**Omnibus\* Course Syllabus**

**School of Letters, Arts, and Sciences**

**Department**: Mathematical and Computer Sciences **Instructor:** Jody Paul

**Prefix and Course Number**: CS 390\_\_\_ **Semester/year offered:** Fall 2012

**Banner Number (for Academic Affairs use):**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(**Students registering after Census date** will be **ineligible for the COF stipend** and must pay the full tuition for the omnibus course. Please see COF-FAQ for details regarding registration deadlines: <http://www.mscd.edu/news/cof/cof_faq.htm>)

**Course Title**: Intermediate Programming

**Credit Hours**: 4 (4+0)

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

Lecture 60 Lab 0 Internship 0 Practicum 0 Other (specify type and hours): 0

**Meeting Times/Dates**:

**Grading Mode(s)**:  L **Schedule Type(s):**  L

**Prerequisites**: CS2050 with a grade of C or better

Corequisites:

Banner Enforced:

Prerequisite(s): CS2050 with a grade of C or better

Corequisite(s):

Prerequisite(s) or Corequisite(s):

**Course Description**:

This course provides the opportunity and support for students who wish to solidify and extend the computer programming knowledge and abilities acquired in Computer Science 1 & 2 (CS1050 & CS2050). Topics covered include tools, techniques, and approaches to help tackle the programming tasks of domain analysis, program design, coding, building, testing, and principled debugging.

**Required Reading Materials**

Butcher, P. (2009) *Debug It!: Find, Repair, and Prevent Bugs in Your Code*. Pragmatic.

Wampler, D. (2011) *Functional Programming for Java Developers.* O’Reilly.

Numerous online references (JUnit, Ant, Test-Driven Development, OOA/OOD, etc.)

**Evaluation of Student Performance** (*format* - 1, a, i, ii, etc.):

1. Assignments
2. Projects
3. In-Class Activities
4. Tests

Specific ***Measurable*** Student Behavioral Learning Objectives (*format* - 1, a, i, ii, etc.):

1. Students can articulate tools, techniques, and approaches to domain analysis and program design, coding, testing, and debugging.
2. Students can demonstrate the application of tools, techniques, and approaches to domain analysis and program design, coding, testing, and debugging.

**Detailed outline of course content** (major topics and subtopics) or outline of field experience

(*format* – I, A, 1, a, etc.) – please see note[[1]](#footnote-1) below:

1. The Context of Programming
   1. Programming Objectives
   2. Constraints on Programs and Programmers
   3. Automated Tools
2. Domain Analysis, Program Design, and Coding
   1. Imperative Paradigm
   2. Functional Paradigm
   3. OOA/OOD Paradigm
3. Testing
   1. Unit Testing
   2. Regression Testing
   3. Test-First Development
4. Principled Debugging

***Excerpt from***

**METROPOLITAN STATE COLLEGE *of* DENVER**

**GUIDELINES FOR THE PROTECTION OF HUMAN SUBJECTS**

*Available in full on the MSCD web site:* <http://clem.mscd.edu/~forrestj/HSRC%20Docs/The%20Policy.doc>

Research Projects Conducted in Research Classes. Developmental and institutional guidelines for confidentiality and research with human subjects will be taught in depth as a part of course requirements for research classes. Students will be required to develop their own informed consent forms or to use forms developed by faculty members which conform to College guidelines and Department policy (*see link above*). All student projects will be reviewed and approved by faculty prior to recruiting subjects. (*See Example 3 consent form at this link:* [*http://clem.mscd.edu/~forrestj/HSRC.htm*](http://clem.mscd.edu/~forrestj/HSRC.htm)).

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**This required course content MUST be part of the “Detailed outline of course content” section of the omnibus course syllabus OR a statement must be attached that clearly states how the proper procedures have been followed by the course instructor and/or the student.**

**The Associate VP for Academic Affairs cannot sign an omnibus syllabus that appears to involve human subjects and/or personal data unless this information is provided.**

1. note: If the omnibus course includes student and/or course instructor research that involves **(1)** interviewing subjects **and/or (2)** handling personal data **and/or (3)** topics which could be viewed as “sensitive” (e.g., personal political views, health data, sexuality, etc.), **then approval by the Office of Academic Affairs will require assurance that the guidelines described at the end of this document have been followed.** [↑](#footnote-ref-1)