

Course           ARCHAEOLOGICAL OCEANOGRAPHY: REEFS AND WRECKS  
CZMT 0955-DE1 (22411) or MACS 0955-DL1 (23746)  
Graduate Level: 3 credits

Fall Two Term:       October 19 to December 20, 2009

### Course Description

Archaeological Oceanography: Reefs and Wrecks will examine human interest in the tension of natural and cultural treasures. Students explore the dynamics of ocean systems, human systems, natural and artificial reefs. Legal, ethical and preservation considerations will be examined. Mapping, navigation through time and tools and technology through time will be featured as well as present day conservation of artifacts, archives and the nature of evidence. Elements of concern include stewardship of natural and cultural resource plus conservation and research of artifacts.

We are proposing to offer a follow-on one-week field course to be offered during 2010 focusing on the NOAA Maritime Heritage Trail of 11 shipwreck sites of the 1733 Fleet in the Florida Keys National Marine Sanctuary, the History of Diving Museum at Mile Marker 83, the Mel Fisher Maritime Museum and Conservation Laboratory, Key West, the Vandenberg, and the Dry Tortugas National Park at Fort Jefferson. If this course is approved, it will include an on-going distance learning dialogue on WebCT. A reflection final report will be required at the end of the term.

Instructor     Clarice M. Yentsch, Ph.D. with experience as a research oceanographer, educator, and museum professional.

### Contact Information

My E-mail is [cy58@nova.edu](mailto:cy58@nova.edu). Please use the WebCT e-mail for course-related issues. I do not always check my email over the weekend, so please try to send me any pressing email correspondence during the week. My cell phone is 305-509-4070 should you have an urgent need to reach me. Please use email as the first line of communication.

### Text Book and Other Resources

The textbook for the course is BENEATH THE SEVEN SEAS: ADVENTURES WITH THE INSTITUTE OF NATICAL ARCHAEOLOGY edited by George F. Bass and published by Thames & Hudson, 2005. The Library of Congress Catalog Card Number is 2005900862 and the ISBN-13: 978-0-500-05136-8 and ISBN-10: 0-500-05136-4. There are 433 illustrations, 410 in color. The book retails for \$39.95 and is readily available on Amazon.com and other websites. In addition there are a

number of excellent websites and publications regarding underwater archaeology. In addition, recent publications of significance will be made available for reading online. There will be guest presentations.

### Course Structure and Learning Goals

The goal is to engage students in the field of underwater archaeology via case studies of various shipwrecks and sunken communities. The learning goals are: 1) To gain knowledge and appreciate both natural and cultural treasures and the interplay between them. 2) To understand the complexity of the tensions (legal, ethical, environmental, and preservation considerations) and prepare to undertake appropriate actions based on the short-term and long-term and 3) To become wise about the history of mapping, navigation, ship design and construction, and the tools and technologies of exploration and the nature of evidence.

The course is designed to be self-directed and you will need to keep up with the readings, postings and assignments. Each week you should give two responses to a specific Discussion Board Question (dialog with entire class), to follow that discussion with posting from your peers/fellow classmates, and help in the flow and assimilation of information. You will find an overview for each week (e.g. "Week 1 Overview" under Course Content on the WebCT and the Calendar). Note that all Discussion Board Question responses and Bi-weekly Assignments are DUE by midnight Eastern Standard Time on the week they are assigned.

Discussion Board Questions/Dialogue/Forum (Group): I will post a Discussion Board Question at the beginning of the week related to the week's material. You are required to post one "mini-essay" response of 150-200 word, and one shorter reaction to your classmates and the group dialogue on the Bulletin Board in the WebCT under the designated week. These entries are due by midnight (EST) on Sunday. It should be evident that you have done the weekly readings and synthesized the material. You are required to submit 7 Discussion Question responses. There will not be a response due the last week of class.

Bi-Weekly Assignments (Individual): There will be 3 weeks (at the end of weeks 2, 4, 6) where you will have a short assignment due. The assignments should be created in WORD and uploaded to the Assignment Digital Drop Box on WebCT.

Final Research Paper (Individual): A final research paper will be expected to be approximately 3-5 double spaced pages (1000 words). The final research paper should be created in WORD and uploaded to the Assignment Digital Drop Box on WebCT. A minimum of 5 references is expected. Please use APA style formatting for citing references (can be found on Nova library website). The Research Paper is due by Friday at midnight (EST) on the last day of class, December 18.

## Course Assessment

Your grades will be based on the following breakdown of requirements for the course.

Discussion Board Questions Contribution	30%
Bi-Weekly Assignments	30%
Final Research Paper	40%
<b>Total</b>	<b>100%</b>

## Computer Conference Participation Grading Guide

This matrix explains the basic criteria used to assess participation in the on-line discussion forums on the course website. Each factor listed will be taken into account in assigning grades. Please note that the caliber of contribution is at least as important as the frequency.

One of the advantages of an online course is your ability to reflect on an issue or topic and then revisit it at a later date, and/or continue to provide new material or perspectives. For this reason, online discussions are not “closed” at the end of a particular Unit. However, it is understood that your participation in the discussions will take place throughout the term, and the majority of postings to a particular Bulletin Board unit will be made at the time that it is being actively examined and discussed. It is not acceptable to make a large number of postings to all unit discussions during the final week of class. If you are going to be away for a period of time during the course and will be unable to make postings, it is your responsibility to advise the course instructor.

<b>Grade per unit</b>	<b>Frequency of Participation</b>	<b>Discussion &amp; Feedback</b>	<b>Readings</b>
2.5	Participates at least two times within a unit.	Thoughtful answers; offers original analysis and comment; uses assigned readings, as well as web-links and outside experience where relevant. The student offers valuable feedback to help classmates better understand an issue.	Comments clearly demonstrate that the student has done the required readings, and that the student comprehends the course material and its significance.
2	Participates one-two times within	Has a basic grasp of concepts, but arguments	Displays familiarity with

	a unit.	are sometimes incomplete or poorly supported. Student answers the discussion exercises, but rarely pays attention to classmates' comments.	most readings, but tends not to analyze them or explore connections.
1	Participates one-two times within a unit.	Not good. Comments to the discussion exercises marred by misunderstanding of key concepts. Little indication that the student has completed assigned readings.	Actual knowledge of material is outweighed by improvised comments and remarks.
0.5	Rarely participates.	Poor. Rarely participates in the forum discussions or exercises. Comments show no indication that student has completed the assigned readings or understands key concepts.	Little familiarity with readings.
0	No participation.	Never participates in the discussion exercises.	No apparent familiarity with assigned material.

## Course Syllabus Key Concepts – Eight Weeks

Week I      October 19-23, 2009  
 Oceanography: What we know and what we don't know  
 Dynamics of Ocean Systems: Setting the context  
     Light in water: Water Visibility/Clarity/Turbidity  
     Nutrients and oxygen:  
     Sound in water:  
     Pressure in water:  
     Temperature in water:  
     Climate and weather  
     Waves, tides and currents  
     Storms at sea; oceans and coast

### Assignments:

Review PDF of "Teaching Physical Concepts in Oceanography" By Lee-Karp Boss et al., 2009, The Oceanography Society.  
 Read "Archaeological Oceanography" by Robert Ballard, 2007 Oceanography Vol 20 No. 4 pp 62-67.

Week II      October 26-30, 2009  
 Dynamics of Human Systems: History of ships and shipbuilding:  
     Evidence  
     Timeline; mapping and navigation  
     Materials and methods  
     Engineering and design  
     Art and artisans

### Assignments:

Review PDF of Ocean Timeline from Appendix II of "Ocean Studies: Introduction to Oceanography" Joseph Moran, editor, American Meteorological Society

Week III      November 2-6, 2009  
 History of study of sunken shipwrecks: Evidence  
     Timeline of research highlights  
     Archaeological standards  
     Legal and ethical considerations

### Assignments:

Read from Text: "Introduction: Reclaiming Lost History from Beneath the Seven Seas" by George Bass, pp 10-27.

Week IV      November 9-13, 2009

History of study of sunken coastlines and sunken communities:  
Evidence

- Timeline of research highlights
- Archaeological standards
- Legal and ethical considerations

Assignments:

Read from Text: "Resurrecting the 'Wickedest City in the World': Port Royal, Jamaica" by Donny L. Hamilton pp 164-171.

Week V      November 16-20, 2009  
THE SEARCH: Methods of study, precision instruments, equipment and remote sensing

- Satellites to SCUBA
- Submarines/ROVs
- Research Vessels
  - Side scanning sonar; remote sensing; magnetometers
- Mailboxes; airlifts

Assignments:

Read from Text: "Mapping the 'Unsinkable' Titanic" by George Bass pp 231-237.  
Read: "Application of Geo-Referenced Underwater Mosaics in Marine Biology and Archaeology" by Martin Ludvigsen et al., 2007, Oceanography, Vol 20, No 4, pp 140-155.

Week VI      November 30-December 4, 2009  
Archives: Documentation of a study site; recovery of artifacts

- Labeling
- Verification
- Interpretation; In situ vs. exhibition
- Preservation and Conservation and Exhibition
  - Timeline of material breakdown and repair
  - Paper, fiber, wood – other organics
  - Metals – gold, silver, copper, lead, iron, mixed metals
  - Gems and stones

Assignments:

Read from Text: "La Salle's Ship Belle: Matagorda Bay, Texas" by J. Barto Arnold III and Donny L. Hamilton, pp 156-163.

Work through Conservation Matrix

Week VII      December 7-11  
Student Research Project discussion; Students share draft ideas

Assignments:

Select and learn about one wreck from each of the following chapters in the text or other resources:

Wrecks of Native Populations  
Oldest Wrecks  
Ancient Greek Wrecks  
Roman and Byzantine Wrecks  
Medieval and Renaissance Wrecks  
Seventeenth-Century Wrecks  
Eighteenth-Century Wrecks  
Wrecks of Modern Times

Week VIII     December 14-18  
                    Final Student Research Project

\*\*\* Disclaimer

This is the first time that this particular course is being offered. The syllabus may change. If this occurs, you will receive specific notification.