

Why Do We Explore? An Online Professional Development Course

Presented by NOAA's Office of Ocean Exploration and Research (NOAA OER), and
the College of Exploration (COE)

Course Dates: October 5-16, 2009
(Coursework will be due by October 23)

Instructor for Grad Credit Portion: Melissa Ryan (COE)

Facilitators:

Dr. William Bragg (COE)
Peter Tuddenham (COE)
Dr. Tina Bishop (COE)
Susan Haynes (NOAA OER)
Melissa Ryan (COE)
Mellie Lewis (COE)

Location: The College of Exploration's online campus at www.coexploration.org
Log-in for course is specifically at this page:
<http://www.coexploration.org/oe/index.html>

Cost: The professional development offering is free to participants.
One biology graduate credit through California State Fullerton is available for \$90. The California State credit registration form is available on the *Why Do We Explore?* registration page and must be submitted directly to California State Fullerton. Registration deadline for Grad Credit is Mon Oct 5.

Course Description

This two-week online course is a collaboration between NOAA's Office of Exploration and Research and the College of Exploration. It presents the *Okeanos Explorer*, the first federal ship dedicated to ocean exploration, reasons why we explore, and the global importance of ocean exploration. Reasons for ocean exploration that will be discussed will involve:

- The relationship between the ocean, climate change, and ocean life
- The benefits of marine organisms to human health
- The potential for new energy sources
- The conservation and sustainability of our ocean

The course will feature scientist presenters who are experts in their respective fields and who have made significant contributions to our knowledge of the ocean.

Participants will be formal and informal educators, as well as interested members of the public. An unlimited number of people will be able to participate. Course components will include

online spaces for Teacher Professional Development, a collection of resources, discussion rooms for keynoters to interact with participants, and discussion rooms for teachers of different grade levels. Leader's Guides for teachers and new lesson plans relating to the keynote topics will be introduced. Participants taking this course for graduate credit will be guided to explore and discuss all materials with particular emphasis on ocean life and deep-sea ecosystems, and the ocean's impacts on human health. For example, new lesson plans that explore the biological impacts of climate change, species interactions at undersea methane hydrate sites, the benefits of marine organisms to human health, and the effects of human-induced stresses on marine life will be discussed and reviewed.

Course Outline (Subject to some timing alteration; see Professional Development Details)

Week One – October 5 - 9, 2009

Topics

- Climate Change and the Ocean
- Energy Sources from the Ocean
- *The Okeanos Explorer*: The Nation's First Federal Ship Dedicated to Ocean Exploration

Objectives:

- Discuss the impacts of climate change on the ocean and its inhabitants
- Explain how ocean exploration can lead to the discovery of new energy sources
- Describe the importance of the *Okeanos Explorer* to deep-ocean ecosystems

Week Two – October 10 – 16, 2009

Topics

- Benefits of the Ocean to Human Health
- Ocean Health

Objectives:

- Discuss the ways in which deep ocean organisms can contribute to pharmacology and cite examples
- Describe the potential effects of ocean acidification and other ocean health issues on marine organisms
- Explain why ocean exploration is important to sustaining life

Graduate Credit Requirements

1. Read and Participate in all online sessions. Join and read each of the keynote presentations.

- Listen to/read presentations, ask questions
- Review and explore lessons, resources, and standards (all related to the particular presentation)

Total ~ 9 hours

2. Participate in breakout session(s).

- Dialogue with other teachers/break out sessions (Resource room, Café, etc.)
- Explore other resources (web links, books, and other shared resources and lesson plans)

Total ~ 6 hours

3. Answer the “question for the week” in the graduate credit room. The question will relate to the Keynote topics.

4. Review at least one biology-related lesson plan that was presented during the workshop and provide feedback as to its usability, alignment with your curriculum, and content.

5. Demonstrate intended or actual classroom applications for one of the two one-week sessions, by choosing **one** of the options below:

A. Choose two of the lessons presented in this course and describe how you would incorporate them into your curriculum. Include a timeline for your implementation, your target audience, web site links, and additional resources.

B. Create an annotated bibliography of at least eight new resources beyond those presented in this course related to the session that would be useful for others as a reference. These may include Web links, articles, books, and other recommended resources. A description of each resource, as well as suggested grade level(s), possible use in the classroom, and assessment of its value should be included.

6. Complete the course evaluation. The survey will be posted online and will include questions about the participants' individual learning as well as the workshop format, structure, and content.

Course Assessment

Participants will have until October 23 to complete the requirements for graduate credit. Instructors to ascertain that all requirements have been met as stated above.

Note: Attendance related stats will be verified using a manager's monitoring feature of our Caucus software.