



# SOMA3417 Virtual Control Systems and 3D Surfaces

Term T2, 2019

## Course Information

Units of Credit: 6

## Course Overview

### Course Description

Moving virtual objects in 3D spaces require specialised design approaches and complex applied processes. Moving virtual objects also requires sophisticated control systems to drive movement (whether that movement comes from motion capture data, hand animation processes, or procedural techniques).

This course explores processes in virtual organic surface creation, complex virtual control systems, and related working processes in Computer Generated Imagery (CGI). The aim of this course is to explore processes to create fully controllable objects in 3D virtual spaces.

The course draws on research in contemporary practice from a wide range of sources including virtual sculpting processes, anatomy and physiology, colour theory, visual storytelling, along with technical skill sets and software processes.

This course fosters cross-disciplinary thinking and extends on foundations in CGI process gained in the 2000 streams. It employs layered approaches in design for the realisation of virtual control systems that underpin CGI surface manipulation, and animation.

### Course Learning Outcomes

On completion of this course, the student should be able to:

1. Develop a design proposal that evidences independent, and creative responses underpinned by appropriately located research.
2. Synthesise a functional prototype and mock-up design, developing a proof-of-concept system for further development.
3. Demonstrate integrated design and technical processes with a fully functional virtual organic surface and fully functional control system.

### Teaching and Learning in this Course

This courses uses a variety of teaching approaches:

#### Blended/online

- Review - assessment tool
- Moodle - learning management system

## Assessment

|                   | TITLE                                  | WEIGHTING | ASSESSMENT TYPE  |
|-------------------|--|-----------|------------------|
| Assessment Task 1 | Create a Design Proposal               | 20%       | Project Proposal |
| Assessment Task 2 | Primary Character Design               | 40%       | Project          |
| Assessment Task 3 | Completed Character and Control System | 40%       | Project          |

## References for this Course

### References and other resources for this course

These references cover a range of online and library material. They are by no means exhaustive and are intended as a starting point for your own exploration and research.

#### Maya specific

Lynda.com free access to Maya tutorials. Access through the UNSW library website

Autodesk Maya, the support site - Join up for free and gain access to many things...

<http://area.autodesk.com/>

Creative Crash - an established site for all things Maya and 3D

<http://www.creativecrash.com/>

#### Electronic Magazines (for tutorials, discussions and much, much more)

Animation World

[www.awn.com](http://www.awn.com)

3D World (UK CGI magazine)

<http://www.3dworldmag.com/> (also in Paddington campus library)

#### General CGI forums, galleries and discussion

CG Society

<http://www.cgsociety.org/>

#### Modelling & Rigging Blog sites

Jason Schleifer

Head of Character Animation at Dreamworks'. Prior to his career at DreamWorks, Schleifer had extensive involvement at Weta Digital beginning as a Creature Technical Director and later, Animation Lead.

<http://jasonschleifer.com/>

Javier (Solsona) Goosh

DreamWorks character TD, his site offers many useful tutorials on rigging along with his free rigged characters Package Man and IK-Joe.

<http://www.rigging101.com/>

Sven Kalkschmidt

<http://youtu.be/VZMgDp-l4Ro>

TD Matt, and excellent rigging resource

<http://td-matt.blogspot.com.au/>

#### Recommended reading

**Students will be provided with the following Material:**

- **Movies detailing the processes described and covered in the tutorials.**

**These Movies are copyright free and students may take them off the servers and view at home.**

- **Pertinent Documents detailing the subject matter discussed in tutorials.**

**These Documents may be subject to change due to the nature of our work.**

**NOTE: All Material will be made available to students in the Course Resources folders on the Class work server.**