ARTV-1445 | 3D Modeling & Rendering 1

section 002

course time Fridays 9:00am-2:20pm

location NRG-3134

instructor Sara Farr

office hours M-TH 11:40am-1:00pm

appointments M-TH 1:00pm-2:00pm

office location NRG-3135

phone (512) 223-4802

e-mail sfarr@austincc.edu

department site http://www.viscom.austincc.edu/

instructor site http://www.austincc.edu/sfarr/online/3dmr-1

Course Description
A studio course in the theory and technique of three-dimensional (3D) modeling utilizing appropriate software. Topics include the creation and modification of 3D geometric shapes; and rendering techniques; and use of camera light sources, texture, and surface mapping.

Course Rationale
This course is a foundation course for Game Development and 3D Animation curriculum. Its purpose is to familiarize the students with the 3D interface and build a working knowledge of the basic tools and skills needed to design and create 3D models in a virtual environment.

This course is a pre-requisite for
- ARTV-1441 3D Animation I
- ARTV-2445 3D Modeling & Rendering II
- ARTV-1472 3D Lighting & Surfacing
- GAME-1470 Video Game Art 1
**Prerequisites & Preferred Foundation**
There are no prerequisites for this class. Suggested foundation classes include: ARTS-1316 (Drawing I), ARTS-2326 (Sculpture I), and ARTS-2356 (Photography I).

**Required Texts & Materials**
During the semester, you will be required to have a pencil or pen, and a 3-ring notebook with paper and pockets (in which to keep notes, exercises, projects and information sheets).

You will also need to provide a temporary backup of your coursework (Flash Drive or External hard drive), and at least one blank DV-R to provide a permanent backup of both your working files and final output files.

**Required Textbooks:**
-- The Art of 3-D Computer Animation and Imaging by Isaac Victor Kerlow
  - ISBN-10: 0470084901

**Recommended Textbooks:**
-- Visual QuicksStart Guide: 3DS Max 6 For Windows by Michele Matossian
  - ISBN: 073571391X

**Instructional Resource:**
Autodesk 3D Studio Max [version 2013]; an industry standard software package used to create 3D imaging and animation for multi-media, interactive-media, game development, broadcast production, commercial television, and film.

**Student Learning Outcomes**
During the term of the course, students will learn:
- Virtual 3-D space interface
- Building tools and techniques for both simple & complex objects
  - Creation and manipulation of vertices, edges & polygons
  - Creation and manipulation of primitives, splines, sub-division patch geometry
- basic 3-D rendering tools and techniques
  - surface channels
  - procedural textures
  - image mapping
  - light types and settings
  - camera settings & use
  - ray-trace rendering
- the importance of file management

**Program-Level Student Learning Outcomes:**
This course is offered in more than one degree plan. For more information on the Program-level Student Learning Outcomes (PSLO) for this course in your degree, please go to http://www.viscom/austincc.edu/pslo
SCANS (Secretary’s Commission on Achieving Necessary Skills)

A high performance workplace requires workers to not only have basic literacy, math, and personal skills, but also specific competencies – including the ability to manage resources, work well with others, research and process information, master complex systems and a variety of technologies. This list summarizes the SCANS skills and competencies addressed in this course.

**Resources**
- Manages Time
  - NA
- NA
- NA
- NA
- NA

**Interpersonal**
- NA
- NA
- NA
- NA
- NA
- NA

**Information**
- Acquires and Evaluates Information
- Organizes and Maintains Information
- Uses Computers to Process Information

**Systems**
- Understands Systems
- Monitors and Corrects Performance
- Improves and Designs Systems

**Technology**
- Selects Technology
- Applies Technology to Task
- Maintains and Troubleshoots Technology

**Basic Skills**
- Reading
- Writing
- Arithmetic
- Mathematics
- Listening
- Speaking

**Thinking Skills**
- Creative Thinking
- Decision Making
- Problem Solving
- Mental Visualization
- Knowing How to Learn
- Reasoning

**Personal Qualities**
- Responsibility
- Self-Esteem
- Sociability
- Self-Management
- Integrity/Honesty

Please go to [http://www.austincc.edu/mkt/scans.htm#whatis](http://www.austincc.edu/mkt/scans.htm#whatis) for a complete definition and explanation of SCANS.

**Instructional Methodology**

To help you meet course objectives, the teaching methods in this class are based on professional experience and best practices in the area of 3D modeling and rendering. These methods might include: lecture, demonstration, critiques in group and one-on-one settings, group activities and student presentations.

**Grading System**

Coursework will consist of exercises, quizzes, projects and exams. Assignments are graded using four scales based on industry standards and expectations -- Focus, Tools/Techniques, Design/Modeling Principles and Creativity/Critical Thinking.

Each scale awards 4-0 points based on the student’s effort to meet the exercise criteria (Superior – Unacceptable), for a total of **16 possible points per exercise**.
Evaluation Scales:

**Focus** – *(criteria established in assignment)* ability to follow directions, work hard in & out of class, make an effort to meet exercise objectives, and complete the work on time.

- 4 – On time and meets or exceeds all criteria.
- 3 – On time with one (1) criterion missing.
- 2 – On time with two (2) criterion missing.
- 1 – On time with three (3) criterion missing.
- 0 – Late or has inappropriate solution to the problem, incomplete

**Design Principles** – *(criteria established in assignment)* ability to understand and demonstrate the use of the elements & principles of design, as well as the 3D modeling principles.

- Elements of Design (line, shape, form, space, value, color, texture)
- Principles of Design (contrast, unity; dominance, balance; pattern, movement, rhythm)
- Modeling Principles (reference, proportion, exaggeration, weight, detail, functionality)
  - 4 – Superior understanding and application of the design principles
  - 3 – Good ability to utilize the design principles
  - 2 – Several errors in regards to the application and understanding of the design principles
  - 1 – Large number of errors in application and understanding of the design principles
  - 0 – No application or understanding of the design principles

**Craftsmanship & Technique**– *Craftsmanship* is aptitude, skill, and manual dexterity in use of media and tools – knowledge of interface & keyboard shortcuts, correct use of tools without the aid of notes, correct use of vocabulary. *Technique* is the manner and skill in which the student uses the tools to achieve the chosen effect – efficient use of geometry [no duplicate, hidden, or wasted geometry], proper use of surfaces [no Default surfaces; correct settings or textures in the appropriate surface channel], & well-organized files with properly placed pivots, labeled layers, and file type extensions.

- 4 – Great skill in manipulation of tools and technique used to express creative idea.
- 3 – Proficiency in manipulation of tools and technique used to express creative idea.
2 – Some degree of skill in manipulation of tools and technique used to express creative idea.
1 – Less than average ability or skill in manipulation of tools and technique used to express creative idea.
0 – Little or no apparent skill in manipulation of tools and technique used to express creative idea.

**Creativity, Inventiveness, and Independence** – *(criteria established in assignment)* ability to find unique solutions to assignment, elaborate on assigned theme, transfer concepts/techniques from previous exercises, work through problems/difficulties, originality of style & idea, and the ability to work independently.

4 – Superior degree of originality throughout; very unique solution; theme has been elaborated on to a high degree; ability to take initiative in assignment that augments what is learned; self-initiated; complex solution.
3 – Above average degree of originality throughout; theme is present with some elaboration; shows ability to work and think independently; May have sought additional material to accomplish assignment idea.
2 – Above average degree of originality throughout; theme is present with little elaboration; some initiative in working and independent thinking.
1 – Below average originality; theme is not fully developed; little initiative in working and independent thinking.
0 – Lack of originality; theme is very trite, weak, stereotypical, copied or traced; very little or no initiative; student waits to be told what to do

<table>
<thead>
<tr>
<th>Assignments</th>
<th>Focus (4)</th>
<th>Tools (4)</th>
<th>Design (4)</th>
<th>Creativity (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 - Orthographic Technical Drawings</td>
<td>4</td>
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<tr>
<td>02 - Navigation &amp; Selection</td>
<td>4</td>
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<td>03 - Primitives (Robot)</td>
<td>4</td>
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<td>04 - Splines &amp; Modifiers (Logo)</td>
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<td>05 - Surfacing (Ammo-Room)</td>
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<td>06 - Lighting (Environment)</td>
<td>4</td>
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<td>07 - Lighting (3 Point)</td>
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<td>08 - Lathe (Goblet)</td>
<td>4</td>
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<td>09 - Loft (Cutlass)</td>
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<td>10 - Boolean (Hinge)</td>
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<td>11 - Editable Poly (Snow-speeder)</td>
<td>4</td>
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<td>12 - Displacement Map (Terrain)</td>
<td>4</td>
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<td>13 - Team Project (Prop)</td>
<td>4</td>
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<td>14 - Team Project (Element)</td>
<td>4</td>
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<tr>
<td><strong>Assignment Point Totals</strong></td>
<td>56</td>
<td>56</td>
<td>36</td>
<td>36</td>
</tr>
<tr>
<td><strong>Assignment Sub-Total</strong></td>
<td><strong>184 (45%)</strong></td>
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</tbody>
</table>
Quizzes | points
--- | ---
1- covering assignments #01-02 | 4
2- covering assignments #03-04 | 4
3- covering assignments #05-07 | 4
4- covering assignments #08-010 | 4
5- covering assignments #11-12 | 4
**Quiz Sub-Total** | **20 (5%)**

<table>
<thead>
<tr>
<th>Exams</th>
<th>Written</th>
<th>Practical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midterm Exam</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Final Exam</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Exam Point Totals</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td><strong>Exam Sub-Total</strong></td>
<td><strong>200 (50%)</strong></td>
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</tr>
</tbody>
</table>

| Assignment Sub-Total | 184 (45%) |
| Quiz Sub-Total | 20 (5%) |
| **Exam Sub-Total** | **200 (50%)** |
| **Final Grade Total** | **404 (100%)** |

**Point total ranges:**

- **A** (89.5% and up)
- **B** (79.5% to 89.4%)
- **C** (69.5% to 79.4%)
- **D** (59.5% to 69.4%)
- **F** (59.4% or less)

**Passing Grade Policy**

Effective September 2005, D’s are not accepted as a passing grade within the Visual Communication Department courses. Students receiving a grade of D must retake the course to receive credit and to progress to the next level course. Students who made a D prior to September 2005 will be allowed to proceed to the next level course.

**Course Outline/Calendar:**

<table>
<thead>
<tr>
<th>Week 1</th>
<th>Assignment 1 &amp; 2</th>
<th>Week 9</th>
<th>Assignment 8 &amp; 9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 2</td>
<td>Quiz 1 (#1&amp;#2); Assignment 3</td>
<td>Week 10</td>
<td>Assignment 10; Quiz 4 (#8-10)</td>
</tr>
<tr>
<td>Week 3</td>
<td>(#3 cont’d)</td>
<td>Week 11</td>
<td>Assignment 11</td>
</tr>
<tr>
<td>Week 4</td>
<td>Assignment 4</td>
<td>Week 12</td>
<td>Assignment 12; Quiz 5 (#11-12)</td>
</tr>
<tr>
<td>Week 5</td>
<td>(#4 cont’d); Quiz 2 (#3&amp;#4)</td>
<td>Week 13</td>
<td>Team Project (prop)</td>
</tr>
<tr>
<td>Week 6</td>
<td>Assignment 5</td>
<td>Week 14</td>
<td>Team Project (element)</td>
</tr>
<tr>
<td>Week 7</td>
<td>Assignment 6&amp;7</td>
<td>Week 15</td>
<td>Team Project (element)</td>
</tr>
<tr>
<td>Week 8</td>
<td>Quiz 3 (#5-7); Midterm Exam</td>
<td>Week 16</td>
<td>Final Exam</td>
</tr>
</tbody>
</table>
Course Policies

Attendance/Participation - Regular and punctual class and laboratory attendance is expected of all students. If attendance or compliance with other course policies is unsatisfactory, the instructor may withdraw students from the class.

If for any reason you’re unable to come to class, you will be counted as absent. You are allowed 4 absences. There is no distinction between an excused or unexcused absence, so use your absences meaningfully and sparingly. You are counted absent if:
- you are not in class
- you leave the class early
- you get to class extremely late

At your fifth absence, you will fail the class and should withdraw from the course. If your fifth absence happens past the final withdrawal date of the semester, then your final grade will be lowered one letter grade for each subsequent absence. If you decide to withdraw from the course, it is your responsibility to officially withdraw yourself from the class through admissions and records. If you do not withdraw from the class, you will receive an F.

Withdrawal - It is the responsibility of each student to ensure that his or her name is removed from the roll should he or she decide to withdraw from the class. The instructor does, however, reserve the right to drop a student should he or she feel it is necessary. If a student decides to withdraw, he or she should also verify that the withdrawal is submitted before the Final Withdrawal Date. The student is also strongly encouraged to retain their copy of the withdrawal form for their records.

Students who enroll for the third or subsequent time in a course taken since Fall, 2002, may be charged a higher tuition rate, for that course. State law permits students to withdraw from no more than six courses during their entire undergraduate career at Texas public colleges or universities. With certain exceptions, all course withdrawals automatically count towards this limit. Details regarding this policy can be found in the ACC college catalog.

Missed or Late Work -
Assignments are due at the beginning of class periods. If turned in after that, the project is late. I will lower a project one letter grade for each class day that it is late.

Incomplete - An instructor may award a grade of “I” (Incomplete) if a student was unable to complete all of the objectives for the passing grade in a course. An incomplete grade cannot be carried beyond the established date in the following semester. The completion date is determined by the instructor but may not be later than the final deadline for withdrawal in the subsequent semester.

An incomplete (I) will be granted to a student in extremely rare circumstances. Generally, to receive a grade of I, a student must have completed all examinations and assignments to date, be passing, and have personal circumstances that prevent course completion that occur after the deadline to withdraw with a grade of W.

Scholastic Dishonesty - A student attending ACC assumes responsibility for conduct compatible with the mission of the college as an educational institution. Students have
the responsibility to submit coursework that is the result of their own thought, research, or self-expression. Students must follow all instructions given by faculty or designated college representatives when taking examinations, placement assessments, tests, quizzes, and evaluations. Actions constituting scholastic dishonesty include, but are not limited to, plagiarism, cheating, fabrication, collusion, and falsifying documents. Penalties for scholastic dishonesty will depend upon the nature of the violation and may range from lowering a grade on one assignment to an “F” in the course and/or expulsion from the college. See the Student Standards of Conduct and Disciplinary Process and other policies at http://www.austincc.edu/current/needtoknow

Copyright – The software programs used in the labs are licensed to the college, which is the original purchaser. Thus students cannot duplicate the software for their personal use. Do not use college equipment to duplicate software for other students or to produce work-for-profit.

Do not download, copy or scan copyrighted material for use in your projects unless it meets the Fair use guidelines below and the copyright holder is properly credited.

Fair use is an important element of U.S. copyright law that allows for the use of copyrighted work without asking permission of the copyright holder, especially when the copyrighted work is used for criticism, scholarship, and education. Under the Fair Use guidelines students may:

- Incorporate portions of copyrighted materials when producing a project for a specific course; and
- Perform and display their own projects and use them in their portfolio or use the project for job interviews or as supporting materials for application to other schools.

For more information on Fair Use see http://en.wikipedia.org/wiki/Fair_use

Student Rights and Responsibilities - Students at the college have the rights accorded by the U.S. Constitution to freedom of speech, peaceful assembly, petition, and association. These rights carry with them the responsibility to accord the same rights to others in the college community and not to interfere with or disrupt the educational process. Opportunity for students to examine and question pertinent data and assumptions of a given discipline, guided by the evidence of scholarly research, is appropriate in a learning environment. This concept is accompanied by an equally demanding concept of responsibility on the part of the student. As willing partners in learning, students must comply with college rules and procedures.

Privacy policy The Family Educational Rights and Privacy Act protects confidentiality of your educational records. Grades cannot be given over the phone, posted, over non ACC e-mail, or through a fellow student.

Statement on Students with Disabilities - Each ACC campus offers support services for students with documented disabilities. Students with disabilities who need classroom, academic or other accommodations must request them through the Office for Students with Disabilities (OSD). Students are encouraged to request accommodations when
they register for courses or at least three weeks before the start of the semester, otherwise the provision of accommodations may be delayed.

Students who have received approval for accommodations from OSD for this course must provide the instructor with the ‘Notice of Approved Accommodations’ from OSD before accommodations will be provided. Arrangements for academic accommodations can only be made after the instructor receives the ‘Notice of Approved Accommodations’ from the student.

Students with approved accommodations are encouraged to submit the ‘Notice of Approved Accommodations’ to the instructor at the beginning of the semester because a reasonable amount of time may be needed to prepare and arrange for the accommodations.

Additional information about the Office for Students with Disabilities is available at http://www.austincc.edu/support/osd/

**Safety Statement** - Austin Community College is committed to providing a safe and healthy environment for study and work. You are expected to learn and comply with ACC environmental, health and safety procedures and agree to follow ACC safety policies. Additional information on these can be found at http://www.austincc.edu/ehs. Because some health and safety circumstances are beyond our control, we ask that you become familiar with the Emergency Procedures poster and Campus Safety Plan map in each classroom. Additional information about emergency procedures and how to sign up for ACC Emergency Alerts to be notified in the event of a serious emergency can be found at http://www.austincc.edu/emergency/.

Please note, you are expected to conduct yourself professionally with respect and courtesy to all. Anyone who thoughtlessly or intentionally jeopardizes the health or safety of another individual will be dismissed from the day’s activity, may be withdrawn from the class, and/or barred from attending future activities.

You are expected to conduct yourself professionally with respect and courtesy to all. Anyone who thoughtlessly or intentionally jeopardizes the health or safety of another individual will be immediately dismissed from the day’s activity, may be withdrawn from the class, and/or barred from attending future activities.

**Use of ACC Email Communication** - All College e-mail communication to students will be sent solely to the student’s ACC email account, with the expectation that such communications will be read in a timely fashion. ACC will send important information and will notify you of any college related emergencies using this account. Students should only expect to receive email communication from their instructor using this account. Likewise, students should use their ACC email account when communicating with instructors and staff. Instructions for activating an ACC email account can be found at http://www.austincc.edu/accmail/index.php.
**Cell phone policy** - Students are not allowed to have their cell phone on in classroom during scheduled class times. Students may check messages during their break as long as their phone calls don’t cause the student to return from break late. During an emergency situation, the student should notify the instructor. Instructors will use their discretion to determine an emergency situation. (Students may be able to set phone to vibrate, and leave the classroom to receive an emergency call.) Dept of Visual Communication Policy & Procedure Manual.

**Student And Instructional Services:**
ACC strives to provide exemplary support to its students and offers a broad variety of opportunities and services. Information on these services and support systems is available at:

[http://www.austincc.edu/s4/](http://www.austincc.edu/s4/)

Links to many student services and other information can be found at:

[http://www.austincc.edu/current/](http://www.austincc.edu/current/)

ACC Learning Labs provide free tutoring services to all ACC students currently enrolled in the course to be tutored. The tutor schedule for each Learning Lab may be found at:

[http://www.austincc.edu/tutor/students/tutoring.php](http://www.austincc.edu/tutor/students/tutoring.php)

For help setting up your ACCeID, ACC Gmail, or ACC Blackboard, see a Learning Lab Technician at any ACC Learning Lab.
To ACC,

I hereby have read, acknowledge and agree to the Syllabus document of “ARTV-1445 3D Modeling & Rendering 1” for the fall of 2012.

____________________________________
Signature

____________________________________
Print Name