Model Curriculum of Education (Graduate) for Integrated Coastal Management

March, 2012

Ocean Policy Research Foundation

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This publication was carried out under the patronage of the Nippon Foundation from the proceeds of motorboat racing.

Published 2012 by Ocean Policy Research Foundation, Tokyo, Japan

Publisher: Masahiro Akiyama
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First Printing ISBN 978-4-88404-279-0

The digital version of this book can be found at <http://www.sof.or.jp/en/>.

This report is published with the support of The Nippon Foundation.

Introduction

Various human and industrial activities are concentrated in coastal areas, but an appropriate perspective has been missing to manage the land and ocean in an integrated manner, leading to various problems such as the deterioration of the marine environment, the decline of fisheries, and conflicts over use and development. The integrated coastal management has been widely introduced around the world, becoming standard internationally, in order to address these kinds of situations, and this has also been discussed as one of the twelve basic measures under the Basic Act on Ocean Policy enacted in 2007.

However, progress has been slow in Japan towards measures for the integrated management of coastal areas, and there is a deficit of expertise to support these efforts. Thus, with the support of the Nippon Foundation through grants for our Foundation's boat race, we have implemented a three year study since 2010 entitled "Research into Curriculum of Education for Integrated Coastal Management".

This study seeks to build interdisciplinary education and research systems in universities etc. related to integrated coastal management, and to contribute to the development of the human resources needed to manage coastal areas, as well as the promotion and expansion of integrated coastal management throughout Japan.

This booklet summarizes a proposed Model Curriculum of Education for Integrated Coastal Management at the graduate level, according to the results of our 2011 research to mark the second year of this project. This draft educational curriculum model aims to propose an ideal curriculum for the purpose of establishing an independent graduate program for the study of integrated coastal management. We hope that the various graduate schools will be able to base their education in integrated coastal management on the model outlined in this booklet.

It is hoped that this booklet will contribute to the dissemination of education on integrated coastal management, and that it will further promote integrated coastal management.

March 2012

Ocean Policy Research Foundation
Masahiro Akiyama, Chairman

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for Integrated Coastal Management

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Model Curriculum of Education (Graduate) for Integrated Coastal Management

The following educational curriculum model has been developed for integrated coastal management with a view of the development of an independent Program of Integrated Coastal Management at the graduate level.

1. Diploma Policies (Educational Goals)

The integrated coastal management must coordinate the development, utilization and conservation of coastal areas for stakeholders in a variety of fields, and promote the mutual cooperation of parties with differing interests. This curriculum is designed with the purpose of providing a single, independent program for the development of human resources with these abilities.

The following four goals for the graduate program are the same as the ones for the undergraduate program. However, in comparison with the undergraduate program, the graduate program requires a deepening of expertise, and a more sophisticated cross-disciplinary understanding of practical techniques.

(1) Acquiring a broad perspective and multidisciplinary knowledge in order to promote the integrated management of coastal areas, against a framework in which the integrated management of coastal areas is led on a regional basis.
(2) Acquiring specialized knowledge in fields of personal interest related to coastal issues.
(3) Acquiring communication skills for the building of consensus and resolution of conflicts among stakeholders.
(4) Acquiring field (project) management skills for planning, implementation, monitoring and evaluation etc.

2. Basic Structure of Educational Organizations and Curriculum

The Integrated Coastal Management Graduate Program consists of the three courses of : 1) Marine and Coastal Science and Environmental Conservation; 2) Coastal Disaster Prevention; and 3) Coastal Social Sciences and Management.

There are no set Specialist Units (elective units) for each individual course, and students from all three courses are free to choose from the classes which interest them.

The Graduate Program for the Model Curriculum of Education for Integrated Coastal Management requires 30 credits for graduation, in accordance with Article 16 of the Graduate Program Establishment Standards. These 30 credits are generally broken down as shown below based on the graduate program graduation requirements.

In order to finish the master course, students must take at least 30 credits in total which consist of: i) 8 credits of compulsory units under Specialist Foundation Units; ii) 12 or more credits of elective units under Specialist Units; and iii) 2 credits of internship and 8 credits of Master Thesis under Practicum Units.

Classification of Course Units	Course Credits
Specialist Foundation Units (Compulsory Units)	8 credits
Specialist Units (Elective Units)	12 credits or more
Internship	2 credits
Master Thesis (Policy Breif Proposal Document or Proposal to Solve a Problem)	8 credits

3. Definition of Unit Areas

(1) Specialist Foundation Units (Compulsory Units): 8 credits

The following group of units are common for all courses, and are compulsory foundation units which give students the basic skills and knowledge related to integrated coastal management. In addition, within this educational curriculum model, “coastal” refers to the integrated concept of both the water and land, and units are named accordingly.

Coastal Science Theory; Ocean Management Policy Theory; Fundamental Consensus Building; Fundamental Partnerships

(2) Specialist Units (Elective Units): 12 or more out of 74 credits

The specialist units (selected compulsory units) which have a varied number of credits depending on the course are divided into Groups A, B and C.

In each of the Marine and Coastal Science and Environmental Conservation Course, the Coastal Disaster Prevention Course and the Coastal Social Sciences and Management Course, students can freely select 12 credits from Groups A, B and C according to their interests.

Elective Units Group A

Sub Groups

① Natural Science Units (Fields of Marine/Coastal Sciences and Environmental Conservation)

Fundamental Marine Ecology; Marine Physics; Coastal and Marine Chemistry; Marine Meteorology; Coastal Zoology; Coastal Botany; Ecosystem Functions; Fisheries Science (Natural Science); Land and Ocean Interaction; Water Pollution Policy; Marine Environment Conservation

② Engineering Units (Field of Coastal Disaster Prevention)

Environmental Impact Assessment; Coastal Disaster Prevention; Coastal Engineering; Coastal Planning

③ Social Science Units (Fields of Economics, Management, Sociology and Law)

Coastal Fisheries Resource Management; Fundamental Marine Transport; Ocean Energy and Mineral Resource Management; Fisheries Science (Social Science); Coastal Sociology; Coastal Tourism; Integrated Ocean Management Policy I; Integrated Ocean Management Policy II – Integrated Management Policies for Exclusive

Economic Zones and the Continental Shelf; Integrated Ocean Management and Planning; Domestic Ocean Laws; International Ocean Management Legislation

Elective Units Group B: These units teach how to build consensus and strengthen cooperation between the various entities and organizations that are involved in practice in the regional integrated management of coastal areas.

Consensus Building/Partnership Units

Consensus Building; Partnership Theory; Ocean and Coastal Literacy; NPO Theory

Elective Units Group C: These units allow students in small groups to enhance their practical approaches to specific techniques for the management of coastal areas.

Project Design and Evaluation; GIS Remote Sensing; Coastal Monitoring Techniques; Measurement Techniques; Social Research Methodology; Seminars

(3) Practicum Units (Compulsory): 120 credits

In addition to the above compulsory and selected compulsory units, graduates are also required to undergo an internship (2 credits) and to complete a graduation thesis (8 credits), to give them hands-on experience in fields related to integrated coastal management.

The graduation thesis is expected to involve proposals for policy-making or solving problems, and is to be developed in conjunction with the seminar in Group C.

The above ideas are summarized in the table below. With regard to the unit names, these are not meant to be set, but to offer a broad idea of the concepts involved. Since there are no established names for many units related to education in integrated coastal management, the unit names here are only meant to be illustrative.

4. Unit Structure (Graduate School of Integrated Coastal Management)

Unit Class.	Unit Names		Credits
Specialist Foundation Units (Compulsory) 8 credits	Coastal Science		2
	Ocean Management Policy		2
	Fundamental Consensus Building		2
	Fundamental Partnerships		2
Specialist Units (Selected Compulsory Units) A 54 credits	**①Natural Science Units (Fields of Marine, Coastal Sciences and Environ. Conservation) 24 credits**	Fundamental Marine Ecology	2
		Marine Physics	2
		Coastal and Marine Chemistry	2
		Marine Meteorology	2
		Coastal Zoology	2
		Coastal Botany	2
		Ecosystem Function	2
		Fisheries Science (Natural Science)	2
		Land and Ocean Interaction	2
		Water Pollution Policy	2
		Marine Environment Conservation	2
	②Engineering Units (Field of Coastal Disaster Prevention) 8 credits	Environmental Impact Assessment	2
		Coastal Disaster Prevention	2
		Coastal Engineering	2
		Coastal Planning	2
	③Social Science Units (Fields of Economics, Management, Sociology and Law) 22 credits	Coastal Fisheries Resource Management	2
		Fundamental Marine Transport	2
		Ocean Energy and Mineral Resource Management	2
		Fisheries Science (Social Science)	2
		Coastal Sociology	2
		Coastal Tourism	2
		Integrated Ocean Management Policy I	2
		Integrated Ocean Management Policy II – Integrated Management Policies for Exclusive Economic Zones and the Continental Shelf	2
		Integrated Ocean Management and Planning	2
		Domestic Ocean Laws	2

		International Ocean Management Legislation	2
Specialist Units (Selected Compulsory Units) B 8 credits	**Consensus Building and Partnerships 8 credits**	Consensus Building	2
		Partnership Theory	2
		Ocean and Coastal Literacy	2
		NPO Theory	2
Specialist Units (Selected Compulsory Units) C 12 credits	**Coastal Management Techniques and Practice 12 credits**	Project Design and Evaluation	2
		GIS・Remote Sensing	2
		Coastal Monitoring Techniques	2
		Measurement Techniques	2
		Social Research Methodology	2
		Seminars	2
Practicum Units 10 credits	Internship		2
	Graduate Thesis		8

5. Comparison of Diploma Policies

		(1)Broad Perspective and Multidisciplinary Knowledge	(2)Communication Skills	(3)Project Management Skills	(4)Specialized Knowledge
	Compulsory Units	○	○	○	○
Specialist Units (Selected Compulsory Units) A	**①Natural Science Units (Ocean and Coastal Sciences and Environmental Conservation)**	○			○
	②Engineering Units (Coastal Disaster Prevention)	○			○
	③Social Science Units (Economics, Management, Sociology and Law)	○			○
Specialist Units (Selected Compulsory Units) B	**Consensus Building and Partnerships**		○		○
Specialist Units (Selected Compulsory Units) C	**Coastal Management Techniques and Practice**			○	○