



COURSE INFORMATION FORM

Course Name	Course Code
RAILWAY ENGINEERING	151415365

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
5	4	0	5

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	3	2		

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	
Objectives of the Course	To teach soil properties and earthwork calculations, concepts related to railways, railway route standard elements and principles related to superstructure.
Short Course Content	Earthworks calculations, calculation of cross-sectional areas and earthwork volumes, Introduction to railways and rail systems and general information, route study, superstructure, switches.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Calculating earthworks	2,3,8	1,6,11	A,D,J
2 Road project elements	2,3,8,9,11	1,6,11	A,D,J
3 Railway types and their properties	2,3,8	1,6,11	A,D
4 Railway basic design features	2,3,8,9,11	1,6,11,14	A,D,J
5			
6			
7			
8			

*Teaching Methods 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

**Measuring Methods A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Toprak İşleri, Prof.Dr. Gngr Evren, Yrd. Doç. Dr. Selim Dndar Demiryolu, Prof. Dr. Gngr Evren, Yrd. Doç. Dr. Selim Dndar
Supporting References	Toprak İşleri ve Demiryolu, Prof.Dr. İnal Seçkin
Necessary Course Material	Laptop, Datashow (data projection devices), fixed or movable white screen, blackboard for written applications.

Course Schedule	
1	General information, types of earthworks. Ground types and properties in terms of earthworks.
2	Determination of cross section areas, cross method.
3	Cross Method
4	Volume calculations, Table of volumes, Table of masses
5	Land distribution, masses diagram, storage borrowing costs, general method, Brckner method, 2nd order distribution.
6	Mechanical vehicles used in earthworks, excavators, dozers, dozers, skimmers, others, explosives
7	History and classification of railways.
8	Mid-Term Exam
9	Features of railway vehicles, taper
10	Qatar equation of motion and its properties.
11	Geometrical properties of the passage, slopes, ribs, parabolic rakordman.
12	Superstructure elements, rail, sleeper, ballast, joining elements.
13	Superstructure systems, trusses, cruisers.
14	Line capability
15	Characteristics of urban rail systems
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	4	56
Classroom Studying Time (review, reinforcing, prestudy,...)	14	1	14
Homework	1	20	20
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)	1	30	30
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	1	15	15
Final Exam	1	1	1
Studying for Final Exam	1	15	15
Total workload			152
Total workload / 30			5,07
Course ECTS Credit			5

Evaluation	
Activity Type	%
Mid-term	40
Homework	10
Project Observation	10
Bir öge seçin.	
Final Exam	40
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	Adequate knowledge in mathematics, science and basic engineering subjects; ability to apply theoretical and applied knowledge in these areas to modelling and solving engineering problems	1
2	Ability to identify, define, formulate and solve complex engineering problems in civil engineering and related fields by selecting and applying appropriate analysis and modelling	5
3	Ability to design a complex system, device or product under realistic constraints and conditions by applying modern design methods in accordance with a specified objective	5
4	Ability to develop, select and use modern techniques and tools required for Civil Engineering applications and to utilise information technologies effectively	3
5	Ability to design experiments, conduct experiments, collect data, analyse and interpret results for the investigation of Civil Engineering problems	2
6	Ability to work in disciplinary and interdisciplinary teams	2
7	Effective oral and written communication skills in Turkish and the ability to use/develop knowledge of foreign languages	2
8	Awareness of the necessity of lifelong learning; the ability to access information, to follow developments in science and technology and to constantly renew oneself	5
9	Awareness of professional and ethical responsibility	5
10	Knowledge of business life practices such as project management, risk management and change management; awareness of entrepreneurship, innovation and sustainable development.	3
11	Knowledge about the effects of engineering applications on health, environment and safety in universal and social dimensions; awareness of national and international legal regulations and	3

LECTUTER(S)				
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Signature(s)				

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