

# ENTERTAINMENT TECHNOLOGY

<b>INSTRUCTOR:</b> DR. ANGELOS BARMPOUTIS	<b>CLASS LOCATION:</b> CSE E413
<b>SEMESTER/YEAR:</b> FALL 2018	<b>CLASS MEETING TIME(S):</b> M & W, P 3 - 4
<b>Office location/Hours:</b> CSE428 M&W 11:30am-12:30	<b>Contact phone:</b> (352) 294-2000
<b>Credit Hours:</b> 3.0	<b>COURSE NUMBER:</b> DIG6050C
<b>CONTACT EMAIL:</b> ANGELOS@DIGITALWORLDS.UFL.EDU	<b>COURSE COMMUNICATION:</b> UF E-LEARNING

## COURSE DESCRIPTION

The goal of this class is to understand the core principles behind entertainment technology. Real-time simulation, physics engine development, and level construction will be covered in depth. Advanced concepts on game engine development will be discussed, building on the knowledge and skills acquired in other classes.

## PREREQUISITE KNOWLEDGE AND SKILLS

Sufficient computer programming knowledge and fundamentals on game engine development.  
 DIG6751C Protocols for multimedia interfaces.

## PURPOSE OF COURSE

To learn advanced computer programming concepts and to understand various protocols used in entertainment technology.

## COURSE GOALS AND/OR OBJECTIVES

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

1. Learn advanced programming concepts.
2. Learn the principles of simulation using physics engines.
3. Gain experience in game engine construction.
4. Develop environments for entertainment technology.

## 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.

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 <https://registrar.ufl.edu/soc/>

Week	Topic	Assignments
1	Course overview / workspace setup	Setup your software development workspace
	3D geometry review	Test your geometry skills
2	Parameterization of simulated objects	Develop data structures for position, speed, acceleration
	Vehicular 3D navigation	Create car motion

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		simulation
3	Application of external forces	Implement gravity and friction
	Avatar 3D navigation	Implement 3D walking and jumping
4	Level parameterization	Create your level data structure
	Structure of boundaries and points of interaction	Create sequence of rooms
5	Collision detection	Implement wall collider
	Neighborhood-based collision optimization	Implement multi-room collider
6	Collision with bounding volumes	Create volume parameterization
	Rectilinear versus Spherical collision volumes	Implement spherical and rectangular collision volumes
7	Collision between dynamic objects	Implement cross-object collision functions
	Collision optimization strategies	Implement hierarchical segmentation of 3D space
<b>Exam Week</b>	<b>Completion of final project</b>	<b>Final project due</b>

**REQUIRED TEXTBOOKS AND SOFTWARE:**

1. MOZILLA DEVELOPERS NETWORK REFERENCE GUIDE: <https://developer.mozilla.org/en-US/>
2. SOURCE CODE EDITOR: <http://research.dwi.ufl.edu/VN>

Additionally, there will be several useful on-line tutorials and resources.

**RECOMMENDED TEXTBOOKS AND SOFTWARE:**

Will be provided

**COURSE FEES:**

Course fees are assessed for certain courses to offset the cost of materials or supply items consumed in the course of instruction. A list of [approved courses and fees](#) is published in the Schedule of Courses each semester. (UF-3.0374 Regulations of the University of Florida).

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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 \$5.50

The total course fee for each course is listed on the UF Schedule of Courses.

[\(https://registrar.ufl.edu/soc/\)](https://registrar.ufl.edu/soc/).

### EVALUATION OF GRADES

Assignment	Total Points	Percentage of Grade
<b>Daily in class projects</b> – Programming assignments that you have to complete every day in class.	56	56%
<b>Final Project</b> – Semester-long assembly of a larger project out of the daily in-class projects.	30	30%
<b>Participation</b> – Students are expected to actively participate in class discussions.	14	14%

### GRADING SCALE:

Letter Grade	% Equivalency	GPA Equivalency
A	94 – 100%	4.0
A-	90 – 93%	3.67
B+	87 – 89%	3.33
B	84 – 86%	3.00
B-	80 – 83%	2.67
C+	77 – 79%	2.33
C	74 – 76%	2.00
C-	70 – 73%	1.67
D+	67 – 69%	1.33
D	64 – 66%	1.00
D-	60 – 63%	.67
E, I, NG, S- U, WF	0 – 59%	0.00

More information on grades and grading policies is here:

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

### COURSE POLICIES:

#### PARTICIPATION / ATTENDANCE

In our course, attendance for On-Campus and RT On-Line students is mandatory. Students are allowed **three unexcused absences**. If you miss more than **three classes** during the semester, each additional

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absence will lower your overall grade by **100 points**. If you miss more than **six classes**, you will fail the course. 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**.

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

YOT On-Line students will be expected to stay in sync with the rest of the class, and to achieve their participation portion by recording/writing their responses to course material in advance of each lecture at least once a week.

### **MAKE-UP POLICY**

Unless discussed at least 72 hours in advance of the deadline, late assignments will not be accepted. Excluded from this policy are any assignments missed due to medical emergencies.

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/ugrad/current/regulations/info/attendance.aspx>

### **COURSE COMMUNICATIONS**

Students can communicate directly with the Instructor regarding the course material through UF e-Learning. <http://elearning.ufl.edu/>

### **COURSE TECHNOLOGY**

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. Students are required to access electronic forms of information, submit assignments and communicate with other students and faculty electronically.

### **COURSE TECHNOLOGY SUPPORT:**

The [Technology Support Center](#) provides computer support for Digital Worlds students who access Visimeet, lecture recordings, student equipment, facilities and other technology-based resources.

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

For computer assistance related to Visimeet, lecture recordings, student equipment, and facilities request please [Submit a Help Ticket](#) or email [support@digitalworlds.ufl.edu](mailto: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 Computer Help Desk](#) available 24 hours a day, 7 days a week at 352-392-4357 or [helpdesk@ufl.edu](mailto:helpdesk@ufl.edu).

## UF POLICIES:

### UNIVERSITY HONESTY POLICY

UF students are bound by The Honor Pledge that 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](#) 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 requesting accommodations should first register with the [Disability Resource Center](#) (352-392-8565) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure 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>

### ONLINE COURSE EVALUATIONS

Students are expected to provide feedback on the quality of instruction in this course by completing [online evaluations](#). Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at [evaluation results](#).

## CAMPUS RESOURCES

## HEALTH AND WELLNESS

### **U Matter, We Care**

If you or a friend is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu) or 352 392- 1575 so that a team member can reach out to the student.

Counseling and Wellness Center

<http://www.counseling.ufl.edu/cwc/Default.aspx>, 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

Sexual Assault Recovery Services (SARS)  
Student Health Care Center, 392-1161.

University Police Department, 392-1111 (or 9-1-1 for emergencies). <http://www.police.ufl.edu/>

## ACADEMIC RESOURCES

E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu. <https://lss.at.ufl.edu/help.shtml>.

Career Resource Center, Reitz Union, 392-1601. Career assistance and counseling. <http://www.crc.ufl.edu/>

Library Support, <http://cms.uflib.ufl.edu/ask>. Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring. <http://teachingcenter.ufl.edu/>

Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers. <http://writing.ufl.edu/writing-studio/>

Student Complaints Campus:

[https://www.dso.ufl.edu/documents/UF\\_Complaints\\_policy.pdf](https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf)

On-Line Students Complaints:

<http://www.distance.ufl.edu/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.*