Stanford University  
Course Syllabus  
CEE 170S/270S: Environmental Disasters  
2 units

Instructor: YeoMyoung Cho (Sr Research Engineer); daybreak@stanford.edu; Rm 121 Y2E2  
Co-Instructor: Colin Ong (Adjunct Prof.); cgong@stanford.edu; Rm 159 Y2E2  
Teaching Assistant: TBD  

Office hours: TBD

Lecture Schedule: TBD  
Discussion Session Schedule: TBD  
Classroom Location: TBD

Course Description: Both natural and anthropogenic disasters produce undesirable environmental impacts as well as economic damage. Main objective of this course is to learn and understand environmental science and various environmental impacts of natural and anthropogenic disasters from chemical pollution point of view.

Also, to achieve the course objective, student will develop and apply a key academic skill: literature mining and critical review. Student will search, select, and review scientific research papers addressing environmental impacts of natural and anthropogenic disasters. Furthermore, student will understand how scientific research is designed and conducted, and research findings are disseminated.

Prerequisites: Chemistry. Or consent of instructor is required.

Learning objectives:  
- To understand environmental impacts by various natural and anthropogenic disasters  
- To develop key skills necessary to conduct scientific research: literature survey and critical review  
- To understand how to conduct scientific research and disseminate its findings and outcomes to academia and public

Grading:  
The course may be taken for a letter grade or CR/NC option. Letter grades will be based on a 100-point total score. A passing grade (CR) requires a total score equal to or greater than 70% of the total score. The total score includes:

15 Reading worksheets  
5 Literature survey worksheet  
Participation  
Final presentation  

60 %  
20 %  
10 %  
10 %
Course Format and Expectations

Lectures: Each lecture of the course will be taught by the instructor and materials will be provided at the lecture or online through coursework. Students are expected to attend and actively participate during lectures and discussions. For communicating additional questions and for periodic attendance records, an evaluation sheet may be distributed and collected during class. Please otherwise utilize office hours to speak with the instructor regarding course content questions or other issues/concerns.

Discussion sessions: Discussion session will consist of either discussion-based critical evaluations of research articles or teaching-assistant-led sessions with time for general questions/answers. The purpose of these sessions is to cover more research articles relevant to the lecture topic, enhance knowledge about environmental impacts of various disasters, and practice critical review process of research articles. Students are expected to attend and actively participate during lectures and discussions.

Reading assignments (60%)
• Total 15 reading worksheets will be handed out throughout the course including the last three for the final presentation. Worksheet(s) will be handed out during the class/discussion session, and should submitted at the start of next class/discussion session.
• Reading worksheets are to be submitted by individual students. Students must conduct the actual work and write up their work without referring to others' work. In other words, observe the spirit of the Honor Code; if in doubt, ask the instructor.
• Any late submissions after the due, and before the next class/session will have 50% of the score deducted from the total. Assignment will not be accepted after that.

Literature search assignments (20%)
• Total five literature search worksheets will be handed out throughout the course including the last one for the final presentation.
• Literature search worksheets are to be submitted by individual students. Students must conduct the actual work and write up their work without referring to others' work. In other words, observe the spirit of the Honor Code; if in doubt, ask the instructor.

Participation (10%)

Final presentation (10%)
• Each student will select or be assigned a case study topic (natural or anthropogenic disaster). Student will conduct their own literature search, select key literature, and review them (via reading and literature search assignments). Based on their review, student will prepare and give in-class 5-min presentation for the class. The objective of the short presentation is to provide scientific information about environmental impacts by the disaster to audience.
## Topics and Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Type</th>
<th>Date</th>
<th>Topic</th>
<th>Assignments</th>
<th>Due dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lecture</td>
<td>TBD</td>
<td>Course overview</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Discussion</td>
<td>TBD</td>
<td>Literature search and review, exemplary reading worksheet</td>
<td>RW¹ 1, LS² 1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Lecture</td>
<td>TBD</td>
<td><strong>Hurricane</strong>: Media Coverage, Science Behind, Research Findings and Implication</td>
<td>RW 2/3</td>
<td>RW 1/LS 1 due in class</td>
</tr>
<tr>
<td></td>
<td>Discussion</td>
<td>TBD</td>
<td>Journal club: Hurricane</td>
<td>RW 4, LS 2</td>
<td>RW2/3 due in class</td>
</tr>
<tr>
<td>3</td>
<td>Lecture</td>
<td>TBD</td>
<td><strong>Wild Fire</strong>: Media Coverage, Science Behind, Research Findings and Implication</td>
<td>RW 5/6</td>
<td>RW 4/LS 2 due in class</td>
</tr>
<tr>
<td></td>
<td>Discussion</td>
<td>TBD</td>
<td>Journal club: Wild Fire</td>
<td>RW 7, LS 3</td>
<td>RW5/6 due in class</td>
</tr>
<tr>
<td>4</td>
<td>Lecture</td>
<td>TBD</td>
<td><strong>Oil Spill</strong>: Media Coverage, Science Behind, Research Findings and Implication</td>
<td>RW 8,9</td>
<td>RW 7/LS 3 due in class</td>
</tr>
<tr>
<td></td>
<td>Discussion</td>
<td>TBD</td>
<td>Journal club: Oil Spill</td>
<td>RW10, LS 4</td>
<td>RW8/9 due in class</td>
</tr>
<tr>
<td>5</td>
<td>Lecture</td>
<td>TBD</td>
<td><strong>Water Crisis</strong>: Media Coverage, Science Behind, Research Findings and Implication</td>
<td>RW 11/12</td>
<td>RW 10/LS 4 due in class</td>
</tr>
<tr>
<td></td>
<td>Discussion</td>
<td>TBD</td>
<td>Journal Club: Water Crisis</td>
<td></td>
<td>RW11/12 due in class</td>
</tr>
<tr>
<td>6</td>
<td>Lecture</td>
<td>TBD</td>
<td>Course review</td>
<td></td>
<td>Presentatio n Topic</td>
</tr>
<tr>
<td></td>
<td>Discussion</td>
<td>TBD</td>
<td>Student presentation topic selection</td>
<td>LS 5</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Lecture</td>
<td>TBD</td>
<td>Student presentation paper selection (key 3 papers for the topic)</td>
<td>RW 13/14/15</td>
<td>LS 5 in class</td>
</tr>
<tr>
<td></td>
<td>Discussion</td>
<td>TBD</td>
<td>Student presentation paper selection</td>
<td></td>
<td>RW 13/14/15 due in class</td>
</tr>
<tr>
<td>8</td>
<td>Final</td>
<td>TBD</td>
<td>Student 5-min presentation</td>
<td></td>
<td>5-p presentation slides</td>
</tr>
</tbody>
</table>

¹ Reading worksheet assignment

² Literature search assignment
Accessibility
Students who may need an academic accommodation based on the impact of a disability must initiate the request with the Office of Accessible Education (OAE). Professional staff will evaluate the request with required documentation, recommend reasonable accommodations, and prepare an Accommodation Letter for faculty dated in the current quarter in which the request is being made. Students should contact the OAE as soon as possible since timely notice is needed to coordinate accommodations. The OAE is located at 563 Salvatierra Walk; phone: 650-723-1066; web site: http://studentaffairs.stanford.edu/oae.

Honor Code
The Honor Code applies to both instructors and students. The text is reproduced below; for more information, see http://studentaffairs.stanford.edu/communitystandards/policy/honor-code. Violations of the Honor Code will be taken extremely seriously in this class.

1. The Honor Code is an undertaking of the students, individually and collectively:
   - that they will not give or receive aid in examinations; that they will not give or receive unpermitted aid in class work, in the preparation of reports, or in any other work that is to be used by the instructor as the basis of grading;
   - that they will do their share and take an active part in seeing to it that others as well as themselves uphold the spirit and letter of the Honor Code.

2. The faculty on its part manifests its confidence in the honor of its students by refraining from proctoring examinations and from taking unusual and unreasonable precautions to prevent the forms of dishonesty mentioned above. The faculty will also avoid, as far as practicable, academic procedures that create temptations to violate the Honor Code.

3. While the faculty alone has the right and obligation to set academic requirements, the students and faculty will work together to establish optimal conditions for honorable academic work.

Course Codes
Only graduate students may enroll in the course using the CEE 270S course code. Summer College and undergraduate students should enroll in this course under the CEE 170S course code.