

**CMPSC 600 and 610
Senior Thesis I and II
Fall 2016**

Syllabus

Course Instructors

Oliver Bonham-Carter
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John E. Wenskovitch
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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.

- Oliver Bonham-Carter: <http://www.cs.allegheny.edu/sites/obonhamcarter/>
- Janyl Jumadinova: <http://www.cs.allegheny.edu/sites/jjumadinova/>
- Gregory M. Kapfhammer: <http://www.cs.allegheny.edu/sites/gkapfham/>
- John E. Wenskovitch: <http://www.cs.allegheny.edu/sites/jwenskovitch/>

Course Communication

Throughout the semester, students and faculty will use Slack to support course communication. All students will be required to integrate notifications from the version control repositories with a specified Slack channel, thereby allowing all students and the course instructors to observe everyone’s progress on their thesis research. Whenever possible, students are also encouraged to post appropriate questions to a channel in Slack, which is available at <https://CMPSC600Fall2016.slack.com>.

Course Schedule

August 30	Submit request for first and second reader
September 6	Register for CMPSC 600 with first reader
November 7 – November 11	Register for CMPSC 610 with first reader
October 17 – December 2	Oral defense of thesis proposal
December 13	Submit two chapters to the course instructor by 5 pm
Before September 6	Schedule weekly meeting time with your first reader
Before September 13	Create version control repositories for your research
Before September 20	Integrate version control repositories with Slack
Before November 1	Secure formal approval of proposal from first reader
Before November 8	Schedule proposal defense with Pauline Lanzine
Before November 22	Get technical report number from Pauline Lanzine
Entire academic semester	Tuesday class session, 1:30 pm–2:20 pm
September through December	Meet with first reader on a regular basis
September through December	Communicate with instructors and students in Slack

The schedule for CMPSC 600 may change as the course instructors deem appropriate. Please note that, unless evidence of extenuating circumstances is presented in writing to all of the course 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.

Required Textbooks

On Being a Scientist: A Guide to Responsible Conduct in Research (Third Edition). Committee on Science, Engineering, and Public Policy, National Academy of Sciences, National Academy of Engineering, and Institute of Medicine. ISBN: 0309119715, 82 pages, 2009.

(References to the textbook are abbreviated as "OBAS").

BUGS in Writing: A Guide to Debugging Your Prose (Second Edition). Lyn Dupré. Addison-Wesley Professional. ISBN-10: 020137921X and ISBN-13: 978-0201379211, 704 pages, 1998.

(References to the textbook are abbreviated as "BIW").

Writing for Computer Science (Second Edition). Justin Zobel. Springer ISBN-10: 1852338024 and ISBN-13: 978-1852338022, 270 pages, 2004.

(References to the textbook are abbreviated as "WFCS").

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 600 — review and discuss all of the submitted deliverables.

Your grade in CMPSC 600 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 proposal, the oral defense of your thesis proposal, and your two thesis chapters.

- **Class Participation:** This includes meeting regularly with your first reader. Although the exact details about frequency and length of each meeting must be established with your first reader, you should adhere to the previously stated schedule. Additionally, this also requires regular contributions, in the form of questions and comments, to the course's Slack site.
- **Course Repositories:** This involves students creating, at minimum, two version control repositories to store (i) their thesis proposal and written chapters and (ii) any relevant source code and data. Both of your readers must have administrative access to your repositories.
- **Written Proposal:** This document must be approved, in writing by the specified deadline, by the first reader for your senior thesis and formatted according to the department's thesis proposal style requirements, which is available from the course web site.
- **Proposal Defense:** This event is scheduled in consultation with your first and second reader and the building coordinator, Pauline Lanzine. Students may not schedule their proposal defense until their thesis proposal has been formally approved, in writing, by their first reader; evidence of this approval must be submitted to Pauline Lanzine when scheduling the defense.
- **Thesis Chapters:** Any two chapters of your final senior thesis must be submitted to the course instructor by the aforementioned deadline. Written in a professional and scientific style, these chapters must be formatted in the department's thesis style; please note that this style is available from the course web site and it is different from the proposal's style.

Details About Course Expectations and Deliverables

Class Participation: Once your readers have been assigned, you must regularly meet with your first reader, who will report on your participation when the department's faculty meet to assign final grades. Students are expected to come to each 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. In addition, students should regularly participate in the discussions on the relevant channels in the Slack site 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 proposal 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 thesis research. Finally, all students are required to attend and actively participate in all of the class sessions that will involve both meetings with their research group and informal discussion during the departmental coffee and tea session. Evidence of regular participation must be submitted to the course instructor; failure to participate and submit this evidence will result in the reduction of your grade in CMPSC 600.

Course Repositories: Every student must create at least two version control repositories to store (i) their thesis proposal and written chapters and (ii) any relevant source code and data; students may create additional repositories in consultation with their first reader. Unless advised by their first reader to do otherwise, students are expected to create their repositories in Bitbucket. Regardless of the repository provider that you select, your first and second reader must have administrative access to your repositories. Additionally, your repositories must be correctly integrated into the appropriate channel in our Slack site, thereby allowing all faculty and students to see everyone's progress on their research. Finally, all repositories must have a README.md file that contains well-written instructions for creating all of the deliverables under version control. Failure to regularly commit to your repositories will lead to a decrease in your final grade for CMPSC 600.

Thesis Proposal: The proposal should follow the department's proposal style and thus must include an abstract, the main body of your proposal, a tentative schedule for completing the project, a bibliography, and any other information deemed important by your first reader. This will often include one or more of the following: a survey of the existing literature; an overview of your proposed technique; technical diagrams and formal statements of algorithms illustrating your main approach; the description of an evaluation method; examples or code artifacts or other evidence that you understand the nature of the work you are proposing and can feasibly complete it in the time available. Finally, the proposal must fully adhere to professional standards of writing.

Although your first reader will be your primary contact person as you write and revise your thesis proposal, you may involve your second reader as appropriate. Primarily, your first reader will make suggestions on your submitted drafts; students are expected to revise multiple proposal drafts. You must work at a pace that will ensure that your first reader can formally approve the final draft of your thesis proposal before the stated deadline. Failure to secure formal approval of your proposal before this date will result in the reduction of your final grade in CMPSC 600. Securing formal approval of your thesis involves a student having their first reader sign and date the final printed version of the thesis proposal. This document must be shown to Pauline Lanzine when scheduling your proposal defense; no defense will be scheduled without this evidence of approval.

Proposal Defense: A proposal defense is a prepared, formal presentation of about ten minutes in which you lay out the essential parts of your chosen project under the assumption that your first and second reader have studied your proposal. Following the presentation that is supported by polished slides, you will participate in a discussion with your readers to identify potential challenges, refine or modify some aspects of the thesis proposal, and ensure that your project is feasible and

appropriate. All components your proposal defense should be completed in consultation with your first reader. You must schedule your proposal defense before the stated deadline. Your grade in CMPSC 600 will be reduced if you miss the deadline for scheduling or conducting your defense.

Thesis Chapters: Your two chapters, due on the previously stated date, should represent a significant addition to or extension of the material in your proposal. Don't simply "split the proposal into two chapters" — this usually does not work well since your chapters must represent work completed, not work being proposed. Chapters are judged according to the same professional standards as the proposal; they must include a full bibliography, a preliminary table of contents, lists of any figures and tables, and any other items required by your first reader.

As you write your chapters in consultation with your first and second reader, allow these individuals to comment on your drafts and then make all of their requested changes. Plan to write several drafts of the chapters before submitting them on the due date; failure to submit the chapters by the stated deadline will result in the reduction of your final grade in CMPSC 600.

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 600 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 heavily on computer hardware and software. At the start of your senior year, we invite you to pursue this class with great enthusiasm and vigor.