

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



COURSE OUTLINE

COURSE TITLE: Texturing and Shaders

CODE NO. : VGA303 **SEMESTER:** 12F

PROGRAM: Video Game Art

AUTHOR: Matias Kamula

DATE: August, 2015 **PREVIOUS OUTLINE DATED:** May, 2014

APPROVED: "Colin Kirkwood" **DATE:** Aug/15

TOTAL CREDITS: 4 **DEAN** **DATE**

PREREQUISITE(S): Game Art Studio 2

HOURS/WEEK: 4

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I. COURSE DESCRIPTION: Textures and shaders give life to the art in the game. Students will learn how to create efficient textures and shaders for game assets. Students will also learn both normal and parallax mapping techniques.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

Upon successful completion of this course, the student will demonstrate the ability to:

1. Design and produce convincing 3D game textures and shaders
Potential Elements of the Performance:
 - Develop an understanding of the capabilities of various platforms and create assets that maximize platform potential
 - Understand and create normal maps to be used on 3D assets
 - Become familiar with tools and functions found in a game engine for creating and editing textures and shaders
2. Design and create visually appropriate 2D game assets for textures and shaders
Potential Elements of the Performance:
 - Using traditional and digital art skills to create convincing textures
 - Understand how to efficiently import, manage and package 2D assets inside a game engine.
3. Create textures and shaders for a game using a 3D game engine
Potential Elements of the Performance:
 - Demonstrate the ability to use a 3d game engine to create and manage textures and shaders
 - Use a game engine to create appropriate shaders for 3D assets
 - Understand how to efficiently import, manage and package 3D assets inside a game engine.
4. Learn how to use and apply lights in a game engine to enhance game textures and shaders.
Potential Elements of the Performance:
 - Demonstrate the ability to place and use all various light types in a game engine
 - Understand the core difference between light types and when it is best to use each
 - Effectively light a game asset in a game scene with both

textures and shaders applied.

III. TOPICS:

1. Introduction to texture and shaders
2. What is a shader?
3. Components in a shader
4. Normal mapping and parallax mapping
5. Combining multiple textures into a shader
6. Creating multiple shaders for use in a game engine
7. Understanding how and when to use game engine lights to enhance textures and shaders

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

V. EVALUATION PROCESS/GRADING SYSTEM:

Assignments/Projects = 100% of final grade

Assignments/projects will constitute 100% of the student's final grade in this course. A missing assignment is equivalent to course objectives not achieved which results in an "F" (fail) grade for the assignment/project.

The following semester grades will be assigned to students:

Grade	<u>Definition</u>	<i>Grade Point Equivalent</i>
A+	90 – 100%	4.00
A	80 – 89%	3.00
B	70 - 79%	2.00
C	60 - 69%	1.00
D	50 – 59%	0.00
F (Fail)	49% and below	
CR (Credit)	Credit for diploma requirements has been awarded.	
S	Satisfactory achievement in field /clinical placement or non-graded subject area.	
U	Unsatisfactory achievement in field/clinical placement or non-graded subject area.	
X	A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.	
NR	Grade not reported to Registrar's office.	
W	Student has withdrawn from the course without academic penalty.	

VI. SPECIAL NOTES:Attendance:

Sault College is committed to student success. There is a direct correlation between academic performance and class attendance; therefore, for the benefit of all its constituents, all students are encouraged to attend all of their scheduled learning and evaluation sessions. This implies arriving on time and remaining for the duration of the scheduled session.

VII. COURSE OUTLINE ADDENDUM:

The provisions contained in the addendum located on the portal form part of this course outline.