

**Course Syllabus**

**Course Number:** CS 444  
**Course Title:** Software Engineering

**Course Description**

Studies modern software engineering techniques that ensures development of well-designed, reliable, flexible, modular, and verified software and software systems. Topics include software development lifecycle, requirements, maintenance, UML, traditional, model-based, Agile development, and teamwork

**Prerequisite Courses**

**CS336 or CS338, and Senior Standing**

**Course Overview**

This course highlights key issues in Software Engineering theory and practice by focusing on a modern agile approach to Object-Oriented Analysis and Design and comparing this approach to the traditional Waterfall software engineering approach.

**Course Outcomes**

Upon completion of this course, students should be able to (in no particular order):

1. Explain the concept of software life cycle in terms of phases and their deliverables by comparing software engineering approaches such as the Waterfall and Unified Process.
2. Justify object-oriented design philosophy by explaining via examples encapsulation, interfaces, reuse, classifiers, objects, and inheritance, polymorphism, overloading, and overriding and design patterns.
3. Use object-oriented design philosophy to create a new, or improve an existing, medium-sized software design utilizing the Unified Modeling Language and Unified Process
4. Create a use-case-based software requirements specification that specifies the functional and non-functional requirements for a medium-sized software system.
5. Provide advanced judgment concerning software engineering as part of a basis for social and political decision making

**Course Materials**

***Required Text:***

All reading material is located in From the Experts sections of the course in WorldClass. Supplemental materials are linked within each of the eight assignments.

**Technology Tools:**

PC-compatible computer system running a version of the Windows operating system, or a Mac and administrator rights to install new software. <http://www.regis.edu/Academics/Learning-Management-System/System-Requirements.aspx>

**Pre-Assignment:**

**Online Format:** Log in to WorldClass (LMS) and become familiar with the course navigation.

**Course Assignments and Activities:**

Week	Topics	Readings	Activities Assignments and Associated Percentages
1	1: Software Development Life Cycle 2: Software Requirements	Online Textbook – Chapter 1 Chapter 2	Introductions Topic 1 – No assignment Topic 2 Assignment 1– 8.4% Discussions/Participation – 1.0%
2	3: Presentation Layer & GUIs	Online Textbook – Chapter 3	Topic 3 Assignment 2– 8.4% Discussions/Participation – 1.0%
3	4: Static Design Model	Online Textbook – Chapter 4	Topic 4 Assignment 3– 8.4% Discussions/Participation – 1.0%
4	5: Dynamic Design Model	Online Textbook – Chapter 5	Topic 5 Assignment 4– 8.4% Discussions/Participation – 1.0% <b>Midterm Exam</b> – 10%
5	6: Implementation & Deployment Model ( <i>Software Components</i> )	Online Textbook – Chapter 6	Topic 6 Assignment 5– 8.4% Discussions/Participation – 1.0%
6	7: Design Patterns 8: Software Project Management	Online Textbook – Chapter 7 Chapter 8	Topic 7 – No assignment Topic 8 Assignment 6– 8.4% Discussions/Participation – 1.0%
7	9: Software Validation ( <i>Quality Assurance</i> )	Online Textbook – Chapter 9	Topic 9 Assignment 7– 8.4% Discussions/Participation – 1.0%
8	10: Software Process Approaches ( <i>Agile &amp; Maturity Models</i> )	Online Textbook – Chapter 10	Topic 10 Assignment 8– 8.4% Discussions/Participation – 1.0% <b>Final Exam</b> – 15%

**\*Note to Classroom sections only:** Exact dates for topics and assignments may differ from the above grid. Your faculty's syllabus, handed out the first night of class, will indicate any changes.

### Summary of Assignments and Percentage Weight towards course grade

Assignments (see table above)	Value (percent of overall course grade)
Assignments 1-8	67 %
Midterm Exam	10 %
Final Exam	15 %
Discussions/Participation	8 %
<b>Course Total</b>	100 %

#### ***Late Assignment Policy for Assignments***

Late assignments will be graded and then 2% will be deducted for each day the assignment is late, **up to 5 days late**. Therefore, any assignment turned in more than **5 days** late will be given a grade of **zero**, and no feedback will be given.

#### ***Exams***

There will be a midterm and a final exam. Exam questions will be cumulative, taken from reading course content and assignments. **Exams will not be accepted late.**

#### ***Discussions/Participation***

Class participation/effort is important because we can all learn from each other. Your Discussions/Participation points can make a difference in the final grade. Participation means:

1. a. Present in class every session (classroom)  
b. Present in the forum every week (online)
2. a. Effectively responds to questions from the facilitator (classroom)  
b. Regularly checks forum and posts all required items by the deadlines (online)
3. Interacts/replies to other students in classroom/forum discussions.

#### **Course Policies and Procedures**

##### ***Adding this course during the Drop/Add Period***

If you add this course during the drop/add period, you are responsible for **immediately** notifying the instructor that you joined the course late. None of the course due dates will be extended for you. If a due date has already passed when you add the course, late points will be deducted.

##### ***Repeating the course***

If you are repeating this course (due to a previous withdraw or low grade), you are responsible for **immediately** notifying the instructor. If any of the course assignments have not changed since last time you took the course, you may be required to complete alternate assignments.

##### ***Plagiarism***

Plagiarism includes submitting code obtained from any other person, publication, or any internet web source. **All work submitted in CS444 must be your own.**

In cases of suspected cheating or plagiarism, the instructor will discuss the matter with the student(s) involved. The instructor reserves the right to question any student orally or in writing about any

assignment, and to use the evaluation of the student's understanding of the assignment and of the submitted solution as evidence of cheating. All cheating incidents will be reported to the Computer Science department, and may also be reported to the Academic Integrity Board for further action.

### CC&IS Grading Scale

Letter Grade	Percentage	Grade Point
A	93 to 100	4.00
A–	90 to less than 93	3.67
B+	87 to less than 90	3.33
B	83 to less than 87	3.00
B–	80 to less than 83	2.67
C+	77 to less than 80	2.33
C	73 to less than 77	2.00
C–	70 to less than 73	1.67
D+	67 to less than 70	1.33
D	63 to less than 67	1.00
D-	60 to less than 63	.67
F	Less than 60	0

Additional information about grading can be found in the latest edition of the University Catalog, available at <http://www.regis.edu/Academics/Course%20Catalog.aspx>.

### CC&IS Policies and Procedures

Each of the following CC&IS Policies & Procedures is incorporated here by reference. Students are expected to review this information each term, and agree to the policies and procedures as identified here and specified in the latest edition of the University Catalog, available at <http://www.regis.edu/Academics/Course%20Catalog.aspx> or at the link provided.

- The CC&IS Academic Integrity Policy.
- The Student Honor Code and Student Standards of Conduct.
- Incomplete Grade Policy, Pass / No Pass Grades, Grade Reports.
- The Information Privacy policy and FERPA. For more information regarding FERPA, visit the [U.S. Department of Education](http://www.ed.gov).
- The HIPAA policies for protected health information. The complete Regis University HIPAA Privacy & Security policy can be found here: <http://www.regis.edu/About-Regis-University/University-Offices-and-Services/Auxiliary-Business/HIPAA.aspx>.
- The Human Subjects Institutional Review Board (IRB) procedures. More information about the IRB and its processes can be found here: <http://regis.edu/Academics/Academic-Grants/Proposals/Regis-Information/IRB.aspx>.

The CC&IS Policies & Procedures Syllabus Addendum summarizes additional important policies including, Diversity, Equal Access, Disability Services, and Attendance & Participation that apply to every course offered by the College of Computer & Information Sciences at Regis University.

A copy of the CC&IS Policies & Procedures Syllabus Addendum can be found here: <https://in2.regis.edu/sites/ccis/policies/Repository/CCIS%20Syllabus%20Addendum.docx>.