# UNIVERSITI TEKNOLOGI MARA

**GDT259: 3D ANIMATION**

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| **Course Name (English)** | 3D ANIMATION  `APPROVED` |
| **Course Code** | GDT259 |

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| **MQF Credit** | 4 |

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| **Course Description** | In this subject, students will be introduced to the production process of developing 3D animation, based on the Principles of Animation and various video and sound editing techniques. Students will participate through essential stages in producing 3D animation such as modeling, texturing, lighting, camera, animation and rendering that are integrated with pre-production, production and post-production process. In the end, students are required to use their creativity to produce a short 3D animation video complete with appropriate sounds. |

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| **Transferable Skills** | Computer skills, 3D Modeiling and Animation skills, Presentation Skills, Audio video editing skills. |

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| **Teaching Methodologies** | Lectures, Blended Learning, Lab Work, Tutorial, Presentation, Directed Self-learning , Computer Aided Learning |

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| **CLO** | CLO1  Apply the techniques, terminologies and production of 3D Animation<br>CLO2  Show the technical skills and aesthetic values in 3D animation project.<br>CLO3  Demonstrate creative animated movie project by integrating 3D animation and digital media elements |

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| **Pre-Requisite Courses** | No course recommendations |

| **Topics** |
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| **1. (A). Introduction to the syllabus (B). Introduction to 3D program**<br>1.1) Briefing: Explain the course requirements and learning activities.<br>1.2) Definition: (What is 3D?;What is Animation?; How to create 3D?; |
| **2. (A) Introduction to Principles of Animation (B) Introduction to User**<br>2.1) Working with files<br>2.2) Understanding 3D dimensions (XYZ) ;<br>2.3) Lab Practice: Arranging 3D geometrical objects in viewport using X, Y, Z axis. |
| **3. (A) Pre-Production (B) Introduction to 3D Animation:**<br>3.1) (-A)Pre-Production<br>3.2) Treatment/script<br>3.3) Storyboard<br>3.4) Sketch<br>3.5) (-B) 3D Animation<br>3.6) Modeling<br>3.7) Working with Objects and Modifiers<br>3.8) Primitive<br>3.9) Selection and Properties<br>3.10) Layers or Groups<br>3.11) Clones, Mirrors and Arrays<br>3.12) Transformers |
| **4. (A) Production (B) Introduction to 3D Animation:**<br>4.1) (-A)Production<br>4.2) Designing graphic<br>4.3) 3D modeling and animation<br>4.4) (-B) Introduction to 3D Animation<br>4.5) Modeling<br>4.6) Spline and Shape Modeling<br>4.7) Poly Modeling<br>4.8) Patch Modeling |

4.9) Mesh Modeling
4.10) Nurbs
4.11) Compound Objects

**5. (A) 3D Material and mapping (B) Production [continue from week 4]**
5.1) (-A)3D Material Mapping
5.2) Standard materials
5.3) Compound Materials
5.4) Raytrace Materials
5.5) Animated Materials
5.6) UVW Map Modifiers
5.7) (-B) Production (continue from week 4)
5.8) Designing graphic
5.9) 3D modeling and animation

**6. (A) Basic cinematic and film terminologies (B) Production**
6.1) (-A) Basic cinematic and film terminologies
6.2) Introduction to 3D Animation: Lights & Camera
6.3) Creating and Positioning Lights & Camera
6.4) (-B) Production (continue)
6.5) Designing graphic
6.6) 3D modeling and animation

**7. (A) 3D Animation (B) Production**
7.1) (-A) 3D Animation
7.2) Time and keys
7.3) Animated objects
7.4) Wiring parameters / helpers
7.5) Animation modifiers
7.6) Track view
7.7) Constraints
7.8) Animation Controllers
7.9) (-B) Production (continue)
7.10) Designing graphic
7.11) 3D modeling and animation

**8. (A) Introduction to 3D Animation: Rendering and Effects**
8.1) Post Production
8.2) Offline editing

**9. (A) Basic Video Recording and Editing (B) Post Production**
9.1) Post Production
9.2) Offline editing

**10. (A) 3D Animation: Basic**
10.1) Post Production
10.2) Offline editing

**11. (A) Basic Video Composting (B) Post Production**
11.1) Post Production (Composting)
11.2) Offline editing

**12. (A) Integrating project with final video and audio**
12.1) Post Production (Final project)
12.2) Offline editing (Final Project)

**13. (A) Integrating project with final video and audio (continued)**
13.1) Post Production (Final project)
13.2) Offline editing (Final Project)

**14. Submission of Project with Folio (To Be Informed)**
14.1) Final Assesment Presentation

| Assessment Breakdown | % |
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| Continuous Assessment | 100.00% |

| Details of Continuous Assessment | Assessment Type | Assessment Description | % of Total Mark | CLO |
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| | Assignment | Student is required to research and produce a 3d model of a product, complete with materials or shaders and lighting. The progress of the project will be reviewed and discussed in weekly basis up till final date of submission. | 30% | CLO1 |
| | Assignment | Student is required to produce a short video of an animated 3D product or logo, complete with proper materials or shaders and lighting. During the production of the modelling and texturing , it is compulsory for student to consult and get advice from lecturer in every stages of the production. The progress of the project will be reviewed and discussed in weekly basis up till final date of submission. | 30% | CLO2 |
| | Assignment | Student is required to produce a short 3D Animation video about either a product, service, campaign or interior design. The video must also include suitable supporting music and/or sounds. Document the process ( Concept, Sketches, Storyboard & 3D Process Screenshots) in a folio. During the production of the 3D Animation, it is compulsory for the student to report, consult and get advice from lecturer in every stages of the pre production, production and post production. The progress of the project will be reviewed and discussed in weekly basis up till final date of submission. | 40% | CLO3 |

| Reading List | Recommended Text | • **Kelly Murdock 2019, *Kelly L. Murdock's Autodesk 3ds Max 2020 Complete Reference Guide*, SDC Publications [ISBN: 9781630572532]**<br>• **Richard Williams 2009, *The Animator's Survival Kit 2nd Edition*, Faber and Fabe [ISBN: 0571202284]**<br>• **Maxim Jago 2020, *Adobe Premiere Pro Classroom in a Book (2020 release)*, Adobe Press [ISBN: 0136483968]** |
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| **Article/Paper List** | This Course does not have any article/paper resources | |
| **Other References** | • **Website Melissa Lax *3ds Max Animation Techniques* https://area.autodesk.com/tutorials/series/3ds-max-animation-techniques-series/** | |