THE OCEAN ENVIRONMENT in Fall 2018 (SC1070)

Course Code	SC1070	**Professor(s)**	Manuel Caballer Gutierrez
Prerequisites	None	**Office Number**	C202
Class Schedule	MR: 09:00-10:20 in C-103	**Office Hours**	By appointment
Credits	4	**Email**	mcaballergutierrez@aup.edu
Semester	Fall 2018	**Office Tel. Ext.**	618

Course Description

This course will take you on a vivid exploration of the oceanic environment, from the tropics to the poles, introducing physical, geological, chemical, and biological oceanography. We will visit the Marianas trench and mid-ocean ridges, discuss about global warming and about the growing plastics problem in mid oceanic gyres, observe the effects of acidification in marine life, and study wave dynamics. We will explain oceanography´s most important concepts and debunk it´s widely (and wildly) held misconceptions, presented in movies such as “Deep impact”, “Day after tomorrow” or “The Meg”. You will understand the complexities and nuances involved in state-of-the-art oceanic research. You will explore topics like Hurricanes; El Niño; tsunami; the oceans role in climate; climate change; modern scientific exploration; biodiversity, red tides. We will also examine the ocean´s role as an energy, food and freshwater resource for humans and its tremendous vulnerability to abuse by them. The future success of humanity as a species depends on its ability to manage marine resources efficiently, mitigate associated risks and adapt to environmental changes.

This course emphasizes science literacy and critical thinking through the study of the ocean environment. Students will be guided by a text book, but they will also engage in lessons that involve research or more in-depth study on the topic.

Course Learning Outcomes

Gain a working knowledge of oceanic fundamentals
Be able to evaluate successful adaptation and mitigation strategies for humanity
Understand the major ocean related concerns of their generation.

General Education

This course fulfills the AUP Science General Education requirement GE130.

Course Outline

Lecture	Date	Subject
1	Mon 10 Sept.	Origins of the ocean, earth and solar system
2	Thu 13 Sept.	Marine science and scientific expeditions
3	Mon 17 Sept.	Plate tectonics
4	Thu 20 Sept.	The ocean floor
5	Mon 24 Sept.	Sediments
6	Thu 27 Sept.	The water molecule
7	Mon 1 Oct.	Structure of the Ocean
8	Thu 4 Oct.	Chemistry and ocean acidification
9	Mon 8 Oct.	Atmospheric circulation
10	Thu 11 Oct.	Storms and hurricanes
11	Mon 15 Oct.	Ocean circulation
12	Thu 18 Oct.	**Midterm recap**
13	Mon 22 Oct.	**Midterm**
14	Thu 25 Oct.	Climatic change, El Niño and La Niña
15	Mon 29 Oct.	Waves and tsunamis
16	Mon 5 Nov.	The tides and themass of the moon
17	Thu 8 Nov.	Coast
18	Mon 12 Nov.	The ocean and the origin of Life
19	Thu 15 Nov.	Marine biodiversity
20	Mon 19 Nov.	Marine communities
21	Thu 22 Nov.	Pelagic communities
22	Mon 26 Nov.	Benthic communities
23	Thu 29 Nov.	Deep sea
24	Mon 3 Dec.	Services provided by the Ocean
25	Thu 6 Dec.	Uses and abuses of the Ocean
26	Mon 10 Dec.	**Recap before final exam**
27	Mon 17 Dec.	**Final exam**

The schedule is subject to change and will be revisited as the course progresses.

Other faculty from the Department of Computer Science Math and Environmental Science might occasionally teach some classes of this course as guests.

Textbooks

Title	Author	Publisher	ISBN	Required
Essentials of Oceanography - 8th Edition	Tom S. Garrison & Robert Ellis	Cengage Learning	Print 9781337098649, eText 9781337515382	Yes

Attendance Policy

Students studying at The American University of Paris are expected to attend ALL scheduled classes, and in case of absence, should contact their professors to explain the situation. It is the student’s responsibility to be aware of any specific attendance policy that a faculty member might have set in the course syllabus. The French Department, for example, has its own attendance policy, and students are responsible for compliance. Academic Affairs will excuse an absence for students’ participation in study trips related to their courses.

Attendance at all exams is mandatory.

IN ALL CASES OF MISSED COURSE MEETINGS, THE RESPONSIBILITY FOR COMMUNICATION WITH THE PROFESSOR, AND FOR ARRANGING TO MAKE UP MISSED WORK, RESTS SOLELY WITH THE STUDENT.

Whether an absence is excused or not is ALWAYS up to the discretion of the professor or the department. Unexcused absences can result in a low or failing participation grade. In the case of excessive absences, it is up to the professor or the department to decide if the student will receive an “F” for the course. An instructor may recommend that a student withdraw, if absences have made it impossible to continue in the course at a satisfactory level.

Students must be mindful of this policy when making their travel arrangements, and especially during the Drop/Add and Exam Periods.

ENGLISH LANGUAGE PROFICIENCY STATEMENT: As an Anglophone university, AUP is strongly committed to effective English language mastery at the undergraduate level. Most courses require scholarly research and formal written and oral presentations in English, and AUP students are expected to strive to achieve excellence in these domains as part of their course work. To that end, professors include English proficiency among the criteria in student evaluation, often referring students to the university Writing Lab where they may obtain help on academic assignments. Proficiency in English is monitored at various points throughout the student's academic career, most notably during the admissions and advising processes, while

the student is completing general education requirements, and during the accomplishment of degree program courses and senior theses.

Grading Policy

Item	Num.	Duration	Evaluation	Percentage weigh final grade
Class quizzes	10	20 minutes	Percentage of right answers, average of top 8 scores	25%
Midterm	1	2 hours	Percentage of right answers	20 %
Lab reports	13	n/a	A,B,C,D,F. Average of top 11 scores	25%
Final written	1	3 hours	Percentage of right answers	30%

Other