Course Descriptions & Schedule: Computer Science Stream

Please read carefully!

This document provide the descriptions and schedules for the Seminar Courses (Section A) and Elective Courses available to ESP students in the Computer Science stream for the 2025-2026 academic year. Please read the descriptions carefully before selecting your course preferences on your ***Course Selection Form***. Please note: All courses are subject to cancellation and/or change.

- All ESP students must register for one credit in a first-year seminar (see Section A below).
- All ESP students must register in two Elective Courses (see descriptions below in Section B)
    - Students registered in the Computer Science stream have set electives; according to requirements for this program (see your *Course Selection Form*).
    - Each elective will be supported by an ESP Workshop. See the *Course Schedule* for times.

Each elective course has a corresponding ESP workshop that will appear on your schedule as ESPW 1000.

Half-credit courses are marked with an asterisk (*) and are worth 0.5 credits and run during either the Fall or Winter semester. Full-credit courses are worth 1.0 credits and run during the entire Fall/Winter session. With each of your Elective Courses (Section B), you will also attend a two-hour weekly ESP Workshop. See the Student Guide for information about Workshops.

A Guide to Reading the Schedules

Course:	Name of the course and how many credits it's worth.
Code/Semester:	The course code and its semester. Some courses are full credits (Fall/Win) and run from Sept-Apr. Others are half credits and run in either the Fall (Sep-Dec) or Winter (Jan-Apr) sessions. For the First Year Seminars, some course codes are different for the same class. This is indicated by the / and you are welcome to select either course section based on your preferred day/time.
Day/Time:	M=Mon, T=Tues, W=Wed, **R=Thurs**, F=Fri. Classes may be held once per week for 3 hours or two times per week for 1.5 hours, or once per week for 2 hours plus a discussion group of 1 hour. For example, courses listed **MW are offered both Mon and Wed**, and classes **listed TR are offered Tues and Thurs** at the times listed. As well, the / represents two different times for different course codes (see above notes). Please read the times carefully.
Instructor:	Name of the Instructor/Professor.
Time Tutorial/Labs:	Some courses (usually those that have two hours per week for the lecture time) have discussion groups for 1 hour per week. These are led by Teaching Assistants assigned to the course and are a graded component of your courses. Groups are often offered at different times. We'll register you in just one of the discussion groups listed (one that has space available and works with your other course).
ESP Workshop:	This is the ESP Workshop assigned to the course with its day/time listed. It's there to help you succeed in the course and is an important and mandatory part of our program.
Facilitator:	Name of facilitator who runs the corresponding ESP workshop.

Course and Workshop Schedules

Section A: First Year Seminars (1.0 Credits)

Course: **Privilege, Power and Difference: Social Problems in Canada**
Code/Semester: FSYM 1900 C / FYSM 1900 H Fall/Winter
Day/Time: TR 10:05-11:25 / TR 11:35-12:55
Instructor: Beth Hughes

Course: **Fantasies, Fears, and Fandom: A Critical Guide to Popular Culture**
Code/Semester: FSYM 1900 F / FYSM 1900 G Fall/Winter
Day/Time: W 11:35-2:25 / R 8:35-11:25
Instructor: Susan Burhoe

Course: **The Price of Home: The Social Life of Debt, Housing, & Homeownership**
Code/Semester: FSYM 1900 I Fall/Winter
Day/Time: W 6:05-8:55
Instructor: Eric Hitsman

Course: **Death to Procrastination: The Psychology of Motivation and Academic Success**
Code/Semester: FYSM 1900 J Fall/Winter
Day/Time: W 11:35-2:25
Instructor: Allan Blunt

Section B. Computer Science Stream Courses (2.0 Credits)

Course: **Introduction to Computer Science I**
Code/Semester: COMP 1005 B Fall
Day/Time: TR 1:05-2:25
Instructor: Robert Collier
Time Tutorial/Labs: B1: ONLINE B2: ONLINE
ESP Workshop: ESPW 1000 U | W 2:35-5:25
Facilitator: Manuel Lebron Flores

Course: **Elementary Calculus I**
Code/Semester: MATH 1007 B Fall
Day/Time: MW 10:05-11:25
Time Tutorial/Labs: BT: M 2:35- 3:25
Instructor: TBA
ESP Workshop: ESPW 1000 W | F 8:35-11:25
OR
ESPW 1000 P | F 11:35-2:25
Facilitator: Jada O'Brien

Course: **Introduction to Computer Science II**
Code/Semester: COMP 1006 B Winter
Day/Time: WF 8:35-9:55
Instructor: Ava McKenny
Time Tutorial/Labs: B1: W 10:05-11:25 B2: W 11:35-12:55 B3: W 1:05-2:25
ESP Workshop: ESPW 1000 U | R 2:35-5:25
Facilitator: Manuel Lebron Flores

Course: **Linear Algebra for Engineering or Science**
Code/Semester: MATH 1104 G Winter
Day/Time: MW 2:35-3:55
Time Tutorial/Labs: GT: M 1:35-2:25
Instructor: Charles Starling
ESP Workshop: ESPW 1000 L | M 10:05-12:55
Facilitator: Adam El-Takkale

Course and Workshop Descriptions

Section A: First Year Seminars (1.0 Credits)

All FYSMs are titled: "Selected Topics in the Study of Academic Discourse" but have different selected topics.

Privilege, Power and Difference: Social Problems in Canada
FYSM 1900 C/ FYSM 1900 H (1.0 Credit) Fall/Win
Instructor: Beth Hughes

This course will develop your understanding of Canada as a society by examining the connections between privilege, power and difference. What are the key social problems? What is social injustice? What groups benefit and what groups are oppressed by social injustice? What structures perpetuate social injustice? How can we become more informed and challenge ideas? Most importantly, how can we create social change?

The goal of this course will be to provide you with the skills and tools necessary to critically analyze oppressive social structures that reinforce harmful narratives and assumptions. Our first class will be truly "lit and fire," because it examines how slang and language change with new social ideas. Other topics covered include identity, racism, consent, crime, addiction, poverty, racialization, health, addictions, education, the environment, globalization and others that interest you. Lastly, you get to choose a social issue of your choice, and you will analyze the power of individual action and social movements to communicate and create meaningful change.

Our class will go step-by-step, taking a thoughtful and planned approach to how all these ideas fit together. There will be fun and joy in expressing your ideas along the way. These engaging ideas will provide you with many opportunities to understand and develop strong academic skills that will serve you well at university and in future employment:

- reading, writing, revising,
- critical thinking and how to position an argument,
- researching and reading,
- time management, including procrastination,
- early career exploration, and so much more.

The following quotation will guide our work together this year. "Canada is a great country, one of the hopes of the world. We can be a better one–a country of greater equality, justice, and opportunity. We can build a prosperous economy and a society that shares its benefits more fairly" (Jack Layton, 2011).

Welcome to Carleton university and ESP!

Fantasies, Fears, and Fandom: A Critical Guide to Popular Culture
FYSM 1900 F/ FYSM 1900 G (1.0 Credit) Fall/Win
Instructor: Susan Burhoe

Popular culture is everywhere – from the shows we binge, the games we play, and the music we love to the ads, memes, and celebrity gossip that flood our feeds. But what does it all mean? In this course, we'll explore how 20th- and 21st-century popular culture both reflects and shapes how we see the world, ourselves and others. From Hollywood fantasies to video game panics, pop culture is more than entertainment; it's a powerful lens through which we understand society.

You'll be introduced to key concepts in cultural theory and learn how to "read" cultural "texts" like music videos, ads, memes, TV shows, and brand names. We'll examine themes of identity, power, and resistance through the lenses of race, gender, class, sexuality, and dis/ability. Why are we so fascinated by celebrities? How does advertising shape our sense of self? What does The Last of Us tell us about cultural anxieties?

We'll also dig into broader debates about representation. Who gets seen and heard in popular culture—and who doesn't? Whose stories dominate, and whose are left out?

Expect lively discussions, engaging media clips (from TV and film to internet culture), and collaborative activities. Assignments include short reflections, an exam, and a project where you'll analyze a pop culture topic of your choice in an essay, video, or podcast. Along the way, you'll also build key academic skills to support your success in university.

Note: this course precludes additional credit for CIED 1001; it is reserved for students who have not taken CIED 1001 previously.

The Price of Home: The Social Life of Debt, Housing, & Homeownership
FYSM 1900 I (1.0 Credit) Fall/Win
Instructor: Eric Hitsman

Why do so many Canadians willingly take on massive debt to buy a home? What gives something value, and why is repaying debt often seen as a moral obligation? From an anthropological ethnographic lens, this course examines the cultural and historical dimensions of economic life by focusing on the social world of debt, housing, and home ownership. From ancient systems of reciprocity and obligation to modern mortgage markets and housing crises, we will explore how economic practices are deeply embedded in social values, political institutions, and historical transformations. Drawing on core anthropological theories of exchange, kinship, materiality, and power, we will analyze how ideas of home and debt are constructed and contested throughout various cultural contexts.

Across cultures and throughout history, debt-based economies have profoundly shaped where and how people live. We will investigate housing as both a material necessity and a cultural ideal, asking how domestic life has been organized across different societies and time periods. Topics include household structures in ancient civilizations, cross-cultural perspectives on housing rights, and contemporary debates around affordability and access—particularly in the context of the Canadian housing crisis.

This course aims to help you think critically about the intersections of economy, power, and place—and to rethink familiar ideas about debt, value, and what it means to call a place "home." Through writing and critical discussion, this course will help you develop the analytical and communication skills essential for success across your university career.

Death to Procrastination: The Psychology of Motivation and Academic Success.
FYSM 1900 J (1.0 Credit)
Fall/Win Instructor: Allan Blunt

You have the brains. You have the potential. It is down to me to teach you some theories and techniques that can help you maximize that potential. It is my strong belief that every student who enters my class has the right stuff. But something messes things up for many of them — PROCRASTINATION. I have been studying procrastination for 30 years, and I can tell you this for sure, procrastination is a tricky beast. It is tied into and affects so many things like motivation, self-control, emotions, time management, stress, anxiety, distractions, goal setting, self-identity, learning, and academic success. It is a beast and you need to attack it head-on because university is procrastination's playground. Another thing that can mess things up for many students are ineffective learning/study methods. Therefore, we are going to look at some powerful research and theory related to learning and memory, with the aim of helping you develop more effective study/learning methods that have been demonstrated to boost grades, in many cases substantially. So, that's the course in a nutshell — it is a psychology course about motivation, learning, academic success and killing procrastination (or at least taming it). My final words — if you can solve your procrastination puzzle and put in some decent effort then everything else should fall into place, and university will become YOUR playground. Good Luck!

Section B. Elective Computer Science Courses (2.0 Credits)

Introduction to Computer Science I (Fall)
***COMP 1005 B [0.5 credit]**
Prof. Robert Collier

Introduction to computer science and programming. Topics include: algorithm design; control structures; variables and types; linear collections; functions; debugging and testing. Special attention is given to procedural programming in a modern language, computational thinking skills, and problem decomposition.

- An example of a course outline from Winter 2025 can be found here.
    - Please note that this outline is subject to change for the current academic year
- Lectures three hours per week and online tutorials

Introduction to Computer Science II (Winter)
***COMP 1006 B [0.5 credit]**
Prof. Ava McKenny

A second course in programming emphasizing problem solving and computational thinking in an object-oriented language. Topics include abstraction, mutable data structures, methods, inheritance, polymorphism, recursion, program efficiency, testing and debugging.

- An example of a course outline from Winter 2025 can be found here.
    - Please note that this outline is subject to change for the current academic year
- Lectures three hours a week and tutorials one and a half hours a week.

Elementary Calculus I (Fall)
***MATH 1007 B [0.5 credit]**
Prof. TBA

Limits. Differentiation of the elementary functions, including trigonometric functions. Rules of differentiation. Applications of differentiation: max-min problems, curve sketching, approximations. Introduction to integration: definite and indefinite integrals, areas under curves, fundamental theorem of calculus.

- An example of a course outline from Fall 2022 can be found here.
    - Please note that this outline is subject to change for the current academic year
- Lectures three hours a week and tutorials one hour a week.

Linear Algebra for Engineering or Science (Winter)
***MATH 1104 G [0.5 credit]**
Prof. Charles Starling

Systems of linear equations. Matrix algebra. Determinants. Invertible matrix theorem. Cramer's rule. Vector space R^n; subspaces, bases. Eigenvalues, diagonalization. Linear transformations, kernel, range. Complex numbers (including De Moivre's theorem). Inner product spaces and orthogonality. Applications.

- An example of a course outline from Fall 2022 can be found here.
    - Please note that this outline is subject to change for the current academic year
- Lectures three hours a week and tutorials one hour a week