



COLLEGE OF INFORMATION TECHNOLOGY  
DEPARTMENT OF MULTIMEDIA SCIENCE  
COURSE SYLLABUS/ SPECIFICATION

<b>Course Code &amp; Title:</b>	<b>ITMS 426 – 3D Graphics Softwares</b>
<b>Weight:</b>	<b>(2 - 2 - 3)</b>
<b>Prerequisite:</b>	<b>ITMS 327</b>
<b>NQF Level Allocated:</b>	<b>Level 8</b>
<b>NQF Notional Hours / Credits:</b>	<b>120 notional hours / 12 NQF credit</b>

**Description:** This course introduces students to the basic concepts and terminology of 3D computer graphics as it is used in film, visual effects, games, and animation. Students will have a better understanding of the different disciplines that collectively make up 3D computer graphics production. It will also give students a foundation for 3D Animation and 3D Game Development.

**Objective:**

1. To critically understand the basic concepts and terminology of 3D computer graphics as it is used in film, visual effects, games, and animation.
2. To acquire the foundation of 3D Animation and 3D Game Development.
3. To gain the different techniques of modeling, texturing, applying lights and rendering objects in 3D
4. To create advanced 3D animation movie.

**Semester:**

**Instructor (s):**

**Office Telephone:**

## Intended Learning Outcomes (ILOs):

A. Knowledge and Understanding		NQF Descriptor/ Level
A1	<b>Concepts and Theories:</b> Demonstrate critical understanding of concepts, and specialized theories relating to 3D Graphics.	Knowledge: theoretical understanding [Level 8]
A2	<b>Contemporary Trends, Problems and Research:</b> NA	
A3	<b>Professional Responsibility:</b> NA	

B. Subject-specific Skills		NQF Descriptor/ Level
B1	<b>Problem Solving:</b> Identify real life problems and solve them by designing efficient and effective 3D graphics projects.	Knowledge: Practical Application [Level 8]
B2	<b>Modeling and Design:</b> Design the architecture of 3D graphics projects by choosing appropriate components and models that satisfy user specifications.	Knowledge: Practical Application [Level 8]
B3	<b>Application of Methods and Tools:</b> Apply multimedia software and tools such as 3D, video editing, audio processing, vector-based software that assists in the creation of 3D graphics projects.	Knowledge: Practical Application [Level 8]

C. Critical-Thinking Skills		NQF Descriptor/ Level
C1	<b>Analytic skills:</b> Critically analyze 3D Scenes in different viewports within 3D software and remodel part/some/all objects found within the 3D Scenes.	Generic Problem Solving & Analytical skills [Level 8]
C2	<b>Synthetic:</b> NA	
C3	<b>Creative Thinking and innovation:</b> Demonstrate creativity in designing 3D graphics projects.	Knowledge: Practical Application [Level 8]

D. General and Transferable Skills (other skills relevant to employability and personal development)		NQF Descriptor/ Level
D1	<b>Communication:</b> Show ability to communicate information in appropriate oral and written forms.	Communication, ICT and Numeracy Skills [Level 7]
D2	<b>Teamwork and Leadership:</b> NA	
D3	<b>Organizational and Developmental Skills:</b> Demonstrate ability to organize ideas and effectively allocate time in given assignment.	Competence: Autonomy, Responsibility and Context [Level 7]
D4	<b>Ethics and Social Responsibility:</b> NA	

### Course Structure (Outline)

Week	Hours		ILOs	Topics	Teaching Method	Assessment Method
	Lec.	Lab				
1	1	4	-	A1	Introduction	Lecture
2	2	2	2	A1, B3, C1, D1	3D Basic Concepts and Project Management	Lecture/ lab Demonstration
3	3	2	2	A1,B1, B2, B3, C1, C3	User Interface of Autodesk 3D Studio Max	Lecture/ lab Demonstration
4	4	2	2	A1,B1, B2, B3, C1, C3	First 3D Studio Max Animation	Lecture/ Lab Demonstration/ Supervised Work
5	5	2	2	A1,B1,B2,B3, C1,C3,D3	Modeling in 3D Studio Max Part I	Lecture/ Lab Demonstration/ Supervised Work
6	6	-	4	A1, B1, B2, B3, C1, C3	Exercises in Modeling	Lab Demonstration/ Supervised Work
7	7	2	2	A1,B1,B2,B3, C1,C3,D3	Modeling in 3D Studio Max Part II	Lecture/ Lab Demonstration/ Supervised Work
8	8	-	4	A1, B1, B2, B3, C1, C3	Exercises in Modeling	Lab Demonstration/ Supervised Work
9	9	2	2	A1, B3, C1, D1	Organic Poly Modeling	Lecture/ Lab Demonstration/ Supervised Work

10	10	2	2	A1,B1,B2,C1	Materials and Mapping	Lecture/ Lab Demonstration/ Supervised Work
11	11	2	2	A1,B1,B2,B3, C1,C3,D3	Introduction to the basics of Animation	Lecture/ Lab Demonstration/ Supervised Work
12	12	2	2	A1,B1, B2, B3, C1, C3	Advanced Animation	Lecture/ Lab Demonstration/ Supervised Work
13	13	2	2	A1,B1, B2, B3, C1, C3	Lighting	Lecture/ Lab Demonstration/ Supervised Work
14	14	2	2	A1,B1, B2, B3, C1, C3	Rendering and Character Studio	Lecture/ Lab Demonstration/ Supervised Work
15	15	2	2	B1,B2,B3,C1,C3,D1,D3	Students Presentations And Reports Of Research Projects	Presentation Of Projects By Students
16	16			A1, B1,B2, B3, C1,C3	All Topics	

\* Formative assessment

### Teaching Materials:

<b>Textbook(s):</b>	ASCENT, Center for Technical Knowledge, Autodesk 3ds Max 2018 Fundamentals: Autodesk Authorized Publisher, ISBN: 978-1946571397
<b>Handout(s):</b>	Power point slides, <a href="http://www.ahlia.edu.bh/moodle">http://www.ahlia.edu.bh/moodle</a>
<b>Reference(s):</b>	Martin Poirier and Eric Paquette, "Rig Retargeting for 3D Animation", CHCCS Graphics Interface 2009 Conference Proceedings, Kelowna, BC, Canada, 25-27 May, pages 103-110, 2009

### Assessment

Method of Assessment	Description	Learning Outcomes	Weighting
Oral Inquiry	Students will be questioned orally to demonstrate their understanding and knowledge of the topics	A1, D1	Formative

	covered during class lectures and lab sessions.		
Assignment	The assignment consists of essay, problem-solving and research based theoretical questions regarding topics in 3D graphics projects. The purpose of the assignment is to assess students individually where they have to demonstrate their extensive and detailed knowledge and critical understanding of key concepts of 3D graphics projects.	B1, B2, B3, C1, C3	10%
Major Test	The test will be an in-class 1-hour exam that will consist of short-answer, essay, and problem solving questions and cover the topics studied in the first 9 weeks.	A1,B1,B2,C1	25%
In-Lab Exercises	Each of the practical exercises consists of a set of practical tasks to be implemented by students individually in lab as shown in the above weekly structure. Each of the exercises assesses the student's skills in the field of 3D Graphics. Students work will be observed and evaluated directly during the lab sessions.	B1, C3	10%
Project	Starting from week 4, each student will be	A1, B1, B2, B3, C1, C3, D1, D3	15%

Report And Presentation	asked to develop a small 3D graphics animation project.		
<b>Overall:</b>			<b>100 %</b>

<b>Admissions</b>	
<b>Pre-requisites</b>	ITMS 327
<b>Minimum number of students</b>	8
<b>Maximum number of students</b>	20