



Imperial Valley College Course Syllabus / WT 105 – Computational Procedures Operator I

**Basic Course Information**

Semester:	<b>Fall 2023</b>	Instructor Name:	<b>Ramiro Salas</b>
Course Title & #:	<b>Computational Procedures Operator I / WT 105</b>	Email:	<b>ramiro.salas@imperial.edu</b>
CRN #:	<b>11113</b>	Webpage (optional):	
Classroom:	<b>204 / Building 200</b>	Office #:	<b>N/A</b>
Class Dates:	<b>8/16/2023 ~ 12/6/2023</b>	Office Hours:	<b>N/A</b>
Class Days:	<b>Wednesdays</b>	Office Phone #:	<b>(760) 355-6361 Dept. Sec. Tisha Nelson</b>
Class Times:	<b>6:00 PM ~ 9:10 PM</b>	Emergency Contact:	<b>(760) 427-5787 Cell.</b>
Units:	<b>3.0</b>	Class Format:	<b>Face-to-Face</b>

**Course Description**

This course is designed to give water and wastewater treatment operators a general knowledge of basic mathematics as applied to treatment plant operations. This course includes calculations of treatment plant problems, fractions, decimals, percentages, ratios, proportions, averages, areas, volumes, metric system conversions, and estimation. (CSU)

**Course Prerequisite(s) and/or Corequisite(s)**

None

**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.
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.
3. Identify mathematical methods that can be used to improve the performance of the water treatment plant.

**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

#### **Basic Math Concepts For Water and Wastewater Plant Operators (Recommended Only)**

By Joanne Kirkpatrick Price. CRC Press.

ISBN-13: 978-0-87762-808-8

ISBN: 0-87762-808-4

<https://www.isbns.net/isbn/9780877628088/>

Recommended textbook(s):

#### **Operator Certification Study Guide (AWWA)**

ISBN: 158321-287-6

[https://www.google.com/books/edition/Operator\\_Certification\\_Study\\_Guide/85xtIYDYDSwC?hl=en&qv=1&dq=ISBN:+158321-287-6&pg=PR2&printsec=frontcover](https://www.google.com/books/edition/Operator_Certification_Study_Guide/85xtIYDYDSwC?hl=en&qv=1&dq=ISBN:+158321-287-6&pg=PR2&printsec=frontcover)

Web site(s) recommended:

<http://owp.csus.edu>

Water Treatment and Water Distribution:

[https://www.waterboards.ca.gov/drinking\\_water/certlic/occupations/DWopcert.html](https://www.waterboards.ca.gov/drinking_water/certlic/occupations/DWopcert.html)

### Course Requirements and Instructional Methods

**This is a Face-to-Face college format class; the student is required to physically attend class on college as scheduled it. Specific instructions and assignments will be available only through Zoom and Canvas.**

**Required materials:** Any device able to work with CANVAS (laptop preferably), 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 ink pens or pencils.**

**Assignments:** Will be made in class or homework and will not be accepted late. All class activities will be described in advanced on weekly basis at Modules on your Canvas class home page during the semester.

**Prerequisite(s):** None



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**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.

## CANVAS

Access to Canvas is extremely important for this class since the class eventually will be online; all the class content is located on your IVC Canvas site.

You need to login into [Canvas Student Login](#) and then go into the course. You can also use CANVAS to email your fellow students or myself. 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.

You may also chat with someone live about your issue at:

<https://cases.canvaslms.com/liveagentchat?chattype=student&sfid=001A000000YzURSI3>

If you need additional training using Canvas you may go here:

<https://training-portal-prod-pdx.insproserv.net/pages/tutorial>

Here it is an overview from the course key areas, each one can be accessed from the course menu:

- **Home Page** will be the starting point of class and will give you as well a general overview from class activities and notifications during the semester.
- **Announcements** will be made every week letting you know about the next week class schedule and activities.
- **Syllabus** contains information that you will use throughout the course: Syllabus and Schedule.
- **Modules** contains everything you need for each week of the course. Simply click on “next” to move forward from one item to the next one into the week’s module.
- **Quizzes** provides one-click access to weekly quizzes and occasional surveys.
- **Tests** provides one-click access to chapter exams.
- **Grades** lists your scores and the points possible for all assignments. Most quiz grades are posted immediately after completion. You will also see your current total points and percentage.

## 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 quizzes and exams. Make up test, unless due to special circumstances, will not be granted.

Asking to make-up missed quizzes or exams is your responsibility and needs to be for a reasonable excuse. Exams may include true/false and multiple choice questions (math included).

**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:**

<b>Items to verify:</b>	
Attendance	20%
Class Participation	20%
Chapter Quizzes & Exams	20%
Final Exam	40%
<b>Final Grade</b>	<b>100%</b>

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

### Course Policies

- 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 important 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.

## Academic Honesty (Artificial Intelligence -AI)

IVC values critical thinking and communication skills and considers academic integrity essential to learning. Using AI tools as a replacement for your own thinking, writing, or quantitative reasoning goes against both our mission and academic honesty policy and will be considered academic dishonesty, or plagiarism unless you have been instructed to do so by your instructor. In case of any uncertainty regarding the ethical use of AI tools, students are encouraged to reach out to their instructors for clarification.

## Additional Services for Students

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.



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## How do I access services now that we are mostly online?

- **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

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..

## 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

\*\*\*Subject to change without prior notice\*\*\*

WT 105 Computational Procedures Oper I Course Outline			
DATE	CHAPTER(S)	TOPIC	ASSIGNMENT
August 16, 2023		Introduction & Course overview	Textbook, laptop & calculator
August 23, 2023	1	Area & Volume (Square & Circle)	Class Practice & Quiz
August 30, 2023	2	Volume in Gallons & Conversion Factors	Class Practice & Quiz
<b>September 6, 2023</b>	<b>1 - 2</b>	<b>Review Chapters 1 - 2</b>	<b>Exam Chps. 1 - 2</b>
September 13, 2023	3	Pressure	Class Practice & Quiz
September 20, 2023	4	Flow	Class Practice & Quiz
September 27, 2023	5	Velocity	Class Practice & Quiz
<b>October 4, 2023</b>	<b>3 - 4 - 5</b>	<b>Review Chapters 3 - 4 - 5</b>	<b>Exam Chps. 3 - 4 - 5</b>
October 11, 2023	6	Detention Time	Class Practice & Quiz
October 18, 2023	7	Surface Loading Rate	Class Practice & Quiz
October 25, 2023	8	Chemical Feed Calculations	Class Practice & Quiz
November 1, 2023	9	Chemical Feed Calculations (Gallons)	Class Practice & Quiz
<b>November 8, 2023</b>	<b>6 - 7 - 8 - 9</b>	<b>Review Chapters 6 - 7 - 8 - 9</b>	<b>Exam Chps. 6 - 7 - 8 - 9</b>
November 15, 2023	All	General Review	Class Practice
<b>November 22, 2023</b>		<b>No Class (Campus Closed)</b>	
November 29, 2023	All	Final Review	Class Practice
<b>December 6, 2023</b>	<b>All</b>	<b>Final Examination</b>	<b>Good Luck!</b>