GAME ENGINE I | ANIM 220-1 OR ART341-1 FALL 2026

Instructor Name: Antonio Sanders

Course Information: ANIM 220 or ART 341 Animation: Game Engine 1

Meeting Time: T-TH 3:30pm – 6:15pm

Room: AJ 246

Canvas:
https://bsu.instructure.com/courses/190257

Email: Antonio.sanders@bsu.edu
Office Telephone: (765) 285-5676

Office Hours: M-W 11:00-1:00pm
or by appointment

Zoom Personal Room Address: 339 734 0328

COURSE INFORMATION

Course Description: This course focuses on teaching students the fundamentals of game engines. Students will learn the fundamental components and features of game engines (such as objects, inputs, movement, interactions, physics, UI, artwork, animation, sound, and more) and the terminology and theory behind them.

Course Overview: This course focuses on 3D asset creation, texturing, lighting, rendering, and animation using industry standard game engine software. This course is meant to help build the competency needed to make high quality 3D assets used in games and film. A broad approach is used in the course to familiarize the student to the many aspects of 3D game art.

Prerequisites: **ART 210**, **ART 211**, **ART 311**, and **ART 315**

Course Goals / Learning Outcomes:

Upon successful completion of this course, the student should be able to:

- Game Industry Pipeline Workflows
- Import 3D models from other DCC software.
- Apply texture maps to 3d models.
- Basic material editor usage
- Introduction to lighting
- Efficient use of Nanite to bring high resolution geometry to the game engine.
- Learn to Lumen to create real time global illumination.
- Use Sequencer for animation.
- Incorporate simple triggers for interactions.
- Intro to blueprints

Course Modality / Structure: The format for this class will combine video, demonstration, studio work time, individual feedback, group discussion, and critique. There will be a Course Calendar located on the Canvas course site, which includes all weekly tasks, assignments, and due dates. This calendar will be updated as the semester progresses.

Course Time Commitment: It is expected that students will spend approximately 2 hours of study time outside of class for every one hour in class. Since this is a 3-credit studio, you should expect to study an average of 6 hours outside of class each week.

COURSE MATERIALS AND FEES

Reference Material: Udemy (all Ball State Students have access at my.bsu.edu)
Required Texts: None
Course Fee: TBD

Materials and Supplies: Note taking material, flash drive, Portable hard drive, or some type of media storage device.

Making Back-ups: Students are responsible for all digital work. Never rely on the local computer "M" drive or Desktop in the computer labs for any overnight storage or long-term storage. The "M" drives on the computers will not be touched until the end of the semester over the breaks for cleanup unless the drive becomes full. The loss of class works due to the lack of back up is not a viable excuse in this class. Hard drives go corrupt and flash drives break, as a digital artist expects this and plans for it. Always back up everything and do not leave all your files in one location. I would highly recommend using cloud storage such as OneDrive, Dropbox, or a Google drive to aid with online storage. Course assignments and assessments.

COURSE ASSIGNMENTS AND ASSESSMENTS

The Value of Your Work: As an artist/designer/creative, you help to determine the worth of your work and to cultivate respect for the work that you create. You should take care of your work, the execution, craftsmanship and maintenance of your work reflects on you. Maintaining a portfolio (physical/digital) is an important aspect of your development and education.

Course Assignments: List required work that makes up the total grade for the course, such as quizzes, exams, homework, paper, service hours, project, and presentation, etc. Specify **if attendance and/or participation is required** and how it impacts student grades.

Grading Scale: Based on Industry Standards

A = You excelled and added techniques not taught by instructor
B = Did the work asked for with acceptable results
C = Did the minimally acceptable work and attended all classes
D = Unacceptable work but attended all class and completed all homework
F = Unacceptable work, unacceptable homework, and unacceptable attendance

Assessment Criteria & Methods of Assessment:

Assignments: 100pts
Final Project: 50pts

Grading Rubrics

*All or some of the following criteria will be used for grading projects. The rubric may be altered at the discretion of the instructor. * The instructor reserves the right to update and or change the syllabus, projects, or due dates.*

HOMEWORK RUBRIC

Project Basics	Satisfies project specifications and directions	2 pts
Creativity/Concept	Creative and independently developed by the student	2 pts
Effort	Demonstrated competent skills, accuracy, and neatness throughout the project.	2 pts
Technical Competency	Traditional and/or computer tools used appropriately and naming conventions	2 pts
Naming conventions	All files named using naming convention and saved in proper location	2 pts

FINAL PROJECT RUBRIC

Project Basics	Satisfies project specifications and directions, and met deadline	10 pts
Creativity/Concept	Creative and independently developed by the student	10 pts
Effort	Demonstrated competent skills, accuracy, and neatness throughout the project.	10 pts
Technical Competency	Traditional and/or computer tools used appropriately and naming conventions	10 pts
Visual Design / Aesthetics	Project looks complete and finished according to industry standards	10 pts

LATE WORK POLICY

On time – Full Credit	Assignment delivered by the specified time and date for the assignment
1-24 hours late	Grade reduced by one letter grade
1-6 days late	½ Credit
7 or more days Late	Zero for the assignment

ATTENDANCE POLICY

Full credit	Zero to 3 absences
Miss 4-5 classes	Grade drops by one letter grade
6 or more absences	Fail the course

Final Grade Percentage	Point Scale	BSU Grading Scale
A = 100-94	A = 150-139	A = 4.000
A- = 93-90	A- = 138-135	A- = 3.667
B+ = 89-87	B+ = 134-130	B+ = 3.333
B = 86-84	B = 129-126	B = 3.000
B- = 83-80	B- = 125-120	B- = 2.667
C+= 79-77	C+ = 119-115	C+ = 2.333
C = 76-74	C = 114-111	C = 2.000
C-= 73-70	C- = 110-105	C- = 1.667
D+= 69-67	D+ = 104-100	D+ = 1.333
D = 66-64	D = 99-96	D = 1.000
D- =63-60	D- = 95-90	D- = .667
F = 59 or lower	F = 89-0	F = 0.000

COURSE STATEMENTS AND POLICIES

Attendance Policy

Students are required to attend all classes and critiques. After 5 absences you will automatically fail the course unless there are mitigating circumstances. This course is designed to include discussion and other forms of collaboration and communication. You will need to check Canvas each week and your official BSU University email account daily. Doing so will allow you to view announcements, participate in class activities, prepare for and complete assignments and assessments. You are expected to complete all assignments and any other activities by the due date.

Our class time is only 1 hour and 50 minutes. It is important to be on time and ready to work.

- **1-3 absences**: Full attendance credit (no penalty).
    - **15 minutes is tardy.**
    - **3 tardies equals 1 absence.**
    - **30 minutes or more late is absent.**
- **4-5 absences**: One-letter grade deduction from the final grade.
- **6 absences**: Automatic failure of the course.

Participation Policy:

- This course is designed with critiques, discussion, and other forms of regular collaboration and communication.
- It is recommended that you log into your course 3 to 4 times a week and check your official Ball State email account daily to view announcements and prepare for class.
- Complete all assignments and other activities by the stated due dates.

Feedback Policy:

- I will respond to email from your official Ball State email address within 24 hours during weekdays (Monday-Friday) and within 48 hours on the weekend.
- I will read every discussion post, but I will not always personally comment on posts.
- I will grade your quizzes, assignments, and discussions no later than within 5 business days of submission.
- Contact me directly if you have questions or concerns about your performance in class.

Late Assignment Policy:

- All assignments are due by the dates and times indicated on Canvas. Note, they tend to be at 11:59pm. This is to ensure students can get some rest rather than pulling all-nighters to rush assignments.
- Assignments posted after the indicated time will receive half credit.
- Internet connectivity and technical issues may occur and impede you from turning in work on time. Turn in work early and often, and set up a back-up plan, such as visiting the computer labs or having a personal hard drive for backup.
- Inform your instructor via email if you have difficulty submitting homework and it will be handled on a per case basis.
- Canvas will not accept assignments for grading after 11:59 pm on the final day of class.

Assignment Submission Policy:

- All assignments should be submitted digitally in the format requested in the assignment description. These may include .mb, png or ,pdf. or via Perforce
- **Naming in Unreal scenes** – All objects, groups, objects within groups, textures or shaders are to be named according to the naming conventions, or there will be a deduction on homework assignments.
    - Examples:

        - Beane_Andy_FinalRig.mb
        - Ludwick_Brian_FinalStoryboard.pdf
        - Condie_Brad_FirstDraftAnimation.mp4
- Assignments, unless otherwise indicated, should be submitted using the dropbox on the astar server

AI Policy

As part of this course, students are permitted to use text-based AI tools to support their creative and technical work. The responsible and ethical use of AI is essential and should align with the principles of academic integrity, originality, and respect for the creative process.

- **NOT PERMITTED: Creating any 3D models or art related assets including textures and in game assets or marketing materials.**
- **PERMITTED: To aid with coding, materials, shaders, and other code-based tasks. Inspirational ideas, and images.**

Submitting AI generated models and textures in any attempt to pass it off as an individual's work will be considered plagiarism and result in automatic failure of this course.

Grading Policy

It is my policy that appropriate evaluation of your academic performance is an integral part of your learning experience. In the absence of mistake, fraud, bad faith or incompetence, I will be the key decision-maker on the assignment of grades. For information concerning grade appeals, consult the Ball State website.

A Note on Pronouns

We all have pronouns that we expect people to use when they refer to us. These may be he/him, she/her, they/them, or something else. Many people never have to think about their pronouns, but most of us would still be uncomfortable if someone referred to us using pronouns that feel wrong to us. For that reason, it is important to use the correct pronouns when referring to others, including your classmates, professor, and the artists and designers we will be discussing throughout the semester.

UNIVERSITY POLICIES

We are committed to ensuring that all members of the community are welcome, through valuing the various experiences and worldviews represented at Ball State and among those we serve. We promote a culture of respect and civil discourse. If you need course adaptations or accommodations because of a disability, please contact the instructor of record as soon as possible. Ball State's Disability Services office coordinates services for students with disabilities; documentation of a disability needs to be on file in that office before any accommodations can be provided. Disability Services can be contacted at 765-285-5293 or dsd@bsu.edu.

Diversity Statement
Ball State University aspires to be a university that attracts and retains a diverse faculty, staff and student body. We are committed to ensuring that all members of the campus community are welcome through our practice of valuing the various experiences and world views of those we serve. We promote a culture of respect and civil discourse as evident in our Beneficence Pledge. For Bias Incident Response information, go to https://www.bsu.edu/campuslife/multiculturalcenter/bias-incident-reporting or email mc2@bsu.edu.

Disability Services Statement
If you need course adaptations or accommodations because of a disability, please contact Disability

Services as soon as possible. The Office of Disability Services coordinates services for students with disabilities; documentation of a disability needs to be on file in that office before any accommodations can be provided. Disability Services can be contacted at 765-285-5293 or dsd@bsu.edu.

Ball State Academic Ethics Policy
Honesty, trust, and personal responsibility are fundamental attributes of the university community. Academic dishonesty and other forms of academic misconduct threaten the foundation of an institution dedicated to the pursuit of knowledge and will not be tolerated. To maintain its credibility and reputation, and to equitably assign evaluations of scholastic and creative performance, Ball State University is committed to maintaining a climate that upholds and values the highest standards of academic integrity. Visit the complete Student Academic Ethics Policy.

Plagiarism Policy: Plagiarism is not acceptable, unless otherwise indicated for all assignments, you must work independently by yourself. Sharing of files is not permitted for any reason.

Potential Violations

Examples of academic integrity violations include but are not limited to:

- Working with another person on any assignment other than authorized group projects.
- Sharing or allowing others to access your files, whether done with permission or not.
- Use or possession of a file created by someone else.
- Reusing work from another semester, course, or section.
- Fraudulent submission of work.
- Using unauthorized materials during Exams.
- Impersonating someone else or having them impersonate you.
- Making fraudulent or dishonest statements regarding your work.
- Soliciting others to complete work for you.
- Posting course files and resources on study or content sharing websites.

The Plagiarism Tutorial from UNC Libraries provides you with a great foundation in Academic Integrity.

Plagiarism Detection

The campus subscribes to SimCheck, a plagiarism prevention service, through Canvas. You may need to submit written assignments to SimCheck. Student work will be used for plagiarism detection and for no other purpose. The student may indicate in writing to the instructor that he/she refuses to participate in the plagiarism detection process, in which case the instructor can use other electronic means to verify the originality of their work.

Title IX

Ball State University is committed to providing a safe and inclusive learning environment for all students. If you or someone you know has experienced sexual harassment—including sexual assault, dating violence, domestic violence, or stalking, please know that you are not alone. The University offers support services and resources. For more information or to report an incident, please visit www.bsu.edu/titleix or contact the Title IX Coordinator at 765-285-1545 or at titleix@bsu.edu

As your instructor, I am a mandatory reporter under the Title IX policy and required to report any information I receive about possible sexual harassment. This includes information shared in class discussions, assignments, or private conversations.

What happens after I report? The Title IX Coordinator will email the person who experienced sexual harassment (complainant) and invite them to schedule a meeting. If the complainant **chooses** to meet with the Title IX Coordinator,

- Title IX Coordinator will offer supportive measures (e.g., counseling, extensions on deadlines, course-related adjustments, changes to work or class schedules, and/or referrals to campus offices), review the policy, and discuss options to move forward.

- If a complaint is filed by the complainant or the University, an investigation will begin following University policy.

CANVAS AND STUDENT PRIVACY

Canvas Accessibility: Canvas provides a user experience that is easy, simple, and intuitive. Special attention has been paid to making Canvas screen-readable. The Rich Content Editor encourages users to create accessible content pages (i.e. text formatting is accomplished using styles). Canvas is designed to allow limited customization of colors and schemes to be accessible for all users. The National Federation of the Blind granted Canvas the Gold Level Web Certification in 2010. Find more information by visiting the Canvas Voluntary Product Accessibility Template (VPAT).

FERPA and Privacy: As a student, your educational records are considered confidential. Under FERPA (Family Educational Rights and Privacy Act), your records are confidential and protected. Under most circumstances, your records will not be released without your written and signed consent. However, some directory information may be released to third parties without your prior consent unless a written request to restrict this is on file. You can learn more about student rights to privacy by reading Ball State's FERPA and Privacy and Protection.

Video Conferencing Recording: In this class, software may be used to record live class discussions. As a student in this class, your participation in live class discussions may be recorded. These recordings typically will be made available only to students enrolled in the class, to assist those who cannot attend the live session or to serve as a resource for those who would like to review content that was presented. Students who prefer to participate via audio only will be allowed to disable their video camera so only audio will be captured. Students who prefer to listen only must disable their audio capability and visual camera. If you have concerns, please discuss these options with me.

SUPPORT SERVICES

The Writing Center: All writers improve with practice and feedback, so as a student in this course, you are encouraged to use the Writing Center (in Robert Bell 295, Bracken Library, or online) to get additional feedback on your writing. To schedule a free appointment to discuss your writing, go to www.bsu.edu/writingcenter. Online and in-person appointments are available seven days a week: however, plan ahead because appointments book quickly!

The Learning Center
The Learning Center offers free tutoring for many courses. We also provide writing and study skills tutoring. Tutoring is delivered in-person in NQ 350 or online via Zoom: you decide! Students can begin making appointments on Monday, August 21, 2023. To make an appointment, visit my.bsu.edu and click on “Navigate” in the Additional Tools section, or just go directly to https://bsu.navigate.eab.com. You can also download the Navigate Student app. The Learning Center also has drop-in tutoring (no appointment necessary) for math, chemistry, and biology. Check our website for more information. Testing accommodations for students with disabilities are available for students who have received the appropriate documentation from Disability Services. Tests may be administered in the Learning Center. For more information about all of our programming, visit bsu.edu/learningcenter or call 765-285-1006. Email us at learncenter@bsu.edu. Follow us on Instagram and Twitter: BallStateLC

The Counseling Center offers free confidential telehealth counseling services for BSU students. Students can call the Counseling Center at (765) 285-1736 to make an appointment. Many of their outreach services can be accessed from anywhere and they have online **resources** available 24 hours a day. They also have a free, self-help, on-line tool --Welltrack to help cope with stress, anxiety and

depression and this can be found at: https://www.bsu.edu/campuslife/counselingcenter. Click here to **find more information (PDF)** about services for Spring 2022.

Cardinal Kitchen: Cardinal Kitchen is Ball State's campus food pantry. The pantry is open to all Ball State students Tuesday nights from 5:00 to 8:00 p.m. throughout the year. It is located in Room L26 of the Student Center and you can contact them by phone: (765) 285-2621 or email: cardkitch@bsu.edu

SUBJECT TO CHANGE STATEMENT

This syllabus and schedule are subject to change in the event of extenuating circumstances.

TENTATIVE COURSE SCHEDULE

Fall 2026

WK	**Topic**	**Reading / Assignment**
1	Version Control Modeling, Texture Creation	Project and Scene set up. Perforce integration Assignment 1: Concept and model trim sheet asset
2	Version Control Modeling, Texture Creation	Assignment 1: Model trim sheet asset and submit to perforce **Assignment 1: DUE 20pts**
3	Version Control High-Res Modeling	Assignment 2: Sculpt high-res detail in models
4	Version Control High-Res Modeling	Assignment 2: Sculpt high-res detail in models **Assignment 2: DUE 20pts**
5	Version Control Texture baking	Assignment 3: Create textures in Substance painter
6	Version Control Texture baking	Assignment 3: Bake textures in Substance painter **Assignment 3: DUE 20pts**
7	Version Control Build modular assets	Assignment 4: Build modular assets in 3D. Create UV's for models to use trim sheets Import assets into game engine using version control
8	Import to Game Engine	Assignment 5: Create materials for assets in game engine Create and render animated sequence **Assignment 4: DUE 20pts** **Assignment 5: DUE 20pts**
9	Final Project: Create a playable level Import to Game Engine Render Diorama in Game Engine	Project and Scene set up. Perforce integration
10	Final Project: Create a playable level	Model, UV, Sculpt, Texture

WK	**Topic**	**Reading / Assignment**
11	Final Project: Create a playable level	Blueprinting: elevator platform, doors, damage
12	Final Project: Create a playable level	Blueprinting: Create one unique feature using blueprints, connect level to next level
13	Final Project: Create a playable level	Build initial level prepare for testing. Playtest levels
14	Final Project: Create a playable level	Adjust level based on player feedback
15	Final Project: Create a playable level	**Submit final playable level** **Final Project: DUE 50pts**
	FINAL DATE/TIME	**Tuesday Dec. 8, 2:15-4:15PM**