

Basic Course Information

Semester:	Summer 2023 Hybrid	Instructor Name:	Dr. Michael Kanyi
Course No. & Title	AG 220: Irrigation and Drainage	Email:	michael.kanyi@imperial.edu
CRN #:	30165	Webpage (optional):	
Classroom:	2732	Office	3114
Class Dates:	June 20, 2023 – July 27, 2023	Office hours: Virtual (email, text canvas, pronto, zoom)	
Class Days:	Wednesday - Thursday	Office Phone #:	(760)355-5717
Class Times:	07:55 AM – 12:10 PM	Emergency Contact:	Tisha Nelson, Economic & Workforce Development (760) 355-6361/ (760) 355-6161
Units:	4	Format	Hybrid (Face-to-Face+ Online)

Course Description

This course covers the fundamental principles and practices of irrigation. History of irrigation with emphasis on the Imperial Valley, water law, crop-plant soil-water measurement, methods of irrigation, structures, crop water needs, problems and practices in soil reclamation, drainage systems, and drainage requirements for irrigated agriculture will be discussed. (CSU).

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

Although there is no prerequisite requirement for this course, adequate knowledge of general high school biology is expected.

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. Discuss various irrigation systems and benefits/compromises of each system based on a given crop system/soil type/geographic condition (ILO1, ILO2, ILO3, ILO4).
2. Discuss irrigation system and design as it influences plant nutrient application and utilization (ILO1, ILO2, ILO4).
3. Plan out and defend schedule for irrigation of a given crop over the life cycle based on system type, soil type and season of growth (ILO2, ILO4).

Course Objectives

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

1. Describe the importance of irrigation water in agriculture; describe problems facing California and Imperial Valley agriculture in a period of limited water; to differentiate between State vs. Federal water and projects; water district vs. irrigation district.
2. Differentiate between State vs. Federal water and projects, water district vs. irrigation district.
3. Identify sources of water for irrigation.
4. Describe and evaluate different water delivery systems.
5. Explain the principles and equipment used to measure water.
6. Describe and evaluate the different methods for applying and measuring irrigation water.
7. Demonstrate an understanding of soil-plant-water relationships; calculate evapotranspiration rates for crops grown in the Imperial Valley using CIMIS and other methods.
8. Describe the economics of irrigation and drainage.

9. Observe and describe irrigation practices in the Imperial Valley.

Textbooks & Other Resources or Links

International Irrigation Association. (2012). Robert D. von Bernuth (Ed). *Principles of Irrigation* (3rd ed.) ISBN: 9781935324270

- Note: This course will use various open/online educational resources (OERs).

Course Requirements and Instructional Methods

- Learning activities for this class will include, but not limited to, instructor's guided discussions, lecture, reading materials provided in canvas, YouTube videos, lab and field practical experience, Labster Simulations' laboratory activities, individual and group presentations, assignments, and tests. Students' participation in class learning activities is highly encouraged. Critical thinking approach in solving irrigation systems issues with Imperial Valley and beyond will be emphasized.
- Out of Class Assignments (mainly f2f): 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.
- This is an online course, and the mode of instruction is asynchronous. You are therefore advised to dedicate ample time to the daily instructional activities and assignments.
- You will conduct virtual lab simulations that will require a computer (not a mobile phone) and reliable internet.**

Course Grading Based on Course Objectives

Students are advised to acquaint themselves with all rules and regulations of Standards of Student Conduct outlined in the [Imperial Valley College General Catalog](#). For writing assignments, it is expected that each student will demonstrate proficiency in the use of the English Language. Grammatical errors and writing that donot express ideas clearly will affect your grade.

Tests

There will be a **mid-term test (or cumulative quizzes)** and a **final comprehensive test covering all the modules**. Test questions may include true/false, multiple choice, matching, and short answer questions. All students are advised to strictly adhere to the dates and times for the tests which will be communicated. Late submission of assignments must be communicated to the professor before the due date to avoid loss of points.

Late Submission Policy

- Timely submission of all assignments, quizzes, discussion posts, tests and other tasks by the due date is required. Therefore, "no late work and submissions policy" will be followed.
- Minimally, legitimate circumstances that potentially threaten this policy must be communicated and excusal granted in advance of the submission's due date. There will be a 10% deduction of possible points for a late submission with excusal. If a submission is not made by the due date, and there was no prior excusal, then a zero (0) score will result.
There will be no make-up tests.

Distribution of grading points towards the final grade will be as follows.

1) Discussion	15%
2) Lab /assignments	25%
3) Quizzes	20%
4) Fina test (All modules)	40%
Total	100%

Grading Legend

A= 100-90%
B = 89-80%
C = 79-70%

D = 69-60%

F =<59%

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.

Course Policies

Attendance

- A student who fails to attend the first meeting of this class will be dropped by the instructor as of the first official meeting. 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 absence exceeds 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.

What does it mean to "attend" an online class?

Attendance is critical to student success and for IVC to use federal aid funds. Acceptable indications of attendance are:

- Student submission of an academic assignment
- Student submission of an exam
- Student participation in an instructor-led Zoom conference
- Documented student interaction with class postings, such as an interactive tutorial or computer-assisted instruction via modules
- A posting by the student showing the student's participation in an assignment created by the instructor
- A posting by the student in a discussion forum showing the student's participation in an online discussion about academic matters.
- An email from the student or other documentation showing that the student has initiated contact with a faculty member to ask a question about an academic subject studied in the course.

Logging onto Canvas alone is NOT adequate to demonstrate academic attendance by the student.

Classroom Etiquette (face-to-face on ground class)

- **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, no one who is not 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.

Taking and using the words, work, or ideas of others and presenting any of these as your own work is plagiarism. This applies to all work generated by another, whether it be oral, written, or artistic work. Plagiarism may either be deliberate or unintentional.

Other Course Information

Late submissions will not be accepted.

IVC Student Resources

IVC wants you to be successful in all aspects of your education. For help, resources, services, and an explanation of policies, visit <http://www.imperial.edu/studentresources> or click the heart icon in Canvas.

Anticipated Class Schedule/Calendar

The week of	Topics, subtopics, and Textbook Chapters
Week 1 June 20 - 24	Overview of the syllabus and the course materials. History and importance of irrigation in the world, California, and the Imperial Valley <ul style="list-style-type: none"> • Problems facing agricultural irrigation in California in terms of shrinking supplies. • Irrigation regulations and control of irrigation water (federal, state, and local)
Week 2 June 26-July 1	Irrigation systems for landscape/turf and agriculture Methods of applying irrigation water. <ul style="list-style-type: none"> • Subsurface irrigation • Surface irrigation • Flood irrigation • Furrow irrigation • Basin irrigation • Sprinkler irrigation • Drip irrigation Determining the efficiency and effectiveness of an application method
Week 3 July 3- 8	Sources of water for irrigation <ul style="list-style-type: none"> • Ground water • Surface water
	Water delivery systems <ul style="list-style-type: none"> • Ditches • Pipelines • Water pumps - maintenance and repair
Week 4 July 10 - 15	Soil, crop plants, and water relationship <ul style="list-style-type: none"> • Soil moisture measurement and monitoring devices • Field Capacity • Permanent wilting. • Calculation of available moisture • Crop water use (soil-plant-water relationships) • Measuring soil moisture
	Evapotranspiration Calculation, Irrigation scheduling and efficient water utilization
Week 5 July 17 -22	Precipitation, water supply efficiency and uniformity
	Valves and pipe fittings
Week 6 July 24 -26	Problems involved with irrigation. <ul style="list-style-type: none"> • Excess irrigation • Water quality • Drainage <ul style="list-style-type: none"> ○ Methods of drainage ○ Types of Drains ○ Drain installation
	Hydraulics in irrigation systems
	Economics of Irrigation and Drainage. Water conservation
	Present irrigation practices and the future of irrigation in Imperial Valley

Subject to change without prior notice

You are therefore advised to follow the instructions provided at the start of each module or week. Any changes to the schedule, including tests and due dates, will be communicated.