Basic Course Information

Semester:	**Fall 2017**	Instructor Name:	**Manuel Sanchez**
Course Title & #:	**Computational Procedures Operators I**	Email:	**Manuel.Sanchez@Imperial.edu**
CRN #:	**10806**	Webpage :	**www.imperial.edu**
Classroom:	**3119**	Office #:	**Room 809**
Class Dates:	**8/14/2017 to 12/08/2017**	Office Hours:	**N/A**
Class Days:	**Tuesdays**	Office Phone #:	**760-355-6361**
Class Times:	05:30-08:40 PM	Emergency Contact:	**Frances Arce, (760) 355-6361**
Units:	3.0		

Course Description

Basic Mathematical principles used in the treatment of potable water and wastewater form the basis for many approaches to the remediation of contaminated water ways as well as proper techniques of water treatment for human consumption. In addition, these principles can be used in designing, developing and tailoring industrial processes to minimize detrimental environmental effects. This course presents the student with a basic understanding of the hydrologic cycle and how the human interface alters this process and creates an artificial cycle. The chemical and biological elements of treatment will be presented as well as theory of hydrology and treatment technologies. Design engineering of processes will be stressed. Finally, federal and state regulations will be covered which directly impact various treatment technologies.

Student Learning Outcomes

To build and strengthen a student's math ability to complete the Water and Wastewater Treatment Technology science programs at IVC and to successfully pass various mandated licensing examinations. To assist the student in analyzing word problems, to communicate the various aspects of the California Department of Health Services licensing programs, and to provide a strong mathematical base for concepts encountered in the Water Utility Science program.

Course Objectives

After accomplishing this course, it is expected that students will...

1. Retain some foundational knowledge: remember basic terms associated with Water and Wastewater Treatment Technologies, environmental issues, recognize potential cross-media impacts, acknowledge linkages between technology and environmental and human health impacts, identify sources of uncertainty in environmental problems, estimate costs and benefits (even qualitatively) of technology and associated environmental impacts. 2. Apply knowledge to other areas: enhance critical thinking in relation to complex problems, find appropriate data sources and use and cite them correctly, assess statistics and scientific information objectively, evaluate options from various viewpoints (e.g.,

technological feasibility, environmental impact, policy implications, everyday operations' strategy, etc.)
2. Integrate knowledge: combine knowledge of everyday consumer choices with basic engineering principles and environmental impacts, see the connectedness of human activities with environmental impacts on a global scale.
3. Reflect on the human dimension: remain conscious of their personal impact on the environment via their choices, educate others on the impact of decisions, realize that decision making is difficult and often doesn't have one right answer.
4. Remain motivated: feel that environmental issues are accessible to their general comprehension; be knowledgeable, not intimidated, by statistics, estimations, calculations, and general scientific information
5. Learn how to learn: ask questions to develop a more robust understanding, collaborate with others with different backgrounds, find good data and identify weak data.

Textbooks & Other Resources or Links

Title: "**Basic Math Concepts for Water & Wastewater Operators"**
By: Joanne Kirkpatrick Price.
ISBN 0-87762-808-4

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. Assignments will be made in class and will not be accepted late. Assignments will be both individual and group work, and will include presentations. Field trips may be scheduled.

Attendance: Class attendance is strongly encouraged. A student whose continuous, unexcused absences exceed the number of hours the class is scheduled to meet per week will be dropped. Imperial Valley College's policy will be strictly adhered to regarding absenteeism (General Catalog, page 23). Absences attributed to the representation of the college at officially approved events (conferences, contests, and fieldtrips) will be counted as excused absences. It is the responsibility of the student to make-up the missed assignments when is absent. Students who are habitually late to class or leave early more than three times will be dropped. Three tardies will equal 1 absence.

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.

Water Science Project: Each student will be expected to complete work in groups of three. Topics must be approved by the instructor. Students must use an approved form and style for the project involved. Directions will be given by instructor.

Homework Assignments: Must be delivered at the beginning of the class session (first 5 minutes) at the Instructor's desk. Homework will not be accepted late.

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

Class Assignments (20% of the course grade)
During the semester, a daily class assignment will be made. These will be short assignments that will be distributed in class and will be due before the end of the class. Grading of these assignments will not be based on whether or not everything is correct, but rather on whether or not a serious and substantial effort was made to complete the assignment. Each class assignment will be graded on a 10-point basis.

Homework Assignments (20% of the course grade)
There will be 13 homework assignments that will be collected and graded during the first 5 minutes of the class. These assignments are an essential component of this course and will be a major factor in determining grades for the course. The mathematical problems on the assignments must show substantial effort to proof the process that support the provided answers. Such results will be graded on the quality of the writing, the quality of the mathematical content, and the logical organization of the writing. Each problem on an assignment will be graded on a 20 point basis. Homework assignments written with no mathematical support with only final answers (given at the end of the textbook) will be graded as zero.

Team Assignments (5% of the course grade)
There will be two Team Assignments made during the semester. The Team Assignments will consist of a set of problems and must be completed by teams of two or three students. Each team will hand in one set of solutions to the problems and each member of the team will receive the same grade. These assignments will require each team to make a significant effort to communicate their results and procedures for obtaining the results in writing. They will be graded on the basis of both content and the quality of the mathematical writing. Details about this assignment will be distributed later in the semester.

Exams 1, 2, 3 and 4 (20% of the course grade)
There will be four exams as per our tentative schedule. No make-ups for this exams will be given without permission from the instructor prior to the date of the test.

Mid Term Exam (10% of the course grade)
There will a mid-term exam as per our tentative schedule. No make-ups for this exam will be given without permission from the instructor prior to the date of the test.

Final Examination (25% of the course grade)
The final examination will be a comprehensive test. No make-ups for this exam will be given without permission from the instructor prior to the date of the test.

***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 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 IVC's 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.

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, 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

Tentative, provisional overview of the reading, assignments, tests, and/or other activity for the duration of the course. **Instructor retains the right to modify these criteria.**

DATE	CHAPTER	DESCRIPTION	HOMEWORK ASSIGNMENT
Aug 15	1	Introduction and Overview of Treatment Technologies, Solving Math Problems	None
Aug 22	2	Solving for the unknown	Pages 7, 8, 9 & 14 (Due next class)
Aug 29	3	Fractions.	Pages 18, 22, 26(Due next class) Study for Quiz #1
Sept 5	4	Decimals. **Test #1**	Pages 27, 29, 32, 36, 40, 44, 50(Due next class)
Sept. 12	5	Percents.	Pages 66, 70, 74 (Due next class) **Team Assignment #1**
Sept. 19	6	Averages.	Pages 77, 78, 79 (Due next class)
Sept. 26	7	Ratios and Proportions.	Pages 84, 88,92,96 102(Due next class) Study for Quiz #2
Oct. 3	8	Conversions. **Test #2**	Pages 104,112,116, 118, 119, 128, 132,136,138,139,144, and 150, (Due next class)
Oct. 10	8	Conversions.	Pages 154, 164, 168, 172 (Due next class).
Oct. 17	9	Linear Measurements	Pages 154, 164, 168,172 (Due next class) Study for Midterm.
Oct. 24	10	Area Measurement. **MIDTERM**	Pages 176,184, 192, and 202(Due next class)
Oct. 31	11	Volume Measurement.	Pages 204,208,and 212(Due next class)

Nov. 7	12	Scale & graphs.	Pages 226,230,234, 259,270, and 281, (Due next class) **Team Assignment #2** Study for Quiz #3
Nov. 14	13	Power, roots, and scientific notations. **Test #3**	Pages 283, 292,296,300,304,308. (Due next class)
Nov. 21	14	Rounding and Estimating	**Water Science Project Due.** Pages 312, 314, 322, 318, 326, 328, 332, 336(Due next class) Study for Final.
Nov. 28	15	Dimensional Analysis **Test #4**	Study for Final.
Dec. 5	**Final Examination**		

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