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Department of Civil Engineering	
Environmental Engineering I (61352)	
Total Credits	**3**
major compulsory	
Prerequisites	P1 : General Chemistry lab. I (23107) P2 : Fluid Mechanics (61341)

Course Contents

Introduction to environmental systems, problems, and pollution. Pollution sources, impacts, and controls for water, air, and soil. Solid waste management. Noise pollution. Water and environmental quality, standards, conservation and management

	Intended Learning Outcomes (ILO's)	Student Outcomes (SO's)	Contribution
1	Describe environment and its pollution, analyze environmental systems based on mass balance, and asses	H	45 %
2	Quantify air pollution, and its effects on micro, meso and macro scales, and to determine how to apply preventive measures.	J	20 %
3	design solid waste management systems (collection, transfer and disposal), and to preliminary design a sanitary landfill.	C	20 %
4	Be familiar with the principle of risk assessment	J	15 %

Textbook and/ or Refrences

Text Book: Makkenzie L. Davis and Susan J. Masten. Principles of Environmental Engineering and science, 2nd edition, McGraw-Hill, 2009. References: 1. Gilbert, M. Masters and Wendell P. Ela. Introduction to Environmental Engineering and Science. 3rd Edition. Prentice-Hall, Inc., 2007. 2. Makkenzie L. Davis and David A. Cornwell. Introduction to Environmental Engineering. 5th Edition. McGraw-Hill, 2011.

Assessment Criteria	Percent (%)
First Exam	20 %
Second Exam	20 %
Homeworks	5 %
Projects	5 %
Final Exam	50 %

Course Plan

Week	Topic
1	Introduction to Environmental Engineering and Systems
2-4	Material Balances
5-7	Water Quality Management: Rivers and Streams; Groundwater FIRST EXAM
8-10	Air Pollution
11-13	Solid Waste Management SECOND EXAM
14-15	Risk Perception, Assessment and Management
16	FINAL EXAM