OCES3130 Marine Biology

Intended Learning Outcome:

On successful completion of this course, students are expected to be able to:

- Describe in detail a diverse range of marine habitats and the organisms that inhabit them.
- Evaluate the extent to which a variety of environmental settings may influence marine life, taking particular account of the interaction between marine organisms and the environment.
- Evaluate the extent to which biological adaptation and ecological processes structure marine communities.
- Identify potential resources from the seas and assess their use for and by humans.
- Critically examine how marine ecological research projects are developed, implemented and interpreted.

Course Format:

There will be **Two 80-minute sessions** per week, which will include lectures, audiovisual presentations, and discussion periods.

Course Assessment (based on the following course activities and examinations)

- Midterm Examination: **40%**
- Final Examination: **60%**

Both will be in the format of MC and essay questions.

Course Instructors:

Course Instructors: Prof Hongbin Liu (liuhb@ust.hk, Tel: 2358-7341, Room: CYT5005);
Prof Longjun Wu (longjunwu@ust.hk, Tel: 2358-8251, Room: 5531 (lift 25-26))
Dr Lanlan Cai (cailanlan@ust.hk, Tel: 2358-7337, Room: CYT5007)

Office hour: by appointment

Textbook:

Peter Castro & Michael E. Hubber. Marine Biology, The 11th Edition, McGraw-Hill Education (Asia)

Major Reference:

James W. Nybakken. Marine Biology: an ecological approach. Harper Collins College publishers, New York. 6th Edition.

Jan A. Pechenik. Biology of Invertebrates. 4th Edition, McGraw-Hill Book Company,

Tentative Lecture Outline and Schedule:

#	Lecture Topic	Instructor
Part 1: Introduction to Marine Environment		
1)	Introduction to Marine Environment	Liu
2)	Physical and chemical oceanography	Liu
Part 2: The Organisms of the Sea		
3)	Marine prokaryotes: Bacteria and Archaea	Cai
4)	Marine viruses: living or non-living	Cai
5)	Marine algae: plant-like	Cai
6)	Marine protozoa: animal-like	Cai
7)	The "simple" marine animals: Porifera, Cnidaria and Ctenophora	Wu
8)	Mollusca (snails, clams, octopus) I	Wu
9)	Mollusca (snails, clams, octopus) II	Wu
10)	Marine worms and beyond: Lophotrochozoa	Wu
11)	The largest phylum: Arthropoda	Wu
12)	Almost vertebrates: Echinodermata, Hemichordata, Cephalochordata and Urochordata	Wu
13)	Mid-term exam	Liu & Wu & Cai
14)	Marine Fishes	Cynthia Yau (Guest Instructor)
15)	Marine Mammals	Liu

Part 3: Structure and Function of Marine Ecosystem

16)	Introduction to marine ecology	Cai
17)	Primary productivity and food web	Cai
18)	Carbon cycle and global warming	Cai
19)	Sandy beach and mudflat ecology	Liu
20)	Rocky shore ecology	Liu
21)	Subtidal ecosystems	Liu
22)	Estuary	Cai
23)	Coral reef	Cai
24)	Deep sea ecosystem	Cai
25)	The deep biosphere	Cai