

WT 105 / Computational Procedures Operators I

Semester:	Fall 2018	Instructor Name:	Ramiro Salas
Course Title & #:	Comp Procedures Op I WT 105	Email:	ramiro.salas@imperial.edu
CRN #:	10806	Phone Cell #:	(760) 427-5787
Classroom:	3119 / Building 3100	Work # :	(760) 337-4575
Class Dates:	8/14/2018 ~ 12/4/2018	Office Hours:	N/A
Class Days:	Tuesdays	IVC Office Phone #:	Dept. Sec. Frances Arce- Gomez(760) 355-6361
Class Times:	5:30 ~ 8:40 PM	Emergency Contact:	(760) 427-5787 Cell.
Units:	3.0		

Course Description

This course is designed to give water and wastewater treatment operators a general knowledge of basic mathematics as applied to treatment plan operations. This course includes calculations of treatment plant problems, fractions, decimals, percentages, ratios, proportions, averages, areas, volumes, metric system conversions, and estimation. (Formerly WT 120)(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 calculate water treatment plant math problems including chemical dosages, flow [rates](#), volumes, detention times, horsepower and energy costs. (IL02,IL03,IL04)
2. Demonstrate basic abilities to identify, troubleshoot and resolve treatment process problems that could compromise the proper water treatment processes as well as involved water related regulations. (IL01,IL02,IL03,IL04,IL0)
3. Identify mathematical methods that can be used to improve the performance of the water treatment plant. (IL02, IL03, IL04)

Course Objectives

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

1. Demonstrate knowledge of tools of analysis.
2. Demonstrate the ability to work word problems.
3. Demonstrate the ability to calculate addition, subtraction multiplication and division of fractions as well knowledge or reducing fractions and improper fractions.
4. Demonstrate the ability to add, subtract, multiply, and divide decimals.
5. Demonstrate the ability to calculate percentages.
6. Demonstrate knowledge of averages as they relate to arithmetic mean, median, mode, weighted averages.
7. Demonstrate the ability to calculate ratios and proportions.

8. Demonstrate the ability to calculate conversions including: cubic feet to ponds, flow conversions, linear measurements, arc measurements, volume measurement, metric system conversions, milligrams/liter to pounds, milligram per liter percentages milligram per liter to grain per US gallon conversions.
9. Demonstrate the ability to calculate area of rectangles, triangles, circles, trapezoids, and combined shapes.
10. Demonstrate the ability to calculate volume measurements.
11. Demonstrate the ability to make unit analysis.
12. Demonstrate the ability to solve for the unknown X.
13. Demonstrate the ability to make estimations.
14. Demonstrate the ability to make slide rule calculations as they relate to setting and reading, calculations, location of the answer and decimal location.

Textbooks & Other Resources or Links

Recommended:

“Basic Concepts for Water & Wastewater Operators”

By: Joanne Kirkpatrick Price

ISBN: 978-087762-808-8

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. No red pens or pencils.**

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.

Prerequisite: None.

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:

Items to verify:	
Attendance	25%
Class Participation	25%
Chapter Exams	25%
Final Exam	25%
Final Grade	100%

Note: Grading criteria are guides only. Instructor retains the right to modify these criteria.

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. Failure to drop the class will result in an "F" for the semester.** 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 excused 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 by the instructor.
- 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, only students enrolled in the class may attend; children are not allowed.

Online Netiquette

- What is netiquette? Netiquette is internet manners, online etiquette, and digital etiquette all rolled into one word. Basically, netiquette is a set of rules for behaving properly online.
- Students are to comply with the following rules of netiquette: (1) identify yourself, (2) include a subject line, (3) avoid sarcasm, (4) respect others' opinions and privacy, (5) acknowledge and return messages promptly, (6) copy with caution, (7) do not spam or junk mail, (8) be concise, (9) use appropriate language, (10) use appropriate emoticons (emotional icons) to help convey meaning, and (11) use appropriate intensifiers to help convey meaning [do not use ALL CAPS or multiple exclamation marks (!!!!)].

Academic Honesty

Academic honesty in the advancement of knowledge requires that all students and instructors respect the integrity of one another's work and recognize the importance of acknowledging and safeguarding intellectual property.

There are many different forms of academic dishonesty. The following kinds of honesty violations and their definitions are not meant to be exhaustive. Rather, they are intended to serve as examples of unacceptable academic conduct.

- 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 plagiarizing 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 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 Student Services

Imperial Valley College offers various services in support of student success. The following are some of the services available for students. Please speak to your instructor about additional services which may be available.

- CANVAS LMS. Canvas is Imperial Valley College's main Learning Management System. To log onto Canvas, use this link: [Canvas Student Login](#). The [Canvas Student Guides Site](#) provides a variety of support available to students 24 hours per day. Additionally, a 24/7 Canvas Support Hotline is available for students to use: 877-893-9853.
- Learning Services. There are several learning labs on campus to assist students through the use of computers and tutors. Please consult your [Campus Map](#) for the [Math Lab](#); [Reading, Writing & Language Labs](#); and the [Study Skills Center](#).

- [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. Please contact them 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.

- [Student Health Center](#). A Student Health Nurse is available on campus. In addition, Pioneers Memorial Healthcare District provide basic health services for students, such as first aid and care for minor illnesses. Contact the IVC [Student Health Center](#) at 760-355-6128 in Room 1536 for more information.
- [Mental Health Counseling Services](#). Short-term individual, couples, family and group counseling services are available for currently enrolled students. Services are provided in a confidential, supportive, and culturally sensitive environment. Please contact the IVC Mental Health Counseling Services at 760-355-6310 or in the building 1536 for appointments or more information..

Veteran's Center

The mission of the [IVC Military and Veteran Success Center](#) is to provide a holistic approach to serving military/veteran students on three key areas: 1) Academics, 2) Health and Wellness, and 3) Camaraderie; to serve as a central hub that connects military/veteran students, as well as their families, to campus and community resources. Their goal is to ensure a seamless transition from military to civilian life. The Center is located in Building 600 (Office 624), telephone 760-355-6141.

Student Equity Program

- The Student Equity Program strives to improve Imperial Valley College's success outcomes, particularly for students who have been historically underrepresented and underserved. The college identifies strategies to monitor and address equity issues, making efforts to mitigate any disproportionate impact on student success and achievement. Our institutional data provides insight surrounding student populations who historically, are not fully represented. Student Equity addresses disparities and/or disproportionate impact in student success across disaggregated student equity groups including gender, ethnicity, disability status, financial need, Veterans, foster youth, homelessness, and formerly incarcerated students. The Student Equity Program provides direct supportive services to empower students experiencing insecurities related to food, housing, transportation, textbooks, and shower access. We recognize that students who struggle meeting their basic needs are also at an academic and economic disadvantage, creating barriers to academic success and wellness. We strive to remove barriers that affect IVC students' access to education,

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degree and certificate completion, successful completion of developmental math and English courses, and the ability to transfer to a university. Contact: 760.355.5736 or 760.355.5733 Building 100.

- The Student Equity Program also houses IVC's Homeless Liaison, who provides direct services, campus, and community referrals to students experiencing homelessness as defined by the McKinney-Vento Act. Contact: 760.355.5736 Building 100.

Student Rights and Responsibilities

Students have the right to experience a positive learning environment and to due process of law. For more information regarding student rights and responsibilities, please refer to the IVC [General Catalog](#).

Information Literacy

Imperial Valley College is dedicated to helping students skillfully discover, evaluate, and use information from all sources. The IVC [Library Department](#) provides numerous Information Literacy Tutorials to assist students in this endeavor.

Anticipated Class Schedule/Calendar

This schedule may be modified at the instructor's discretion without prior notice to meet the needs of the course.

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Course Outline			
DATE	CHAPTER(S)	TOPIC	ASSIGNMENT
August 14, 2018		Introduction & Course overview	
August 21, 2018	1	Rectangular & Volume	Class Practice
August 28, 2018	2	Cylindrical & Circumference	Class Practice
September 4, 2018	1 - 2	Review Chps 1 - 2	Exam Chps 1 - 2
September 11, 2018	3	Volume	Class Practice
September 18, 2018	4	Flow Pipe	Class Practice
September 25, 2018		No Class (Instructor Out of Town)	
October 2, 2018	5	Velocity	Class Practice
October 9, 2018	3 - 4 - 5	Review Chps 3 - 4 - 5	Exam Chps 3 - 4 - 5
October 16, 2018	6	Detention Time	Class Practice
October 23, 2018	7	Surface Loading Rate	Class Practice
October 30, 2018	8	Chemical Feed Calculations	Class Practice
November 6, 2018	9	Percent Solutions	Class Practice
November 13, 2018	6 - 7 - 8 - 9	Review Chapters 6 - 7 - 8 - 9	Exam Chs 6 - 7 - 8 - 9
November 20, 2018		No Class (Campus Open)	
November 27, 2018	All	Final Review (All Chapters)	Class Practice
December 4, 2018	All	Final Examination	Good Luck!