

CEEN 6979 - Water Quality Modeling

Fall 2026 Syllabus, Section 01, CRN 44134,

Credit hours: 3

Instructor

Suresh Sharma

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Public Instructor Information

Instructor Title: Dr. Suresh Sharma

Instructor Professional Qualifications: PhD in Civil Engineering, Auburn University, Alabama

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Course Description

6979. Water Quality Modeling. Mathematical modeling of physical, chemical, and biological processes in natural systems; development of computer models to simulate the fate and transport of pollutants in lakes, streams, and estuaries; application of models to evaluate water resource management options. Crosslisted with: CEEN 5879. Prereq.: CEEN 3736 Fundamentals of Environmental Engineering. 3 s.h.

Course Readings

Group	Title	Author	ISBN
Required	Surface Water-Quality Modeling	By Steven C. Chapra, 1997 or 2008, McGraw-Hill	

The course readings are subject to change in the event of extenuating circumstances, research developments, current events, and/or to ensure better learning.

Schedule of Topics and Assignments

Day	Date	Reading(s)	Proposed Topic	Due/To Prepare for Class
Mon	8/24	Page 1-20	Lecture 1 from Textbook	Class exercise
Wed	8/26	Page 24-42	Lecture 2 from Textbook	HW due
Mon	8/31	Page 52-62	Lecture 3 from Textbook	
Wed	9/2	Page 65-85	Lecture 4 from Textbook	HW due
Mon	9/7	No Class		
Wed	9/9	Page 86-99	Lecture 5 from Textbook	HW due
Mon	9/14	Page 101-115	Lecture 6 from Textbook	
Wed	9/16	Page 137-155	Lecture 8 from Textbook	HW due
Mon	9/21	Page 156-170	Lecture 9 from Textbook	
Wed	9/23	Page 173-189	Lecture 10 from Textbook	HW due
Mon	9/28	Page 235-255	Lecture 14 from Textbook	
Wed	9/30	Exam I		Exam I
Mon	10/5	Page 347-364	Lecture 19 from Textbook	
Wed	10/7	Page 367-385	Lecture 20 from Textbook	HW due
Mon	10/12	Page 389-403	Lecture 21 from Textbook	
Wed	10/14	Page 405-417	Lecture 22 from Textbook	HW due
Mon	10/19	Page 419-431	Lecture 23 from Textbook	
Wed	10/21	Exam II	Lecture 24 from Textbook	Exam II



Mon	10/26	Page 450-478	Lecture 25 from Textbook	
Wed	10/28	Computer models	Lecture 26	HW due
Mon	11/2	Page 521-558	Lecture 27 from Textbook	
Wed	11/4	Page 561-574	Lecture 28 from Textbook	HW due
Mon	11/9	Page 571-588	Lecture 29 from Textbook	
Wed	11/11	No Class		
Mon	11/16	Temperature Modeling using Handouts	Handout	
Wed	11/18	Lake & Heat Budgets	Lecture 30	HW due
Mon	11/23	Mid Term Exam	Mid Term Exam	Mid Term Exam
Wed	11/25	No Class		
Mon	11/30	Handout for Thermal Stratification	Lecture 31	
Wed	12/2	Handout for Algal Bloom in Ohio Lake, Tappan, Buckeye and Mosquito Lake Study	Lecture 32	Project Due
Mon	12/7	Final Exam Week	Final Exam Week	Final Exam Week

The course schedule, policies, procedures, and assignments in this course are subject to change in the event of extenuating circumstances, by mutual agreement, and/or to ensure better learning.