



Course Syllabus: Coral Reef Ecology - MarS 326

Division	Biological and Environmental Sciences & Engineering Division
Course Number	MarS 326
Course Title	Coral Reef Ecology
Academic Semester	Spring
Academic Year	2016/2017
Semester Start Date	01/22/2017
Semester End Date	05/18/2017
Class Schedule (Days & Time)	08:00 AM - 04:00 PM Sun Mon Tue Wed Thu

Instructor(s)

Name	Email	Phone	Office Location	Office Hours
Michael Lee Berumen	michael.berumen@kaust.edu.sa	+966128082376 8082376		By appointment

Teaching Assistant(s)

Name	Email
N/A	N/A

Course Information

Comprehensive Course Description	<p>This course will focus on several aspects of the ecology of coral reef ecosystems. This includes coverage of coral reef distributions, biogeography, and ecological processes important to reefs. Basic coral anatomy and physiology will be discussed. Reef fishes and their interaction with coral communities will be highlighted, along with coral reef fisheries. Modern threats to coral reefs, including thermal bleaching, ocean acidification, and diseases of corals will be examined with particular emphasis on processes affecting the future status of reef communities. There will be particular focus on the Red Sea coral reef ecosystems. The course will explore whether the mechanisms and processes understood as system drivers in coral reef systems in other parts of the world are also operating in the Red Sea. There may be a fieldtrip as part of the course (diving and snorkeling are optional for qualified participants, i.e., cleared scientific divers).</p> <p>As a block course, the course will meet daily and intensively from April 23rd to May 18th. Students are expected to be available at any time and on short notice during the block period.</p>
Course Description from Program Guide	<p>Advanced Coral Reef Ecology: This course will cover coral reef distributions, biogeography, and ecological processes important to reefs. Basic coral anatomy and physiology will be discussed. Reef fishes and their interaction with coral communities will be highlighted, along with coral reef fisheries. Modern threats to coral reefs, including thermal bleaching, ocean acidification, and diseases of corals will be examined with particular emphasis on processes affecting the future status of reef communities. As a PhD level course, assessment of students and participation expectations will be commensurate with the level of student experience.</p>
Goals and Objectives	<p>Students should gain a working knowledge of the current state of research in the aforementioned areas. Provided that logistic arrangements can be made, there will be an emphasis placed on developing field skills and sampling methodology. The overall objective is to provide students with some basic literacy in modern coral reef ecology.</p>
Required Knowledge	MarS 221 is a prerequisite for this course.
Reference Texts	<p>The Biology of Coral Reefs (Sheppard, Davy, and Pilling) Coral Reef Fishes (Sale) Coral Reef Guide: Red Sea (Lieske and Meyers) other texts as assigned by the instructor</p>

Method of evaluation	50.00% - Final exam 20.00% - Homework /Assignments 30.00% - Active participation
Nature of the assignments	The course may include assigned reading from textbooks and from primary literature; literature searches on assigned topics; presentations to the class based on readings or other research; and/or a written assignment.
Course Policies	Attendance is mandatory to all lectures. Participation is a significant component of the grade. As a block course, students are expected to be available at any time and on short notice during the block period. Any anticipated absence should be cleared with the instructor by written (email) notification as early as possible. Students with approved absences are responsible for catching up on the materials from their classmates.
Additional Information	It is strongly preferred that communications are via email. For urgent issues, the instructor may be reached by phone (number will be provided to the class).

Tentative Course Schedule

(Time, topic/emphasis & resources)

Week	Lectures	Topic
1	Sun 04/23/2017 Mon 04/24/2017 Tue 04/25/2017 Wed 04/26/2017 Thu 04/27/2017	Introductory lectures, background information, cruise planning (logistics permitting). Topics include bleaching in the Red Sea, biodiversity studies, direct and indirect dependence on corals, feeding ecology, and survey methodology
2	Sun 04/30/2017 Mon 05/01/2017 Tue 05/02/2017 Wed 05/03/2017 Thu 05/04/2017	Logistics permitting, the second week would be spent doing fieldwork.
3	Sun 05/07/2017 Mon 05/08/2017 Tue 05/09/2017 Wed 05/10/2017 Thu 05/11/2017	Debriefing from the cruise, specific lectures based on cruise observations, preparing assignments for individual presentations.
4	Sun 05/14/2017 Mon 05/15/2017 Tue 05/16/2017 Wed 05/17/2017 Thu 05/18/2017	Individual presentations and final exam
5		N/A (block course Apr 23 - May 18)
6		N/A (block course Apr 23 - May 18)
7		N/A (block course Apr 23 - May 18)
8		N/A (block course Apr 23 - May 18)
9		N/A (block course Apr 23 - May 18)
10		N/A (block course Apr 23 - May 18)
11		N/A (block course Apr 23 - May 18)
12		N/A (block course Apr 23 - May 18)
13		N/A (block course Apr 23 - May 18)
14		N/A (block course Apr 23 - May 18)
15		N/A (block course Apr 23 - May 18)
16		N/A (block course Apr 23 - May 18)
17		N/A (block course Apr 23 - May 18)
18		N/A (block course Apr 23 - May 18)

Note

The instructor reserves the right to make changes to this syllabus as necessary.