



# MECO319

## Modelling and Animation

S1 Day 2015

*Dept of Media, Music & Cultural Studies*

### Contents

---

<a href="#"><u>General Information</u></a>	2
<a href="#"><u>Learning Outcomes</u></a>	2
<a href="#"><u>General Assessment Information</u></a>	2
<a href="#"><u>Assessment Tasks</u></a>	3
<a href="#"><u>Delivery and Resources</u></a>	5
<a href="#"><u>Unit Schedule</u></a>	5
<a href="#"><u>Policies and Procedures</u></a>	6
<a href="#"><u>Graduate Capabilities</u></a>	7

---

#### **Disclaimer**

Macquarie University has taken all reasonable measures to ensure the information in this publication is accurate and up-to-date. However, the information may change or become out-dated as a result of change in University policies, procedures or rules. The University reserves the right to make changes to any information in this publication without notice. Users of this publication are advised to check the website version of this publication [or the relevant faculty or department] before acting on any information in this publication.

## General Information

Unit convenor and teaching staff Wade Marynowsky <a href="mailto:wade.marynowsky@mq.edu.au">wade.marynowsky@mq.edu.au</a>
Credit points 3
Prerequisites 39cp
Corequisites
Co-badged status
Unit description This unit teaches students how to create and animate 3D assets for game design. Students will learn the applied theoretical and technological principles underpinning the practice of 3D modelling and how to export assets into frameworks for game development.

## Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at <https://www.mq.edu.au/study/calendar-of-dates>

## Learning Outcomes

On successful completion of this unit, you will be able to:

- Conceptually design and develop characters, props and scenes for the creation of three dimensional (3D) worlds.
- Develop the capability to create and edit polygonal models utilising Maya's modelling tools.
- Apply creative techniques to the application of texturing.
- Understand and apply rigging to assets for animation.
- Plan, create and present original components of a 3D world for a major project.
- Demonstrate a working understanding of modelling, texturing, rigging and animation capabilities for game construction and or video/moving image formats.

## General Assessment Information

Late assignments, unless the student has been approved for special consideration, will be

penalised at a rate of 10% per day.

**Assessment Criteria:**

- Evidence of the development of necessary skills to produce models.
- Evidence of the development of necessary skills to texture models.
- Evidence of the development of necessary skills to rig models.
- Evidence of the development of necessary skills to animate models.
- The proven ability to apply creativity throughout the major project.
- The proven ability to plan and work to a deadline to achieve results.

## Assessment Tasks

Name	Weighting	Due
<u>Drawing assignment</u>	10%	Week 3
<u>Major project proposal</u>	20%	Week 7
<u>Completion of workshops 1-7</u>	20%	Week 8
<u>Major project</u>	50%	Week 13

### Drawing assignment

Due: **Week 3**

Weighting: **10%**

From the study of the world around you complete a series of three drawings: Front; Side and Top views of something that walks. For example: humans; animals; robots; toys, etc. Develop an understanding of scale and perspective in relation to the Cartesian coordinate system X, Y, Z. Digitise your images and save them to your sites folder (explained in class).

On successful completion you will be able to:

- Conceptually design and develop characters, props and scenes for the creation of three dimensional (3D) worlds.

### Major project proposal

Due: **Week 7**

Weighting: **20%**

The major project proposal must incorporate text (500 words), images (3-6 hand drawn or original photographs) and a timeline. The proposal describes and visualises original concept designs for an alternative 3D world (characters, landscape or interior). When developing ideas

for your 3D game space or 3D moving image world you may pick a genre, for example: science fiction; western; action; drama; horror. Decide on your target audience: children, teenagers, adults. Decide what can happen in the world, do people fly? animals talk? do your characters or objects have special powers or behaviours? how do they walk? Importantly decide how much of the world you can build within the given time frame (Weeks 8-13). Students may collaborate in groups to gain more assets or delegate the various tasks. The timeline should include time for modelling, texturing, rigging and animation and include the final production finishing in week 13. Save your proposal document as a PDF in your sites folder.

On successful completion you will be able to:

- Plan, create and present original components of a 3D world for a major project.

## Completion of workshops 1-7

Due: **Week 8**

Weighting: **20%**

During weeks 2-8 students will be engaged in the completion of workshop tasks. It is essential that these tasks be completed as the workshops enable students with the necessary skills to move into the self directed major project. Save each workshop in a different folder labeled weeks1-7 inside your sites folder.

On successful completion you will be able to:

- Conceptually design and develop characters, props and scenes for the creation of three dimensional (3D) worlds.
- Develop the capability to create and edit polygonal models utilising Maya's modelling tools.
- Apply creative techniques to the application of texturing.
- Understand and apply rigging to assets for animation.

## Major project

Due: **Week 13**

Weighting: **50%**

Students who choose to design a game must present at least three characters and one landscape or interior asset within Unity. The characters should have multiple animated sequences for example: walk; run; jump. Students choosing moving image for the major project must present at least three characters and one landscape or interior within an animated scene, exported as a Quicktime movie. Electronic submissions must be copied or saved to your sites folder.

On successful completion you will be able to:

- Conceptually design and develop characters, props and scenes for the creation of three

dimensional (3D) worlds.

- Plan, create and present original components of a 3D world for a major project.
- Demonstrate a working understanding of modelling, texturing, rigging and animation capabilities for game construction and or video/moving image formats.

## Delivery and Resources

MECO319 starts in week1 and finished in week 13.

The two hour workshops take place in Y3A 006.

As modelling and animation can be a steep learning curve it is expected that students attend at least 80% of classes.

Workshop resources will be provided on a weekly basis and made available on iLearn.

Assignment submission of files and folders will be electronically submitted during the course via the computers in Y3A 006.

## Unit Schedule

### **Week 1 - Introduction**

Discuss outline: workshops; assignments; policies; attendance and expected learning outcomes. Introduction to Apple mac, Photoshop, Unity, Quicktime. Introduction to Maya: setting up preferences; workflows; creating basic polygonal models. Discussion on the optimisation of geometry for various output formats.

### **Week 2 - Workshop 1 Modelling**

Using symmetry, extruding geometry, sculpting geometry.

### **Week 3 - Workshop 2 Modelling**

Importing reference images, modelling the head, creating the mouth, crafting eyes, building the body, forming the limbs, finishing touches.

### **Week 4 - Workshop 3 UV mapping**

UV mapping the body, UV mapping the face, Mirroring.

### **Week 5 - Workshop 4 Texturing**

Texturing, Normal mapping.

### **Week 6 - Workshop 5 Skeleton**

Setting up the skeleton, building the spine, finishing the skeleton.

### **Week 7 - Workshop 6 Rigging**

Rigging the legs and feet, rigging the torso, rigging the arms and hands, rigging the face and head, rigging wrap up.

## Week 8 - Workshop 7 Animation

Skin binding, animation, exporting for Unity. Lights, camera, rendering and exporting an animation as a Quicktime movie.

## Weeks 9 - 12

Major project, self directed with support from tutor.

## Week 13

Finishing touches on major assignments to be marked by multiple lecturers.

# Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central](#). Students should be aware of the following policies in particular with regard to Learning and Teaching:

Academic Honesty Policy [http://mq.edu.au/policy/docs/academic\\_honesty/policy.html](http://mq.edu.au/policy/docs/academic_honesty/policy.html)

Assessment Policy <http://mq.edu.au/policy/docs/assessment/policy.html>

Grading Policy <http://mq.edu.au/policy/docs/grading/policy.html>

Grade Appeal Policy <http://mq.edu.au/policy/docs/gradeappeal/policy.html>

Grievance Management Policy [http://mq.edu.au/policy/docs/grievance\\_management/policy.html](http://mq.edu.au/policy/docs/grievance_management/policy.html)

Disruption to Studies Policy [http://www.mq.edu.au/policy/docs/disruption\\_studies/policy.html](http://www.mq.edu.au/policy/docs/disruption_studies/policy.html) *The Disruption to Studies Policy is effective from March 3 2014 and replaces the Special Consideration Policy.*

In addition, a number of other policies can be found in the [Learning and Teaching Category](#) of Policy Central.

## Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: [https://students.mq.edu.au/support/student\\_conduct/](https://students.mq.edu.au/support/student_conduct/)

## Results

Results shown in *iLearn*, or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in [eStudent](#). For more information visit [ask.mq.edu.au](http://ask.mq.edu.au).

MMCCS Session Re-mark Application <http://www.mq.edu.au/pubstatic/public/download/?id=167914>

## Student Support

Macquarie University provides a range of support services for students. For details, visit <http://students.mq.edu.au/support/>

## Learning Skills

Learning Skills ([mq.edu.au/learningskills](http://mq.edu.au/learningskills)) provides academic writing resources and study strategies to improve your marks and take control of your study.

- [Workshops](#)
- [StudyWise](#)
- [Academic Integrity Module for Students](#)
- [Ask a Learning Adviser](#)

## Student Services and Support

Students with a disability are encouraged to contact the [Disability Service](#) who can provide appropriate help with any issues that arise during their studies.

## Student Enquiries

For all student enquiries, visit Student Connect at [ask.mq.edu.au](http://ask.mq.edu.au)

## IT Help

For help with University computer systems and technology, visit <http://informatics.mq.edu.au/help/>.

When using the University's IT, you must adhere to the [Acceptable Use Policy](#). The policy applies to all who connect to the MQ network including students.

## Graduate Capabilities

### Creative and Innovative

Our graduates will also be capable of creative thinking and of creating knowledge. They will be imaginative and open to experience and capable of innovation at work and in the community. We want them to be engaged in applying their critical, creative thinking.

This graduate capability is supported by:

### Learning outcomes

- Conceptually design and develop characters, props and scenes for the creation of three dimensional (3D) worlds.
- Develop the capability to create and edit polygonal models utilising Maya's modelling tools.
- Apply creative techniques to the application of texturing.
- Understand and apply rigging to assets for animation.
- Plan, create and present original components of a 3D world for a major project.
- Demonstrate a working understanding of modelling, texturing, rigging and animation

capabilities for game construction and or video/moving image formats.

## Assessment tasks

- Drawing assignment
- Major project proposal
- Completion of workshops 1-7
- Major project

## Commitment to Continuous Learning

Our graduates will have enquiring minds and a literate curiosity which will lead them to pursue knowledge for its own sake. They will continue to pursue learning in their careers and as they participate in the world. They will be capable of reflecting on their experiences and relationships with others and the environment, learning from them, and growing - personally, professionally and socially.

This graduate capability is supported by:

## Learning outcomes

- Conceptually design and develop characters, props and scenes for the creation of three dimensional (3D) worlds.
- Plan, create and present original components of a 3D world for a major project.

## Assessment tasks

- Drawing assignment
- Major project proposal
- Completion of workshops 1-7
- Major project

## Discipline Specific Knowledge and Skills

Our graduates will take with them the intellectual development, depth and breadth of knowledge, scholarly understanding, and specific subject content in their chosen fields to make them competent and confident in their subject or profession. They will be able to demonstrate, where relevant, professional technical competence and meet professional standards. They will be able to articulate the structure of knowledge of their discipline, be able to adapt discipline-specific knowledge to novel situations, and be able to contribute from their discipline to inter-disciplinary solutions to problems.

This graduate capability is supported by:

## Learning outcomes

- Conceptually design and develop characters, props and scenes for the creation of three dimensional (3D) worlds.



- Develop the capability to create and edit polygonal models utilising Maya's modelling tools.
- Apply creative techniques to the application of texturing.
- Understand and apply rigging to assets for animation.
- Demonstrate a working understanding of modelling, texturing, rigging and animation capabilities for game construction and or video/moving image formats.

## **Assessment tasks**

- Drawing assignment
- Completion of workshops 1-7
- Major project

## **Critical, Analytical and Integrative Thinking**

We want our graduates to be capable of reasoning, questioning and analysing, and to integrate and synthesise learning and knowledge from a range of sources and environments; to be able to critique constraints, assumptions and limitations; to be able to think independently and systemically in relation to scholarly activity, in the workplace, and in the world. We want them to have a level of scientific and information technology literacy.

This graduate capability is supported by:

### **Learning outcome**

- Plan, create and present original components of a 3D world for a major project.

### **Assessment tasks**

- Major project proposal
- Major project

## **Problem Solving and Research Capability**

Our graduates should be capable of researching; of analysing, and interpreting and assessing data and information in various forms; of drawing connections across fields of knowledge; and they should be able to relate their knowledge to complex situations at work or in the world, in order to diagnose and solve problems. We want them to have the confidence to take the initiative in doing so, within an awareness of their own limitations.

This graduate capability is supported by:

### **Learning outcome**

- Develop the capability to create and edit polygonal models utilising Maya's modelling tools.

## Assessment task

- Completion of workshops 1-7