

Basic Course Information

Semester	Spring 2019	Instructor's Name	Manuel M. Sanchez
Course Title & #	Computational Procedures for Water Plant Operators II	Instructor's Email	manuel.sanchez@imperial.edu
CRN #	21227	Webpage	n/a
Room	3111	Office	809
Class Dates	11 Feb 2019 07 Jun 2019	Office Hours	n/a
Class Days	Mondays	Office Phone #	(760) 355-6217
Class Times	06:00-09:10 pm	Who students should contact if emergency or other absence	Department Secretary: Patricia Robles (760) 355-6217
Units	3.0		

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.

Textbooks & Other Resources or Links

Textbook:

- “Applied Math for Water Operators” by Joanne Kirkpatrick Price. CRC Press Taylor and Francis Group, LLC. ISBN-13: 978-0877628743

Workbook:

- “Applied Math for Water Operators” by Joanne Kirkpatrick Price. CRC Press Kirkpatrick Price, Joanne (1991). ISBN-13: 978-0877628750

Course Requirements and Instructional Methods

Readings and exercises projects: Students are required to complete the necessary reading and exercises assignments prior to the session as reflected in the schedule and are encouraged to bring the textbook to class. Homework assignments shall be delivered every class to the Instructor’s desk until 06:35 pm and will not be accepted late. Assignments will be both individual and group work, and will include presentations. Field trips may be scheduled.

Drop Classes: The Instructor will not drop students from the class. Students are responsible for dropping classes. Failure to drop the class will result in an “F” for the semester.

Calculator: Each student is responsible to bring their own scientific or non-scientific calculator to every class session. No personal telephones or any other type of electronic devices shall be used in lieu of a regular calculator.

Course Grading Based on Course Objectives

Class Participation and assignments:	10%
Homework	20%
Quizzes	60%
Final Exam:	10%
	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 ‘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.
- 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 to take and present 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 correctly 'cite a source', 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, or assisting others in using materials, which 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) use of 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. If you feel you need to be evaluated for educational accommodations, the DSP&S office is located in Building 2100, telephone 760-355-6313.

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.

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.

Extended Opportunity Program and Services (EOPS)

[Required language.]

The Extended Opportunity Program and Services (EOPS) offers services such as priority registration, personal/academic counseling, tutoring, book vouchers, and community referrals to qualifying low-income students. EOPS is composed of a group of professionals ready to assist you with the resolution of both academic and personal issues. Our staff is set up to understand the problems of our culturally diverse population and strives to meet student needs that are as diverse as our student population.

Also under the umbrella of EOPS our CARE (Cooperative Agency Resources for Education) Program for single parents is specifically designed to provide support services and assist with the resolution of issues that are particular to this population. Students that are single parents receiving TANF/Cash Aid assistance may qualify for our CARE program, for additional information on CARE please contact Lourdes Mercado, 760-355- 6448, lourdes.mercado@imperial.edu.

EOPS provides additional support and services that may identify with one of the following experiences:

- Current and former foster youth students that were in the foster care system at any point in their lives
- Students experiencing homelessness
- Formerly incarcerated students

To apply for EOPS and for additional information on EOPS services, please contact Alexis Ayala, 760-355-5713, alexis.ayala@imperial.edu.

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, 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 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 help 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

The following provides a tentative, provisional overview of the reading, assignments, tests, or other activity for the duration of the course. The Instructor reserves the right to modify it as necessary.

*****Tentative, subject to change without prior notice*****

Date	Chapter	Topic	Workbook Assignment Due
Feb 11	1	Introduction and Overview of Treatment Technologies, applied volume calculations	None.
Feb 25	2, 3	Flow and Velocity Calculations Milligrams Per Liter	Pages 3- 9, Study for Quiz #1
Mar 4	4	Loading Rate Calculations, Quiz #1	Pages 15-23; Pages 29-39 Due March 11
Mar 11	5, 6	Detention Time Calculations, Efficiency and Percent Calculations	Pages 45-57; 59-69 and 77-83 Due Mar 11
Mar 18	7	Pumping Calculations	Pages 89-105, Study for Quiz #2, Due Mar 25.
Mar 25	8	Water Sources & Storage, Quiz #2	Pages 111-123; Due Apr 1.
Apr 1	9	Coagulation and flocculation	Pages 129-145, Due Apr 8.
Apr 8	10	Sedimentation, Midterm	Pages 153-161; Study for Quiz #3, Due Apr 8.
Apr 15	11	Filtration, Quiz #3	Pages 163-175; and 183-201; Due Apr 25.
Apr 29	12, 13	Chlorination, Water Science Project Due	Pages 209-227, Due May 6
May 6	13	Fluoridation	Pages 235-249, Due May 13
May 13	14	Softening, Term Paper Due	Pages 257-273; Due May 20
May 20	15	Laboratory Quiz #4	Pages 283-311 Pages 323-333 Due June 3 Study for Final Exam
Jun 3	All	Final Examination	Good luck on your State Exam!

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