

Consult the [General Studies Request FAQ](#) for more information and quick answers.

New permanent numbered courses must be submitted to the workflow in [Kuali CM](#) before a General Studies request is submitted here. The General Studies Council will not review requests ahead of a new course proposal being sent to the Senate.

## Submission Information

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College/School

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College of Global Futures (CGF)

Department/School

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School of Ocean Futures (CSOF)

Submission Type

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Mandatory Review

**New Request:** A request for a new designation, a change in designation, or to reinstate a designation that has been lost.

**Mandatory Review:** Only select if this course (or topic on a *permanent* course) is undergoing mandatory review in the current academic year. Not for omnibus topic use.

**Modification:** A request to modify the expected learning outcomes of the course, but not change any other aspect of the originally approved proposal. Only for courses that have a previously approved General Studies Gold request.

## ASU Request

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Is this request for a permanent course or a topic?

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Permanent Course

Subject Code

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SEA

Course Number

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101

Units/Credit Hours

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3

## Course Information

Enter the course catalog information, found in the [web course catalog](#) or [Kuali CM](#).

Course Title

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Ocean Futures

Course Catalog Description

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Life on planet Earth relies upon a complex interplay between the ecosystems on the land and in the water. Explores the science and technology used to study the oceans, discusses current topics in

ocean science and investigates the effect of human activities on this system. Challenges students to examine their own mindsets regarding the importance of ocean impacts, discuss sustainable solutions to these global problems and identify the range of careers associated with the marine field.

Enrollment Requirements (Prerequisites, Corequisites, and/or Antirequisites)

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Credit is allowed for only BIO 194 (Ocean Futures (Coastal and Marine Science)) or SEA 101 or SEA 194 (Ocean Futures (Coastal and Marine Science))

Is this a crosslisted course?

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No

Is this course offered by (shared with) another academic unit?

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No

If you are requesting to change the existing GS Gold (not Maroon) designation, please check this box.

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General Studies Gold Designation Request

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General Studies Designation

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Sustainability (SUST)

Attach a representative syllabus for the course, including course learning outcomes and descriptions of assignments and assessments.

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[SEA 101 Syllabus.pdf](#)

Sustainability (SUST)

The Sustainability requirement will provide students with an interdisciplinary understanding of socio-ecological systems in relation to global challenges and opportunities. The learning objectives emphasize systems thinking, where human and non-human systems are understood as intimately connected, with human actions affecting all life on a planet with limits and boundaries. Students should also become familiar with how cultural, political, economic, social, and ethical beliefs, practices and systems are related to and impact planetary systems. Students will use course concepts and systems and futures thinking to address contemporary questions or challenges.

Most of the course content should align with the Gold category learning outcomes.

**Instructions:** In the fields below, state the assignment, project, or assessment that will measure each learning outcome, and provide a description. The description should provide enough detail to show how it measures the learning outcome. If needed, more than one can be identified.

The proposal does not need to include all course assessments that measure a given learning outcome. The provided assessment should include sufficient detail to allow the subcommittee to

make their evaluation. When appropriate, the same assessment can be listed for more than one learning outcome (e.g., a culminating project).

You may provide links to a document (Google Drive or Dropbox) that includes the relevant details for the assessment. **Do not provide links to Canvas shells.**

SUST Learning Outcome 1: Demonstrate an understanding of the earth and its ecosphere, including the measures that indicate their capacities and limits.

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### **Name: Lab Activities, Excel Exercise**

As part of the class participate in an excel lab that tasks them with plotting real data from the Bermuda Atlantic Time Series with monthly temperature, salinity, chlorophyll and oxygen data. Students are required to plot this data, link temperature profiles to their understanding of seasonal wind/warming patterns, and link this to the photosynthetic activity of the phytoplankton through interpretation of the chlorophyll and oxygen plots. This lab synthesizes key concepts of ocean ecosphere interactions and contextualizes it in the global earth sciences context.

### **Name: Module Level Quizzes**

The lectures provide a broad overview of the ocean, atmospheric, and land interactions. There are explicit explanations of biogeochemical cycles (with the idea of budgets and rates, capacities and limits), as well as a section on atmospheric climate forcing, global limits and capacities (sea level, heat budget, and ocean pH budget being the three main capacities under exploration). The understanding of these core scientific concept are assessed using end of module questions.

Example questions include:

Ocean acidification occurs as carbon dioxide levels in the atmosphere increase, causing seawater pH to [one] and the concentration of calcium carbonate ions to [two].  
**(decrease, decrease)**

What is the main factor contributing to the development of hypoxic zones in coastal oceans?

**Nutrient pollution, leading to algal blooms and oxygen depletion**

Strong ocean currents

Excessive sunlight

High levels of dissolved oxygen

Which factor primarily contributes to sea level rise?

**Melting glaciers and ice sheets**

Increasing ocean salinity

Ocean acidification

Decreasing ocean temperatures

How does the ocean help regulate the Earth's climate

**By absorbing and storing carbon dioxide and heat**

By creating hurricanes and typhoons

By reducing global temperatures

By generating heat through underwater volcanoes

SUST Learning Outcome 2: Trace historical impacts of a range of socio-economic, political or cultural choices on integrated human-environmental wellbeing.

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### **Name: Module Level Quizzes**

The historical context of current oceanographic problems, and the subsequent human-environment impacts are provided in lectures throughout the course. The learning for each of these is checked at the end of each module in a quiz

Example question from Module 6 Quiz: In the lectures we cover the historical evolution of the maritime shipping industry, from sail to steam, to ice carrying, to container ship carrying and the consequent increase in ocean trade and good availability. This is linked to the ecological impacts (waste) and support for human industries (shipping). We also go over changes in the legal framework for how we view the ocean as a site for waste dumping. In the quiz we then ask the questions to check understanding such as the following:

What type of oceangoing vessel has become more operationally efficient due to computer systems and mechanization of port infrastructure?

Passenger liners

Oil tankers

**Container ships**

Fishing vessels

As the Northern polar ice caps thaw there is increased competition among countries for ownership of the Arctic because of:

Military advantages

Shipping profit

Access to seafloor natural resources

**All of the above**

Dumping of waste into the ocean was historically considered acceptable because it was believed that the vastness of the ocean would dilute and disperse the waste harmlessly.

**True**

False

What does the timeline of regulations suggest about the progress of human understanding and responsibility toward ocean dumping?

Rapid and immediate change

Consistent indifference

**Gradual learning and improvement**

Reversal of regulations over time

SUST Learning Outcome 3: Envision pathways toward futures characterized by integrated human-environmental wellbeing.

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### **Name: Final Product**

Students create a final product that explains an ocean topic of their choice within five broad categories (Food, Resources, Trade, Waste, and Coastlines). They explain why the topic is important for both humans and the environment and what is known about the topic. Proposes solutions to how we can find solutions to the ocean issue. Students are graded (using a rubric) to ensure that for full points students “The importance and/or relevance was established and expanded on excellently. The issue is presented compellingly, and it is incredibly clear why it is important and relevant to both humans and ecosystems.”

SUST Learning Outcome 4: Articulate an approach to addressing contemporary questions or challenges that employs concepts or practices of sustainability.

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### **Name: Final Product**

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List all course-specific learning outcomes. Where appropriate, identify the associated SUST learning outcome(s) in brackets (see below for example). Note: It is expected that a majority of course-specific learning outcomes will be associated with a SUST learning outcome.

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### Learning Outcomes

1. Explain how the oceans are connected to the land and air, resulting in a “one planet” system that humans rely upon. [SUST LO1, SUST L02]
2. Identify potential solutions to human activities that are negatively impacting the ocean and consequently threatening this “one planet” system. [SUST LO4, SUST L02]
3. Communicate/Articulate scientific concepts. [SUST LO1]
4. Feel empowered to affect change in the world. [SUST LO3, SUST LO4]



## Form Submission - Proposer

Submitted for Approval | Proposer

Laura Zafirakis - January 20, 2026 at 3:49 PM (America/Phoenix)

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## Department Approval

Approved

Althea Pergakis

Susanne Neuer - January 20, 2026 at 3:59 PM (America/Phoenix)

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## GSC Coordinator Review

Approved

Kimberly Singleton - January 21, 2026 at 7:21 AM (America/Phoenix)

April Randall

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## Assistant Vice Provost Review

Approved

Tamiko Azuma - January 21, 2026 at 11:48 AM (America/Phoenix)

All required components confirmed.

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## Pre-GSC Meeting

Approved

Kimberly Singleton

April Randall - February 5, 2026 at 3:13 PM (America/Phoenix)

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## Sustainability (SUST) Committee

Acknowledgement Requested

Ryan Heintzman

Kevin Dooley

Jose Lobo - February 25, 2026 at 6:50 AM (America/Phoenix)

Revise and resubmit (major): the submitted course shows potential alignment with the general SUST category, but in its current form, does not yet meet the criteria for designation and requires

significant revisions. The committee recommends that the connection between assessments and SUST LOS be made clearer and that more detailed descriptions of the assessments be provided. If you choose to revise the proposal, please address the concerns outlined below in the revised submission. Resubmissions will be fully reviewed and may still require further revisions. In the revised submission, please clearly indicate the changes or additions using bold or highlighted text or explicitly indicate the changes in the text.

Treavor Boyer

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## General Studies Council Meeting

Waiting for Approval

Kimberly Singleton

April Randall

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## Proposer Notification

Notification

Laura Zafirakis

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## College Notification

Notification

Kate Eaton

Althea Pergakis

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