Undergraduate Courses Offered by GSO (2018)

GSO GRAND CHALLENGES COURSES

**OCG 106G: Life in the Sea for You and Me**
This course explores the biodiversity of life in the ocean and their relationships to humans on the scale of organisms (first half of semester) and entire ecosystems (second half of semester). We will use classic and current case studies of human-marine organism interactions to synthesize the knowledge developed in the class across diverse disciplines and perspectives. High school biology and chemistry courses are strongly recommended prior to taking this course.

Drs. Roxanne Beinart & Kelton McMahon

**OCG 103G: Impact of Global Change on Coastal New England**
LEC: (3 crs.) The relationship between science and society will be explored with a range of environmental change topics related to climate change (e.g., sea level rise, major storm frequency) and societal change (e.g., population trends, globalization). (Lec. 3) (A1) (C2) (GC)

Drs. John King & Rob Pockalny

**OCG 108G: Living by the Ocean**
LEC: (3 crs.) About 44 percent of the world's population lives within 150 kilometers of the sea. It is important for us to understand some great challenges that we are facing related to the ocean. This course will cover topics including but not limited to natural hazards, pollution, and ocean conservation. (Lec. 3) (D1) (GC)

Drs. Matt Wei and J.P. Walsh

**OCG 123G: Climate Change and the Oceans**
LEC: (3 crs.) The impact of human activities on the climate system, with emphasis on the ocean, set against a background of natural processes in and history of global environmental changes. (Lec. 3) (A1) (C2) (GC)

Drs. Becky Robinson and Jaime Palter

**OCG 200G: Extreme Weather**
LEC: (3 crs.) Introduction to the observations, theories and forecasts of weather phenomena with focus on extreme weather. Learn the vocabulary and specifics of weather, put these facts together to understand key weather principles and then apply those principles to decision making. (Lec. 3) (A1) (C2) (GC)

Dr. Kathy Donohue, Brian Heikes, Tetsu Hara

OTHER GSO UNDERGRADUATE COURSES

**OCG 110: The Ocean Planet**
LEC: (3 crs.) Cross-listed as (OCG), GEO 110. Introduces the origin and structure of the solar system; interaction of earth's solid interior, oceans' atmosphere and biosphere with emphasis on earth science; energy resources and present environment on Earth. (Lec. 3) (A1) (B4)

**OCG 111: Ocean Exploration**
LEC: (3 crs.) An introduction to the basic tenants of oceanography as illustrated by the significant scientific discoveries that have shaped our understanding of the ocean its role on the planet. (Lec. 3) (A1) (B3)

**OCG 131: Volcanoes And The Environment**
LEC: (3 crs.) General introduction to volcanic eruptions and their impact on the global environment and on human activity. Basic principles of the generation of magmas and their eruption at the earth's surface. (Lec. 3) (A1) (B4)

FOR STEM MAJORS

OCG 150: Coastal Oceanographic Data in RI Waters
LEC: (3 crs.) Collecting oceanographic data during on-the-water field experience in Rhode Island coastal waters. Students work in teams constructing, deploying, recovering and analyzing data from various oceanographic instruments. Declared STEM majors only. (Lec, Lab.) Pre: permission of instructor.

OCG 250: Global Ocean Data Science Analysis and Visualization
LEC: (3 crs.) Students will access oceanographic data from local and global depositories: satellites, floats, and gliders. Students will manipulate, graph, and visualize data of increasing complexity while coding to visualize oceanographic events. (Lec. 1, Lab. 2) Pre: credit for or concurrent enrollment in a 100-level calculus, or equivalent. (B3)

OCG 404: Environmental Data Acquisition and Analysis. LEC: (3 crs.) Cross-listed as (OCG), NRS, GEO 404. Introduction to instrument prototyping and measurements in environmental science. Hands-on with data collection: programming microcontrollers, interfacing hardware and software, wireless sensor networks. Data analysis in Python. (Lec. 2, Lab. 1) Pre: MTH 131 or MTH 141.

Brice Loose - fall

PLUS....

OCG 301

OCG 451