

Course Code:

TBC

1. Course Title:

3D Modelling and Animation

2. Academic Session:

2011/12

3. Level:

SCQF 11

4. Credits:

15

5. Lead School/Board of Studies:

Digital Design Studio

6. Course Contact:

Gillian Moffat

7. Course Aims:

The aim of this course is to provide a comprehensive exploration of the relevant theoretical and practical issues involved in three-dimensional modelling and animation.

8. Intended Learning Outcomes of Course:

On successful completion of the course the student will be able to:

1. demonstrate understanding and knowledge of 3D concepts and contemporary modelling and animation techniques, and its relation to medical visualisation;
2. design and create a computer generated 3D model, demonstrating the principal techniques of 3D modelling and animation;
3. demonstrate self-direction through the development and management of a project of research.

9. Indicative Content:

Lecture subjects are likely to cover the following:

- 3D Coordinate systems
- 3D Space and spatial awareness
- Scene setup
- Modelling Methods: polygonal modelling, NURBS modelling, subdivision surfaces
- Texture mapping, materials and shading
- Reference gathering
- Lighting and shadows
- Cameras
- Rendering
- Fundamentals of practical animation: keyframe animation, FK/IK, dynamics (particles and fluid)

10. Description of Summative Assessment:

Coursework Weighting: 100%

For this course, students will be assessed through a portfolio of work to demonstrate competency in the use of 3D modelling software and knowledge and understanding of key 3D modelling and animation principles and techniques.

10.1 Please describe the Summative Assessment arrangements:

Students on this course will be assessed on their ability to:

- demonstrate a critical knowledge of 3D modelling and animation techniques and practice;
- show an understanding of the practice and theory contexts in relation to which their project is positioned;
- exhibit appropriate level of skill demonstrated in each area of modelling and animation;
- demonstrate good command of verbal, written and visual outcomes to communicate and articulate ideas;
- demonstrate ability to structure tasks and overall workload.

11. Formative Assessment:

N/A

11.1 Please describe the Formative Assessment arrangements:

N/A

12. Collaborative:

Yes

No

12.1 Teaching Institutions:

The University of Glasgow

13. Requirements of Entry:

None

14. Co-requisites:

None

15. Associated Programmes:

MSc Medical Visualisation and Human Anatomy

16. When Taught:

Stage1

17. Timetable:

Timetable will be available in the induction week.

18. Available to Visiting Students:Yes No **19. Distance Learning:**Yes No **20. Placement:**Yes No **21. Learning and Teaching Methods:**

Method	Formal Contact Hours	Notional Learning Hours (Including formal contact hours)
Lecture	8	40
Studio		
Seminar/Presentation	1	5
Tutorial	1	5
Workshop	20	100
Laboratory work		
Project work		
Professional Practice		
E-Learning / Distance Learning		
Placement		
Examination		
Essay		
Private Study	Not Applicable	
Other (please specify below)		
TOTAL	30	150

22. Description of "Other" Teaching and Learning Methods:

N/A

23. Additional Relevant Information:

This course is intended to provide students with an introduction to 3D modelling and animation

techniques by acquiring the principal skills and knowledge required to successfully create and animate 3D objects and provide the student with the necessary skills to demonstrate this. The course will look at various modelling, basic material, rendering, and animation techniques. There will be a particular focus on how these techniques are used in 3D medical visualisation, in essence, how to build complex and anatomically correct 3D medical models by hand.

24. Indicative Bibliography:

Autodesk Maya Press (2009) *Learning Autodesk Maya 2010: Foundation* (Autodesk Maya Techniques: Official Autodesk Training Guides). England: John Wiley & Sons. ISBN 978-1897177556

Birn, J. (2006) *Digital Lighting and Rendering*. 2nd ed., England: New Riders. ISBN 978-0321316318

Ingrassia, M. (2008) *Maya for Games: Modeling and Texturing Techniques with Maya and Mudbox*. Oxford: Focal Press. ISBN 978-0240810645

Eric Keller (2010) *Mastering Autodesk Maya 2011*, John Wiley & Sons, ISBN 9780470639351