

DIGI 234		Technical Direction and Rigging III		
Fall Term 2015	3D ANIMATION FOR FILM AND GAMES COURSE OUTLINE			
Credits 3.0	Course Format: 4 lecture hours per week for 15 weeks			
Prerequisites	DIGI 144 – Technical Direction and Rigging II			
Instructor	TBA	TBA@capilano.ca	Office: BC2xx	Local: xxxx

SCHOOL OF MOTION PICTURE ARTS VISION STATEMENT

The School of Motion Picture Arts is dedicated to inspiring a new generation of independent Canadian filmmakers through the fostering and mentoring of emerging talent utilizing progressive learning environments and authentic production experiences, such that graduates make valued contributions to the global media culture.

MISSION STATEMENT

The program strives to provide a comprehensive artistic and technical education, preparing students in the art of animation and encouraging critical reflection, collaboration and professionalism. Through innovative teaching, local and international partnerships and the highest standards of artistic and academic excellence, the program seeks to ensure student success in creative careers within the animation industry.

COURSE OBJECTIVES

This course builds upon the students' knowledge of rigging technologies and facilitates the development of interactive animation rigs. Students will leverage animation class assignments adding technical elements including particles, rigid and soft body dynamics and cloth simulations. Students will plan and construct advanced rigging solutions based on a constructive needs analysis of relevant animation projects.

COURSE STUDENT LEARNING OUTCOMES

Upon successful completion of this course, students will be able to:

- prepare rigging solutions to meet technical challenges of animated scenes;
- identify and design solutions to challenging rigging problems through research and development;
- work collaboratively with students on projects from the animation classes;
- create custom effects for animated scenes;
- present and share research and development ideas and techniques;
- refine scripting and organizational techniques to maximize efficiency and redundancy in production.

REQUIRED TEXTS

Osipa, Jason. *Stop Staring: Facial Modeling and Animation Done Right*. Sybex, 2003. Print.

COURSE CONTENT

Week 1

Research and development in technical animation

- Identifying and solving problematic issues in production
- Whitepapers as vehicles for pushing change
- Accessing and navigating a software development kit
- Scripting languages and the object model

Week 2

Set based rigging 1

- Rope and chain creation and simulation
- Drapery and cloths
- Hinged elements
- Rigid body dynamics
- *Assignment 1, Simulations, due week 4.*

Week 3

Set based rigging 2

- Grasses, plants and trees
- L-System algorithms
- Film and game based approaches to vegetation generation

Week 4

Animating accessories

- Harnesses, reins, saddles and riding carriages
- Hair systems - grooming and simulation
- Saliva and drool
- Footprints and impressions in simulation

Week 5

Demo reel intro for technical animation

- Analyze both good and bad student and industry based demo reels
- Critical path creation for technical animation demo reel

Week 6

Bluebook final project

- Review final project and identify technical challenges
- Research methods and develop processes to implement your findings
- *Assignment 2, Technical animation proposal, due week 7.*

Week 7

Collaborate with character animation 3 – accessorize animation scene

- Review an animated scene from Character Animation III and evaluate areas where effects could be implemented. Add two additional elements to the shot.

Week 8

Collaborate with character animation 3 – accessorize animation scene

- Continuation from week seven implementing two additional elements into an animation
- Review research and development tests on element additions
- *Assignment 3, Accessorize animation scene, due week 10.*

Week 9

Midterm critique

- Presentation of work and exercises completed over the semesters first eight weeks

Week 10

Crowd simulation and artificial Intelligence

- Hierarchical finite state machines
- A-star algorithms in programming
- *Assignment 4, Crowd simulation, due week 13.*

Week 11

Crowds and agents

- Management of cycle data in crowd simulations
- Crowd systems as vehicles for non-bipedal agents

Week 12

Technical animation – scripting and simulation

- Shelf tools and script editors
- Learning application programming interfaces (API's)
- Limitation of API's

Week 13

Technical animation – scripting and simulation

- Debugging and problem solving
- Scene optimization
- *Assignment 5, Technical animation project, due week 15.*

Week 14

Technical animation – scripting and simulation

- Reusing and repurposing scripts
- Scripting for production pipelines - best practices and next steps

Week 15

- Presentation and evaluation of final portfolio

EVALUATION PROFILE

Participation	15%
Assignment 1 – Simulations	15%
Assignment 2 – Technical animation proposal	10%
Assignment 3 – Accessorize animation scene	15%
Assignment 4 – Crowd simulation	15%
Assignment 5 – Technical animation project	30%
Total	100%

GRADING PROFILE

A+ 90-100	A 85-89	A- 80-84
B+ 77-79	B 73-76	B- 70-72
C+ 67-69	C 63-66	C- 60-62
D 50-59		
F 0-49		

OPERATIONAL DETAILS

Capilano University has policies on Academic Appeals (including appeal of final grades), Student Conduct, Cheating and Plagiarism, Academic Probation and other educational issues. These and other policies are available on the University website.

Professional Behaviour

Students must demonstrate a professional attitude and behaviour toward work, other students, guests and instructors. Each student should demonstrate reliability, respect for and co-operation with colleagues. A willingness to work calmly and courteously under difficult conditions as well as a determination to achieve first class work while meeting deadlines is necessary in this course. Students must have respect for equipment and systems and constructive response to criticism.

Attendance

Regular attendance is essential. Students who miss more than 20% of the course will not receive credit for the course. Attendance will be taken daily and will form part of the participation grade (see Evaluation Profile). Each student is responsible for the material covered and any work assigned in class. The instructor has no obligation to repeat material for students who missed class.

Punctuality

Punctuality is essential. Students more than 15 minutes late for class will be marked absent.

Participation

Students will be evaluated on the following aspects:

- Attendance of classes and labs
- Active engagement in class discussions and projects
- Knowledge of reading / assignments
- Frequency and quality of comments, questions and observations

Late Assignments

All assignments must be delivered at the place and time specified by the instructor. Late assignments will only be accepted if prior approval for a late submission date has been given by the instructor.

Submission of Late Assignments

Although late assignments will not be graded, all assignments must be submitted in order to receive a passing grade in the course.

Incomplete Grades

Grades of incomplete (I) will may be assigned in exceptional circumstances. If the date for the submission of incomplete assignments is not met, the grade will automatically revert to the grade based on the student's present achievements. In addition, the student concerned must submit a written request for approval by the instructor prior to the last regular class in the course.

Continuation Requirement

Students must successfully complete all 3D Animation courses in one term before continuing to the next term.

Emergency Procedures

Students should familiarize themselves with emergency procedures posted in the classroom.