



Undergraduate Course Syllabus

GRA 311: Environmental Design

Center: Online

Course Prerequisites

GRA 201, GRA 202

Course Description

In the first half of this course students will be introduced to a pipeline for the creation of environments inside of a game studio. Students will be shown how to use reference drawings and images to help build props and environment pieces. Students will also be shown how these assets can be used, not only as standalone assets but to create other bigger picture assets when used as a modular set piece. Then the students will digitally sculpt environment assets from references provided to them. When the sculpting phase is finished the students will learn how to build a game model from their digital sculpt. Students will then create the textures that will be used for a final render. In the second half of this course students will be able to go through this same pipeline but instead of using provided artwork, they will create something from their own imagination.

Course Outcomes

- Design game environments focused on design principles using industry-standard game engines and reference images
- Create modular game assets that help to establish a certain mood for producing cohesive interior and exterior game environments
- Implement appropriate photographic and digitally crafted texture maps that produce appealing materials according to the requirements of industry-standard game engines
- Remediate environment functionality and performance issues in game engines through techniques that reduce strain on the system resources
- Construct game environments and boundaries that establish an immersive story, mood, and atmosphere

Required Materials

Using your learning resources is critical to your success in this course. Please purchase directly through the [SNHU Online Bookstore](#) rather than any other vendor. Purchasing directly from the bookstore ensures that you will obtain the correct materials and that the IT Service Desk, your advisor, and the instructor can provide you with support if you have problems.

3D Game Environments: Create Professional 3D Game Worlds

Luke Ahearn

Focal Press

2017

2nd Edition

ISBN: 978-1-138-92002-6

Virtual World Design (available free of charge via [this site](#))

Ann Latham Cudworth

CRC Press

2014 Edition

ISBN: 978-1-4665-7966-8

Software: Entertainment Creation Suite Ultimate

Autodesk

Students are able to acquire a three-year free license for [Autodesk's Entertainment Creation Suite Ultimate](#), which contains Autodesk Maya, Autodesk MudBox, and Autodesk 3ds Max. Students can select the software they wish to use. The software should be 2014 or newer.

Software: Unreal Engine 4.X

Epic Games

This course requires the use of [UnrealEngine](#), which can be downloaded for free online. Please check the [recommended and minimum system requirements](#) before selecting a device for use in this course.

Software: Adobe Creative Cloud Subscription

Adobe

This course requires you to use Photoshop and After Effects. It is highly recommended that you download the Adobe Creative Cloud Package, which can be found at [SNHU OntheHub](#).

Optional Materials

[Game Development Principles](#)

Alan Thorn

Cengage

2014 Edition

ISBN: 978-1-285-42705-8

[The Art of Game Design: A Book of Lenses](#)

Jesse Schell

Focal Press

2008 Edition

ISBN: 978-0-12369-496-6

[Game Design Essentials](#)

Briar Lee Mitchell

John Wiley & Sons, Inc.

2012 Edition

ISBN: 978-1-118-22609-4

Diversity, Equity, and Inclusion

As indicated in our core values, SNHU is committed to “embrace diversity where we encourage and respect diverse identities, ideas, and perspectives by honoring difference, amplifying belonging, engaging civilly, and breaking down barriers to bring our mission to life.”

This may or will be reflected in SNHU’s curriculum as we embrace and practice diversity, equity, and inclusion (DEI) to provide the most transformative experience for our students, faculty, and staff. Because topics pertaining to DEI can be sensitive, please remember that embodying and practicing diversity, equity, and inclusion is one of our core values that you will encounter throughout the academic experience. In higher education, we are expected to think and engage critically. Use a growth mindset to embrace the diverse readings, course assignments, and experiences of your peers and faculty.

For more information about DEI at SNHU, please visit our website at the [Office of Diversity and Inclusion](#).

Instructor Availability and Response Time

Your class interaction with the instructor and your classmates will take place on a regular, ongoing basis. Your instructor will be actively engaged within the course throughout the week. You will normally communicate with your instructor in the weekly discussions or the General Questions discussion topic so that your questions and the instructor’s answers benefit the entire class. You should feel free, however, to communicate with your instructor via SNHU email at any time, particularly when you want to discuss something of a personal or sensitive nature. Your instructor will generally provide a response within 24 hours. Instructors will post grades and feedback (as applicable) within seven days of an assignment’s due date, or within seven days of a late submission.

Grade Distribution

Assignment Category	Number of Graded Items	Point Value per Item	Total Points
Discussions	2	30	60
Peer Feedback	3	30	90
Install Unreal Engine	1	25	25
Journal	1	25	25
Game Engine Practice	1	30	30
Textures, Materials, and Assets	1	60	60
Architectural Assets	1	60	60
Level Concept	1	60	60
Final Project			
Milestones	3	80	240
Final Project	1	350	350
			Total Course Points: 1,000

This course may also contain practice activities. The purpose of these non-graded activities is to assist you in mastering the learning outcomes in the graded activity items listed above.

University Grading System: Undergraduate

Grade	Numerical Equivalent	Points
A	93–100	4
A-	90–92	3.67
B+	87–89	3.33
B	83–86	3
B-	80–82	2.67
C+	77–79	2.33
C	73–76	2
C-	70–72	1.67
D+	67–69	1.33
D	60–66	1
F	0–59	0
I	Incomplete	
IF	Incomplete/Failure *	
IP	In Progress (past end of term)	
W	Withdrawn	

* Please refer to the [policy page](#) for information on the incomplete grade process.

Grading Guides

Specific activity directions, grading guides, posting requirements, and additional deadlines can be found in the Assignment Guidelines and Rubrics section of the course.

Weekly Assignment Schedule

All reading and assignment information can be found within each module of the course. Assignments and discussion posts during the first week of each term are due by 11:59 p.m. Eastern Time. Assignments and discussion posts for the remainder of the term are due by 11:59 p.m. of the student's local time zone.

In addition to the textbook readings that are listed, there may be additional required resources within each module.

Module	Topics and Assignments
1	Introduction to Virtual Environments <i>Virtual World Design</i> , Chapter 4 1-1 Discussion: Theme Analysis 1-2 Install Unreal Engine (Pass/Fail) 1-3 Final Project Review
2	Project Management and Planning <i>3D Game Environments: Create Professional 3D Game Worlds</i> , Chapter 2 2-1 Game Engine Practice (Pass/Fail) 2-2 Final Project Milestone One: Visual Theme/Concept

Module	Topics and Assignments
3	Textures and Assets <i>3D Game Environments: Create Professional 3D Game Worlds</i> , Chapters 3, 5, and 6 3-1 Discussion: Peer Feedback 3-2 Assignment: Level Concept 3-3 Textures, Materials, and Assets
4	Mockups <i>3D Game Environments: Create Professional 3D Game Worlds</i> , Chapters 7 and 8 4-1 Final Project Milestone Two: Level Mockup 4-2 Reminder: Cross-Submit Milestone Two to Module Five Discussion Topic
5	Architecture and Interior Spaces <i>3D Game Environments: Create Professional 3D Game Worlds</i> , Chapter 11 5-1 Discussion: Peer Feedback 5-2 Architectural Assets
6	Immersion <i>Virtual World Design</i> , Chapter 17 6-1 Final Project Milestone Three: Draft Level With Textures and Lighting 6-2 Discussion: Tips and Troubleshooting (Optional) 6-3 Reminder: Cross-Submit Milestone Three to Module Seven Discussion Topic
7	Testing and Troubleshooting 7-1 Discussion: Peer Feedback 7-2 Journal: Status Update 7-3 Discussion: Tips and Troubleshooting (Optional)
8	The Final Project: Filling in the Details 8-1 Discussion: Virtual Gallery 8-2 Final Project: Complete Level Design Package

Course Participation

Course participation is required within the first week of the term for all online courses. *Participation* in this context is defined as completing one graded assignment during the first week of the course. Otherwise, students will be administratively removed for nonparticipation. Students who do not participate during the first week may forfeit their rights to be reinstated into the course. Students who stop attending a course after the first week and who do not officially withdraw will receive a grade calculated based on all submitted and missed graded assignments for the course. Missed assignments will earn a grade of zero. See the [course withdrawal policy](#) and the [full attendance policy](#) for further information.

Late Assignments

Students who need extra time may submit assignments (excluding discussion board postings) up to one week after the assignment due date. Discussion board submissions will not be accepted for credit after the deadline except in extenuating circumstances.

- A penalty of 10 percent of the total value of the assignment will be applied to the grade achieved on the late assignment regardless of the day of the week on which the work is submitted.

- Students who submit assignments more than one week late will receive a grade of zero on the assignment unless they have made prior arrangements with the instructor.

Students must submit all assignments no later than 11:59 p.m. (in their own time zone) on the last day of the term. No assignments are accepted after the last day of the term unless an incomplete has been submitted. See the [incomplete grades policy](#).

There may be times an instructor makes an exception to the late assignment policy. Instructors may accept late work, including discussion board posts, with or without prior arrangement.

- Exceptions to the late policy on these grounds are left to the instructor's discretion, including whether the late penalty is applied or waived. Students should not assume that they will be allowed to submit assignments after the due dates.
- If an instructor finds that they are unable to determine whether an exception to the late policy would be appropriate without documentation, the collection and review of student documentation should be handled through the Dispute Resolution team in order to protect the student's privacy. In these cases, students should file a [Student Concern Dispute form](#) to have the circumstances reviewed.

If a student is experiencing (or knows they will experience) a circumstance, including pregnancy, that is protected under the Americans with Disabilities Act or Title IX, they are encouraged to contact the [Online Accessibility Center \(OAC\)](#) as soon as possible to explore what academic accommodations might be offered. Instructors must honor all deadlines established through the OAC.

Student Handbook

Review the [student handbook](#).

ADA/504 Compliance Statement

Southern New Hampshire University (SNHU) is dedicated to providing equal access to individuals with disabilities in accordance with Section 504 of the Rehabilitation Act of 1973 and with Title III of the Americans with Disabilities Act (ADA) of 1990, as amended by the Americans with Disabilities Act Amendments Act (ADAAA) of 2008.

SNHU prohibits unlawful discrimination on the basis of disability and takes action to prevent such discrimination by providing reasonable accommodations to eligible individuals with disabilities. The university has adopted the [ADA/504 Grievances Policy](#) (version 1.2 effective October 16, 2017), providing for prompt and equitable resolution of complaints regarding any action prohibited by Section 504 or the ADA.

For further information on accessibility support and services, visit the [Disability and Accessibility Services](#) webpage.

Academic Integrity Policy

Southern New Hampshire University requires all students to adhere to high standards of integrity in their academic work. Activities such as plagiarism and cheating are not condoned by the university. Review the [full academic integrity policy](#).

Copyright Policy

Southern New Hampshire University abides by the provisions of United States Copyright Act (Title 17 of the United States Code). Any person who infringes the copyright law is liable. Review the [full copyright policy](#).

Withdrawal Policy

Review the [full withdrawal policy](#).

Southern New Hampshire University Policies

More information about SNHU policies can be found on the [policy page](#).