



CSC223
Introduction to Software Engineering
Fall 2019



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For accessibility reasons, we kindly ask that you refrain from wearing any scented products in class or office hours for this course.

Smith College Catalog Description: *Introduction to software engineering theory and methodologies, with an emphasis on rapid prototyping and development. This course is a survey of topics: requirements elicitation and specification; prototyping and infrastructure; basic project management; architecture and design patterns; and verification and testing. Students will work in teams on a significant design and development project.*

Prerequisites: CSC212 and experience with object-orientation in Java.

We begin with the central question “How do we build the right software right?”, as in how can we ensure that what we build is defect free and satisfies the requirements or intentions of the customer. We will consider this question in the context of the *triple constraint* (i.e., good, fast, cheap). From there we will explore languages for elicitation and specification and how to connect these artifacts with design and runtime entities, with the ultimate goal of building and maintaining a system.

Learning Promises. By the end of this course, you will:

- Describe domains and elicit stakeholders’ intentions and requirements.
- Analyze tradeoffs in designs of a proposed system.
- Understand pros and cons to different development methodologies.
- Produce project deliverables on schedule.
- Understand the purpose of design patterns and testing techniques to verify software.
- Work effectively and negotiate deliverables as a team.

This course will also help you develop the Essential Capacities for Smith Students.

Course Format Your final grade in this course will be calculated as follows:

- Class participation & presentations, homework problems, and reading responses. 40%
- Tests. 15%
- Project Assignments. 45%

This course will use a workshop-based classroom model. Rather than having a lecture and a lab, students will engage with most lecture content prior to class, and in-class time will be used for analyzing problems and working in groups. In class, we will discuss assigned texts and/or audiovisual materials as well as work through problems together. You are expected to complete the class preparation prior to class and to actively participate in discussions. In order to receive full participation marks, students must participate verbally and through written responses throughout the term. The project consists of five assignments and is worth 45%. There will be three take home tests, worth 5% each. There is no final exam.

Weekly Topics

Below is a list of topics discussed each week in class. Course content and dates may change based on current events and the pace of student learning.

Week	Topics	Deliverable
0	Welcome	
1	Systems & Ethics	
2	Product Lifecycles	Assignment 1
3	Goals & Stakeholders	Assignment 2
4	Functions & Behavior	
5	Specifications	Test 1
6	Project Management	
7	Tools and Environments	Assignment 3
8	Project Management	Test 2
9	Software Design	
10	Architecture	
11	Change Impact	Assignment 4
12	Testing	Test 3
13	Maintenance	
14	Advanced / Presentations	Assignment 5

Some topics will be discussed in greater depth than others. You are not expected to become an expert in all course topics. We will clarify expectations prior to each test.

Course Policies

Communication Expectations. All written communication regarding this course will take place via slack (a cloud-based team collaboration tool used by many tech companies for internal communication). Our slack team is “<https://smith-csc223-f2019.slack.com>”. This includes:

- announcements (in the #general channel)
- questions about the material (in the #questions channel)
- messages between individual students and the instructor (via Direct Message to @Alicia)

I cannot commit to checking Slack after hours (i.e., evenings and weekends), so please ask questions publicly so that your peers can help you. Participants are expected to be good citizens on Slack.

Email is hard to search, response rate is slow, and messages are likely to get lost, please use Slack.

In order that all forms of self-identity can be honored, all participants are expected to be respectful of everyone’s name and pronouns both in written and verbal communication.

Course Materials. There is no required textbook for the course at this time.

Late Work Policies. Project management is a core objective of this course, which includes on time delivery of artifacts to your stakeholder (a.k.a. the course instructor). Scheduling conflicts exist in school and the real-world; thus, extensions on course work may be granted. Extensions must be arranged with the instructor at least two business days prior to the date of any course deadline. Timely feedback should not be expected for work submitted late.

Office Hours. I love office hours! Mainly I enjoy talking with students in small groups, so I encourage you to come early and often to office hours, which are important for you to discuss course materials, research opportunities, and future planning. I have three types of office hours:

Open Office Hours are a time when you can come to ask for assistance in understanding course material or assignments. They can also be an opportunity to chat with me about the course or how the course relates to current events, college more generally, or anything else you want to talk about. Do not feel like you need to have a “good” question or reason to come to office hours—you can just pop in to say hello if you want!

Closed Office Hours are 10 minute private appointments for students to discuss individual matters and for those students who cannot make my open office hours. My schedule is linked on the Moodle. These must be scheduled at least two business days in advance. If none of the available times fit your schedule, send me a private message (@Alicia) on Slack.

Technology Teas are for all Smith students to discuss computer science and technology more broadly, and you are encouraged to attend. Questions about this course will not be entertained during technology teas.

You are required to attend open/closed office hours at least once in the first three weeks.

Honor Code

In this course, you are expected to uphold the Smith College Honor Code Statement:

“Students and faculty at Smith are part of an academic community defined by its commitment to scholarship, which depends on scrupulous and attentive acknowledgement of all sources of information and honest and respectful use of college resources. Smith College expects all students to be honest and committed to the principles of academic and intellectual integrity in their preparation and submission of course work and examinations. All submitted work of any kind must be the original work of the student who must cite all the sources used in its preparation.” [<https://www.smith.edu/sao/handbook/socialconduct/honorcode.php>]

Resources and Support

College life is a time for discovering one’s self, and some students will require support on this journey. I encourage all students to seek the support they need.

Class Deans. Your class dean is here to help you and advice you. She is an excellent resource to help you make the most of your time at Smith.

Jane Stangl *Dean of the First-Year Class*; jstangl@smith.edu, 413-585-4910

<https://www.smith.edu/about-smith/class-deans/first-year-dean>

Tina Wildhagen *Dean of the Sophomore Class*; twildhag@smith.edu 413-585-4930

<https://www.smith.edu/about-smith/class-deans/sophomore-dean>

Andrea Rossi-Reder *Dean of the Junior Class, and Ada Comstock Scholars*; arossireder@smith.edu 413-585-4930

<https://www.smith.edu/about-smith/class-deans/junior-ada-dean>

Danielle Carr Ramdath *Dean of the Senior Class and Associate Dean of the College*; dramdath@smith.edu 413-585-4920

<https://www.smith.edu/about-smith/class-deans/senior-dean>

To meet with your dean in person, either attend their walk-in hours (listed on their respective websites) or call 413-585-4915 to book an appointment.

Student Affairs. There's more to your time here at Smith than what appears on your academic transcript. Student Affairs is here to support you find that balance and any of the Associate or Assistant Deans can help.

Julie Ohotnicky *Associate Dean of the College/Dean of Students*; johotnic@smith.edu

Becky Shaw *Associate Dean of Students/Director of Residence Life*; rshaw@smith.edu

Marge Litchford *Assistant Dean of Students*; mlitchfo@smith.edu

To meet with one of the deans in Student Affairs call 413-585-4940 or by email directly.

Faculty Advisors. Every student at Smith college is assigned a faculty advisor to help them select courses as well as to help them reach their personal and professional goals. Your faculty advisor can also support you and connect you with resources.

Resources and Self-Care. See https://www.smith.edu/sao/about_support.php for a list of offices and centers that will complement your learning experience and help you make the most of your journey here at Smith.

If you will be absent from class for a faith/nonfaith-based/cultural reason, please share this information with me prior to your absence. If you do not have access to materials, books, a computer, etc., please let me know as soon as possible. Smith College and the Department of Computer Science have additional resources for students who do not have access to laptops.

Accessibility. Smith College is dedicated to making sure the college, courses, and associated content are accessible to all students of all abilities. I work to ensure that all of my teaching materials and my class are accessible. To this end, all PDFs are accessible. This means that you can use a reader software to read out loud the text of the PDF. I provide all of my slides online in PDF format. If you encounter any material that is not easily accessible to you, please let me know right away so that I can find a solution. In addition, the Office of Disability Services at Smith College works with students, faculty, staff, and visitors to “proactively identify and remove barriers to participation wherever possible. We also strive to promote a disability positive and inclusive climate at Smith that recognizes each person’s multiple identities and values the diverse perspectives that contribute to a multicultural living and learning environment. Smith’s commitment to providing support and services is balanced with a humanistic and developmental approach that requires student engagement and responsibility in the accommodation process,” [<https://www.smith.edu/about-smith/disability-services>].

If you require an accommodation in this or any course, please call (413) 585-2071 to arrange an appointment with Laura Rauscher, Director of Disability Services. You are also encouraged to book an appointment with me (Prof. Grubb) to discuss your unique needs. 20% of students at Smith College have a disability and use the office. There is no stigma in seeking assistance to ensure you have access to events, facilities, course content, etc. Furthermore, Jeanette Landrie, Coordinator for Academic Access, is available to assist all students (independent of disability status) who require assistance with learning strategies. You can email Janette at [jlandrie@smith.edu](mailto:mlandrie@smith.edu) or attend drop-in hours: Thursdays 2–4pm (academic year).

Title IX. I am a responsible employee when it comes to reporting sexual violence. That means I am required to report certain incidents to the Title IX Coordinator. Smith College cares about the safety of students and has created this requirement because sexual violence in all its forms is unacceptable. Your privacy is of utmost importance and Smith will do everything possible to keep all reports private and only share with those who need to know. You will never be forced to share information and your level of involvement will be your choice.

Acknowledgement: Some of the materials used in this course and this syllabus are derived from previous offerings of this and other courses at Smith College, as well as similar courses taught at other institutions. Appropriate references will be included on all such material.