

SM2231: 3D ANIMATION I - BASIC

Effective Term

Semester A 2023/24

Part I Course Overview

Course Title

3D Animation I - Basic

Subject Code

SM - School of Creative Media

Course Number

2231

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 provide a basic understanding of 3D computer animation production. A broad range of concepts will be explored, from the science of computer graphics, the practices in the industry, to the aesthetics of the medium. Through

a series of hands-on exercises, students will produce creative works and build up personal portfolios. Topics will include Polygonal Modeling, Geometric Deformation, Simple Character Rigging, Surface Shading, UV Texture Mapping, Lighting and Compositing.

Course Intended Learning Outcomes (CILOs)

CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Demonstrate understanding of the central facets of computer animation production - modelling, surfacing, rigging, animation, effects, lighting and compositing.		x	
2	Demonstrate basic skills and the capacity for self-directed learning to gain skills in operatign 3D animation software applications.	x	x	
3	Apply the key concepts in creative works.	x	x	x
4	Demonstrate the capacity to evaluate the quality of a work and to conduct constructive criticism.		x	
5	Create a short animation either individually or in a collaborative effort.	x	x	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	Lecture	Explain the key concepts of a computer animation production. - Polygonal modeling - Geometric deformation and basic character rigging - Animating with keyframes and graphs - Surface materials and texture mapping- Lighting and cinematography - Rendering in layers and compositing	1 2 hrs / wk
2	Class Exercises and Assignments	Students create works that explore the key concepts in CILO1	1, 2, 3, 4 4 hrs / wk for 9 weeks

3	Critique Sessions	Critique sessions are held regularly to encourage open discussions and constructive criticism of each other' s works.	1, 4	1 hr / 2 weeks
4	Final Project	By going through a typical production workflow, students create short animations either individually or collaboratively.	1, 2, 3, 4, 5	4 hrs / wk for 6 weeks

Assessment Tasks / Activities (ATs)

ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	Class Participation	4	10
2	In-class Exercises and Assignments	1, 2, 3	40
3	Final Project and Presentation	1, 2, 3, 4, 5	50

Continuous Assessment (%)

100

Examination (%)

0

Assessment Rubrics (AR)**Assessment Task**

In-class Exercises and Assignments

Criterion

Ability to understand and to apply the concepts on creative works. 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.

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.

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.

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.

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.

Assessment Task

Final Project and Presentation

Criterion

Capacity for self-directed learning to operate the software tools. Ability to apply the key concepts holistically and creatively on a multifaceted production.

Excellent (A+, A, A-)

Work has strong affective quality and the articulation of personal styles and signature.

Good (B+, B, B-)

Strong appreciation, exploration and/or application of the aesthetic and expressive qualities of the medium.

Fair (C+, C, C-)

Basic appreciation and/or application of the aesthetic and expressive qualities of the medium.

Marginal (D)

Marginal appreciation of the aesthetic and expressive qualities of the medium.

Failure (F)

No appreciation of the aesthetics and expressive qualities of the medium.

Assessment Task

Final Project and Presentation

Criterion

The 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.

Excellent (A+, A, A-)

Rich, informative content, excellent grasp of the material with in-depth and extensive knowledge of the subject matter.

Good (B+, B, B-)

Adequate content with firm grasp of the material that informs the audience on a subject matter.

Fair (C+, C, C-)

Adequate content with comprehensive grasp of the material demonstrating basic knowledge of the subject matter.

Marginal (D)

Weak content, loose grasp of the general ideas with some knowledge of the subject matter.

Failure (F)

Inadequate content, fail to identify the general ideas with knowledge of the subject matter.

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

Polygonal Modeling, Faces, Vertices, Edges, User Interface, Animation, Grouping, Parenting, Hypergraph, Hypershade, Shading, Texture, UV Mapping, Lights, Raytracing, Shadow quality, Constraints, NURBS curve, Control Vertices, Environmental Map, Keyframe Animation, Surface Normals, Bump Map, Rendering.

Reading List

Compulsory Readings

Title	
1	Nil

Additional Readings

Title	
1	Jerry Beck: Animation Art, HarperCollins, 2004
2	Stephen Cavalier: The World History of Animation, Aurum Press Ltd, 2011
3	Greg Hilty and Alona Pardo: Watch Me Move, Merrell, 2011
4	The Animation Bible: A Guide to Everything - From Flipbooks to Flash, London (Laurence King), 2008
5	Julius Wiedermann: Animation Now! Taschen, 2004
6	Preston Blair: Cartoon Animation, Walter Foster, 1994
7	Richard Williams: The Animator's Survival Kit, Faber and Faber, 2004
8	Digital Tutors http://www.digitaltutors.com/
9	Animation World Network http://www.awn.com/
10	Animate! http://www.animateonline.org/
11	3Dtotal http://www.3dtotal.com/