New Course Request

Indiana University
Indianapolis Campus

Check Appropriate Boxes: Undergraduate credit [✓] Graduate credit [ ] Professional credit [ ]

1. School/Division: Informatics
2. Academic Subject Code: NEWM-N
3. Course Number: 442 (must be cleared with University Enrollment Services)
4. Instructor: Clint Koch
5. Course Title: Advanced 3D Animation Techniques

Recommended Abbreviation (Optional): (Limited to 52 characters including spaces)

6. First time this course is to be offered (Semester/Year): Fall 2010
7. Credit Hours: Fixed at 3 or Variable from to
8. Is this course to be graded S-F (only)? Yes [✓] No
9. Is variable title approval being requested? Yes [ ] No [✓]

10. Course description (not to exceed 50 words) for Bulletin publication:

P: N342. Advanced techniques in computer animation, including character development and dynamics. Possible topics include story development, character facial animation and locomotion, dynamics, special effects, composites, fluid effects and particle systems.

11. Lecture Contact Hours: Fixed at 3 or Variable from to
12. Non-Lecture Contact Hours: Fixed at 0 or Variable from to
13. Estimated enrollment: 25 of which 0 percent are expected to be graduate students.
14. Frequency of scheduling: F/S Will this course be required for majors?
15. Justification for new course: Redesign of New Media Curriculum
16. Are the necessary reading materials currently available in the appropriate library? Yes
17. Please append a complete outline of the proposed course, and indicate instructor (if known), textbooks, and other materials.
18. If this course overlaps with existing courses, please explain with which courses it overlaps and whether this overlap is necessary, desirable, or unimportant.
19. A copy of every new course proposal must be submitted to departments, schools, or divisions in which there may be overlap of the new course with existing courses or areas of strong concern, with instructions that they send comments directly to the originating Curriculum Committee. Please append a list of departments, schools, or divisions thus consulted.

Submitted by:
M. Pauline [Signature] Date 6/30/2009
Department: Chairman/Division Director

Approved by:
[Signature] Date 7/27/2009
Dean

[Signature] Date
Chancellor/Vice-President

[Signature] Date
University Enrollment Services

After School/Division approval, forward the last copy (without attachments) to University Enrollment Services for initial processing, and the remaining four copies and attachments to the Campus Chancellor or Vice-President.
N442
Advanced 3D Animation Techniques

Credits 3 hours
Instructor Clinton Koch

Recommended Texts

Author: Eric Keller
Title: Introducing Zbrush (Paperback)
Publisher: Sybex, 2008
ISBN10: 0470262796

Author: Osipa
Title: Stop Staring
Publisher: Sybex, 2007
ISBN10: 0471789208
ISBN13: 9780471789208

Course Description

Advanced techniques in computer animation, including character development and dynamics. Possible topics include story development, character facial animation and locomotion, dynamics, special effects, composites, fluid effects and particle systems.

Prerequisite

N342

Course Outcomes

Students will develop concepts from completed storyboards in an animation/simulation productions from beginning to end. Concepts will be sketched on storyboards and production flow will be documented in a conceptual paper that defines the approach. High quality storyboards and papers must be completed before the beginning of your projects.

Software Used
Maya 2009, Zbrush 3.0

Expectations/Guidelines/Policies

Attendance: For success in this class I expect students to attend each class session. I will only allow missed classes if you give me notice a full week in advance. This class has a stringent attendance policy of 1 dropped letter grade for each 2 classes missed. I will take attendance at the beginning of each class.

Homework Assignments: I may require simple homework exercises following tutorials. I expect these to be completed by the next class.

Class Assignments: Class tutorials and demos must be completed with the instructor. Failure to do so can result in a detrimental effect on effort and class participation scores.

Class assignments/projects are expected to be finished and handed in on time. Late assignments will have a letter grade deduction after each day not completed. Final projects will not be accepted late.

Weekly Schedule

Week 1
Introduction to class: syllabus
Projects Overview – team based projects; Entire class?
Customization and hotkey usage in Zbrush is a key component to efficiency and comfort in the Package

Week 2
Interface Continued
Using Maya/Zbrush like an expert Demo
What's new in maya 8/Zbrush 3.0 features
Overview of fundamentals in modeling Polygons
Part 1 on anatomy and proportions for animals; the study of anatomical reference

Week 3
Zoo visit! Bring nice sketching paper, cameras, video cameras, and pencils!
Continued overview on Polygon modeling
Polygon Surfaces Modeling Polygon
Optimization features, components, faces, Extruding, Beveling, Reduction, Cut, Weld, and slice;
*Project #1 Handout: Team/Individual based storytelling short

Week 4
Zspheres in zbrush
Demo on using zspheres to create base mesh of animal

Week 5
Storyboards and Papers Due*: Class presentations for potential projects
Developmental Sketch Review: Each student will discuss their sketches, photos, and gathered reference for review in a short presentation
Storyboards and Papers for Project 1 due at beginning of class*

Week 6
Continued Modeling Exercise of Animal; Level 2 Proportions and Mass

Week 7
Continued Modeling Exercise of Animal; Detailing Level 1 and 2

Week 8
Continued Modeling Exercise of Animal; Detailing Level 3 and 4

Week 9
Texturing your animal in zbrush

Week 10
Texturing continued with Polypaint

Week 11
Setting up animal rig using reference
Interior/House, Rigging continued

Week 12
Character Animation: Walk Cycle 1

Week 13
Character Animation: Walk Cycle 2

Week 14
Character Animation: Facial Animation 1

Week 15
Character Animation: Facial Animation 2

Week 16
Final Projects Due (2 parts): Team Based Short Stories