



Digital Worlds
INSTITUTE

Nick Heitzman
Contact: 352-294-2000 | nick@digitalworlds.ufl.edu
Office: Virtual - Zoom
Hours: By Appointment

DIG3715 GAME CONTENT PRODUCTION 2 ONLINE

Spring 2025

Course Meetings: Asynchronous online
Course Mode: Online
Course Location: Online section through Canvas Shell

Course Description

Game Content Production 2 aims to equip the students with the basic technical knowledge and skills required to operate the Unity3D game engine. The course reviews the key engine features, their principles and practical application. The course is both theoretical and practical in nature, it heavily focuses on hands-on projects throughout the semester. Students will learn to work with various tools provided with the Unity3D game engine, within multiple disciplines (2D and 3D art, programming, animation, UI, VFX etc.) in order to build up a general understanding of the application of a game engine within a game development process. Emphasis is placed on strong foundation skills and self-motivated problem solving. Through a carefully crafted set of assignments, the course simulates the working conditions in video game production.

Course Prerequisites

Digital Arts and Sciences major and [DIG 3713](#) with minimum grade of C

Learning Outcomes

By the end of this course, students will be able to:

- Schedule and document a multi-milestone development cycle
- Implement a 3D software to engine development pipeline
- Create 3D assets, textures, and advanced materials
- Edit and animate 3D characters
- Organize 3D environment lighting
- Build gameplay systems and scripts
- Craft and evaluate all aspects of a complex indie-style 3D video game from initial concept to final game build.

Materials & Books

Required

- Unity HUB and Unity Editor (Free registration required)

- Visual Studio (or similar scripting software)
- 3D modeling program; Maya, 3DSMax, Blender, etc. (Free registration required)
- 2D texturing program; Adobe Photoshop, G.I.M.P., Substance Painter

Supplemental

- GitHub Code Repository (Free registration required)
- Lynda.com Online Unity Tutorials (Free access for UF students)
- Official Unity Development Community <https://unity3d.com/community>
- Autodesk Academy <https://academy.autodesk.com>
- Autodesk Indestructables Community <https://www.indestructables.com/howto/games/>
- ArtStation <https://www.artstation.com>
- Digital Graphic Drawing Tablet with Pen (Photoshop compatible)

Technology Requirements

- [Unity Editor capable](#) laptop or equivalent (*PC or Mac* - development can be done on a Mac, but all submissions must be Windows 64-bit builds and all builds must be able to be played on a Windows computer*)
- Mouse peripheral or equivalent (*not trackpad only*)
- *For more details, see the section on course technology below.*

Course Schedule

This schedule is only a guide and is subject to change. Unless otherwise indicated, assignments and readings are due the day they are listed on the syllabus, not the following day.

Week	Subject	Assignment Quizzes	Assignments Due
0	Course Orientation: course software requirements and settings; 3D design architecture	M0 Quiz	- Introduce yourself discussion
1	Overview of successful 3D small-scale titles; project schedule	M1 Quiz	Schedule
2	3D asset databases; design documentation and scope of game.	M2 Quiz	GDD V1.0
3	3D Development Pipeline Maya to Unity to Maya Iterative Development Pipeline Unity ProBuilder System Exercise Physics-Based Rendered Material Creation Exercise The FBX Exporter Optimal Settings and Use 3D Collision Application and Options	M3 Quiz	-3D Asset with PBR Material - Two custom 3D model variants with complex multi-texture materials applied
4	Creating basic 3D characters; differentiating character types and reducing animation time; simple keyframe animation; main camera set up	M4 Quiz	- Animated 3D Player Gif or video demonstrating a 3D character mobility and idle cycles in Maya
5	Player feedback design; storytelling and communication in game; unconventional user interface design.	M5 Quiz	-UI Screenshots

6	<p>PROTOTYPE MILESTONE</p> <p>Whitebox 3D Game Level with ProBuilder Exercise</p> <p>Player Navigation, Physics, and Camera in a 3D World</p> <p>Basic Gameplay Systems Overview</p> <p>Milestone Readme.txt Discussion</p> <p>Introduction of Visual Design Rules in Whitebox</p> <p>Update GDD Exercise</p>	M6 Quiz	<p>PROTOTYPE MILESTONE</p> <p>GDD V2.0 - Windows Game executable build containing a whitebox 3D environment with basic core gameplay in place, and updated design document</p>
7	<p>Lighting, Color, and Post-Processing</p> <p>Ambient and Directional Lights</p> <p>Spot, Point, Custom Light Techniques</p> <p>Prefabs with Lighting Exercise</p> <p>Particle Editor and Systems Review</p> <p>Global and Local Post-Processing Systems Development</p>	M7 Quiz	<p>Lighting Screenshots</p>
8	<p>MIDTERM MILESTONE</p> <p>Creating In-Game Tutorials and Learning Objectives</p> <p>Developing 3D Key Assets and Encounters</p> <p>Timing, Pacing, and Delivery Tuning Discussion</p> <p>Game Scope and Scale Evaluation Exercise</p>	M8 Quiz	<p>MIDTERM MILESTONE - Windows Game executable build containing near final art, systems, and design element</p>
9	<p>Logging, prioritizing, and addressing game bugs; tutorial and conveyance; lighting and pathing to guide gameplay</p>	M9 Quiz	<p>Prioritized Bug Report: Document listing all current bugs, missing features, cut content with priority and delivery dates</p>
10	<p>3D game start screen; scene and level transition techniques; gameplay impact improvement</p>	M10 Quiz	<p>Aux Game Screenshots In game screenshots showing the Game Start</p>
11	<p>Introduction to Unity Sound; theme music and sound effects design; credits screen design and creation; splashes</p>	M11 Quiz	<p>- Screenshots of Credits and Splash screens</p>
12	<p>Game icon creation; imagery</p>	M12 Quiz	<p>Game icon and screenshots</p>
13	<p>BETA Milestone and Final Game Design Document</p>	M13 Quiz	<p>BETA GAME BUILD - Final GDD V3.0 - Feature complete game executable Windows build deliverable along with updated final design document and video walkthrough</p>

14	Writing a project post-mortem document	M14 Quiz	Postmortem
15	GOLD MASTER MILESTONE: Final Game Build as portfolio piece	M15 Quiz	FINAL GAME BUILD, Video Walkthrough

Grading Criteria

Assignment / Assessment	Total Points	% of Grade
Weekly Assignments	1100	40
Weekly Quizzes	1600	10
PROTOTYPE MILESTONE Executable build of the initial game product state Updated design document	100	10
MIDTERM MILESTONE Executable build of the game product demonstrating gameplay and art Updated design document	100	10
BETA MILESTONE Executable build of the content complete game product. Final game design document, and video walkthrough.	100	10
FINAL PROJECT (GOLD MASTER MILESTONE) Final executable build of the unique 3D game product and video walkthrough	100	20

Grading Scale

Letter Grade	% Equivalency
A	94 – 100%
A-	90 – 93%
B+	87 – 89%
B	84 – 86%
B-	80 – 83%
C+	77 – 79%
C	74 – 76%
C-	70 – 73%
D+	67 – 69%
D	64 – 66%
D-	60 – 63%
E, I, NG, S-U, WF	0 – 59%

More information on grades and grading policies is here: <https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>

Materials and Supply Fees

Material and supply and equipment use fee information are available from the academic departments or from the

schedule of courses (Florida Statutes 1009.24). The total course fee for this class is \$0.00. The total course fee for each course is listed on the UF Schedule of Courses. (<https://registrar.ufl.edu/soc/>)

Course Policies

Attendance Policy, Class Expectations, and Make-Up Policy

We value participation more than mere attendance. The instructor is responsible for communicating the specific details of what percentage of your grade (if any) will be assigned to participation, and how class participation will be measured and graded. Interaction with your peers and the instructor will empower you to greater achievement.

In our course, attendance is taken at the beginning of each class period and is calculated as the Participation element which makes up 10% of your overall grade. Any unexcused absences are factored into the Participation grade total. Exempt from this policy are only those absences involving university-sponsored events, such as athletics and band, and religious holidays, family emergencies, and health issues for which you must provide appropriate documentation in advance of the absence. All assignments are due by the stated date and time. Late assignments because of an unexcused absence may be submitted up to one week (7 days) after the scheduled due date, incurring a 10% grade penalty. This does not apply to the Final Project which must be submitted on time as scheduled.

Additionally, tardiness will not be tolerated. If you are tardy for three class periods, you will receive an unexcused absence.

Students may only participate in classes if they are registered officially or approved to audit with evidence of having paid audit fees. The Office of the University Registrar provides official class rolls to instructors. Students are responsible for satisfying all academic objectives as defined by the instructor. Absences count from the first-class meeting.

Acceptable reasons for absence from or failure to engage in class include illness; Title IX-related situations; serious accidents or emergencies affecting the student, their roommates, or their family; special curricular requirements (e.g., judging trips, field trips, professional conferences); military obligation; severe weather conditions that prevent class participation; religious holidays; participation in official university activities (e.g., music performances, athletic competition, debate); and court-imposed legal obligations (e.g., jury duty or subpoena). Other reasons (e.g., a job interview or club activity) may be deemed acceptable if approved by the instructor.

For all planned absences, a student in a situation that allows an excused absence from a class, or any required class activity must inform the instructor as early as possible prior to the class. For all unplanned absences because of accidents or emergency situations, students should contact their instructor as soon as conditions permit.

Students shall be permitted a reasonable amount of time to make up the material or activities covered during absence from class or inability to engage in class activities because of the reasons outlined above.

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at: <https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/>

Course Technology

The students will be required to have access to and use a personal computer with access to the Internet. Word

editing software will be required for written assignments.

The University of Florida and Digital Worlds requires that students have access to and ongoing use of a laptop/mobile computer for DIG courses in order to be able to function in the current learning environment. Digital Worlds requires each student's laptop computer to meet certain minimum specs for heavy graphics use, the requirements documented below must be met. <https://digitalworlds.ufl.edu/programs/ba-in-digital-arts-sciences/technology-requirements/>




Course Communications

Students can communicate directly with the instructor regarding the course material through the course management system (CANVAS) using "Canvas Mail".

Course Modality

Course modality is the way in which a class is offered/delivered to students by the instructor. All students, regardless of the modality, will achieve the same learning objectives. Students can check their class schedules or reference the top of this syllabus to see the format(s) available for each of their individual classes. The modality of a course does not vary during a semester, and students are expected to adhere to the instructor-defined attendance guidelines for that format. Use the guide below to familiarize yourself with the various ways classes are offered at the Digital Worlds Institute.

Know Your Course Modality

		
Face-to-Face (F2F)	Online Asynchronous (OA)	Online Synchronous (OS)
Students attend class F2F in a classroom. Class sessions may be recorded for students to view later.	Students watch the posted recording of the class session or studio recording online at their convenience.	Students participate in a class in real-time through Zoom.
Hybrid refers to a course that is partially Face-to-Face (F2F) and Online Asynchronous (OA)		
In a HyFlex Model , students have the flexibility of moving across all three modalities as needed or desired.		

Course Technology

The students will be required to have access to and use a personal computer with access to the Internet. Word editing software will be required for written assignments.

The University of Florida and Digital Worlds requires that students have access to and ongoing use of a laptop/mobile computer for DIG courses in order to be able to function in the current learning environment. Digital Worlds requires each DAS major's laptop computer to meet certain minimum specs for heavy graphics use, the requirements documented below must be met. <https://digitalworlds.ufl.edu/programs/ba-in-digital-arts-sciences/technology-requirements/>.

Course Communications

Students can communicate directly with the instructor regarding the course material through the course management system (CANVAS) using "Canvas Mail".

Course Recordings

Our class sessions may be audio-visually recorded for students in the class to refer and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who unmute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.

Creation of Original Content Ethics

For original projects and all assignment deliverables, students should remember that representations of acts of violence, coarse and offensive language, sexual behavior, bodily function and ability, neurodiversity, and personal identity are likely to cause extreme audience response, regardless of the creator's intentions. In addition, the recreation of such actions and subjects for fictional purposes may unintentionally traumatize or negatively impact those who collaborate in the creation of the images. While the university encourages students to explore themes and tell stories that may include this difficult subject matter, they should be cautioned against modes or styles of representation that might be considered unnecessarily offensive or potentially triggering. Instructors, faculty, and university administrators reserve the right to not show or share any student work they feel is inappropriate for their classroom or for public exhibition, as there may be concerns about the impact of such work on the community. We encourage students to consult with their faculty when producing work that might be considered controversial, and to err on the side of being cautious when it comes to making decisions about a project's content - in other words, make the PG-13 version of your story, not the R version, and certainly not the "unrated" version. This is also to help students understand that most professional creative situations have strict guidelines and limitations on such content and how it is produced: your ability to tell stories effectively with "less" is a strong professional skill that will aid in the dissemination of your work to a broader audience.

Course Technology Support

Technology Support Center

The [Technology Support Center](http://digitalworlds.ufl.edu/support) provides computer support for Digital Worlds students who access Zoom, lecture recordings, student equipment, facilities, and other technology-based resources.

<http://digitalworlds.ufl.edu/support>

For computer assistance related to Zoom, lecture recordings, student equipment, and facilities requests please email support@digitalworlds.ufl.edu.

UF Computing Help Desk

For support related to account services, technical consulting, mobile device services, software services, administrative support, application support center, and learning support services, please contact the [UF Computing Help Desk](http://ufcomputing.com) available 24 hours a day, 7 days a week at 352-392-4357 or helpdesk@ufl.edu.

University Policies

University Honesty Policy

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Class Demeanor

Students are expected to arrive to class on time and behave in a manner that is respectful to the instructor and to fellow students. Please avoid the use of cell phones and restrict eating to outside of the classroom. Opinions held by other students should be respected in discussion, and conversations that do not contribute to the discussion should be held at minimum, if at all.

Students Requiring Accommodations

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting <https://disability.ufl.edu/students/get-started/>. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

Netiquette Communication Courtesy

All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions and chats, more information can be found at: <http://teach.ufl.edu/wp-content/uploads/2012/08/NetiquetteGuideforOnlineCourses.pdf>

Software Use

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

Student Privacy

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see: <https://catalog.ufl.edu/UGRD/academic-regulations/ferpa-confidentiality-student-records/>

Course Evaluation

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>

Campus and Academic Resources

U Matter, We Care: If you or someone you know is in distress, please contact umatter@ufl.edu, 352-392-1575, or visit [U Matter, We Care website](#) to refer or report a concern and a team member will reach out to the student in distress.

Counseling and Wellness Center: [Visit the Counseling and Wellness Center website](#) or call 352-392-1575 for information on crisis services as well as non-crisis services.

Student Health Care Center: Call 352-392-1161 for 24/7 information to help you find the care you need, or [visit the Student Health Care Center website](#).

University Police Department: [Visit UF Police Department website](#) or call 352-392-1111 (or 9-1-1 for emergencies).

UF Health Shands Emergency Room / Trauma Center: For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; [Visit the UF Health Emergency Room and Trauma Center website](#).

E-learning technical support: Contact the [UF Computing Help Desk](#) at 352-392-4357 or via e-mail at helpdesk@ufl.edu.

[Career Connections Center](#): Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.

[Library Support](#): Various ways to receive assistance with respect to using the libraries or finding resources.

[Teaching Center](#): Broward Hall, 352-392-2010 or to make an appointment 352- 392-6420. General study skills and tutoring.

[Writing Studio](#): 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers.

Student Complaints On-Campus: [Visit the Student Honor Code and Student Conduct Code webpage for more information](#).

Online Students Complaints: [View the Distance Learning Student Complaint Process](#).

Disclaimer: This syllabus represents the instructor's current plans and objectives. As we go through the semester, those plans may need to change to enhance the class learning opportunity. Such changes, communicated clearly, are not unusual and should be expected.