Fall 2013

Stony Brook University
Sustainability Studies Program
EHI 310
Course Instructor: William Bowman, PhD
Section: 01
Office Hours: By Appointment
william.p.bowman@gmail.com

COURSE DESCRIPTION:
A study of the rationale, principles, practices, and legal, social, economic, and ethical issues associated with restoring the structure and function of degraded ecological systems. Restoration ecology draws heavily from ecological theory, and the process of restoring a site can in fact provide unique experimental opportunities to test how well ecological theories predict the responses of natural systems. Important ecological concepts applied in restoration include disturbances, succession, fragmentation, system function, as well as, emerging areas such as assembly theory and alternative stable states.

Course Pre/co-requisites
MAT 125 or MAT 131; BIO 201

COURSE LEARNING OBJECTIVES:
The objectives of EHI 310 are for students to 1) learn the differences between degraded and undisturbed ecosystems at the community-, ecosystem-, and landscape-level; 2) practice recognition of field indicators of degraded ecosystems, including the identification of invasive and native flora; 3) understand how fundamental ecological principles are applied to the design and implementation of ecological restoration projects (including population genetics, physiological ecology, inter-species interactions, trophic dynamics, and succession models); 4) gain knowledge of how ecological restoration projects are implemented from site assessment through plan development and implementation to evaluation of the success of restoration projects in improving ecosystem attributes or services; 5) learn about the key ecological attributes of wetland, riverine, and forest ecosystems and how restoration projects attempt to restore or replace these attributes; 6) become skilled at understanding scientific literature and using the findings of scientific studies to evaluate restoration practices; 7) have the opportunity to ask restoration professionals about the technical challenges associated with designing and implementing ecological restoration projects; and 8) understand and evaluate the social, legal, economic, and ethical issues associated with the restoration of degraded ecosystems.

COURSE REQUIREMENTS:

Attendance and Make Up Policy
Three or more unexcused absences shall result in receiving no credit for class participation. Requests for an excused absence must be received more than 24 hrs before class via email. An absence due to sickness may be excused if accompanied by a letter from a doctor or health services center.

Required Readings and Assignments
Other Assigned Reading and Journal Articles: Will be posted on Blackboard.


Assignments: Three short assignments described below.
o Assignment 1: Observing Ecological and Physical Conditions in Degraded and Healthy Habitats. This assignment involves completion of field inspection worksheets to document observations. Assignment Due 9/19/2013

o Assignment 2: Is it Native or Invasive? This assignment requires you to use the plant identification skills learned in our field biology classes to quantify the % coverage of native and invasive plants at a nearby site. Assignment Due 10/10/2013

o Assignment 3: This assignment requires that you write a 2 page paper putting forth your position on a current topic in restoration ecology and defend that position using the findings of scientific review papers or studies. Paper Specifications include Time New Roman- 12 pt Font, 1.5 Line Spacing, and Normal Margins. Assignment Due 11/26/2013

Exams
Exams will be held on October 3 and November 5. The final exam will occur on the date/time determined set by the Registrar. The exams will not be cumulative and will be based only on the class material covered since the last exam.

GRADING:
Course grades will be determined as follows:
- Each Exam will account for 20% of the final grade
- Each Assignment will account for 10% of the final grade
- Participation in Class Discussions will account for 10% of the final grade

Alphanumeric breakdown of grades is as follows:
- A= 94-100%, A- = 90-94%, B+= 87-89%, B= 84-86, B-= 80-83%, C+= 77-79%, C= 74-76, C-= 70-73%, D=65-69%, F= <65%

MEETING SCHEDULE:

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<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Section</th>
<th>Topic</th>
<th>Reading(s)</th>
<th>Assignments Due and Other Notes</th>
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</thead>
</table>
| 1    | 8/27 | Introduction to Restoration Ecology | 1. Overview of Course, Course Policies, Class Survey  
2. Restoration Ecology’s Historical Context | Galatowitsch (Ch. 1); | |
|      | 8/29 |          | Global Drivers of Ecological Change and Characteristics of Degraded Ecosystems: Part I | Galatowitsch (Ch. 2-pgs 32-52)  
Rapport and Whitford (1999) | |
| 2    | 9/3  | No Class- Labor Day | | | |
| 9/5  | 9/5  | Introduction to Restoration Ecology | Global Drivers of Ecological Change and Characteristics of Degraded Ecosystems: Part II | Galatowitsch (Ch. 2-pgs 53-70) | |
| 3    | 9/10 |         | Assessing Current Ecological Conditions and Establishing Goals for Restoration | Galatowitsch (Ch. 2-pgs 53-70) | |
|      | 9/12 |         | Gathering Historical Site Data and Information | Howell et al. (Ch. 3) | Field Biology Class Held Outside in Schiff Preserve |
| 4    | 9/17 |         | Documenting Existing Conditions: Biological Inventories | Howell et al. (Ch. 4) | |
| 9/19 | 9/19 |         | Ecological Succession and Multiple Equilibrium States | Scheffer et al. (2001)  
Galatowitsch (Case H) | Site Assessment Worksheet Due;  
Field Bio Class Held Outside at Avalon Preserve |
| 5    | 9/24 |         | Interactions between Species | Galatowitsch (Case J) | |
|      | 9/26 |         | Food Webs, Invasions, and Re-introductions | Collins et al. (1999)  
Galatowitsch (Case G) | |
<p>| 6    | 10/1 | Restoration Planning and Design | Intro to Planning of Ecological Restoration Projects | Galatowitsch (Ch. 3) | |
| 10/3 | | | | EXAM I | |</p>
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<thead>
<tr>
<th>Date</th>
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<td>7</td>
<td>10/8 Restoration Planning Case Study: Indian Island and Terry’s Creek (Riverhead, NY)</td>
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<td>10/10</td>
<td>Restoration Master Plans and Site Plans</td>
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<td>10/12</td>
<td>Field Trip (Optional) to Gerritsen Creek Tidal Wetland Restoration in Brooklyn</td>
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<td>8</td>
<td>10/15 Restoration Planning and Design Beach and Dune Restoration, Case Study (Fire Island, NY)</td>
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<td>10/17</td>
<td>Restoration Planning and Design Wetland Restoration, Case Study-Mud Creek (Patchogue, NY)</td>
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<td>9</td>
<td>10/22 Restoration Planning and Design River and Stream Restoration, Case Study-Peconic River Fish Passage (Riverhead, NY)</td>
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<td>10/24</td>
<td>Restoration Planning and Design Invasive Species Management</td>
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<td>10/29</td>
<td>Restoration Planning and Design Forest Restoration, Case Study-Restoring Giant Sequoias in Mariposa Grove (Wawona, CA)</td>
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<td>10/31</td>
<td>Restoration Planning and Design Monitoring and Evaluation of Restoration Projects</td>
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<td>11</td>
<td>11/5 Restoration Planning and Design Exam II</td>
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<td>11/7</td>
<td>Restoration Planning and Design Restoration Genetics</td>
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<td>12</td>
<td>11/12 Restoration Planning and Design Mitigation</td>
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<td>11/14</td>
<td>Restoration Planning and Design Restoration of Contaminated Site and Brownfields</td>
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<td>13</td>
<td>Restoration Planning and Design Restoration of Plant-Pollinator Interactions</td>
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<td>11/21</td>
<td>Restoration Planning and Design Ecological Restorations: Large and Small Backyard Restorations &amp; Restoration in an Urban Landscape, Part I</td>
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<td>14</td>
<td>Restoration Planning and Design Ecological Restorations: Large and Small Backyard Restorations &amp; Restoration in an Urban Landscape, Part II</td>
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<td>11/28</td>
<td>Restoration Planning and Design No Class- Thanksgiving</td>
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<td>12/5</td>
<td>Restoration Planning and Design Ecological Restorations: Large and Small Everglades National Park, Part II</td>
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**Blackboard**
You can access class information, documents, and assignments on-line at: [http://blackboard.sunysb.edu](http://blackboard.sunysb.edu). If you used Blackboard during the previous semester, your login information (Username and Password) has not changed. If you have never used Stony Brook's Blackboard system: for help or more information see: [http://www.sinc.sunysb.edu/helpdesk/docs/blackboard/bbstudent.php](http://www.sinc.sunysb.edu/helpdesk/docs/blackboard/bbstudent.php). For problems logging in, go to the helpdesk in the Main Library SINC Site or the Union SINC Site, you can also call: 631-632-9602 or e-mail: helpme@ic.sunysb.edu

**Student's Responsibility:** Ensure you have entered a working email account in your Blackboard account. Access your BB account and make sure that you have access to this class, send yourself a test email using the email option within BB. Adhere to deadlines for term paper and other assignments. Adhere to the formatting instructions for the term paper. Seek help from instructor when problems arise. Should you have a disability follow the regulations spelled out below so that it can be evaluated as soon as possible.

**Cell Phone and Electronic Devices:** Use of cell phones, blackberries, laptop computers, iPods, MP3 players, and other audio and
telecommunications devices is strictly prohibited during class. The only exceptions are through permission granted by the instructor for special purposes. Clickers are excluded from this prohibition, if required for the class. During regular class sessions, cell phones must be either in ‘vibrate mode’ or turned off. Calls cannot be answered. Text messaging is not allowed during class. Cell phones must be turned off and enclosed in a case, book bag, briefcase, or the like during tests and exams. YOU are responsible for ensuring this policy is followed. Students MAY NOT have cell phones, electronic dictionaries, calculators, pagers or other “information rich” devices (anything that can receive and/or store many pages of text) in their possession during tests and exams.

Academic Dishonesty Policy: Academic dishonesty is a serious offense and a breach of academic integrity that may result in failure of the course or failure for the individual paper or assignment. The “Code of Student Conduct” states that all forms of academic dishonesty, including the following are prohibited (see student handbook):

- Plagiarism – the intentional use of ideas or words of another as one’s own paper or other academic assignments. If you are unsure of what constitutes Plagiarism visit this document http://www.wpacouncil.org/positions/WPAplagiarism.pdf or ask the instructor.
- Cheating during examinations, whether by copying from a fellow student or by using information in the form of unauthorized aids brought to the examination.
- The submission of work for any assignment that has been prepared by another student.

ACADEMIC INTEGRITY STATEMENT (must be the following language as approved by the undergrad council):
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/

Classroom Policy: Students are expected to follow the Stony Brook Code of Conduct while in the classroom. If you are not familiar with the Code you can find it at: http://studentaffairs.stonybrook.edu/sites/handbook/Code_1-22-03.pdf
Behavior that is disruptive to the function of the class, other students, or the instructor will not be tolerated. Poor class behavior or violations to the Code of Conduct will lead to removal from the class, possible withdrawal, or suspension. Food is not permitted in class. Beverages are OK, but please bring a container the can be closed to reduce spills. If a spill occurs please clean it up immediately.

Instructional Responsibilities: The University's statement of Minimal Instructional Responsibilities and Minimal Undergraduate Student Responsibilities are protocols with which you may already be familiar. They were established by the University Senate in 1996. If you have not already done so, please review them carefully. Both statements may be found beginning on page 81 of the Academic Policies and Regulations section of the on-line Undergraduate Bulletin: http://www.stonybrook.edu/ugrbulletin/current/index.shtml

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

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.

Course Content: Course material accessed from Blackboard, SB Connect, SB Capture or a Stony Brook Course website is for the exclusive use of students who are currently enrolled in the course. Content from these systems cannot be reused or distributed without written permission of the instructor and/or the copyright holder. Duplication of materials protected by copyright, without permission of the copyright holder is a violation of the Federal copyright law, as well as a violation of Stony Brook's Academic Integrity and Student Conduct Codes http://www.stonybrook.edu/uaa/academicjudiciary/policies.shtml

Electronic Communication Statement Email and especially email sent via Blackboard (http://blackboard.stonybrook.edu) is one of the ways the faculty officially communicates with you for this course. It is your responsibility to make sure that you read your email in your official University email account. For most students that is Google Apps for Education (http://www.stonybrook.edu/mycloud), but you may verify your official Electronic Post Office (EPO) address at http://it.stonybrook.edu/help/kb/checking-or-changing-your-mail-forwarding-address-in-the-epo.

If you choose to forward your official University email to another off-campus account, faculty are not responsible for any undeliverable messages to your alternative personal accounts. You can set up Google Mail forwarding using these DoIT-provided instructions found at http://it.stonybrook.edu/help/kb/setting-up-mail-forwarding-in-google-mail.

If you need technical assistance, please contact Client Support at (631) 632-9800 or supportteam@stonybrook.edu.