**UES 227**

**Panama Study Abroad - Climate Change and Water Management**

**Spring 2020**

Professors: Lacy Kamber (& Rebekah Parker)

Office: Harbert 203a

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Office Hours: T/TR 11:00am - 12:00pm or by appointment

**Class times and Location**

Spring 2020 Semester February 3 - May 11, 2020

Tuesday and Thursday 9:30 - 10:50; Harbert 302

**\*Travel portion (required):** Panama City, Panama - The City of Knowledge (CATHALAC)

Sunday, March 22nd - Sunday, March 29th

**Required Text**

Sangam Shrestha, Mukand S. Babel, Vishnu Prasad Pandey, Climate Change and Water Resources, 1st Edition, CRC Press, 2014

An integral part of our course will be reading primary literature focusing on Climate Change and the Panama Canal Watershed. These papers will be posted on the UES 227 Moodle page.

**Course Description**

Students will acquire basic knowledge and skills regarding climate change, GIS, and human dimension of climate change in the Republic of Panama. This course is intended to give students a general understanding of the potential impacts of climate change on Panama’s environmental and human resources. Through a mix of lectures, assignments, in-class exercises, and study abroad programming, students will explore direct and indirect effects of a changing climate on water resources management.

Throughout the course, students will learn to use technologies and to apply research methodologies for the analysis and monitoring of natural and human systems affected by climate change. The acquired knowledge and interests developed by the students will guide them in the development and implementation of a final research project.

**Objectives**

1. Develop an in-depth knowledge of the various components of the environment in the Republic of Panama that can be applied towards a broader understanding of environmental sustainability, present and future.
2. Recognize and critically analyze the concepts influencing water, ecology, forest, urbanization, and land management in Panama.
3. Realize and assess the local and global scale of problems within the Panama Canal Watershed, and identify potential adaptations and sustainable mitigation methods.
4. Gain confidence in facing challenges through class discussions, team activities, and international experiences
5. Develop skills associated with research, GIS, interpretation, and assessment across topics related to climate change, environmental management, and international relationships.

**EXPECTATIONS OF STUDENTS**

1. Complete reading assignments and exercises on time
2. Always arrive for class and travel excursions on time
3. Participate actively in regular class meetings, group discussions, and assignments
4. Treat everyone in the class with respect, regardless of their viewpoints
5. Gain an understanding of environmental topics through lectures, discussions, and active learning

**EXAMS**

There will be two non-cumulative examinations. You may be able to take the exam early but only if your reason for missing the exam is exceptional (e.g., planned sports event). Discuss this option with me if necessary. Exams will be multiple choice questions, short answer questions, and short essays. **Your Final Exam (#3) will be cumulative, and is on Friday, May 15th from 9:00am-12:00pm.**

**Attendance**

Class attendance is expected as part of your enrollment in this course. An attendance list will be distributed at each class. It is your responsibility to sign this list each class. This list will serve as your official attendance record for class. **Absences due to illness, family emergency or participation in a BSC sponsored activity are considered excused but will require documentation**. Unexcused absences will result in a loss of two points per day missed in addition to points lost from any missed assignments.

**Moodle**

Students enrolled in this course are automatically entered into Moodle. It will be important for you to become familiar with the Moodle page for this course as soon as possible. We will be using Moodle throughout the semester in numerous ways, including posting reading assignments, important announcements, discussion questions and answers, and grades. I will also use Moodle along with my BSC email for communication.

**Class assignments**

Throughout the semester, we will be covering a variety of topics including climate change, introductory GIS concepts, and the Panama Canal Watershed. You will be assigned various short questions/answer assignments and brief, written discussion assignments to assist in connecting the lecture material.

**Final Panama Project**

You will be placed in groups of 2 to develop your final project. The project will consist of developing a significant climate change issue/threat associated with the Panama Canal Watershed, conducting a literature review on the issue, incorporating GIS mapping, and presenting your project to the class. This project will help students to relate and apply knowledge gained during the semester. Details will be discussed in class and a guideline will be provided.

**Evaluation**

Letter grades will be assigned at the end of the course based on the number of possible points that you can earn (see points below).

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| --- | --- | --- |
| **Assignment** | **Number** | **Total Points** |
| Exams | 3 | 300 |
| Case Studies | 2 | 50 |
| Class Assignments | 6 | 100 |
| Participation | 1 | 50 |
| Final Project | 1 | 150 |
| **Total Points Possible** |  | **650** |

**BSC GRADING SCALE**

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| --- | --- | --- | --- | --- | --- |
| A | 650 – 605 points | 100% - 93% | C | 500 – 475 points | 76%-73% |
| A- | 604 – 585 points | 92% - 90% | C- | 474 – 455 points | 72%-70% |
| B+ | 584 – 566 points | 89% - 87% | D+ | 454 – 436 points | 69%-67% |
| B | 565 – 540 points | 86% - 83% | D | 435 – 390 points | 66%-60% |
| B- | 539 – 520 points | 82% - 80% | F | 389 – 0 | 59%-0% |
| C+ | 519 – 501 points | 79% - 77% |  |  |  |

**Academic Accommodations**

If you are registered for accommodations, please make an appointment with me as soon as possible to discuss accommodations that may be necessary. During this discussion, you are not expected to disclose any details concerning your disability though you may discuss these details at your discretion.  If you have a disability but have not contacted Jason Peevy, the Disability Accommodations Coordinator at BSC, please call 226-4717 or visit Counseling & Health Services on the second floor of Norton Center, next door to Student Development. You may also contact the Coordinator at jpeevy@bsc.edu if you have any questions or need more information. If you have a learning disability or challenge, or require an academic accommodation, please make arrangements to discuss this with me as soon as possible.

**Title IX**

Birmingham-Southern College is committed to the creation and maintenance of a safe learning environment for students and the campus community. The College forbids any type of sexual or gender-based misconduct among its students, faculty, and staff. The College encourages all members of the academic community to report suspected sexual and gender-based misconduct to the appropriate authorities so that it can be investigated, remedied, and eliminated. Such misconduct is prohibited whether the actor is a student, faculty member, staff member, contractor, visitor, or another member of the College community. BSC forbids retaliation against any person who has opposed, reported or participated in an investigation concerning sexual or gender-based misconduct.

In accordance with federal policy, all College employees are required to report information related to discrimination and harassment which includes, but is not limited to, sexual assault, relationship violence, stalking, and sexual harassment. For this reason, if you tell a faculty member about a situation of sexual harassment or sexual violence or other related misconduct, the faculty member must share that information with the Title IX coordinator. As a student, you can report allegations of sexual misconduct to officials in Student Development (Assistant Dean of Students, Dana Bekurs; Associate Dean of Students, W. David Miller; Vice President for Student Development, David Eberhardt), Campus Police, or confidential resources in Counseling Services, Health Services, and Religious Life. Please refer to the Title IX section of the BSC website for more information on filing a report and available resources.

**Tentative Schedule**

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| --- | --- | --- |
| **Date** | **Topic / Assignments** | **Class Readings** |
| Feb 4 T | Introductions, Syllabus Review | Chapter 1 |
| Feb 6 TR | Chapter 1 - Global Climate System, Energy Balance, and the Hydrological Cycle | Chapter 2, Moodle article |
| Feb 11 T | Chapter 2 - Climate Variability and Change | Chapter 3 & 4 |
| Feb 13 TR | Chapter 3 & 4 - Detection and Attribution of Climate Change, Uncertainty in CC Studies | Chapter 5, Moodle articles |
| Feb 18 T | Chapter 5 - Impacts on Water Resources | Chapter 6 |
| Feb 20 TR | Chapter 6 - Economics of Climate Change |  |
| Feb 25 T | Exam 1 | Chapter 7, Moodle articles |
| Feb 27 TR | Chapter 7 - Vulnerability Assessment | Chapter 8, Moodle articles |
| March 3 T | Chapter 8 - Adaptation in Water | Chapter 9, Moodle articles |
| March 5 TR | Chapter 9 - Managing Climate Risk for the Water Sector with Tools and Decision Support | Chapter 10, Moodle articles |
| March 10 T | Chapter 10 - Transboundary River Systems in the Context of Climate Change |  |
| March 12 TR | GIS Introduction | Moodle articles |
| March 17 T | GIS | Moodle articles |
| March 19 TR | GIS | Concept Map Due |
| March 22 - 29 | Spring Break |  |
| March 31 T | No class |  |
| April 2 TR | GIS |  |
| April 7 T | GIS |  |
| April 9 TR | GIS |  |
| April 14 T | Climate Change Solutions |  |
| April 16 TR | Exam 2 |  |
| April 21 T | Project Discussion/Planning |  |
| April 23 TR | Work on Project | Common Hour - Jim McClintock |
| April 28 T | Work on Project | McClintock Lecture Assignment Due |
| April 30 TR | Work on Project |  |
| May 5 T | Project Presentations |  |
| May 7 TR | Optional Final Exam Review | **Final Exam is Friday, May 15th 9:00am-12:00pm** |

**\*This schedule is subject to change and an updated calendar and/or changes in assignments will be posted on our Moodle page. Always check reading assignments on Moodle.**