Computer Graphics Essentials

ART - 1630 001

Course Description

Introduction to basic techniques and theories used in creating images with a computer. Exploring the fundamentals of scripting, modeling, texturing, lighting, rendering, animation, and compositing while applying principles of storytelling and design. It is recommended that students take ART 1280 in the same semester as this course.

Semester: All

Course Student Learning Outcomes

- Define and apply key terminology related to the core concepts behind the digital representation of images and 3D objects.
- Utilize foundational scripting to understand how computers can be used to create images and 3D objects, creating and manipulating variables, basic operations and functions.
- Implement foundational skills and techniques in using industry-standard software (such as 3D software or game engines) to create computer graphics, navigating user interfaces, 3D modeling and rendering, animating in a game engine.
- Apply traditional principles of art and design to digital image and 3D creation focusing on composition (space, line, shape, etc.), visual storytelling and aesthetics.
- Exhibit traits of professional responsibility through respect for copyright and intellectual property, use of online and other resources for research to inform creative work.

- Demonstrate a production workflow related to computer graphics, including research and use of reference materials, working iteratively and incorporating feedback into revisions.

College Wide Student Learning Outcomes

- Utilize foundational scripting to understand how computers can be used to create images and 3D objects: Creating and manipulating variables. Basic operations and functions Related Institutional Learning Outcomes: 1, 3, 4, 7, 9

- Implement foundational skills and techniques in using industry-standard software (such as 3D software or game engines) to create computer graphics: Navigating user interfaces. 3D modeling and rendering. Animating in a game engine Related Institutional Learning Outcomes: 1, 2, 4, 7, 9

- Apply traditional principles of art and design to digital image and 3D creation, focusing on: Composition (space, line, shape, etc.). Visual storytelling and aesthetics. Related Institutional Learning Outcomes: 1, 2, 4, 5, 9

- Exhibit traits of professional responsibility through: Respect for copyright and intellectual property. Use of online and other resources for research to inform creative work. Related Institutional Learning Outcomes: 1, 2, 6, 7

- Demonstrate a production workflow related to computer graphics, including: Research and use of reference materials. Working iteratively and incorporating feedback into revisions. Related Institutional Learning Outcomes: 1, 2, 4, 5, 7

- Define and apply key terminology related to the core concepts behind the digital representation of images and 3D objects. Related Institutional Learning Outcomes: 1, 3, 4, 7, 9

Engagement Plan

- I will respond to email within 48 business hours, I will offer feedback on major assignments within the week. The best way to contact me is via the Canvas Inbox, as I will prioritize this email over other modes of communication.
- I will be participating in the discussion in Discord and forums with you to share my perspective within the discipline and to offer some nuances of interpretation.
- Lastly, we'll be holding small group Q & A sessions, where we can learn from our peers (and faculty) on some of the more difficult assignments within the course.

Brief Description of Assignments/Exams

You will be asked to demonstrate the above outcomes through projects that explore complex solutions to creating computer generated imagery, which will show evidence of your skill using the software and your ability to apply the principles of design. Your Milestones and projects will be presented to the class for a peer review. Part of that grade will also reflect your participation in group critiques.
Assignments
This is a studio class with all assignments given in class. There will be class time given to work on projects creating an opportunity for greater instructor involvement. However, the more time you put into your assignments outside of class, the more you will learn and the better your projects will turn out. Each assignment will be outlined on CANVAS, and when completed will be presented to the class for a peer review. See attached schedule.

Assignment Schedule

Due Date	Assignment Name	Assignment Type	Points
	Introduce Yourself	Discussion	0
	Introduce Yourself	Discussion	0
	Roll Call Attendance	Assignment	100
9/2/25	Getting Started with Maya	Assignment	5

Due Date	Assignment Name	Assignment Type	Points
9/6/25	Show Your Truck in Here	Discussion	5
9/13/25	3D Modeling for Concept-Low Poly	Assignment	0
9/13/25	3D Modeling for Concept-Low Poly Ragged modeling	Assignment	10
9/27/25	Low Poly Environment Tile	Assignment	20
9/30/25	Basic Lighting and Cameras	Assignment	10
10/4/25	Outdoor Lighting and HDRI	Assignment	10
10/11/25	Noir Lighting	Assignment	10
10/25/25	UV Practice Upload	Assignment	10
11/8/25	PBR textures and Substance Painter	Assignment	10
11/22/25	Scene Layout in unreal	Assignment	10
12/6/25	Animation Short in Unreal	Assignment	10
12/11/25	Final Presentation	Assignment	10

Grading Scale

Percentage (%)	Grade	Grade Points
90 - 100%	A	4.0

80 - 89%	B	3.0
70 - 79%	C	2.0
60 - 69%	D	1.0
Below 60%	F	0.0

How to Navigate to Canvas

Institutional Policies

As members of our academic community, we would like to invite you to review the Institutional Syllabus which covers important policies and procedures. This document contains important links for students on the code of student rights and responsibilities, academic integrity, and grading policies, Title IX and other important acknowledgements. By familiarizing yourself with this information, you can help us create a safe and respectful environment for everyone.

For more information, navigate to the Institutional Policies tab on the Institutional Syllabus page.

Learning Support and Tutoring Services

We are pleased to offer a range of tutoring and learning support services to help you achieve your academic goals. Whether you need assistance with a specific subject or want to improve your study skills, you have many options for tutoring or other support.

To learn more about the services we offer and how to access them, visit the Institutional Syllabus page under the Tutoring and Learning Support tab. We encourage you to take

advantage of these resources to help you succeed in your studies. If you have any questions or would like to schedule a tutoring session, please don't hesitate to reach out to us. We are here to support you in any way we can.

Advising and Counseling Support Services

At our institution, we are committed to supporting your academic and personal growth. That's why we offer a range of advising and counseling services to help you navigate the challenges of college life. To learn more about the resources available to you and how to access them, visit the Institutional Syllabus page under the Advising and Counseling Support Services tab. Our advising team and the support centers across campus are here to support you in achieving your goals and overcoming any obstacles you may face.

Student Academic Calendar

As students you should be aware of all important dates in the semester, such as the day that courses begin and end, as well as the drop date and the last day to withdraw. To learn more about those dates, navigate to the Student Academic Calendar below:

SLCC Student Academic Calendar