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INSTITUTE OF  
OCEANOGRAPHY  
AND ENVIRONMENT

Faculty of Science and Marine Environment



## Syllabus of the new courses

**Course Name :** Marine Resources Management

**Number of credits :** 3 credits (4 ECTS)

**Period:** March or October Semester

Coordinator	Assoc. Prof. ChM. Dr. Ong Meng Chuan
Credits	3 credits (4 ECTS)
Lecturers	Assoc. Prof. ChM. Dr. Ong Meng Chuan / ChM. Dr. Tuan Mohamad Fauzan bin Tuan Omar / ChM. Dr. Adiana binti Ghazali
Level	Bachelor
Host institution	Faculty of Science and Marine Environment, Universiti Malaysia Terengganu
Course duration	14 weeks
New/revised	New Course

### Summary

*This course introduces the concepts of marine resources and management of marine environments, its complex interactions between flora and fauna ecosystem include fisheries resources, coral reefs communities and mangrove forests. Students will gain a knowledge and understanding of marine pollution, fisheries resources management, food security and safety, marine conservation, marine protected areas, coastal zone management, strategies for sustainable development and other topics of contemporary relevance. The course also will highlight the marine resources policy and the environmental and social implications of that policy. The current issue related to marine resource pollution also will be discussed in this course.*

### Target student audiences

Bachelor of Science students majoring in Marine Science.

### Prerequisites

No

### Aims and objectives

The aim of the course is to provide students with the concepts and inventory of marine resources, marine resources policy and its implication and management of marine environments, its complex interactions between flora and fauna ecosystem include fisheries resources, coral reefs communities and mangrove forests.

The objectives of the course are:

- to identify the major marine resources that beneficial to human livelihood and how to sustain the resources for future generations.
- to define the present level of exploitation of marine resources and how pollution affected the resources.
- to acquaint the principles of sustainable management of fisheries resources and healthy product to human.
- to impart knowledge on the policy and management of the resources and on the conservation aspects.

### The Authentic Tasks are:

No

### General learning outcomes:

By the end of the course, successful students will:

- |               |  |
|---------------|--|
| Knowledge     | • Describe the concept and type of marine resources and marine resources management and policy.  |
| Comprehensive | • Interpret the management of marine resources available and the interaction between biotic and abiotic factors without affecting the carrying capacity of the ocean |
| Application   | • Demonstrate the relevant ideas or models to overcome the problems of marine resource.  |
| Analysis      | • Identify the policies and acts that are widely used for sustainable marine resources management.   |
| Synthesis     | • Integrate the connection between human activity and the current issues related to marine resources.  |

### Overview of sessions and teaching methods

The course will make most of interactive and self-reflective methods of teaching and learning and, where possible, avoid standing lectures and presentations.

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|-------------------------|---|
| <b>Learning methods</b> | <ul style="list-style-type: none"><li>• Video presentations</li><li>• Group work, written articles</li><li>• Project Based Learning</li><li>• Literature review</li></ul> |
|-------------------------|---|

- |                       |  |
|-----------------------|--|
| <b>Course outline</b> | <p>Topic 1. Introduction to Marine Resources</p> <ul style="list-style-type: none"><li>• Defining marine resources</li><li>• Type of marine resources</li><li>• Marine resources use overview and history</li><li>• Human association with marine resources</li></ul> <p>Topic 2. Conservation of Marine Resources</p> <ul style="list-style-type: none"><li>• The importance of marine biological diversity</li><li>• Aichi biodiversity target / IUCN Redlist</li><li>• Protecting marine resources</li><li>• Marine protected areas</li></ul> <p>Topic 3. Pollution of Marine Resources</p> <ul style="list-style-type: none"><li>• Type of marine pollution</li><li>• Effect of marine pollution on marine resources</li><li>• Prevention and control of pollution and marine resources degradation</li><li>• Current cases on marine pollution</li></ul> <p>Topic 4. Fisheries Resources Sustainability</p> <ul style="list-style-type: none"><li>• What are fisheries populations and stocks?</li><li>• What does it mean to harvest sustainably?</li><li>• Sustainable use of fisheries resources</li></ul> |
|-----------------------|--|

**Topic 5 - Seafood Safety and Security**

- Seafood contamination by biological and chemical hazard
- Ensuring the safety and quality of seafood products
- Seafood safety guidelines / standards
- Quality control & assurance in seafood sources

**Topic 6 - Policies and Acts to Manage Marine Resources**

- Laws and policies related to the conservation of marine resources
- Legal framework in conserving marine resources
- Fisheries regulations & policies
- Marine resources management strategies

**Topic 7 – Current issues discussion**

- Current cases on marine pollution
- Current marine resources conservation activities
- Current seafood safety and security issues

**Literature**

**Compulsory**

- Falque M, De Alessi M, Lamotte, H (2002). Marine Resources: Property Rights, Economics and Environment. JAI Press.
- Ray GC, McCormick-Ray J (2013) Marine Conservation: Science, Policy, and Management. UK: John Wiley and Sons Ltd.
- Bavinck M (2001) Marine Resource Management: Conflict and Regulation in the Fisheries of the Coromandel Coast. New Delhi: Sage Publications India
- Noone KJ, Sumaila UR, Diaz RJ (2013) Managing Ocean Environments in a Changing Climate: Sustainability and Economic Perspectives. Elsevier.
- Techera E (2012) Marine Environmental Governance: From International Law to Local Practice. Abingdon, Oxon New York: Routledge.

**Recommended:**

- Alexander KA (2019) Conflicts Over Marine and Coastal Common Resources: Causes, Governance and Prevention. Abingdon, Oxon: Routledge

**Course workload**

The table below summarizes course workload distribution:

Activities	Learning outcomes	Assessment	Estimated workload (hours)
<b>In-class activities (40 hours)</b>			
Lectures	Understand the concept of marine resources and marine resources management and policy.	Class participation	28
Tutorial	Understand various policy and management contexts and common problems in communication in environmental governance	Class participation and preparedness for discussions	4
In-class assignments	Understand the fisheries sustainability and food safety to human and how the policy can minimize the degradation of marine resources	Class participation and preparedness for assignments	1

Discussion of preparation for presentation	Familiarity with and ability to critically and creatively discuss concept and points from literature.	Class participation, creative and active contribution to discussion	2
Presentation	Ability to discuss the type of marine resources regionally and globally, and the impact of several types of pollution to marine resources.	Quality of group and individual presentations	2
Examination	Measure students' knowledge and understanding at the end of a course or a program.	Individual assessment	3
<b>Independent work (80 hours)</b>			
Group work: - Contribution to the group case-study projects - Contribution to the preparation and delivery of presentation	Familiarity with and ability to critically and creatively discuss concept and points from literature.	Quality of group assignments and individual presentations	4
Assignment	Understand the fisheries sustainability and food safety to human and how the policy can minimize the degradation of marine resources	Quality of group assignments and individual presentations	20
Presentation	Ability to discuss the type of marine resources regionally and globally, and the impact of several types pollution to marine resources.	Quality of group assignments and individual presentations	6
E-learning modul			36
Examination	Measure students' knowledge and understanding at the end of a course or a program.	Individual assessment	14
<b>Total</b>			<b>120</b>

## Grading

The students' performance will be based on the following:

### Assessment

- Progress assessment (40%):
  - Presentation (20%):
    1. Type of marine resources (10%),
    2. Type and effect of pollution to marine resources (10%)
  - Report (20%):
    1. Fisheries and food safety (10%)
    2. Policies and Acts to Manage Marine Resources (10%),
- Final assessment (60%):
  - Mid-term Test (20%): Conducted at week 7, before mid-term break.
  - Final examination (40%): Conducted at end of semester accordance with the university exam timetable

### Evaluation

A (> 80%)  
A- (75 - 80%)  
B+ (70 - 75%)



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B (65 - 70%)  
B- (60 - 65%)  
C+ (55 - 60%)  
C (50 - 55%)  
C- (45 - 50%)  
D (40 - 45%)  
F (< 40%)



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