TROPICS101x

TROPICAL COASTAL ECOSYSTEMS

Course Syllabus
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1.0 What is this Tropical Coastal Ecosystems course about?

In this course, you will learn about the basic biology, ecology and sustainable management of tropical coastal ecosystems: coral reefs, mangrove forests, and seagrass meadows. Particular emphasis is given to how humans interact with these important ecosystems and how we might better manage them for a sustainable future.

Course material will draw heavily on the University of Queensland’s marine teaching programme. Many lectures are delivered on-site at Heron Island Research Station on the Great Barrier Reef. Lectures will involve exciting videos as well as varied activities called “Knowledge Acquisition Moments”.

2.0 Who is the target audience for this course?

Primary: K13 or first year undergrad students who have completed year 12 science. There are no prerequisites.

Other: Professionals from the Indo-Pacific and South-east Asian region (specifically Indonesia, Malaysia, and the Philippines) and graduate students from a variety of disciplines.

Other: Individuals interested in the long-term sustainable and practical uses of natural resources within the context of tropical coastal ecosystems.

3.0 What are the expected learning outcomes?

By the end of this education program, students will develop:

• Introductory understanding of the key organisms and ecosystems processes underpinning tropical coastal ecosystems
• A basic understanding of the value, vulnerability, dynamics and sustainable management of tropical coastal ecosystems
• Understanding and appreciation of the local and global threats to tropical coastal ecosystems, as well as the potential solutions that can be put in place to reduce the impact of these threats
• Understanding and practical use of spatial planning tools
• Experience with designing simple experiments and collecting ecological data from coral reefs (virtual coral reef ecology), as well as some simple analytical and statistical techniques
4.0 How is the course content organised?

Each week you will be encouraged to master a series of lectures. Lectures will consist of short videos, which will be interspersed with knowledge acquisition moments (KAMs), which do not contribute to your final grade.

It is important that you participate in these knowledge acquisition moments as they will enhance your overall understanding of the content and are crucial for allowing you to test whether or not you have understood the concepts presented throughout the lecture videos.

Each week closes with an end of week assessment, which will count towards your grade in this course. At the end of this course you will be asked to complete a Final Project, which is introduced at the start of this course (an outline of the sections and sub-sections is shown in the table below).

Finally, a discussion forum has been integrated at the end of each week.

The following table provides a summary of the course sections and sub-sections.
<table>
<thead>
<tr>
<th>Week</th>
<th>Section</th>
<th>Sub-sections</th>
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</thead>
</table>
| Intro| Introduction to Tropic101x       | • Welcome to the course  
• Preliminary survey  
• UQx Tutorial  
Introductory Discussion |
| 1    | Week 1: Introduction to Coral Reefs | • Introduction to the week  
• Biodiversity of Tropical Coastal Ecosystems  
• Coral Reef Ecosystems  
• Profile of a Reef Coral Reef  
• Assessment 1 (10%)  
Week 1 Discussion Board |
| 2    | Week 2: Introduction to Mangroves and Seagrass Communities | • Introduction to the week  
• Mangrove Ecosystems  
• Seagrass Communities  
• Profile of a Mangrove Forest  
• Assessment 2 (10%)  
Week 2 Discussion Board |
| 3    | Week 3: Primary Productivity, Calcification and Nutrient cycles | • Introduction to the week  
• Primary production, calcification and Nutrient cycles  
• Calcification and the carbonate balance  
• Predator-Prey interactions  
• Reproduction, Recruitment and Connectivity  
• Assessment 3 (10%)  
Week 3 Discussion Board |
| 4    | Week 3: Ecosystem Services and Threats | • Introduction to the week  
• Marine Ecosystem Services  
• Local Human Impacts  
• Global Human Impacts – Part 1  
• Global Human Impacts – Part 2  
• Assessment 4 (10%)  
Week 4 Discussion Board |
| 5    | Week 5: Ecosystem Management      | • Introduction to the week  
• Fisheries Management for Tropical Coastal Ecosystems  
• Marine Protected Areas  
• Land and Habitat Management for Tropical Ecosystems  
• Climate Adaptation  
• Assessment 5 (10%)  
Week 5 Discussion Board |
| 6    | Week 6: Research Methods         | • Progress so far and introduction to the project  
• Field Methods  
• Experimental Design  
• Remote Sensing  
• Assessment 6 (10%)  
Week 6 Discussion Board |
| 7/8  | Assessment Scenarios (2)         | • Introduction to the Final Project  
• Methodology  
• Final Project (40%)  
Week 7/8 Discussion Board |
5.0 Approximately how long will it take to complete the course?

As you can see from the table, some of the weeks contain more lecture materials than others. We anticipate, however, that the course will take no more than 4-5 hours to complete each week.

6.0 How do I navigate through the course?

When you first go to the course you will land in the Course Info area, where you will see announcements, course updates etc. There are several other tabs across the top of the page:

**Progress**: This tab shows your progress and grades for all completed sections of the course.

**Course**: This area holds the course content – videos, lectures, assessments etc. You should generally work through the course in the order in which it is presented. The sections are listed in the left-hand navigation bar and when you click on one of these then the sub-sections will be displayed as shown here for the introduction section.

Once you click into a sub-section then each of these will consist of a varying number of units (between 1 and 10). These are displayed in the horizontal bar across the top of the screen.
Tip! It can be easy to miss some of the content if your previous experience of learning platforms uses navigation from the sidebar. In the edX environment you need to navigate using both the left side bar and the bar at the top of the page.

There is a video tutorial demonstrating how to use the edX platform in the section called Introduction to Tropic101x, if you need additional help, the edX Demo course delves more into how to use the platform.

7.0 What are the assessment and completion requirements for this course?

- 6 quizzes (one for each week) containing approximately 20 questions and worth 10% each.
- Final Project in weeks 7 and 8, worth 40%.
- In order to pass this course you must complete all of the weekly assessments with a cumulative grade of 50% or higher and you must complete all parts of the final project.