GLY 6746
GLOBAL ENVIRONMENTAL CHANGE
3 Credits

TERM: Fall, 2019
COURSE TYPE: Classroom course (web assisted, but not an online course)
CRN: 15498
LOCATION: Lecture SE 417

EXPECTED BACKGROUND:
Scientific background sufficient for admission to a graduate program in the Charles E. Schmidt College of Science at FAU, or other graduate technical program. Familiarity with geologic concepts.

TIME: M 9:30 A.M. - 12:20 P.M.

Class begins on August 19, 2019.

DATES: August 19 through December 11, 2019 excluding September 2 and November 11, 2019

INSTRUCTOR:
David Warburton, Ph.D., PG
Science 466
(561) 297-3312
e-mail warburto@FAU.EDU

Please note: Under State of Florida law, all e-mails to or from FAU are public records. Do not say anything in an e-mail you would not want to see in a newspaper, etc.

Office Hours: The instructor will be in or around SE466 or 465, or in the classroom laboratory SE 435, during the following hours each week, beginning August 19, 2019 through December 11, 2019, although Final Exams times may require adjustments after December 5.
M W 1:00 - 4:00 p.m., or by appointment

COURSE DESCRIPTION:
An introduction to the study of global climate change through time. Included and in-depth studies of the causes of and evidence for past environmental changes, major perturbations of global natural environmental systems, the effects of sea level changes, solar variations, and planetary dynamics on climate, and details of Quaternary paleoclimate models. (From the catalog)
COURSE OBJECTIVES:
Students will become familiar with major anthropogenic perturbations of the environment. Discussions will include the principles of radiation physics which are involved in the “Greenhouse Effect”, and with selected examples of environmental processes that are undergoing change as a result. Students will become familiar with properties of Greenhouse Gases, aspects of the Thermohaline circulation, and aspects of Earth’s Climate History. Current climate research and controversy, climate, physical and biological change, and the impacts of these changes on the earth, especially on humans, and human response to climate modification will be considered. Other major ecological impacts will be examined, including the impact of increasing wildfires, and pollution by plastic.

COURSE EVALUATION:
One midterm examination will be worth 16% of the total grade. A cumulative final examination, worth 19% of the total grade, will be given. Tests will be announced at least one week in advance. It is the student's responsibility to take the tests on the announced date. Failure to take any test will result in a grade of "F" and a score of "Zero" on that test. Exceptions, for truly unusual circumstances only, may be obtained by consulting with the instructor prior to the test.

A term paper and in-class presentation by each student will be worth a total of 35% of the total grade. (Term paper 25%, Presentation 10%)

Student attendance and meaningful participation in-class discussion and projects will be worth 30% of your total grade.

GRADING SCALE:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>93-100%</td>
</tr>
<tr>
<td>A-</td>
<td>90-93%</td>
</tr>
<tr>
<td>B'</td>
<td>87-90%</td>
</tr>
<tr>
<td>B</td>
<td>83-87%</td>
</tr>
<tr>
<td>B-</td>
<td>80-83%</td>
</tr>
<tr>
<td>C+</td>
<td>77-80%</td>
</tr>
<tr>
<td>C</td>
<td>73-77%</td>
</tr>
<tr>
<td>C-</td>
<td>70-73%</td>
</tr>
<tr>
<td>F</td>
<td>&lt;70%</td>
</tr>
</tbody>
</table>

Attainment of the lowest grade average in any category will assure that your grade is not lower than the indicated grades.

LATE WORK AND MISSED EXAMINATIONS:

Exams will be announced at least one week in advance. It is the student's responsibility to take the tests on the announced date. Similarly, participation in classroom discussions, group projects, and students presentations must be done in a timely manner and, where a due date is assigned, must be completed by the date announced when the assignment is made. Late assignments are either not acceptable or will be heavily penalized, depending on the assignment.
CLASSROOM ETIQUETTE:

University policy on the use of electronic devices states: “In order to enhance and maintain a productive atmosphere for education, personal communication devices, such as cellular telephones and pagers, are to be disabled in class sessions.”

ATTENDANCE POLICY:

Students are expected to attend all of their scheduled University classes and to satisfy all academic objectives. It is the student’s responsibility to give the instructor notice prior to any anticipated absences and within a reasonable amount of time after an unanticipated absence, ordinarily by the next scheduled class meeting.

DISABILITY POLICY STATEMENT:

In compliance with the Americans with Disabilities Act Amendments Act (ADAAA), students who require reasonable accommodations due to a disability to properly execute courseware must register with Student Accessibility Services (SAS)-in Boca Raton, SU 133 (561-297-3880); in Davie, LA 203 (954-236-1222); or in Jupiter, SR 110 (561-799-8585) -and follow all SAS procedures.

COUNSELING AND PSYCHOLOGICAL SERVICES (CAPS):

Center Life as a university student can be challenging physically, mentally and emotionally. Students who find stress negatively affecting their ability to achieve academic or personal goals may wish to consider utilizing FAU’s Counseling and Psychological Services (CAPS) Center. CAPS provides FAU students a range of services – individual counseling, support meetings, and psychiatric services, to name a few – offered to help improve and maintain emotional well-being. For more information, go to http://www.fau.edu/counseling/.

CODE OF ACADEMIC INTEGRITY POLICY STATEMENT:

Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty is considered a serious breach of these ethical standards, because it interferes with the university mission to provide a high quality education in which no student enjoys an unfair advantage over any other. Academic dishonesty is also destructive of the university community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. For more information, see University Regulation 4.001.

TEXTS

No texts are required. On-line assignments of various reading materials will be assigned.
Other Resources: The following may prove useful for this course.


Other readings available at G:\CourseMaterial\GLY 6746 Global Environmental Change Spring 2017. There is a directory labeled IPCC which contains most of the documents issued as PDF files from the First Assessment Report (FAR) on. This is for reference only unless specific assignments are made.

HOLIDAYS:
Labor Day - September 2, 2019 - FAU closed - no class
Veteran’s Day, November 11, 2019 - FAU closed - no class
Thanksgiving Recess, November 28 -December 1, 2019 (does not affect this class)

WEB PAGES:
This is a web assisted course. A great deal of information pertinent to the course is maintained on the web pages, including an updated syllabus, a frequently updated activity schedule, access to the PowerPoint presentations shown in lecture, word lists for upcoming examinations, and keys to the examinations (posted after the exam, of course). The web pages for this section may be found at: [http://cosweb1.fau.edu/~warburton/Fall2019/GLY6746_F19/index_6746_F19.html](http://cosweb1.fau.edu/~warburton/Fall2019/GLY6746_F19/index_6746_F19.html)

Students should check this site frequently.

EXAMINATION SCHEDULE:
The approximate schedule of lecture examinations is as follows - actual examination dates may vary in accordance with the above outlined policy:

Midterm Exam - October 7, 2019
Final Exam - Wednesday, December 11, 2019 7:45-10:15 a.m.
Midterm exam will be from 9:30 a.m. on, with class activities following.

METHOD OF INSTRUCTION:
The material for the lecture part of the course will be presented in lecture format, usually accompanied by PowerPoint presentations. For discussion sections, students will be split into groups. Groups will be assigned to provide as diverse an array of educational backgrounds within each group as possible. Groups will be expected to lead discussions of assigned material, and each student will be required to
provide one presentation of a topic during the semester. All students will be expected to fully participate in classroom discussions. Scientific papers, topics, or other materials will be assigned, and will be discussed. When a prior assignment has been made, students are expected to have read the paper, or have done other work as assigned. In addition to short video clips shown during lectures, some longer video presentations will be shown, and will serve for some form of classroom activity.

The following schedule is tentative and is subject to change. See the online “Activity Schedule” for up-to-date information.

<table>
<thead>
<tr>
<th>Lecture Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
</tr>
<tr>
<td>Meteorology, Climatology, and Earth's Atmosphere</td>
</tr>
<tr>
<td>Radiation</td>
</tr>
<tr>
<td>Natural Climate Variability</td>
</tr>
<tr>
<td>Midterm Exam</td>
</tr>
<tr>
<td>Thermohaline Circulation, Ocean Acidification</td>
</tr>
<tr>
<td>Impacts of Climate Modification</td>
</tr>
<tr>
<td>Fires and Climate Change</td>
</tr>
<tr>
<td>Plastics in the Environment</td>
</tr>
<tr>
<td>Student Presentations</td>
</tr>
<tr>
<td>Final Examination</td>
</tr>
</tbody>
</table>

Additional readings for in-class exercises and discussions will be made throughout the term. Students will supply one or two (if short) readings as background for their presentations. The Activity Sheet on the web page has up-to-date reading assignments, and links to articles assigned. Students should check this page and complete all assigned work before coming to class.

You should also check the department G drive, G:\CourseMaterial\GLY 6746 Global Environmental Change Fall 2019, for reading materials.