OCES3130 Marine Biology (Fall 2024-2025)

Time/ Place: Tuesday and Thursday 12:00 – 13:20 in Room 4620 (Lift 31/32)

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)

- In class quiz: **10%**
- Midterm Examination: **40%**
- Final Examination: **50%**

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

Course Instructors:
Course Director: Prof Hongbin Liu (liuhb@ust.hk, Tel: 2358-7341, Room: CYT5005)
Course Instructors: Prof Longjun Wu (longjunwu@ust.hk, Tel: 2358-8251, Room: CYT2013b)

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:

#	Date	Lecture Topic	Instructor
Part 1: Introduction to Marine Environment			
1)	3 Sep (Tue)	Introduction to Marine Environment	Liu
2)	5 Sep (Thur)	Physical and chemical oceanography	Liu
Part 2: The Organisms of the Sea			
3)	10 Sep (Tue)	Marine prokaryotes: Bacteria and Archaea	Liu
4)	12 Sep (Thur)	Marine viruses: living or non-living	Liu
5)	17 Sep (Tue)	Marine algae: plant-like	Liu
6)	19 Sep (Thur)	Marine protozoa: animal-like	Liu
7)	24 Sep (Tue)	Multicellularity and the simplest animals	Wu
8)	26 Sep (Thur)	Cnidaria and Ctenophora (coral, jellyfish, and comb jellies)	Wu
9)	1 Oct (Tue)	Holiday	
10)	3 Oct (Thur)	Mollusca I (snails)	Wu
11)	8 Oct (Tue)	Mollusca II (clams)	Wu
12)	10 Oct (Thur)	Mollusca III (octopus and squids)	Wu

13)	15 Oct (Tue)	**Mid-term exam**	Liu/Wu
14)	17 Oct (Thur)	Marine worms and beyond: Lophotrochozoa	Wu
15)	22 Oct (Tue)	The largest phylum: Arthropoda I	Wu
16)	24 Oct (Thur)	The largest phylum: Arthropoda II	Wu
17)	29 Oct (Tue)	Almost vertebrates: Echinodermata, Hemichordata, Cephalochordata, and Urochordata	Wu
18)	31 Oct (Thur)	Marine Fishes	Wu
19)	5 Nov (Tue)	Marine Mammals	Liu
Part 3: Structure and Function of Marine Ecosystem			
20)	7 Nov (Thur)	Primary productivity	Liu
21)	12 Nov (Tue)	Zooplankton and food web	Liu
22)	16 Nov (Thur)	Carbon cycle and global warming	Liu
23)	19 Nov (Tue)	Sandy beach and mudflat ecology	Liu
24)	21 Nov (Thur)	Rocky shore ecology	Liu
25)	26 Nov (Tue)	Coral reef	Liu
26)	28 Nov (Thur)	Deep sea ecosystem	Liu