Yapı İşletmesi, Şantiye Tekniği, Maliyet Hesapları’, Bilim Yayınları, No:37, 1.Baskı, İstanbul 2002
Recommended Reading	1)Allen, E. , ‘Fundamentals of Building Construction: Materials and Methods’, Wiley, New York, 1999. 2)Olin, H.B and Lewis, W.H. , ‘Construction: Principles, Materials and Methods, 7th Ed., John Wiley and Sons, NY , 1994. 3)Simmons, L. , ‘Construction: Principles,Materials and Methods, 8 th Ed., John Wiley and Sons, NY , 2001 4)Özcan, K. , ‘Yapı’ , Bilim Yayınları No:40, 8. Baskı, Ankara, 2000 5)Chudley, R. , ‘Advanced Construction Technology’, 3 rd Ed., Pearson Education Limited, Essex, england, 1999 6)Gözü, Ş.U. , ‘İnşaat Metraj ve Keşif İşlemi’ 6. Baskı, Vega Yayınları, Ankara, 2001. 7)Pancarlı, A. M.E. Öcal , ‘Yapı İşletmesi ve Maloluş Hesapları’, Birsen Yayınevi, 7. Baskı, İstanbul 2002
ECTS	3
Prerequisites and co-requisites	No prerequisite Required attendance to lectures is at least 70%.
Compulsory / Elective	Technical course
Language of Instruction	English
Aim of Course	To help students in gaining insight and consciousness about the processes during the design of a structure (preconstruction / construction phases), construction cost, planning, machinery, and health and safety.
Learning outcomes of the course unit	1) Gaining knowledge on technical and practical issues about the process between the planning of a structure and its completion, 2) Learning the responsibilities of various project participants, 3) Learning cost estimation and planning techniques such as CPM and PERT, 4) Gaining insight on construction machinery, 5) Gaining detailed knowledge about construction components, 6) Gaining insight on tender documents and construction contracts, 7) Becoming more conscious about health and safety issues, 8) Becoming more conscious about ethical issues, duties, and responsibilities.
Mode of delivery	Face to face
Course Content	1) Definitions of basic construction terms, project participants and their duties 2) Project Preparation Process and Construction Contracts 3) Tender / Bid Preparation

	<div>4) Preparation and Establishment of Construction Sites and Construction Machinery</div> <div>5) Phases of Construction and Manufacturing Processes</div> <div>6) Introduction of Construction Components</div> <div>7) Introduction of Construction Components</div> <div>8) Midterm</div> <div>9) Construction Phase and Documents Used, Health and Safety</div> <div>10) Unit Cost Analysis</div> <div>11) Construction Cost Estimation and Calculations: Quantity Takeoff and Related Calculations</div> <div>12) Construction Cost Estimation and Calculations: Project work and Understanding Project Drawings</div> <div>13) Construction Project Planning: Planning process, Preparation of Construction Plans, Gantt Charts, CPM Technique</div> <div>14) Construction Project Planning: Calculation of Project Duration, Critical Path Method by CPM and PERT – applications and examples</div> <div>15) Midterm / Construction Project Planning: Calculation of Project Duration, Critical Path Method by CPM and PERT – applications and examples</div>			
Planned learning activities and teaching methods	3 hours of theoretical class (3+0) Reading Preparing Reports Midterms and preparations Final examination and preparations			
Assessment methods and criteria		Number	Total Impact (%)	
	Midterm	2	40	
	Assignment	1	15	
	Exercises	-	-	
	Projects	-	-	
	Practice	-	-	
	Quiz	2	5	
	Contribution of In-term Studies to Overall Grade (%)		60	
	Contribution of Final Examination to Overall Grade (%)		40	
	Attendance			
Workload	Efficiency	Total Week Count	Weekly Duration (InHour)	Total Workload in Semester
	Theoretical Study Hours of Course Per Week	14	3	42
	Practicing Hours of Course Per Week	14	0	0
	Reading	14	1	14
	Searching in Internet and Library	14	0	0
	Designing and Applying Materials	14	0	0
	Preparing Reports	14	1	14
	Preparing Presentation	14	0	0

	Presentation	14	0	0					
	Midterms and Studying for Midterm	2	2	4					
	Final and studying for final	1	1	1					
	Other	0	0	0					
	Total workload:			75					
	Total workload / 25:			3					
	ECTS:			3					
Course Contribution to Program	No	Program Learning Outcomes			1	2	3	4	5
	1	Adequate knowledge in mathematics, science and engineering subjects pertaining to the relevant discipline; ability to use theoretical and applied knowledge in these areas in complex engineering problems.							
	2	Ability to identify, formulate, and solve complex civil engineering problems; ability to select and apply proper analysis and modeling methods for this purpose.					X		
	3	Ability to design a complex system, process, device or product under realistic constraints and conditions, in such a way as to meet the desired result; ability to apply modern design methods for this purpose.					X		
	4	Ability to devise, select, and use modern techniques and tools needed for analyzing and solving complex problems encountered in civil engineering practice; ability to employ information technologies and to use at least one computer programming language effectively.						X	
	5	Ability to design and conduct experiments, gather data, analyze and interpret results for investigating complex civil engineering problems or discipline specific research questions.							
	6	Ability to work efficiently in intra-disciplinary and multi-disciplinary teams.						X	
	7	Ability to work individually.					X		
	8	Ability to communicate effectively in Turkish, both orally and in writing; ability to write effective reports and comprehend written reports.						X	
	9	Knowledge of English of B1 level according to <u>Common European Framework of Reference</u> .							
	10	Prepare design and production reports, make effective presentations, and give and receive clear and intelligible instructions.							
	11	Recognition of the need for lifelong learning; ability to access information, to follow developments in science and technology, and to continue to educate him/herself.						X	
	12	Consciousness to behave according to ethical principles and professional and ethical responsibility.					X		
	13	Knowledge on standards used in civil engineering practice.						X	
	14	Knowledge about business life practices such as project management, risk management, and change management.						X	
	15	Awareness in entrepreneurship, innovation; knowledge about sustainable development.							
	16	Knowledge about the global and social effects of engineering practices on health, environment, and safety, and contemporary							

		issues of the century reflected into the field of engineering.				X	
	17	Awareness of the legal consequences of engineering solutions.				X	
Name of lecturers and contact information		Assoc. Dr. Bengi Aykaç, baykac@gazi.edu.tr Instructor Dr. Mehmet Çağatay BELGİN cmbelgin@gazi.edu.tr					