EXPANDED COURSE DESCRIPTION
DIGITAL MEDIA PROGRAM
School of the Arts, Media, Performance and Design
Computational Arts
FA / DATT 2501 3.0 SECTION M
INTRODUCTION TO 3D ANIMATION
FALL 2017 / WINTER 2018

Last Modified Date: 09/05/2017

COURSE CALENDAR DESCRIPTION

This course provides a foundation in 3D animation using state of the art render time 3D modelling and animation software such as Maya, Blender, and 3DS Max. The course will provide a survey of various animation techniques and approaches with an emphasis on render time animation as it is used in 3D art, 3D animation, data visualization and games. Topics include, scene building, character animation, timeline based animation techniques, and the use of 3D graphics in simulation and visualization. Prerequisite: DATT 2500 3.00, or by permission of the instructor.

INSTRUCTOR(S)

<table>
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<tr>
<th>Name</th>
<th>Section / Format / Term</th>
<th>Contact Email</th>
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<td>Hambleton, Joe</td>
<td>Sec. M / LECT / W</td>
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SPECIAL FEATURES

This course provides a foundation in 3D animation using the 3D modelling and animation software Maya. The course will provide a survey of various animation techniques and approaches with an emphasis on render time animation as it is used in 3D art, 3D animation, data visualization and games. Topics include the principles of animation, scene building, character animation, timeline based animation techniques, staging a scene using lighting, cameras and sound and the use of 3D graphics in simulation and visualization. Some animation techniques covered in the course are straight ahead action and pose-to-pose keyframing, rigging, motion paths, set driven keys, and particle and physical effects. Each class consists of a one hour lecture and two hours of lab practice to accomplish a combined theoretical and practical approach.

Prerequisite: DATT 2500 3.00, or by permission of the instructor.

Students will learn:

Theoretical points: The principles of animation. An overview and comparison between traditional and digital animation. An overview of various production workflows. An overview of traditional cinematography techniques and how they can be utilized in digital animation.


Batch Rendering.

Details may change by circumstance.
TOPICS AND CONCEPTS

Course Schedule:
Week 1: Lecture: Overview of the course: review course outline, intro to projects. Intro to digital animation. Lab: Set-up account for the class portfolio website. Intro to Maya animation interface and key-framing animation. Assignment 1.
Week 4: Lecture: Introduction to Rigging Lab: Adding a joints to simple objects. FK and IK kinematics. Assignment 3.
Week 6: Lecture: Adding Rig controls to your models. Lab: Using HumanIK to rig a character. Assignment 5.
Week 8: Lecture & Lab: Adding expression to character movement. Lab: Adding Controls to rigs. Assignment 7.
Week 11: Lecture & Lab: Effects and Physics based animation Lab: Maya animation techniques: Motion Path animation & Set Driven Key and Batch rendering. Project 3: Short Rendered Animation.
Week 12: Lecture: Advanced Cinematography techniques. Lab: In-progress critique, bring a playblast animation of your final project to the lab for peer evaluation and feedback.

LIST OF LEARNING OUTCOMES AND EXAMPLES OF

Course Objectives:
- To build a framework of skills and vocabulary to create 3D animation.
- To understand the fundamental components and their position in various 3D animation workflows.
- To apply theory and concept in 3D animation art-making.
- To appreciate the interdisciplinary research attitudes of art and technology.
- To invest independent and artistic expression along with problem solving processes during construction.
- To develop awareness of current 3D animation practices through diverse examples of animation, films, videogames, art, etc.

There will be three projects and several minor assignments. It is expected that the majority of the
assignments will be completed outside of class time. If you plan to use the lab outside of your class
time, you must purchase a Digital Media Lab Card. Lab Cards are $25 for the year, or $15 for one term.
The Digital Media Lab Card can be purchased in the Digital Media office, located in Rm. 235, Goldfarb
Centre for Fine Arts. The office is open Monday to Friday, 10:00am-4:00pm.

**GRADED ASSESSMENT**

- Project 1- Bouncing ball animation (16%)
- Project 2- Walking animation (30%)
- Project 3- Short Rendered Animation (30%)
- Assignments (24%)

Failure to complete any project, assignment or to participate in lectures and lab practice will result in failure of
the class. It is mandatory for all students to adhere to the course schedule.
The evaluation will be based on cumulative achievement, regular attendance and the student’s participation
in research, making, and creative expression. It is expected that students will show a commitment to
completing all projects and assignments with creative & aesthetic solutions based consistent work habits
both in class time and outside of class time.

**Evaluation/Grading Criteria:**

- Quality of the work produced; with the balance of the student’s artistic expression & sensitivity as well as
technical understanding, with integration of techniques and subject.
- Ability to use 3D animation techniques and to solve problems into the process of making.
- The progress and engagement of the student in their research studies, as well as their curiosity and
motivation to learn and achieve.
- The degree and details to which students can set challenges for her or himself.
- Commitment (includes participation, completing work on time, ambition of project)

(For a full description of York grading system see the York University Undergraduate Calendar - http://
calendars.registrar.yorku.ca/pdfs/ug2004cal/calug04_5_acadinfo.pdf)

**ADDITIONAL INFORMATION**

**Computer Lab:**
Please turn your cell phones off before entering class and/or the computer lab. Please clean your seat and
log out before you leave for a next lab session. If you have any questions about using the lab, address them
to the lab technician or instructor.

**Supplies:**
Students will be required to supply headphones in the lab to follow web tutorials. Please also
bring a notebook or small sketchbook and pencils to collect and sketch ideas.

**Course Texts and References:**

- Maya Help File (in Maya menu, F1 key)
- The Art of Maya: An Introduction to 3D Computer Graphics by Autodesk Maya Press
- Getting Started in 3D with Maya by Adam Watkins, Focal Press, 2012
- Autodesk Maya 2014 Essentials by Paul Naas, Sybex, 2013
- Digital Art Masters series by 3DTotal publishing
- Rig it Right! Maya Animation Rigging Concepts by Tina O'Hailey, Focal Press, 2013

Useful Links:
http://knowledge.autodesk.com/support/maya/?p=MAYAUL&p_disp=Maya&sort=score
http://forums.cgsociety.org/
http://www.creativecrash.com/maya/

Last date to drop a winter term (W) course without receiving a grade: March 9, 2018

Academic Policies / Information
The Senate Academic Standards, Curriculum and Pedagogy Committee (ASCP) provides a Student Information Sheet that includes:

York's Academic Honesty Policy and Procedures / Academic Integrity Web site
- Access/Disability
- Ethics Review Process for Research Involving Human Participants
- Religious Observance Accommodation
- Student Code of Conduct
http://secretariat.info.yorku.ca/files/CourseInformationForStudentsAugust20121.pdf

Additional information:
- Academic Accommodation for Students with Disabilities
- Alternate Exam and Test Scheduling
- Grading Scheme and Feedback Policy
The Senate Grading Scheme and Feedback Policy stipulates that (a) the grading scheme (i.e. kinds and weights of assignments, essays, exams, etc.) be announced, and be available in writing, within the first two weeks of class, and that, (b) under normal circumstances, graded feedback worth at least 15% of the final grade for Fall, Winter or Summer Term, and 30% for ‘full year’ courses offered in the Fall/Winter Term be received by students in all courses prior to the final withdrawal date from a course without receiving a grade.

- Important University Sessional Dates (you will find classes and exams start/end dates, reading/co-curricular week, add/drop deadlines, holidays, University closings and more.
http://www.registrar.yorku.ca/enrol/dates/index.htm
- Manage my Academic record
http://myacademicrecord.students.yorku.ca/
- "20% Rule"

No examinations or tests collectively worth more than 20% of the final grade in a course will be given during the final 14 calendar days of classes in a term. The exceptions to the rule are classes which regularly meet
Friday evenings or on Saturday and/or Sunday at any time, and courses
offered in the compressed summer terms.
Final course grades may be adjusted to conform to Program or Faculty grades distribution profiles.

Many courses utilize Moodle, York University’s course website system. If your course is using Moodle,
click here to access it.
Moodle @ York University