## DIG2632 Creating Mobile Games

### Instructor
Nick Heitzman

### Phone
(352) 294-2000

### Email
Canvas Mail

### Office Location
NRG 102

### Office Hours
W 1 – 2 PM

### Course Number
DIG2632

### Semester/Year
Summer B 2021

### Course Credits
3 credits

### Course Location
ORC 0120

### Course Description
Introduces designing mobile video games with simple drag and drop programming and basic asset creation. Covers the essential principles of design and development needed to create effective arcade-style games. Provides a solid foundation in the technical skills needed to create multi-platform mobile games.

### Pre-Requisite Knowledge and Skills
None

### Objectives: By the end of this course, students will be able to:
- Understand the general work-flow for creating mobile games using industry standard software.
- Define scope for their game by creating a Game Design Document.
- Understand the various types of tools involved in designing a mobile game.

### Required Materials
- Unity HUB and Unity 2019+ (*Free registration required*)
- Visual Studio (*or similar scripting software*)
- Adobe Photoshop CC

### Recommended Materials
- Lynda.com Online Unity Tutorials (*Free access for UF students*)
- Official Unity Development Community [https://unity3d.com/community](https://unity3d.com/community)
- ArtStation [https://www.artstation.com/](https://www.artstation.com/)
- SketchFab [https://sketchfab.com/](https://sketchfab.com/)
- Digital Graphic Drawing Tablet with Pen (*Photoshop compatible*)
Course Schedule

This course incorporates lecture, discussion, quizzes, and group learning projects. Individual assignments will be explained in detail as the course progresses. The final exam time scheduled for this course will be announced in advance of each semester by the University of Florida Registrar’s Office at [http://www.registrar.ufl.edu/soc/](http://www.registrar.ufl.edu/soc/)

<table>
<thead>
<tr>
<th>Week</th>
<th>Subject</th>
<th>Assignments Due</th>
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</thead>
</table>
| Week 1 | **Introduction to Game Development**  
Syllabus Overview  
Unity and Photoshop Install Check and Best Settings  
Development Pipelines  
2D Games Introduction  
Game Design Document (GDD)  
GDD Assignment Overview and Exercise | None |
| Week 2 | **GDD and Rough Level Development**  
Rough Level Map Creation  
Unity Editor Exercises  
Movement, Physics, and Collision  
Player and Main Camera  
Damage, Death, and Respawn  
Level Gameplay Assignment Exercise | GDD V1.0  
Rough Level Map  
Prototype Level Image |
| Week 3 | **MIDTERM Game Build**  
Building the Game Executable  
Animations  
Enemies and Hazards  
Gameplay Scripts Review | MIDTERM GAME BUILD  
Animated Sprite Sheet |
| Week 4 | **User Interface (UI) and Particle FX**  
Canvas UI; Health, Score, Buttons, Feedback  
Collectables  
Dialogue System and UI Components  
Particle Editor Overview and Exercises  
Particle FX Best Practices | UI + Particles Screenshot |
| Week 5 | **Icing On The Cake**  
Lighting and Shadows  
3D Materials in 2D Games  
3D Models in 2D Games  
Parallax Scrolling  
Post-Processing | Lighting Screenshots |
| Week 6 | **FINAL Gold Master Game Build**  
Gameplay Testing and Bugs  
Tutorials and Player Conveyance Basics  
Bug Evaluating and Tracking  
Final Game Build Process  
Game Icon Design and Implementation  
Post-mortems in Game Development | FINAL GAME BUILD |
Evaluation of Grades

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<tr>
<th>Assignments</th>
<th>Total Points</th>
<th>% of Grade</th>
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<tbody>
<tr>
<td>PARTICIPATION</td>
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<tr>
<td>GAME DESIGN DOCUMENT</td>
<td>50</td>
<td>10</td>
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<tr>
<td>ROUGH LEVEL MAP</td>
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</tr>
<tr>
<td>PROTOTYPE LEVEL IMAGE</td>
<td>50</td>
<td>10</td>
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<tr>
<td>MIDTERM MILESTONE</td>
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<tr>
<td>ANIMAGED SPRITE SHEET</td>
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<tr>
<td>UI + PARTICLE FX SCREENSHOT</td>
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<td>5</td>
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<tr>
<td>LIGHTING SCREENSHOT</td>
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<tr>
<td>FINAL PROJECT (GOLD MASTER)</td>
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<td>30</td>
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Grading Scale

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<tbody>
<tr>
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<tr>
<td>A-</td>
<td>90 – 93%</td>
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<tr>
<td>B+</td>
<td>87 – 89%</td>
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<tr>
<td>B</td>
<td>84 – 86%</td>
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<tr>
<td>B-</td>
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<tr>
<td>C+</td>
<td>77 – 79%</td>
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<tr>
<td>C</td>
<td>74 – 76%</td>
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<tr>
<td>C-</td>
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<tr>
<td>D+</td>
<td>67 – 69%</td>
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<tr>
<td>D</td>
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<tr>
<td>D-</td>
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<td>.67</td>
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<tr>
<td>E, I, NG, S-U, WF</td>
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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 is 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 Polices

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.

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/

Face-to-Face Instruction
We will have face-to-face instructional sessions to accomplish the student learning objectives of this course. In response to COVID-19, the following policies and requirements are in place to maintain your learning environment and to enhance the safety of our in-classroom interactions.

- You are required to wear approved face coverings at all times during class and within buildings.
- This course has been assigned a physical classroom with enough capacity to maintain physical distancing (6 feet between individuals) requirements. Please utilize designated seats and maintain appropriate spacing between students. Please do not move desks or stations.
- Sanitizing supplies are available in the classroom if you wish to wipe down your desks prior to sitting down and at the end of the class.
- Follow your instructor’s guidance on how to enter and exit the classroom. Practice physical distancing to the extent possible when entering and exiting the classroom.
- If you are experiencing COVID-19 symptoms (Click here for guidance from the CDC on symptoms of coronavirus), please use the UF Health screening system and follow the instructions on whether you are able to attend class. Click here for UF Health guidance on what to do if you have been exposed to or are experiencing Covid-19 symptoms.
  - Course materials will be provided to you with an excused absence, and you will be given a reasonable amount of time to make up work. Find more information in the university attendance policies.

Course Technology
The students will be required to have access to and use a personal computer with the 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 on-going 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.

**DW 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.

**Student-Developed Content**
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 subject for fictional purpose 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**

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.
For computer assistance related to Zoon, lecture recordings, student equipment, and facilities request please Submit a Help Ticket or email support@digitalworlds.ufl.edu.

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.

UF 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. Click here to get started with the Disability Resource Center. 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: http://registrar.ufl.edu/catalog0910/policies/regulationferpa.html

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. Click here for guidance on how to give feedback in a professional and respectful manner. 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 ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students here.

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.


Student Complaints On-Campus: Visit the Student Honor Code and Student Conduct Code webpage for more information.

On-Line 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.