Course Code	Course Title	ECTS Credits
MULT-361	3D Modeling & Animation	6
Department	**Semester**	**Prerequisites**
Design & Multimedia	Fall, Spring	MULT-250
Type of Course	**Field**	**Language of Instruction**
Elective	Applied Multimedia	English
Level of Course	**Year of Study**	**Lecturer(s)**
1st Cycle	2nd	Chris Christou
Mode of Delivery	**Work Placement**	**Co-requisites**
Face-to-face	N/A	None

Objectives of the Course:

The main objectives of the course are to:

- Introduce the student to the basic concepts of computer generated 3D graphics.
- Introduce students to the modeling software 3DStudio Max.
- Provide students with the knowledge to use software to create 3D elements for publications, showcases, in advertising and for artistic development.
- Teach students fundamental principles of animation and in particular 3D animation and how to create animations using 3DStudio Max.

Learning Outcomes:

After completion of the course students are expected to be able to:

1. Apply basic principles of coordinate systems and the principles of rigid body transformations and use these principles in their modeling.
2. Utilise methods developed in contemporary computer graphics to model and render 3D shapes and have an appreciation for the problems involved including computing time.
3. Apply appropriate lighting and use object materials/textures to create realistic scenes.
4. Use keyframing to animate cameras, lights and objects.
5. Create animated movie clips and combine these in movie editing software

Course Contents:

1. Introduction to 3D space and projection methods
2. Introduction to 3D Editing (3D Studio Max)
3. Modeling (primitive objects, free form surfaces and text objects)
4. Transformations (stretch, shatter, bend, twist, scale)
5. Shading and illumination, Lighting an object (ambient light, specific light - distant, bulb, spot etc.)
6. Materials and Textures
7. Cameras (wide, telephoto and zoom lenses), Viewpoints and the rendering pipeline
8. Render modes (ray trace, shade best, phong, gouraud, wireframe etc.)
9. Animation theory, Timelines, Frames and Tweening
10. Character Animation basics and Special Effects
11. Project Planning and Post Production

Learning Activities and Teaching Methods:

Lectures, Lab Presentations, Lab Tutorials, Practical Exercises and Assignments.

Assessment Methods:

Homework, Project, Mid-Term, Final Project.

Required Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN
Derakhshani, D & Munn, R. L.	Introducing 3ds MAX 9: 3D for Beginners	SyBex	2007	978-0-4700-9761-8

Recommended Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN