



**Digital Worlds**  
INSTITUTE

**Nick Heitzman**

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**Office:** NRG102, Norman Gym, Gainesville

**Hours:** T | 9:30 AM – 10:45 PM

R | 9:30 AM – 10:45 AM

# **DIG2632 INTRODUCTION TO GAME DEVELOPMENT & DESIGN**

**Summer 2025**

**Course Meetings:** T R F | 9:30 AM – 10:45 AM  
**Course Mode:** Campus  
**Course Location:** Campus, Norman Gym, Room 120 (ORC)

## **Course Description**

DIG2632 focuses on learning the basic concepts related to the Unity Platformer game. Students will have opportunities to create their own 2D characters and assets in order to complete a functional game built on multiple platforms. In addition, students will learn the essential principles of video game design and development in the Unity game engine with provided script package.

## **Course Prerequisites**

None

## **Learning Outcomes**

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

- Understand the general workflow for multi-platform executable games using one of the industry-standard software.
- Define the scope for their game by creating a Game Design Document.
- Understand the various types of tools involved in designing 2D game assets.

## **Materials & Books**

### **Required**

- Unity Hub and Unity LTS Editor (*free registration required*)
- Microsoft Visual Studio (*or similar C# scripting editor*)
- Adobe Photoshop CC or similar 2D editing software

### **Supplemental**

- GitHub (*free registration required*)

- Lynda.com Online Unity Tutorials (*free access for UF students*)
- Official Unity Development Community <https://unity3d.com/community>
- ArtStation <https://www.artstation.com/>
- Sketchfab <https://sketchfab.com/>
- Digital Graphic Drawing Tablet with Pen

## Technology Requirements

- Unity capable computer – [system requirements](#)
- Mouse

## 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	Assignments Due
1	<b>Introduction to Game Development</b> <ul style="list-style-type: none"> <li>● Syllabus Overview</li> <li>● Review students' examples</li> <li>● Game Genre and Gameplay Brainstorming</li> </ul> <b>Game Design Document (GDD) Creation</b> <ul style="list-style-type: none"> <li>● Aesthetics, Gameplay, and Features</li> <li>● Milestones, Scope, Deliverables</li> </ul> <b>Initial Prototype Development</b> <ul style="list-style-type: none"> <li>● Unity Editor Basics</li> <li>● Unity Package &amp; Scene setup</li> <li>● Rough Gameplay Maps</li> </ul>	<b>Rough Level Map</b>  <b>What to Submit?</b> <b>GDD V1.0</b> (Word/PDF) <b>Rough level map</b> (image)
2	<b>Player Character and Animation</b> <ul style="list-style-type: none"> <li>● Pixel Arts</li> <li>● Gathering references</li> <li>● Creating a customized character</li> </ul> <b>PROTOTYPE (Character &amp; Platforms)</b> <ul style="list-style-type: none"> <li>● 2D Character animation</li> <li>● Applying animation in Unity</li> </ul>	<b>Main Character functionality</b> <b>Player Character Design</b> (GIF)  <b>What to Submit?</b> <b>Character Sprite Sheet</b> (JPG or PNG) <b>Unity Playtest Video</b> (mp4)
3	<b>User Interface Development</b> <ul style="list-style-type: none"> <li>● Canvas UI/UX Pipeline</li> <li>● Collectibles</li> <li>● Dialogue system in Unity</li> </ul> <b>Tile Sets in Game Development</b> <ul style="list-style-type: none"> <li>● Creating extra assets &amp; tiles</li> <li>● Tile &amp; background setup in Unity</li> </ul> <b>MIDTERM MILESTONE</b> <ul style="list-style-type: none"> <li>● Game Build Process</li> <li>● Testing and Bug-Fixes</li> </ul>	<b>MIDTERM MILESTONE</b> <b>(Character + Tile + UI + Collectibles)</b> Tile Sets Collectibles Dialogue Play Test  <b>What to Submit?</b> <b>Unity Playtest Video</b> (mp4) <b>Custom Tile Sets</b> (JPG or PNG) <b>Working Build</b> (ZIP)

4	<b>Weapon system &amp; Enemy Functionality</b> <ul style="list-style-type: none"> <li>• Player Weapon System</li> <li>• Health Bar</li> <li>• Enemy Movement</li> <li>• Enemy Weapon System</li> <li>• Moving Platform</li> </ul> <b>Level Transitions</b> <ul style="list-style-type: none"> <li>• Level Indexes and Navigation</li> <li>• Teleporting</li> </ul>	<b>Midterm Build Test</b> Adding Enemy Objects Weapon system Teleportation  <b>What to Submit?</b> <b>Unity Playtest Video (mp4)</b>
5	<b>Auxiliary Systems and Post-processing</b> <ul style="list-style-type: none"> <li>• Parallax and Layers</li> <li>• Hybrid Lighting</li> <li>• Post-processing System Exercises</li> </ul> <b>Particle Systems</b> <ul style="list-style-type: none"> <li>• Unity Particle Editor</li> <li>• Practical Effects Creation</li> </ul>	Lighting Screenshot Particles  <b>What to Submit?</b> <b>Unity Playtest Video (mp4)</b>
6	<b>Support Game Levels</b> <ul style="list-style-type: none"> <li>• Game Start, Splash, Transitional Screens</li> <li>• Consistent Design</li> </ul> <b>Game Audio</b> <ul style="list-style-type: none"> <li>• Creating your own sound effect &amp; Voiceover</li> <li>• Audio Trigger</li> <li>• Adobe Audition</li> <li>• Audio Balancing</li> </ul> <b>Play Testing</b> <ul style="list-style-type: none"> <li>• Bug and Issue Priorities</li> <li>• In-class review</li> </ul> <b>GOLD MASTER MILESTONE</b> <ul style="list-style-type: none"> <li>• Final Game Build</li> </ul>	<b>GOLD MASTER MILESTONE</b> ReadMe Document Game Title Screen Credit Screen  <b>What to Submit?</b> <b>Final Game Build (ZIP)</b> <b>Unity Playtest Video (mp4)</b> <b>ReadMe Document (pdf)</b>

## Grading Criteria

Assignment / Assessment	Total Points	% of Grade
<b>Assignments</b> – 10 weekly assignments, 10 points each	100	50
<b>Milestones</b> – 2 major milestones, 100 points each	200	30
<b>Participation</b> – Students are expected to be present for classes and actively participate in class discussions.	100	10
<b>Final Project</b> – 1 Final game project, 100 points	100	10

## 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 as a result of an unexcused absence may be submitted up to one week 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.

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 Recordings

Our class sessions may be audio-visually recorded for students in the class to refer back 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 un-mute 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](mailto: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](#) available 24 hours a day, 7 days a week at 352-392-4357 or [helpdesk@ufl.edu](mailto: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](mailto: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](mailto: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.