CSCE 4250.001
Topics in Game Development

Instructor: Curtis Chambers
Semester: Spring 2021
Office Hours: TBD on Canvas
Class Time: Tues & Thur 5:30 PM – 6:50 PM
Email: Curtis[dot]Chambers[at]unt[dot]edu
Location: Remote (Zoom via Canvas)

Advanced topics in game development, possibly including but not limited to character animation, procedural content generation, shader techniques, and graphics special effects. Discussion of articles from the recent academic and technical literature on game development and related material from relevant computer science areas.

The class will read and discuss articles from the academic and technical literature on game development and related material from relevant computer science areas.

Course Description:

Learning Outcomes:

By the end of the course, you will have:

1. Ability to perform a literature search for academic game development articles.
2. Ability to formulate a game development related project using academic articles.
3. Ability to devise metrics for measuring the viability of a game development related project.
4. Experience with writing code for and evaluating those metrics.
5. Experience with interpreting and pitching the results to a game development team.

Prerequisites: CSCE 4210 (Game Programming I) with a grade of C or better.
Corequisite: CSCE 4220 (Game Programming II)

Course Requirements:

Attendance: Optional except for student pitches and presentations which are mandatory for all.
Exams: None. A final project will be turned in at the end of the semester.
Grade: The grade for this class will be based on a project and a class presentation.

Draft Schedule:

Pay close attention to the requirements of each assignment as they are administered. Note that there will not be a Spring Break this semester.

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topics (tentative)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>1/11</td>
<td>Introduction, Video Game Science, Game Dev Research</td>
</tr>
<tr>
<td>2</td>
<td>1/18</td>
<td>Research Methods</td>
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<tr>
<td>3</td>
<td>1/25</td>
<td>Project Pitches</td>
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<tr>
<td>4</td>
<td>2/01</td>
<td>Perlin Noise and its Applications</td>
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<tr>
<td>5</td>
<td>2/08</td>
<td>Procedural Content Generation</td>
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<tr>
<td>6</td>
<td>2/15</td>
<td>Procedural Terrain Generation</td>
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<tr>
<td>7</td>
<td>2/22</td>
<td>Puzzles: Sokoban, The 15-Puzzle</td>
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<tr>
<td>8</td>
<td>3/01</td>
<td>Procedural Quest Generation, Emergent Economies in RPGs</td>
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<tr>
<td>9</td>
<td>3/08</td>
<td>Burning Things Procedurally</td>
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<tr>
<td>10</td>
<td>3/15</td>
<td>Lindenmayer Systems, Want Tiling</td>
</tr>
<tr>
<td>11</td>
<td>3/22</td>
<td>Audio Games, Procedural Ornamentation</td>
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Grading Policy:

After receiving your grade for an assignment, you have one week to discuss it with me. Afterwards, I will make no changes to the grade. This is to avoid “end of the semester” rush to alter a letter grade bump or penalty that is the result of assignments. Each student should keep track of their grades throughout the semester.

Each assignment will have varying requirements. Pay very close attention to what I am asking you to deliver in every Assignment and Presentation. Be it on SVN, Canvas, in person, or (in many cases) more than one!

Assignments

Completing an assignment on time will earn you full credit. Late assignments will be accepted up to one week after their due date/time. Late assignments will earn you half credit. Below is a (tentative) list of expected assignments.

• Project Pitch
  The student will design, create, and present a Pitch for their research topic that they will turn in at the end of the semester.

• Project Presentation
  During these weeks, students will demonstrate their progress on their project in class. Please upload the PowerPoints for your final project presentation.

• Final Project
  At the end of the semester, each student will schedule a 30-minute appointment with me to demonstrate their final project. A schedule will be drawn up towards the end of the semester.

The final project is your final grade.

Your final grade will reflect:

❖ The quality of your project,
❖ The contribution you made to it,
❖ Your performance during presentations, and
❖ Your final presentation.

It is highly recommended that the student dedicates an average of nine productive hours a week (outside of class) on their final project throughout the semester.

• Final Project Code and Data:
  The student will upload any additional material for their final project, which could include executable code, source code, or data. Please organize your submission into a single zip file.

If you do not submit a final project or the relevant material to back up your work, the highest grade you could receive is a F.

Course Policies:
**Academic Misconduct**

- The department, college, and university have very strict guidelines regarding academic misconduct. Students are expected to submit their own work on individual programming projects (tutorials, assignments, and final project).
- You are allowed to discuss solutions, but do NOT work with other students on shared program solutions. Do NOT use even partial program solutions from the Internet without properly citing them. **Do NOT recycle a complete game, this will result in a failing grade.** You may borrow and integrate code from any legal source as long as you properly cite your resources. **Failure to do so is considered cheating.**
- You will be graded on your contribution to the code. Be honest – attribute your work. Using code without acknowledging it to the instructor is **cheating**, and will be dealt with in accordance to the department cheating policy.
- If it is determined that you have cheated, the first instance of cheating in the class will result in a grade of ZERO on the assignment in question and referral to the department chairman and dean of engineering. The second instance of cheating in the class will result in a grade of F in the class, and a dismissal hearing may be initiated by the dean of engineering.
- You need to do your own work on your final project as well. Here there should be no ambiguity at all. In case the above description, and in-class discussion of my views on appropriate and inappropriate collaboration does not answer all of your questions, please look at the university Student Rights and Responsibilities web page.
- You are responsible for the information covered in class, whether you attend class or not. Individualized lectures will not be given. Please check with other class members for any notes that might have been missed during an absence. Attendance WILL be taken in lecture and your attendance is strongly recommended to improve your opportunity to meet course objectives.
- There will be two Milestones to check-up on the progress of your final project; each with increasing requirements to ensure that you are working on your individual project.
- Progress on your final project should start by the first week of class. The software used is available for home use. With both, you are fully expected to have the ability to work on your project outside of class. Students who plan to have difficulty with this should meet with me before the end of the second week of classes.
- Each student should adhere to the university's student code of conduct.

**Excused Absences**

Students are expected to schedule routine appointments and activities so as not to conflict with attending class. However, some absences cannot be prevented. In the event of a medical emergency or family death, etc., students must request an excused absence as quickly as feasible following the event. Send to me (ASAP) a brief email from your UNT provided email address. You need not go into detail as to the emergency, but you should schedule with me a meeting outside of lecture at your earliest convenience. Students must be able to provide documentation that verifies the reasoning for the excused absence.

Above all else, this course is compliant with UNT Policy 06.039 “Student Attendance and Authorized Absences.” Please refer to this policy for more detail/information.

**Emergencies**

By definition, emergencies cannot be planned for. Your instructor attempts to make accommodations in these instances that allow for making up missed work and completion of the course in a timely manner. Students must provide documentation that verifies the emergency.

**Disability Accommodation**

The University of North Texas makes reasonable academic accommodation for students with disabilities. Students seeking reasonable accommodation must first register with the Office of Disability Accommodation (ODA) to verify
their eligibility. If a disability is verified, the ODA will provide you with a reasonable accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You may request reasonable accommodations at any time, however, ODA notices of reasonable accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of reasonable accommodation for every semester and must meet with each faculty member prior to implementation in each class. Students are strongly encouraged to deliver letters of reasonable accommodation during faculty office hours or by appointment. Faculty members have the authority to ask students to discuss such letters during their designated office hours to protect the privacy of the student. For additional information, refer to the Office of Disability Accommodation website at http://www.unt.edu/oda. You may also contact ODA by phone at (940) 565-4323.

**Academic Integrity**

Below I have taken out two paragraphs from UNT Policy 06.003 Student Academic Integrity.

“UNT promotes the integrity of learning processed and embraces the core values of trust and honesty. Academic integrity is based on educational principles and procedures that protect the rights of all participants in the educational process and validate the legitimacy of degrees awarded by the university. In the investigation and resolution of allegations of student academic dishonesty, the university’s actions are intended to be corrective, educationally sound, fundamentally fair, and based on reliable evidence.”

“Students are expected to conduct themselves in a manner consistent with the university's status as an institution of higher education. In the class setting, students shall follow their instructors’ directions and observe all academic requirements published in course syllabi and other course materials. A student is responsible for responding to an academic dishonesty report issued by an instructor or other university official. If a student fails to respond after proper attempt at notification, the university may take appropriate academic actions in the absence of the student.”

**Academic Freedom and Academic Responsibility**

Refer to UNT Policy 06.035

Academic freedom and academic responsibility give vitality to the UNT and its mission. As such, the academic freedom to be able to freely consider or investigate important, and, perhaps, controversial questions is essential to the education of students and advancement of knowledge. Faculty have the academic responsibility to subject their knowledge and postulates to rigorous review by peers who are experts in the relevant subject material, to have a firm foundation of their postulates in the most relevant and suitable available evidence, and to work with one another to provide the best education possible for our students.