Mission Statement:
Our mission is to serve as a leading center of Christian thought and action providing an excellent education from a biblical perspective and global context in pivotal professions to equip Christian leaders to change the world.

COURSE SYLLABUS

SCHOOL OF COMMUNICATION & THE ARTS
DEPARTMENT OF CINEMA AND TELEVISION

ANIM 314
ADVANCED 3D ANIMATION TECHNIQUES
FALL 2011
WEDNESDAY 6:00PM-9:00PM

PROFESSOR: DAVID XU

Phone: 757-352-4235
Fax: 757-352-4275
E-mail: dxu@regent.edu
Office Hours: Thursday 12:00PM-1:30PM 2:30PM-7PM
OFFICE LOCATION: COM 253

All students are required to read and have a thorough understanding of the syllabus. Any questions or concerns need to be addressed to the instructor.
**COURSE DESCRIPTION**
Texture mapping, lighting, Cameras, Rendering, Animation, techniques are addressed.

**RATIONALE/COURSE OVERVIEW**
The purpose of this course is to expand on the student’s skill set needed to become a proficient animator in Maya. This class will be a more in-depth study of 3D animation techniques using Autodesk’s Maya. We will also focus on the purpose behind animation as it relates to society. Specifically how animation is such a universal language, and how we can use the power and beauty of this art form to advance our positive messages to others around the world. At the end of the course, the student will demonstrate their understanding of all aspects covered in class by presenting an original short film.

**Integration of Faith & Learning**
There are many scriptures on which this class is based. This class, in attempting to teach the student the “business” of entertainment, does so, based on the biblical principles of honesty, integrity, professionalism, responsibility, humility, and servant leadership. As the Lord directs us to let our yes be yes and our no be no, this class intends to forge a spirit of integrity and honesty in business relationships, as a cornerstone to success in the industry. Students are expected to present themselves in accordance with these principles.

**PREREQUISITES**
ANIM 313 Modeling and Rigging in Maya.

**ANIMATION PROGRAM OUTCOMES**
- **Conceptionalization**: Scripting, storyboarding, character development, animatic, sound, issues of adaptation, copyright and pitching will be covered.
- **Modeling and construction**: Construction of the wire frame and kinematic structures for characters/objects to be animated within their environments will be covered. This will include both Polygonal and Nurbs modeling issues.
- **Texturing**: Creation of surface information and details for all the created objects are covered in this step. Issues of rendering effects and optimizing for speed will be stressed.
- **Animation**: Movement, exaggeration, expression, character animation and timing are addressed at this point.
- **Digital Cinematography**: Camera angle and movement, lighting, particles and environmental effects will be covered in this step.
• **Post Production**: This step includes rendering of elements, compositing, editing, layback to audio and getting the final product to its proper media as well as proper compressions (DVD, Internet, Film, VHS, d-Beta, BetaSP, etc.).

• **Faith and Learning**: How and why your Christian worldview can impact your ability to learn now and perform later in your chosen field.

**ANIM 415 OUTCOMES** - This course is a hand-on, production-based class. Upon completion of this course, aside from the general competencies listed above, students should be able to:

- Understand and use Maya to create a range of 3D models and animations.
  - Focusing on detail and quality.
  - Use Maya’s capabilities such as particles, paint effects, fluids.
- Understand and use Maya to create a range of Rigs and animation controls.
  - Being able to rig is very important when planning out a project.
  - Knowing different types of rigs for different situations.

**COURSE MATERIALS**

**Required Materials: Software**

Student Version of Autodesk Maya 2011 or higher.

**MASTERING AUTODESK MAYA 2011**

**ISBN-13**: 978-0470639351

Lanier, Lee. *Advanced Animation*
It is recommended to have a digital camera and/or camcorder for motion/visual reference and texture creation.

Students are required to have a laptop powerful enough to run Maya. For details see: [http://usa.autodesk.com/adsk/servlet/index?siteID=123112&id=7639522](http://usa.autodesk.com/adsk/servlet/index?siteID=123112&id=7639522)

(*A laptop with a dedicated (not shared or integrated) graphics card is recommended. Often times, these types of laptops are referred to as “gaming laptops” or “desktop replacements.” These laptops are often larger and heavier due to their increased power and performance)

**Recommended Resources:**

- [www.highend3d.com](http://www.highend3d.com)
- [www.thegnomonworkshop.com](http://www.thegnomonworkshop.com)
- [www.digitaltutors.com](http://www.digitaltutors.com)
- [www.keithlango.com](http://www.keithlango.com)
- [www.3dtotal.com](http://www.3dtotal.com)
- [www.3dcafe.com](http://www.3dcafe.com)
- [www.awn.com](http://www.awn.com)
- [www.animationmeat.com](http://www.animationmeat.com)
- [www.cgchannel.com](http://www.cgchannel.com)
- [www.sketchcrawl.com](http://www.sketchcrawl.com)

**Note:** Animation is an extremely time intensive activity. You should expect to spend at least triple the amount of class time working upon your assignments in order to complete them satisfactorily. 9 hours is only 1 day of a work week. If you think that’s enough, you may be surprised. Additionally, you should remember that you will only get out of this course what you put into it. There is no magic *poof*, make you a highly efficient animator. It takes work. **Lots** of work.

**NOTE:** Do not be discouraged at the beginning of the class. Learning Maya is like learning a whole new language and learning advanced techniques requires patience. The learning curve starts slow and then skyrockets. You will be amazed how much you will retain in a short time and I encourage everyone to use all your skills and creativity to bring your dreams to life.

**COURSE REQUIREMENTS AND ASSIGNMENTS**

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<thead>
<tr>
<th>Grade</th>
<th>Assignment</th>
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<tbody>
<tr>
<td>A</td>
<td>Storyboard Ideas – Due Week 2</td>
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<tr>
<td>B</td>
<td>Storyboard Animatic – Due Week 5</td>
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<td>C</td>
<td>Week 2 Assignment</td>
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1. Read and do Book Projects 1 of Adv. Maya Texturing and Lighting
2. Pick the best one of your Brainstorming 1 minute animation ideas for your Midterm & Final project and show next class
3. Begin working on Storyboard (due week 5)
4. Practice class content and create 1 work using *Advanced Lighting, Shading and Texturing Techniques* (show next class) (2 %)
D  Week 3 Assignment
   1. Read and do Book Projects 2 of Adv. Maya Texturing and Lighting
   2. Continually working on Storyboard (due week 4)
   3. Practice class content and create 1 work using Advanced Lighting, 
      Shading and Texturing Techniques (show next class) (2 %)

E  Week 4 Assignment
   1. Read and do Book Projects 3 of Adv. Maya Texturing and Lighting
   2. Continually work on Storyboard
   3. Midterm project Assignments (see assignment sheet)
   4. Practice class content and create 1 work using Rendering Basics and 
      Advanced Rendering with mental ray (show next class) (2 %)

F  Week 5 Assignment
   1. Read and do Book Projects 4 of Adv. Maya Texturing and Lighting
   2. Practice class content and create 1 work using Rendering Basics and 
      Advanced Rendering with mental rayII (show next class) (2 %)
   3. Start work on your midterm project

G  Week 6 Assignment
   1. Read and do Book Projects 5 of Adv. Maya Texturing and Lighting
   2. Practice class content and create 1 work using Motion Path Lattice, 
      Cameras Technique (show next class) (2 %)
   3. Start work on your midterm project

H  Week 7 Assignment
   1. Read and do Book Projects 6 of Adv. Maya Texturing and Lighting (2%)
   2. Continually work on your midterm project
I  Week 9 Assignment
   1. Read and do Book Projects 7 of Adv. Maya Texturing and Lighting
   2. Practice class content and create 1 work using *Non-Liner Deformer Wrap, Wire, Jiggle, and Cluster Deformer* Technique (show next class) (2 %)
   3. Continually work on your Final project
J  Week 10 Assignment
   1. Read and do Book Projects 8 of Adv. Maya Texturing and Lighting
   2. Practice class content and create 1 small animations using *blend shape on any polygon and nurbs geometry* Technique (show next class) (2 %)
   3. Continually work on your final project
K  Week 11 Assignment
   1. Read and do Book Projects 9 of Adv. Maya Texturing and Lighting
   2. Practice class content and create 1 small animations using *Influence Object, Lip-sync* Technique, I (show next class) (2 %)
   3. Continually work on your Final project (modeling and animation)
L  Week 12 Assignment
   1. Read and do Book Projects 10 of Adv. Maya Texturing and Lighting
   2. Practice class content and create 1 small animation using *Character Animation* Technique, (show next class) (2 %)
   3. Continually work on your Final project
M  Final Project – Due Wk 15

**EVALUATION AND GRADING**

A. Weight
   
   Assignment Storyboard Animatic 8%
   Week 2 Assignment 2%
   Week 3 Assignment 2%
   Week 4 Assignment 2%
   Week 5 Assignment 2%
   Week 6 Assignment 2%
   Week 7 Assignment 2%
   Week 9 Assignment 2%
Week 10 Assignment  2 %  
Week 11 Assignment  2 %  
Week 12 Assignment  2 %  

Midterm  18%  
Final Film  34%  
Presentation &  10 %  
participation  
Attendance  10 %  

B. Scale  

<table>
<thead>
<tr>
<th>Grade</th>
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<tbody>
<tr>
<td>A</td>
<td>93–100</td>
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<tr>
<td>A-</td>
<td>90-92</td>
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<td>D+</td>
<td>67-69</td>
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<td>D</td>
<td>63-66</td>
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**CLASS SCHEDULE:**  

**Week 1** Syllabus introduction, animation piece appreciation  
Discuss Storyboard, Midterm & Final project  
Review student’s understanding of Maya concepts for a better idea of where to begin.  
A detailed explanation of the Storyboard Animatic process and requirement  
A brief overview of the needed skills and techniques for Storyboard will be given  

**Assignments:** Brainstorm three 1- minute animation ideas for Final project.  
( then we pick up the best idea) Length: 1 minute (show next class)  

**Week 2 Lecture :** *Advanced Lighting, Shading and Texturing for Animation (I)*
Activity: Class discussion on 3 1-minute animation ideas for Midterm & Final project.

Workshop: Individually help student to solve problems

Assignments:
1. Read and do Book Projects 1 of Adv. Maya Texturing and Lighting
2. Pick the best one of your Brainstorming 1 minute animation ideas for your Midterm & Final project and show next class
3. Begin working on Storyboard (due week 5)
4. Practice class content and create 1 work using Advanced Lighting, Shading and Texturing Techniques (show next class) (2 %)

Week 3 Lecture: Advanced Lighting, Shading and Texturing for Animation II

Activity: Class discussion on 3 1-minute animation ideas for Midterm & Final project.

Workshop: Individually help student to solve problems

Assignments:
1. Read and do Book Projects 2 of Adv. Maya Texturing and Lighting
2. Continually working on Storyboard (due week 4)
3. Practice class content and create 1 work using Advanced Lighting, Shading and Texturing Techniques (show next class) (2 %)

Week 4 Lecture: Rendering Basics and Advanced Rendering with mental ray I

Activity: Students Present last assignment

Students Present one of the best animation ideas for Mid & Final project.

Workshop: Individually help student to solve problem

Assignments:
1. Read and do Book Projects 3 of Adv. Maya Texturing and Lighting
2. Continually work on Storyboard
3. Midterm project Assignments (see assignment sheet)

4. Practice class content and create 1 work using Rendering Basics and Advanced Rendering with mental ray (show next class) (2 %)

**Week 5 Lecture**  Rendering Basics and Advanced Rendering with mental ray II

**Activity:** Students Present last assignment

Students Present Storyboard for Mid & Final project. (8%)

**Workshop:** Individually help student to solve problem

**Assignments:**

1. Read and do Book Projects 4 of Adv. Maya Texturing and Lighting

2. Practice class content and create 1 work using Rendering Basics and Advanced Rendering with mental rayII (show next class) (2 %)

3. Start work on your midterm project

**Week 6 Lecture :**  Animation – Deformer I: Lattice, Wrap, Cluster, Wire

**Activity:** Students Present last assignment

**Workshop:** Individually help student to solve problem

**Assignments:**

1. Read and do Book Projects 5 of Adv. Maya Texturing and Lighting

2. Practice class content and create 1 work using DeformerI Technique (show next class) (2 %)

3. Start work on your midterm project
Week 7 Lecture:  **Workshop**

**Activity:** Students Present last Assignment  
Students Final Project Progress Report (18 %)

**Workshop:** Individually help student to solve problem

**Assignments:**

1. Read and do Book Projects 6 of Adv. Maya Texturing and Lighting (2 %)
2. Continually work on your midterm project

Week 8 Lecture:  **Workshop**

**Activity:** Students work on Final Project

**Workshop:** Individually help student to solve problem

**Assignments:** Continually work on Final project

Week 9 Lecture:  **Animation  Deformer I I: Non-Liner Deformer Sculpt Deforme, Jiggle Deforme**

**Activity:** Students Present last Assignment

**Workshop:** Individually help student to solve problem

**Assignments:**

1. Read and do Book Projects 7 of Adv. Maya Texturing and Lighting
2. Practice class content and create 1work using *DeformerII* Technique (show next class) (2 %)
3. Continually work on your Final project

Week 10 Lecture:  **Animation - - Blend Shape ,**

**Activity:** Students Present last Assignments  
Student Present Final project progress

**Workshop:** Individually help student to solve problem

**Assignments:**
1. Read and do Book Projects 8 of Adv. Maya Texturing and Lighting

2. Practice class content and create 1 small animations using *blend shape on any polygon and nurbs geometry* Technique (show next class) (2 %)

3. Continually work on your final project

**Week 11 Lecture:** *Animation - - Influence Object, Lip-sync Technique,*

**Activity:** Students Present last Assignments

Students Present Final project progress

**Workshop:** Individually help student to solve problem

**Assignments:**

1. Read and do Book Projects 9 of Adv. Maya Texturing and Lighting

2. Practice class content and create 1 small animations using *Influence Object, Lip-sync Technique, I* (show next class) (2 %)

3. Continually work on your Final project (modeling and animation)

**Week 12 Lecture:** *Animation - - Character Animation1*

**Activity:** Students Present last Assignments

Students Present midterm project progress

**Workshop:** Individually help student to solve problem

**Assignments:**

1. Read and do Book Projects 10 of Adv. Maya Texturing and Lighting

2. Practice class content and create 1 small animation using *Character Animation 1*Technique,(show next class) (2 %)

3. Continually work on your Final project

**Week 13 Lecture:** *Character Animation2*
Activity: Students Present last Assignments
Students Present final project progress

Workshop: Individually help students to solve problem

Assignments: Continually work with Final project

Week 14 Workshop: Individually help student to solve problems on final project

Activity: Students Present final project progress

Assignments: Continually work on Final project

Week 15 final Students Present Complete Final project (34%)

Students must turn in their projects at the beginning of class (as students arrive – please have your Film burned to a CD or on a thumb drive that the instructor can borrow to transfer the files). Students will present their Short Film, from conception to completion. Critiques of their work will be given and student discussion will be encouraged. Due to limitations within the render farm for class, all animation may not have access to the render farm. Students are instructed to include Playblast of Final film complete with sound, Still images of fully realized shots and the best scene (students choice) fully realized and rendered on the students machine. (Be advised that render time COULD be a full day or more on your system)

Breakdown of elements for the grading of the Final Project is as follows:

- Student’s Presentation and Interaction: 10%
- Adherence to Storyboard Animatic: 10%
- Modeling, Texturing & Rendering: 20%
- Rigging & Animation: 25%
- Dynamics: 20%
- Overall Creativity and Originality: 15%

UNIVERSITY ACADEMIC HONOR CODE

Students are on their honor to complete assignments with honesty and integrity. Academic dishonesty involves intentionally or unintentionally stealing the intellectual property of others. Students are expected to be familiar with the university’s policy on academic integrity found in both the University Student Handbook and School of Undergraduate Studies Catalog (http://www.regent.edu/general/catalog/) and to follow it. As an academic and Christian community, Regent University takes seriously the call for integrity and penalizes breaches of academic integrity.
Students should be aware that submitted papers may be checked using Safeassign (Blackboard’s plagiarism detection feature. This feature will determine the percentage of the submitted paper that matches other sources and will generate a report. Scores below 15% include quotes and few common phrases or blocks of text that match other documents, these papers indicate no evidence of the possibility of plagiarism. Scores between 15% and 40% include extensive quoted or paraphrased material or may include plagiarism and will require further review. Scores over 40% indicate a high probability the text in the paper was copied from other sources and should be reviewed for plagiarism. The professor or instructor will contact the student if plagiarism is a concern.

DEPARTMENT RESOURCES

Production Forms, including Production Manual
http://www.regent.edu/acad/schcom/production/forms.htm

Equipment Reservation Form
http://www.regent.edu/acad/schcom/equipment/equipment_reservation_form.htm

UNIVERSITY POLICIES AND RESOURCES

Please review the following links for important information on University policies:

- Academic Calendar/Registrar Information
- Bookstore
- Honor/Plagiarism Policy
- Regent Library
- Student Services (includes links to student handbook, disability services, University calendar, University Writing Center, etc.)
- Technical Support – University Helpdesk
- Grading Policies (incompletes, extensions, IPs, etc.)
- Student Course Evaluations

DISABILITY STATEMENT:

The student is responsible for contacting director of student life at 757.352.4867 to request accommodations, provide necessary documentation, and make arrangements with each instructor.

The following website is designed to help our disabled students learn of their rights and responsibilities with regards to disability services. The site also has resources for faculty to become better informed of their responsibilities towards the disabled students in their classes.
http://www.regent.edu/disabilities

STUDENT COURSE EVALUATION
Becoming Christian leaders includes learning how to evaluate others by providing honest evaluations that include positive affirmation and constructive feedback, as appropriate. In addition, such evaluation leads to the continual improvement of courses and student learning. Consequently, university policy requires that all students submit a formal student evaluation of teaching form at the end of the academic term. This mandatory requirement must be completed before students will be able to access their final course grade. This form is only available in an online format. Prior to the end of the course, students will receive an e-mail indicating that the form is available. Instructions on accessing the evaluation will be included. Since these evaluations are only available for a limited time, students should complete the evaluation as soon as they receive the e-mail notification that the evaluation form is available. Instructors will not have access to course evaluations until after grades have been submitted and will only have access to anonymous summary data. Students are also encouraged at any point during the term to offer comments that may be helpful to the improvement or refinement of the course. Students can access the online evaluation system at: http://eval.regent.edu/regentsurvey/students.cfm. If you have questions about the online evaluation please contact evaluation@regent.edu.

Last Updated: 5/24/2011

At times, due to unforeseen circumstances, course content may be subject to change. Please check with your professor to insure you have the most recently updated Syllabus for this course.

Regent University
1000 Regent University Drive, Virginia Beach, VA, 23464
Phone (888) 718-1222
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