

# **SWS2102C: Soils and Fertilizers**

## **Valencia College West**

**Instructor:** Ayesha Mirza

**Email:** amirza9@valenciacollege.edu or through Canvas email

**Class Days, Times, and Location:**

- Lecture Virtual (canvas)
- **Student Engagement/Conference Days:**  
Monday -Wednesday via Zoom 3 p.m.- 5p.m  
Thursday: 2 p.m.- 3p.m  
Friday 2 p.m.- 3 p.m. (on campus upon request)

**Modality:** Online

**Credit Hours:** 3

**Prerequisites:** PLS1010C



## **Welcome to the Course!**

Did you know that growing plants begins with the soil? Soil provides the roots with anchorage, water, oxygen, microorganisms, and nutrients. If any of those are compromised, your plant will suffer. Soil is not dirt. Dirt is what is in a vacuum cleaner. Soil is teeming with life and dirt is dead. In this course, we will begin with why soil is important. It can take several hundred years to form an inch of soil while the loss of topsoil from erosion due to agriculture surpasses the rate of soil formation. You may have seen in the news about the problems with climate change. This affects our soil as well. This course provides a deep dive into how soils are formed and classified in order to understand soils not only locally but in other areas. It studies the physical, chemical, and biological properties of soils and how they can be managed so that our plants will thrive. Since water is a main component of soil, the soil-water-plant relationships are explored, and connections made to real-life applications. Lastly, the course explores plant nutrition, soil pH, and fertilizers, providing applicable tips to manage your plants in the future. To help apply this to a crop important to you, there is a project making a sustainable soil factsheet that will pull from all aspects of the course.

## **Course Information**

### **Course Description**

This course involves the study of soil-water-plant relationships. The emphasis is on soil properties (soil science), soil management and soil use (economical as well as social). It includes nursery and greenhouse soils for Florida, elemental nutrient studies and selected research topics.

### **Course Outcomes**

There are several broad learning goals we will help you achieve by the end of this course. Specifically, you will:

1. Explain principles of soil formation and classification.

2. Determine soil physical, chemical, and biological properties.
3. Describe how to utilize the principles of soil and water conservation.
4. Interpret and evaluate the results of soil analysis.
5. Describe how to determine the need for fertilizer application.

Additional topic-specific learning objectives will be provided each week on the Canvas website on the overview pages and in the assignments. These learning objectives provide an overview of what you should be able to do on an exam. Use these learning objectives to help you focus your studying.

### Textbook (optional)

Your lectures are drawn from material in the textbook. The PowerPoints/videos are created from this information; therefore, if the textbook is cost-prohibitive, then you can succeed in the class by reviewing the lecture material. The textbook is a valuable resource for those that prefer a hard copy resource to study from or would like to have a resource for the future.

- *Soil Science & Management*. 6<sup>th</sup> ed. Edward J. Plaster. 2014. Delmar, Cengage Learning.

### Valencia College Core Competencies

Valencia's Student Core Competencies are complex abilities that are essential to lifelong success. This course will help you to develop and demonstrate the abilities to:

1. THINK clearly, critically, and creatively.
2. COMMUNICATE with others verbally and in written form.
3. Make reasoned VALUE judgments and responsible commitments.
4. ACT purposefully, reflectively, and responsibly.

Due to the nature of these global competencies, many of the problems will be presented in the context of an application. These applications will require students to select appropriate information from the problem and communicate effectively in order to explain and/or describe how the student used the skills they are learning to arrive at an appropriate solution for the problem.

## EXPECTATIONS

### Our inclusive Learning Environment

Your success in this class is important to me. We all learn differently and bring different strengths and needs to the class. We expect everyone in this class to contribute to a respectful, welcoming, and inclusive environment to support the learning of all other members of the class. We practice the 13 principles for "how we treat each other." If there are aspects of the instruction or design of this course that result in barriers to your inclusion or accurate assessment or achievement, please let me know as soon as possible.

If you require accommodations, please let me know during the first two weeks of the semester. You will need to register with the Office for Students with Disabilities (OSD) (West Campus SSB 102, 407-582-1523). OSD determines accommodations based on appropriate documentation of disabilities and provides a letter to me with them.

### Teacher Expectations

I believe every individual has the potential to succeed and a skill in their pocket and the capacity to learn. Success in this class is for all if the right learning environment and strategies are used. This course is designed to provide learning for all and includes a variety of learning assessments with diverse learners in mind. I value your uniqueness and experience and want you to value your classmates as well. We are all learning together so please reach out to me if you have any questions or need extra assistance. I will follow the course outline as closely as possible and will notify you of modifications in the outline if they happen.

- I will attempt to create and maintain a classroom atmosphere in which you feel free to both listen to others and express your views and ask questions to increase your learning. I like to see the class as a community.
- Please email me or schedule a Zoom meeting if there is anything you want to discuss or about which you are unclear. I want to be supportive of your learning and growth.
- I will provide feedback/grades within a **week (7 days)**, often earlier, on the submitted assignment. It will be posted to the Canvas Gradebook.

### Student Expectations

Set goals for yourself for this course and plan/work to meet them. Meet all course deadlines and you will receive feedback within a week on the submitted assignment. Value your classmate's opinions and be open to learn new ways of thinking. Complete all assignments, quizzes, and projects without sharing/copying other's work or answers and be proud of your work.

- Please inform me via Canvas or by email if there is something that prevents you from turning in assignments.
- You are expected to check your Atlas email and Canvas inbox on a regular basis throughout the week.
- Since this is an online class, all of it is spent at the comfort of a computer, you can expect to devote **5-8 hours each week to this course**.
- Feel free to share feedback regarding how well the class is meeting your needs or if material is unclear. I make changes to the class based on feedback, either on the spot or in the future.
- It is also expected that you will treat classmates with respect and observe the rules of confidentiality regarding personal information shared in class.

### Assessment Method and Evaluation Scale

All assignments will be turned-in according to the schedule outlined on Canvas.

**Quizzes:** To reinforce the concepts you have learned each week, you will **complete quizzes by the Thursday** of the following week. Quizzes will be based on the chapter videos and activities. Questions may include multiple-choice, matching, and true/false. You will have one opportunity to take the quiz. You need to download [Respondus Lockdown Browser](#) to **take the quizzes and you will have 15-25 minutes**, depending on the number of questions, to take it. In order to review for the quizzes and give you a buffer on your grade, you will have extra credit review activities worth up to one point on the quiz.

**Final Exam:** You will have a cumulative final exam based on the information from your online quizzes, although they are not the same exact question. You will use **Respondus Lockdown Browser** to take the **final exam**. This exam will have 100 multiple-choice questions. A study guide is available.

**Video Guides:** Video guides include questions from the videos that will assist you in studying for the quizzes. Thanks to Dr. DeBusk I have include scripted PowerPoints with each video. It is expected that your answers for your video guides will be in your own words or paraphrasing what is provided. Do not copy and paste paragraphs or sentences from the PowerPoint script. The best way to learn is to handwrite the answers and take a photo of your video guide, although you can type your answers.

**Activities:** The activities are an integral part of the course and provide you with practical applications of the lecture material. Activities are graded for completion, but questions on the quizzes will be drawn from the activities.

**Project:** You will choose a crop or cropping system and create a soil sustainability factsheet based on material you learned in each unit. The project is graded using a detailed rubric. You will have weekly check-ins worth 2 points each where you will submit a section of your factsheet. This is an opportunity to receive feedback of each section and get clarification.

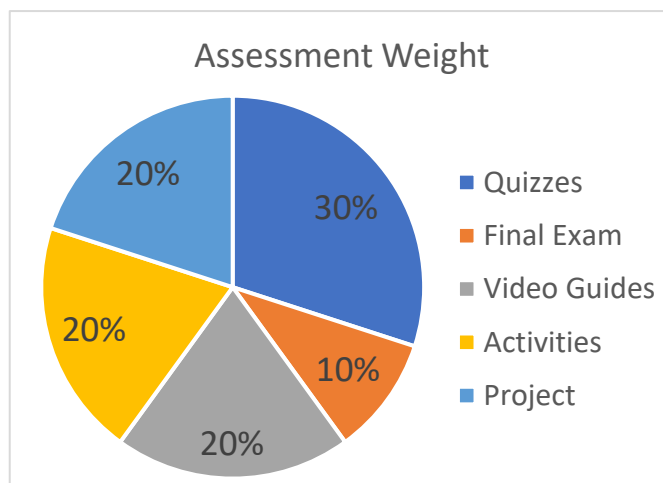
**Late Work/Makeup Policy:** Since life sometimes gets in the way, your lowest quiz grade will be dropped. There is no Late Work Policy. Incomplete assignments will receive a zero. If there are extenuating circumstances, please contact me as early as possible to discuss your options.

**Extra Credit:** You will have extra credit activities for most chapters that can each count up to 1 point extra credit on the Quizzes. These serve as a great review for your quizzes. There is also an opportunity to do the Student Feedback for Instruction.

### Grading Scale

A = 89.5-100%, B = 79.5-89.49%, C = 69.5-79.49%,  
D = 59.5-69.49%, F = below 59.49%

- Quizzes (lowest will be dropped) – 30%
- Final Exam – 10%
- Video Guides – 20%
- Activities – 20%
- Project – 20%



## COURSE SCHEDULE

Week of	Topic(s)	Assignments Due Thurs	Assignments Due Sunday
Jan 8-14	Orientation <a href="#">Zoom meeting Monday 6:00 p.m.</a> Meeting ID: 945 8296 4844 Passcode: Learn Importance of Soil (Ch 1)	Orientation Quiz Be in the Know Assignment Introductions	Library Workshops Video Guide Activity: Climate Change and Agriculture
Jan 15-21	Soil Origin (Ch. 2); Soil Classification (Ch. 3)	<b>Quiz: Importance of Soil</b> Project: Crop and Description	Video Guide: Soil Origins and Classification Activity: Soil Classification
Jan 22-28	Physical Properties (Ch. 4)	Extra Credit Review <b>Quiz: Soil Origins and Classification</b> Project: Soil Origins and Classification	Video Guide: Physical Properties Activity: Physical Properties
Jan 29-Feb 4	Life in the Soil (Ch. 5)	Extra Credit Review <b>Quiz: Physical Properties</b> Project: Physical Properties	Video Guide: Life in Soil Activity: Life in the Soil

Feb 5-11	Organic Matter (Ch. 6)	Extra Credit Review <b>Quiz: Life in Soil</b> Project: Microorganisms	Video Guide: Organic Matter Activity: Living Soil Film
Feb 12-18	Soil Conservation (Ch. 18)	Extra Credit Review <b>Quiz: Organic Matter</b> Project: References	Video Guide: Soil Conservation Activity: Erosion and Climate Change
Feb 19-25	Soil Water (Ch. 7)	Extra Credit Review <b>Quiz: Soil Conservation</b> Project: Effect of Climate Change	Video Guide: Soil Water Activity: Soil Water
Feb 26-Mar 3	Drainage and Irrigation (Ch. 9)	Extra Credit Review <b>Quiz: Soil Water</b> Project: Knowing When to Water	Video Guide: Drainage and Irrigation Activity: Drainage
Mar 4-10	Water Conservation (Ch. 8)	Extra Credit Review <b>Quiz: Drainage and Irrigation</b> Project: Irrigation	Video Guide: Water Conservation Activity: Water Conservation and Irrigation
Mar 11-17	Soil Fertility (Ch. 10); Soil Sampling and Testing (Ch. 13)	Extra Credit Review <b>Quiz: Water Conservation</b> Project: Water Need and Schedule	Video Guide: Fertility and Testing Activity: Soil Fertility
Mar 18-24		<i><b>Spring Break (no class)</b></i>	
Mar 25- 31	Plant Nutrition (Ch. 12)	Extra Credit Review <b>Quiz: Fertility and Soil Testing</b> Project: Soil Sampling	Video Guide: Plant Nutrition Activity: Nutrient Deficiency Case Studies
Apr 1-7	Soil pH and Salinity (Ch. 11)	Extra Credit Review <b>Quiz: Plant Nutrition</b> Project: Nutrient Deficiencies	Video Guide: Soil pH and Salinity Activity: Soil pH
Apr 8-14	Fertilizers (Ch. 14)	Extra Credit Review <b>Quiz: Soil pH</b> Project: Soil pH	Video Guide: Fertilizers Activity: Analyzing Fertilizer Labels
Apr 15-21		Extra Credit Review <b>Quiz: Fertilizers</b> Project: Fertilizer Recommendations	<b>Soil Sustainability Project</b>
Apr 22-26		<b>Final Exam</b>	

### Vacations and other important dates

- Jan 8 – Classes begin
- Jan 16 – Drop/Refund Deadline
- Mar 15 – Withdrawal deadline
- Mar 18-24 – Spring Break (no classes)
- Apr 30 – Term ends

## How can you Contact Me?

You may contact me in various ways during this semester.

- You may contact me through the Canvas Inbox. This is probably the best and quickest method of communication. I will respond to your message within 48 hours, often much sooner, with the exception of days and times when the college is closed.
- For more complicated issues (e.g., walking you through an assignment), your best option is communication through the Zoom tool in Canvas. The Zoom tool is a live, synchronous webinar platform where you can ask questions and receive support for the course. Please email me if you would like to use this method at a suitable time. You can also [Book time with Ayesha Mirza](#).
- You may email me at [amirza9@valenciacollege.edu](mailto:amirza9@valenciacollege.edu). In your messages subject (if not using the Canvas Inbox), please indicate your course number so that I may better assist you.
- If you prefer to speak to me directly, I will be happy to make an appointment with you any time on Friday between 2:00 p.m. – 3:00 p.m.

## What Policies are in the Course?

### No Show Policy

Since this is an online class, attendance is counted as assignments submitted. The Zoom meeting and Orientation Quiz are the required attendance activity for the first week. You need to complete the activity to show that you are attending the course. If you do not complete that activity by the end of the week, you will be withdrawn from the class as a “no show.” You will still be financially responsible for the class and a final grade of “WN” will appear on your transcript for the course. If you are unable to complete the Orientation Quiz during the first week, notify me as early as possible and we can discuss your options. If you are not planning to continue the class, make an effort to drop the course before the deadline.

### Attendance Policy

This is an online course, available 24/7, managed through Canvas. You must have access to the Internet (available on all Valencia campuses) to complete the course requirements. Your online attendance will be checked based on your participation in the course and submission of coursework. In the event of an extended absence, you should contact me so that we can discuss your options. If you do not submit any assignments for two weeks, I will email you about your absence. If I don't get an email back within a week explaining your absence, I will withdraw you from the class. If you contact me but do not begin completing work, you will be withdrawn after another week. After the withdraw deadline, students with an absence of more than 2 weeks will receive the final grade that is earned according to the course grading policy.

### Withdrawal

The deadline for Drop/Refund is **Jan 16<sup>th</sup>** and for Withdrawal is **Mar 15<sup>th</sup>**. Per [Valencia policy](#) a student who withdraws from class before the established deadline for a particular term will receive a grade of “W”. A student is not permitted to withdraw after the withdrawal deadline.

Since I have an attendance policy, I can withdraw you for violation of that policy, but I strive to work with you so that you can complete the class. If you are withdrawn, you will receive a grade of “W”. This can affect you financially and cause problems with any future financial aid you receive. After the withdrawal deadline, I will not withdraw you and you will receive the grade earned at the end of the course. If you withdraw or is withdrawn from a class during a third or subsequent attempt in the same course, you will



automatically be assigned a grade of “F.” If you do not intend to complete the course, you must withdraw yourself prior to the withdrawal date. Prior to withdrawing, please reach out to me to discuss your situation.

### Academic Integrity

Valencia College is a community of scholars committed to the values of integrity. In this community, all members including faculty, staff, and students alike are responsible for maintaining the highest standards of academic honesty and quality of academic work. As a student and member of the Valencia College community, you are expected to demonstrate integrity in all of your academic endeavors. Unacceptable behavior include cheating, fabrication, plagiarism, using unauthorized study aids, or facilitating academic misconduct. Please review our campus policy on [academic integrity](#).

All work submitted by you is expected to be the result of your individual thoughts, research, and self-expression. Whenever you use ideas, wording, or organization from another source, the source shall be appropriately acknowledged. Copying and pasting from an online source without paraphrasing the information first, even if providing a reference, is still considered plagiarism. Since writing can be difficult, I will provide you resources to assist your efforts. I use a program called Turnitin to check for similarities with online sources. Any score on Turnitin above 11% is checked for plagiarism. You can see your score once you submit it. If too much of your work is similar, I will allow a rewrite for up to 50% of the assignment score for the first offense. A second offense will result in a zero score on the assignment and a third offense will result in a class grade of F. Take advantage of the project check-ins to receive feedback on your writing. As an alternative to the 50% rewrite, you can resubmit your work within the grace period with the partial point deduction.

### College Student Conduct Policy

Valencia is dedicated not only to the advancement of knowledge and learning but also to the development of responsible personal and social conduct. As a registered student, you assume the responsibility for conducting yourself in a manner that contributes positively to Valencia’s learning community and that does not impair, interfere with, or obstruct the orderly conduct, processes, and functions of the college as described in the [Student Code of Conduct](#).

### Netiquette

It is important to be aware of your behavior in an online learning environment to ensure positive interactions with your instructor and peers. This requires you to follow some guidelines for behaviors.

All students are expected to:

- Show respect for the instructor and for other students in the course
- Respect the privacy of other students
- Express differences of opinion in a polite and rational way
- Maintain an environment of constructive criticism when commenting on the work of other students
- Remain focused on the learning topics during discussions and activities

### Third Party Software & FERPA Policy

Valencia College has a firm commitment to protecting the privacy rights of its students. Under no circumstances will your test scores, total points, or final grades be discussed on the telephone or over e-mail. FERPA rights to privacy prevent the divulging of scores or related materials by these means. Access your scores through the Canvas gradebook.

## Student Resources for Support and Learning

As a Valencia College student, you may experience challenges such as struggles with academics, finances, or your personal well-being. Valencia College has a multitude of resources available to all students. Many of these resources are listed below and we encourage all students to explore them as needed. **If you are experiencing a mental health emergency please contact 9-1-1 or BayCare Behavioral Health at (800) 878-5470.**

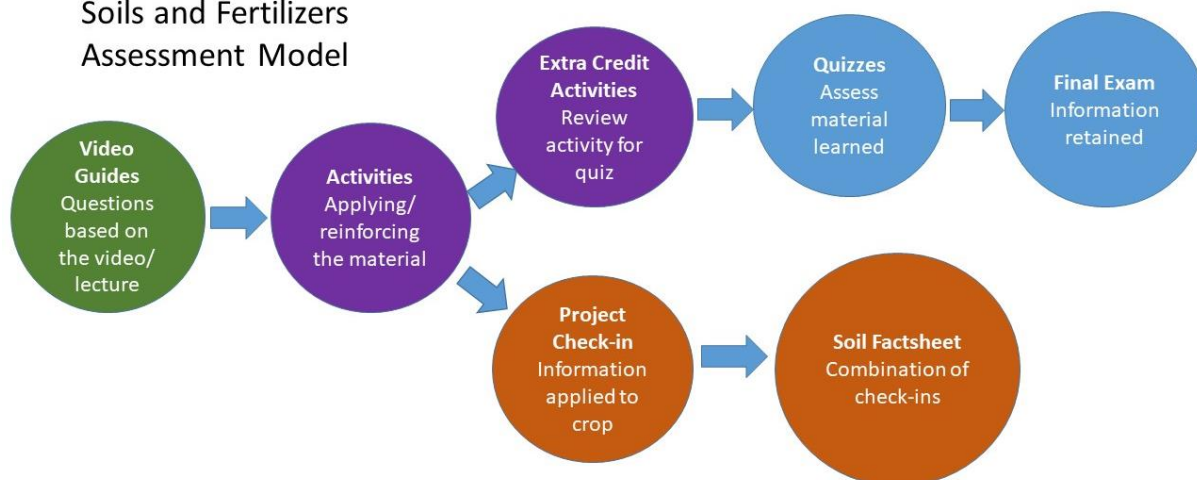
- **Student Assistance Program:** Valencia students can get immediate help with issues dealing with stress, anxiety, depression, adjustment difficulties, substance abuse, time management as well as relationship problems dealing with school, home or work. [BayCare Behavioral Health Student Assistance Program](#) services are free to all Valencia students and available 24 hours a day by calling (800) 878-5470. Free face-to-face counseling is also available.
- **Valencia Counselors:** Valencia counselors care about your emotional well-being so they offer both virtual and in-person options to connect with students. Connect to counselors through the [student support form](#).
- **Pooky's Pantry:** It is a free resource that offers non-perishable food items, hygiene items, socks, outside resource information, and local housing information. There are [locations](#) on each campus.
- **Advising:** The advisor is Gabriela Cerda. She can be reached at [gcerda@valenciacollege.edu](mailto:gcerda@valenciacollege.edu) or 407-582-1108. She is a great resource for questions about classes, degree programs and certificates, graduation, and transferring to a university.
- **Learning Support:** Learning Support Services provides students with academic support through distance tutoring, face to face tutoring at the campuses, writing consultations, library services, and resources. Tutoring is offered in most academic disciplines including math, science, foreign languages, English for academic purposes (EAP), computer programming and writing assistance for any course. For more information on how to access tutoring and library research assistance, please visit the college-wide [Learning Support Services LibGuide](#).
- **Skillshops:** [Skillshops](#) are free workshops, or mini courses that provide real-life solutions to common student issues.
- **Career Center:** Don't wait until your last year – visit the [career center](#) today!
- **Library:** At each campus library, librarians and other qualified staff can assist students with searching and finding items and information, MLA and APA citations, and technologies. The library provides a variety of books, eBooks, online articles, textbooks, DVDs and streaming videos to support course-related research and other learning needs. View the [Library website](#) for more information.

## How to Succeed in this Course?

There are many ways for you to show us what and how you are learning, through your effort, interaction and class participation, application of scientific thinking to solve real world problems, and performance on assignments and quizzes. This class has been structured to help all students get the support and guidance needed to succeed in your learning. The below graphic is how the class is structured to best facilitate learning. If you skip ahead, such as missing an activity because it will take too long, this breaks the chain in understanding and you may not do as well on the quiz or your project. If you miss the project check-ins then you may receive a grade that you weren't expecting because you misinterpreted the rubric. The following tips will help you be successful in this class and in other classes throughout your career at Valencia College.



## Soils and Fertilizers Assessment Model



- “LEARNING” IS AN ACTION VERB!! Most students need to do more than just watch lectures and reread their notes. **Spend 1-2 hour blocks of time several days a week** actively writing or discussing concepts to make them a part of your memory. Use the words you learn often, they will sink in better.
- **Check Canvas every other day and change your settings** so you are getting the notifications for announcements and submission comments in your email. You don’t want to miss an important announcement or extra credit opportunity.
- **Do the extra credit activities!** These interactive activities have been specifically designed to complement the quizzes, so they are a great review. If you get 75% correct, you get a point. If you get less, then you get a 0.5 point. Open book and no pressure.
- **Progress through the modules** rather than relying on the to-do list on Canvas. The module is set-up to guide you through material and increase mastery of the information.
- **Make to-do lists and prioritize tasks.** Record all the things you need to accomplish then focus on completing one task at a time. Prioritize your task based on the most critical and time-sensitive ones. You can use paper to-do lists or an app. Don’t forget to reward yourself for a job well done once tasks have been successfully completed.
- **Eliminate distractions** so your attention is on the task-at-hand. You will finish tasks and move on to the next ones more quickly while paying more attention to details. Turn off the TV, put your phone on silent, and keep your study area organized.
- **Take good notes.** Record the key points of the video or lecture and answer your video guides without writing down too much extraneous information.
- **Take a break.** Take a 10-15 minute break each hour or a 5-minute break after every 20 minutes of studying. This will prevent you from burning out too soon and you are more likely to retain the material compared to studying 3 hours straight. Good break options include listening and singing to a song, taking a walk, or getting a snack.
- **Ask questions.** Make lists of confusing topics from your studying and ask questions (as many as you can!). Talking to your professor helps you as well your professor to refocus on the topic again.

## Technology Requirements

### Computer Access

Students should verify [computer software and hardware](#) requirements to ensure course work can be submitted successfully. You will need to download Respondus Lockdown Browser on personal computers to access the quizzes and final exam which requires a computer (not an iPad, tablet, or Chromebook). Canvas lists minimum computer specifications and supported browsers to ensure compatibility. The Chrome browser is recommended. Students are also encouraged to install the Canvas app on their Android phone or iPhone in order to receive mobile notifications and to access your courses via your mobile device.

### Technical Skills

Students should consider the [basic computer skills](#) needed to be successful in this course, which include:

- Reading and responding to emails
- Software application skills (PowerPoint, Word, Office365, etc.)
- Internet and library database browsing
- Copying and pasting
- Saving files in different formats
- Working with attachments
- File management

Canvas 101 is a free self-paced course available for student to learn more about using the Canvas learning management system we are using for this course.

### Technology Privacy Policies

Valencia College has a firm commitment to protecting the privacy rights of its students. Any use of student records and information in this course will comply with the [Family Educational Rights and Privacy Act \(FERPA\)](#), including third party tools and services used in this course. Privacy policies for the tools used in this course are listed below and at the point of use.

- [Valencia College privacy policy](#)
- Canvas privacy policy

If you have any concerns or issues with any of these requirements or policies, please contact your instructor.

## LifeMap Webpage

Students can access the [LifeMap webpage](#) in Atlas. It provides LifeMap support, including education plan, college transition, introduction to college, progression to degree, graduation transition, financial and career planner and lifelong learning. Copyright material obtained during this course can only be circulated within the class only. Students must refrain from recording, using or displaying the pictures, drawings, and presentations outside this course.