



# SULTAN QABOOS UNIVERSITY

## COURSE OUTLINE

**PROGRAM: Marine Science and Fisheries**

<b>1. Course Code</b>	MASF3060	
<b>2. Course Title</b>	INTEGRATED COASTAL ZONE MANAGEMENT	
<b>3. Credits</b>	3 CH, 12 CP, 6 ECTS	
<b>4. Pre-requisite Course(s)</b>	MASF2003+Cr	
<b>5. Co-requisite Course(s)</b>		
<b>6. Equivalent Course(s)</b>		
<b>7. Incompatible Course(s)</b>		
<b>8. Course Category</b>	<input type="checkbox"/> University Requirement	<input type="checkbox"/> University Elective
	<input type="checkbox"/> College Requirement	<input type="checkbox"/> College Elective
	<input checked="" type="checkbox"/> Department Requirement	<input type="checkbox"/> Department Elective
	<input type="checkbox"/> Specialization Requirement	<input type="checkbox"/> Specialization Elective
	<input type="checkbox"/> Other (specify):	
<b>9. Course Owner</b>	College: CAMS	Department: MSF
<b>10. Course Type</b>	<input type="checkbox"/> Lecture	<input type="checkbox"/> Lecture/Lab
	<input checked="" type="checkbox"/> Lecture/Seminar	<input type="checkbox"/> Lecture/Studio
	<input type="checkbox"/> Lecture/Tutorial	<input type="checkbox"/> Lecture/Lab/Tutorial or Seminar
	<input type="checkbox"/> Tutorial	<input type="checkbox"/> Laboratory (Practical)
	<input type="checkbox"/> Field or Work Placement	<input type="checkbox"/> Studio
	<input type="checkbox"/> Seminar	<input type="checkbox"/> Internship
	<input type="checkbox"/> Workshop	<input type="checkbox"/> Project
<b>11. Language of Instruction</b>	English	
<b>12. Course Description</b>		
<p>Integrated Coastal Zone Management Plan (ICZM): an integrated approach to coastal management policy with respect to all facets of coastal zones, in a bid to achieve sustainability, including geographical and political boundaries. The concept was originated in 1992 at the Rio de Janeiro Earth Summit. The ICZM requirements are set out in the summit's Agenda 21 proceedings. Integrated Coastal Zone Management (ICZM) is recognized globally as an effective way of resolving coastal disputes, ensuring that a wide variety of stakeholders can continue to use coastal services and promote adaptation to the impacts of climate change on both coastal communities and ecosystems. For sustainable development to be achieved, it is necessary to manage coastal impacts of human activities like onshore construction, forestry, mining, agriculture and the long-term implications of climate change.</p> <p>The course introduces students to general coastal management concepts including the assessment of resources, impacts and risks as well as policy and regulatory frameworks and the techniques that are applied to achieve sustainable development. The major physical settings of the coast, natural pressures as well as socio-economic aspects relevant for the coastal zone will be presented. Students will learn the environmental impacts of coastal developments, the estimation and definition of risk and how to achieve acceptable protection levels against storm events. Principles, tools and processes of integrated coastal zone management will be covered. Coastal resources are of fundamental importance in economic, cultural and environmental terms in Sultanate of Oman. The course will give examples of different coastal management projects worldwide and include an evaluation of the coastal zone management programme of Oman.</p> <p>At the beginning of the course the introduction to the marine environment along with the different types of coastal ecosystems like mangroves, wetlands, the coral reef will be discussed. Then different coastal resources of Oman would be identified. After that, the concept of ICZM will give to the students. In the next section, ICZM planning and management will be discussed along with the ICZM plan of Oman. After discussing 2-3 case studies student will try to prepare ICZM plan for Al Mouj Muscat. Then, the course will figure out the coastal zone management plan focusing on fisheries, aquaculture and tourism. After that climate change and risk in the coastal zone will be discussing the special emphasis on Oman and at the end of the course student will able to learn the adaptive strategies of climate change on the coastal zone.</p>		

<b>13. Teaching/Learning Strategies</b>		
<p>This course will teach students the importance of ICZM and how to apply the ICZM to prepare the coastal zone management plan. It includes preparing and applying the expertise needed to balance competing demands from various stakeholder groups with their coastal needs and requests. The lecture method is used in conjunction with active-learning teaching strategies. The theoretical fundamentals of the course are taught in lecture sessions and deepened by classroom discussion. Within practical sessions, the students are encouraged to apply what they have learned to analyse real-life case studies. In group assignments the students will prepare reports and practice presentations through cooperative learning. The course will be taught through lecture (black board, power point presentation), discussing, debating, questioning &amp; answering, demonstrations, concept mapping, team working, group discussing and field working. Student will identify the climate change impact of Sultanate of Oman coast and prepare adaptation strategies through group work. Finally, Student design the ICZM Plan for a particular region of Sultanate of Oman.</p>		
<b>14. Assessment Components and Weight [%]</b>		
<input checked="" type="checkbox"/> Quizzes 10	<input type="checkbox"/> Practical	<input type="checkbox"/> Other (specify):
<input checked="" type="checkbox"/> Homework assignments 20	<input checked="" type="checkbox"/> Project 20	
<input checked="" type="checkbox"/> In-term examination(s) 10	<input checked="" type="checkbox"/> Final examination 40	
<b>15. Grading Method</b>		
<input checked="" type="checkbox"/> A-F Scale <input type="checkbox"/> Pass/Not passed		
<b>16. Textbook(s) and Supplemental Material</b>		
<p>Textbooks:</p> <p>Clark, J.R. 1996. Integrated management of coastal zones. FAO Technical Paper. No. 327. Rome, FAO. 1992. 167p. <a href="http://www.fao.org/docrep/003/t0708e/t0708e00.htm">http://www.fao.org/docrep/003/t0708e/t0708e00.htm</a></p> <p>Clark, J.R. 1996. Coastal Zone Management Handbook. CRC Press. ISBN 1-56670-092-2.</p> <p>Kay, R. and Alder, J. 2000. Coastal Planning and Management. Spon Press. ISBN 0-419-24350-X.</p> <p>Reference books:</p> <p>Frank Ahlhorn. Integrated Coastal Zone Management- Status, Challenges and Prospects. 2018. Springer Vieweg. eBook ISBN 978-3-658-17052-3.</p> <p>Wim Salomons, R. Kerry Turner, Luiz D. de Lacerda, S. Ramachandran. 1999. Perspectives on Integrated Coastal Zone Management. Springer-Verlag Berlin Heidelberg. eBook ISBN 978-3-642-60103-3.</p>		

17. Matching Course Objectives with Program Outcomes and SQU Graduate Attributes			
SQU Graduate Attributes			
<b>A. SQU graduates should be able to:</b> <ol style="list-style-type: none"> <li>1. apply the knowledge and skills relevant to the specialization</li> <li>2. communicate effectively and use information and communication technologies</li> <li>3. critically analyze complex information and present it in simple clear manner</li> </ol>		<b>B. SQU graduates possess</b> <ol style="list-style-type: none"> <li>1. interpersonal communication skills and alignment with culture of international labour market to assist them in practical life and in living successfully</li> <li>2. skills and motivation for independent learning and engagement in lifelong learning and research</li> <li>3. work ethics and positive values, and intellectual independence and autonomy</li> <li>4. teamwork skills and display potential leadership qualities</li> </ol>	
		<b>C. SQU graduates should</b> <p>relish good citizenship qualities, be conscious of their national identity and be socially responsible, engage in community affairs and be mindful of contemporary issues.</p>	
#	Intended Student Learning Outcome /Course Learning Objective	Relevant Program Outcome(s)	Applicable Attribute(s)
1.	Students should be able to know the introduction to marine environment and different types coastal	A demonstrated depth of knowledge in the areas of marine science, aquaculture and	A

	ecosystems like mangrove, coral reef, wetlands	fisheries.	
2.	Students should be able to identify resources in typical coastal environments with special emphasis on coastal resources of Oman	A demonstrated depth of knowledge in the areas of marine science, aquaculture and fisheries.	A
3.	Students should be able to distinguish the physical settings of the various coastal types and describe their evolution	A demonstrated depth of knowledge in the areas of marine science, aquaculture and fisheries.  The ability to analyze and interpret the results of experiments, surveys and other data collection methods commonly used in marine sciences.	A, B
4.	Students should be able to describe the general concepts of integrated coastal zone management	A demonstrated depth of knowledge in the areas of marine science, aquaculture and fisheries.	A
5.	Students should be able to estimate the impact of coastal uses on the marine environment and evaluate sustainable development in the coastal zone	The ability to analyze and interpret the results of experiments, surveys and other data collection methods commonly used in marine sciences.	B
6.	Students should be able to distinguish the process of preparation of ICZM, i.e. ICZM Planning and Management	The ability to analyze and interpret the results of experiments, surveys and other data collection methods commonly used in marine sciences.	B
7.	Students should be able to prepare the coastal zone management plan focusing on aquaculture, fisheries and tourism	The ability to develop sustainable agri-food-systems or some of their components within practical constraints: financial, environmental, social, ethical, health and safety.  the attitudes of their professions necessary to promote an ethical professional behavior in the use of marine natural resources.	C, F
8.	Students should be aware on the case studies on ICZM, will be help them to prepare the ICZM Plan	The ability to develop sustainable agri-food-systems or some of their components within practical constraints: financial, environmental, social, ethical, health and safety.	C
9.	Students should be able to assess impact and risk of extreme events (climate change) onto the coastal zone and and develop the adaptive strategies	The ability to think critically, provide solutions to problems, and implement these solutions, especially in a team context.	D/E
10.	Students should be able to roughly predict the morphological effects of coastal constructions and how to manage shoreline erosion/sedimentation	The ability to think critically, provide solutions to problems, and implement these solutions, especially in a team context.	D/E
11.	Students should be able to prepare the coastal zone management plan of a particular region of Oman coast	The ability to think critically, provide solutions to problems, and implement these solutions, especially in a team context.  An ability to link marine sciences and social sciences in the context of a sustainable exploitation of the marine natural resources both nationally and internationally.	D/E, H2
12.			
13.			

14.			
15.			
16.			
17.			
18.			
19.			
20.			

#### **16. Student Responsibilities**

It is the student's responsibility to know and comply with all University Academic Regulations relevant to participation in this course. These regulations specifically include attendance requirement and students' academic code of conduct.

For attendance, it is the student's responsibility to be punctual and to attend all classes.

Students are expected to perform their work with honesty and avoid any academic misconduct, which is defined as the use of any dishonest or deceitful means to gain some academic advantage or benefit. This can take many forms, including but not limited to, the following: copying, plagiarism, collusion and forging documents. For full details, please refer to the Undergraduate Academic Regulations and to the Student Academic Misconduct Policy.

Additionally, this course requires that you:

Comply with all University rules and regulations including the wear of proper clothing on board the research vessels during field trips.

You are required to take notes during the class.

COURSE INFORMATION			
Course Code	3060	Course Title	INTEGRATED COASTAL ZONE MANAGEMENT
Semester/ Year	Fall 2021	Section(s)	10/11
Day, Time, and Place	Sun A01 10-12 + Tue A01 10-12		
Course Coordinator	Sachinandan Dutta		
Office Location	2057	Office Hours	Monday 10:00 - 12:00
Office Tel. Ext.	3673	Email	s.dutta@squ.edu.om
Tentative Schedule			
Week	Lecture #	Topic/Material to be covered	Assessment
1		Add/Drop - Course Brief	N/A
2	1	Introduction to Marine Environment Different Coastal Ecosystem	Quiz/Mid Term
3	2	Coastal Evolution and Types	Quiz/Mid Term
4	3	Coastal Resources of Oman	Quiz/Mid Term
5	4	Introduction to ICZM -I - Definition / Concept / Goals	Quiz/Mid Term
6	5	Introduction to ICZM-II- Sustainable Approach	Quiz/Mid Term
7	6	ICZM Planning and Management	Assignment
8	7	CZMP of Oman (existing)	
9	8	CZMP Focus - Coastal Development	Assignment
10	9	Case Study - Turtle Habitat	
11	10	Case Study - Digha, India	
12		Mid Term Exam	
13	11	Al Mouj - ICZM Preparation	Project
14	12	CZMP Focus - Fisheries/Aquaculture	Project
15	13	CZMP Focus - Tourism	Project
16	14	Climate Change and Risk in the Coastal Zone	Project
17	15	Adaptation Strategies and Coastal Protection	Project

## APPENDIX A: INSTRUCTORS OF MULTIPLE SECTIONS

[illegible]

## APPENDIX B: ADDITIONAL INFORMATION

### Principle of grade assignment

The course will be graded out of 100 points using both continuous evaluation and a final examination as follow:

It divided into 5 assessment methods

- 1 Two (2) assignments on ICZM Planning and Management and ICZM of OMAN.
- 2 Two (2) Quizzes covering almost all the topics.
- 3 One (1) Project on Climate Change impact on Oman Coast and its Adaptation
- 4 One (1) Mid-term exam covering all the topics
- 5 A final examination (PROJECT of ICZM Preparation) covering all topics of the course (class, laboratories, reading assignments....). As per SQU regulation, the final examination will count for >40% of the final mark (40 points).

### Mark Scheme:

For this course the marking scheme is as follow:

1	2 Assignments	20%
2	2 Quizzes	10%
3	1 Project	20%
4	Mid term exam	10%
5	Final Exam Project	40%
	Total	100%

### SQU Grading Scale

Letter Grade	Number Value	Lower Range%	Upper Range%
A	4	95	100.0
A-	3.7	90	94
B+	3.3	87	89
B	3	83	86
B-	2.7	80	82
C+	2.3	77	79
C	2	73	76
C-	1.7	70	72
D+	1.3	65	69
D	1	60	64
F	0	0.0	59

### INPUTS

Pass > 60

Excellence > 90

\*\*Ranges are inclusive: e.g., 87.0 - 89.9