

COMP 401 — Project Proposal

Fall 2026

COMP401 culminates with the formal proposal of your senior capstone project. The proposal is given in two forms:

1. Written Project Proposal
2. Proposal Presentation

The presentation is effectively a summary of the written proposal given in a public forum.

Written Proposal

The written proposal should contain the sections listed below. Each section has an estimated page length next to it. Page length estimates assume *single spaced, 11 pt. font*. Please note that these are estimates and the most important thing is that each section is detailed enough for project at hand.

Section	Length (pages)
Abstract	1–2
Background/Introduction	3–5
Project Description	5–10
Foundations	8–10
Goals, Requirements, Features, and Risks	5–8
Conclusion	1–2
Bibliography & Works Cited	2–4

Abstract

The abstract should be roughly one to two pages and should give a high level summary of the document. One should be able to read the abstract and determine what the project is and why it's interesting and important. The goal is to get the reader interested in the work and believing that the proposer has a firm, actionable plan for carrying it out next semester.

Background & Introduction

This section introduces the project along with the problems and ideas that led to its conception. The emphasis here is on the end product. To whom is this project interesting and important and why? The goal is to establish the wider socio-technical context in which that end product exists, namely:

- The problem or problems (social, technical, or otherwise) addressed by the project.
- How, specifically, the project addresses or solves the problem.
- What work is related or comparable to the project and what niche is filled by the project. Meaning, if similar work is out there, then how is this project different? If this project is totally unique, then to what is it's uniqueness attributed?

Project Description and Analysis

This section lays down the technical details for the project. Where the background section spells out the what and the why of the project, this section begins the process of explaining, at least in the abstract, the how of the project. What exactly needs to go in here will vary from project to project. Likely candidates include:

- A clear, and explicit discussion of the features of the project
- Concrete use cases for the project.
- A high to mid-level system design and architecture
- An outline of a paper
- Experimental plans

When all is said and done, the reader should have a very concrete idea of what the project entails after reading this section and feel confident that this project, if completed, would address the issues discussed in the previous section.

Foundations

This section continues establishing the *how* of your project by connecting the high level description of the previous section to foundational research and ideas in computing. Students should:

- Identify seminal research related to their work
- Discuss the specific instantiation of that research in the confines of their project
- Assess the difficulty of a project component with respect to the status of existing research

Where the project description connects the real-world problems and issues to concrete components of the project, this section establishes the feasibility of those components by exploring their status as solved or open problems.

Implementation Priorities and Project Goals

It is in this section students lay down their goals and priorities and provide some insight into their intended course of action in COMP401. This should include:

- High-Level project goals and prioritization principles
- Project Requirements (functional, non-function, user, domain, etc.)
- Project Features and User Stories with dependency analysis
- Potential Minimum Viable Products and Versioning
- A Kanban board with initial backlog
- Project Risk Analysis

These details let the reader know that you've done some key initial work that needs to take place before development begins and as such can move through the development process with clarity and purpose. This means you have a fairly detailed picture of where you might end up and the goals you'll use to steer you as you go. Furthermore, you've done some due diligence on the little details of what needs doing and can start to work through those details as determined by your priorities and goals.

Conclusion

The final section of the proposal should be both a summary of the proposal and a place to reflect on the work ahead. The reader needs to be assured that this project is worth doing and that the proposer is capable of doing it.

Bibliography & Works Cited

All proposals should contain some amount of inline citations as they'll need to refer to previous research and existing tool such as libraries and languages. All of these cited documents and works should appear in the bibliography. In addition to these sources, students should clearly list key resources, documentation, and foundation research they expect to utilize when carrying out their work in COMP402.

Presentation

Students will give a *20 to 30 minute* presentation of their proposed work. It is essentially the oral form of the written proposal. The presentation outline should mirror the paper's outline. The following are rough estimates of the number of minutes one might expect to spend per section.

Section	Length (min)
Background/Introduction	2-5
Project Description	5-7
Foundations	7-10
Goals, Requirements, and Key Features	3-5
Conclusion	2-3

There will be time for questions after the presentation, and students should be prepared to explain and re-explain the plans and details of the project.