Course Descriptions
Science Stream

The following are descriptions of the courses available to ESP/IESP students in Science stream for the 2018-2019 academic year.

Please read the descriptions carefully before listing your Seminar preferences on your Course Selection Form. Please note: courses are subject to change.

- All ESP/IESP students must register for one First Year Seminar (Section A, below)
- First-year ESP students enroll in FYSM 1900 E
- All ESP/IESP students must register in two Elective Courses (see descriptions below in Section B)
  - Students registered in the Science stream have set electives; according to requirements for this program (see your Course Selection Form).
  - Each elective will be supported by an ESP/IESP Workshop. See the Course Schedule for times.

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.

Section A: First Year Seminars

All First Year Seminars are titled: “Selected Topics in the Study of Academic Discourse” but have different selected topics. See the descriptions below:

First-Year Enriched Support Program Students should choose from these Seminars:

Selected Topic: Communication in Humans and Other Animals
FYSM 1900 C (1.0 Credit) Fall/Win
Instructor: Petra Watzlawik-Li

To understand how humans and other animals communicate and think, we will look at research from disciplines such as psychology, neuroscience, cognitive science, sociology, biology and linguistics.

We will start by learning the design features of human language and how humans acquire language (hint: it’s not merely imitation). We will review some of the cognitive processes, such as Theory of Mind (ToM) that go along with the stages of language acquisition, and also what happens when a child is kept from interacting (e.g. Genie the Wild Child).

Humans are not alone in the capacity for communication and cognition. You will be surprised at the communicative abilities and cognitive processes of many animals (such as dolphins, elephants, canines (wolf and dog), chimpanzees and other primates, birds (parrots and crows), octopuses, etc.). We will delve into the world of researchers (psychologists, neuroscientists, psychobiologists, behavioural ecologists, linguists, primatologists, etc.) to discover the most current information on animal cognition, learning, problem solving, social relationships, and tool design/use.

Finally, we will review the possible benefits of interspecies communication and look at how humans have learned to communicate with dogs (e.g. airport bomb sniffing dogs, therapy dogs), use horses for psychological therapy, and attempts at teaching primates language.
Did you know you could turn almost any interest into an academic research topic?

The goal of this course is for you to discover a topic you are passionate about and research it academically. But how do you truly discover or develop your passion? And how are passion and perseverance connected? To find out, you will read and learn about research that has been done in the field of psychology, sociology, and others. How do people become experts in anything (school, sports, music, etc.)? Is it natural talent or effort? How do coaches teach grit to teams? Does having a fixed or growth mindset matter?

This is a project spanning over the full course and you will receive a lot of feedback and support along the way. Who knows, maybe you will even find a new academic interest that you will major in!

Selected Topic: Power and Culture
FYSM 1900 H (1.0 Credit) Fall/Win
Instructor: Beth Hughes

What do Tupac, Stephen Colbert, Margaret Atwood, and Malala Yousafza all have in common? They have used words and images to powerfully express creativity, originality and arguments influencing our culture. In this course, we look at politics, pop culture and advertising by playing with language. Topics covered include slang, swearing, graffiti, persuasion, argumentation, privilege, equity and inclusiveness. We also critique racism, sexism, ageism and ableism in texts as a means of considering how the use of power also creates and promotes these types of discrimination. Throughout the year, will use gamification, that is “meaningful play,” for fun and learning to explore ideas and an historical event to understand how these ideas have been recognized, debated and disputed over time. Lastly, class activities include strategies for creating social change.

This course draws on different academic disciplines: linguistics, sociology, communications, history and others. This content aims to help you develop a deeper understanding of Culture and power, as well as provide opportunities to develop strong academic tools for reading, researching, analysis and writing in any of the ESP streams – skills that are valuable for university and beyond.

“Got questions?” Please email me and come for a chat and coffee. beth.hughes@carleton.ca

Selected Topic: A Procrastinator’s Guide to the Psychology of Academic Success
FYSM 1900 I (1.0 Credit) Fall/Win
Instructor: Allan Blunt

I am a procrastinator, hence the title. And as a procrastinator, I have learned how to deal with the distracting voice in my head that whispers — you can do it later, buddy…. loads of time to go, Al … you’ll feel more like doing it tomorrow, old buddy … and you know you work better under pressure anyway. Sound kind of familiar? If it does, maybe you should think about taking this course. Because in this course we will discuss lots of research and ideas that can help you learn faster, better, smarter, and just maybe — reduce procrastination. So, what are these exciting, life-changing topics, you ask (with a wee bit of sarcasm). Well, here’s a list of many of them: academic self-regulation, metacognition, monkey mind and time management, dealing with distractions and cognitive load, making memories stick, anxiety and test-taking, searching for self-identity, goal setting done right, creating emotions that matter, boredom and mind-wandering, willpower over temptations, and some others I am currently developing. Wow, that sounds amazing, you say (without a trace of sarcasm). Yep, you’re right — it is! I have pulled together tons of research to help me (and you) achieve my guiding goals: to help you become a more effective learner, and to help you succeed at university and at other things (because many of the ideas in this course can be applied to other areas of your life).

So, apart from all of the amazing content, how will I be graded, you ask (with a concerned tone). That’s a very fair question. You will be graded on the following: attendance (15% of grade — 22 classes, you can miss 4 without penalty); small application assignments (7.5% of grade — 14 applications, lowest 4 dropped); mini-reflections (7.5% — 6 one-page mini-reflections, lowest 2 dropped); term reflection papers (10% of grade — 2 five-page papers, lowest dropped); and tests (60% of grade — 6 short-answer/multiple-choice style tests, lowest 2 dropped). Nice that you drop the low grades, you say, but it sounds like a lot of work. Nah! The work is spread over both terms and my intention is not to overwhelm anybody, rather my intention is to help you transition to university. All of the material comes from the lecture modules. All of the slides have been developed by me and will be provided to you online — free of charge! As well, each module contains several practice questions for the tests (hint: sometimes practice questions appear on the tests). And there is no graded group work in this course — you are in control of your grade. Well, that’s it. If you have any questions about the content and requirements, you can pop by my office before you sign up or maybe I will see you at a registration session in July or August. Welcome to university and good luck! (The fine print: As an inherent procrastinator, I reserve the right to change any or all the above at the last minute. Cheers, Al)
**Section B: Elective Courses**

All elective courses listed below will be accompanied by a three hour/week **ESP/IESP Workshop** (this will appear on your schedule as ESPW 1000). Please see the Class and Workshop Schedule sheets enclosed for day and time information; and read the **ESP/IESP Registration Guide and Student Handbook** for a description of workshops.

**Chemistry: General Chemistry I (Fall)**  
*CHEM 1001 A [0.5 credit]  
Prof. Robert Burk  
This math-intensive course covers introduction to periodicity, gas laws, equilibrium, bonding, electrochemistry, and organic chemistry. This is a specialist course for students intending to take second year chemistry.  
- There is no outline currently available for this course.  
- **Lecture three hours/week plus a lab three hours/week and a discussion group one hour/week.**

**Chemistry: General Chemistry II (Winter)**  
*CHEM 1002 A [0.5 credit]  
Prof. Robert Burk  
This math-intensive course covers an introduction to solution chemistry, acids and bases, thermodynamics, and kinetics. Specialist course for students intending to take second year chemistry.  
- There is no outline currently available for this course.  
- **Lecture three hours/week plus a lab three hours/week and a discussion group one hour/week.**

**Math: Elementary Calculus I (Fall)**  
*MATH 1007 F [0.5 credit]  
Prof. Wojciech Jaworski  
- The course outline below is an example from a previous year. Note: outline may be different this year: [https://carleton.ca/math/wp-content/uploads/MATH-1007H-W15.pdf](https://carleton.ca/math/wp-content/uploads/MATH-1007H-W15.pdf)  
- **Lecture three hours/week plus tutorial one hour/week.**

**Math: Linear Algebra I (Winter)**  
*MATH 1107 B [0.5 credit]  
Prof. TBA  
Systems of linear equations; vector space of n-tuples, subspaces and bases; matrix transformations, kernel, range; matrix algebra and determinants. Dot product. Complex numbers (including de Moivre's Theorem, and n-th roots). Eigenvalues, diagonalization and applications.  
- **Lecture three hours/week plus tutorial one hour/week.**