

COURSE OUTLINE

Name of Course: Computer Animation

Level: 10-12 Grade Students

Course Number: 750

Number of Credits: 5

Date Written: July 2008

Prerequisites: Art 1/Graphic Design/Media 1

Course Description:

The course will start with a general introduction to computer animation. The class will examine where, how, and why computer animation and computer generated graphics are used in our increasingly technological society.

Hand sketching and basic hand drawing techniques will be introduced as it is an essential skill to computer animators. Students will be required to practice hand sketching and drawing throughout the duration of the course, and be called upon to use their skills to complete storyboards as well as computer animated segments.

Four important areas of focus for this course will be Basic Concepts, Modeling, Animation, and Rendering. After an overview of the 3D Studio Max interface, students will learn how to build simple models using a variety of techniques. Students will learn how to animate models at a basic level and extract character and emotions from animated objects. Finally, students will learn how to embellish the scene using materials and lights and render a movie file.

Core Curriculum Content Standards Addressed:

NJCCCS-

8.1. A.5. Produce a multimedia project using text, graphics, moving images, and sound.

8.1. A.8. Discuss and/or demonstrate the capability of emerging technologies and software in the creation of documents or files.

8.2. B.1 Describe the potential and implications of contemporary and emerging computer applications for personal, social, lifelong learning, and workplace needs.

8.2. B.9 Create and manipulate information, independently and/or collaboratively, to solve problems and design and develop products.

8.2. B.11 Identify a problem in a content area and formulate a strategy to solve the problem using brainstorming, flowcharting, and appropriate resources.

Standards for Technological Literacy-

The Nature of technology –

Standard 3. Students will develop an understanding of the relationships among technologies and the connections between technology and other fields of study.

The Designed World –

Standard 17. Students will develop an understanding of and be able to select and use information and communication technologies.

Measurable Goals & Objectives:

- ✓ Explore past, present, and future of the computer animation.
 1. Students will be able to discuss the transition from hand drawing to computer drawing.
 2. Students will be able to discuss current methods and techniques of computer drawing and animation.
 3. Students will be able to list 3-5 ways that computer can be used by society in the future.
- ✓ Understand applications for computer animation.
 1. Students will develop an understanding of how computer animation is used in society.
 2. Students will be able to discuss visual effects in movies, animated 2d/3d feature movies, independent shorts, video and computer games, television.
- ✓ Develop hand sketching skills
 1. Students will practice hand sketching shapes, characters, and objects.
 2. Students will hand sketch storyboards.
- ✓ Understand computer modeling
 1. Students will be able to summarize basic modeling concepts as space, objects and structures, points, lines, and surfaces.
 2. Students will become familiar with geometric primitives, sweeping, and freeform objects.
- ✓ Understand Rendering

1. Students will develop an understanding of rendering concepts, camera, lighting, shading, and surfacing.
- ✓ Understand animation and effects
 1. Students will gain an understanding of and be able to discuss types of animation, principles of animation, character development, and file formats.
 2. Students will develop storyboards, create 3d scenes, apply realistic lighting, model characters, and animate objects.
 3. Students will create and develop an animated short.

Implementation of Technology:

In this course students will be completely immersed in computer technology. Students will use computers on a daily basis to complete class activities and projects. Students will use sophisticated computer animation software such as 3D Studio Max, Macromedia Flash, and Adobe Photoshop.

Materials, Resources, Year Published & Name of Text:

[How to Cheat in 3DS Max 2009: Get spectacular Result Fast](#) by Michele Bousquet

[Animation from Pencils to Pixels: Classical Techniques for the Digital Animator](#)

by Tony White - [Performing Arts](#) - 499 pages

This book is intended to serve as your one-stop how-to animation guide.

[3ds Max 9 Bible](#)

by Kelly L. Murdock - [Computers](#) - 1248 pages

Loaded with advice, professional tips, and more than 150 step-by-step lessons, this is the most comprehensive reference-tutorial on 3ds Max on the market, and the one you'll turn to again and again.

[Rendering With Mental Ray & 3ds Max](#)

by Joep van der Steen - 2007 - 256 pages

Finally, the book reviews mental rayspecific materials and what effects can be obtained by using most of the specific mental ray shaders.

Student Evaluation Methods:

Students will be graded in the areas listed below, based on a standard points system.

Homework – 5 pts

In-Class Assignments – 10 pts

Quizzes – 10 pts

Tests – 25 pts

Projects – 50 pts

Final Project – 100 pts

District Policy: