Course Syllabus

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CSC196H1: Great Ideas in Computing (Winter 2025)

Calendar Description

We will pursue the general (and very debatable) theme of GREAT IDEAS in COMPUTING (including some surprising algorithms). The ambitious goal is to try to identify some of the great ideas that have significantly influenced the field and have helped to make computing so pervasive. We will concentrate on mathematical, algorithmic and software ideas with the understanding that the importance and usefulness of these ideas depends upon (and often parallels) the remarkable ideas and progress in computing and communications hardware. As we will see, many of the great ideas were against the "prevailing opinion". The list of topics we shall discuss will depend to some degree on the background and interests of the class. Please note that not all CSC first-year seminars will be offered in a given year; please check the Timetable for current offerings. Restricted to first-year students. Not eligible for CR/NCR option.

Logistics

Instructor: Paul He

Office: BA 4238

Email: **csc196-2025-01@cs.toronto.edu** **(mailto:csc196-2025-01@cs.toronto.edu)**

Lecture: Mon/Wed/Fri. 10:10am–11:00am, MP 118

Office hours: Wed 11:00am-12:00pm, BA 4238 (after class, feel free to walk back to my office with me)

Learning Objectives

While we will discuss technical details of each of our "great ideas", the focus of the class will be on the historical context and impact of these ideas and the people behind them.

By the end of this course, students should be able to:

- Identify key ideas and figures in the development and evolution of computer science as a field
- Understand the historical context and impact of various important ideas in computing
- Analyze how different advancements in technology influence and build upon each other

- Conduct independent research on historical developments in computing
- Communicate about course topics with a general audience

First-Year Foundations Seminars

CSC196 is an Arts and Science First-Year Foundations Seminar. These classes are open to first-year students only and capped at 30 students. The class size helps ensure that all students are active participants in discussions and are encouraged to develop their ability to think analytically and to express ideas and logical arguments through class discussions and in their writing.

Course Readings

There are no assigned course textbooks. Weekly readings will be posted on Quercus.

Evaluation scheme

Rubrics will be posted for each assessment. **Late submissions will not be accepted.** Please email the course email if there is an emergency or other extenuating circumstance.

	Percentage	Description
Pre-class preparation	15%	One prep will be assigned per reading, and will typically be due on Sundays at 9pm. Each prep will be weighed equally.
Post-class reflections	15%	Reflections will be completed in class, and will typically be on Wednesdays. Each reflection will be weighed equally.
Presentations	25% (10% for the first and 15% for the second)	Students, in groups of two, will do two in-class presentations during the term, one between weeks 3 and 7 (Jan 30 - Feb 28), and one between weeks 8 and 12 (Mar 3 - Apr 4). Sign ups will happen throughout the term. Presentations will typically be on Fridays.
Term paper	45% (10% for outline and peer review, 15% for first draft, 20% for final version)	Consists of 3 parts: - A peer review session for an outline and notes on the term paper (due Feb 28) - First draft of paper (due Mar 14) - Final version of paper (due Apr 4)

Generative AI

In this course, you will use generative AI tools, like ChatGPT or Copilot, as part of the term paper. The purpose of this requirement is to explore the capabilities and limitations of a generative AI tool in the context of our course. More details will be provided in the paper details. You will be allowed, but not required, to use generative AI tools as learning aids and to help complete the other course assignments. You will not be permitted to use generative AI on the post-class reflections, which will be written in class. Generative AI may produce content which is incorrect or misleading, or inconsistent with the expectations of this course. They may even provide citations to sources that don't exist—and **submitting work with false citations is an academic offense**. These tools may be subject to service interruptions, software modifications, and pricing changes during the semester.

Generative AI is not required to complete any aspect of this course other than the term paper, and we caution you to not rely entirely on these tools to complete your coursework. Instead, we recommend treating generative AI as a supplementary tool only for exploration or drafting content. Ultimately, you (and not any AI tool) are responsible for your own learning in this course, and for all the work you submit for credit. It is your responsibility to critically evaluate the content generated, and to regularly assess your own learning independent of generative AI tools.

The University of Toronto provides you access to the enterprise version of Microsoft Copilot, which has additional privacy and data protections. See this **link for instructions for using the enterprise version of Copilot (https://teaching.utoronto.ca/tool-guides/microsoft-copilot/)**.

Academic Integrity

All suspected cases of academic dishonesty will be investigated following procedures outlined in the Code of Behaviour on Academic Matters. If you have questions or concerns about what constitutes appropriate academic behaviour or appropriate research and citation methods, please reach out to me. Note that you are expected to seek out additional information on academic integrity from me or from other institutional resources (for example, the **University of Toronto website on Academic Integrity (https://www.academicintegrity.utoronto.ca/)**).

Accommodations for Disabilities and Religious Holidays

The University provides academic accommodations for students with disabilities in accordance with the terms of the Ontario Human Rights Code. This occurs through a collaborative process that acknowledges a collective obligation to develop an accessible learning environment that both meets the needs of students and preserves the essential academic requirements of the University's courses and programs. Students with diverse learning styles and needs are welcome in this course. If you have a disability that may require accommodations, please feel free to approach me and/or the **Accessibility Services office (https://studentlife.utoronto.ca/department/accessibility-services/)**.

The University provides reasonable accommodation of the needs of students who observe religious holy days other than those already accommodated by ordinary scheduling and statutory holidays. Students have a responsibility to alert members of the teaching staff in a timely fashion to upcoming religious observances and anticipated absences and instructors will make every reasonable effort to avoid scheduling tests, examinations or other compulsory activities at these times. Please reach out to me as early as possible to communicate any anticipated absences related to religious observances, and to discuss any possible related implications for course work.