Global Environmental Change

EVSC 01121

Syllabus, Spring 2021 Semester

**Instructor**: Dr. Patrick Crumrine **Office**: 209 H Westby Hall

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**Office** **Hours**: Virtual: Monday, Wednesday 2:00 – 3:00 pm, or by appointment

# Meeting Times and Locations:

Lecture: Section 1: Monday/Wednesday 11:00 am – 12:15 pm 301 Business Hall

Section 2: Monday/Wednesday 12:30 pm – 1:45 pm 301 Business Hall

* This is a Physical Presence Optional (PPO) course. Class sessions will be virtual and primarily synchronous. Occasional ansynchronous meetings may also be utilized. We will meet outside, in-person, and on campus for selected class sessions when the weather is favorable. These in-person meetings are optional and will reinforce content.

# Textbook:

* Environment by, David Hassenzahl, Mary Catherine Hager, Nancy Gift, and Linda Berg, and Peter Raven, 10th Edition. Wiley and Sons, ISBN: 9781119393412. **(Required)**

**Course Description:**

Humans are the most significant agents of environmental change on the Earth and our activities have impacted the Earth’s ecosystems in many ways. In this introductory-level science course, students will learn how human demand for resources such as space, clean air and water, productive farmland, energy, and raw materials have altered the health of ecosystems and their ability to positively influence humans and other organisms. A unifying theme of the course is ecosystem services and the degree to which healthy intact ecosystems are able to provide these services to human societies. In addition, students in this course will learn some of the basic skills necessary for scientific inquiry, including the scientific method, critical thinking, and evaluating data to draw valid scientific conclusions. After completing this course student should:

* be able to apply the scientific method to ask and answer questions related to global environmental change.
* understand the physical principles that govern the distribution of ecosystems.
* understand the basic ecological principles that explain interactions between organisms and their environment.
* be able to identify ways that humans have altered the environment.
* understand what defines an ecosystem service and how those ecosystem services are influenced by human-induced environmental change.
* recognize the importance of ecosystem services to their own daily lives.

**Rowan Core (General Education)**

All first-year, non-transfer student who entered Rowan on or after Fall 2018 must complete the new general education requirements, known as Rowan Core. (Students who arrived before Fall 2018—and all new transfer students—are still following the existing general education requirements.) Students in Rowan Core must complete course requirements in six literacies: Artistic, Communicative, Global, Humanistic, Quantitative and Scientific. Global Environmental Change is a course that satisfies the Scientific Literacy.

All students in this course will be assessed on the following Rowan Core Outcomes for this literacy:

* Students can demonstrate knowledge of core ideas and vocabulary of science and the scientific method in written and/or oral work.
* Students can describe how to design an experiment to test competing hypotheses by manipulating and controlling variables.
* Students will apply scientific data to solve a real-world problem

For details on the new Rowan Core requirements, please consult your advisor or the Undergraduate Catalog (<https://sites.rowan.edu/catalogs/>).

**Format:**

Global Environmental Change is a Physical Presence Optional (PPO) course. Class sessions will be virtual and primarily synchronous. Occasional ansynchronous meetings may also be utilized. Synchronous meetings will be held using the Zoom videoconferencing app and most class sessions will require students to work in breakout rooms with groups of students. We will meet outside, in-person, and on campus for selected class sessions when the weather is more favorable towards the later half of the semester. In-person meetings will be designed to reinforce content rather than introduce new content, so I view them as “physical presence optional” but extremely valuable community building and learning opportunities. Occasionally meeting outside will allow us to physically distance and maintain a safer environment than what can be achieved inside a classroom.

# Policies

* **Attendance and Participation:** Attendance and participation are critical for your success in this course. Attendance at all class sessions (virtual) is expected. Outdoor, in person, on campus meetings are optional but highly encouraged. All aspects of the Rowan University [Attendance Policy](https://confluence.rowan.edu/display/POLICY/Attendance+Policy) and the [Interim Amendment to the Attendance Policy Spring 2021](https://drive.google.com/file/d/1mztQdSA6YFuDnuKdbY04_D5umU24CwW2/view) apply in this course. If you know you will miss class due to an expected excused absence (excused absences are outlined in the Rowan University Student Information Guide), notify the instructor at least one week **prior** to that session to arrange for make-up work.  If you miss a class unexpectedly due to an illness or another event, please let the instructor know as soon as possible and provide documentation for your absence.
* **Academic Integrity:**I strongly support the Rowan University [Academic Integrity Policy](https://confluence.rowan.edu/display/POLICY/Academic+Integrity+Policy) and expect students to comply with this policy. Any student found responsible for violations (i.e. cheating of any kind, plagiarism, copying, lying, etc.) risks losing some/all points on assignments, receiving a failing grade in the course, and/or other sanctions outlined in the policy.
  + Under no circumstances should any material related to the course (including but not limited to: PowerPoint slides, assignments, reading material, quizzes, exams) be shared with others or posted online in any capacity.
* **Special Accommodations**: Your academic success is important. If you have a documented disability that may have an impact upon your work in this class, please contact the instructor. Students must provide documentation of their disability to the Academic Success Center in order to receive official University services and accommodations. The Academic Success Center can be reached at 856-256-4234. The Center is located on the 3rd floor of Savitz Hall. The staff is available to answer questions regarding accommodations or assist you in your pursuit of accommodations.
* **In-Class Behavior**: Please be respectful of other students and the instructor during class sessions both in-person and virtual. Among other things this means arriving/logging in to sessions on time, staying engaged and focused during sessions, and recognizing that your behavior affects those around you. Follow this link to the full Rowan University [Classroom Behavior Policy](https://confluence.rowan.edu/display/POLICY/Classroom+Behavior)and the [Interim Amendment to the Classroom Behavior Policy Fall 2020](https://docs.google.com/document/d/1ZvRs792-IM5dk1xWDplxVVMpy83K2vHyVddLukXPcdo/edit).
* **Technology in the classroom:**Technology is fully integrated into the fabric of this course as Canvas and Zoom will be used to deliver portions of the course. In virtual settings it is critical that you focus on the tasks at hand and resist the urge to multi-task on more than one device. During in-person sessions, use technology to enhance your experience in the course rather than detract from it. Follow this link to the Rowan University [Mobile Electronic Device Policy](https://confluence.rowan.edu/display/POLICY/Mobile+Electronic+Device+Policy).
* **Late work policy:**Students are expected to hand in assignments by the deadline indicated. For some assignments, on-time completion is necessary to progress through the course or for an in-class activity to be successful. If you are unable to meet deadlines your performance in the course will likely suffer.
* **Videoconferencing Policy:**Students are expected to be professional and respectful when attending class sessions that are held using Zoom, Webex or other videoconferencing apps.
  + General
    - Login to virtual sessions from a quiet space with limited distractions conducive to work such as a desk/table in a dorm room, home office, or similar workspace.
    - Maintain a professional appearance during virtual class sessions.
    - Sign in with your full first name (or preferred name) and last name. Do not use a nickname because it makes it difficult to know who is in attendance. Using your full name quickly sorts students into their groups when needed. Users who do not provide their full names will NOT be admitted to class.
    - If you do not have access to a computer or smartphone with internet access, call into class using a landline phone. This is not optimal; please try to locate an internet-enabled device to use for class.
    - Stay focused. Please stay engaged in class activities. Close any apps on your device that are not relevant and turn off notifications.
  + Video
    - Turn ON your video when possible. It is helpful to be able to see each other, just as in an in-person class.
    - Exception 1: If you have limited internet bandwidth or no webcam.
    - Exception 2: If you're unable to find an environment without a lot of visual distractions.
  + Audio
    - Mute your microphone when you are not talking. This reduces background noise.
    - Use a headset when possible. If you own headphones with a microphone, please use them. This improves audio quality.
  + Chat
    - Stay on topic. Use the chat window for questions and comments that are relevant to class. The chat window is not a place for socializing or posting comments that distract from the course activities
    - As with in-person sessions, respectful behavior is expected while chatting in virtual sessions.
* **Email policy:**Email will be used to communicate information to students about the course. The instructor will only send email to your Rowan account, so you should check this account daily.  Email is a very convenient way to correspond with the instructor but please maintain formality in your communications. Treat all message as if they were short letters.  All messages should include a subject, consist of an opening greeting (i.e. Dear Dr. Crumrine) and should end with your signature (i.e. Sincerely, Jane Student).  Emails not prepared in a professional format will not be answered.

# Grading:

The point breakdown is as follows:

### Point Distribution Grading Scale

Exam I 80 Minute Papers 60 90% - 100% A-, A

Exam II 80 Quizzes 60 80% - 89% B-, B, B+

Exam III 70 Homework & In-class 90 70% - 79% C-, C, C+

Exam IV 60 Assignments 60% - 69% D-, D, D+

0% - 59% F

Total 500

**Exam Format:**

Exams will include multiple choice and short answer questions, data interpretation questions, and essay questions. Exams will be made available through Canvas and will have a strict time limit and hard deadline. If a student will not be able to complete an exam on the regularly scheduled day/time due to an unavoidable excused absence, that student must notify the instructor and take the exam prior to the regularly scheduled exam date and time. If a student misses an exam due to an unexpected excused absence, that student has one week from the scheduled exam date and time to make-up the exam. Make-up exams will only be given for unexcused absences in rare cases.

**Description of Grades:**

* The grade of A indicates excellence in learning and scholarship. Such scholarship should involve not only the recall of information, but also the ability to communicate the information effectively and to understand its importance and application.
* The grade of B indicates substantial mastery of the objectives of the course.
* The grade of C indicates average work and basic knowledge of key concepts.
* The grade of D indicates substandard work and poor understanding of key concepts.
* The grade of F indicates failure to meet the objectives of the course.

**Syllabus Assignment**

Your assignment is to send the instructor an email message by 5:00 pm on Wednesday 9/9. Your message should: 1) indicate what HS/college science courses you have taken; 2) describe why you are interested in environmental science; and 3) describe what you hope to do after you graduate from Rowan University. This assignment is worth 5 points.**- Tentative Schedule -**

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| **Week of 1/25/2021** |
| * Introduction and Overview; What is Environmental Science? * Reading: Chapter 1 |
| **Week of 2/1/2021** |
| * Topic: The Physical Environmental and Major Drivers of Global Climate * Reading: Chapter 4, Pages 66-77 |
| **Week of 2/8/2021** |
| * Topic: Global Climate Change * Reading: Chapter 20 and IPCC Figures |
| **Week of 2/15/2021** |
| * Topic: Air Pollution * Reading: Chapter 19 |
| **Week of 2/22/2021** |
| * Topic: Ozone * Reading: Chapter 19 and Ozone Activity with Figures * **EXAM I, Wednesday February 24** |
| **Week of 3/1/2021** |
| * Topic: Major Ecosystems of the World, Energy and Ecosystem Function * Reading: Chapters 3 and 6 |
| **Week of 3/8/2021** |
| * Topic: Decomposition and Nutrient Cycling * Reading: Chapter 4, Pages 57-66 |
| **Week of 3/15/2021** |
| * Topic: Ecosystems and Interactions Among Organisms * Reading: Chapter 5 |
| **Week of 3/22/2021** |
| * Topic: Biodiversity and Ecosystem Function/Services * Reading: Chapters 5, and 16 * **EXAM II Wednesday March 25** |
| **Week of 3/29/2021** |
| * Topic: Water Resources * Reading: Chapter 13 |
| **Week of 4/5/2021** |
| * Topic: Water Pollution * Reading: Chapter 21 |
| **Week of 4/12/2021** |
| * Topic: Soil Resources * Reading: Chapter 14 * **EXAM III Wednesday April 14** |
| **Week of 4/19/2021** |
| * Topic: Human Health and Ecotoxoicology * Reading: Chapter 7 |
| **Week of 4/26/2021** |
| * Topic: Pesticides * Reading: Chapter 22 |
| **Week of 5/3/2021** |
| * **EXAM IV, Date TBD** |