Related to This Course

Online completion of lessons, activities, and participating in class discussions over the term. You should also be prepared to spend at least 6-8 hours per week.

About This Course: This course is delivered completely online. You must have consistent access to the Internet.

Goals: Upon completion of the course, students will be able to:

1. Explain the geologic history of ocean basins, including the influence of plate tectonics.
2. Identify physical components of ocean margins and the deep sea.
3. Interpret deep sea sediments to explain relevant depositional and preservation processes in the marine environment.
4. Differentiate between abyssal and pelagic sediment types and their mode of origin.
5. Understand the importance of marine economic mineral resources.
6. Explain how sediments and structures can be used to understand paleoclimates.

Course Description: The study of the morphology, formation, and evolution of ocean basins

and marine biology with lab (G5SC2311 and 2311L).

Prerequisites or Co-Requisites: Physical Geography with Lab (GEO1200 and 1200L) or Introduction to Oceanography.

Instructor Name and Contact Information:

Mr. Brandon Jarvis
jarvis.brandon@calmail.com

Course Credit Hours: 3

Course Title: Geological Oceanography

Course Prefix/Number: OCE4050

Course Syllabus
Features
  Recognize processes responsible for creating ocean margins
  Classify coastal zones as active or passive margins
  Terminology
  Identify different components of the ocean margins using proper
  Student Learning Outcomes
  Session 3: Origin and Morphology of Ocean Margins
  
  Recognize processes responsible for creating ocean basins features
  Describe variations in deep ocean relief using proper terminologoy
  Student Learning Outcomes
  Session 2: Origin and Morphology of Ocean Basins

  Utilize multiple resources to visualize ocean bathymetry
  Describe the bathymetry of an ocean basin
  Recognize the history of ocean bathymetry research
  Student Learning Outcomes
  Vertical exaggeration
  Remote sensing
  Sampling and analytical methods
  Bathymetry
  
  Topics will include:
  
  Session 1: Introduction to Geological Oceanography

  Instructor ASAP! I will help you come up with a solution!
  Ask questions when you need answers. If you have problems, contact your
  address:

  You might have. Check the "Classlist" link for biographical info and email
  Team up with your classmates to discuss class assignments and questions
  Become very familiar with the site and how to use it. It is a tool to help you learn!
  See what tasks you'll need to work on for the week.
  Set your own schedule -- check the course web site early in the class week to
  Finally, you may want to incorporate these tips to help you get started:
Session 7: Waves and Currents - Effects on Marine Sediments

- Sedimentary Structures

How waves and currents affect marine sediments

Topics will include:

- Vents
- Sources of different marine environments, including hydrothermal
- Compare the physical and biological demands (e.g., nutrient levels)
- Biological communities
- Explain the effect of physical environment on benthic marine

Student Learning Outcomes

- Hydrosphere
- Abyssal
- Coral Reefs
- Estuaries
- Intertidal
- Marginal Marine

Session 6: Benthic Marine Environments

- Recognize different types of sediments created by biological activity

Student Learning Outcomes

- Analyze biogenic and chemically sediments in terms of water column
- Nongenic Chemical Sediments
- Lysothlibic and CI
- Production and preservation
- Siliceous Sediments
- Carbonate Sediments
- Distribution of biogenic sediments

Session 5: Biogenic Sediments: Other Chemical Sediments

- Processes and Diversity
- Interpret ocean sediment distribution in terms of water column
- Identify sediment distribution patterns in the deep ocean

Student Learning Outcomes

- Transport processes
- Distribution
- Origin
- Terrestrial Sediments
- Sediment Distribution
- Sediment Types

Session 4: An Introduction to Marine Sediments: Terrestrial (Classic)
Session 10: Palaeoceanography - Methods and Observations

Regional, national, and global impact

- Critique the impact of forecasted sea level rise in terms of its data
- Assess previous changes in sea level using physical and chemical

Student Learning Outcomes
- Global hydrologic mass balance (continental glaciers-ocean)
- Marginal marine depositional environments
- Methods for determining present sea level
- Estimate vs. isotopic sea level changes
- Anomalies, isostatic, etc.

Topics will include:

Session 8: Marine Resources

- Student Learning Outcomes
- Describe the costs and benefits of mining marine mineral resources
- Recognize the range of mineral resources that are available from the seafloor, or may be available with development of technology

Topics will include:

- Fossil Fuels
- Minerals

Session 6: Geologic Evidence and Consequences

- Student Learning Outcomes
- Use sedimentary structures to assess modern and ancient wave and water processes
- Identify the sedimentary structures associated with various wind

Topics will include:

- Fossil Fuels
- Minerals

Session 2: Palaeoceanography - Methods and Observations

Regional, national, and global impact

- Critique the impact of forecasted sea level rise in terms of its data
- Assess previous changes in sea level using physical and chemical

Student Learning Outcomes
- Global hydrologic mass balance (continental glaciers-ocean)
- Marginal marine depositional environments
- Methods for determining present sea level
- Estimate vs. isotopic sea level changes
- Anomalies, isostatic, etc.

Topics will include:
Required Materials:

- ISBN 354064453X
  Marine Geochemistry. H. D. Schulz and M. Zabel (eds).
- ISBN 3540601910
- Supplemental texts (NOT required):
  - ISBN 075067731
  - ISBN 0750639830
    The Ocean Basins: Their Structure and Evolution (second edition). Open
    University.

Required texts:

- Texts:
  - Environmental
  - Categorize the diageneric processes in terms of physical
  - Link chemicoor biological processes to the alteration of marine
  - Student Learning Outcomes
  - Diagnostic Questions
  - Authentic Assessment
  - Topics will include:
    - Session 1.2: Alteration of Abyssal Sediments

Session 1: Plate Tectonics and Ocean Basins

- Integrate the plate tectonics mechanism into students
- Review plate tectonics in terms of its effect on ocean margins and
- Ocean through time
- Formation of ocean lithosphere
- Evolution of an ocean basin
- Topics will include:
  - Session 1.1: Plate Tectonics and Ocean Basins

E-mail account

Internet Access (DSL or LAN access recommended)
Program Goals:

- Final exam (after Session 12): 25%
- Third exam (after Session 9): 15%
- Second exam (after Session 6 and concurrent with Session 7): 15%
- First exam (after Session 3): 10%
- Exams
  - Sessions 1, 6, 8, and 9: 5.5%
  - Directed discussions (4): 7.5%
  - All sessions
    - Middle Point (12): 7.5%
  - Participation in discussions: 16%
  - Session 10
  - Fieldwork exercise
  - Session 8
  - Marine Resources Summary
  - Sessions 1, 2, and 3: 15%
  - Ocean basin description
  - Assignments (3): 15%
  - Sessions 2, 3, 4, 5, 7, 11, and 12: 5%
  - Weekly quizzes (7): 5%

The course grade will be determined as follows:

| Course Component | Grade % | 0.0 | 0-9% | F 
|------------------|---------|-----|------|---
| Final exam       | 25%     | 1.0 | 60-69% | D |
| Exam 3           | 15%     | 1.3 | 70-79% | C |
| Exam 2           | 15%     | 1.7 | 77-79% | C+ |
| Exam 1           | 10%     | 2.0 | 80-82% | B |
| Discussions (4)  | 7.5%    | 2.2 | 83-86% | B+ |
| Participation in |         | 3.0 | 87-89% | A |
| Directed         |         | 3.3 | 90-93% | A+ |
| Discussions (12) | 7.5%    | 3.7 | 94-100%| A+ |
| Participation in |         | 4.0 | 0-49% | F |
| Middle Point     | 15%     | 4.4 | 50-59% | D |
| Assignments (3)  | 15%     | 4.0 | 60-69% | D |
| Weekly quizzes (7)| 5%   | 4.4 | 70-79% | C |

Grading Scale

Below is an additional breakdown of the course assignments. See slightly different from the grading scales used in other Oceanography courses. See Geological Oceanography will use the grading scale specified below, which may be

Grading / Evaluation:
ASSISTANCE:

Student Handbook 

Plagiarism Policy: 

Academic Conduct Policy:

Expectations for Academic Conduct/Plagiarism Policy:

need one or more of the following plugin:

Special Technology Utilized by Students: This course is totally online. All

References/Bibliography:

ISBN 354064933X

H.D. Schuh and M. Zabel (eds.)

Sebilo and H.W. Berger. ISBN 3540601904


E. Malme, P. Bergström, and J. Öhrström. ISBN 0750679391


ISBN 0750639830