Instructor:  Eric Cornish

**Course Description:** Students will learn fundamentals of building computer based 3D models for Film, TV, and Video Gaming applications. Students will also learn technical and conceptual skills that will enable them to creatively express and develop their personal ideas and feelings. The students will also acquire a fundamental understanding of 3D modeling, texture mapping and lighting from concept to final product. Lab fee. 
Prerequisite(s) ART2600C or GRA2577C or VIC1202.

**Course Purpose:** These courses will introduce students to the fundamentals of 3D modeling using the MAYA animation software. Technical and conceptual skills will enable each student to creatively express and develop their personal ideas and feelings.

**Course Requirements:** All students will be responsible for:

1. **Notebook & sketchbook** with pencil (soft lead or charcoal) and pen to class. 
   - The Notebook will be used to keep class notes, handouts and resource materials. 
   - The Sketchbook will be used to work on daily sketches and the homework assignments.

2. A 1GB Flash drive and/or Pack of blank CD-R/RW's to save student work

   Quizzes will be given at the discretion of the instructor. 
   *Daily classroom work will be monitored and graded.

**Text books:**

**Objectives:**

(1) Through the critique process, students will use analytical vocabulary to discuss processes, formulate opinions and describe the roll of 3D graphics and animation in today’s high tech industry.

(2) Students will also recognize and examine 3D graphics and animation produced with several different software applications.

(3) Students will begin to build a portfolio of 3D characters, products and scenes exhibiting the effective use and implementation of the software. The students will acquire a fundamental understanding of modeling, texture mapping and lighting from concept to final product. The students will build and develop each project with fundamental elements of art and the principles of design.

(4) Finally, students will express personal ideas and feelings through the use of creative 3D graphics and models.
(5) Students will learn to research & develop detailed conceptual drawings. This discipline will reinforce the creative process. This will be kept in a sketchbook.
- (9)- Thumbnail sketches **rough & (2)**- 5X7 Sketches **more developed**
- (1) Front, (1) Side, (1) Top, & (1) Isometric Drawings **tight** pencils
- Tight pencils will be inked by hand, scanned in and colored in Photoshop.
- a journal to write down notes and keep track of the research gathered during
the creative **process**. (A list of books, magazines, websites, etc...)
- Final 3d model turnarounds, lighting, texturing.

**Course Competencies**

<table>
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<tr>
<th>Competency 1: The student will demonstrate proficiency in use of the computer animation window interface by:</th>
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<tr>
<td>• Identifying and defining basic window tools and palettes</td>
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<td>• Customizing interface windows and tool preferences</td>
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<th>Competency 2: The student will demonstrate proficiency in creating 3d Polygon models by:</th>
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<td>• Constructing 3D models using 2D image planes as a reference.</td>
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<tr>
<td>• Creating more complex using 3D primitives as the basis.</td>
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<tr>
<td>• Working with the components of a polygon mesh (faces, edges, and vertices).</td>
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<tr>
<td>• Selecting the faces, edges, and vertices of polygonal meshes.</td>
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<td>• Combining separate meshes into one mesh.</td>
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<td>• Using “Snap to Grid.”</td>
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<th>Competency 3: The student will demonstrate proficiency in creating 3d Creating Non Uniform Rational B-Spline (NURBS) Models by:</th>
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<tr>
<td>• Creating a NURBS curve using the control vertices (CV) creation technique.</td>
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<td>• Determining the start and end points for a NURBS curve and its direction.</td>
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<td>• Increasing the surface subdivisions on a NURBS surface.</td>
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<td>• Creating a NURBS surface using the Loft tool</td>
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<th>Competency 4: The student will demonstrate proficiency in creating 3d Subdivision models by:</th>
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<td>• Converting a polygon surface to a subdivision surface.</td>
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<td>• Splitting subdivision faces to create areas for more detail in a model.</td>
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<td>• Changing the Display Level when working in Standard Mode.</td>
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<th>Competency 5: The student will demonstrate proficiency in Rendering 3d scenes by:</th>
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• Assigning shading materials to surfaces in the scene
• Editing the color of shading materials
• Applying basic texturing techniques
• Manipulating lights, shadows, and camera angles.
• Rendering a scene.

**Attendance Policy:** Students are required to attend all classes and to **be on time**. Consistent tardiness will result in the deduction of grade points. Every 3 tardy will count as an unexcused absence. After 3 unexcused absences the student may be dropped from the class. In the case of **make up work** the student must discuss his/her situation with the instructor to determine a resolution.

**Class Rules:** The Students need to be **respectful of each other, the computer Lab, materials, as well as the teacher.** By obeying these rules, the students will be better prepared to enter the workplace and succeed there.

* **The pirating of software programs is illegal; please do not ask your professor for a free copy!!!**

1. Students are encouraged to take part in lab time in order to practice and finish projects.
2. Students are to respect the rights of teachers and all other class members.
3. Students are not to eat, drink, or chew any candy, food, gum, or drink beverages during class time or once in the Computer Lab.
4. All computers are to be shut down at the end of every class session. All work areas are to be kept clean and orderly.
5. Students are to use The Internet in an appropriate manner (educational material only).

**Grading Scale: MDCC**

100 - 90 = A  
89 - 80 = B  
79 - 70 = C  
69 - 60 = D  
59 - 0 = F

Class Projects……………………………………. 65%
Final Quiz ………………………………………… 15%
Quizzes ………………………………………….. 10%
Attendance ……………………………………… 10%

(Students must complete Final or results in an automatic failure of the course)

**Course Outline**

**Week 1**  
Maya Interface & basics  
**Maya Help files**
- Modeling the Temple

**Week 2**
Understanding Maya
Learning Maya 2008 book – pg. 13
- Quiz 1

**Week 3**
Learning Maya 2008 book – pg. 39
*Project 01_Lesson 01*
Working with Primitives

**Week 4**
Learning Maya 2008 book – pg. 63
*Project 01_Lesson 02*
Adding Details

**Week 5**
Learning Maya 2008 book – pg. 75
*Project 01_Lesson 03*
Shaders and Textures
- Quiz 2

**Week 6**
Learning Maya 2008 book – pg. 111
*Project 01_Lesson 03*
Working with Maya

**Week 7**
Learning Maya 2008 book – pg. 423
*Project 03_Lesson 21*
Rendering
*Rendering with Layers - occlusion render*

**Week 8**
(Extrude face/ Booleans/ working with polygon tools)
*Maya Help files*
- Polygon Modeling- helmet
- Quiz 3

**Week 9**
Learning Maya 2008 book – pg. 173
*Project 02_Lesson 07*
Polygon Modeling

**Week 10**
Learning Maya 2008 book – pg. 205
*Project 02_Lesson 08*
Polygon Texturing
- Quiz 4

**Week 11**
*Project 03_Lesson 15*
NURBS Modeling

**Week 12**
Learning Maya 2008 book – pg. 361
*Project 03_Lesson 16*
NURBS Texturing
- Quiz 5

**Week 13**
Learning Maya 2008 book – pg. 383
*Project 03_Lesson 18*
Paint Effects

**Week 14**
Learning Maya 2008 book – pg. 409
*Project 03_Lesson 20*
Lights and Effects
**Week 15**  
Learning Maya 2008 book – pg. 409  
*Project 04_Lesson 22*  
SubD Modeling

**Week 16**  
Learning Maya 2008 book – pg. 409  
*Project 04_Lesson 23*  
SubD Texturing

- **Final Quiz (combination of all the quizzes)**

Students must complete Final or  
Grade results in an automatic failure of the course.