EMBRY-RIDDLE AERONAUTICAL UNIVERSITY
Department of Computing and Mathematics
COURSE OUTLINE FOR

Course No.: MSE535 **Title: Graphical User Interface Design and Evaluation**

Cr Hrs: 3

Lecture Hours: 3 **Laboratory Hours: 0**

COURSE DESCRIPTION:

This course provides an introduction to designing, implementing, and evaluating computer-human interfaces, with emphasis on graphical user interfaces. The approach is both theoretical and practical. Students participate in small team development of a prototype graphical user interface employing an available interface design software tool such as TAE. A paper evaluating a graphical user interface, as described in the literature and/or evidenced in existing software, is required.

GOALS:

This course strives to stress the importance and application of software engineering principles, concepts, tools, and techniques in the development and evaluation of computer-human interfaces. It provides knowledge and understanding of the concepts, principles, techniques, and tools used to construct graphical user interfaces. It also acquaints the student, by means of team-oriented software development projects, with one or more specific interface design packages.

PERFORMANCE OBJECTIVES:

1. Identify and explain the prerequisite knowledge required for the study of user interface design:
    a. Discuss user and machine capabilities and limitations;
    b. Explain options available in, and characteristics of, human-computer interaction;
    c. Explain methods of modeling human-computer interaction;
    d. Discuss tools and techniques, which support interface design and development;
2. Identify and explain the basic concepts of interface design and implementation:
    a. List and explain design terms and decision constructs;
    b. Identify and discuss design approaches and methods;
    c. Name and discuss design objects, modules, and models;
3. Explain and discuss network-oriented design and adaptive design models;
4. Implement a graphical user interface using an existing software tool;
5. Evaluate an existing human-computer interface.

Department of Computing and Mathematics
COURSE OUTLINE FOR MSE535, Continued

TEXTBOOK:

Siegfried Treu, *User Interface Design, A Structured Approach*, Plenum, 1994.

SUGGESTED SUPPLEMENTAL MATERIALS:

a. Siegfried Treu, *User Interface Evaluation, A Structured Approach*, Plenum, 1994.
b. G. Booch, *Object Oriented Design with Applications*, Benjamin Cummings, 1991.
c. MODSIM II and SimGraphics Programming Manuals, CACI, 1993.
d. TAE Interface Design Tool Programming Manual, 1994.

PREREQUISITE KNOWLEDGE BY TOPIC:

1. Ability to program a computer using C or C++ programming language.

2. Knowledge of the software engineering life cycle, and ability to apply it to programming.

	TOPIC	CLASS HOURS	COURSE OBJECTIVES
1.	Introduction and Prerequisite Concepts	6	Identify and explain the prerequisite knowledge required for the study of user interface design
2.	Basic Concepts in Interface Design	12	List and explain design terms and decision constructs; Identify and discuss design approaches and methods; Name and discuss design objects, modules, and models;
3.	Evaluating Interface Design	8	Explain and discuss network-oriented design and adaptive design models;
4.	Constructing Graphical User Interfaces	8	Implement a graphical user interface using an existing software tool;
5.	Class Reports	6	Evaluate an existing human-computer interface.
6.	Testing	2	

LABORATORY:

None

COMPUTER USAGE:

Occasional use as a learning tool in the classroom.

GRADING SYSTEM:

The final grade is based on a midterm and final exam; a small-team programming project with accompanying oral report and written documentation; and a paper of about ten pages which evaluates an existing graphical user interface.

ESTIMATED CONTENT:

Skills: %40
Content: %60