Basic Course Information

Semester:	Fall 2024	Instructor Name:	Dr. Michael Kanyi
Course No. &Title	AG 120: Soil Science	Email:	michael.kanyi@imperial.edu
CRN #:	10551	Webpage (optional):	
Classroom:	2732	Office #:	406
SemesterDates:	August 12, 2022 – Dec. 6, 2024	Office hours (In-person, email, text canvas, pronto)	MTWR 1:00 p.m. -2:00 p.m.
Class Days:	Monday & Wednesday	Office Phone #:	760-355-5717
Class Times:	M- 9:00am-11:10am W-8:00am– 11:10am	Emergency Contact:	Tisha Nelson, Economic & Workforce Development (760) 355-6361/ (760) 355-6161
Units:	3	Course Format	Face-to-face (On Ground)

Course Description

This course provides a basic knowledge of the physical, chemical, and biological properties of soils and their characteristics. Includes fundamental soil properties, soil-plant relationships, soil formation, fertilization and soil management, salinity, pH, erosion management, soil moisture and non-agricultural uses. Laboratory required. Laboratory topics include soil type, classification, soil reaction, soil fertility and physical properties ofsoil. (CSU, UC, UofA)

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

Although there is no prerequisite requirement for this course, basic knowledge of the periodic table 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. Identify soil crop compatibility via research and reporting information obtained from lecture, journal studyand text materials in either a written or verbal manner by assigned completion date (ILO1, ILO2, ILO3, ILO4).
2. Conduct lab analysis using prescribed protocols on known samples to derive accurate & repeatable resultsthat are reported in a useful format (ILO1, ILO2, ILO3, ILO4).
3. Develop an accurate and useful recommendation for soil application or amendment for desired cropproduction within a reasonable soil/crop interaction (ILO1, ILO2, ILO4).

Course Objectives

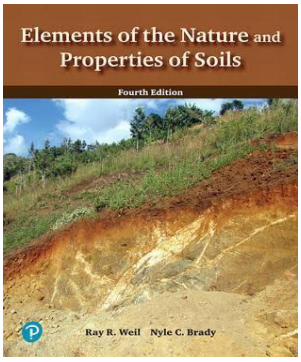
Upon satisfactory completion of the course, students will be able to:

1. Analyze local soil quality as affected by human and natural activities and explain local geographicalfeatures and their relationship to local soils.
2. Describe and identify the textural class of a soil by feel and laboratory procedures.
3. Evaluate parent rocks and other soil forming processes influence on local and global soils.
4. Describe the physical, chemical, and biological properties of soils and understand their formation and whysoils are reservoirs for nutrients, water, and microscopic life. To effectively manage these properties for sustained productivity.
5. Understand the methods and means by which organic matter may be added to the soil and how it decomposes to maintain and stimulate soil health.
6. Describe the chemical elements necessary for plant growth, identify common deficiency and toxicitysymptoms, and keep the soil in an adequate supply and balance.

7. Measure and understand the effects and alleviation of soil compaction in crop production situations.
8. Demonstrate how to determine a Soil Storie Index Rating and a Natural Resources Conservation Serviceland capability class.
9. Understand the effects of salts on soil structure, pH, productivity, and drainage.
10. Describe use, importance, and function of soil maps utilizing township range and GIS at the local, state, andglobal levels.

Textbooks & Other Resources or Links

- Brady, N. C. & Weil, R. (2019). Elements of the Nature and Properties of Soils (4th ed.): PearsonISBN: ISBN-13:9780133254648



Other references

- Brady, N. C. & Weil, R. (2017). Nature and Properties of Soils (15th ed.): Pearson
- Plaster, E., J. (2014). Soil Science and Management 6th ed. Cengage Learning ISBN: 978-0840024329ISBN-13: 978-0133254488; ISBN-10: 9780133254488

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 notes posted in canvas, instructional YouTube videos, simulated laboratory activities, outside/field practical experience, assignments, quizzes, and tests. **Participation in all class activities is highly encouraged and will be graded**. Critical thinking approach to solving agricultural economic issues at the regional, state, national and global level will be emphasized.

Out of Class Assignments: The Department of Education policy states that one (1) credit hour is the amount ofstudent work that reasonably approximates not less than one hour of class time and two (2) hours of out-of-classtime per week over the span of a semester. WASC has adopted a similar requirement.

- You will conduct **virtual lab simulations using Labster.** You 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.

Assessment and Tests

There will be discussions on canvas, and virtual laboratory simulations using Labster.

There will be weekly module weekly quizzes, in-class participation quizzes **(or cumulative quizzes)** and a **final comprehensive test covering all the modules**. The date for mid-term test will be announced. 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 any 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.

Discussion	15%
Lab/assignments/test	25%
Quizzes	20%
Fina test	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 and Participation

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 theclass. More information is found in the General Catalog.

- 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**

onlinecourses, 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-assistedinstruction 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 onlinediscussion about academic matters.
- An email from the student or other documentation showing that the student has initiated contact with afaculty 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 tomeet 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 mayattend; 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 violationsand 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 owned 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 the IVC students' resources or click the heart icon in Canvas.

Anticipated Class Schedule/Calendar

The week of	Topics, subtopics, and Textbook Chapters	Chapters	Module
8/12	**Orientation Module** • Orientation to the course and online learning • Meet and greet discussion posts		Orientation
8/12	Introduction. The Soils Around Us. Importance of soil in the world (also in California, Imperial Valley) • Ecological functions of soil and its role in recycling resources neededfor plant growth. • Soil constituents and soil's three-phase system • Land use in the United States	Chapter 1	Module 1
8/19	Soil Formation (origin) and Development • The soil body. • Soil formation process • Soil Profile • Negative effect of soil compaction	Chapter 2	Module 2
8/26	Soil Taxonomy/Classification and Survey • USDA soil classification system • Land/soil capability classes • Remote sensing • Satellite imagery • Geographical Information Systems (GIS) -CIMIS	Chapter 3	Module 3
9/3	Physical properties of soil • Soil texture • Soil density; bulk and particle density • Permeability • Soil structure	Chapter 4	Module 4
9/9	Soil Water	Chapter 5	Module 5

	• Characteristics and behavior • Forces and types of soil water • Functions of water in plants		
9/16	Soil and the Hydrologic Cycle • Evapotranspiration • Condensation • Precipitation • Water run-off	Chapter 6	Module 6
9/23	Soil Aeration and Soil Temperature • Porosity • Redox • Saturation	Chapters 7	Module 7
9/30	The Colloidal Fraction • Soil Chemical and Physical Activity • Silicate clays • Sesquioxide	Chapter 8	Module 8
10/7	Soil reaction • pH • Salinity • Acidity • Alkalinity • Sodicity • Agricultural limes	Chapter 9	Module 9
10/14	Soil Microbiology: Organisms and Ecology of the Soil • Soil fauna Soil flora	Chapter 10	Module 10
10/21	Soil Organic Matter • Role of organic matter • Immobilization • Mineralization	Chapter 11	Module 11
10/28	Nutrient Cycles and Soil Fertility • Macro and micronutrients • Nitrogen fixation • N, P, C, S cycles	Chapter 12	Module 12
11/4	Practical Nutrient Management • Sustainable use of nutrient resources/fertilizers • Commercial synthetic fertilizers • Organic fertilizers • Soil analysis	Chapter 13	Module 13
11/12	Soil Erosion and Its Control • Agents of soil erosion • Universal Soil Loss Equation (USLE) • Land Capability Classification	Chapter 14	Module 14
11/18	Soils and Chemical Pollution • Toxic substances • Landfills	Chapter 15	Module 15
11/25	**Thanksgiving (campus closed)**	**Thanksgiving**	**Break**

12/2	**The final test will cover all the modules, and it will account for 40% of the final grade.**	**Final Test**	**All modules**

Brady, N. C. & Weil, R. (2019). *Elements of the Nature and Properties of Soils* (4th ed.): Pearson ISBN: ISBN-13:9780133254648

This schedule is very tentative and can change without notice. You are therefore advised to follow the instructions provided at the start of each module or week.