

## **CENTER FOR INTERNATIONAL PROGRAMS**

Course name: **Climate change impacts and adaptations**

Course code: ENV-3740

Total contact hours: 60 hours

## **COURSE DESCRIPTION**

This course is an introduction to understand climate change, its causes, consequences and the effects it is having on natural populations of plants and animals across the planet, including humans. Mankind is facing several problems due to climate change, and these effects may likely increase in the near future. As temperatures keep increasing, producing major effects on all habitat types, how can animals and plants adapt to such rapid changes? And what are we as humans responsible for global warming doing to deal with it? Can we actually answer these questions? Do we have the knowledge to reverse the ongoing conditions, and if so, what is being done worldwide? Finally how is the “political weather” addressing the climate change?

## **OBJECTIVES**

- I. Understand climate change, causes and consequences.
- II. Comprehend the effects of climate change on worldwide habitats and the natural populations occupying them.
- III. Analyze the evidence supporting climate change, and learn how to discuss it with an expert.

## **COURSE CONTENTS**

### **Unit 1. Weather, climate and climate change**

- Climate systems
- Climate change: definition and causes
- Global warming
- Regional and global climate changes
- Seasonal climate variability: El Niño and other climate phenomenon's
- Historical climate

## **Unit 2. Climate change consequences on natural habitats and their populations**

- Effects on habitats
- Climate as an evolutionary force
- Global extinctions due to climate
- Changes in distribution and community assemblages
- Impacts on humans

## **Unit 3. Adaptation and mitigation**

- Carbon emissions sequestration
- Mitigation: reducing the impacts
- Adaptation
- Ecosystems based adaptation

## **Unit 4. Policy, politics and economics of Climate Change**

- Politics of climate change
- Country's policies
- From Kyoto to Paris' resolutions
- The future of climate change policies

## **METHODOLOGY**

### **Attendance**

Students are only allowed two (2) non consecutive absences (justified or not). The student will fail the course if he/she has more than 2 absences. Students will have a 0 on any assignment evaluated in class (presentations, evaluations, field trips, etc.) if he/she is absent in this class, unless an official document is presented to justify the absence the class after. In this case the assignment will be done that day.

### **Field trips**

This course includes two mandatory field trips, Choices will depend on climate and availability. Lodging and main meals are covered by the course.

## **Field trip report**

Students must do a report of the field trip. This report includes a summary of the sites visited and activities done, plus the assignments ask during the field trip. The report is individual and must be deliver one week after the field trip, it has to be send to the professor's e-mail on word or pdf format, in times new roman font, size 12, 1.15 or 1.5 line spacing and it **must not be larger** than 10 pages.

The evaluation of the report will consist of two parts, 70% on the content of the report and 30% on the behavior (punctuality, participation, etc.) during the field trip. Both field trips assistance are obligatory, an unjustified absence to any of them will immediately mean failing the course.

## **Presentations**

Students will have to make two (2) individual presentations. The first presentation can be about any subject concerning the course topics, or a topics not covered but related to the course, and has to be approved by the professor. The second presentation includes a research paper about online data related to climate change. Presentations must be made on Power Point and should last about 15 minutes. The professor, depending on the subject will assign the date for the presentation.

### **For All Presentations:**

It will be evaluated based on preparation (knowledge assimilation), presentation style (organization, smoothness and clarity), slides (clarity, aesthetics), finishing on time, and answering questions. All presentations must be made on the assigned date, if not the grade will be 0 (unless the absence is justified).

### **Electronic devices:**

The use of cell phones, smart phones, or other mobile communication devices is distracter, and is therefore prohibited during class. **All devices must be turned OFF during the class.** Devices may be used **ONLY** when the professor assigns a specific activity and allows the use of them. Those who fail to comply with the rule must leave the classroom for the remainder of the class period.

## **EVALUATION**

Individual presentations (2)	40 % (20 each)
Midterm tests (2)	30 % (15 each)
Field trip reports (2)	20 % (10 each)
Class participation	10 %

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**100**

## **REFERENCE BIBLIOGRAPHY**

Dessler, A. (2015). Introduction to modern climate change. Cambridge University Press.

Hannah, L. 2014. Climate change biology. Academic Press.

Morhart, J. E. 2016. Climate change, ecology, health. Cloudripper Press.

Pelling, M. 2010. Adaptation to Climate Change, from resilience to transformation. Taylor and Francis.