

COURSE DESCRIPTION

Department and Course Number: CSCI 444 (cross-listed as ART 444)

Course Title: Multimedia Design and Development

Current Catalog Description: In-depth analysis of multimedia architecture and tools. Students implement an interactive multimedia project.

Total Credits: 3 hours

Coordinator: P. Tobin Maginnis, Associate Professor of Computer and Information Science

Nota bene: This course has not been offered for more than four years. Implementation of ubiquitous interactive graphics has migrated from custom standalone systems to Web-based graphics environments such as Macromedia Flash.

Textbooks: Possible current textbooks include the following:

1. D. Franklin and J. Makar, *Macromedia Flash ActionScripting*, Macromedia Press, 2002.
2. P. S. Woods, *Macromedia Flash MX Developer's Guide*, Osborne McGraw-Hill, 2002.

Other required materials: Study guides and miscellaneous class handouts.

References: Foley J.D., A. van Dam, S. K. Fiener, and J.F. Hughes, *Computer Graphics: Principles and Practice* (2nd Ed.) Addison-Wesley, 1990.

Course Goals: Students are provided with a set of computer-based graphic tools which include text formatting, font generation, windows, buttons, canvases, keyboard-mouse input subsystem, and archive subsystem. Students master these tools to complete a multimedia project.

Prerequisites by Topic: For computer science students, this course requires familiarity with general programming concepts and basic algorithms and data structures (e.g., CSCI 112 and 211). Familiarity with the C or C++ language is a plus.

Major Topics Covered in the Course:

1. Multimedia architecture (5 hours).
2. Scripting development environment (2 hours).
3. Archiving and data extraction subsystem (5 hours).
4. Keyboard and mouse subsystem (3 hours).
5. Sound subsystem (3 hours).
6. Textbox subsystem (3 hours).
7. Windows classes (4 hours).
8. Button classes (3 hours).
9. Canvas classes (4 hours).
10. Animation (8 hours).
11. Tests (5 hours)

Operating Systems and Languages: Windows, Linux, C++

Laboratory projects:

Under direction of graphic art majors and using existing tools, computer science students implement a computer-based multimedia presentation as a semester project.

Estimate of CSAB Category Content:

	CORE	ADVANCED		CORE	ADVANCED
Data Structures	_____	_____ 1 _____	Computer Organization and Architecture	_____	_____ 1 _____
Algorithms	_____	_____	Concepts of Programming Languages	_____	_____
Software Design	_____	_____ 1 _____		_____	_____

Oral and Written Communications:

Every student is required to submit at least 1 written report (not including exams, tests, quizzes, or commented programs) of typically 20 pages and to make 1 oral presentation of typically 15 minutes duration. This includes only material that is graded for grammar, spelling, style, and so forth, as well as for technical content, completeness, and accuracy.

Social and Ethical Issues:

Computer science and art majors must learn to communicate and work together to create a multimedia presentation. Computer science students find it difficult to quantify the language of graphic design while the art students find it difficult to provide a "punch list" that the computer science students can simply program.

Theoretical Content (Foundations):

Not a significant focus of this course.

Problem Analysis:

Students are provided a tool set and example projects. From this they are asked to create a new project.

Solution Design:

Students must perform graphic design, user interface design, run-time analysis, and manage computer resources for an optimal presentation.