

Course Descriptions

Engineering Stream

The following are descriptions of the courses available to ESP/IESP students in Engineering stream for the 2019-2020 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 IESP 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 Engineering 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

Each elective course has a corresponding ESP/IESP workshop that will appear on your schedule as ESPW 1000. Each workshop is 3 hrs/wk.

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: Introduction to Abnormal and Forensic Psychology

FYSM 1900 A (1.0 Credit) Fall/Win

Instructor: Kate Pardoel

Do you watch a lot of psychodramas and crime shows? Are you fascinated by bizarre, deviant, and pathological behaviour? Have you always wondered what drives some people to commit horrible crimes, and what really happens to them after they’re sentenced to prison? If you’re anything like me, you’ve probably been told many times that you have an unhealthy amount of interest in the darker side of human nature, and that you should probably find some more uplifting books and cheerful hobbies. If you can relate to any of the above, then this seminar may be the right choice for you.

The purpose of this course is to introduce students to the study of abnormal behaviour and forensic psychology. We will start by looking at how abnormal behaviour was perceived in ancient times, and by learning about how definitions of crime and appropriate punishments have changed throughout history. Next, we will spend some time learning about the criteria currently used in diagnosing abnormality and about how research is conducted in the field of psychology. From there, the focus of the course will shift to criminal behaviour and exploring how psychology contributes to the criminal justice system. We will spend some time discussing topics like the different types of risk factors for criminal behaviour, the different types of offenders (think young or mentally ill offenders, female criminals, and psychopaths), as well as topics related to catching and imprisoning offenders such as risk assessments and eyewitness testimony. We will wrap up the course by considering what happens once offenders reach the end of their sentence – can all offenders be rehabilitated and safely reintegrated into society? How do we decide which ones should be released and how do we ensure that they stay on the straight and narrow?

Now, on to the bit you really care about – how your grades will be assigned. Your grade in this seminar will be based on a series of tests, in-class activities, a criminal profile research project, and attendance. Over the course of

the year you will be required to write 5 tests, and the best 4 will count towards your final grade (4 x 15% = 60% total). All tests will be comprised of multiple choice and short-answer questions, and all of the content will come from the lectures. You will also be required to complete 6 short, in-class activities related to the course. Like with the tests, your lowest mark will be dropped, so the in-class activities will account for 10% of your final grade (5 x 2% each). The activities are designed to give you the opportunity to review and engage with the course content, practice different discipline-specific skills, and to work on more general academic skills like critical thinking. For the criminal profile project, you will need to create a profile for an antisocial individual (of your own choosing) that incorporates elements that you have learned throughout the course. The remaining 10% of your grade is for attendance.

Selected Topic: Communication and Cognition in Animals

FYSM 1900 C (1.0 Credit) Fall/Win

Instructor: Petra Watzlawik-Li

Humans are not alone in the capacity for communication and cognition. You will be surprised at the communicative abilities and cognitive processes of many other 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 (comparative psychologists, neuroscientists, psychobiologists, behavioural ecologists, linguists, primatologists, engineers, etc.) to discover the most current information on animal cognition, learning, problem solving, social relationships, and tool design/use (including how engineers use robots to understand animal cognition).

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). We will also look at non-verbal communication, including body language, micro-expressions and tone.

Finally, we will try to understand why humans and other animals have such strong bonds and how that has resulted in therapy and service animals such as <https://carleton.ca/wellness/dogs/>

Selected Topic: Exploring the Psychology of Creativity

FYSM 1900 F (1.0 Credit) Fall/Win

Instructor: Eve Blouin-Hudon

Creativity ranges across a wide variety of subjects and life events. Because of this, it is difficult to define creativity in terms of outcome (e.g., a painting is a creative outcome but so is a scientific paper), since what feels creative to some may be completely different for others. In this course, we will explore the psychology of creativity to answer questions such as: What is the use of creativity (adding meaning to the world, well-being)? What makes a person creative (personality, childhood development, culture)? How can we cultivate our own personal creativity (flow, collaboration, intuition)?

For the *Exploring the psychology of creativity* course, theories of creativity will be applied to real-world and self-related experiences. To this end, each class in this year-long seminar will be divided into *three core components*: (1) A theoretical portion, (2) an active experimentation portion, and (3) a reflection portion. This course will be based on discussion, collaboration, and participation. As such, formal lectures will be minimal and much of the learning will occur during collaborative activities and reflection.

Selected Topic: A Global History of the Second World War

FYSM 1900 G (1.0 Credit) Fall/Win

Instructor: Hal Goldman

In 1939 when World War II began, many nations still fielded horse-mounted cavalry. By the time it was over six years later, the first jet-powered fighters streaked through the air, the first ballistic missiles had entered space, and the first atomic bombs had been detonated over cities. Sixty million people had been killed and all the world had been changed.

This full-year course will take a comprehensive global history approach to this the greatest conflict in human history. We will examine the origins of the war in the failed post-World War I peace settlement and the rise of mass political movements in Italy, Germany, and Japan before moving on to the diplomatic and military run-up to the war. We will study the tactical, strategic, and diplomatic prosecution of the war in both the Pacific and European theatres from the perspectives of both the Allies and the Axis powers. We will focus in particular on the experience of the war for ordinary men and women—those on the front line, those fighting behind the lines as partisans and resistance fighters, those in the rear, and those who remained back home, including those who faced repression, internment, and genocide at the hands of their own and other governments. The course will end by examining the post-war settlement and on-going controversies concerning the memorializing of the war and those who fought in it, including debates over the morality of dropping the atomic bomb, renewed controversy over allied bombing of German cities, and controversial exhibits at the Smithsonian’s Air and Space Museum and the Canadian War Museum.

Students will study all this material through brief lectures, small and large group exercises, diverse reading assignments, film, poetry, photographs and other cultural sources. Coursework includes in-class activities, quizzes, and informal and formal writing assignments. First-year students completing the course will not only have a comprehensive understanding of one of the most important episodes in human history, they will also have an opportunity to develop strong reading, analysis, research, and writing skills applicable to all future university study.

Selected Topic: The Psychology of Motivation, Self-control, Memory, Learning and Other Things Related to Academic Success (and Dealing with Procrastination)

FYSM 1900 J (1.0 Credit) Fall/Win

Instructor: Allan Blunt

Welcome to Carleton University and congrats on becoming a Raven! You have officially taken a first step toward achieving your academic and career goals. In order to help you reach those goals this course explores lots of research aimed at understanding and improving memory, learning, motivation, self-regulation, emotion regulation, career management, and more. Although we will be discussing lots of theory and research, there is a very practical purpose to this course — to help you achieve your academic goals. So, if you decide to take this class, embrace the ideas and practice the methods we discuss, you will be taking another step toward your goals. Along the way, you will also develop your research skills, writing skills, citation skills, test-taking skills and presentation skills — all essential for your continued success at university. Even though I can’t guarantee your success, I can definitely say that if you decide to take this seminar you will learn some very interesting and useful information — and that’s not a bad thing.

One last thing - you should know a bit about the grading before you commit. Your final grade will be most likely based on the following three core elements:

- 1) attendance & participation (15% of the overall grade);
- 2) testing (50% of the overall grade, consisting of four tests & one exam, you will be given all of the questions for each test and exam); and
- 3) research (35% of the overall grade, you will pick a psychology-based topic, find and summarize several research articles, write a review paper based on the summaries, and give a 3-minute thesis presentation (based on your topic).

In closing, if you are a procrastinator, I know your “pain” because I am an inherent, recovering procrastinator who has and still does apply the ideas discussed in this course. Have a great frosh year. Best of luck, AKB.

First-Year IESP Students should choose:

Selected Topic: Indigenous Studies

FYSM 1900 E (1.0 Credit) Fall/Win

Instructor: Sheila Grantham

Aanii Kinawiya! (Hello Everyone!)

This seminar prioritizes narration and storytelling. Storytelling in an Indigenous context emphasizes the oral nature of language and speaks to many areas from which Indigenous knowledge systems are drawn, including stories of tricksters, the land, ceremonies, relationships, and clan systems. Storytelling can also be relayed through fiction and comics. Stories can take the form of a personal narrative and reveal personal and communal experiences that speak to the Indian Act, gender, education and child welfare. Within this course, we will draw upon a variety of literature, as well as oral teachings that privileges storytelling as a medium to relay Indigenous lived experiences, knowledges, research methods, and theories.

This course is a requirement for students in the Indigenous Enriched Support Program and is therefore reserved for IESP students.

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* for day and time information; and read the *ESP/IESP Student Handbook* for a description of workshops.

Chemistry: General Chemistry I (Fall)

***CHEM 1001 E [0.5 credit]**

Prof. TBA

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. TBA

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: Calculus for Engineering or Physics (Fall)

***MATH 1004 B [0.5 credit]**

Prof. Angello Mingarelli

Limits. Differentiation of the elementary functions. Rules of differentiation. Inverse trigonometric functions. Applications of differentiation: max-min problems, curve sketching, approximations. Definite and indefinite integrals, techniques of integration. Applications to areas and volumes.

- The course outline below is an example from a previous year. Note: outline may be different this year: <http://carleton.ca/math/wp-content/uploads/MATH-1004H-W15.pdf>
- *Lecture three hours/week plus tutorial one hour/week.*

Math: Linear Algebra for Engineering or Science (Winter)

***MATH 1104 D [0.5 credit]**

Prof. Mathieu Lemire

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

- The course outline below is an example from a previous year. Note: outline will be different this year: <https://carleton.ca/math/wp-content/uploads/MATH-1104I-W17.pdf>
- *Lecture three hours/week plus tutorial one hour/week.*