



**WEEKLY SCHEDULE**  
**MA115 Principles of 3D Modeling**

**Instructor:** Jim Tavernetti

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**Office hours:** *By Appointment*

**Week 1**

- Lecture:** Understanding 3D space, coordinate systems, viewport navigation  
Transform tools  
Unit setup  
Working with primitives and extended primitives  
Using help menus, rendering and saving files  
Understanding pivot points  
Command panels and workflow  
Working with multiple selections  
Align tools
- Lab:** Explore the interface
- Assignment:** **Primitive Toy Model/Dining Room Concept** Build a simple toy model out of primitives. Make sure to use the align tools. Must include at least 10 items. Using the Library resources explore different eras and choose a furniture style to reproduce. Must have one chandelier. **Due Week 2**
- Competency:** Analyze 3D coordinate systems to conceptualize the geometric representation of an image.  
Create 3D models and apply concepts of 2D design to maximize the benefits of 3D space.

**Week 2**

**DUE: Primitive Toy Model/Dining Room Concept**  
*Critique assignments*

- Lecture:** Exploring more complex modifiers (FFD, Edit Poly)  
Working with modifiers and multiple modifiers  
Sub-object mode  
The importance of naming objects  
Recovering files with the auto backup and using hold and fetch  
Incremental saving and protecting files  
Box modeling
- Lab:** Box modeling and modifier stack work
- Assignment:** **Dining Room Furniture** Using your chosen furniture style, model at least 4 items. **DUE Week 3**
- Competency:** Analyze 3D coordinate systems to conceptualize the geometric

representation of an image.  
Create 3D models and apply concepts of 2D design to maximize the benefits of 3D space.

### Week 3

#### **DUE: Dining Room Furniture**

*Critique assignments*

**Lecture:** Understanding normals  
Smoothing groups  
Turbo and Meshsmooth  
Importance of poly count. When to go high or low.  
More box modeling

**Lab:** Smoothing groups, normals and turbosmooth

**Assignment:** **Box Model** Create a model with smoothing groups and turbo/meshsmooth. **Due Week 4**

**Competency:** Analyze 3D coordinate systems to conceptualize the geometric representation of an image.  
Create 3D models and apply concepts of 2D design to maximize the benefits of 3D space.

### Week 4

#### **DUE: Box Model**

*Critique assignments*

**Lecture:** Exploring the editable spline rollout  
Modeling with splines  
Cloning and the spacing tool  
Instances and make unique  
Attaching vs. grouping  
Merging files

**Lab:** Using spline based modifiers begin modeling chandelier and dining equipment (choose a style that compliments the chosen dining room era—these projects will be merged together)

**Assignment:** **Model Chandelier and Dining Equipment** Use spine modeling, cloning, grids and align tools to set up the scene. **DUE Week 5**

**Competency:** Analyze 3D coordinate systems to conceptualize the geometric representation of an image.  
Create 3D models and apply concepts of 2D design to maximize the benefits of 3D space.

### Week 5

#### **DUE: Chandelier and Dining Equipment**

*Critique assignments*

**Lecture:** Basic Materials  
Basic Lighting  
Basic Rendering  
File types and post production

**Lab:** Poly mesh painting  
Merging files together and accessorizing. We will merge different student files together.

**Assignment:** **Dining Room Interior/Tank Reference**

Create simple materials for your Dining Room scene. Light and render the scene using the proper file formats. Bring in reference pics of a tank for modeling. **DUE Week 6**

**Competency:** Analyze 3D coordinate systems to conceptualize the geometric representation of an image.  
Create 3D models and apply concepts of 2D design to maximize the benefits of 3D space.

**Week 6** **DUE: Dining Room Interior/Tank Reference**

*Critique assignments*

**Lecture:** Review  
Compound objects (Booleans and Shape Merge)  
Chamfer  
To smooth or not to smooth  
Edge loop is most important concept in modeling  
Checking model integrity  
Setting up reference drawings

**Lab:** Begin working on Tank project

**Assignment:** **Head/Face Designs-Tank Progress** Model a replica of a military Tank using reference. Must use lofts, parametric modifiers, spline based modifiers, arrays and path deforms, as well as box modeling techniques. Come in with concept for head/face model. **DUE Week 7**

**Competency:** Analyze 3D coordinate systems to conceptualize the geometric representation of an image.  
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**Week 7** **DUE: Head/Face Designs-Tank Progress**

*Critique assignments*

**Lecture:** Organizing and testing Models  
Strip Modeling/ edge loops

**Lab:** Continue working on Tank assignment

**Assignment:** **Tank Model** Complete Tank assignment. Set up reference drawings for Head/Face designs. **DUE Week 8**

**Competency:** Analyze 3D coordinate systems to conceptualize the geometric representation of an image.  
Create 3D models and apply concepts of 2D design to maximize the benefits of 3D space.

**Week 8**                    **DUE: Tank Model**  
*Critique assignments*  
**Lecture:** Strip modeling workflow  
Drawing out your loops  
Symmetry  
**Lab:** Open Lab. Work on Head model  
**Assignment:** **Head/Face Model Progress** Keep working on the Head Model assignment **DUE Week 8**  
**Competency:** Analyze 3D coordinate systems to conceptualize the geometric representation of an image.  
Create 3D models and apply concepts of 2D design to maximize the benefits of 3D space.

**Week 9**                    **DUE: Head Model Progress**  
**Lecture:** Keep your poly count low  
**Lab:** Open Lab  
**Assignment:** **Finish Head/Face Models** Complete model and render to appropriate file format.  
**Competency:** Analyze 3D coordinate systems to conceptualize the geometric representation of an image.  
Create 3D models and apply concepts of 2D design to maximize the benefits of 3D space.

**Week 10**                    **DUE: Finished Head/Face Model**  
*Critique assignments*  
**Lecture:** Final changes and quality vs. render time  
Portfolio Quality renders  
Class Critique  
**Lab:** Full critique and open lab  
**Assignment:** **Portfolio Quality Renders+ 1 Process Render** Prepare and Render Portfolio Quality Models **Due Week 11**  
**Competency:** Analyze 3D coordinate systems to conceptualize the geometric representation of an image.  
Create 3D models and apply concepts of 2D design to maximize the benefits of 3D space.

**Week 11**                    **DUE: Portfolio Quality Renders + 1 Process Render**  
**Lecture:** “Portfolio Quality” ceremony  
**Lab:** last minute corrections and re-renders for “Portfolio Quality” folder.

### **Points Breakdown**

<b>Due</b>	<b>Assignment</b>	<b>Points Possible</b>	<b>Points Earned</b>
All	Participation	15	
Wk #2	Primitive Toy Model/Dining Room Concept	10	
Wk #3	Dining Room Furniture	10	
Wk #4	Box Model	10	
Wk #5	Chandelier and Dining Equipment	55	
Wk #6	Dining Room Interior/Tank Reference	20	
Wk #7	Head/Face Designs-Tank Progress	10	
Wk #8	Tank Model	30	
Wk #9			
Wk #10	Finished Head/Face Model	10	
Wk #11	Portfolio Quality Renders	120	
<b>Total</b>		300	

### **Extra Credit Points Breakdown**

You must have a signed document that you are part of a club or attended workshops. You may use the back of the syllabi to obtain these.

All	Clubs and Organizations: First one joined additional	15 10	
All	Workshops and events: First one attended additional	15 10	
<b>MAX</b>		75	

**Total Points** **300**

A	279-300
A-	270-278
B+	261-269
B	249-260
B-	240-248
C+	231-239
C	219-230
C-	210-218
D+	201-209
D	195-200

F  
Late Work

0-194  
0

This Schedule is subject to change according to the needs of the class as determined by the instructor.