**Introduction to environmental sciences (EVS1101)**

**(Winter-2021)**

**Professor:**

**Dr. Hafida El Bilali** Dept.Earth and Environmental Sciences, ARC 413

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**Office hours (Request appointment via Zoom)**:

Tues. from 11h30-12h30 (Jan. 11th to APR. 14th)

Thurs. from 10h00 to 11h00 (Jan. 11th to APR. 14th)

**Dr. Clement Bataille** Dept.Earth and Environmental Sciences, ARC 419

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**Office hours (Request appointment via Zoom)**:

Tues. from 11h30-12h30 (Jan. 11th to APR. 14th)

Thurs. from 10h00 to 11h00 (Jan. 11th to APR. 14th)

**TA:**Daniela Quintero : [dquin020@uottawa.ca](mailto:dquin020@uottawa.ca)  
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**Virtual course delivery:**

Tuesday10h00-11h30 (Zoom)

Thursday 8h30-10h00 (Zoom)

The course material will be provided **asynchronously:** Video of the lectures with the lecture slides will be recorded and posted in advance on Brighspace.

Invited speakers will regularly come during the course hours to discuss the topic seen in the lecture and debate with the students (**see schedule below**; speakers will also be **annonced by email** the day prior their lecture)

When speakers are not coming, the course hours will be used to listen to lectures from invited speakers, re-teach portion of the courses, answer questions, correct the assignments and exams, or watch short videos about the problematics treated in the course.

**Watch the video of the course prior to the class so you can ask questions.**

**Course description:**

This class provides a comprehensive overview of environmental science. By using an "earth systems" approach, you will recognize how humans and the environment are an interrelated system. Throughout the course, we will introduce environmental topics and examine key environmental issues focusing particularly on biodiversity losses, ecosystems and soil degradation, contaminant transport and fate in soils and the hydrosphere, ecotoxicology, climatology and global warming, atmospheric chemistry, waste management, human population growth, and agriculture and food production.

**Course objectives:**

After completing this course, you should :

* Know the basic chemistry and biology behind environmental issues and be familiar with terms that describe characteristics, relationships, and changes in natural environments
* Know where water, energy, mineral and biological resources that we use and consume are coming from
* Recognize how human activities, notably our consumption of natural, biological and agricultural resources and our production of waste materials, modify the environments that sustain us
* Appreciate our responsibility to manage environmental resources in ways that support the capacity of our Earth to sustain future generations

**Material:**

To follow and participate in virtual classes it is expected that you have reliable access to the following:

* A computer that meets performance requirements found here.
* An internet connection that is fast enough to stream video.
* Computer accessories that enable class participation, such as a microphone, speakers and webcam when needed.
* If you use assistive technology or believe that our platforms might be a barrier to participating ask [adapt@uOttawa.ca](mailto:adapt@uottawa.ca), for support.

**Evaluation:**

* **Online assessments** (on Brightspace) **20%**

4 assessments in total, 2 in part 1 and 2 in part 2 (5% each)

One attempt but unlimited time to do the assignment

Submit the assignment before the deadline

* **2 partial exams** (20% each) **40%**

Partial exam 1 on part 1: February 4th 2021 at 8h30AM

Partial exam 2 on part 2: March 25th 2021 at 8h30AM

* **Final exam** (Parts 1 and 2) (during the exam period) **40%**

**Suggested textbooks**

* Environment, science, issues, solutions, 2016. M. Molles and B. Borrell. W.H. Freeman Company.
* Environment: The science behind the stories; Canadian edition; 2013. Jay Withgott, Scott Brennan, Barbara Murck. Pearson. ISBN:  978-0-321-73936-0
* Course outline, announcements, interactive questions, etc. will be available on Brightspace

**OUTLINE EVS 1101**

**PART I: PHYSICO-CHEMICAL ASPECTS OF THE ENVIRONMENT**

**(H. El Bilali) (January 11th to February 26th 2021)**

**Chapter 1:** Introduction

1.1 Planet earth

1.2 What is the environment?

1.3 Basic environmental chemistry concepts

**Chapter 2:** Lithosphere

2.1 Rocks and minerals

2.2 Resources

2.2.1 Mines

2.2.2 Energy

2.2.3 Soils

**Chapter 3:** Hydrosphere

3.1 Hydrologic cycle

3.2 Water reservoirs

3.2.1 Lakes

3.2.2 Rivers

3.2.3 Oceans

3.2.4 Ground waters

3.3 Transport, dispersion of pollutants

3.4 Acidification

**Chapter 4:** Atmosphere

4.1 Composition

4.2 Climate (El Niño)

4.3 Global warming

4.4 Ozone layer

**PART II: BIOLOGICAL ASPECTS OF THE ENVIRONMENT**

**(C. Bataille) (March 1st to April 14th 2021)**

**Chapter 5:** Biosphere

5.1 Evolution and biodiversity

5.2 Population ecology

5.3.Species interactions and community ecology

5.4 Ecosystems and biogeochemical cycles

**Chapter 6:** Anthroposphere

6.1. Human population and ecological footprint

6.2. Food production, agriculture, and soils

6.3. Biotechnology and food resources

**SCHEDULE**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Date and Time** | | | **Lecture** | **Assignment** |
| 1 | Tuesday | 12-Jan | 10:00 | Dr. El Bilali : Chapter 1: Introduction |  |
| Thursday | 14-Jan | 8:30 | Dr. El Bilali: Chapter 2: Lithosphere-Rocks & Minerals |  |
| 2 | Tuesday | 19-Jan | 10 :00 | Dr. El Bilali : Chapter 2: Resources-Mines |  |
| Thursday | 21-Jan | 8:30 | Dr. El Bilali : Chapter 2: Resources-Energy | Assignment 1 |
| 3 | Tuesday | 26-Jan | 10 :00 | Dr. El Bilali : Chapter 2: Resources-Soils |  |
| Thursday | 28-Jan | 8:30 | Dr. El Bilali : Chapter 3: Hydrologic Cycle and Water Reservoirs |  |
| 4 | Tuesday | 2-Feb | 10 :00 | Dr. El Bilali : Chapter 3: Transport of Pollutants-Acidification |  |
| Thursday | 4-Feb | 8:30 | EXAM 1 |  |
| 5 | Tuesday | 9-Feb | 10 :00 | Dr. El Bilali : Chapter 4: Atmosphere-Composition |  |
| Thursday | 11-Feb | 8:30 | Dr. El Bilali : Chapter 4: Atmosphere-Climate (El Nino) | Assignment 2 |
| 6 | Tuesday | 16-Feb |  | Reading Week | |
| Thursday | 18-Feb |  |
| 7 | Tuesday | 23-Feb | 10 :00 | Dr. El Bilali: Chapter 4: Atmosphere-Global Warming |  |
| Thursday | 26-Feb | 8:30 | Dr. El Bilali : Chapter 4: Atmosphere-Ozone Layer |  |
| 8 | Tuesday | 2-Mar | 10 :00 | Dr. Bataille: Evolution and biodiversity |  |
| Thursday | 05-Mar | 8:30 | Dr. Bataille : Population Ecology Invited (Dr. Jean Noel Candau) |  |
| 9 | Tuesday | 9-Mar | 10 :00 | Dr. Bataille : Community Ecology |  |
| Thursday | 12-Mar | 8:30 | Dr. Bataille: Invasive Species (City of Ottawa) | Assignment 3 |
| 10 | Tuesday | 16-Mar | 10 :00 | Dr. Bataille: Ecosystem Ecology |  |
| Thursday | 19-Mar | 8:30 | Dr. Bataille : Biogeochemical cycles |  |
| 11 | Tuesday | 23-Mar | 10 :00 | Dr. Bataille : Population & Ecological Footprint (Sustainable Ottawa) |  |
| Thursday | 26-Mar | 8:30 | EXAM 2 |  |
| 12 | Tuesday | 30-Mar | 10 :00 | Dr. Bataille : Food production and soils (Farming association) |  |
| Thursday | 02-Apr | 8:30 | Dr. Bataille : Food production and soils |  |
| 13 | Tuesday | 06 Apr | 10 :00 | Dr. Bataille : Biotechnology and Food Ressources (Gautier Dubois) |  |
| Thursday | 08 Apr | 8:30 | Dr. Bataille + Dr. El Bilali : Revisions | Assignment 4 |
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**IMPORTANT INFORMATION**

1. Classes start on **January 11th 2021**
2. Marks (for quizzes and exam) will not be provided by e-mail.
3. Answers to the online assessments will provided
4. Plagiarism is a serious offence: <https://www.uottawa.ca/vice-president-academic/academic-integrity>
5. If you cannot do an online assessment, quiz or exam, you will need a medical note from your doctor. You also need to inform the professor within 5 days, otherwise you get “zero” (<https://www.uottawa.ca/administration-and-governance/academic-regulation-9-evaluation-of-student-learning>)
6. **The professors and teaching assistants (TAs) will reply to your e-mail messages between 8h30 AM and 5h30 PM from Monday through Friday**
7. If you make an appointment with the professors or the TAs, please be on time. If you cannot make it, please let us know ahead of time**.**
8. **Review for final exam on April 8th 2021**
9. Final exam: during exam week, **check the exam schedule**
10. Students are advised that lectures, demonstrations, performances, and any other course material provided by an instructor include copyright protected works. The Copyright Act and copyright law protect every original literary, dramatic, musical and artistic work, including lectures by University instructors. The recording of lectures, tutorials, or other methods of instruction may occur during a course. Recording may be done by either the instructor for the purpose of authorized distribution, or by a student for the purpose of personal study. Students should be aware that their voice and/or image may be recorded by others during the class. Please speak with the instructor if this is a concern for you.
11. **The course outline is subject to change depending on time and conditions**