

Instructor:

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Office hours: via [ZoomMeeting](#):TR: 10:00 – 11:00; or by appointment

Class place and time:

Class Times: **01:** TR 8:30-9:45 AM; **02:** 2:10-3:25 PM

>>>> **All classes are conducted synchronously via Zoom with physical access to the classroom.**

ZoomRooms: you MUST login using CofC email : see [how-to](#)

01: [here](#); **02:** [here](#)

Classroom: Harbor Walk East 301 - please observe [Cougar Pledge](#) if you use it.

Class Websites: **01:** [here](#); **02:** [here](#) (navigate from <http://bowringj.people.cofc.edu/>)

Catalog descriptions:

CSCI 462 Software Engineering Practicum - This course provides hands-on experience in the practice of group-based software development. Student teams utilize development tools and techniques to implement software solutions to moderately complex problems. This project-based component provides a framework in which students gain both understanding and insight into the application of software engineering principles.

Prerequisites: Senior standing, COMM 104, C- or better in: CSCI 362 or (CSCI 315 and CSCI 332)

CITA 495 Capstone Practicum - A capstone course to provide a synthesizing experience for CITA majors across all concentrations. Students will read and analyze the latest research in the expanding field of computing in the arts, and will develop individual software projects integrating computing in the arts.

Prerequisites: Senior rank, CITA major, COMM 104, CSCI 380, CITA 395 with a grade of C- or better.

DATA 495 Data Science Capstone - A capstone course for the application of knowledge discovery and data mining tools and techniques to large data repositories or data streams. This project based course provides students with a framework in which students gain both understanding and insight into the application of knowledge discovery tools and principles on data within the student's cognate area.

Prerequisites: DATA 210, CSCI 470 and MATH 441

Detailed Course Description with Course Outcomes

Full document is attached to this syllabus, and includes these course outcomes:

Upon successful completion of the course, students will:

1. Gain in-depth experience from learning to participate in and successfully contribute to a FOSS/HFOSS project by designing and building bug fixes as prescribed by the project community.
2. Work in teams to design software and/or software patches for the FOSS/HFOSS project.
3. Apply modern unit-testing techniques.

4. Produce a professional-grade blog detailing their learning experiences.
5. Work with team to produce online documentation of the process and artifacts used and produced during the open source development effort.
7. Write and present orally reports of project progress.
8. Gain expertise in IRC, electronic mail lists, newsgroups, Git, building code from repositories, bug trackers, etc.
9. Describe the ethical issues associated with software development and re-use with a focus on intellectual property issues.

Required text:

[Client-Centered Software Development by Tucker, CRC Press 2019](#)

Electronic Resources

- 1) Software Engineering Body of Knowledge ([SWEBOK](#))
- 2) The College of Charleston [Libraries](#) supply free full access to a wide range of electronic resources, including the [ACM Digital library](#) and the [IEEE Computer Society Journals](#).
- 3) [Center for Student Learning](#)
- 4) Career Planning Guide provided by the [Career Center](#)
- 5) [Git, GitHub, Ubuntu, VirtualBox](#)

Professional Development

I highly recommend that you join one or more of: the Association for Computing Machinery ([ACM](#) = \$19 for a student), the Institute of Electrical and Electronics Engineers (IEEE) [Computer Society](#), [National Center for Women and Information Technology](#). All offer student memberships. We have a College of Charleston [student chapter of the ACM](#), student chapter of [Women in Computing](#) (WIC), a cybersecurity club, and a data science club, all of which you are encouraged to join and attend. In your professional career as a software engineer / architect, your employers will likely expect you to maintain at least one of these memberships. The department has several undergraduate [research labs](#).

Team Projects

Students will form into teams during the first week of class. I will assign a series of small team projects to help with team development. There will be a term team-project to contribute to an open source project and produce a series of deliverables including a wiki, poster, and an oral presentation recorded as a distributable video. The approach is agile and iterative, so all work is “live” and continuously improved. Teams will arrange to work outside of class. Students will present their posters at the annual School of Science and Mathematics Virtual Poster Session in April 2021 – details to be announced.

Attendance, class participation, online presence, and oral presentations:

Your active participation in class will lead to your success and your team's success. You are required to maintain a professional-grade personal blog and a team wiki where you record your progress and work artifacts, and that will be used to evaluate your work. I expect you in class on time and well-prepared by having read the assigned readings, performed the assigned tasks, and updated your personal blogs and team wikis. Each student will give oral presentations on demand during the semester and an oral presentation as part of their team's final report.

Blog, Wiki, and Assignment policy

You will maintain a professional-grade blog titled with your full name where you will post all individual assignments by the date specified. Your team will maintain a professional-quality wiki where you will post all team assignments by the date specified. Each assignment must be professional in appearance with pertinent identifying information.

Disabilities

If you have a documented disability and are approved to receive accommodations through [SNAP Services](#), please contact me during office hours or by appointment.

Student Conduct

I expect you to abide by <http://deanofstudents.cofc.edu/honor-system/studenthandbook/>, which includes sections on conduct and the Honor Code. If you have a question about how to interpret the Honor Code, ask before acting! I encourage collaboration on assignments and projects, but you must document the collaboration with the names of your collaborators on the assignment.

Evaluation Scheme:

40% : Personal Professional Blog

60% : Team project including wiki, contributions, and presentations

Grading scale: (Each absence after 3 is a penalty of 5 of these 100 points)

Exceptional:	A (90+) perform all work on time with good quality PLUS initiative
Adequate:	B (80-89) perform all work on time with good quality
Poor:	C (70-79) consistently miss deadlines and/or poor quality
Else:	F

Mental & Physical Wellbeing

At the college, we take every students' mental and physical wellbeing seriously. If you find yourself experiencing physical illnesses, please reach out to student health services (843.953.5520). If you find yourself experiencing any mental health challenges (for example, anxiety, depression, stressful life events, sleep deprivation, and/or loneliness/homesickness) please consider contacting the Counseling Center on the 3rd Robert Scott Small Building at <http://counseling.cofc.edu> or 843.953.5640, or contact the Students 4 Support certified volunteers on the 3rd Floor of the Stern Center in person or by texting "4support" to 839863.

Food & Housing Resources

Many CofC students report experiencing food and housing insecurity. If you are not able to afford groceries or to get sufficient food to eat every day or lack a safe and stable place to live, please contact the Dean of Students for support (<http://studentaffairs.cofc.edu/about/salt.php>). Also, you can go to <http://studentaffairs.cofc.edu/student-food-housing-insecurity/index.php> to learn about food and housing assistance that is available to you. You can visit the Cougar Pantry in the Stern Center (2nd floor), a student-run food pantry that provides dry-goods and hygiene products at no charge to any student in need. Please also consider reaching out to Professor Bowring if you are comfortable in doing so.

The official CSCI 462 Course Description for ABET accreditation follows.

Course Description

Computer Science Department, College of Charleston

Course Number: **CSCI 462**
Course Title: **Software Engineering Practicum**
Course Coordinator: **Bowring**

Catalog Description

This course provides hands-on experience in the practice of group-based software development. Student teams utilize development tools and techniques to implement software solutions to moderately complex problems. This project-based component provides a framework in which students gain both understanding and insight into the application of software engineering principles.

Prerequisites: CSCI 230 and either CSCI 360 or CSCI 362

Prerequisites by Topic

- OO Programming: Java or C#
- Software Analysis, Design, and Engineering
- Writing skills for design documentation
- Oral communication skills
- Teamwork experience and skills in software projects

Major Topics Covered in the Course (Required Topics)

- 1) Documentation: continuous and agile
- 2) Ethical issues including IP issues
- 3) Teamwork
- 4) Open source FOSS and HFOSS
- 5) Blogs and Wikis as community and communication tools
- 6) POSSCON (Palmetto Open-Source Conference)
- 7) IRC, electronic mail lists, newsgroups as collaboration tools
- 8) Subversion
- 9) Building code from repositories: dependencies and make files
- 10) Bug trackers and debugging the code
- 11) Testing and unit-testing
- 12) Fixing the code per the standards of the OS community
- 13) Release early and often

Course Narrative

The principal objective of this course is to prepare students for careers as software engineers and/or software architects by providing practical experience as team-based contributors to existing open source development projects. Other objectives include the exploration and understanding of intellectual property issues, an understanding of the dynamics of team-based development, and the development of an awareness of the ethical and cultural issues inherent in software development.

Term Team Projects

Students will work on a term team project to contribute in a concrete way to an existing open-source project of their choice. The approach is agile and iterative, so all work is “live” and continuously improved.

Course Outcomes

Upon successful completion of the course, students will:

Course Outcomes	Program Outcome Linkage			
	BS CSCI	BA CSCI	BS INFS	BS DISC
1. Gain in-depth experience from learning to participate in and successfully contribute to a FOSS/HFOSS project by designing and building bug fixes as prescribed by the project community.	a, b, c, d, e, f, i, j, k			
2. Work in teams to design software and/or software patches for the FOSS/HFOSS project.	a, b, c, d, f, i, j, k			
3. Apply modern unit-testing techniques.	b, i, j, k			
4. Produce a professional-grade blog detailing their learning experiences.	f, h, i			
5. Work with team to produce online documentation of the process and artifacts used and produced during the open source development effort.	d, f, g, h, i			
6. Attend POSSCON with the requirements of meeting targeted presenters and of blogging about the experience.	e, f, g, h, i			
7. Write and present orally reports of project progress.	d, f			
8. Gain expertise in IRC, electronic mail lists, newsgroups, Subversion, building code from repositories, bug trackers, etc.	d, i			
9. Describe the ethical issues associated with software development and re-use with a focus on intellectual property issues.	e			

Oral and Written Communications

Every student is required to maintain a professional-grade blog and to submit one blog entry per class of typically 500 words and to make two oral presentations of five minute’s duration. Material is graded for grammar, spelling, style, technical content, completeness, and accuracy.

Notes

N/A