Basic Course Information

Semester:	Winter 2017	Instructor Name:	Dr. Michael Kanyi
Course No. & Title	AG 120 – Soil Science	Email:	michael.kanyi@imperial.edu
CRN #:	15176	Webpage (optional):	
Classroom:	2733	Office #:	3114
Semester Dates:	01/3 -2/3	Office Hours:	MTWR 1:50 PM – 2:50 PM
Class Days:	Monday through Friday	Office Phone #:	760-355-5717
Class Times:	MTWRF 10:00 AM – 12:10PM MTWRF 12:30 PM – 1:50 PM	Emergency Contact:	Frances Arce-Gomez Industrial Technology Staff Secretary 760 -355-6361
Units:	3		

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 of soil. (CSU, UC)

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 study and 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 results that are reported in a useful format (ILO1, ILO2, ILO3, ILO4).
3. Develop an accurate and useful recommendation for soil application or amendment for desired crop production 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 geographical features 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 why soils 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 toxicity symptoms, 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 Service land 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, and global levels.

Textbooks & Other Resources or Links

Required Text Book

Plaster, Edward 2013. Soil Science and Management 6th ed. Cengage Learning ISBN: 978-0840024329.

Other Recommended Books

1. Dingus, D.D. Soil Science Laboratory Manual. Prentice Hall , 00-01-1999
2. Brady, N. and Weil, R 2007. The Nature and Properties of Soils 14th. Prentice Hall
3. Cheng Liu 2009. Soil Properties: Testing, Measurement, and Evaluation, 6/E. Prentice Hall ISBN: 9780136141235.
4. Havlin, lL, S.L. Tisdale, Werner L. Nelson, and James D. Beaton 2005. Soil Fertility and Fertilizers: An Introduction to Nutrient Management 7th. Prentice Hall ISBN: 978-0130278241.

Course Requirements and Instructional Methods

Learning activities for this class will include, but not limited to, instructor's guided discussions, lecture, lab and field practical experience, individual and group presentations, assignments, and tests. **Participation in class learning activities is highly encouraged and will have a significant effect on the final grade**. Critical thinking approach in addressing soil related issues in Imperial valley and beyond will be emphasized.

Course Syllabus	
	Topics
1.	Course overview Importance of soil in the world (also in California and Imperial Valley) • Ecological functions of soil and its role in recycling resources needed for plant growth • Soil constituents and soil's three-phase system • Land use in the United States
2.	Soil Origin and Development • The soil body • Soil formation process • Soil Profile
3.	Soil classification and survey • USDA soil classification system • Land/soil capability classes

Course Syllabus	
4.	Physical properties of soil • Soil texture • Soil density and permeability • Soil structure
5.	Soil Biology • Soil and food chain and food web
6.	Soil organic matter • Immobilization • Mineralization • Role of organic matter
7.	Soil water • Forces and types of soil water • Functions of water in plants
8.	Water use and conservation • Hydrologic cycle • Water resources in the United States
9.	Drainage and Irrigation • Methods of irrigation • Wetlands
10.	Soil fertility and soil chemistry • The essential elements • Cation exchange capacity (CEC)
11.	Soil reaction • soil pH • Liming
12.	Macro and micro nutrients
13.	Soil sampling and testing
14.	Fertilizers • Forms of fertilizers • Fertilizer calculations • Fertilizer application
15.	Organic manures and amendments • Composting • Biosolids
16.	Tillage and cropping systems
17.	Horticultural uses of soil
18.	Soil conservation • Soil erosion and prevention
19.	Urban soil and their characteristics
20.	Government Agencies and Programs on soil use and management • USDA • Cooperative State Research, Education, and Extension Service (CSREES)

****This syllabus may be subject to change ****

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 do not express ideas clearly will affect your grade.

Individual Research Paper and Presentation

There will be one research paper write-up (100 point) about an agricultural economics issue of your choosing. Specific details about this paper, including due dates will be announced in class.

Practical demonstrations and Lab Work

Students will participate in field demonstrations and lab work. Participation will be graded out of a possible 100 points.

Group Work and Presentation

The will be one group presentation (group membership will be determined). Class time will be set for this task. However, students might need some extra time outside the set class time to complete their work. Details about this assignment will be communicated in the due course.

Exams

There will be two sit-in tests/exam. Exams may include true/false, short answer, multiple choice, and short essay questions. Exams will be worth 100 points each. All students are advised to strictly adhere to the dates and times for the tests which will be communicated.

Distribution of grading points

- Research Paper and Presentation 100 points
- Field work and Lab activities 100 points
- Attendance and class participation 100 points
- Mid-term test 100 points
- Final Exams 100 points

Grading

Final score will be calculated out of possible 500 points (100%). Final grade will be as follows:

- A= 100-90%
- B = 89-80%
- C = 79-70%
- D = 69-60%
- F =<59%

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 **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, no one who is not enrolled in the class may attend, including children.

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 Support Site.** The Canvas Support Site provides a variety of support channels available to students 24 hours per day.
- **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 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 therapy are provided to currently enrolled students. Contact the IVC Mental Health Counseling Services at 760-355-6196 in Room 2109 for 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.