

**Basic Course Information**

Semester	<b>Spring 2016</b>	Instructor Name	<b>Ramiro Salas</b>
Course Title & #	<b>Water Distribution Systems – WT 140</b>	Email	<b>ramiro.salas@imperial.edu</b>
CRN #	<b>20866</b>	Phone Cell/Work	<b>(760) 427-5787 Cell (760) 337-4575 Work</b>
Room	<b>2711 / Building 2700</b>	Office	<b>Part-Timers: Room 809</b>
Class Dates	<b>2/17/16 ~ 6/8/16</b>	Office Hours	<b>n/a for part-time faculty</b>
Class Days	<b>Wednesday's</b>	Office Phone #	<b>Dept. Secretary (760) 355-6361</b>
Class Times	<b>6:00 pm ~ 10:15 pm</b>	Office contact if student will be out or emergency	<b>Department Secretary is an option</b>
Units	<b>4 Units</b>		

**Course Description**

This course is designed to provide operators with the necessary skills required for the proper installation, inspection, operation, maintenance, repair, and management of water distribution systems. Among the topics covered are: distribution system mathematics, system hydraulics, system design, water mains and valve installation, fire hydrants, water services and meters, backflow and cross-connection control, pumps and motors, occupational safety, utility management, and federal regulations. (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. Correctly perform basic operational adjustments and calculations for the operation of a water distribution system. (ILO2, ILO3, ILO4)
2. State and observe the implied responsibilities related to the operation of the water distribution system. (ILO2, ILO3, ILO4, ILO5)
3. Analyze water samples laboratory data to perform operational adjustments in the water distribution system. (ILO1, ILO2, ILO3, ILO4)
4. Feel more confident about their ability to identify cross connections. (ILO1, ILO2, ILO3, ILO4, ILO5)

**Course Objectives**

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

1. Operate and maintain designated water distribution systems.
2. Operate and maintain clear wells and storage tanks.
3. Monitor and maintain water quality throughout a distribution system.
4. Recognize and identify hazards and develop safe working procedures and safety programs for Water Distribution Systems.
5. Develop preventative maintenance programs and maintain records of inspection and repair for all water works equipment.
6. Address complaints from the public and maintain positive public relations,
7. List and demonstrate safe and effective methods to manage a water distribution system and facility.
8. Obtain knowledge necessary to pass California State Water Distribution operator certification exams up to journeyman level (Grade 2).

**Textbooks & Other Resources or Links**

**Water Distribution System Operation and Maintenance**  
**5<sup>th</sup> Edition by Kenneth Kerri**  
**California State University Sacramento**  
**ISBN: 1-59371-020-8**

Another recommended textbook(s):  
**Operator Certification Study Guide (AWWA)**  
**ISBN: 158321-287-6**

**Water Distribution Operator Training Handbook (AWWA)**  
**By Harry Von Huben**  
**ISBN: 1-58321-014-8**

Web site(s) recommended:  
Water and Distribution: [http://www.waterboards.ca.gov/drinking\\_water/certlic/occupations/DWopcert.shtml](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](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 6 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% -		<b>A</b>
89-80% -		<b>B</b>
79-70% -		<b>C</b>
69-60% -		<b>D</b>
59% or less-		<b>F</b>

Final grade shall consist of:

Items to verify :	%
Attendance	25%
Chapter exams	25%
Class Participation	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](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.

<b>Course outline</b>			
<b>Date</b>	<b>Chapter(s)</b>	<b>Topic</b>	<b>Assignment</b>
* February 7, 2016		Introduction, objectives and course overview	
* February 24, 2016	1 , 2	Water Dist. System Op. & Storage Facilities	Lecture & Discussion
* March 2, 2016	1 , 2	Math Introduction	Quiz / Chapters 1 & 2
* March 9, 2016	3	Distribution System Facilities	Lecture & Discussion
* March 16, 2016	3	Math review	Quiz / Chapter 3
* <b>March 23, 2016</b>	<b>1 , 2, 3</b>	<b>Review Chapters 1,2,3</b>	<b>TEST</b>
* <b>March 30, 2016</b>		<b>No classes scheduled. Spring Recess.</b>	
* <b>April 2, 2016</b>		<b>Field Trip ECWTP</b>	<b>Meet at ECWTP</b>
* April 6, 2016	4	Water Quality Considerations in Dist. Systems	Lecture & Discussion
* April 13, 2016	4	Math review	Quiz / Chapter 4
* April 20, 2016	5	Dist. System Operation and Maintenance	Lecture & Discussion
* April 27, 2016	5	Math review	Quiz / Chapter 5
* May 4, 2016	6	Disinfection	Lecture & Discussion
* May 11, 2016	6	Math review	Quiz / Chapter 6
* <b>May 18, 2016</b>	<b>4 , 5 , 6</b>	<b>Review Chapters 4,5,6</b>	<b>TEST</b>
* May 25, 2016	7 , 8	Safety / Dist System Administration	Lecture & Discussion
* <b>June 1, 2016</b>	<b>7 , 8</b>	<b>Review Chapters 7,8</b>	<b>TEST</b>
* <b>June 8, 2016</b>	<b>1 ~ 8</b>	<b>Final Examination</b>	<b>TEST</b>