**CHEM 3800: The Chemistry of Environmental Pollutants**

**Instructor**: Geronimo Parodi-Matteo

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Please allow up to 24 hrs to respond during the weekdays (Monday – Friday) and 48 hrs during the weekend.

**Teaching Assistant**: Ethan McCann

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Please allow up to 24 hrs to respond during the weekdays (Monday – Friday).

**Context**: We are all exposed to human-made chemicals via food, air, clothes, surfaces, devices, water, and more. Exposure to these chemicals can cause and/or aggravate a host of negative health outcomes including cancer, inflammatory diseases, metabolic diseases, cardiovascular diseases, to name a few. These chemicals not only harm us, but fundamentally change our environment and all the organisms that call it home.

The story about environmental pollutants is fundamentally about people. We created these chemicals to profit and dominate the Earth. We either purposefully, or by negligence, allowed for their widespread contamination on Earth. Billions of people and animals suffer because of our innovation.

There are ~ 100,000 chemicals registered for use in Canada, and likely many more times that in the environment. Due to the extreme variety in type and quantity, it is impossible to cover all the different chemicals to which Canadians and individuals worldwide are exposed. You will learn about historically relevant chemicals and how they have impacted our health and Earth. Unfortunately, there is not enough time in each of our lives to study all the different chemicals in our environment.

**Goal**: Provide you with a general understanding of the different classes of environmental pollutants, as well as their effects on human health, the environment, and the different organisms therein. The focus in this course will be on application and ‘real-life’ scenarios.

I aim to help you achieve your desired grade by answering questions in person and via e-mail, as well as hosting office hours. If you put in effort, I am confident that you can achieve your desired grade.

**Materials**: There is no textbook for this course. All course materials will be covered in class and any additional materials will be shared via BrightSpace.

**Class Schedule**: Tuesday and Thursday 0850 – 1000 in Southam Hall 502. The first class will be on Thursday Sept 08 at 0835. All subsequent classes will start at 0850 to ensure students eat breakfast and get to class on time. If you can, please try to eat breakfast before coming to class. Students are permitted to eat during class if it’s not disruptive to others.



Please note that the class schedule is subject to change. All changes will be communicated by email and an updated course outline will be uploaded to BrightSpace.

**Assessments**

Attendance (10%): You must attend at least two of the guest lectures to pass this course. If one lecture is missed, I will deduct up to 5% from your total grade.

Assignment 1 (30%): A summary (3 – 5 pages, 12 pt. font, single-spaced) of the toxicology and environmental impact of a selected environmental pollutant.

Will include intended use of the chemical, its distribution and concentration in different environmental media, ADME in humans and health outcomes, public health concerns, and effect on select non-human organism (e.g., bird, fish, microorganism, plant, etc.,). Details and grading rubric will be provided. Assignment 1 is due October 20th and will be submitted via BrightSpace.

Assignment 2 (60%): A two-part assignment including an oral presentation (Part 1) and a written portion (Part 2). Assignment 2 will expand on Assignment 1 by focusing on remediation.

You and a partner will invent a scenario where an environmental medium (i.e., air, soil, water) is contaminated with a chemical. This chemical can be the same as Assignment 1 or a different chemical. You will present (Part 1) two remediation strategies (one each) that you propose to reduce the amount of that chemical to safe levels. Student presentations will be from November 17 – December 01. You will also individually write a summary of your selected remediation strategy (Part 2) as a take-home exam due December 20th. Details and grading rubric will be provided.

**Late Policy**

Life happens, and it has happened to me. It is best practice to email the professor (me) and tell them if you expect any delays in your ability to complete a midterm. I would much rather have a conversation before something happens instead of dealing with it after. You must complete the [self-declaration for Academic Accommodations form](https://carleton.ca/registrar/wp-content/uploads/self-declaration.pdf). Otherwise, the assignment will not be graded.

**Academic Integrity**

Any suspected violation of [Carleton University’s Academic Integrity Policy](https://carleton.ca/registrar/academic-integrity/) will be reported to Chemistry Department. Especially relevant to this course is plagiarism. All references must be cited, and someone else’s work cannot be copied and/or quoted. You must rewrite things in your own words and cite the author(s)’ work accordingly.

Please reach out to me if you have any questions about Academic Integrity and read the [University’s Policy](https://carleton.ca/registrar/academic-integrity/).

**Internet/Computers Policy**

Not having access to the internet/electronic device will not be accepted as a valid reason for failing to submit an assignment. Please contact Information Technology Services (ITS) Service Desk if you have any questions: <https://carleton.ca/its/>

Carleton University MacOdrum Library also has computers available for students to use.

**Links**

* Academic Integrity: <https://carleton.ca/registrar/academic-integrity/>
* Academic Accommodations: <https://students.carleton.ca/course-outline/>
* Carleton Health and Counselling Services: <https://carleton.ca/health/>
* Carleton Information Technology Services: <https://carleton.ca/its/>
* Carleton Library: <https://library.carleton.ca/>
* Carleton VPN: <https://carleton.ca/its/help-centre/remote-access/>