

**Extended Syllabus  
(2013 2<sup>nd</sup> Semester)**

<b>Course Title</b>	3D Modeling and Texturing	<b>Course Number</b>	ANT3012
<b>Credit</b>	3	<b>Enrollment Eligibility</b>	2, 3, 4
<b>Class Time</b>	Wed 13:30~14:45, Fri 13:30~14:45	<b>Classroom</b>	X 427

<b>Instructor's Photo</b>	<b>Name: HyunKyung (Haru) Ji</b>	<b>Homepage:</b>
	<b>E-mail: Ji, H &lt;haruoneday@gmail.com&gt;</b>	<b>Telephone:</b>
	<b>Office: X 407 Office Hours: Tue 14:00~16:00, Fri 15:00~17:00</b>	

**I. Course Overview**

1. Description							
<p>The goal of this class is for students to learn both practical and theoretical knowledge in digital modeling and texturing. During the class, we will broadly expand our subjects from digital modeling to shading, digital cinematography, and MEL (Maya Embedded Language) modeling. This approach will widely expand students’ creative production abilities.</p> <p>In the class, we will primarily use Autodesk Maya, which has very strong support on modeling as well as other related production pipeline.</p> <p>The class covers from a beginner level to an intermediate level. Students will do a small assignment each week, and for the mid- and final-term evaluation, they will submit one Maya modeling project along with quiz respectively.</p>							
2. Prerequisites							
Nothing but willing motivation.							
3. Course Format (%)							
Lecture	Discussion	Experiment/Practicum	Field study	Presentations	Other		
50 %	10 %	40 %	%	%	%		
4. Evaluation (%)							
mid-term Project	Final Project	Quizzes	Presentations	Exams	Assignments	Participation	Other
30 %	30 %	20 %	%	%	20 %	%	%

## II. Course Objectives

Students will learn:

Theoretical and practical points such as: understanding 3D computer graphics / various kinds of digital modeling methods / production workflow focused on modeler's role / Maya interface and structure / Maya NURBs, Polygon, Subdivision modeling / Shading including Texturing / UV / Deformers & Blend Shape / simple Mel / digital cinematography / Global Illumination at mostly basic to intermediate level

## III. Course Format

(\* In detail)

This class takes a workshop format. Half of the class will be lecture-based, showing the theory and practice using presentation media and software (50%) with discussed feedback (10%). The other half will be practice-based, oriented toward work by students (40%).

Students will share their homework through the website such as Tumblr. Questions and discussions are encouraged during the class time.

There will be at least one guest lecture.

## IV. Course Requirements and Grading Criteria

- 1) Small assignments to evaluate how students follow the each week's topics (20%).  
(When you submit, please name your assignment as the following format:  
yourschoolid\_name\_date.extension)
- 2) Mid-term: one creative Maya NURBs modeling project + quiz (30% + 10%).
- 3) Final-term: one creative Maya character modeling project (30% + 10%).

## V. Course Policies

Using the software:

- 1) You can download Maya software for educational purpose on your personal computer for free:  
[http://students.autodesk.com/?nd=download\\_center](http://students.autodesk.com/?nd=download_center)

Create your account and choose Maya2014 to download & install.

- 2) Support for the disabled: seat support/ Extensions on homework's and project submissions/ TA support etc.

## VI. Materials and References

**Class website:** <http://jiharu.github.io/ant3012/>

**Maya Help File** (in Maya, F1 key)

**The Art of Maya: An Introduction to 3D Computer Graphics**

By: Autodesk Maya Press, Pub. Date: April 30, 2007 (2003/ 2005/ 2007 edition)

Introducing Maya

By: Dariush Derakhshani, Publisher: Sybex, Pub. Date: May 3, 2010

Mastering Autodesk Maya 2013

By: Todd Palamar, Publisher: Sybex, Pub. Date: June 19, 2012

Autodesk Maya 2013 Essentials

By: Paul Naas, Publisher: Sybex, Pub. Date: June 5, 2012

[digital] Modeling

By: William Vaughan, Publisher: New Riders, Pub. Date: December 23, 2011

Maya® 2008 Character Modeling and Animation: Principles and Practices

By: Tereza Flaxman, Publisher: Course Technology PTR, Pub. Date: January 01, 2008

Advanced Maya® Texturing and Lighting, Second Edition

By: Lee Lanier, Publisher: Sybex, Pub. Date: August 11, 2008

Professional MEL Solutions for Production

By: Kevin Mannens; Ed Caspersen, Publisher: Jones & Bartlett Learning, Pub. Date: June 23, 2009

Useful links:

<http://www.autodesk.com/products/autodesk-alias-products/overview>

<http://forums.cgsociety.org/>

<http://www.melscripting.com/>

<http://www.creativecrash.com/maya/>

And more online tutorials

## VII. Course Schedule

(\* Subject to change)

<b>Week 1</b> 9/4, 9/6	<b>Learning Objectives</b>	Understand digital modeling and a digital modeler's role
	<b>Topics</b>	Introduce digital modeling
	<b>Class Work (Methods)</b>	Lecture/Discussion with presentation materials & practice
	<b>Materials (Required Readings)</b>	[digital] Modeling Chapter 1, 2, 3
	<b>Assignments</b>	Submit your research on 3D modeling masterwork
<b>Week 2</b> 9/11, 9/13	<b>Learning Objectives</b>	Different modeling methods and fundamental components
	<b>Topics</b>	Digital modeling methods and fundamentals
	<b>Class Work (Methods)</b>	Lecture/Discussion with presentation materials & practice
	<b>Materials (Required Readings)</b>	[digital] Modeling Chapter 5, 4

	Assignments	Reading
<b>Week 3</b> 9/18, 9/20	<b>Learning Objectives</b>	Maya Interface and Nodes (Transform and Shape Nodes), and more basic concepts
	<b>Topics</b>	Maya overview
	<b>Class Work (Methods)</b>	Lecture/Discussion with presentation materials & practice
	<b>Materials (Required Readings)</b>	Mastering Autodesk Maya 2013, Chapter 1 Autodesk Maya 2013 Essentials, Chapter 1 The Art of Maya, 3D Computer Graphics & Exploring Maya
	<b>Assignments</b>	Practice & Submit your ideas & Create your first project
<b>Week 4</b> 9/25, 9/27	<b>Learning Objectives</b>	Overview on NURBS, Polygon, Subdivision modeling
	<b>Topics</b>	Basic Modeling
	<b>Class Work (Methods)</b>	Lecture/Discussion with presentation materials & practice
	<b>Materials (Required Readings)</b>	Introducing Maya Chapter 4, 5 Mastering Autodesk Maya 2013, Chapter 3 The Art of Maya: Modeling part Maya Help file
<b>Week 5</b> 10/2, 10/4	<b>Assignments</b>	Practice
	<b>Learning Objectives</b>	NURBS Curves / Surface / Modeling Tools,
	<b>Topics</b>	Modeling with NURBS
	<b>Class Work (Methods)</b>	Lecture/Discussion with presentation materials & practice
	<b>Materials (Required Readings)</b>	Introducing Maya Chapter 5 Maya® 2008 Character Modeling and Animation Chapter 5 Maya Help file
	<b>Assignments</b>	Upload your first modeling to Tumblr
	<b>Learning Objectives</b>	Materials (Shaders), Textures
	<b>Topics</b>	Shading and Texturing

<b>Week 6</b> 10/9, 10/11	<b>Class Work (Methods)</b>	Lecture/Discussion with presentation materials & practice
	<b>Materials (Required Readings)</b>	Introducing Maya Chapter 7 The Art of Maya materials and textures part Maya Help file
	<b>Assignments</b>	Practice
<b>Week 7</b> 10/16, 10/18	<b>Learning Objectives</b>	Lighting: 1-, 2-, and 3-point lighting, naturalistic and stylistic lighting, Maya lights and basic Rendering
	<b>Topics</b>	Lighting & Rendering
	<b>Class Work (Methods)</b>	Lecture/Discussion with presentation materials & practice
	<b>Materials (Required Readings)</b>	Autodesk Maya 2013 Essentials Chapter 13, 14 The Art of Maya digital cinematography, rendering part Advanced Maya® Texturing and Lighting Chapter 1, 2 Maya Help file
	<b>Assignments</b>	Prepare your mid-term project (NURBS rendering)
<b>Week 8</b> 10/23, 10/25	<b>Learning Objectives</b>	Mid-term
	<b>Topics</b>	Mid-term project
	<b>Class Work (Methods)</b>	Feedback and evaluation
	<b>Materials (Required Readings)</b>	
	<b>Assignments</b>	Submit and upload your project
<b>Week 9</b> 10/30, 11/1	<b>Learning Objectives</b>	Understanding polygons, Constructing good polygon modeling, & Lattice & Non-linear Deformers, Coordinate system, Parent & Group relations
	<b>Topics</b>	Polygonal Modeling
	<b>Class Work (Methods)</b>	Lecture/Discussion with presentation materials & practice
	<b>Materials (Required Readings)</b>	Introducing Maya Chapter 6 Autodesk Maya 2013 Essentials, Chapter 3, 4
	<b>Assignments</b>	Practice & Submit your character design

<b>Week 10</b> 11/6, 11/8	<b>Learning Objectives</b>	Using reference, Creating & Refining your Polygon model
	<b>Topics</b>	Polygonal Modeling
	<b>Class Work (Methods)</b>	Lecture/Discussion with presentation materials & practice
	<b>Materials (Required Readings)</b>	Autodesk Maya 2013 Essentials, Chapter 5
	<b>Assignments</b>	Practice
<b>Week 11</b> 11/13, 11/15	<b>Learning Objectives</b>	Understanding the characteristics of subdivision models & Creating your subdivision model, Laying out UVs & Texture mapping
	<b>Topics</b>	Subdivision Modeling and UV texturing
	<b>Class Work (Methods)</b>	Lecture/Discussion with presentation materials & practice
	<b>Materials (Required Readings)</b>	Autodesk Maya 2013 Essentials, Chapter 6. 7
	<b>Assignments</b>	Practice
<b>Week 12</b> 11/20, 11/22	<b>Learning Objectives</b>	Understanding & applying 2D/3D textures, advanced materials
	<b>Topics</b>	Advanced Shading
	<b>Class Work (Methods)</b>	Lecture/Discussion with presentation materials & practice
	<b>Materials (Required Readings)</b>	Advanced Maya® Texturing and Lighting Chapter 4, 5
	<b>Assignments</b>	Practice
<b>Week 13</b> 11/27, 11/29	<b>Learning Objectives</b>	Understanding & Exploring Global Illumination, Applying MentalRay shaders, Create and render The Cornell Box
	<b>Topics</b>	Global Illumination
	<b>Class Work (Methods)</b>	Lecture/Discussion with presentation materials & practice

	<b>Materials (Required Readings)</b>	Advanced Maya® Texturing and Lighting Chapter 12
	<b>Assignments</b>	Practice
<b>Week 14 12/4, 12/6</b>	<b>Learning Objectives</b>	MEL commands and structure, Using MEL to create recursive modeling
	<b>Topics</b>	MEL (Maya Embedded Language)
	<b>Class Work (Methods)</b>	Lecture/Discussion with presentation materials & practice
	<b>Materials (Required Readings)</b>	Professional MEL Solutions for Production Chapter 1, 2, 7 Maya Help file
	<b>Assignments</b>	Reading & Practice & Submit
<b>Week 15 12/11, 12/15</b>	<b>Learning Objectives</b>	Learning from a professional modeler in the industry
	<b>Topics</b>	Guest Lecture
	<b>Class Work (Methods)</b>	Lecture/Discussion with presentation materials
	<b>Materials (Required Readings)</b>	
	<b>Assignments</b>	Prepare your final-term project
<b>Week 16</b>	<b>Learning Objectives</b>	Final-term
	<b>Topics</b>	Final project
	<b>Class Work (Methods)</b>	Feedback and evaluation
	<b>Materials (Required Readings)</b>	
	<b>Assignments</b>	Submit your final project

### VIII. Special Accommodations

Created on July 19 2013. This syllabus can be partly modified later.

**Update notice:**



**Classroom is changed from AS 111 to X 427 from September 11.**



Students need to bring **their laptop with a three button mouse for all class times.** And each student will register, download, and install Autodesk Maya on the laptop:

[http://students.autodesk.com/?nd=download\\_center](http://students.autodesk.com/?nd=download_center)

\* Regulation related to Autodesk Education Community License:

[http://students.autodesk.com/?nd=license\\_update#](http://students.autodesk.com/?nd=license_update#)



On both 9/4 and 9/6, there will be no class because Prof. Ji will have an official trip to Austria Linz; she will compensate for those later using her office time or in class. The class TA will assist your query on both 9/4 and 9/6 for about 15 mins. .