

**CIS 4655: SOFTWARE ENGINEERING**  
**Fall 2009**

**OBJECTIVE**

**Course Description:** An advanced course in the systematic approach to the specification, development, operation, maintenance, and retirement of software. Topics include formal specification tools, developmental strategies and quality assurance.

Prerequisite: CIS 3660.

**Course Objectives:** Upon successful completion of this course, students will be able to:

- 1) Express knowledge of basic object-oriented software engineering concepts and demonstrate use of tools (Exams 1 & 2)
- 2) Apply use cases in requirements analysis of a given scenario (Project & Final Exam, part 3)
- 3) Discuss a current topic in object-oriented software engineering (Term paper / Presentation)
- 4) Identify current topics in software engineering (Final Exam, part 2)
- 5) Express a basic knowledge of systems quality and CMMI. (Final exam part 1)

**RESOURCES**

**Instructor:** Kerry Henson, PhD

**Office:** DOC 300C (will change)

**Phone:** 660/422-2705

**Email:** dochenson@charter.net

**Office hours:**

MW 11-12; 3-4

M 1-1:50

and by appointment

**WebSite:** <http://cis.ucmo.edu/henson/4655/>

Passkey: AgileSE

**Textbooks:** Software Engineering: A Practitioner's Approach, 7<sup>th</sup> edition, Roger S. Pressman, 2010 McGraw-Hill, ISBN: 978-0-07-337597-7 (required)

Writing Effective Use Cases, Alistair Cockburn, 2001 Addison Wesley Inc., ISBN: 0-201-70225-8 (required)

Object-Oriented Software Engineering, Ivar Jacobson et. al, Addison Wesley Inc., ISBN: 0-201-54435-0 (optional)

Other Related Texts (not required):

Use Case Modeling, Kurt Bittner and Ian Spence, 2003 Pearson Education Inc., ISBN: 978-0-201-70913-1

The Capability Maturity Model: Guidelines for Improving the Software Process, Mark C. Paulk et. al, CMU SEI Institute, Addison-Wesley Longman Inc., ISBN: 0-201-54664-7

- Purchase:** (1) Paper, notebooks, etc for documents, handouts and presentation  
(2) Scantrons, as needed

## **EXPECTATIONS**

### **Course Requirements**

1. Prerequisite for this course is CIS 3660: Systems Analysis and Design
2. You are responsible for reading each chapter and preparing assignments. All assignments are due on the date specified by the instructor at the beginning of class.
3. All writing assignments must be typed unless otherwise specified by the instructor. The computer lab is available for word processing and students are encouraged to use the microcomputers.

**Attendance:** This class is important. You are expected to attend class and participate in class discussions. There tends to be a strong correlation between class attendance and final grade. Obtaining notes missed because of a class absence is your responsibility. It is a good idea to obtain a classmate's phone number for this purpose.

Being late for class is not fashionable. It disrupts the class activities. Each individual is expected to make whatever arrangements are necessary to arrive in class on time.

If you decide to discontinue attending, then drop the course. If the course is not dropped, a course grade will be assigned based upon the number of points obtained.

**Honesty:** University policy deals severely with students caught cheating, copying papers or programs, or participating in dishonest behavior. All ideas expressed in assignments should originate from you. If verbatim text from another source is incorporated into your work, it must be in the form of a quote and be properly referenced. Ideas originating outside of you must also be properly referenced. Failure to do so is an act of plagiarism, that is, claiming someone else's intellectual property as your own. All individual work is to be unique to you. All group work is to be unique to your group. Any work on your group assignments by someone outside your group is a violation of the policy. No reference material may be used during an examination unless provided by the instructor.

The instructor may use electronic tools to check for plagiarism. Such tools may be web-based and require that the student's submission be copied to a database maintained by a third party. The third party may store a copy of the paper for future comparisons.

If a student is suspected of dishonesty, the student will be notified. Any questions and explanations should be directed to the instructor. A meeting with the instructor may be scheduled. Responses to such an offense may include a zero on the assignment or test, a grade of "F" in the course, or recommendation for removal from the degree program. All instances of dishonesty will be reported to the Vice President for Student Affairs. For more information see the University Calendar/Handbook.

**Use of Computing Resources:** When using university computing and network resources students are required to comply with the acceptable use policy (AUP) as set forth by the University and MORENet. For more information see the University Calendar/Handbook.

**Code of Conduct:** This class will observe the HCBA Code of Conduct found at [www.ucmo.edu/x9595.xml](http://www.ucmo.edu/x9595.xml).

### **ACTIVITIES AND ASSESSMENTS**

#### **Tests and Homework:**

3 exams	51%
Term Paper	15%
Project	15%
Plagiarism Paper	4%
Pecha Kucha / Paper	10%
Peer Evaluation	5%
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Total	100%

#### **Grading:**

90%-100% =A
80%-89% = B
70%-79% = C
60%-69% = D
0%-59% = F

Exams will consist of essay and/or multiple choice items. In addition, short answer questions may also be included. Creating diagrams will be required. The nature of this course dictates that each exam is somewhat comprehensive; however, the focus of each exam will be upon material covered since the previous exam.

Students, working in groups, will complete a case/project. A term paper over an instructor-approved OOSE topic will be completed by each individual graduate student. Undergraduate students will complete the term paper in groups. Two short papers are also required and the second will be presented in class. A synopsis of this paper will be presented in class and distributed in written form. These topics will then be addressed on the last exam.

Homework is due at the very beginning of the period. Homework not turned in at the beginning of class will be considered late. Written assignments submitted within 48 hours after the beginning of class will receive an initial 25% reduction before being graded as other projects. Written homework not received by the late deadline will not be accepted. Late presentations will not be accepted.

Assignments may be made-up in the case of an extreme emergency (as deemed by the instructor) or a university excused absence. In either case, the instructor must be notified before class, an Exception Request Form must be completed, and support documentation must be provided. The final exam score will count for an exam missed due to an approved absence.

**On occasion** an end-of-the-semester curve is applied to all grades in the class; however, to be eligible for the curve the student must have completed all projects, taken all exams and quizzes, and not have an excessive number of absences.

There is no extra credit.

## Schedule of Topics (Subject to Change)

Date	Topics	Activities
Aug 20	Introduction to course, Plagiarism, OO concepts, Introduction to software engineering	P chp 1, App 2
Aug 27	Process models, Jacobson's OOSE	P chp 2 <b>Plagiarism Paper due</b>
Sep 3	Agile development, SE principles	P chp 3, 4, 31.4.7 <b>Paper topic due</b>
Sep 10	Requirements: Elicitation and Modeling, Use Cases	P chp 5 & 6, Cockburn
Sep 17	Use cases	Cockburn <b>Paper references due</b>
Sep 24	<b>Exam One</b> , Requirements modeling	P chp 7
Oct 1	Design concepts, Architectural design	P chp 8 & 9 <b>Paper outline due</b>
Oct 8	Components and user interface design	P chp 10 & 11 <b>Project Due</b>
Oct 15	Design patterns and desing for the web	P chp 12 & 13 <b>Pecha Kucha topic due</b>
Oct 22	<b>Exam Two</b> , Introduction to quality	P chp 14
Oct 29	Review techniques, quality assurance, testing	P chp 15 - 18
Nov 5	Testing, modeling and verification	P chp 19 - 21 <b>Paper due</b>
Nov 12	Configuration management, metrics, process improvement (CMMI)	P chp 22, 23, 30
Nov 19	Pecha Kucha Night	<b>Slides &amp; Paper due for all</b>
Nov 26	No class	
Dec 3	Pecha Kucha Night	
Dec 10	<b>Exam Three</b>	

\*\*\*\*\* Last day to drop a class with a W \*\*\*\* Oct 27 \*\*\*\*\*





Due date: \_\_\_\_\_

Name (print): \_\_\_\_\_

Course: \_\_\_\_\_

Section: \_\_\_\_\_

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### STATEMENT OF UNDERSTANDING

In signing this statement I am stating that I understand all points presented in the syllabus and that I have completed all the prerequisites for this course.

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

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### POSTING OF GRADES

A student's course grade falls under federal privacy laws. You may choose to have your grades posted. Grades in this course will be posted by a special number assigned to you. Your social security number will not be used. Please indicate your preference below.

I prefer my grades be posted \_\_\_\_\_

not be posted \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_