OCNG - Oceanography

Courses

OCNG 251 Oceanography
Credits 3.3 Lecture Hours.
Overview of the ocean environment; interrelation of the subdisciplines of ocean sciences; importance of the oceans to human beings; human impact on the oceans.
Prerequisite: Concurrent registration in ONCG 252 if necessary for meeting the 8 credit hour science core curriculum requirement.

OCNG 252 Oceanography Laboratory
Credit 1.2 Lab Hours.
Hands-on laboratory experiments and exercises demonstrating principles of ocean sciences; emphasis on the unique interdisciplinary nature of the ocean and current ocean issues relevant to today's society; tailored for the non-scientist. Honors sections are also available.

OCNG 291 Research
Credits 0 to 4.0 to 4 Other Hours.
Research conducted under the direction of faculty member in oceanography. May be repeated 2 times for credit. Registration in multiple sections of this course is possible within a given semester provided that the per semester credit hour limit is not exceeded.
Prerequisites: Freshman or sophomore classification and approval of instructor.

OCNG 350 Marine Pollution
Credits 3.3 Lecture Hours.
Sources and fates of marine pollutants; types of pollutants including plastics, oil and sound; impact of pollution on society.
Prerequisite: Junior or senior classification or approval of instructor.

OCNG 401 Interdisciplinary Oceanography
Credits 3.3 Lecture Hours.
Quantitative survey of interdisciplinary relationships between biological, chemical, geological/geophysical and physical aspects of the ocean. Honors section also available.
Prerequisites: CHEM 101 or CHEM 107; MATH 131, MATH 151, or MATH 171.

OCNG 404 Ocean Observing Systems
Credits 3.3 Lecture Hours.
Investigate the rationale behind ocean observing systems; familiarize with the relevant social, scientific design, technology and policy issues associated with observing systems.
Prerequisite: OCNG 251 or OCNG 401 or approval of instructor.

OCNG 410 Introduction to Physical Oceanography
Credits 3.3 Lecture Hours.
Elements of the physics of the sea; descriptive aspects as well as cause and effect relations in respect to currents, thermal structure and waves. Intended for majors in the physical sciences or engineering.
Prerequisites: MATH 308; junior or senior classification.

OCNG 420 Introduction to Biological Oceanography
Credits 3.3 Lecture Hours.
Biological aspects of the marine environment; marine organisms; productivity of the sea; marine pollution and fouling; use of the sea.
Prerequisites: BIOL 112 or OCNG 251; junior or senior classification.

OCNG 425 Microbial Oceanography
Credits 3.3 Lecture Hours.
Diversity and ecology of microorganisms in the ocean; role in the Earth system both in the contemporary ocean and the geological past.
Prerequisites: Junior or senior classification, OCNG 251, or OCNG 401, or approval of instructor.

OCNG 430 Introduction to Geological Oceanography
Credits 3.3 Lecture Hours.
History of Oceanography; physiographic provinces of the oceans, their origins and sediments; geological sampling techniques and geophysical methods; coasts and beaches; paleoceanography; global tectonics.
Prerequisites: OCNG 251 or OCNG 401 or GEOL 101 or GEOL 104 or GEOG 203; junior or senior classification.

OCNG 440 Introduction to Chemical Oceanography
Credits 3.3 Lecture Hours.
Chemical aspects of the marine environment; biogeochemical cycles of organic and inorganic constituents; primary productivity, the carbon dioxide system, nutrient cycles, stable and radioactive isotopes in the sea.
Prerequisites: CHEM 102 or CHEM 104; junior or senior classification; sophomore with approval of instructor.

OCNG 451 Mathematical Modeling of Ocean Climate
Credits 4.3 Lecture Hours. 2 Lab Hours.
Problem-based course in theoretical and computer techniques applied to mathematical solutions of ocean climate, including ocean circulation, climate variability, El Niño.
Prerequisite: MATH 308 or MATH 451.

OCNG 485 Directed Studies
Credits 1 to 4.1 to 4 Other Hours.
Special reading assignments, problems and discussion on oceanographic topics of mutual interest to student and instructor.
Prerequisites: OCNG 251 or OCNG 401 or approval of instructor. An honors section is also available.

OCNG 489 Special Topics in...
Credits 1 to 4.1 to 4 Lecture Hours. 0 to 4 Lab Hours.
Selected topics in an identified area of oceanography. May be taken two times for credit.
Prerequisite: OCNG 251 or OCNG 401 or approval of instructor. An honors section is also available.

OCNG 491 Research
Credits 0 to 9.0 to 9 Other Hours.
Research conducted under the direction of faculty member in oceanography. Registration in multiple sections of this course is possible within a given semester provided that the per semester credit hour limit is not exceeded.
Prerequisites: Junior or senior classification and approval of instructor. An honors section is also available.