Project Management: a multi-perspective approach

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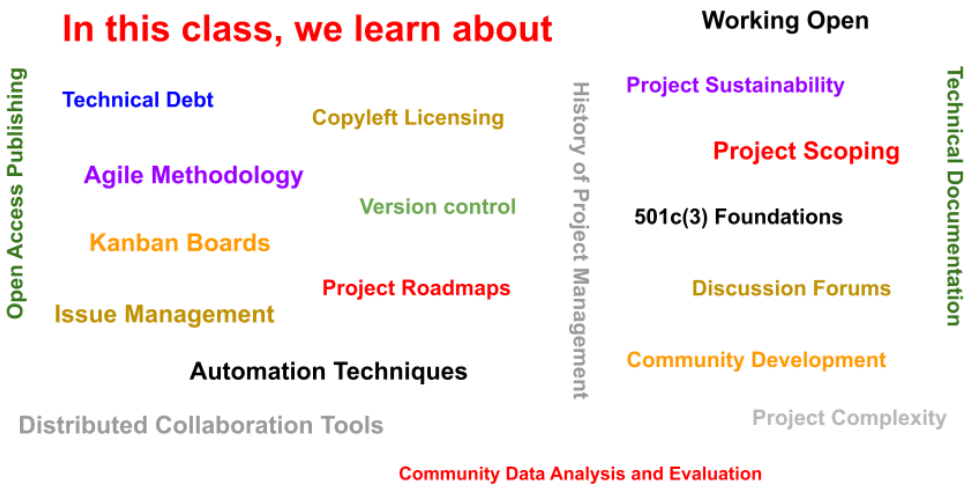

IS 340, Fall 2024
Location: 53 Grad School, Library and Information Sciences
Mondays and Wednesdays, 2pm – 3:20pm
Office Hours: by appointment
https://meet.jit.si/project-mgmt

Course Objectives

In this course, students will learn how to manage projects using open-source principles and tools, concepts in technological-oriented project management, and how to manage distributed collaborations. These skills include but are not limited to working with collaborative/organizational tools, managing workflows and project resources, project scoping, and financial/legal aspects of project management. Open-source techniques provide small projects with bureaucratic flexibility and access to collaborators from around the world. Managing the open-source way, particularly using open-source communities, is growing in popularity among large corporations and startups alike.

Learning will be assessed through two quizzes, three reflection assignments, and a final project to foster understanding. The lessons learned here are transferable to a wide range of project types. Students will also apply the skills learned in the course to a paper describing a hypothetical but personally relevant open-source project. This paper will realize many of the techniques and ideas covered in this curriculum.

Prerequisites
Students should have taken **IS 205 - Programming for Information Problems** (or equivalent) or have **basic knowledge of a coding language** such as Python, C++, Java, or object-oriented modeling prior to taking this course. While not an absolute requirement, this prerequisite should make your course experience easier.

Schedule

Week 1 (August 26-28): Introduction to open-source and open access.

* why open and how is this beneficial?

* ethos of working open.

* the different types of open: open-source, open data, open research, open *x*,*y*,*x*.

Reflection #1: project vision and open canvas (due September 4).

Week 2-3 (September 4, September 9-11): Introduction to Github and Version-control

* managing documentation, code, and other versioned materials.

* working collaboratively and asynchronously.

* managing open data and metadata.

Quiz #1: Introduction to Github and Version Control. Available on September 11 after the class period, due in one week (September 18): https://github.com/OREL-group/ Project-Management/tree/main/Quiz%201

Week 4-5 (September 16-18, September 23-25): Community Resource Management.

* why work as a community? The power of community collaboration.

* collaboration tools and community relations.

* community standards and coherent organizations.

* project management with documentation.

Reflection #2: technical debt (due October 2).

Week 6-7 (September 30-October 2, October 7-9): Public Events, Discussions.

* Sprints and the -athon style of project management: Hack-, Doc-, Idea-, Etc-.

* contributor and stakeholder management.

* community interactions as a base of operations.

Reflection #3: workflow process mapping (due October 16).

Week 8 (October 14-16): Hypothetical Open Project Design
Midterm Check-in: report on paper progress.

* how to describe your project of interest.

* discuss: what are the most interesting things to focus on?

Week 9-10 (October 21-23, October 28-30): Project Scope and Types of Contribution

* scoping and rescoping, using Kanban boards and issue management, prioritizing goals and degrees of contribution.

* project complexity.

Quiz #2: Issue Management. Available on October 30 after the class period, due in two weeks (November 13): https://github.com/OREL-group/Project-Management/tree/ main/Quiz%202

Weeks 11-13 (November 4-6, November 11-13, November 18): Project Sustainability and Lifecycle

* open-source sustainability (keeping projects alive).

* how to create leaders and maintainers, encouraging self-perpetuating activity.

* project automation and related topics.

Reflection #4: automation (due December 4).

Fall Break (November 25-27)

Week 14-15 (November 20-December 2): Financial and Budgeting

* types of legal organization.

* grants and fundraising.

Week 15-16 (December 9 and December 18): Final Paper Presentations

* discuss your projects and management details.

FINAL PAPERS DUE DECEMBER 20

submit to Github and to the instructor's e-mail in .pdf format.

Assignments and Grading

Assignment	Percent of Grade
Homework #1	15
Homework #2	20
Reflection #1 (project vision statement)	5
Reflection #2 (technical debt)	5
Reflection #3 (workflow process mapping)	5
Reflection #4 (automation)	5
Presentation	10
Github Submission of Final Paper	10
Final Paper	25

Your grade will consist of two homework assignments, four reflection assignments, and a presentation/term paper. The homework assignments will gauge your understanding of the technical skills as imparted in the course. The reflection assignments will be short written assignments that reveal your understanding of selected topics. You will also write and present a paper on a project that is important to you. The presentation will be an outline of the final paper, while the term paper will require you to synthesize the course materials by applying at least three principles from the course, thus extending your knowledge to a problem domain of your choice.

Homework Assignments

Each quiz will focus on some of the principles and tool types taught in the course. The purpose of these quizzes is to enforce understanding of the concepts presented in class, and to ensure that they are correctly applied in the term paper.

Reflections

Each reflection will require a short, written answer 1-4 paragraphs in length. Selected topics include project vision statements, technical debt, workflow process mapping, and automation. Please synthesize your thoughts on these lecture topics and submit them via Canvas when available.

Term paper

Develop a 10-page paper on a hypothetical open-source project that you would like to manage. It could be something that interests you, or something that you have always wanted to bring to fruition. The goal of this paper is to describe your project and the ways in which you would manage this project using open source and working open principles.

The papers from Fall 2023 semester are located here:
https://github.com/OREL-group/Project-Management-FA23/tree/main/Final%20Papers

Presenting your term paper

A 10–15 minute presentation on your term paper is also required. This presentation should summarize your project and provide evidence of how the principles discussed

in class apply to the project. This will not be graded, but you must complete this to get full credit for your paper. Presentation times and dates are to be determined.

Media and Reading Materials (NOT REQUIRED, but useful). A more detailed set of topical references will accompany the lecture materials.

Working Open textbook. Mozilla Foundation.
http://mozillascience.github.io/open-science-leadership-workshop/01.2-working_open.html

Ben Cotton, Program Management for Open Source Projects: How to Guide Your Community-Driven, Open Source Project.
https://www.amazon.com/Program-Management-Open-Source-Projects/dp/1680509241

Adrienne Watt, Project Management. Available as eBook:
https://opentextbc.ca/projectmanagement/

Jhangiani, R.S. and Biswas-Diener, R. (2017). Open: the philosophy and practices that are revolutionizing education and science. Ubiquity Press, London.
https://library.oapen.org/handle/20.500.12657/31551

Fogel, K. Producing Open Source Software: how to run a successful free software project. https://producingoss.com/

Weber, S. (2004). The success of open source. Harvard University Press, Cambridge, MA.
https://www.hup.harvard.edu/books/9780674018587

Project Management Institute. (2017). Agile Practice Guide. PMI.
https://www.agilealliance.org/wp-content/uploads/2021/02/AgilePracticeGuide.pdf

Project Management Body of Knowledge (PMBOK)
https://www.projectmanagement.com/contentPages/wiki.cfm?ID=234759&thisPageURL=/wikis/234759/Project-Management-Body-of-Knowledge--PMBOK--#_=_

Stellman, A. and Greene, J. Learning Agile: Understanding Scrum, XP, Lean, and Kanban 1st Edition. O'Reilly Media. https://www.amazon.com/Learning-Agile-Understanding-Scrum-Kanban/dp/1449331920

The Community Engagement Playbook. Commsor.
https://www.commsor.com/engagement-playbook

How to MozFest: how to arrive at a Hackathon with an idea. Mozilla Foundation.
https://book.mozillafestival.org/

Git Guides (FAQ on Github-flavored Git)

https://github.com/git-guides/

GitHub Docs (especially the collaborative coding section)
https://docs.github.com/en

Oh My Git! An Interactive way to learn version-control
https://ohmygit.org/

Open Data and Open Science features (Synthetic Daisies posts)
https://orthogonal-research.weebly.com/open-science-and-data.html

Loeliger, J. and McCullough, M.
Version Control with Git: Powerful tools and techniques for collaborative software development.

Dupire, F.
Git Essentials: Developer's Guide to Git. Stack Abuse.
https://stackabuse.com/courses/git-essentials-developers-guide-to-git/

Oggl, B. and Kofler, M.
Git: Project Management for Developers and DevOps. Rheinwerk Computing.

Course Policies

Academic Integrity

Please review and reflect on the academic integrity policy of the University of Illinois, http://admin.illinois.edu/policy/code/article1_part4_1-401.html to which we subscribe.

By turning in materials for review, you certify that all work presented is your own and has been done by you independently, or as a member of a designated group for group assignments.

When describing assignments in the syllabus or in other documents that provide the detailed requirements for one of your assignments, I have tried to be quite specific about the degree to which collaboration is encouraged and the degree to which you are expected to submit an original work of which you are the author. If you have any questions regarding the policy regarding a particular assignment, please contact me directly for advice.

Please be aware that the consequences of academic dishonesty will be severe. Students who violate university standards of academic integrity are subject to disciplinary action, including a reduced grade, failure in the course, and suspension or dismissal from the University.

Statement of Inclusion

http://www.inclusiveillinois.illinois.edu/mission.html As the state's premier public university, the University of Illinois at Urbana-Champaign's core mission is to serve

the interests of the diverse people of the state of Illinois and beyond. The institution thus values inclusion and a pluralistic learning and research environment, one which we respect the varied perspectives and lived experiences of a diverse community and global workforce. We support diversity of worldviews, histories, and cultural knowledge across a range of social groups including race, ethnicity, gender identity, sexual orientation, abilities, economic class, religion, and their intersections.

Accessibly Statement

To obtain accessibility-related academic adjustments and/or auxiliary aids, students with disabilities must contact the course instructor and the Disability Resources and Educational Services (DRES) as soon as possible. To contact DRES you may visit 1207 S. Oak St., Champaign, call 333-4603 (V/TTY), or e-mail a message to disability@uiuc.edu.