COURSE NUMBER AND TITLE:
GAME 1343 – Game and Simulation Programming I

COURSE (CATALOG) DESCRIPTION:
Game and simulation programming. Includes advanced pointer manipulation techniques and pointer applications, points and vectors, sound, and graphics.

<table>
<thead>
<tr>
<th>INSTRUCTOR:</th>
<th>Tony Lozano</th>
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<tbody>
<tr>
<td>OFFICE:</td>
<td>G-104</td>
</tr>
<tr>
<td>OFFICE HOURS:</td>
<td>TBA</td>
</tr>
</tbody>
</table>
| CONTACT INFORMATION (TELEPHONE AND EMAIL): | Phone: 364-4630  
Email: tony.lozano@harlingen.tstc.edu |

MAJOR COURSE REQUIREMENTS:
This course has been divided into five units and they are on:

A. Graphics Foundations
B. 3D Rendering Pipeline
C. 3D Graphics Rendering
D. 3D Color, Lighting, and Texture
E. 3D Meshes

In each unit you will be given a lecture/demonstration and then be expected to perform the assignments for each unit. Each assignment will be demonstrated and explained so that you can then attempt it. The course will have two exams, one at mid-term, and a final comprehensive exam given the last week of the course.

LEARNING OUTCOMES:

A. Graphics Foundations
   1. Using a computer, lecture notes, and an appropriate reference the student will develop programs that set up the graphics device using an appropriate graphics library to specified criteria with 70% accuracy.
   2. Using a computer, lecture notes, and an appropriate reference the student will develop programs that manage frame time and user input to specified criteria with 70% accuracy.
   3. Using a computer, lecture notes, and an appropriate reference the student will develop programs that draw basic sprites using an appropriate graphics library to specified criteria with 70% accuracy.
B. **3D Rendering Pipeline**

1. Using a computer, lecture notes, and an appropriate reference the student will describe the purpose and function of the rendering pipeline to specified criteria with 70% accuracy.
2. Using a computer, lecture notes, and an appropriate reference the student will describe code structures related to vector and matrix manipulation and the view frustum to specified criteria with 70% accuracy.
3. Using a computer, lecture notes, and an appropriate reference the student will describe the basics principles behind 3d transformations to specified criteria with 70% accuracy.

C. **3D Graphics Rendering**

4. Using a computer, lecture notes, and an appropriate reference the student will develop programs to draw 3d primitives to specified criteria with 70% accuracy.
5. Using a computer, lecture notes, and an appropriate reference the student will develop programs utilizing vertex and index buffers to specified criteria with 70% accuracy.

D. **3D Color, Lighting, and Texture**

1. Using a computer, lecture notes, and an appropriate reference the student will develop programs that utilize color to specified criteria with 70% accuracy.
2. Using a computer, lecture notes, and an appropriate reference the student will develop programs that utilize 3d lighting to specified criteria with 70% accuracy.
3. Using a computer, lecture notes, and an appropriate reference the student will develop programs that utilize 3d texturing to specified criteria with 70% accuracy.

E. **3D Meshes**

1. Using a computer, lecture notes, and an appropriate reference the student will develop games that utilize basic 3d meshes to specified criteria with 70% accuracy.

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### COURSE SCAN COMPETENCIES

<table>
<thead>
<tr>
<th>Competency Number</th>
<th>Competency Statement</th>
<th>Instruction/Evaluation Methodology</th>
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<tbody>
<tr>
<td>3A Acquires and Evaluates Information</td>
<td>Identifies need for data, obtains them from existing sources or creates them and evaluates their relevance and accuracy</td>
<td>Throughout the semester students will be required to use online resources and help files to aid in completing projects.</td>
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MAJOR COURSE LECTURE, TOPICS DESCRIPTION/REQUIRED/RECOMMENDED READINGS/ELECTRONIC RESOURCES TO VIEW:

Tentative Schedule (Subject to change by your instructor)

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic/Lecture/Event</th>
<th>Required/Recommended Readings/Electronic Resources to View</th>
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<tbody>
<tr>
<td>1</td>
<td>Graphics Foundations</td>
<td>Chapters 4 &amp; 5</td>
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<tr>
<td>2</td>
<td>Graphics Foundations</td>
<td>Chapters 4 &amp; 5</td>
</tr>
<tr>
<td>3</td>
<td>Graphics Foundations</td>
<td>Chapters 4 &amp; 5</td>
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<tr>
<td>4</td>
<td>3D Rendering Pipeline</td>
<td>Chapter 6</td>
</tr>
<tr>
<td>5</td>
<td>3D Rendering Pipeline</td>
<td>Chapter 6</td>
</tr>
<tr>
<td>6</td>
<td>3D Graphics Rendering</td>
<td>Chapters 7&amp;8</td>
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<tr>
<td>7</td>
<td>3D Graphics Rendering</td>
<td>Chapters 7&amp;8</td>
</tr>
<tr>
<td>8</td>
<td>Mid Term Exam</td>
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<tr>
<td>9</td>
<td>3D Graphics Rendering</td>
<td>Chapters 7&amp;8</td>
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<tr>
<td>10</td>
<td>3D Color, Lighting, and Texture</td>
<td>Chapters 9, 10, &amp; 11</td>
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<tr>
<td>11</td>
<td>3D Color, Lighting, and Texture</td>
<td>Chapters 9, 10, &amp; 11</td>
</tr>
<tr>
<td>12</td>
<td>3D Color, Lighting, and Texture</td>
<td>Chapters 9, 10, &amp; 11</td>
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<tr>
<td>13</td>
<td>3D Meshes</td>
<td>Chapter 14</td>
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<tr>
<td>14</td>
<td>3D Meshes</td>
<td>Chapter 14</td>
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<tr>
<td>15</td>
<td>Final Exam</td>
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REQUIRED TEXT AND MATERIALS:
USB Pen Drive
Notebook and pencil/pen for note taking.
XBox360 wired USB/PC compatible gamepad. Any PC compatible brand may be used. A wireless controller may be used if you have the Xbox 360 Wireless Gaming Receiver for Windows.

GRADING CRITERIA:          GRADING SCALE:
Labs/Assignments           30%          A  90-100
Daily Activities           30%          B  80-89
Quizzes                    10%          C  70-79
Mid-Term Exam              20%          D  60-69
Final Exam                 10%          F   0-59

DEPARTMENT PARTICIPATION POLICY:
Student participation is defined in the current TSTC Harlingen Campus Catalog and Student Handbook; and is expanded to include: answering and asking questions during class; completing all Assignments, Activities, Technical Summaries, Tests and Quizzes; and attending classes as
scheduled. Additionally, students are expected to read all assigned materials, and come to class prepared for dialog. Your average will be provided by your instructor after each unit exam. Any other questions concerning your grade, average or progress in coursework will not be discussed during class; you must make an appointment to discuss your progress with your Instructor. Note: Lecture Presentations have been modified to support the instruction of this Course and cannot be used in place of reading the book.

**ACCOMMODATION STATEMENT:** If you have a documented disability which will make it difficult for you to carry out classwork as outlined and/or if you need special accommodations due to a disability, please contact (956) 364-4520 or visit the Support Services Office in the Auxiliary Services Building as soon as possible to make appropriate arrangements.

**CLASS POLICIES:**

**CONDUCT:**
1. Smoking is prohibited in instructional buildings, classrooms and laboratories.
2. Alcohol is prohibited on campus.
3. Eating and Drinking is prohibited in classrooms and laboratories.
4. Cheating and/or copying will earn a grade of zero (0) for all parties involved.
5. No Downloading of or installation of Games on Lab Computers without instructor permission.
6. Cell phones are prohibited during lecture, labs and especially exams and must be turned off.
7. For your privacy grades will not be discussed during regular class session, see your instructor privately to discuss your grades.
8. Printing must be related to the course. Any other material must be approved by your instructor.

Participants are expected to read all assigned materials, submitted written papers and contribute to class discussion, complete all activities and assignments, and come to class prepared for dialog, discussion, and participation in class activities. Participants will be expected to attend all class sessions. For your privacy, grades will not be discussed during class sessions, see your instructor privately to discuss your grades.

**DUE DATES:** Lab Work, Homework, and Daily Activities must be submitted on the due date provided by the instructor. Late work will not be accepted unless prior arrangements are made with the instructor. Notify your instructor if you think you will not be able to submit assigned work on time.

**DAILY ASSIGNMENTS:** The class will include daily activities (code snippets, question sheets, etc.) that will be due either in the same class session they are assigned, or at the beginning of the next class session at the discretion of the instructor. No late or make-up daily activities will be accepted. These activities along with quizzes will be kept by your instructor in a folder with your other assignments and used in the determination of your final grade.
LAB WORK: Though you will have lab time, you may find you need extra time to finish your assignments. Labs that are not finished during class time are considered homework and must be submitted as scheduled.

Mid-Term and Final Exams: Excused absences will be allowed to make up exams. You must contact the instructor prior to the end of the class session when the exam was scheduled. You may call or email the instructor and leave a detailed message. In the case of medical emergency or similar, contact the instructor as soon as possible. It is your responsibility to make an appointment to take a make-up prior to the test time or upon your return to class, failure to make arrangements will result in a test grade of zero (0).

QUIZZES: No advanced notice on Quizzes and NO make-up on missed quizzes, and once a quiz has begun those arriving late will not be provided the quiz.

PERSONAL ITEMS IN THE CLASSROOM: TSTC is not liable for the theft or damage of any students’ personal items such as pen drives, backpacks, purses, cell phones, laptops, and computers. Other personal items are not excluded from this statement. It is our recommendation that you secure your items before, during, and/or after class.

ESTABLISHING A SAFE CLASSROOM ENVIRONMENT
This course will not tolerate derogatory comments based on race ethnicity, class, gender, sexual orientation, or nationality. The use of inappropriate or foul language is not allowed in the classroom/laboratory. Students are expected to follow the student Code of Conduct found in your student handbook. The student handbook is available online at http://www.harlingen.tstc.edu.

TSTC Harlingen faculty, staff, and students are asked to report all threats, perceived or real, immediately to College Police located in the Auxiliary Building. If the threat is imminent, the College Police emergency phone line at 364-4234 or 9-911 should be called. College Police will then coordinate the proper response in accordance with State and federal laws and TSTC System/College rules and regulations.

COPYRIGHT STATEMENT
The materials used in the course [textbooks, handouts, media files (podcast, MP3, Videos, RSS (Feeds), and all instructional resources on the colleges Learning Management System (Moodle)] are intended for use only by students registered and enrolled in this course and are only to be used for instructional use, activities associated with, and for the duration of the course. All materials generated for this course, which includes but are not limited to syllabi, quizzes, exams, lab problems, in-class materials, review sheets, and any additional materials.

These materials may not be retained in another medium or disseminated further. They are provided in compliance with the provisions of the Teach Act. These materials may not be
COMMUNICATING WITH YOUR INSTRUCTOR

All email to the instructor must include your name, and your class.

NOTE: Any changes to this syllabus will be provided in writing to the student and updated on all posted locations (HB 2504, course Moodle sites, building offices, etc.).