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## Syllabus

### Coastal Processes, Hazards, and Society – Fall Semester 2015

This syllabus is divided into several sections. You can read it sequentially by scrolling down the length of the document or by clicking on any of the links below to “jump” to a specific section. This material is also covered in your individualized campus syllabus (see Syllabus tab).

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#### Course Overview

##### Description

This course will provide students with a global perspective of coastal landscapes, the processes responsible for their formation, diversity, and change over time, as well as societal responses to current changes in the coastal zones around the world. Active learning elements include analyzing real data sets and applying critical thinking and problem-solving skills to real-world coastal issues that affect human populations. Students will complete a capstone project in which they consider a real-world coastal issue.

##### Course Objectives

When you successfully complete this course, you will be prepared to:

- develop the fundamental geospatial skills and concepts needed to assess the coastal processes and hazards discussed in this course;
- link geologic time and current shoreline processes in order to explain the past and present evolution of coastline morphology;
- assess the economic and social impacts of coastal hazards;
- select optimal engineering options to mitigate specific risks;
- assess how government and stakeholders can plan for and respond to coastal hazards.

##### Expectations

On average, most students spend eight to ten hours per week working on course assignments. Your workload may be more or less depending on your study habits.

We have worked hard to make this the most effective and convenient educational experience possible. The Internet may still be a novel learning environment for you, but in one sense it is no different from a traditional college class: how much and how well you learn is ultimately up to you. You will succeed if you are diligent about keeping up with the class schedule and if you take advantage of opportunities to communicate with me as well as with your fellow students.

Specific learning objectives for each module and project are detailed within each module.

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#### Course Materials

##### Online Lesson Content

All materials needed for this course are presented online through our course website. In each module, we provide citations for additional reading.

##### Complementary Subscription to the New York Times

We require you to obtain a *complimentary subscription* to the New York Times. You can use the online version. To do this

go directly to:

[nytimes.com/passes](https://nytimes.com/passes)

Simply register with your Penn State email address and create your user password to claim a NYTimes.com Academic Pass and receive NYTimes.com access

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### Assignments

This course will rely on a variety of methods to assess and evaluate student learning, including:

- **weekly quizzes multiple choice**, administered through your course management system;
- **two midterm exams** short answer, given in the lab period midterm weeks;
- **labs**: take place during weekly lab meetings;
- **Blogs**: see Course Blogs for a full description of this activity;
- **capstone activity**: will be introduced at the end of Module 3.

It is important that your work be submitted in the proper format by the designated due date. We strongly advise that you not wait until the last minute to complete these assignments—give yourself time to ask questions, think things over, and chat with others. You'll learn more, do better...and be happier!

**Due dates for all assignments are posted in the syllabus for your campus and below. Please make sure you are aware of the weekly deadlines.**

### Grading

#### Percentages and Letter Grades

Breakdown of each assignment's value as a percentage of total course grade.

Assignment	Percent of Grade
Quizzes (12)	15%
Midterm Exams (2)	15% each
Labs (12 weeks with multiple labs)	30%
Blogs (12)	10%
Capstone Project (1)	15%

Your scores for all assignments will be kept current in the Course Management System.

Letter Grade and Corresponding Percentages

Letter Grade	Percentages
A	93 - 100 %
A-	90 - 92.9 %
B+	87 - 89.9 %
B	83 - 86.9 %
B-	80 - 82.9%
C+	77 - 79.9 %
C	70 - 76.9 %
D	60 - 69.9 %
F	< 60 %
X	Unsatisfactory (student did not participate)

#### Late Policy

We accept late work *only* in exceptional circumstances, but you must contact us immediately if you need an exception. The earlier you contact us to request a late submission, the better. Requests will be considered on a case by case basis. *If you miss a quiz or a blog entry, that will count as your dropped score. Late labs will be assessed a penalty of 10% per day.*

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### Course Schedule

Weekly Schedule

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				Lab: 9.30-10.45 AM		
<b>Blog posts are due by</b>						

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Midnight.						
Quizzes are due by Midnight.						

Note: Labs are due in the following week lab period (i.e., Lab 1 is due in Lab 2 lab period).

### Module Schedule

**Do not use this list for Readings or Assignments, use the Lesson Road Maps at the beginning of each module for these.**

Week 1: Course Orientation	
<b>Dates</b>	Monday, August 24, 2015 - Sunday, August 30, 2015
<b>Topics</b>	<ul style="list-style-type: none"> <li>• Meet the Instructors</li> <li>▶ The Learning Environment</li> <li>• Assignments</li> <li>▶ Technical Requirements</li> <li>▶ Course Blogs</li> <li>▶ Refreshers and Tutorials</li> <li>▶ How to Succeed in this Course</li> <li>• Course Communication</li> <li>• Getting to Know You</li> <li>• Course Introduction</li> <li>• Modern Earth Science Principle</li> </ul>
<b>Readings</b>	<ul style="list-style-type: none"> <li>• None</li> </ul>
<b>Assignments</b>	<ul style="list-style-type: none"> <li>• Perform tasks outlined in course orientation to become familiar with the course and the course environment.</li> <li>• Post a self-introduction to the course Blog.</li> <li>• Complete the Initial Course Survey on your CMS (Professors will give you more information).</li> </ul>

Week 2: The Societies and Economics of Coastal Regions	
<b>Dates</b>	Monday, August 31, 2015 - Sunday, September 6, 2015
<b>Topics</b>	<ul style="list-style-type: none"> <li>• Our Increasingly urbanized coasts and sea level</li> <li>▶ Introductory Activities</li> <li>▶ Case Studies</li> </ul>
<b>Readings</b>	<ul style="list-style-type: none"> <li>• See Lesson Road Map.</li> </ul>
<b>Assignments</b>	<ul style="list-style-type: none"> <li>• Complete Module 1 labs.</li> <li>• Take the Module 1 quiz.</li> <li>• Post the Module 1 Blog.</li> </ul>

Week 3: A Global Glance of the Geology of Coastal Landscapes	
<b>Dates</b>	Monday, September 7, 2015 - Sunday, September 13, 2015
<b>Topics</b>	<ul style="list-style-type: none"> <li>▶ Classification of Coastal Zones</li> <li>▶ Second Order Influences on Coastal Zones</li> </ul>
<b>Readings</b>	<ul style="list-style-type: none"> <li>• See Lesson Road Map.</li> </ul>

<b>Assignments</b>	<ul style="list-style-type: none"> <li>• Complete Module 2 labs.</li> <li>• Take the Module 2 quiz.</li> <li>• Post the Module 2 Blog.</li> </ul>
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<b>Week 4:</b>	
<b>Coastal Systems, Landscapes and Processes</b>	
<b>Dates</b>	Monday, September 14, 2015 - Sunday, September 20, 2015
<b>Topics</b>	<ul style="list-style-type: none"> <li>▶ Rocky Coasts</li> <li>▶ Reef Coasts</li> <li>▶ Nearshore, Beaches, and Dunes</li> <li>▶ Barrier Islands</li> <li>▶ Deltaic Coasts</li> <li>▶ Estuaries</li> <li>▶ Coastal Wetlands and Maritime Forests</li> </ul>
<b>Readings</b>	<ul style="list-style-type: none"> <li>• See Lesson Road Map.</li> </ul>
<b>Assignments</b>	<ul style="list-style-type: none"> <li>• Complete Module 3 labs.</li> <li>• Take the Module 3 quiz.</li> <li>• Post the Module 3 Blog.</li> <li>• Begin working on the Capstone Activity.</li> </ul>

<b>Week 5: Understanding Sea Level Change</b>	
<b>Dates</b>	Monday, September 21, 2015 - Sunday, September 27, 2015
<b>Topics</b>	<ul style="list-style-type: none"> <li>• Measuring Sea Level</li> <li>• Sea Level Definitions</li> <li>▶ Sea Level Changes: On a Daily to Centuries Long Time Scale</li> <li>▶ Sea Level Changes: New section title to come</li> <li>▶ Sea Level Fluctuations</li> <li>▶ Anthropogenic Factors and Sea-Level Change</li> </ul>
<b>Readings</b>	<ul style="list-style-type: none"> <li>• See Lesson Road Map.</li> </ul>
<b>Assignments</b>	<ul style="list-style-type: none"> <li>• Complete Module 4 labs.</li> <li>• Take the Module 4 quiz.</li> <li>• Post the Module 4 Blog.</li> </ul>

<b>Week 6: Coastal Catastrophes: Storms and Tsunamis</b>	
<b>Dates</b>	Monday, September 28, 2015 - Sunday, October 4, 2015
<b>Topics</b>	<ul style="list-style-type: none"> <li>▶ Tropical and Extratropical Storms</li> <li>▶ Tsunamis</li> </ul>
<b>Readings</b>	<ul style="list-style-type: none"> <li>• See Lesson Road Map.</li> </ul>
<b>Assignments</b>	<ul style="list-style-type: none"> <li>• Complete Module 5 labs.</li> <li>• Take the Module 5 quiz.</li> <li>• Post the Module 5 Blog.</li> </ul>

<b>Week 7: Impacts on the Societies and Economics of Coastal Regions</b>	
<b>Dates</b>	Monday, October 5, 2015 - Sunday, October 11, 2015
<b>Topics</b>	<ul style="list-style-type: none"> <li>▶ Case Studies</li> <li>▶ Paying for Flood Damage</li> </ul>

<b>Week 8: Midterm 1</b>	
<b>Dates</b>	Monday, October 12, 2015 - Sunday, October 18, 2015
<b>Topics</b>	Modules 1-6
<b>Readings</b>	<ul style="list-style-type: none"> <li>• None</li> </ul>
<b>Assignments</b>	<ul style="list-style-type: none"> <li>• Take the Midterm.</li> </ul>

<b>Week 9: Hard Structures and Coastal Modifications through Mimicking Natural Processes</b>	
<b>Dates</b>	Monday, October 19, 2015 - Sunday, October 25, 2015
<b>Topics</b>	<ul style="list-style-type: none"> <li>• Overview of Coastal Erosion <ul style="list-style-type: none"> <li>▶ The Dynamic Coastline</li> <li>▶ Coastal Protection and Mitigation</li> </ul> </li> </ul>
<b>Readings</b>	<ul style="list-style-type: none"> <li>• See Lesson Road Map.</li> </ul>
<b>Assignments</b>	<ul style="list-style-type: none"> <li>• Complete Module 7 labs.</li> <li>• Take the Module 7 quiz.</li> <li>• Post the Module 7 Blog.</li> </ul>

<b>Week 10: Managed Retreat/Multi-Layered Protection</b>	
<b>Dates</b>	Monday, October 26, 2015 - Sunday, November 1, 2015
<b>Topics</b>	<ul style="list-style-type: none"> <li>• Alternate Approaches <ul style="list-style-type: none"> <li>▶ Managed Retreat: Introduction</li> <li>▶ Managed Retreat as a Response to Disaster</li> <li>▶ Multi-Layered Defenses</li> </ul> </li> </ul>
<b>Readings</b>	<ul style="list-style-type: none"> <li>• See Lesson Road Map.</li> </ul>
<b>Assignments</b>	<ul style="list-style-type: none"> <li>• Complete Module 8 labs.</li> <li>• Take the Module 8 quiz.</li> <li>• Post the Module 8 Blog.</li> </ul>

<b>Week 11: Smart Building</b>	
<b>Dates</b>	Monday, November 2, 2015 - Sunday, November 8, 2015
<b>Topics</b>	<ul style="list-style-type: none"> <li>▶ Early Smart Building</li> <li>▶ The Need for Growth</li> </ul>
<b>Readings</b>	<ul style="list-style-type: none"> <li>• See Lesson Road Map.</li> </ul>
<b>Assignments</b>	<ul style="list-style-type: none"> <li>• Complete Module 9 labs.</li> <li>• Take the Module 9 quiz.</li> <li>• Post the Module 9 Blog.</li> <li>• Continue working on the Capstone Activity.</li> </ul>

<b>Week 12: Understanding and Assessing Coastal Vulnerability</b>	
<b>Dates</b>	Monday, November 9, 2015 - Sunday, November 15, 2015
<b>Topics</b>	<ul style="list-style-type: none"> <li>▶ Assessing Vulnerability: The Vulnerability Scoping Diagram</li> <li>▶ Dimension 1: Exposure</li> <li>▶ Dimension 2: Sensitivity</li> </ul>

	<ul style="list-style-type: none"> <li>▶ Dimension 3: Adaptive capacity</li> </ul>
<b>Readings</b>	<ul style="list-style-type: none"> <li>• See Lesson Road Map.</li> </ul>
<b>Assignments</b>	<ul style="list-style-type: none"> <li>• Complete Module 10 labs.</li> <li>• Take the Module 10 quiz.</li> <li>• Post the Module 10 Blog.</li> </ul>

<b>Week 13: Tsunami and Storm Surge Policy</b>	
<b>Dates</b>	Monday, November 16, 2015 - Sunday, November 22, 2015
<b>Topics</b>	<ul style="list-style-type: none"> <li>• Policy, natural hazards, disasters, and the emergency management cycle</li> </ul>
<b>Readings</b>	<ul style="list-style-type: none"> <li>• See Lesson Road Map.</li> </ul>
<b>Assignments</b>	<ul style="list-style-type: none"> <li>• Complete Module 11 labs.</li> <li>• Take the Module 11 quiz.</li> <li>• Post the Module 11 Blog.</li> </ul>

<b>Week 14: Sea Level Rise Policy</b>	
<b>Dates</b>	Monday, November 30, 2015 - Sunday, December 6, 2015
<b>Topics</b>	<ul style="list-style-type: none"> <li>▶ Identifying Stakeholders</li> <li>▶ Selecting Strategies</li> <li>▶ Assessing Costs and Benefits</li> <li>▶ Considering Views of Vulnerable Stakeholders</li> <li>▶ Setting Timeframes for Implementation</li> </ul>
<b>Readings</b>	<ul style="list-style-type: none"> <li>• See Lesson Road Map.</li> </ul>
<b>Assignments</b>	<ul style="list-style-type: none"> <li>• Complete Module 12 labs.</li> <li>• Take the Module 12 quiz.</li> <li>• Post the Module 12 Blog.</li> <li>• Continue working on the Capstone Activity.</li> </ul>

<b>Week 15: Second Midterm Week</b>	
<b>Dates</b>	Monday, December 7, 2015 - Sunday, December 13, 2015
<b>Topics</b>	Modules 6-12
<b>Readings</b>	None
<b>Assignments</b>	<ul style="list-style-type: none"> <li>• Take the second midterm.</li> <li>• Continue working on the Capstone Activity.</li> </ul>

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### Technical Requirements

See Technical Requirements (upper right of Orientation).

### Disclaimer

Please note that the specifics of this Course Syllabus can be changed at any time, and you will be responsible for abiding by any such changes. Changes will be posted to the course discussion forum.

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