



WEEKLY SCHEDULE
MA260 Materials and Lighting

Instructor: Jim Tavernetti

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Office hours: *By Appointment*

Week 1

- Lecture:** Intro to 3DS Max Material Editor
Basic Lights
Materials vs. Texture Maps; Applying Materials to objects
Explanation of material attributes.
Scanline vs. Global Illumination
- Lab:** Explore the Material Editor. Light a scene
- Assignment:** **Environment Sketch** Begin sketches for final Project.

Due Week 2

- Competency:** Demonstrate the rules of surfacing 3D images
Demonstrate the use of local vs. global lighting.
Execute the lighting of a complex scene with coverage from pre-production to teardown.

Week 2

DUE: Environment Sketch Students are expected to work on these until midterm
Critique assignments

- Lecture:** UVW coordinates - basic texture mapping
Bump, Specular and Opacity maps
Intro to Advanced lighting: Light Tracer - GI overview
Intro to unwrap
Bitmap sizes

Lab: Unwrapping box object

Assignment: **Unwrap Box Assignment** Unwrap, light and texture 3 box type objects. Must include diffuse, specular and bump map. Light objects. **DUE Week 3**

- Competency:** Demonstrate the rules of surfacing 3D images.
Use multiple image map types on a 3D model.
Demonstrate the use of local vs. global lighting.
Execute the lighting of a complex scene with coverage from pre-production to teardown.
Use textures and mapping to conceal low polygon count
Understand and apply UVW mapping coordinates.
Use layered image maps for realistic and industrial texturing.

Understand bitmap and procedural textures and the applications of each.

Week 3

DUE: Unwrap Box Assignment

Critique assignments

Lecture: Understanding normals and the importance of modeling technique
Specular and reflection maps
UVW Unwrap exercises
Placement of unwrap in material editor
Composite map

Lab: Unwrap various models

Assignment: **Cylindrical Unwrap Assignment** Model, unwrap and texture 3 objects with cylindrical parts. Layer materials with composite map

Due Week 4

Competency: Demonstrate the rules of surfacing 3D images.
Use multiple image map types on a 3D model.
Demonstrate the use of local vs. global lighting.
Execute the lighting of a complex scene with coverage from pre-production to teardown.
Use textures and mapping to conceal low polygon count
Understand and apply UVW mapping coordinates
Use layered image maps for realistic and industrial texturing.
Understand bitmap and procedural textures and the applications of each.

Week 4

DUE: Cylindrical Unwrap Assignment

Critique assignments

Lecture: Character unwrapping exercises

Lab: Unwrap character

Assignment: **Character Unwrap /Finish up Environment Concepts**

Due Week 5

Competency: Demonstrate the rules of surfacing 3D images.
Use multiple image map types on a 3D model.
Use textures and mapping to conceal low polygon count
Understand and apply UVW mapping coordinates.
Use layered image maps for realistic and industrial texturing.
Understand bitmap and procedural textures and the applications of each.

Week 5

DUE: Character Unwrap/Environment Concepts

Critique assignments

Lecture: Importance of a proper unwrap

Lab: Midterm: Unwrap character

Assignment: Begin modeling final environment **DUE Week 6**

Competency: Demonstrate the rules of surfacing 3D images.

Use multiple image map types on a 3D model.
Demonstrate the use of local vs. global lighting.
Execute the lighting of a complex scene with coverage from pre-production to teardown.
Use textures and mapping to conceal low polygon count
Understand and apply UVW mapping coordinates.
Use layered image maps for realistic and industrial texturing.

Week 6

DUE: Modeling Progress

Critique assignments

Lecture: Post production techniques. Atmospheric and environmental effects
Tileable textures
Multi-Sub object material

Lab: Work on Environment

Assignment: **Progress on Environment/Create Tileable Texture** Complete a separate tileable texture

DUE Week 7

Competency: Demonstrate the rules of surfacing 3D images.
Use multiple image map types on a 3D model.
Demonstrate the use of local vs. global lighting.
Execute the lighting of a complex scene with coverage from pre-production to teardown.
Use textures and mapping to conceal low polygon count
Understand and apply UVW mapping coordinates.
Use image manipulation software to create tileable, color-limited maps.
Use layered image maps for realistic and industrial texturing.
Understand bitmap and procedural textures and the applications of each.

Week 7

DUE: Environment Progress/Tileable Texture

Critique assignments

Lecture: Procedural maps
Architectural materials and alternative shaders

Lab: Unwrapping and preparing an entire scene for textures

Assignment: **Finish up modeling phase of environment**

DUE Week 8

Competency: Demonstrate the rules of surfacing 3D images.
Use multiple image map types on a 3D model.
Demonstrate the use of local vs. global lighting.
Execute the lighting of a complex scene with coverage from pre-production to teardown.
Use textures and mapping to conceal low polygon count
Understand and apply UVW mapping coordinates.
Use image manipulation software to create tileable, color-limited

maps.
Use layered image maps for realistic and industrial texturing.
Understand bitmap and procedural textures and the applications of each.

- Week 8** **DUE: Environment Modeling**
Critique assignments
- Lecture:** Model integrity and polycount
Lab: Open Lab.
Assignment: **Environment Progress** Keep working on the Environment **DUE**
- Week 8**
- Competency:** Demonstrate the rules of surfacing 3D images.
Use multiple image map types on a 3D model.
Demonstrate the use of local vs. global lighting.
Execute the lighting of a complex scene with coverage from pre-production to teardown.
Use textures and mapping to conceal low polygon count
Understand and apply UVW mapping coordinates.
Use image manipulation software to create tileable, color-limited maps.
Use layered image maps for realistic and industrial texturing.
Understand bitmap and procedural textures and the applications of each.
- Week 9** **DUE: Environment Progress**
- Lecture:** Preparing for Portfolio Quality renders
Lab: Open Lab
Assignment: **Finish Environment**
- Competency:** Demonstrate the rules of surfacing 3D images.
Use multiple image map types on a 3D model.
Demonstrate the use of local vs. global lighting.
Execute the lighting of a complex scene with coverage from pre-production to teardown.
Use textures and mapping to conceal low polygon count
Understand and apply UVW mapping coordinates.
Use image manipulation software to create tileable, color-limited maps.
Use layered image maps for realistic and industrial texturing.
Understand bitmap and procedural textures and the applications of each.
- Week 10** **DUE: Rendered Environment**
Critique assignments
- Lecture:** Full class critique
Lab: Full critique

Assignment: Portfolio Quality Renders+ 1 Process Render Prepare and Render Portfolio Quality Models **Due Week 11**

Competency: Demonstrate the rules of surfacing 3D images.
 Use multiple image map types on a 3D model.
 Demonstrate the use of local vs. global lighting.
 Execute the lighting of a complex scene with coverage from pre-production to teardown.
 Use textures and mapping to conceal low polygon count
 Understand and apply UVW mapping coordinates.
 Use image manipulation software to create tileable, color-limited maps.
 Use layered image maps for realistic and industrial texturing.
 Understand bitmap and procedural textures and the applications of each.

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

Due	Assignment	Points Possible	Points Earned
All	Participation	15	
Wk #2	Environment Sketch	10	
Wk #3	Unwrap Box Assignment	10	
Wk #4	Cylindrical Unwrap Assignment	10	
Wk #5	Character Unwrap/Environment Concepts	55	
Wk #6	Modeling Progress	10	
Wk #7	Environment Progress/Tileable Texture	20	
Wk #8	Environment Modeling	20	
Wk #9	Environment Progress	10	
Wk #10	Rendered Environment	10	
Wk #11	Portfolio Quality Renders + 1 Process Render	130	
Total		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:		
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	First one joined additional	15 10	
All	Workshops and events: First one attended additional	15 10	
MAX		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	0-194
Late Work	0

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