

Student Handbook

**Department of Oceanography
Faculty of Fisheries and Ocean Sciences**

**Ocean University of Sri Lanka
Colombo 15**

Academic Year 2019/2020

Usage Policy

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Vice Chancellor's Message

The future prosperity of Sri Lanka depends on how well we manage the potential of Sri Lanka's geographical location as a hub of ocean affairs. Our location in the Indian Ocean has shaped our history over a long period of time and will continue to do so in the future. New consumer markets are emerging all across the Indian Ocean connecting major economies of the east and west that contribute to the growth of maritime activities in the busy east-west shipping route, only a few nautical miles south of Sri Lanka. On this Silk route, more than 150,000 ships annually carry two-thirds of the world's oil supply and a half of the ocean freight. Furthermore, Sri Lanka has its jurisdiction up to 200 nautical miles and we have claimed extended economic zone beyond 200 nautical miles seabed under the United Nations Convention of the Law of Sea. In addition, Sri Lanka situated between the EastWest natural nautical corridor and has become an important contribution the future of our country. As a nation, we are responsible for repositioning our strategies to maximize utilization of these advantages. Human resources development is the mandate of the Ocean University, an essential element to fully tap this potential and has the capacity to cater this important task. Human resources development is the mandate of the Ocean University, an essential element to fully tap this potential and has the capacity to cater this important task. At present, the University offers degree programs in the fields of Oceanography, Fisheries and Aquaculture, Marine Engineering, Maritime Transport Logistics, Coastal and Marine Resources Management. Further, it offers skill sector NVQ level diploma and certificate courses in the related areas in its network of regional centers.

This handbook would guide you to the information on the Department of Oceanography in the Faculty of Fisheries and Ocean Sciences at the University. I hope that you would be benefited by this important learning opportunity to mould yourself towards a successful carrier in ocean related industries.

I wish you all the success!

Dr. T.A. Piyasiri

Vision

To provide innovative solutions for marine, maritime and fisheries sectors

Mission

To be the center of excellence in marine and fisheries education in the region

We adhere to the following values in everything we do:

- **Integrity:** We let our thoughts demonstrate strong moral principles and ethical practices
- **Quality:** Being practiced as habitual actions in everything we do
- **Excellence:** Never satisfied with something less than the best
- **Sustainability:** we agree without debate that we are liable to the wellbeing of all the stakeholders (3BLs)

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The University

1.1 Introduction

The Ocean University (Act No 31 in 2014) is conducting Higher Education and Vocational Education in Ocean and Marine Sciences including Maritime sector to fulfill the needs of related industries. Currently, Higher Education offers B.Sc. Degree programs in (1) Marine Engineering, (2) Marine Transportation Management and Logistics, (3) Coastal and Marine Resources Management, (4) Fisheries and Marine Sciences and (5) Oceanography. Study curriculum consists of theory and mandatory practical sessions which are conducted with international standards.

Vocational Education offers NVQ level diploma and certificate courses in fisheries and marine sector. This section is more focused on shipboard skill development and provides Diploma and Certificate courses in National Vocational Qualification (NVQ 3–5) and upgrade to a degree level academic qualifications.

1.2 Faculties

The university consist of two faculties

- Faculty of Fisheries and Ocean Sciences (FFOS)
- Faculty of Engineering and Management (FEM)

1.3 Department of Oceanography

The Oceanography Department is in the Faculty of Fisheries and Ocean Sciences. The Department offers **BSc (Hons) in Oceanography**, a 4-year full time regular degree program.

The oceanography is an interdisciplinary by nature and has connections to biology, chemistry, physics, engineering, earth sciences and environmental system science. Undergraduates in the Oceanography degree program will develop an understanding of the fundamentals of science governing the ocean. The students engage in a wide range of topics of scientific interest and increasing social concern including ocean waves, tides, ocean circulation, oceanic eddies, natural climate variability including global warming, ocean acidification and ocean-based disasters.

The course equipped with tools to address problems through basic knowledge of fluid dynamics and principles relevant to the ocean and atmospheric sciences. The curriculum includes modern approaches to data collection in the ocean and atmosphere, and the analysis of the big data sets. Exploration and exploitation of resources and their sustainability, environmental impacts, climate change, increased utilization of living and non-living resources of the oceans and challenges are explained. Harnessing renewable ocean energy from waves, tides, currents including ocean thermal energy are also important alternative sources with less environmental impacts are discussed. The degree in oceanography is an appropriate start for a broad range of career and graduate school opportunities including research, environmental management and consulting, ocean sciences, industrial institutions, elementary or secondary education, environmental policy and law.

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Graduation Requirement

2.1 The Degree Program

The B.Sc.(Hons) degree in Oceanography is a four-year program consists with eight semesters. Students shall take minimum of 126 credits to complete the degree program.

Course Modules

Course Modules are selectively organized section of a course curriculum. Two types of course modules, Grade Point Averaging **GPA** and non-GPA (**NGPA**) are offered in the degree program. GPA-modules are subjected to grade point averaging while non-GPA modules are not subjected to grade point averaging. All the students are required to follow the compulsory Non-GPA course modules to complete the degree program. All course modules consist of lectures, assignments, tutorials and practical sessions such as laboratory work and/or field visits. In addition, there are Course Modules consisting of **Project Work** and/or **Internship** in a industry related institution.

Credit Value of Modules

Credit is a time-based quantitative measure used in determining the contribution of a course module. The abstract value assigned on the basis of student contact hours in a course module is called credits. Usually, **One Credit** is equivalent to 15 hours of lectures or 30–45 hours of tutorials, laboratory work and field visits etc. For instant, a three-credit module will be approximately three times that of a One-Credit course Module. A course module of can be consisted One-Credit to Eight-credits.

Theory	Credit Value
15 hour course modules	01
30 hour course modules	02
45 hour course modules	03
Practical	
45 hour course modules	01
Combined Modules	
15 theory hours + 45 practical hours	02
30 theory hours + 45 practical hours	03

Table 2.1: Time allocation and credit values

Course Designation Systems

Each course module is designated by a maximum of three-letter code identifying the course offering department, followed by a four-digit number having the following interpretation.

OCE1012 is consist of four parts as OCE-1-01-2

- **The first part:** three letters OCE stands for the department; OCEanography
- **The second part:** single numeric value (1) stands for Semester-number
- **The third part:** double numeric values (01) stand for the Serial number of a module within that semester
- **The fourth part:** single numeric value (2) stands for the Number of credits in that module

Degree Completion Period

The maximum period permitted for completion of the B.Sc.(General) degree program is 6 years while for the B.Sc.(Hons) degree program is 7 years. This period may extend by the Academic Board on a written request by a student. Thus, a student must request for an extension through head of the department. The Requests must accompany with sufficient documentary evidence to support such extension to be considered by the Academic Board.

Incomplete Grade

- a) If a student was unable to complete a course module due to acceptable reasons, he/she will receive an **I** grade. In this regard, the student should upgrade **I** grade at least to a grade **D** within 1-year period and failure to do will result grade **F** with declaration by the Dean.
- b) If grade **I** is given due to the student was unable to sat for the final examination, he/she may be allowed to sit for the examination and upgrade at a later stage with the approval of the head of the department.

Failing Examinations

- a) If a student has received an **F** grade for a course module at the end semester examination, he/she will be required to sit for a repeat examination at the end-semester examination in following year. Students must pass all modules to be eligible for graduation.
- b) A student who obtained a **F** grade, must have upgraded at least to "**D**" grade to be eligible for graduation.

Improvement of Grades

- a) A student who obtained an **F** grade will be eligible for a maximum of C^+ grade at a repeat-examination.
- b) A student who obtained a grade below C^+ in any course module may re-sit for a repeat-examination of that course module at end-semester examinations in consecutive years for the purpose of improving grade, subject to a ceiling of C^+ .
- c) The number of times that a student is permitted to sit repeat examination shall not exceed 3 sittings.
- d) The students who fail to upgrade his/her **F** grade in three attempts will lead to automatic dismissal.

Grade Point Average

Grade Point Average (GPA) for a semester (SGPA) is calculated at the end of each semester. Let i is the module serial number and C is the number of credits i^{th} module. If G is the grade point earned for that i^{th} module, the SGPA can be expressed as,

$$SGPA = \frac{\sum_{i=1}^n C_i \times G_i}{\sum_{i=1}^n C_i}$$

If a student has earned more than 15 total credits in a semester, the SGPA is calculated based on all compulsory course modules comprising the highest scoring elective or electives that will bring the total credits to 15 for that semester.

Cumulative Grade Point Average (CGPA) is calculated, taking the GPAs of course modules including compulsory Non-GPA modules for the entire degree program.

Graduation

The students are expected to successful completion of a minimum number of credits of the courses offered as stipulated in the program to be eligible for graduation. The total number of credits required to complete the degree program are shown the Table 2.2.

Honoues degree	126
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Table 2.2: Minimum number of credits required for the degree

Classes Awards

Award of classes is subjected to the fulfillment of all the graduation requirements within 4 or 5 years of academic period. The cumulative GPA (CGPA) that will be used in the determination of class awards is shown in the Table 2.3

Class	CGPA
First Class	$3.70 \leq OGPA$
Second class (Upper Division)	$3.30 \leq CGPA < 3.70$
Second Class (Lower Division)	$3.00 \leq CGPA < 3.30$
Pass	$2.00 \leq CGPA < 3.00$

Table 2.3: CGPA limits for class awards

Effective Date of Award of Degree

The effective date of award of degree shall be the date of the last day of the final examination. In the case of students repeating examinations, the effective date shall be the date of the last repeated End of Semester examination.

Academic Concession

A student who has missed an end-semester examination due to an illness or other compelling reason may appeal with supporting documents to the Senior Assistant Registrar/ Examinations for an Academic Concession within one week from the date of an examination.

Course Curriculum

3.1 General Information

1. **Name of the Program:** B.Sc.(Hons) in Oceanography
2. **Duration of the Program:** is a 4-year full time undergraduate program. The program is divided into eight semesters of 6 months each i.e. 2 semesters in every year. The duration of each semester is 26 weeks. In each semester, 15 weeks are dedicated for classroom learning and field surveys, while remaining weeks are utilized for makeup classes, midterm examination, preparatory leave, final examination, other co-curricular activities.
3. **The Academic Calendar:** that approved by the **Faculty Board** is officially announced prior to the commencement of each academic year. The faculty will notify the commencement of academic years and semesters via an Academic Calendar and the time distribution is as follows:
 - a. Classes/ Field Trip 15 weeks
 - b. Mid Term Examinations and Make up Classes 02 weeks
 - c. Preparatory Leave 02 weeks
 - d. Term Final Examination 03 weeks
 - e. Recess 04 weeks
4. **Credits of the Program:** 126 Credits.
5. **Admission Criteria:** All applicants for the bachelor degree program of the university must have pass the G.C.E. advanced level examination with required minimum passes at a single attempt in Physical and Biological Science study stream. Candidates who sat for G.C.E. advanced level (within three attempts at the immediate past year) are eligible to apply for B.Sc. degree in Oceanography. Applications are called from the prospective candidates through the Ocean University website in the relevant year. Students will be selected based on highest z-scores followed by an interview.

6. **Notification of Selection:** Selected candidates will be notified by registered post and the list would be published in the university website (www.ocu.ac.lk)
7. **Registration in the Program:** Students admitted as full-time students to the university are required to be registered for the period study and shall pay any fee prescribed by the university.
8. **Grading System** The performance of students in each module based on the above evaluation methods is expressed by a grading system. The grades are based on the Grade Point specified % marks ranges indicated in the Table:3.1.
9. **Performance Evaluations:** of a student in each subject are assessed based on assignments, continuous assessments and closed book examinations which are held at the end of each semester. Marks are given for assignments, continuous assessments and the end of semester examinations and are taken into account for computing the final grade for each subject.
10. **For Practical/Field Study:** 30% of marks shall be allotted for continuous assessment, i.e. quizzes, class tests, home assignments, class evaluation and class participation etc.
 - a. General Observation/ Participation 10%
 - b. Lab Test/ Computer Test 20%
 - c. Viva/Presentation 30%
 - d. Report Submission 40%
11. **For Theory Courses:** 70% of marks shall be allocated for theoretical courses. The term final Examination is conducted by the university and shall be normally of 3-hours duration. Distribution of marks for a given course is as follows:
 - a. Class Attendance 05%
 - b. Quizzes/Class Test/Assignments 25%
 - c. Term Final Examination 70%

3.2 Registration for semester course units

Students shall be registered to a Course Units conducted by the respective departments two weeks prior to the end of previous semester. Students are able to register for course units at the department. Only registered students for respective courses are allowed to sit for the end semester examinations. Students are encouraged to reach the Assistant Registrar (Student Affairs) of the faculty for any query regarding course registration.

Percentage Marks	Grade	Grade Points	Definition Remarks
85 and above	A^+	4.2	Superior performance
75-84	A	4.0	Excellent
70-74	A^-	3.7	Very Good
65-69	B^+	3.3	Good
60-64	B	3.0	Encouraging
55-59	B^-	2.7	Moderately Good
50-54	C^+	2.3	Satisfactory
45-49	C	2.0	Moderately Satisfactory
40-44	C^-	1.7	Pass
35-39	D	1.3	Conditional Pass
34 and below	F	0.0	Fail
	I	0.0	Incomplete

Table 3.1: Grading system

3.3 Course Modules: B.Sc. (Hons) Degree in Oceanography

Code	Module Title	GPA	NGPA
First Year	Semester-1	Credits	
OCE1012	Foundation Mathematics	2	
OCE1023	Applied Physics	3	
OCE1033	Basic Biology	3	
OCE1043	Introduction to Earth Science	3	
OCE1053	Introduction to Oceanography	3	
OCE1063	English		2
	Number of Credits	14	2
First Year	Semester-2	Credits	
OCE2012	Applied Mathematics	2	
OCE2023	Physical Oceanography	3	
OCE2032	Marine Ecology	3	
OCE2043	Biological Oceanography	3	
OCE2053	Computer Applications	3	
OCE2063	Geographic Information Science	3	
OCE2071	Humanities		1
	Number of Credits	17	1
<i>*Table continue to the next page...</i>			

Code	Module Title	GPA	NGPA
Second Year	Semester-3	Credits	
OCE3012	Geophysical Fluid Dynamics	3	
OCE3023	Geological Oceanography	3	
OCE3033	Chemical Oceanography	3	
OCE3043	Statistical Techniques	3	
OCE3053	Coastal and Marine Pollution	3	
OCE3062	Law of the Sea and Marine Policy	3	
	Number of Credits	18	
Second Year	Semester-4	Credits	
OCE4013	Marine Geophysics	3	
OCE4023	Introduction to Hydrography	3	
OCE4032	Introduction to Atmospheric Science	2	
OCE4043	Coastal and Estuarine Processes	3	
OCE4053	Integrated Coastal Zone Management	3	
OCE4062	Climate Change and Ocean Based Disasters	2	
	Number of Credits	16	
<i>*Table continue to the next page...</i>			

Code	Module Title	GPA	NGPA
Third Year	Semester-5	Credits	
OCE5011	Oceanography of the Indian Ocean	1	
OCE5023	Fisheries Oceanography	3	
OCE5032	Observational Oceanography	2	
OCE5043	Analytical Techniques	3	
OCE5053	Hydrographic Surveying	3	
OCE5063	Environmental Feasibility Assessments	3	
OCE5073	Computer Programming	3	
	Number of Credits	18	
Third Year	Semester-6	Credits	
OCE6012	Data Management Techniques	2	
OCE6023	Research Methodology and Scientific Writing	3	
OCE6032	Statistical Techniques	2	
OCE6043	Ocean Dynamics	3	
OCE6053	Meteorology and Ocean Status Forecasting	3	
OCE6063	Marine Resources and Exploration	3	
OCE6074	Industrial Training (Mini Project)		4
	Number of Credits	16	4
<i>*Table continue to the next page...</i>			

Code	Module Title	GPA	NGPA
Forth Year	Semester-7	Credits	
OCE7013	Oceanographic Surveying	3	
OCE7023	Coastal Morphology and Processes	3	
OCE7033	Ocean Energy and Harnessing	3	
OCE7043	Ocean Modeling and Applications	3	
OCE7053	Coastal Engineering	3	
	Number of Credits	15	
Forth Year	Semester-8	Credits	
OCE8013	Data Analysis Methods in Oceanography	3	
OCE8023	Seamanship and Navigation	3	
OCE8036	Research Project	6	
OCE8041	Professional Ethics		1
	Number of Credits	12	1
	Total Number of Credits	126	8

Academic staff



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Ph.D. in Fisheries Oceanography (PGIS, University of Peradeniya, Sri Lanka), Diploma in Fisheries Stock Assessment (United Nations University, Iceland), M.Sc. in Physical Oceanography (Gothenburg University, Sweden), B.Sc. in Physical Sciences (University of Peradeniya, Sri Lanka)

Research interest: Ocean Environment and its impact on fishery resource; their abundance, distribution and migration.



Dr. H.B. Jayasiri, Senior Lecturer, Department of Oceanography. (jayasiriB@ocu.ac.lk)

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Research interest: Water exchange, Plankton dynamics, Persistent organic pollutants (POPs), Marine debris and microplastics in marine and coastal ecosystems



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Research interest: Offshore circulation, water mass exchange, ocean turbulence and mixing, air sea interaction



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Research interest: Biological oceanography, Biodiversity conservation, Coastal and marine resources management, marine ecology

Services

Services contribute to the quality of Student's learning experience and their academic success. Students are expected to discuss issues or problems of the academic program with their course coordinators. In addition, they can seek assistance from the head of department in relation to subject specific or specialization issues. There is a student affairs branch that supports students for issues related to enrollments, registrations etc. Common problems to many students may be best resolved through the batch representatives.

5.1 Library

- a) **The library:** provides access to academic staffs and all students of the university. The library has two branch libraries in Mattakkuliya and Tangalle premises which serve for different degree programs.
- b) **Library Collections:** consisted of several sections for lending, reference, periodicals and special collections.
- c) **Lending Section:** issues books for a period of two weeks to undergraduates. If needed which can be extended for another two weeks and must meet assigned librarian.
- d) **Reference Section:** includes reference materials that are issued to students for overnight use and could be borrowed between 3.00 p.m. to 4.00 p.m. and should be returned before 10.00 a.m. of the following day. Permanent reference materials (such as encyclopedias, dictionaries, glossaries and other valuable books) are intended strictly for reference within the library. Reading facilities are provided in this section.
- e) **Borrowing Library Resources:** with the exception of certain categories (i.e. Permanent reference materials, dictionaries, atlases, books under special collections etc.) all other books may be borrowed. The university record book or identity card must be produced when borrowing books. Books may

be borrowed before 4.00 p.m. Details about the number of books can be borrowed is given in Table 5.1.

Semester	Lending books	Reference books	Electronic media
Semester 1	01	01	01
Semester 2	01	01	01
Semester 3	01	01	01
Semester 4	01	01	01
Semester 5	02	01	01
Semester 6	02	01	01
Semester 7	02	02	01
Semester 8	02	02	01

Table 5.1: Details of the number of books can be borrowed from the library

- f) **Returning Library Resources:** borrowed from the library must be returned by 10.00 a.m. on the due date. Borrowers are responsible for the materials issued to them and in case of lost or damaged, the materials should be reported immediately to the library. Borrower has to replace it with a new copy of the same edition or subsequent edition within due date. If the book is not available in the market, the borrower will be charged for the replacement cost of the material/s and a processing fee of 25% value of the book. All library resources borrowed must be returned and all outstanding fines must be paid when a student leaves the university. Users who fail to fulfill their obligations may have their degree certificate withheld until they return the borrowed resources and pay the fine.
- g) **Fines and Payments:** if not returned by the due date a fine of Rs.5.00 per day will be imposed in respect of each book borrowed from lending section. If not returned by the due date, a fine of Rs.10.00 per day will be imposed in respect of each book borrowed from reference section. All payments should be made to the Bursar of the faculty/university.
- h) **Photocopying Service:** The Library provides a limited photocopying service (subjected to nominal fee) for those who requires copies of reference materials available in the Library.

5.2 Other Facilities

- a) **Accommodation:** At present, the university provides accommodation for a limited number of students who are enrolled in degree programs. Those who

received hostel facilities are required to pay a nominal fee of Rs.1000/= per month.

- b) **Cafeteria:** operates by the university is located in the main building premises during week days from 8.30 a.m. to 4.00 p.m.
- c) **Sport facilities:** are provided for several indoor games such as Table tennis, Caroms and Chess while outdoor games Volley ball, Netball, badminton and cricket also facilitated. All students enrolled in degrees programs are highly motivated to learn swimming and lifesaving.
- d) **Student activities:** during the study period, the students are encouraged to engage in extracurricular activities. There is a wide range of activities organized by the university departments and students. Participation in these activities provides social association, leadership and personal development.