**SETU**

Ollscoil
Teicneolaíochta
an Oirdheiscirt

South East
Technological
University

# Module Descriptor

---

# 3D Modelling Fundamentals (Computing and Mathematics)

# 3D Modelling Fundamentals
## (A13461)

**Short Title:**  3D Modelling Fundamentals
**Department:**  Computing and Mathematics
**Credits:**  5                                **Level:**      Introductory

## Description of Module / Aims

This module serves as an introduction to 3D modelling and comprises an emphasis on the modelling pipeline, from concept to model creation. Students will acquire a knowledge of the craft of 3D modelling and will gain experience in producing a number of 3D models using a number of essential tools within an industry-led 3D-creation toolset.

## Programmes

| | stage/semester/status |
|---|---|
| COMP-0595  BSc (Hons) in Creative Computing (WD_KCRCO_B) | 2 / 4 / M |
| COMP-0595  BSc in Multimedia Applications Development (WD_KMULA_D) | 2 / 4 / M |

## Indicative Content

- Introduction to the 3D production pipeline, from concept to mesh creation
- Components of an industry-standard 3D modelling platform
- Polygon, subdivision, and NURB modelling
- Basic camera and viewing techniques
- Introductory shading and rendering

## Learning Outcomes

*On successful completion of this module, a student will be able to:*

1. Describe the fundamentals of the 3D modelling workflow, from concept to a shaded mesh.
2. Identify and effectively navigate the main components and features of an industry standard 3D modelling production platform.
3. Compare various modelling approaches, i.e. polygon, sub-division and NURB-based modelling.
4. Demonstrate the use of appropriate tools for the creation and manipulation of 3D objects and object components.

## Learning and Teaching Methods

- Interactive and open-forum lectures.
- Class discussions and presentations.
- Problem-based learning activities.
- Self-directed learning.

## Learning Modes

| Learning Type | F/T Hours | P/T Hours |
|---|---|---|
| Lecture | 12 | |
| Practical | 36 | |
| Independent Learning | 87 | |

## Assessment Methods

| | Weighting | Outcomes Assessed |
|---|---|---|
| Continuous Assessment | 100% | |
| Assignment | 30% | 1 |
| Project | 70% | 2,3,4 |

## Assessment Criteria

*<40%:* Inability to identify and navigate the main components of a 3D production software platform. Inability to critically evaluate techniques used in the creation and exporting of 3D computer graphics models.

*40%–49%:* Ability to identify and navigate the main components of a 3D production software platform. Ability to describe key concepts of the 3D modelling pipeline.

*50%–59%:* Ability to discuss and critically evaluate key concepts of the 3D modelling pipeline and techniques.

*60%–69%:* Be able to solve problems within the framework of the 3D modelling pipeline by experimenting with appropriate skills and tools of the 3D production software.

*70%–100%:* All the above to an excellent level. Be able to analyse and design solutions to a high standard for a range of problems through the use and modification of appropriate skills and tools of the 3D production software.

## Supplementary Material(s)

- Palamar, T. *Mastering Autodesk Maya 2016.* New York: Sybex, 2015.

## Requested Resources

- Computer Lab: BYOD Lab