COFA
UNSW

SCHOOL OF MEDIA ARTS

SOMA2609

3D1 Animation and Modelling

Session one 2009

CONTENTS

Course staff

Course Coordinator: Steve Weymouth steve@cofa.unsw.edu.au
Location   G108
Phone   ext. 50814

Additional Tutor: William Burdis william@unsw.edu.au
Location   G112
Phone   ext. 50768

Consultation times are normally by appointment. Please contact the relevant tutor to arrange a suitable time.

Units of Credit: 6

Teaching times and location:

Tuesday: 3pm – 4pm   room **EG02** (Lecture)
Tuesday: 4pm – 6pm   room **F111** (Tutorial group 1)
Tuesday: 6pm – 8pm   room **F113** (Tutorial group 2)
Thursday: 9am – 11am   room **F113** (Tutorial group 3)
Thursday: 11am – 1pm   room **F113** (Tutorial group 4)
Thursday: 1pm – 3pm   room **F113** (Tutorial group 5)
Thursday: 7pm – 19pm room **F106** (Tutorial group 6)

Contact hours per week*: 3

*Please note that the expectation of time in this course is more than contact hours. The University has expectations of a total load of 25 – 30 hours per unit of credit. This means that you should spend no less than 8-9 hours per week on average on class work in addition to your timetabled hours.

Course aims:
3D1 is an introduction to 3D CGI software; it's varying and fundamental working practices. This course seeks to illustrate how 3D CGI relates to the broader digital media areas.

The course explores fundamental techniques in modelling, texturing, lighting and rendering. You will also develop primary skills in 3D CGI and traditional animation techniques.

Emphasis is placed on establishing a good working practice, which will serve your ongoing development of skills within the field.

Relationship to other courses:
3D1 is a core subject within the Digital Media degree and introduces the fundamental skills required to utilise 3D CGI software within a digital media production environment.

3D1 can be followed by two further electives (**3D2** SOMA3609 and **3D3** SOMA4609). These two classes aim to build your skillset, they will also aid you in production of 3D CGI related material for your major third year work.

Student learning outcomes:
By the end of this course you will be able to
1) Navigate the complicated Maya interface with confidence
2) Model, texture, light and render complex 3D CGI scenes
3) Develop animation skills (utilising a fully functional and supplied 3D character)
4) You will also be introduced to the utilisation of 3D CGI elements in other digital media.

Graduate attributes developed in this course:
This course actively integrates, encourages and promotes the College of Fine Arts (COFA) and wider UNSW graduate attributes. You can read what they are here;
http://www.cofa.unsw.edu.au/staff/learningteaching/policyguides/graduateattributes.html

Approach to learning and teaching:
Teaching on this course has been informed by professional working practice. Students are actively encouraged to develop professional methodologies and approaches to problem solving.

Teaching strategies:
Teaching on this course will take the form of instructional tutorials, practical demonstrations in class, along with an illustrative weekly lecture.

Assessment

Assessment will be based on **two major projects** accompanied by their respective **journal***

Project 1:   Animation
Project 2:   Modelling, texturing, lighting and rendering

*Journal
A journal is a process diary that reflects your problem solving approach and learning experience, it should evidence the development of your project along with all related research.

This subject requires that you keep a regular journal of your progress. The school provides online journals ('blogs') that should be used as your primary documentation. If this format is not suitable please consult with your tutor

Staff regularly read online journals to verify student activity and to read updates.

For more information see the PDF 'Online Services for Media Arts' in the subject folder, or go to
http://soma-blogs.cofa.unsw.edu.au/about/

Discussion is essential both in class and via the Omnium website for this subject. Students should visit their online discussion regularly for news updates, recorded lectures and useful links to share along with general help and information with other students.

Some project tasks requires that you upload your video to the UNSW-TV server. This works like YouTube, but has higher quality and protects your privacy.

For more information about UNSW-TV see the PDF 'Online Services for Media Arts' in the subject folder, or browse 'soma-blogs' from any COFA computer.

Assessment (continued)

To qualify for a passing grade you must complete all set work and submitted it on time. Where absences in excess of two (2) classes occur without a doctors' certificate or similar, will result in a fail grade.

You must be punctual and participate in all class activities.

Each project will be provided in a separate briefing document. Make sure you read the document **THOROUGHLY** (a common cause of students **failing** a project or gaining low marks is due to the simple fact that they have fully to read and applied what the brief has asked for).

Detailed assessment criteria will be included in the briefing documents, but usually you will be assessed on

1. Originality of your idea
2. Thoroughness of research, practice and application of technique (how it looks and how you got there)
3. Overall quality and standard of the delivered work and accompanying journal **(read the brief!)**

Breakdown of Marks

Project 1:	**30%**
Project 1 journal:	**10%**
Project 2:	**30%**
Project 2 journal:	**10%**
Class participation	**20%***

* Class participation relates to your general level of engagement, your overall attendance to both lectures and class along with the fulfillment of homework and outside class activities related to the course.

NOTE! ANY evidence of 3D projects being produced on cracked or illegal software **WILL RESULT IN AN INSTANT FAIL**. It is expected that you use the schools labs and or legal software only!

Penalty for late delivery of assignments

Late delivery of work either presentations, projects or logbooks will incur a penalty of ten percent (10%) per day.

I.e. a project may be worth 35% of the total semester mark. If the project is one day late it will loose 10% of 35% (3.5) for each and every day that the project is late. Extensions will be granted for exceptional circumstances only and will need to be backed up with doctors' certificates or a report from the school councilor.

Computing Requirements

Students are expected to complete their course work on the universities lab computers using the licensed Maya software provided. Some study and reference can be made using a free download version of Maya personal learning edition (PLE) on personal computers. However, be aware that any work produced using PLE cannot be transferred and opened on the university computers due to the nature of the free software.

ACADEMIC HONESTY AND PLAGIARISM

What is Plagiarism?

Plagiarism is taking the ideas or words of others and passing them off as your own.

Plagiarism can take many forms, from deliberate cheating to accidentally copying from a source without acknowledgement. Plagiarism can have serious consequences, so it is important that students be aware of what it is, and how to avoid it.

It is also plagiarism to claim credit for a proportion a work contributed to a group assessment item that is greater than that actually contributed, to submit an assessment item that has already been submitted for academic credit elsewhere, or to knowingly permit your work to be copied by another student.

There are very serious penalties for plagiarism, ranging from re-submission, reduction of marks (including to zero), failure of the course, and exclusion from the university.

The Learning Centre website has a lot of useful information. See www.lc.unsw.edu.au/plagiarism.

Course schedule

Week by week dates (Mondays) 2009

Week 1	March 9th
Lecture	3D CGI– its roots and uses
Tutorial	Introduction to the Maya interface plus basic animation controls

Week 2	March 16th
Lecture	Animation mojo 1 – methods and examples
Tutorial	3D CGI animation methods – what's in a pose?

Week 3	March 23rd
Lecture	Animation mojo 2 – case studies
Tutorial	3D CGI animation methods – Arcs, transitions and moving holds

Week 4	March 30th
Lecture	Animation mojo3 – styles; limited, mo-cap and the character-full
Tutorial	Animation methods and examples – Cleaning up and refining movement

Week 5	April 6th
Lecture	Animation mojo4 – Putting it all together
Tutorial	Animation methods and examples - revision

Mid-Session Break	

Week 6	April 20th
Lecture	The Short Animation Format
Tutorial	Modelling basics – it started with a cube and some other primitives…

Week 7	April 27th
Lecture	Modelling Basics – methodologies
Tutorial	Modelling procedures – surface types and how to use them

Week 8	May 4th
Lecture	Texture placement and relation to surface
Tutorial	Modelling practical – textures and application

Week 9	May 11th
Lecture	Composition and balance – referencing the real thing
Tutorial	The CGI camera, DOF and staging

Week 10	May 18th
Lecture	3D CGI Lighting – learn from the masters
Tutorial	3D CGI lighting – setup and function and rendering

Week 11	May 25th
Lecture	Photorealism Vs Reality
Tutorial	Render techniques – mental ray, global illumination and toon

Week 12	June 1st
Lecture	3D CGI integration in other digital media – Review and Semester 2
Tutorial	Class presentation of project work

SAFETY INFORMATION

You have a responsibility to not do anything that risks the safety or health of your fellow students and also staff.

This will involve informing your lecturer of any safety risks you become aware of, and also following the directions of staff in relation to such issues as equipment usage, and safety equipment and clothing.

You are responsible for:
- *adhering to UNSW and COFA OHS policies and procedures,*
- *following instructions on safe work methods,*
- *promptly reporting hazards or accidents*
- *ensuring your conduct does not endanger others.*

Emergencies and evacuation

In case of emergency you should follow the instructions on the emergency procedures displays, which are located on each level.

### The emergency phone number is 9385-6666 (not 000).

During evacuations always follow the directions given by fire wardens and proceed to the emergency assembly area, which is in front of the campus art store (red oval on diagram).

First aid information

If you are injured or are hurt in any way inform your supervisor. All accidents and incidents must be reported. The names and contact details of first aid officers on campus are displayed on the green and white first aid posters. Security staff are also trained first aid officers.

Electrical safety

Students should ensure that any portable electrical equipment they bring onto the campus (such as laptop computer power supplies) are tested and tagged. Such equipment will not be able to be used on campus if not tagged. Testing can be done at the Resource Centre.
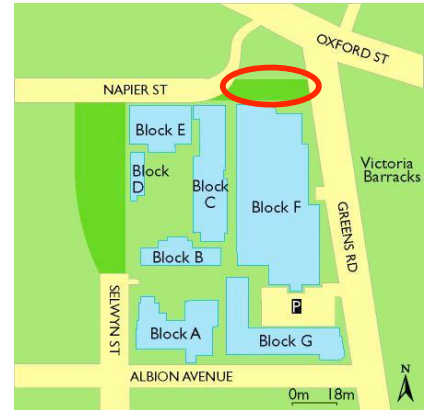
SOMA2609 – References & Further Reading

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.

Online

SOMA2609 class site
http://online.cofa.unsw.edu.au/2009s1/soma2609/

Maya specific

Autodesk Maya http://area.autodesk.com/ (Join up as a Bronze member and gain access to free info)
Highend3d http://www.highend3d.com (an established site for all things Maya and 3D)
Digital Tutors www.digitaltutors.com/ free streaming tutorials and other useful stuff

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

Animation World http://mag.awn.com/
3D World http://www.3dworldmag.com/

Forums, galleries and tutorials

Keith Lango http://keithlangotutorials.blogspot.com/
CG Networks http://www.cgsociety.org/
Portal for many Maya tutorials http://www.infinitee-designs.com/Tutorials-Maya-1.htm
A good source material related to animation http://www.animationmeat.com/
Good gallery for 3D CGI and illustration work http://www.raph.com/3dartists/

E-Books

Title: Ideas for the Animated Short: Finding and Building Stories
Author: Sullivan, Karen; Schumer, Gary; Alexander, Kate

Title: Beginning Illustration and Storyboarding for Games
Author: Les Pardew

Title: Game Character Development with Maya
Author: Antony Ward

Title: Maya® 5 Fundamentals
Author: Garry Lewis; Jim Lammers

Training Books and DVD's on Maya and 3D CGI

The **Learning Maya series of DVD's** are an informative (although dry), step-by-step introduction to the many levels and complexities within the software along with instructive tutorials.

Simply go to the Library Resource Database and type 'learning Maya' in the search field Start with 'foundation' and work your way through 'modelling', 'textures', rendering' etc. Although some of these titles may seem related to older versions of Maya they are still informative in basic techniques and methodology.

Library resources - DVD's and Videos

Learning 3D Character animation with Jeff Lew
CFAAV 791.4334/4
Excellent first introduction to the concepts behind 3D CGI

Before Mickey: an animated anthology
CFAAV791.433/20
See how it all began and view some of the very first animations for public entertainment

Fantasia
CFAAV 791.433/6
Disney's 1940 classic (unfortunately on VHS)

Walt Disney Treasures - Mickey Mouse in B/W
CFAAV791.433/26
Mickey Mouse and all of the early Disney productions were built upon the pioneers of animation, illustrated in the previous video

Weird Cartoons: volume 1
CFAAV791.433/1
Disney pioneered the animation as movie; see the other direction animation went…

Ren & Stimpy: the classics
CFAAV791.433/37
And the beat goes on with the surreal and irreverent Ren and Stimpy!

The Animatrix
CFAAV791.433/39
Check out this disc in its entirety and you'll find a diverse range and interpretation of the animation medium

The Mysterious Geographic Explorations of Jasper Morello
CFAA 791.4334/17
An amazing combinations of story telling techniques including 3D CGI, shadow puppets and stop frame.

Hayao Miyazaki
Titles include; Porco Roso, Laputa, Princess Monoke, Spirited Away, My Neighbor Totoro, Castle Cagiostro, Castle in the Sky, Kiki's Delivery Service and Howl's Moving Castle.

Pixar and Disney

Pixar titles include: Toy Story (1&2), A Bugs Life, Monsters Inc., Finding Nemo and The Incredibles.
Disney titles include: Lady and the Tramp, Jungle Book, Snow White, Tron and Fantasia

Aardman Animations
Titles include: The Wrong Trousers, Creature Comforts and The Curse of the Were-Rabbit

Stop Frame classics
Ray Harryhousen
Tim Burton: The Nightmare Before Christmas and The Corpse Bride

Siggraph reviews
These DVD's contain the screened works presented at the largest computer graphics conference in the world. Much of the material represents innovative and cutting edge results from any given year.

Library resources - Books

Learning Maya 7. Foundation
CFA 006.696/30
Yes I know it's for Maya version 7 but this book will help the keener 3D CGI student and in many ways, complements the help files.

Title: Maya 6 killer tips
CFA 006.696/12
Yes I know it's for Maya version 6 but this book will help the keener 3D CGI student. It contains many fundamental and valuable tips and tricks.

The Illusion of Life – Thomas Frank and Ollie Johnston
SQ 741.58/6
This is THE bible of Disney's' golden age animators' and has informed, practical advise on animating.

How to Animate Film Cartoons – Preston Blair
SQ 741.58/8
Preston Blair explains 2D drawn character animation in a clear and easy to follow manor.

The Animator's Survival Kit – Richard Williams
CFA 778.5347/22
Many animators' in the industry considered this book to be the their bible.

Animation from Pencils to Pixels – Tony White
CFA 006.696/40
This is an excellent resource showing production, methodologies and details related to short animation production whether 2D or 3D CGI.

Digital Lighting and Rendering – Jeremy Birn (editions 1 & 2)
CFA 006.6 103A or CFA 006.6 103B
Indispensable bible on digital lighting from a long time practitioner and master through the New Riders publishing company

Digital Texturing and Painting

CFA 776/2
In depth exploration of pixel imaging

This is only the tip of the iceberg, search the library resources and ye shall find!
Continual course improvement

Periodically student evaluative feedback on the course is gathered, using among other means, UNSW's Course and Teaching Evaluation and Improvement (CATEI) Process. Student feedback is taken seriously, and continual improvements are made to the course based in part on such feedback. Significant changes to the course will be communicated to subsequent cohorts of students taking the course.

Improvements to this course as a direct reaction to 2008 CATEI feedback are:
More timely feedback to students project work
More detailed class notes
A guide to online tutorials

If you have something you want to say about the course (good or bad) then please direct your thoughts to the end-of-session CATEI. Directions and instruction will be given to you in class in week 12.

Administrative Matters

To qualify for a passing grade you must complete all set work *to a satisfactory standard* and submitted it on time. Where absences in excess of two (2) classes occur without a doctors' certificate or similar, will result in a fail grade.

You must be punctual and participate in all class activities.

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Backup All Your Work

IT IS YOUR RESPONSIBILITY TO BACK UP ALL YOUR WORK! You will need to purchase some CD-Rs to store files generated during the semester. The machines in the labs no longer have Zip drives but now have CD-burners and Toast software with which to burn CDs. You are advised to purchase your own external Firewire drive if you intend to work extensively with digital media.

REMEMBER: A hard drive is not a backup – CDs, DVDs or tapes are the only safe option. You should make two copies and keep them in separate places. Diligently backup all work that is important to you at regular intervals. **Extensions of time for assignments will not be granted if you lose work through software/ hardware /operator error or viruses on personal machines.**

Assessment procedure and advice concerning illness or misadventure

Where, because of illness or misadventure, you cannot hand in an assignment on time, or your work has suffered, you can apply for Special Consideration. For information on Special Consideration (see https://my.unsw.edu.au/student/atoz/SpecialConsideration.html).

- *Applications for special consideration must be lodged with the COFA Student Centre (within 3 working days of the assessment to which it refers) – applications will **not** be accepted by teaching staff;*

- *Applying for special consideration does not automatically mean that you will be granted additional assessment or that you will be awarded an amended result;*

- *If you are making an application for special consideration (through COFA Student Centre) please notify your Lecturer in Charge;*

- *Please note: a register of applications for Special Consideration is maintained. History of previous applications for Special Consideration is taken into account when considering each case.*

Equity and diversity

Those students who have a disability that requires some adjustment in their teaching or learning environment are encouraged to discuss their study needs with the course convener prior to, or at the commencement of, their course, or with the Equity Officer (Disability) in the Equity and Diversity Unit (9385 4734 or http://www.studentequity.unsw.edu.au/).

Issues to be discussed may include access to materials, including Library materials, signers or note-takers, the provision of services and additional exam and assessment arrangements. Early notification is essential to enable any necessary adjustments to be made. Information on designing courses and course outlines that take into account the needs of students with disabilities can be found at:
www.secretariat.unsw.edu.au/acboardcom/minutes/coe/disabilityguidelines.pdf