This course satisfies the DEC category H
This course satisfies the SBC category STAS (pending)

**Course Instructors:** Anne McElroy, Professor, SoMAS
J. Kirk Cochran, Professor, SoMAS
Graduate Teaching Assistant: TBA

**Instructor and TA contact information:**

**Offices:** Our offices are located on the South Campus at SoMAS-
McElroy- Dana Hall 113a; Cochran- Challenger Hall 157;
Teaching Assistant- Office Hours in Earth and Space Science Building, room 104, times to be announced

**Phone:** McElroy- 631-632-8488, Cochran- 631-632-8733

**Email:** McElroy- anne.mcelroy@stonybrook.edu
Cochran- kirk.cochran@stonybrook.edu

**Office Hours:** Each of the lecturers will set aside time on Tuesdays to meet with students. If you want to meet with one of us before or after class, please let us know in advance by email or before or after lecture. Office space for student meetings is available in the Earth and Space Science building, Room 104 (tel: 631-632-8680). We are also available by appointment in our offices at SoMAS (South Campus, see above). The TA will hold regular office hours in Room 104 in the Earth and Space Science Building (hours to be announced).

**Course Description:**
A detailed examination of the scientific, social, and legal aspects of important environmental problems, including global climate change, the depletion of atmospheric ozone, acid rain, rain forests and the loss of biodiversity, and energy conservation, as well as case histories of problems such as the use of DDT, environmental carcinogens, and lead poisoning.

**Course Prerequisites**
U3 or U4 standing; one course in chemistry or biology

**Course Learning Objectives:**
- Obtain an overview of the major environmental issues facing humankind and the ecosystem processes that drive these issues and their solutions.
- Understand ecosystem processes (including biogeochemical cycling of nutrients, demographics and population growth, ecosystem structure and function and biodiversity) and energy production and their importance to environmental issues.
- Obtain an appreciation of the societal and political factors that constrain solutions to environmental problems.
- Understand the diversity of perspectives associated with environmental issues.
- Understand the links between the scientific processes driving environmental issues/problems and societal choices and political actions that factor into development of solutions.
- Summarize and discuss material presented in class and in role-playing exercises and make informed judgments on solutions to environmental problems in brief written essays.
These objectives can be met through attendance in lectures, reading assigned course material, completing written homework assignments and participating in role-playing exercises. Progress will be assessed through performance on tests (2 in number), in-class clicker quizzes (5 in number) and graded written homework assignments (5 in number), and participating in discussion during role-playing exercises (4 in number).

This course satisfies the requirements of the current Diversified Education Curriculum (DEC) H Tier III Category H, Implication of Sciences and Technology, in that it explicitly discusses how the scientific processes driving environmental problems help inform sustainable solutions to these global societal programs. It is anticipated that this course will fulfill the requirement for the STAS, Understand relationships between Science or Technology and the Arts, Humanities or Social Sciences, learning outcomes in the new Stony Brook Curriculum to be implemented in 2014. Learning objectives will provide students with the skills needed to apply scientific concepts and approaches used to understand and study ecosystem processes and the societal/political context by which to understand constraints to solving environmental problems. Role-playing exercises, written essays and exams will require students to synthesize this knowledge and make informed judgments about the relationship between science and society.

Course Requirements:

Attendance and Make Up Policy
Attendance is required and will be counted as 10% of the grade (see “Grading”). Attendance will be automatically taken as each student signs on with her/his response pad at the beginning of each class. We recognize that even the best intentioned student will have to miss class occasionally. Therefore, grades for attendance will be allocated as follows: Attendance at 80% or greater of lectures- full credit (i.e. 10% toward course grade); Attendance at 65-80% of lectures- partial credit (i.e. 7% toward course grade); Attendance at 50-65% of lectures- partial credit (i.e. 5% toward course grade); Attendance at <50% of lectures- no credit for attendance.

Exams and quizzes may be made up only with an approved, documented excuse. Homework assignments will be due one week after assignment, with a one-week grace period for late submission (for reduced credit). Homeworks may not be turned in after that time, except under unusual circumstances by permission of one of the instructors (See “Grading” below).

Description and Schedule of Assignments/Readings.
Class assignments will be announced in class and posted on Blackboard. A due date will be given (generally one week after the assignment is made). The assignment will continue to be posted on Blackboard for a one-week grace period past the due date. Assignments may still be submitted during this time, although they will be penalized for being late. After the grace period, the assignment will disappear from Blackboard and submissions will not be accepted, except by permission from one of the instructors. Homework assignments mostly will be based on role-playing exercises and class discussion during them, although consultation of internet based resources is expected to support positions taken in your essays. You may volunteer to be one of the ‘role-players’ (generally 5 for each exercise). You will have to prepare for your role in advance, but will not be required to turn in a written assignment pertaining to the exercise. The written assignments will be brief (1-2 pages) essays, but must show original thought (see Plagiarism below). Any resources used must be cited to give credit to the source, and information will be provided in class on ways to do that properly.

The principal resource for this course is the textbook “Environmental Sciences Earth as a Living Planet” by D. B. Botkin and E. A. Keller, John Wiley and Sons, New York. 8th Edition, 2011. (see “Resources” below) We will cover most of the textbook, and the lecture schedule below is keyed to the chapter upon which a given lecture is based. Students are responsible for reading the material in the appropriate chapter in advance.
of the lecture on that chapter. **Student may substitute earlier versions of this text if they wish.** A few copies of the older versions of this text will be placed on reserve in the Engineering and Sciences Reading Room in the Melville Library.

*Exams*

See Grading and Meeting schedule below.

**Grading:**

*Exams:* We will have two multiple-choice exams (a MID-TERM and a FINAL) that will together count as 60% of the grade. The MID-TERM will count as 30% and the FINAL as 30%. The FINAL will be held during final exam week, in the regularly scheduled examination period. This exam mostly will cover the material presented since the Mid-term, but will be partly cumulative and will draw on ideas presented earlier in the course. Exams will emphasize the material covered in class and will be graded on a 100-point scale. **Makeup exams will be permitted only with appropriate documentation of excuse or by prior permission of the instructors, and in all cases will be essay exams.**

*Participation:* Student participation is key to getting the most out of this course, and will constitute 20% of your grade. Response pads (“clickers”) will be used to facilitate student participation, by polling student opinions on topics being discussed in class, and to gauge student understanding throughout the course in a quiz format. For this reason, EACH student **MUST have a response pad registered to them.** Your student participation grade will be determined by a combination of your level of participation (how often a response is registered on your pad), and your mastery of the material (your correct score on announced quizzes). Students caught using more than one response pad in class will have their pads confiscated, and will be reported for academic dishonesty. There will be five clicker quizzes, through the semester as indicated on the attached lecture schedule. In total, these will be worth 10% of the course grade. Attendance will be counted as 10% of the grade, weighted as described above in “Attendance”.

**Written Assignments** (see below): These assignments (5 in number throughout the course) will focus on examples or case studies of specific environmental issues. We will explore these mostly through role-playing exercises. The assignments will be written, 1-2 page (single-spaced with 1 inch margins) mini-essays. It is expected that students will consult web-based resources to support positions taken in their essays. These assignments must constitute your own original work; as described below, we have a **zero tolerance policy towards plagiarism** in this course. Written assignments must be submitted through Blackboard (see below) using the Assignment Manager feature as explained in class. The written assignments count as 20% of the grade.

Points accumulated throughout the semester and will be totaled at the end, pro-rated according to the weighting described in each section above. Grades will be curved based on the distribution of point scores obtained by the class.

**Meeting Schedule:**

MAR 340 will meet twice weekly, on Tuesday and Thursday from 4:00 – 5:20PM in Javits 109. We expect to start class promptly and end on time. Both instructors attend the lectures; the instructor responsible for a given lecture is indicated on the schedule below. Highlighted in blue are the dates on which homeworks are assigned, when they are due, and the dates for clicker quizzes.
### MAR 340 Lecture Topics

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<td>Chapter 3- Systems of Change</td>
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<td>Chapter 6- Biogeochemical Cycles</td>
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<td>Biogeochemical Cycles &amp; the Gaia Hypothesis (HW#1 assigned)</td>
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<td>Chapter 4- Human Population &amp; the Environment</td>
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<td>Chapter 5- Ecosystems (Clicker Quiz #1)</td>
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<td>Chapter 8- Biological Diversity and Invasions (HW #1 DUE)</td>
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<td>Chapter 11- Effects of Agriculture on the Environment</td>
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<td>Chapter 12- Forest, Parks and Wilderness &amp; Chapter 9- Environmental Restoration</td>
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<td>Chapter10- Environmental Health, Pollution &amp; Toxicology (Clicker Quiz #2)</td>
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<td>Chapter 15- Fossil Fuels &amp; the Environment (HW#2 DUE)</td>
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<td>MID-TERM EXAM</td>
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<td>Chapter 18- Water Supply, Use and Management</td>
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<td>Chapter 19- Water Pollution &amp; Treatment (HW #3 DUE)</td>
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<td>Chapter 23- Materials Management</td>
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<td>Chapter 13- Wildlife, Fisheries, &amp; Endangered Species</td>
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<td>Role Play- “Overfishing” (HW #4 assigned)</td>
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<td>Chapter 20- Earth’s Atmosphere &amp; Climate (Clicker Quiz #4)</td>
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<td>Chapter 20- continued (HW#4 DUE)</td>
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<td>Chapter 21- Air Pollution</td>
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<td>Role play- “Global Warming” (HW#5 assigned)</td>
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<td>Chapter 7- Economics of Environmental Issues (Clicker Quiz #5)</td>
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<td>Chapter 24- Our Environmental Future: Wrap up/Review (HW#5 DUE)</td>
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### Class protocol:
Appropriate decorum is critical in a large lecture class. Conversations in the back of the lecture hall (or anywhere, for that matter) can be disruptive to both the students in the immediate area and to the instructors. In MAR 340, we follow a protocol we call “Concert Rules”. This is the sort of behavior expected during an opera or classical music concert. Once the performance (i.e. lecture) begins, there is to be no talking to those around you or on cell phones. In fact there are plenty of opportunities to speak in class - we welcome your questions and comments on the lectures or reading material. We will occasionally ask you to converse with your neighbor if a clicker question produces an unusual response or indicates that students are not
understanding topics presented in lecture. During the role-playing exercises, students have the stage, both in making presentations and in asking questions. Disruptive students will be asked to leave class.

Class Resources:

*Text Book:* “Environmental Sciences Earth as a Living Planet” by D. B. Botkin and E. A. Keller, John Wiley and Sons, New York, 8th Edition, 2011. This should be available at the bookstore bundled with WileyPlus. You may be able to purchase new or used versions of the text (e.g., 7th or earlier editions) at reduced cost through on-line vendors. We do highly recommend that you get one version of the text and read the assigned chapters to help you understand material covered in class. Alternatively, you may purchase just access to the WileyPlus site (https://www.wileyplus.com/WileyCDA/- the online version of the text. WileyPlus offers an online version of the complete text and many additional study materials including practice exams.

There is also a free student web site at: [http://www.wiley.com/college/botkin](http://www.wiley.com/college/botkin)

*Response Pads:* Stony Brook University has adopted the Turning Technologies response pad for use in courses. **All students must obtain their own response pad (available from the book store) and register it through our Blackboard site.** Response pads can be used in more than one course and if you already gave one, you can simply register it with MAR 340 to use it in the course. We will use these pads to take attendance, assess your understanding of lecture material, and grade in-class clicker quizzes.

*Blackboard:* This course has a website on Blackboard. Students can log onto the website at [http://blackboard.sunysb.edu](http://blackboard.sunysb.edu). Instructions for doing this as well as a list of campus SINC sites that provide access to the Web will be given in class. We will use the web site to provide supplementary information to the lectures, distribute and receive homework assignments, post grades as assignments and exams are completed, announce extra credit opportunities or any changes in the lecture schedule etc.

**DISABILITY SUPPORT SERVICES (DSS) STATEMENT**
If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Disability Support Services, ECC (Educational Communications Center) Building, room128, (631) 632-6748. They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation is confidential.

Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and Disability Support Services. For procedures and information go to the following website: [http://www.stonybrook.edu/ehs/fire/disabilities](http://www.stonybrook.edu/ehs/fire/disabilities]

**ACADEMIC INTEGRITY STATEMENT**
Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty are required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at [http://www.stonybrook.edu/uaa/academicjudiciary/](http://www.stonybrook.edu/uaa/academicjudiciary/)

**A Special Note On Academic Integrity pertinent to MAR 340**
Submitting written work that is not your own is plagiarism, and because it undermines the opportunity for a student to develop thinking and writing skills, and because it gives unfair advantage in grading to students
who commit plagiarism, it is not tolerated. As a student at Stony Brook University, you are held responsible for knowing what plagiarism is and for avoiding it. If there is any uncertainty in a written assignment about what we allow, you must ask one of us for clarification. Assignments are submitted through a feature in Blackboard called “SafeAssign”. This checks your assignment against a large body of available resources and gives you (and us) an indication of material copied from other sources. We urge you to check your SafeAssign score and if it shows a high incidence of copying, re-do the assignment in your own words before we grade it.

In your written assignments, you should avoid all of the following. Violating any of these standards or assisting someone else in doing so would be grounds for formal action against you by the Academic Judiciary.

You may not represent the writing or ideas of anyone else as your own. This includes but is not limited to:

- copying someone else's writing word-for-word, even if it constitutes only some of your paper.
- paraphrasing someone else's writing too closely, even if it constitutes only some of your paper. If there is any doubt about whether your submission is too close of a paraphrase, check with your instructor before turning it in.
- downloading from electronic databases, encyclopedias, or web sites and submitting the product as your own work, even if it constitutes only some of your paper.
- writing a paper together with someone else in the course (unless we expressly allow collaborative work).
- allowing someone else to write your paper or part of it.
- submitting all or part of a paper obtained from a commercial "paper mill."
- presenting someone else's idea as your own without properly citing it.
- submitting the same paper in more than one course without permission of the instructors.

As is true in any scholarly work, quoting someone else's writing is allowable, but only if the formal conventions for quoting and citing are strictly followed. Remember, however, that a written assignment that asks you to develop an idea and express it in your own words should, if it quotes other people's work at all, do so sparingly.

You are responsible for being familiar with and for adhering to the standards referred to in this section of the syllabus. Any violation can be taken as a deliberate act of cheating and will be actionable. Instances of plagiarism in MAR 340 will be referred to the Academic Judiciary for action. Information on the penalties and procedures that will be followed for plagiarism and other types of academic dishonesty is available on the Academic Judiciary page at the SUNY-Stony Brook web site (http://www.sunysb.edu). If you have any questions about policies for this course, speak to one of us.

CRITICAL INCIDENT MANAGEMENT:
Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures.