



MMC-170-NC312Z – Virtual Design and Simulated Realities

COURSE OUTLINE

Class Section(s):	NC31Z	Class Location:	Zoom
Class Time(s):	Monday, 2:00 - 3:55		

Instructor:	Dr. R. DuPont	Semester:	Spring 2022
Office Hours:	Monday: 4:00 - 5:00pm Tuesday: 11:00 - 1:00pm Wednesday: 4:00 - 5:00pm	Office Location:	Online
Instructor Contact Methods:	Email: rdupont@ccac.edu or via Discord (Preferred) Phone: 412-369-4123		

Books & Materials	<ul style="list-style-type: none">● Access to Epic's Unreal Game Engine● Access to Screen Recording Software● Epic Games User Account● Floop User Account● Access to Unreal Documentation
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Course Credits:	3
Prerequisites / Co-requisites:	MMC-160 or Approval of Department Head
Course Description:	Students begin practicing with current virtual realities and elements to create interactive simulated environments using current game engine technologies. During this course, students will practice with hardware and software needed to implement immersive media experiences. Students will also create simulations for gaming, training and environmental experiences to examine the many uses of these emerging media forms.
Learning Outcomes (from master course syllabus):	Upon successful completion of the course, the student will: <ol style="list-style-type: none">1. Differentiate between various hardware platforms.2. Design different genres of immersive realities.3. Integrate simulation of experiences using current technologies.4. Apply interactive techniques to game technologies.



	5. Integrate multiple software packages for pipeline development. 6. Create multi-industry based designs for portfolio demonstrations.
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General Education Goal(s)	How does this course meet the General Education goal(s)?
Critical Thinking and Problem Solving	2, 3, 6
Technological Competence	1, 4, 5

Course Policies & Procedures

Evaluation Plan:		
	Projects (x3)	300 Points
	Critiques/FLoop	100 Points
	Midterm Practical	200 Points
	Learning Activities	100 Points
	Final Project	300 Points
	Total Points	1000 Points
	<p>Projects: Projects throughout the course will encompass the use of the programs discussed and demonstrated in the course. All projects are expected to be completed no later than the due date given, except under extraordinary circumstances. An extraordinary circumstance includes death in families, illness of students and unnatural occurrences. Students will be expected to provide documentation in such circumstances.</p> <p>Project Late Policy: Students will be able to turn in assignments up to two days after the due date for 10% off the total grade on the assignment. After this time, the grade will be zero and the assignment will not be accepted.</p> <p>Additionally, students involved with sports and groups on campus must turn in assignments prior to leaving for school sponsored activities.</p>	



	<p>Project Attempts: Once a project is graded, students have one additional attempt to redo and correct the mistakes made on the project. This is to be completed in the two weeks after the due date.</p> <p>Critiques/Floop: Students will review one another's projects and learning activities using the Floop website. This is a free website and the instructor will set up the accounts on the first day of class. Critiques will be graded and students will have one week after the submission dates to complete their critiques for credit.</p> <p>Midterm Practical: Students will have the week of the midterm to complete a practical application of the design elements learned to that point of the class. Students can use all references from the course to that point and Internet references. All Internet references will need to be cited and noted with the submission of the midterm.</p> <p>Learning Activities: These are small activities and assessments that are completed through the week of each course. These can range from review of terminology to implementation of different elements in Unreal. These are to reinforce the content students learned during that class and are due by the start of the following class meeting.</p> <p>Final Project: The final project will encompass all programs, assets and theories examined throughout the semester. Through this process, students will have a complete demonstration of the process to design and layout in preparation for their portfolios. There will be no late policy applied to this project, and it must be handed in on the provided due date.</p>
Attendance & Tardiness:	<p>Students are allowed 1 unexcused absence from the course meeting time. Students who continue to miss course meetings and do not provide proper documentation will lose 25 points per absence from their final overall grade.</p> <p>An excused absence is where proper documentation is provided to the instructor of the course. Accepted forms of documentation include: Doctor's Excuse, University documentation for participation in events, obituary of a family member. This documentation must be presented to the instructor at the following class meeting to be recorded.</p> <p>Instructors are required to check attendance for the first three weeks of the term (or 20% of shorter terms) and report students who have never attended or stopped attending to the college Registrar. For this course, if you are not attending our live Zoom sessions, I will use the last date you completed an assignment or contacted me directly. If you do neither, I will be forced to mark you as not attending, even if you have logged into Blackboard. Students who have never attended will be dropped from the</p>



	<p>class, and financial aid will be adjusted – no refund of tuition or fees. Students who withdraw or stop attending prior to the 10th week of class (or 60% for shorter terms) will have financial aid adjusted to reflect the dates of attendance. You may be required to repay the college for the funds that are returned to the federal government. See Appendix A of the college catalog at catalog.ccac.edu.</p>
Test and/or Quiz Makeup:	<p>There are no quizzes or exams in the course. Weekly activities will be provided via Blackboard with students having one week to complete the activity.</p>
Technology Use:	<p>Students will need to have access to a computer, the Unreal Game Engine, Screen recording software and the Internet. The computer needs to be able to handle the Unreal Engine. Please see the specs required HERE</p>
Academic Honesty:	<p>Academic Misconduct Rules—the college expects students will not engage in:</p> <p>Cheating: The act or attempted act of deception by which a student misrepresents that he/she has mastered information on an academic exercise that, in fact, has not been mastered.</p> <p>Fabrication: The use of invented information or citation in an academic exercise or the falsification of research or other findings.</p> <p>Plagiarism Occurs when a student:</p> <ul style="list-style-type: none"> ● fails to place quotation marks around material copied word-for-word from another source, published or not, including web-based content (long quotes are indented and blocked, according to discipline documentation requirements); ● neglects to attribute words and/or ideas to the author, whether the author is published or not; ● closely follows the original’s wording and sentence structure when attempting; and/or ● presents all or part of a paper from an essay-purchasing website or other source as his or her own work. <p>If you are not sure - ASK! I will let you know! Failure to follow this will result in a failing grade for the project. Further infractions will result in a failing grade for the class and report to the Dean of Academic Affairs.</p>
Other Policies and Procedures:	<ul style="list-style-type: none"> ● File corruption, Drive failures and other miscellaneous technological issues are not grounds for an assignment or final project extension. If this occurs, the student is still held to the due date and late policy (if applicable).



- For on campus classes, as students will have computers for use during the class with all needed software, students are responsible for their own personal computers and troubleshooting issues that can occur.
- Make-Up Quizzes will be offered only for those presenting valid medical excuses within one week of the quiz or exam.
- Final Exams are scheduled per College Policy. Your presence at the scheduled final exam time is mandatory. Failure to attend will result in a failing grade for the final showcase/critique.
- Any electronic devices including cell phones, music players, laptops and tablets should be muted during class.
 - Cell phones are not to be out on the desks during class. Students will not text during the class.
- Students should be attentive during lectures and follow-along activities during the class period. Therefore, any non-class related websites should not be open during this time, as they are distracting to you, and those around you.
- Concerns related to the course should be presented to the professor in a timely manner before exploring other options. Set up an appointment with the instructor and present your concerns in a respectful, professional manner.
- E-mails will be answered in a timely manner. However, they will not be answered from 4:00pm to 8:00am during the week.
 - Emails sent after 4:00pm on Fridays will not be responded to until Monday.
 - During university holidays, e-mail responses will not occur until the start of classes again.
 - Emails sent 24 hours prior to the due time of an Assignment or Final Project will not be answered.
- When emailing regarding questions about the course:
 - Include the course ID and number in the title of the email
 - Do not respond to email announcements sent via the Blackboard system
 - Ask questions in the email and/or provide times that you are available for meetings if outside office hours, and I will do my best to accommodate.
- Students are to behave in a professional manner during the class periods. Disrespectful or disruptive behavior towards students or the professors will not be tolerated, and you may be asked to leave the class.
 - The student forfeits any assistance with that day's topic should they be asked to leave.
 - Conduct will be recorded as an Incident Report and conveyed to the Dean.
- Cheating, Plagiarism, or any other unethical behavior will be handled per the policies outlined by the Community College of



	Allegheny County. Students are expected to familiarize themselves with, and follow these policies.
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All students are expected to read and comply with the policies and regulations set forth in the CCAC Student Handbook, including without limitation the College's policies regarding academic and behavioral conduct, the procedures for requesting an accommodation based upon a disability, pregnancy or pregnancy related condition, or a religious observance, and for reporting unlawful discrimination and harassment.

The Student Handbook is available to view and download from the College's website at the following URL: <https://www.ccac.edu/policies>.

The full text of the College's *Policy Manual*, *Administrative Regulations Manual*, and the Civil Rights Complaint Procedure can also be viewed and downloaded at: <https://www.ccac.edu/policies>.

Information concerning the process and documentation required to request a disability-related accommodation can be obtained by contacting the campus' Office of Supportive Services for Students with Disabilities (OSSSD) or by visiting the OSSSD information page at <https://www.ccac.edu/policies>.

Students are reminded that they can access their course information and CCAC email account, the CCAC Academic Calendar (including add/drop/withdrawal deadlines), the Student Handbook, the College's Incident Report form, and many other College services through the MyCCAC portal at: <https://my.ccac.edu>.

Course Plan:

Class Week/Date	Topics / Learning Activities	Assignments / Homework	Tests, Quizzes, Evaluations
Week 1 1/31	Syllabus Overview Creating an Epic Account Game Engine Pipeline Project Organization and Assets	Create Epic Account Download Unreal Reading 1	Project 1 - Assigned Midterm - Assigned
Week 2 2/7	Unreal Game Engine - Interface and Project Types Working with level assets File Types and Unreal Placing Actors in Unreal	Reading 2 Learning Activity 1	



Week 3 2/14	Using the Content Browser Lighting & Audio in Unreal File publishing in Unreal Engine	Reading 3	
Week 4 2/21	Textures and Materials Landscapes in Unreal	Reading 4 Learning Activity 2 Project 1 - Floop	Project 1 - DUE Project 2 - Assigned
Week 5 2/28	Importing external assets into Unreal Physics and Collisions in Unreal	Reading 5 Learning Activity 3	
Week 6 3/7	Midterm Practical - No Zoom Meeting		
Week 7 3/14	Animation in Unreal Engine	Reading 6 Learning Activity 4	Final Project - Assigned
Week 8 3/21	Blueprints vs. C++ in Unreal Creating scripts and Interactivity	Reading 7 Project 2 Floop	Project 2 - DUE Project 3 - Assigned
Week 9 3/28	UMG UI design in Unreal Game Modes for Unreal Games	Learning Activity 5	
Week 10 4/4	Blueprints and Artificial Intelligence Design	Reading 8	
CCAC SPRING BREAK - APRIL 11 to APRIL 17			
Week 11 4/18	Character Controls and Respawns	Learning Activity 6	
Week 12 4/25	Reserved	Project 3 - Floop	Project 3 - DUE
Week 13 5/2	Reserved - Final Project Work Week		
Final Project Due - Monday May 16th by 2:00pm			

Course Outline Corrections:

During the semester/session, reasonable changes to the course outline may be academically appropriate. Students will be notified of these adjustments by the instructor in a timely manner.