

Basic Course Information

Semester	Fall 2015	Instructor Name	Ramiro Salas
Course Title & #	Computational Procedures for Water/Wastewater Treatment Operators II – WT 205	Email	ramiro.salas@imperial.edu
CRN #	10829	Phone Cell/Work	(760) 427-5787 Cell (760) 337-4575 Work
Room	2711 / Building 2700	Office	Part-Timers: Room 809
Class Dates	8/20/15 ~ 12/10/15	Office Hours	n/a for part-time faculty
Class Days	Thursday	Office Phone #	Dept. Secretary (760) 355-6361
Class Times	6:00 pm ~ 9:10 pm	Office contact if student will be out or emergency	Department Secretary is an option
Units	3 Units		

Course Description

This course provides instruction in entry-level to advanced-level mathematical calculations used in the operation and evaluation of conventional water/wastewater treatment processes and water distribution systems. Course will cover basic geometry, metric conversions, flows, pressure, and chemical dosage as it relates to the water/wastewater industry. Material will parallel some of the problems found on State Certification examinations. (Formerly WT 220) (CSU)

Student Learning Outcomes

Upon course completion, the successful student will have acquired new skills, knowledge, and or attitudes as demonstrated by being able to:

1. Apply mathematical principles to address and solve problems related to water and wastewater treatment technologies. (IL02, IL03, IL04)
2. Enhance treatment systems by interpretation of hydraulic volumes, dimensional analysis, primary and secondary sewage treatment, calculations and chemical dose rates as it relates to water/wastewater technology. (IL02, IL03, IL04)
3. Understand and evaluate issues concerning the proper use and distribution of the water natural resources. (IL01, IL02, IL03, IL04, IL05)
4. Effectively attain grades III/IV/V in both water and wastewater State certifications. (IL02, IL04)

Course Objectives

Upon satisfactory completion of the course, students will be able to:

1. Demonstrate knowledge of volume calculations.
2. Demonstrate knowledge of flow and velocity.
3. Demonstrate the ability to calculate milligrams per liter to pounds per day.
4. Demonstrate the ability to calculate loading rates.
5. Demonstrate the ability to calculate detention and retention times.
6. Demonstrate the ability to calculate efficiency and percentages.
7. Demonstrate knowledge of pumping calculations.
8. Demonstrate knowledge of source and storage volumes.
9. Demonstrate knowledge of coagulation and flocculation rates.
10. Demonstrate the ability to calculate sedimentation times.
11. Demonstrate the ability to calculate filtration rates.

12. Demonstrate the ability to calculate chlorination rates.
13. Demonstrate the ability to calculate flouridation rates.
14. Demonstrate the ability to calculate softening rates.
15. Demonstrate knowledge of laboratory calculations.

Textbooks & Other Resources or Links

Applied Math for Water Plant Operators

By Joanne Kirkpatrick Price. CRC Press.

ISBN: 0-8776-2874-2

Another recommended textbook(s):

Operator Certification Study Guide (AWWA)

ISBN: 158321-287-6

Web site(s) recommended:

Water and Distribution: http://www.waterboards.ca.gov/drinking_water/certlic/occupations/DWopcert.shtml

Wastewater: http://www.swrcb.ca.gov/water_issues/programs/operator_certification/docs/exam_info.pdf

Course Requirements and Instructional Methods

Required Materials: Notebook, pen and pencil with eraser, calculator with at least 9 digits capability (not programmable), solar power recommended. **Cell phones will not be allowed as calculator.**

Assignments: Will be made in class/homework, and will not be accepted late. Assignments will be both individual and group work, and will include presentations.

Field Trips: If any, they will be scheduled as needed. Great effort by the institution and instructors are involved and your attendance is expected.

Prerequisite: WT 105 ó Computational Procedures for Treatment Plant Operators I.

Out of Class Assignments: The Department of Education policy states that one (1) credit hour is the amount of student work that reasonably approximates not less than one hour of class time and two (2) hours of out-of-class time per week over the span of a semester. WASC has adopted a similar requirement.

Course Grading Based on Course Objectives

Exam grade scale is strictly base on score percentage. No partial credit will be given for math. All work must be shown for credit. You are strongly advised to be present for all exams. Make up test, unless due to special circumstances, will not be granted. Grade scale is as follows:

100-90% -		A
89-80% -		B
79-70% -		C
69-60% -		D
59% or less-		F

Final grade shall consist of:

Imperial Valley College Course Syllabus ó Comp Procedures for Water/Wastewater Operators II

Attendance & Class		
Participation	-	25%
Chapter exams	-	25%
SLO Assignment	-	25%
Final Exam	-	25%
		100%

Attendance

- A student who fails to attend the first meeting of a class or does not complete the first mandatory activity of an online class will be dropped by the instructor as of the first official meeting of that class. Should readmission be desired, the student's status will be the same as that of any other student who desires to add a class. **It is the student's responsibility to drop or officially withdraw from the class.** See General Catalog for details.
- Regular attendance in all classes is expected of all students. A student whose continuous, unexcused absences exceed the number of hours the class is scheduled to meet per week may be dropped. For online courses, students who fail to complete required activities for two consecutive weeks may be considered to have excessive absences and may be dropped.
- Absences attributed to the representation of the college at officially approved events (conferences, contests, and field trips) will be counted as unexcused absences.

Classroom Etiquette

- Electronic Devices: Cell phones and electronic devices must be turned off and put away during class, unless otherwise directed by the instructor.
- Food and Drink are prohibited in all classrooms. Water bottles with lids/caps are the only exception. Additional restrictions will apply in labs. Please comply as directed.
- Disruptive Students: Students who disrupt or interfere with a class may be sent out of the room and told to meet with the Campus Disciplinary Officer before returning to continue with coursework. Disciplinary procedures will be followed as outlined in the General Catalog.
- Children in the classroom: Due to college rules and state laws, no one who is not enrolled in the class may attend, including children.

Academic Honesty

- Plagiarism is taking and presenting as one's own the writings or ideas of others, without citing the source. You should understand the concept of plagiarism and keep it in mind when taking exams and preparing written materials. If you do not understand how to cite a source correctly, you must ask for help.
- Cheating is defined as fraud, deceit, or dishonesty in an academic assignment, or using or attempting to use materials, or assisting others in using materials that are prohibited or inappropriate in the context of the academic assignment in question. Anyone caught cheating or will receive a zero (0) on the exam or assignment, and the instructor may report the incident to the Campus Disciplinary Officer, who may place related documentation in a file. Repeated acts of cheating may result in an F in the course and/or disciplinary action. Please refer to the General School Catalog for more information on academic dishonesty or other misconduct. Acts of cheating include, but are not limited to, the following: (a) plagiarism; (b) copying or attempting to copy from others during an examination or on an assignment; (c) communicating test information with another person during an examination; (d) allowing others to do an assignment or portion of an assignment; (e) using a commercial term paper service.

Additional Help – Discretionary Section and Language

- Blackboard support center: <http://bbcrm.edusupportcenter.com/ics/support/default.asp?deptID=8543>
- Learning Labs: There are several labs on campus to assist you through the use of computers, tutors, or a combination. Please consult your college map for the Math Lab, Reading & Writing Lab, and Study Skills Center (library). Please speak to the instructor about labs unique to your specific program.
- Library Services: There is more to our library than just books. You have access to tutors in the Study Skills Center, study rooms for small groups, and online access to a wealth of resources.

Disabled Student Programs and Services (DSPS)

Any student with a documented disability who may need educational accommodations should notify the instructor or the Disabled Student Programs and Services (DSP&S) office as soon as possible. The DSP&S office is located in Building 2100, telephone 760-355-6313, if you feel you need to be evaluated for educational accommodations.

Student Counseling and Health Services

Students have counseling and health services available, provided by the pre-paid Student Health Fee. We now also have a fulltime mental health counselor. For information see <http://www.imperial.edu/students/student-health-center/>. The IVC Student Health Center is located in the Health Science building in Room 2109, telephone 760-355-6310.

Student Rights and Responsibilities

Students have the right to experience a positive learning environment and due process. For further information regarding student rights and responsibilities, please refer to the IVC General Catalog available online at http://www.imperial.edu/index.php?option=com_docman&task=doc_download&gid=4516&Itemid=762

Information Literacy

Imperial Valley College is dedicated to helping students skillfully discover, evaluate, and use information from all sources. Students can access tutorials at <http://www.imperial.edu/courses-and-programs/divisions/arts-and-letters/library-department/info-lit-tutorials/>

Anticipated Class Schedule / Calendar

This schedule may be modified at the instructor's discretion to meet the needs of the course.

Course Outline			
No.	Date	Topic	Assignment
1	August 20, 2015	Introduction and Class Overview. Areas,Volumes,Circumference	Class Practice
2	August 27, 2015	Flow and Velocity Calculations	Class Practice
3	September 3, 2015	Milligrams per litre	Class Practice
4	September 10, 2015	Loading Rate Calculations	Class Practice
5	September 17, 2015	Detention Time Calculations	Quiz #1
6	September 24, 2015	Efficiency and Percent Calculations	Class Practice
7	October 1, 2015	Pumping Calculations	Class Practice
8	October 8, 2015	Water Sources and Storage	Quiz #2
9	October 15, 2015	No Class. Instructor Out of Town.	Class Practice
10	October 17, 2015	Saturday 9:00 am. Field Trip El Centro Water Plant	Field Trip
11	October 22, 2015	Coagulation and Flocculation	Class Practice
12	October 29, 2015	Sedimentation	Quiz #3
13	November 5, 2015	Filtration	Class Practice
14	November 12, 2015	Chlorination	Class Practice
15	November 19, 2015	Fluoridation. SLO Project	Quiz #4
16	November 26, 2015	No Class. Thanksgiving Holiday.	
17	December 3, 2015	Final Review (All Chapters)	Class Practice
18	December 10, 2015	Final Examination	