College of Engineering

Department of Civil Engineering

CE 547 Transportation Logistics Planning

Credit and Contact hours	3 / 3 (Lectures), 0 (Tutorials), 0 (Laboratory)
Required, or Elective	Elective
Course Description	This master's course explores advanced concepts in transportation logistics, focusing on the planning, design, and optimization of multimodal transport systems. Students will analyze freight and passenger movement, network modeling, and sustainable logistics strategies. Emphasis is placed on integrating technology and data analytics to solve real-world transportation challenges, preparing graduates for leadership roles in modern civil engineering and logistics sectors.
Prerequisites or Co-requisites	None
Course Learning Outcomes	Students completing this course successfully will be able to:

Course Learning Outcomes (CLOs)	***Related Student Outcomes (SO)***
CLO1. Apply advanced engineering concepts and analytical techniques to identify and interpret complex transportation logistics problems. K1	**SO1**
CLO2. Develop and evaluate innovative solutions for real-world transportation logistics challenges using modern tools, considering social, economic, environmental, and safety impacts. S1	**SO2**
CLO3. Conduct independent or collaborative research on transportation logistics topics, utilizing critical thinking, advanced methodologies, and management principles. S2	**SO3**
CLO4. Critically review and communicate scientific literature and research findings in transportation logistics, demonstrating ethical responsibility and effective teamwork. S3	**SO4**

Student Outcomes related to this Course

SO 1 Recognize advanced engineering knowledge, concepts, and techniques to identify, interpret, and analyze complex and real-life engineering problems.

SO 2 Provide solutions for complex and real-life engineering problems through critical thinking 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. Fundamentals of Transportation Systems and Logistics	**CLO 1**
	2. Freight and Passenger Flow Analysis	**CLO 1**
	3. Network Design and Optimization	**CLO 2**
	4. Multimodal Transport Planning	**CLO 2**
	5. Sustainable and Green Logistics	**CLO 2**
	6. Intelligent Transportation Systems and Data Analytics	**CLO 3**
	7. Supply Chain Integration and Management	**CLO 3**
	8. Policy, Regulation, and Economic Impacts	**CLO 4**
Textbook(s) and Other Required Material	• Jaouad Boukachour and Abdelhamid Benaini, Transport and Logistics Planning and Optimization, IGI Global (2023)	
Grading System	Assignments	10%
	Research work	10%
	Mid-term exams	40%
	Final Exam	40%
Instructors	Appointed Faculty	
Date of Review	November, 2024	