


College of Engineering Department of Civil Engineering		
CE 546 Solid Waste Management		
Credit and Contact hours	3 / 3 (Lectures), 0 (Tutorials), 0 (Laboratory)	
Required, or Elective	Required	
Course Description	The course focuses on the study of engineering and management principles, practices, and techniques for the management and disposal of solid wastes. Topics include characteristics, generation, transport, processing, resource recovery, disposal, landfill design and operation, leachate management, and contaminant transport.	
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. Identify the solid waste demands that must be met by engineers and the impacts of legislation on engineering and scientific activity in solid waste management. K1	SO1
	CLO2. Identify sources, types, and composition of solid waste, in addition to the physical, chemical, and biological properties and transformations of waste materials. K1	SO1
	CLO3. Recognize the processing of MSW such as sorting and compaction, transportation and final processing. K1	SO1
	CLO4. Determine quantities of waste materials that can be recovered from MSW for effective separation and processing of solid waste components. S1	SO2
	CLO5. Develop design strategies depending on the solid waste composition to transform solid waste using thermal, biological, and chemical conversion technologies. S1	SO2
	CLO6. Develop closure plans and guidelines for the long-term care (operational and maintenance of closed landfills) in real-life projects. In addition to studying the Impact of inactive landfills and determining the need for remediation. S4	SO5
	CLO7. Demonstrate professional engineering and ethical values in assigned projects, assignments, and research work with high academic integrity. VI	SO6
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 5 Design novel advanced Civil Engineering systems and evaluate their performance, sustainability, and effectiveness for engineering practice and their impact in global, economic, environmental, and societal contexts	

