



Course Syllabus

Course #: DMT 2500 Course Name: 3D Computer Animation II

Division: Engineering and Industrial Technologies

Class Days: Class Time:
Location: Classroom: E214 Laboratory:
Credit Hours: 4 Contact Hours: Lab Hours: 1 Lecture Hours: 3

Instructor: Craig R Stinchcomb Office Location: 215B Building E
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Full-time Contact Person: Craig R Stinchcomb Phone(s): (419) 559-2445

Course Description: A continuation of DMT 1100, with an emphasis on moving into animated reenactments for industrial applications. Accident reenactments, medical simulations and training animations will be studied. Precise details such as sizes, speeds and timing accuracy of animation sequences will be practiced. Advanced special effects and rendering methods will also be practiced and applied.

Prerequisite(s): DMT 1100, or permission of the Instructor

Corequisite(s): none

Entry Level Skills and Knowledge: Basic computer skills

Required Texts, Supplies and Equipment: 3 Ring notebook, blank CD-R's or larger format thumb drive.

Grading:

- 90 - 100 = A
80 - 89 = B
70 - 79 = C
60 - 69 = D
Below 60 = F

Learning Outcomes:

General Education
(See attached).

Assessment of Student Learning: *This is “Project” based course. Each video/audio project is treated like a quiz. Projects are averaged for a final course grade. The list of required projects is given in the “Plan of Work” section of this syllabus.*

Assessment Project and Measurement in course (if any):

Plan of Work:

Week 1

Introduction

- Explanation of projects
- Review of AutoCAD floor plan principles
- Importing from AutoCAD to MAX
- Using Fireworks for mapping images

Week 2

Creating Surface Textures with Mapping

- Review of mapping
- Mapping to shapes
- Using Auto CAD for 3D shapes & models
- Cup Project

Week 3

Custom Maps

- Wood grain and textures
- Brick wall project

Week 4

Start Walk-Through Project

- Data and print analysis for room sizing

Camera Walk-Through Techniques

- Camera on Track
- Free moving camera
- Editing and Track View control

Week 5

Finish Walk-Through Projects

- Post Processing with Above Premiere
- Music and sound enhancements

Week 6

Introduction to Accident Re-enactments

- Auto Accidents
- Exxon Valdez
- New Orleans Am-Track Railroad accident
- KLM / Pan AM Tenerife collision
- Air Florida flight 90 Potomac crash

Week 7

Extracting Data from Reports

- NTSB reports
- Police reports

Week 7 cont.

- Speed, Distance and Time
- Time Base settings and Control
- Frames, SMPTE, MM:SS:Ticks

Week 8

Open Lab Day

Complete and View Accident re-enactment projects

Week 9

Failure re-enactment

- TWA Flight 800 (center fuel tank failure)
- STS-51 (Challenger SRB failure)
- KC Hyatt collapse
- Titanic (Metallurgical hull failure)
- United 232 (Hydraulic control line failure)
- American 191DC-10 (Engine Pylon failure)
- Structural Failure (Building and Bridges)
- Dam Failures (Compression Dam failures)

Week 10

Part Deformation

- Animating Deformation
- Bend, twist, taper

Failure Motions

- Cycle motion and repetitive vibration
- Smoke and Spray (high quality rendering techniques)
- Grouping vs. linking for objects in motion

Week 11

Mixing and transitioning scenes (Premiere)

- Mixing Scenes
- Titles for scenes

Week 12

Medical or Industrial function

- Animating biological functions
- Animating Mechanical functions

Week 13

Animation for training resources

Character Animation

- Biped
- Footsteps vs. freeform
- Dynamics
- Tendons
- Skin

Week 14

Kinematics and inverse kinematics

- Forward, reverse and blending kinematics

Week 15

Complete and View character animations

** This "Plan of Work" order may be changed or be adjusted to suit individual class needs and software changes.*

Course Requirements:

Complete all animation production projects as required

Policies

Course Withdrawing: If for any reason you need to withdraw from this course, be certain that you do so according to College procedure. It is your responsibility to know and follow this procedure. If you simply stop coming to class, without officially withdrawing from the course, your grade is an automatic “F.” Please follow official College procedure for withdrawing from this or any course.

College Academic Policies are located in the College Catalog. A copy of the current catalog may be picked up in any of the division offices or admissions. The list of college policies is also available online at <https://www.terra.edu/register/Collegecat/policies.asp>.

Support Services: The College offers a number of support services to assist in your success in this course and all courses. Among these services are the Writing & Math Center in B105, the Office of Learning Support Services, which coordinates the campus disability services and tutoring programs, the computer labs, and the computers in the atriums.

Any student who feels he/she may need an accommodation based on the documentation of a disability should contact the Office of Learning Support Services privately to discuss his/her specific issues. Please contact the OLSS at (419) 334-8400 X 208 or visit 100 Roy Klay Hall (Building A) to coordinate reasonable accommodations.

If you have a documented disability and are receiving academic accommodations through the Office of Learning Support Services, please schedule a meeting with your instructor in a timely manner so that we may discuss how these services will be arranged.

Tutoring services are available to students beginning the second week of every quarter. Students requesting tutoring services should obtain a tutor request form from the OLSS in 100 Roy Klay Hall (Building A) or online at the Terra website. Please note that instructor verification and acceptance of the Student Learner Agreement is necessary for all tutoring requests. All requests should be submitted to 100 Roy Klay Hall (Building A).

General Education Learning Outcomes:

1. **Communicate effectively**
2. **Evaluate arguments in a logical fashion**—Competence in analysis and logical argument are explicit learning goals for most general education programs, although these skills go by a variety of names (e.g., critical thinking, analysis, logical thinking, etc.). **Students will be able to demonstrate competence in problem solving in communication, mathematics, and in team settings.**
3. **Demonstrate an understanding of cultural differences and the knowledge of how to work effectively in a global and diverse culture and society.**
4. **Employ the methods of inquiry characteristic of natural sciences, social sciences, mathematics, and the arts and humanities;** general education introduces students to methods of inquiry in several fields of study and thereby prepares students to integrate information from different disciplines.
5. **Engage in our democratic society**—one of the overarching goals of general education is to prepare students to be active and informed citizens; the development of a disposition to participate in and contribute to our democracy is of equal importance to the goal of having the skills to do so intelligently.

Learning Outcomes 1-3 will be measured for all students through the CAAP assessment (Writing, Mathematics, and Critical Thinking) and through the e-portfolio (Writing and Cultural Diversity). Outcomes 1 and 2 will also be assessed through course and program assessment for applied degree programs.

Learning Outcomes 1-5 will be assessed in specific courses included in the Transfer Module.