

**CE 538 WATER SYSTEMS ENGINEERING**  
**FALL 2025-2026**

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**Grading Policy**

Projects (3) 60%

Final Exam 40%

**Course Outline**

Week	Topic
1	Introduction
2	Components of Water Systems
3	Drought and Flood Management
4	Remote Sensing and GIS for Water Resources Management
5-6	QGIS Applications for Water Resources Planning (Watershed Delienation and Construction of Bathymetric maps)
7	Data Requirement for Water Projects
8-9	Preparation of Data for Project Formulation using R programming
10	Flood-plain Mapping
11	General Optimization Concepts and Optimization Methods
12	Basic Optimization Models for Water Management
13	Estimation of Reservoir Storage-Elevation Relationship
14	Class Presentations