January 11, 2006

METROPOLITAN STATE COLLEGE *of* DENVER
Office of Academic Affairs

REGULAR COURSE SYLLABUS

School of: Letters, Arts, and Sciences

Department: Mathematical and Computer Sciences

CIP Code: 11.9999

Prefix & Course Number: CS 4284 **Crosslisted With*:** ____

Course Title: Software Product Engineering

Check All That Apply: Required for Major: ____ Required for Minor: ____ Specified Elective: ____
Required for Concentration: ____ Elective: X Service Course: X

Credit Hours: 3 (3 + 0)

Total Contact Hours per semester (assuming 15-16 week semester):

Lecture 45 Lab 0 Internship 0 Practicum 0 Other (please specify type and hours): 0

Schedule Type(s): Lecture **Grading Mode(s):** Letter

Variable Topics Courses (list restrictions, including the maximum number of hours that can be earned**):

____

** **NOTE: This information must be included in the course description.**

Restrictions (Variable Topics Course): ____

Prerequisite(s): CS 4250 or permission of department

Corequisite(s): ____

Prerequisite(s) or Corequisite(s): ____

Banner Enforced:

Prerequisite(s): ____
Corequisite(s): ____
Prerequisite(s) or Corequisite(s): ____

Catalog Course Description:

This course surveys fundamental topics necessary for successful software product engineering, including usability engineering, software configuration management (SCM), and an overview of legal issues for software engineers.

APPROVED:

Ruth Yarar — 1-17-06
Department Curriculum Committee — Date

Steve Beaty — 1/19/06
Department Chair OR Program Director — Date

Hal Ramsey — 1/31/06
Dean OR Associate Dean — Date

Linda S. Cleveland — 2/2/06
Associate VP, Academic Affairs — Date

*If crosslisted, attach completed Course Crosslisting Agreement Form

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Required Reading and Other Materials will be equivalent to:
An Introduction to Usability by Jordan, Taylor & Francis, 1998.

Usability Engineering by Nielsen, Academic Press, 1993.

User and Task Analysis for Interface Design by Hackos & Redish, Wiley, 1998.

A Guide to Software Configuration Management by Leon, Artech House, 2000.

Various articles and reprints from journals and conference proceedings *(IEEE Computer, CACM, IEEE Software)*

Specific, *Measurable* Student Behavioral Learning Objectives:
Upon completion of this course the student should be able to:
1. Define and describe usability and the components of usability.
2. Explain why usability is important and how it can be measured.
3. Conduct user and task analyses:
   i. Plan and execute site visits
   ii. Document findings
   iii. Analyze and present collected data.
4. Develop usability prototypes
5. Apply principles of usability design
6. Utilize methods for usability evaluation.
7. Describe the essential characteristics of software configuration management (SCM) and its value.
8. Distinguish among the components of SCM
9. Identify the applicable tools and techniques.
10. Select appropriate methods for protecting rights of software engineering products and concepts
11. Explain essential characteristics of software development agreements.

Detailed Outline of Course Content (Major Topics and Subtopics):

I. Usability engineering (45%)
   A. User and task analysis
   B. Interface Cognitive science principles
   C. Design for usability—practical usability heuristics
   D. Usability assessment
II. Software configuration management (45%)
   A. Maintaining software integrity, traceability and accountability
   B. Version control
   C. Configuration management
   D. Tools and techniques
III. Legal issues in software development (10%)
   A. Overview of protection of software-relevant intellectual property rights (patent, copyright, etc.)
   B. Introduction to software development agreements (source code ownership, consultancy, etc.)

Evaluation of Student Performance:

1. Homework assignments
2. Quizzes and examinations
3. Final examination
4. Projects
5. Research papers and/or book reports
6. Oral presentations

as determined by the instructor. Written and verbal communication skills will be applied in this course.