

**CTC 450**  
**Water and Wastewater Systems**  
**Spring 2024**

**Coordinator: Jayne Baran**  
**Classroom: G143**  
**Time: Tuesday 2:00 to 4:50 pm**

**Course Description:**

Course covers water quality, water supply systems, wastewater systems, solid waste management, and pollution control. Prerequisite: Coursework in hydrology and hydraulics. Corequisite: CHE 110T/L

Credit Hours: 3

**Learning Outcomes:**

Each student will demonstrate the ability to:

1. Determine the resultant hydrostatic force on a submerged, inclined gate
2. Apply Bernoulli's equation and draw an Energy/Hydraulic Grade Line
3. Determine detention time, overflow rate, weir loading rate and percent solids removal of a clarifier
4. Use computer software to solve open channel flow problems

**Required Text and Materials:**

Nathanson, Jerry A. and Schneider, Richard A., Basic Environmental Technology, Pearson, 2015, 6<sup>th</sup> edition, ISBN 13:978-0-13-284014-9

**Office Hours and Contact Info:**

see <https://people.sunypoly.edu/~barans/schedule.htm>

(Or by appointment)

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Donovan Hall, 1197

Phone: (315) 792-7542

**Topics and Projects:**

<b>Topics:</b>	<b>Description</b>	<b>Hrs</b>	<b>Assignments/Projects</b>
1	Introduction	2	Review/Download Bentley Software
2	Chemistry	2	
3	Biology	2	
4	Hydraulics & Hydrology	8	Software Application-flowmaster
5	Water Quality	2	
6	Water Distribution Systems	2	
7	Water Processing & Operations	4	
8	Wastewater Flows & Characteristics	2	
9	Wastewater Collection Systems	2	
10	Wastewater Processing	2	
11	Wastewater Operations	2	
12	Advanced Wastewater Treatment	2	
13	Water Reuse	2	
14	Sustainability and Carbon Footprint	2	
	Mid-Term/Final	4	

## Methods of Evaluation:

### **Homework:**

Homework shall be typed or neatly handwritten in pencil on engineering graph paper. Submit via PDF on Blackboard. There is no provision for make-up of homework assignments. A missed homework assignment is a zero and will be factored into the final grade.

### **Quizzes:**

Online quizzes are available on Brightspace as an asynchronous activity

### **Examinations:**

There will be one midterm and one final exam scheduled during the semester. Students are expected to take the exams at the scheduled times. Generally, no make-up test will be given except for medical emergencies or other valid reason for which prior approval has been obtained.

### **Asynchronous Activities:**

Applied software project and report emphasize communication, as well as the application of industry-standard hydraulic, word-processing, and spreadsheet software. The need for professionalism and excellence is reinforced through the requirement for assignments to be completed on time and in a neat and well-organized manner

### **Attendance/Participation:**

Students are expected to attend every class period and have homework and project assignments completed and ready to present unless arrangements have been made with the instructor. A missed class does not excuse responsibility for the work covered in class and the homework assignments. Students will be held to the standards set forth in the *Student Handbook*, stated as the College's "Code of Academic Conduct."

Homework	25%
Asynchronous Activities	25%
Mid-Term Exam	25%
Final Exam	25%
<b>TOTAL</b>	<b>100%</b>

## Code of Conduct:

Students are referred to the Student Handbook for SUNY Poly's current Code of Academic Conduct regarding plagiarism and other inappropriate academic activities.

## **Cancellation of Classes:**

SUNY Poly has a 24-hour hotline to inform students, faculty and staff when severe winter weather prompts the cancellation of all classes. On-campus, you can call the “Snowline” by dialing ext. 7669 (“SNOW”). Off-campus, Snowline can be reached by calling 315-792-7385. Snowline cards are available at various locations on campus.

In the event of severe weather, Snowline will announce only the cancellation of ALL classes. The cancellation of all classes will also be posted online, at [sunypoly.edu](http://sunypoly.edu), and will be broadcast on radio and television stations in the Utica-Rome, Syracuse, and Albany areas. Individual class cancellations are always available at <https://webapp.sunypoly.edu/forms/cancelled-classes/>

## **Accommodations for Students with Disabilities:**

Your access in this course is important to me. In compliance with the Americans with Disabilities Act of 1990 and Section 504 of the Rehabilitation Act, SUNY Polytechnic Institute is committed to ensuring comprehensive educational access and accommodations for all registered students seeking access to meet course requirements and fully participate in programs and activities. Students with documented disabilities or medical conditions are encouraged to request these services by registering with the Office of Student Accessibility Services. Please request accommodations early in the semester, or as soon as you become registered with the Office of Student Accessibility Services, so that we have adequate time to arrange your approved academic accommodation/s. Once Accessibility Services creates your accommodation plan, it is your responsibility to provide me a copy of the accommodation plan. If you experience any access barriers in this course, such as with printed content, graphics, online materials, etc., reach out to me or Accessibility Services right away. For information related to these services or to schedule an appointment, please contact the Office of Student Accessibility Services using the information provided below.

### **Office of Student Accessibility Services**

[SAS@sunypoly.edu](mailto:SAS@sunypoly.edu)

(315) 792-7170

Peter J. Cayan Library, L113