SM4125: COMPUTER ANIMATION FOR INTERACTIVE CONTENT

Effective Term
Semester A 2022/23

Part I Course Overview

Course Title
Computer Animation for Interactive Content

Subject Code
SM - School of Creative Media
Course Number
4125

Academic Unit
School of Creative Media (SM)

College/School
School of Creative Media (SM)

Course Duration
One Semester

Credit Units
3

Level
B1, B2, B3, B4 - Bachelor's Degree

Medium of Instruction
English

Medium of Assessment
English

Prerequisites
Nil

Precursors
Nil

Equivalent Courses
Nil

Exclusive Courses
Nil

Part II Course Details

Abstract

This course aims to explore the potentials of computer animation in interactive applications. At the end of this course, students are able to understand the potential and limitation of real-time interactive computer animation, and create their own interactive works using selected tools. Topics include creating 3D animation contents for interactive applications, real-time rendering, and using physics in an interactive computer animation environment.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Identify the potential and limitation of real-time interactive computer animation		x		
2	Name and compare the tools for real-time graphics			x	
3	Create their own real-time interactive animation graphics through selected tools			x	x
4	Associate, combine and integrate knowledge from different disciplines (e.g. mathematics, sciences, literature etc.) into course assignments			x	
5	Transform basic technical competence into a unique style or personal signature.		x		

A1: Attitude
Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability
Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to real-life problems.

A3: Accomplishments
Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

Teaching and Learning Activities (TLAs)

	TLAs	Brief Description	CILO No.	Hours/week (if applicable)
1	Lectures	The theory behind interactive computer animation is covered during the lectures. Students' activities will be conducted during the lectures to allow them hands-on practice in identifying the potential and limitation of real-time interactive computer animation.	1	

| 2 | In-class demonstration | Various tools will be demonstrated during the classes, to show the potential and limitation of these tools. Students are allowed to have actual hands-on practice in naming and comparing selected tools for real-time graphics. | 2 | |
| 3 | Workshops | Workshops will be conducted in the second part of the course to help the students to create interactive computer animation using selected tools. | 3, 4, 5 | |

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	In-Class Exercise: Operation of different softwares and learning various production strategy.	1	33	
2	Presentation: students are required to present during the classes to demonstrate their understanding on the topics.	2	23	
3	A course project: students are required to finish an interactive animation project individually (using selected tools).	3, 4, 5	44	Course project is the most important, because it demonstrates how much the students acquired.

Continuous Assessment (%)

100

Examination (%)

0

Additional Information for ATs

The weightings is subject to change. The latest course information will be announced during the lesson.

Assessment Rubrics (AR)

Assessment Task

1. Participation and Performance

Criterion

This assessment task reviews students' participation and performance in discussions, debates and peer critique during the tutorial sessions. The evidence of 'negotiation', the sign of discovery, lies in students' pre-class preparation and interpersonal sensitivity to his/her peer members.

Excellent (A+, A, A-)

- Active in-class participation, positive listening, strong ability to stimulate class discussion and comment on other points
- In-depth pre-class preparation and familiarity with peer reports and other materials
- Interpret others' views with an open mind and ready to negotiate
- Readiness to share personal insight via analysis and synthesis with informed views
- Constructively critical, thus facilitating the discovery of new issues

Good (B+, B, B-)

- Active in-class participation, positive listening, ability to initiate class discussion and comment on other points
- Adequate pre-class preparation and familiarity with peer reports and other materials
- Interpret opinions effectively

Fair (C+, C, C-)

- Attentive in in-class participation, listening with comprehension, but only infrequently contributing
- Adequate pre-class preparation but little familiarity with peer reports and other materials
- Fair ability in interpreting opinions

Marginal (D)

- Unmotivated to participate in class discussion or comment on other people's views
- Little pre-class preparation and familiarity with peer reports and other materials
- Poor ability in interpreting opinions

Failure (F)

- Unwilling to participate in class discussion and comment on other points, even when requested by the teacher- No pre-class preparation and familiarity with peer reports and other materials
- Minimal ability in interpreting opinions

Assessment Task

2. Project

Criterion

Students should demonstrate ability to utilize primary and secondary sources, execute creative ideas and projects. The threshold of 'discovery' lies in a student's proactively turning theory into praxis, to transform course material into self-owned authorship.

Excellent (A+, A, A-)

- Work has strong affective quality and the articulation of personal styles and signature
- Excellent appreciation, exploration and/or application of the aesthetic and expressive qualities of the medium
- Work raises questions and instill insights about the process of conception, creative strategization and production
- Innovative exploration by combining knowledge from different disciplines (e.g. mathematics, psychology, physics, anthropology, etc.) to create an inter-disciplinary project
- Efficient adjustment of plans and strategies in response to resources (time, space, equipment, etc) available with constructive adjustment

Good (B+, B, B-)

- Strong appreciation, exploration and/or application of the aesthetic and expressive qualities of the medium
- Ability to create project/ work that demonstrate the processes of thinking and creative exploration
- Proper adjustment of plans and strategies in response to resources (time, space, equipment, etc) available and constructive feedback/ suggestions

Fair (C+, C, C-)

- Basic appreciation and/or application of the aesthetic and expressive qualities of the medium
- Limited ability to create project/ work that demonstrate the processes of thinking and creative exploration
- Adjustment of plans and strategies in response to resources (time, space, equipment, etc) available

Marginal (D)

- Marginal appreciation of the aesthetic and expressive qualities of the medium
- Marginal ability to create project/ work that demonstrate the processes of thinking and creative exploration
- Limited adjustment of plans and strategies in response to resources (time, space, equipment, etc) available

Failure (F)

- No appreciation of the aesthetics and expressive qualities of the medium
- Fail to create project/ work that demonstrate the processes of thinking and creative exploration
- Minimal adjustment of plans and strategies in response to resources (time, space, equipment, etc) available

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Assessment Task

3. Presentation

Criterion

This assessment will grade on content and fluency of presentation. Students should show their co-operation to conduct a well-organized presentation with their own argument and evidence from readings and notes. The threshold of 'discovery' lied in a student's self initiatives to conduct additional research and to personalize theories for her/his personal daily experience.

Excellent (A+, A, A-)

- Rich, informative content, excellent grasp of the material with in-depth and extensive knowledge of the subject matter
- Rigorous organization, coherent structure, and systematic exposition with a strong sense of narrative
- Superior presentation skills: distinct pronunciation, fluent expression and appropriate diction, exact time-management
- Critical analysis with insightful comments opening up new issues, or suggesting the ability to theorize

Good (B+, B, B-)

- Adequate content with firm grasp of the material that informs the audience on a subject matter
- Reasonable organization, balanced structure and composition
- Good verbal communication: comprehensible pronunciation, fluent expression and diction, fair time-management

Fair (C+, C, C-)

- Adequate content with comprehensive grasp of the material demonstrating basic knowledge of the subject matter
- Fair organization, weak structure and composition
- Fair presentation skills: acceptable pronunciation, expression and diction, fair time-management

Marginal (D)

- Weak content, loose grasp of the general ideas with some knowledge of the subject matter
- Poor organization, structure and composition
- Poor presentation skills: marginal pronunciation, expression and diction, poor time-management

Failure (F)

- Inadequate content, fail to identify the general ideas with knowledge of the subject matter
- No organization, structure or/and composition
- Poor presentation skills: marginal pronunciation, expression and diction, minimal time-management

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Additional Information for AR

All A+/A/A- grade assignment should comply with the highest performance of Discovery-oriented learning.

Part III Other Information

Keyword Syllabus

Real-time interactive computer animation, real-time rendering, shadow map/light map, polygonal modeling, channels, dynamic background, 3D models for interactive environment, real-time physics, AI in interactive graphics

Reading List

Compulsory Readings

	Title
1	Quest3D software: http://quest3d.com/
2	Unity software: http://unity3d.com/
3	Blender software: http://www.blender3d.org/
4	The art of participation : 1950 to now / [edited by] Rudolf Frieling, ... [et al.]
5	Prix Ars Electronica : CyberArts 2010 : International Compendium Prix Ars Electronica, computer animation/film/ VFX, digital musics & sound art, hybrid art, interactive art, digital communities, [the next idea] voestalpine art and technology Grant, u19, freestyle computing / [edited by] Hannes Leopoldseder, Christine Schöpf, Gerfried Stocker
6	The language of new media / Lev Manovich
7	Interacting : art, research and the creative practitioner / [edited by Linda Candy and Ernest Edmonds ; preface by Roy Ascott]

Additional Readings

	Title
1	MediaArtHistories / edited by Oliver Grau
2	New media in art / Michael Rush
3	Software takes command / Lev Manovich
4	Second person : role-playing and story in games and playable media / edited by Pat Harrigan and Noah Wardrip-Fruin ; designed by Michael Crumpton