Course Outline	
DSGN6150 Modelling & Shading Lighting Rendering I (4)	**Study Program** Visual Communication Design
Effective Date 01 February 2018	**Revision** 1

1. Course Description

Modeling & Shading Lighting Rendering (SLR) I course includes topology knowledge of 3D modeling, material shading, lighting techniques, and rendering. Modeling SLR I is important for creating shapes in 3D workspace, and presenting them for production purposes.

2. Graduate Competency

Each course in the study program contributes to the graduate competencies that are divided into employability and entrepreneurial skills and study program specific outcomes, in which students need to have demonstrated by the time they complete their course.

BINUS University employability and entrepreneurial skills consist of planning and organizing, problem solving and decision making, self management, team work, communication, and initiative and enterprise.

2.1. Employability and Entrepreneurial Skills

Aspect	Key Behaviour

2.2. Study Program Specific Outcomes

Study Program Specific Outcomes
(SO-6 AN) - Able to design animation product with sale value and recognition of copyright (intellectual property) by applied principle design and technology in design process.
(SO-7 AN) - Able to design business models based copyright (intellectual property) in applied design and animation production.

3. Topics

- Topology & digital sculpting 3d modeling method introduction
- Digital Sculpting using Zsphere & dynamesh
- Digital Sculpting 3D part using sub tool
- Pipeline Integration
- Digital Sculpting Polypaint to create textures
- Approaching shader material and rendering preview
- Retopologize
- Lighting Setup
- Advance Material & Shader
- Posing your 3d Character
- Rigging & skinning
- Advance rendering
- Presenting 3D Character & 3D Printing

4. Learning Outcomes

On successful completion of this course, student will be able to:

- LO 1: Apply Useable and workable topology to the 3D Digital sculpting model method on 3D Character Design
- LO 2: Use Material shaders to create specific material effect.
- LO 3: Apply Lighting setup to enhance the quality of the 3D model.
- LO 4: Create 3D model render in a professional manner.

5. Teaching And Learning Strategies

In this course, the lecturers might deploy several teaching learning strategies, including and Case Study.

6. Textbooks and Other Resources

6.1 Textbooks

1. Vaughan, William... (2012). ***Digital Modeling***. 01. New Rider. California. ISBN: 0321700899.

The book in the first list is a must to have for each student.

6.2 Other Resources

1. http://ww.docs.pixologic.com/referenc
2. http://www.e-guide/tool/polymesh/subtool/
3. http://photo.net/photography-
4. http://www.lighting-equipment- techniques-
5. http://www.forum/00WPsV
6. http://lesterbanks.com/2011/03/polygon-topology-techniques/
7. https://www.3dtotal.com/tutorial/940-combining-shaders-and-maps-cinema-4d-misc-by-peer-draeger-scene-yard-cactus-wall-building#.UPvVUCeTwhU
8. http://docs.autodesk.com/3DSMAX/16/ENU/3ds-Max-Help/index.html?url=files/GUID-0988C119-B9A5-474E-9AAB-E0DE5D79B9F0.htm,topicNumber=d30e454524
9. http://photography.bastardsbook.com/lessons/the-quality-of-light/
10. http://www.3dtotal.com/ffa/tutorial
11. http://www.s/max/joanofarc/head1.php
12. https://www.photo.net/discuss/threads/product-photography-lighting-it-is-simple-when-you-know-how.413719/
13. http://lesterbanks.com/2011/03/polygon-topology-techniques/
14. http://www.docs.pixologic.com/user-guide/3d-modeling/painting-your-http://www.model/polypaint/painting-a-head/
15. http://docs.pixologic.com/user-
16. http://www.guide/3d-modeling/posing- your-
17. http://www.model/

7. Schedule

Theory

Session/ Mode	Related LO	Topics	References
1 F2F	LO 1	Topology & digital sculpting 3d modeling method introduction - Polygonal Modeling Methods & 3d digital sculpting - Polymesh introduction	- Topology & digital sculpting 3d modeling method Introduction.ppt - Digital Modeling, Chapter 5 - Topology & digital sculpting 3d modeling method introduction
2 F2F	LO 1	Topology & digital sculpting 3d modeling method introduction - Polygonal Modeling Methods & 3d digital sculpting - Polymesh introduction	- Topology & digital sculpting 3d modeling method Introduction.ppt - Digital Modeling, Chapter 5 - Topology & digital sculpting 3d modeling method introduction
3 F2F	LO 1	Digital Sculpting using Zsphere & dynamesh - creating character head with dynamesh - creating character figure using Zsphere	- Digital Sculpting using Zsphere& dynamesh. ppt - Digital Modeling,
4 F2F	LO 1	Digital Sculpting using Zsphere & dynamesh - creating character head with dynamesh - creating character figure using Zsphere	- Digital Sculpting using Zsphere& dynamesh. ppt - Digital Modeling,

5 GSLC	LO 1	Digital Sculpting 3D part using sub tool - Creating subtool - Boolean subtraction using subtool	- Digital Sculpting 3D part using subtool.ppt - Digital Modeling, http://ww.docs.pixologic.com/referenc http://www.e-guide/tool/polymesh/subtool/
6 GSLC	LO 1	Digital Sculpting 3D part using sub tool - Creating subtool - Boolean subtraction using subtool	- Digital Sculpting 3D part using subtool.ppt - Digital Modeling, http://ww.docs.pixologic.com/referenc http://www.eguide/tool/polymesh/subtool/
7 F2F	LO 1	Pipeline Integration - GoZ - Using external rendering for previewing end result - Using Goz for detailing 3D character sculpting	- pipeline integration.ppt - Digital Modeling, - Polygon Topology Techniques, http://lesterbanks.com/2011/03/polygon-topology-techniques/
8 F2F	LO 1	Pipeline Integration - GoZ - Using external rendering for previewing end result - Using Goz for detailing 3D character sculpting	- pipeline integration.ppt - Digital Modeling, - Polygon Topology Techniques, http://lesterbanks.com/2011/03/polygon-topology-techniques/
9 GSLC	LO 1	Digital Sculpting Polypaint to create textures - use polypaint to create painting model depends on resolution - transfering polypaint to texture map	- Digital Sculpting 3D part using subtool.ppt - Digital Modeling, - Painting, http://www.docs.pixologic.com/user-guide/3d-modeling/painting-your- http://www.model/polypaint/painting-a-head/
10 GSLC	LO 1	Digital Sculpting Polypaint to create textures - use polypaint to create painting model depends on resolution - transfering polypaint to texture map	- Digital Sculpting 3D part using subtool.ppt - Digital Modeling, - Painting, http://www.docs.pixologic.com/user-guide/3d-modeling/painting-your- http://www.model/polypaint/painting-a-head/
11 F2F	LO 2	Approaching shader material and rendering preview - Shaders material - BPR (best preview render) - 3rd party software rendering	- Approaching shader material and rendering preview .ppt - Digital Modeling, - Joan of Arc, http://www.3dtotal.com/ffa/tutorial http://www.s/max/joanofarc/head1.php
12 F2F	LO 2	Approaching shader material and rendering preview - Shaders material - BPR (best preview render) - 3rd party software rendering	- Approaching shader material and rendering preview .ppt - Digital Modeling, - Joan of Arc, http://www.3dtotal.com/ffa/tutorial http://www.s/max/joanofarc/head1.php
13	LO 1	Retopologize	- Retopologized.ppt

F2F		- Using Zsphere topology - Projecting topology	- Digital Modeling, - Topology, http://lesterbanks.com/2011/03/polygon-topology-techniques/
14 F2F	LO 1	Retopologize - Using Zsphere topology - Projecting topology	- Retopologized.ppt - Digital Modeling, - Topology, http://lesterbanks.com/2011/03/polygon-topology-techniques/
15 F2F	LO 3	Lighting Setup - Global illumination, local illumination, image base lighting. - Light painting using hdri map editor - Shadow	- Lighting setup.ppt - Digital Modeling, - Photography Lighting, https://www.photo.net/discuss/threads/product-photography-lighting-it-is-simple-when-you-know-how.413719/
16 F2F	LO 3	Lighting Setup - Global illumination, local illumination, image base lighting. - Light painting using hdri map editor - Shadow	- Lighting setup.ppt - Digital Modeling, - Photography Lighting, https://www.photo.net/discuss/threads/product-photography-lighting-it-is-simple-when-you-know-how.413719/
17 GSLC	LO 2	Advance Material & Shader - Vray Materials - Organic shaders material approach - Subsurface Scattering - VraySkinMtl	- Advance Materials.ppt - Digital Modeling, - Material Editor, Materials, and Maps, http://docs.autodesk.com/3DSMAX/16/ENU/3ds-Max-Help/index.html?url=files/GUID-0988C119-B9A5-474E-9AAB-E0DE5D79B9F0.htm,topicNumber=d30e454524
18 GSLC	LO 2	Advance Material & Shader - Vray Materials - Organic shaders material approach - Subsurface Scattering - VraySkinMtl	- Advance Materials.ppt - Digital Modeling, - Material Editor, Materials, and Maps, http://docs.autodesk.com/3DSMAX/16/ENU/3ds-Max-Help/index.html?url=files/GUID-0988C119-B9A5-474E-9AAB-E0DE5D79B9F0.htm,topicNumber=d30e454524
19 F2F	LO 4	Posing your 3d Character - Using Zphere to create rigging controller - Transpose master	- Posing your 3d Character.ppt - Digital Modeling, - Pose, http://docs.pixologic.com/user - http://www.guide/3d-modeling/posing- your- http://www.model/
20 F2F	LO 4	Posing your 3d Character - Using Zphere to create rigging controller - Transpose master	- Posing your 3d Character.ppt - Digital Modeling, - Pose, http://docs.pixologic.com/user -

			http://www.guide/3d-modeling/posing- your- http://www.model/
21 F2F	LO 1	Rigging & skinning - Rigging 3D Character preparation - Using Biped	- Rigging & skinning.ppt - Digital Modeling, - Combining shader and maps, https://www.3dtotal.com/tutorial/940-combining-shaders-and-maps-cinema-4d-misc-by-peer-draeger-scene-yard-cactus-wall-building#.UPvVUCeTwhU
22 F2F	LO 1	Rigging & skinning - Rigging 3D Character preparation - Using Biped	- Rigging & skinning.ppt - Digital Modeling, - Combining shader and maps, https://www.3dtotal.com/tutorial/940-combining-shaders-and-maps-cinema-4d-misc-by-peer-draeger-scene-yard-cactus-wall-building#.UPvVUCeTwhU
23 F2F	LO 4	Advance rendering - Rendering 3D character - Using Vray HDR & active shade Vray RT	- Advance rendering.ppt - Digital Modeling, - Product Photography Lighting, http://photo.net/photography- http://www.lighting-equipment-techniques- http://www.forum/00WPsV
24 F2F	LO 4	Advance rendering - Rendering 3D character - Using Vray HDR & active shade Vray RT	- Advance rendering.ppt - Digital Modeling, - Product Photography Lighting, http://photo.net/photography- http://www.lighting-equipment-techniques- http://www.forum/00WPsV
25 F2F	LO 4	Presenting 3D Character & 3D Printing - 3D Character Action pose - Media presentation - 3D printing	- Presenting 3D Character.ppt - Digital Modeling, - The Quality of Light and Shadow, http://photography.bastardsbook.com/lessons/the-quality-of-light/
26 F2F	LO 4	Presenting 3D Character & 3D Printing - 3D Character Action pose - Media presentation - 3D printing	- Presenting 3D Character.ppt - Digital Modeling, - The Quality of Light and Shadow, http://photography.bastardsbook.com/lessons/the-quality-of-light/

8. Evaluation

Theory

Assessment Activity	Weight	Learning Outcomes			
		1	2	3	4
Assignment	50%	√	√	√	√
Mid Exam	20%	√	√		
Final Exam	30%			√	√

Practicum

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Final Evaluation Score

Aspects	Weight
Theory	100%
Practicum	0%

9. A. Assessment Rubric (Study Program Specific Outcomes)

LO	Indicators	Proficiency Level			
		Excellent (85 – 100)	Good (75 – 84)	Average (65 – 74)	Poor (<= 64)
LO 1	1.1. Egde Flow, topology, realistic, style	Edge Flow, topology, realistic	Edge flow, topology	Edge flow	Topology
LO 2	2.1. Polypaint Shader Alpha Texture	Polypaint Shader Alpha Texture	Polypaint Shader Alpha	Polypaint Shader	Polypaint
LO 3	3.1. Basic lighting Studio lighting HDRI Other lighting	Basic lighting Studio lighting HDRI Other lighting	Basic lighting Studio lighting HDRI	Basic lighting Studio lighting	Basic lighting
LO 4	4.1. Grey render Lighting Render HDRI Render Pose	Grey render Lighting Render HDRI Render Pose	Grey render Lighting Render HDRI Render	Grey render Lighting Render	Lighting Render

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