Updates to the syllabus due to the switch to a remote mode of instruction are in red.

Course Instructors

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Prof. Janyl JUMADINOVA
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Instructors’ Office Hours

Please visit the web sites of the course instructors to view their office hours. Using the “appointment slots” feature of Google Calendar, you can select an available meeting time. After picking your time slot, the reserved meeting will appear in both your Google Calendar and the instructor’s.


Course Communication

Throughout the semester, students and faculty will use Slack to support course communication. Whenever possible, students are also encouraged to post appropriate questions to a channel in Slack, which is available at https://cs-seniorthesis2019.slack.com. Moreover, all students are required to use GitHub repositories to submit all of the deliverables for this course’s various projects. Finally, all students should follow a course Google calendar called CS Thesis 2019-2020.

Required Textbooks


(References to the textbook are abbreviated as “OBAS”)


(References to the textbook are abbreviated as “BIW”)

(References to the textbook are abbreviated as “WFCS”).

Course Schedule

Organized according to the calendar month during which an activity takes place or a project is due, the following table outlines this course’s schedule for the entire academic semester. Some of these dates are approximate and, if the need to do so presents itself, it is possible for the course instructors to modify the proposed schedule and notify the class of any changes via email or Slack. Unless it is otherwise noted that there is no class session, it is assumed that, even if there is a course project due or a research task to complete, you will still attend a research group meeting during the scheduled session for this course. During senior thesis defenses no group meetings will be held. You are responsible for scheduling office hour meetings to meet with your first and second readers individually as needed during those weeks.

Please note that, unless evidence of extenuating circumstances is presented in writing to all of the instructors, a student’s grade in the course will be reduced if the stated deadlines are not met. Students who have questions or concerns about these deadlines should talk with their first reader.

| January 21  | Ensure your correct registration for CMPSC 610 with First Reader |
| January 28  | Establish and release a GitHub repository for the project implementation |
| February 11 | Peer Review the third Thesis Chapter Outline |
| February 25 | Peer Review the third Thesis Chapter Draft |
| March 3     | Submit three-paragraph status update on your progress |
| March 3     | Peer Review the fourth Thesis Chapter Outline |
| March 10    | Peer Review Complete Thesis Draft |
| March 17    | Spring Break — No Class |
| April 9     | Submit Senior Thesis Document by midnight |
| April 14    | Submit a five-minute presentation video and slides, submit final working code in the project implementation repository |
| April 20 – April 24 | Asynchronous Q&A |
| April 27 – May 1 | Follow up synchronous Q&A via Google Meet |
| May 5       | Submit final changes to the thesis repositories on GitHub by midnight |

January through April | Meet with the first reader and your research group weekly |
January through April | Communicate with instructors and students in Slack |
January through April | Use GitHub to commit to your research repositories regularly |

Students completing a double thesis need to arrange the structure of their thesis defense in coordination with their readers from both departments. Other students (non double majors) will be asked to prepare a short video presentation outlining their completed thesis work and answer questions of their thesis committee asynchronously via GitHub issue tracker. If a more in-depth discussion of the thesis is required by the committee, a follow-up synchronous defense will be scheduled via Google Meet during the week of April 27 – May 1. Students who fail to follow the specified thesis defense process will automatically receive a grade of “F” in CMPSC 610 and will have to repeat the course. Additionally, students who fail to submit their thesis document will not be allowed to proceed with their thesis defense process.
Overview of the Grading Policies

Final grades are determined after the entire faculty of the Department of Computer Science — not just your course instructor for CMPSC 610 — review and discuss all of the submitted deliverables. Your grade in CMPSC 610 will be based on a combination of the following activities and deliverables. Percentages are not given because we recognize that the senior thesis experience differs from one student to the next and that there are many variables, such as the nature of the project and the availability of external resources, that can influence the relative importance of these criteria. However, it is important to note that a large percentage of your grade depends upon your written thesis document, technical work completed as a part of your senior project, and the oral defense of your thesis.

- **Class Participation:** As previously mentioned in the “Course Schedule” section, all students are required to attend all of the Tuesday class sessions and to fully participate in their research group meetings. Additionally, this also requires regular contributions, in the form of peer reviews, questions and comments to the course’s Slack team. If it is required that additional meetings are necessary with the first and/or second reader, then an appointment should be made during that reader’s office hours. During the remote instruction, no synchronous research group meetings will be held. However, students are responsible for updating their first readers on their progress and to schedule Google Meet office hour appointments with their first and second readers as appropriate.

- **Course Repositories:** This involves students creating, at minimum, a GitHub version control repository for each of the assigned course projects and a properly created, documented and released GitHub repository containing project implementation materials. The project implementation repository can be created under course organization or under student’s individual GitHub account, in which case it must be shared with both first and second readers. Students should use their project4 repository from the fall semester to commit and release their thesis document. Students should regularly use the Travis system and GitHub’s tagging mechanism to release PDFs of your thesis document with versions that adhere to the semantic versioning standard. Course instructors will only grade and provide feedback on projects that are stored and released through GitHub.

- **Status Update:** This document should describe the progress that a student has made on completing the research (e.g., program implementation and testing, experimentation, and statistical analysis) for their senior thesis and documenting your results in the senior thesis chapters. Written with feedback from your first and second readers, your status update should be stored and released through the appropriate GitHub repository, which is to be created via GitHub Classroom assignment link.

- **Thesis Draft and Peer Reviews:** At various times during the semester each student will be required to submit outlines and drafts of their thesis document via the appropriate GitHub repository. Additionally, each student will be tasked with reviewing a thesis draft of at least one of their research peers. The peer review summary is to be submitted through GitHub in the reviewer’s own (project3) repository and released as an issue in the reviewee’s thesis repository, written using a proper Markdown syntax, following the template provided to students via GitHub.

- **Written Thesis:** In consultation with your first reader and in accordance with the stated deadlines, you must work out a schedule for completion of your thesis research and your written document. All senior theses are due, in a proper digital format, on the stated due date. Working closely with your first reader, you must produce a thesis that both follows the
department’s style and adheres to professional standards of writing. Your grade in CMPSC 610 will be reduced if you fail to submit your unbound thesis on time. Following your defense, you must submit the final version of your senior thesis via GitHub by the aforementioned due date. This document must incorporate any changes that were requested by your first and second reader. Seniors who have not submitted the final copies of their senior thesis by the stated deadline will receive an incomplete and will not graduate.

- **Thesis Defense**: Students are required to submit a five-minute video of their thesis presentation by midnight, April 14th, 2020. If a video submission is not possible, students must inform the course coordinator, Janyl Jumadinova, before April 9, 2020, to make alternate arrangements. Additionally, students are required to submit polished slides in support of the video presentation and adhere to all of the other stated requirements for this deliverable. The video presentation and slides should address the following:
  - A brief overview of the thesis and its motivation.
  - Work that has been completed.
  - Summary of the evaluation and outcomes.

Part of your grade for this defense will depend on how well you are able to discuss aspects of your thesis, including implications of your work, connections between your research and other areas of computer science, and possible extensions or improvements of your research ideas. You are expected to work with your first reader in preparing your oral defense video presentation. A follow-up thesis defense via Google Meet maybe scheduled if the committee determines there is a need for a more in-depth discussion of the thesis work.

**Details About Course Expectations and Deliverables**

**Class Participation**

You must regularly attend a research group meeting on Tuesday lead by your first reader, who will report on your participation when the department’s faculty meet to assign final grades for this course. In addition to participating in the class session activity, students are expected to come to each class meeting with a status update on their progress and a meeting agenda. Students should conclude each meeting by listing the tasks that they want to complete before the next meeting. Students should also regularly participate in the discussions on the relevant channels in the Slack team for our course. Your participation on Slack may involve giving a quick status update to your first reader, inviting your first reader to examine a draft of your thesis document or compile and run a new version of a program, or, within the bounds of the Honor Code, answering a question from another senior conducting their thesis research.

During the remote instruction, no synchronous research group meetings will be held. However, students are responsible for updating their first readers on their progress and to schedule Google Meet office hour appointments with their first and second readers as appropriate.

**GitHub Repositories**

Every student must accept each of the course projects given as an assignment via GitHub Classroom, thus creating a GitHub repository customized for the student and that specific project. All of these GitHub repositories should have a README file that clearly explains the steps that a student took to complete and release the final version of the assignment. In addition to containing the \LaTeX source code that fulfills the assignment, each GitHub repository should feature releases of
the compiled PDF files that are tagged with numbers that adhere to the semantic versioning standard described at http://semver.org/. The release of a compiled PDF file can be accomplished automatically by using both the tagging and releases feature provided by GitHub and, additionally, the continuous integration system provided by Travis. Your first and second readers will download, read, and comment on a released PDF at semantic version 1.0.0 or higher. Students who are not able to automatically release PDFs of their projects may instead manually create them by using the GitHub interface. Please see an instructor if you have questions about using GitHub. Failure to either regularly commit to your GitHub repositories or to make releases of your PDFs will lead to a decrease in your final grade for CMPSC 610.

Every student must also release and share their implementation repositories with their first and second readers. This repository must contain well-documented source code, a README file with the necessary details of how one can run the provided source code, and an appropriate LICENSE file. A student will not be allowed to defend their thesis at the pre-scheduled time if the readers do not have access to the thesis’s implementation repository.

**Thesis Document**

The thesis document should follow the Department’s thesis style and requirements that were released as project 4 in Fall 2019. Additionally, thesis chapters peer review checklist provides a list of items that the department requires in each chapter. Although your first reader will be your primary contact person as you write and revise your thesis document, you may involve your second reader as appropriate. That is, your first reader will make suggestions on your submitted documents under the expectation that you will revise multiple thesis drafts. You must work at a pace that will ensure that you complete an approved senior thesis before the stated deadline. Failure to complete a final thesis document by the due date will result in the reduction of your final grade in CMPSC 610 and may result in the cancellation of your scheduled defense.

**Thesis Defense**

A thesis defense will include a submission of a prepared, formal video presentation of about five minutes in which you lay out the essential parts of your completed project under the assumption that your first and second reader have already studied your thesis document. Following the presentation, you will participate in an asynchronous Q&A with your readers to identify project’s accomplished goals and to ensure that your project meets most of the requirements. Faculty will submit questions via students project 4 GitHub repositories issue tracker and students will be given 48 hours to answer them. The same time frame is given for the follow up questions. After the week-long process of question and answer discussion via GitHub, the readers will deliberate and inform the student of either a passing thesis or a need for more in-depth discussion of the proposed thesis. If the committee finds the need for more time to determine whether the project meets the minimum requirements for a passing grade, a follow-up synchronous remote defense via Google Meet will be scheduled. During the follow-up defense, a further discussion of the thesis work will be held and potential refinement or an extension of the thesis may be requested.

**Using Email**

Although we will primarily use Slack for class communication, we will sometimes use email to send announcements about important class matters. It is your responsibility to check your email at least once a day and to ensure that you can reliably send and receive emails. This class policy is based on the statement about the use of email that appears in *The Compass*, the student handbook.
Honor Code

The Academic Honor Program that governs the academic program at Allegheny College is described in the Allegheny Academic Bulletin. The Honor Program applies to all work that is submitted for academic credit or to meet non-credit requirements for graduation at Allegheny College. This includes all work assigned for these classes (e.g., source code, technical diagrams, and your written content); deliverables that are nearly identical the work of others will be taken as evidence of violating the Honor Code. All students who have enrolled in the College will work under the Honor Program. Each student who has matriculated at the College has acknowledged the following pledge:

I hereby recognize and pledge to fulfill my responsibilities, as defined in the Honor Code, and to maintain the integrity of both myself and the College community as a whole.

Disability Services

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. Students with disabilities who believe they may need accommodations in this class are encouraged to contact Disability Services at 332–2898. Disability Services is part of the Learning Commons and is located in Pelletier Library. Please do this as soon as possible to ensure that approved accommodations are implemented in a timely fashion.

Welcome to an Adventure in Computer Science

CMPSC 610 affords you the opportunity to pursue independent research in computer science and to ensure that your work has a positive influence on your future plans, the students and faculty at Allegheny College, and a broader society that relies on computer hardware and software. As you complete your senior year, we invite you to pursue this class with great enthusiasm and vigor.