3D Engines in Practice – Topic Survey
Class Period: Monday P4
Location: TBD

Instructor
Jeremiah Blanchard
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Office Hours: TBD

Course Description
Focuses on basic technical knowledge and skill in design, conceptualization, and visualization for three-dimensional engine content production. Coverage of scene and agent development, multi-disciplinary teams, complexes pipelines, and production processes. Project-based, culminating in a practical 2D, 2.5D, or 3D application. (3)

Course Objectives
By the end of the semester, successful students should be able to:
- Conceptualize and plan the systems, design, and visual aesthetics for a 2D/2.5D application.
- Develop an industry standard design document.
- Consider and integrate designs regarding usability and user experience.
- Effectively implement core principles of the design production process.
- Create a final application build including multiple levels in a cohesive executable package.

Course Pre-Requisites / Co-Requisites
Some prior programming experience

Course Schedule

Day	Topics	Assessment (Daily)	Assignment Due
5/12	Syllabus, History of AI & Simulation	Syllabus Quiz (Q00)	-
5/19	Virtual Env. Design & AI Fundamentals	Q01	G00
5/26	Knowledge Representation, Basic Search	Q02	Ex0 (Review), G01
6/02	Optimized Search, Advanced Search	Q03, Q04	G02
6/09	Game Playing, Decision-Making	Q05	Ex1 (Search), G03
6/16	Steering Behaviors, Adv. Decision-Making	Q06, Q07	G04
6/23	Irrational Agents	Q08	Ex2 (Flocking), G05
6/30	*ASYNCHRONOUS WORK WEEK*		
7/7	*HOLIDAY: TANABATA (七夕)*		
7/14	Grad Topic Presentations, Adv. Topics	Q09	G06
7/21	*HOLIDAY: MARINE DAY (海の日)*		
7/28	Robocode Tournament	-	Ex3 (Robocode), G07

Grades

Assignment	Points	Grade Pct
Exercises (4)	8 x 4	32%
Quizzes (10-drop-1)	2 x 9	18%
Group Work (8-drop-1)	2 x 7	14%
Professionalism	2 x 1	2%
	100	**100%**

Grading Policy

Percent	Grade	Points	Percent	Grade	Points
93 – 100	A	4.00	73 - 76	C	2.00
90 – 92	A-	3.67	70 – 72	C-	1.67
87 – 89	B+	3.33	67 - 69	D+	1.33
83 – 86	B	3.00	63 - 66	D	1.00
80 – 82	B-	2.67	60 – 62	D-	0.67
77 – 79	C+	2.33	00 – 59	E	0.00

Excuses are evaluated per policy: https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/

Exercises. Short assignments intended to reinforce fundamental engine concepts.

Quizzes. Taken each day on the content previously assigned content for reinforcement.

Group Work. Work / deliverables completed weekly by student groups. (*individual submission prohibited*)

Required Textbooks and Software
There are no required materials for this course. All materials will be provided by the instructor. Assignments require a mobile computing device (laptop). Support is provided only for Windows 11.

Professionalism & Expectations
Students are expected to adhere to the following guidelines in this course:

Read and adhere to the syllabus. Emails requesting information contained in the syllabus will receive the lowest priority for response with no guaranteed turnaround. Practically, this means responses will come only after the remaining email queue of the instructor is otherwise empty. This condition occurs approx. once every 24 months.

Students must act with honor; academic dishonesty will be strictly addressed. Sharing / copying, "borrowing" of code structure, discussing code structure, looking at code from another student, providing such code, and plagiarism, in addition to other dishonest behaviors, are considered academic dishonesty. No information regarding assignment solutions may be shared by students except at a conceptual level. If students implement algorithms from other sources, they must be cited. Students may not copy code from the Internet or other sources under any circumstances. Any student found to have violated these rules, whether a provider or receiver or unauthorized help, will be assigned a **grade of E (failing) in the course** and referred to the Honor Court. **When in doubt, ask.**

Grade reviews must be requested within one week of a grade being posted. After two weeks, no grades will be revisited. In the event of a grade review, the entire assignment will be reviewed.

All assignments are due by the time listed on Canvas. Projects and homework with a cascading deduction: one (1) weekday late for 10% penalty; two (2) for 25% penalty; or three (3) for 50% penalty. Quizzes and presentations may not be completed late for credit except with instructor approval for extenuating circumstances (see below).

Quiz, presentation, and meeting make-ups will not be permitted except in extenuating circumstances. For make-up consideration, a student must submit written documentation from a reputable source as evidence. For planned events (e.g., wedding), the student must contact the instructor at least two weeks in advance. There is no guarantee that requests will be accommodated. Events are taken into consideration strictly at instructor discretion.

Students should visit office hours for exercise help and grade questions. Do not send email to, send private messages to, or "@" instructors or TAs about project help or grades. TAs and instructors will try to answer questions in the chat when possible, but the way to get personalized help is to visit or make arrangements!

Please allow 48 business hours for a response by email. Remember that we will not respond to requests for exercise help or grades. Instructors and TAs have many responsibilities; they will respond to messages as is practical, but it can take some time, especially during the busy parts of the term.