

COVER SHEET - NEW and REVISED COURSES

Commission on Undergraduate Studies and Policies/ Commission on Graduate Studies and Policies/ University Core Curriculum Committee
Effective August 1993

- SEE I - VIII for Basic Course Proposal Guidelines•
- SEE APPENDIX FOR NOTES, EXPLANATIONS AND ADDITIONAL GUIDELINES•
- PRINT CLEARLY, TYPE or COMPLETE ELECTRONICALLY•

APPROVED
CGC 10-10-02
CGSP 10-16-02
10/23/02 nch

PROPOSAL DATE: 2/4/2002

BEGIN FIFTEEN DAY REVIEW

END FIFTEEN DAY REVIEW

DEPARTMENT AND COURSE NUMBER: CS 5774

TITLE OF COURSE: User Interface Software

TRANSCRIPT (ADP) TITLE (MAX-30 Characters): User Interface Software

INSTRUCTOR and/or DEPARTMENTAL CONTACT: Manuel A. Perez-Quinones

CONTACT PHONE #: 231-2646

CONTACT E-MAIL: perez@vt.edu

CHECK IF GRADUATE CREDIT IS REQUESTED (15 copies required for CGSP)

CHECK ONLY ONE OF THE FOLLOWING BOXES

NEW COURSE REVISED COURSE (REVISION > 20%)

NEW COURSE & INCLUSION IN THE CORE

REVISED COURSE FOR INCLUSION IN THE CORE OR CORE AREA CHANGE

- Courses routed directly to the University Core Committee MUST be endorsed by the appropriate Department Head or Dean.
- The Chair of the University Core Committee shall inform the appropriate college curriculum committee of all courses under review by the core committee.

•A Attach Appropriate Letters of Support from Affected Departments and/or Colleges

•B Effective Semester: Spring 2003

•C Change in Title **From:**

To:

•D Change in Lecture and/or Lab Hours **From:**

To:

•E Change in Credit Hours **From:**

To:

•F Percentage of Revision from Current Syllabus:

•G Course Number(s) and Title(s) to be Deleted from the Catalogue with APPROVAL of course:

•FOR ALL COURSES, NEW, CORE AND REVISED: Attach statement from Dean or Departmental Representative as to whether teaching this course will require or generate the need for **additional** departmental resources.

APPROVAL SIGNATURES / DATE

Department Representative

Verna Schuch

11 March 2002

College Curriculum Committee Representative

Michael Fowler

23 April 2002

College Dean

Myna Gordon 4.25.02

**COMPUTER SCIENCE 5774
USER INTERFACE SOFTWARE**

(ADP TITLE: USER INTERFACE SOFTWARE)

I. Catalogue Description

Survey of software architectures to build user interfaces, particularly focused on graphical user interfaces. Includes the design and implementation of user interfaces, the use of object-oriented application frameworks, software architecture for command undo, document management, layout managers, customized components, and separation of concerns in user interface software architectures. Discussion of research and advanced topics in User Interface Software.

Pre: 2704 (3H, 3C).

II. Learning Objectives

Having successfully completed this course, the student will be able to:

- design a highly interactive graphical user interface
- implement an object oriented architecture for interactive systems
- evaluate different software architectures used in interactive systems
- conduct research in the area of User Interface Software

III. Justification

User Interface Software is an extremely important aspect of today's software development. Several estimates have shown that the user interface component of projects accounts for about 50%-70% of the code. This course will introduce the principles and concepts behind interactive software and user interface programming, and explore in detail advanced software architectures used in building interactive software.

This course is offered at the graduate level because of the emphasis placed on research software architectures (e.g. architectures for intelligent interfaces) instead of commercial software architectures (e.g. Microsoft's MFC). Most of the material presented is advanced in nature and based on research principles. One of the objectives of the course is to train students to do research in this area.

IV. Prerequisites and Corequisites

Knowledge of an object-oriented programming language, including such advanced features as encapsulation, inheritance, templates, association and aggregation as taught in CS 2704, is required to successfully complete the project requirements of the course.

V. Texts and Special Teaching Aids

Olsen, Dan, Jr. DEVELOPING USER INTERFACES. 1998. Morgan Kauffmann Publishers, San Francisco, California, xvii, pp. 414.

VI. Syllabus

Topic	Percent of Course
1. Computer Graphics Principles	15
2. Design of Interactive Programs	15
3. Event based programming	10
4. Software Architecture for Interactive Systems	20
5. Presentation layer: Widgets and Layout Managers	10
6. Undo, Drag and Drop, Clipboard Handling	10
7. Document commands, Printing	10
8. Advanced architectures: Scripting, Help	<u>10</u>
Total	100

VII. Old (current) Syllabus

N/A

VIII. Core Curriculum Guidelines

N/A

Dr. Harlan B. Miller, Secretary
College of Arts and Sciences Curriculum Committee
C/o Department of Philosophy
CAMPUS 0126

February 22, 2002

Dear Harlan,

Please find enclosed a course proposal for CS5774, User Interface Software. This course strengthens our course offerings in the field of Human Computer Interaction, and reflects the research and academic interests of some of our new faculty members who have joined the Department in the past two years. The resources to teach this course come from the availability of these new faculty members.

Sincerely,



Cliff Shaffer
Chair, Graduate Program Committee