College of Engineering Department of Civil Engineering



CE 552 Highway Infrastructure Management

Credit and Contact hours	3 / 3 (Lectures), 0 (Tutorials), 0 (Laboratory)		
Required, or Elective	Elective		
Course Description	Composites: Processes and techniques of managing rehabilitation and maintenance of highway infrastructure facilities including roads. Evaluation of pavement, and roadway maintenance, the primary emphasis on data collection, life cycle cost analysis, priority setting and optimization, and program development strategies.		
Prerequisites or Co- requisites	None		
	Students completing this course successfully will be able to:		
	Course Learning Outcomes (CLOs)	Related Student Outcomes (SO)	
	CLO1. Course Description and Introduction of Composites. K1	SO1	
Course Learning Outcomes	CLO2. Management Approach for Highway Infrastructure. S1	SO2	
	CLO3. Management Framework and Policy. S2	SO3	
	CLO4. Strategy for Individual Asset Groups. Asset Classes and Highway Infrastructure. S2	SO3	
	CLO5. Data Management and Information Systems. Highway Facilities Management Process. S3	SO4	
	CLO6. Review Process, Monitoring, and Performance. S3	SO4	
Student Outcomes related to this Course	SO 1 Recognize advanced engineering knowledge, concepts, and techniques to identify,		
	SO 2 Provide solutions for complex and real-life engineering problems. and the use of modern engineering tools, and identify their impact on social, global, cultural, environmental, safety, and economic factors.		
	SO 3 Investigate scientific research problems independently or through teamwork using critical thinking, appropriate techniques, advanced tools, and management principles.SO 4 Criticize and discuss scientific research reports /papers related to Civil Engineering issues		
	with a high level of ethics proficiency and communication skills, independently, or as a teamwork.		
Topics Covered	List of Topics	Related CLOs	
	1. Course Description and Introduction of Composites	CLO 1	
	2. Management Approach for Highway Infrastructure	CLO 2	
	3. Management Framework and Policy	CLO 3	

	4. Strategy for Individual Asset Groups. Asset Classes and Highway Infrastructure.	CLO 4	
	5. Highway Facilities Management Process Data Management and Information Systems	CLO 5	
	6. Review Process, Monitoring, and Performance	CLO 6	
	7. Economical evaluation of airport maintenance strategies. Maintenance service life, life cycle cost analysis	CLO 6	
Textbook(s) and Other	• AASHTO. Maintenance Manual for Roadways and Bridges. Washington, DC: American Association of State Highway and Transportation Officials.		
Required Material	 Roberts, J, Road infrastructure management systems (rims) components, 2004, ARRB Saudi Highway Code. 	: the main	
Grading System	Assignments Lecture attendance Term project Case/ Field Study Overview (literature review) paper Project - report and oral presentation Mid-term exam	10% 5% 5% 5% 10% 25%	
Instructors	Prof. Abdullah Al-Mansour	4070	
Date of Review	April, 2025		