File Ref.No.Ac.A3/General/2023

COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY

(Abstract)

Department of Marine Biology - Modifications in the programme curriculum consequent to the introduction of mandatory MOOC courses - Resolution of the Academic Council - Communicated - Orders issued.

ACADEMIC A SECTION

No.CUSAT/AC(A).A3/4658/2024 Dated,KOCHI-22,31.10.2024

Read:-1. Item No.II (34) (6) of the minutes of the meeting of the Academic Council held on 07.09.2024

2. U.O.No:CUSAT/AC(A).A3/1208/2024 dated 13.03.2024

ORDER

The Academic Council meeting held on 07.09.2024, vide item referred above, considered along with the recommendations of it's standing committee and resolved to approve modifications in the programme curriculum of following courses offered by the Department of Marine Biology, consequent to the introduction of mandatory MOOC programmes, with effect from 2024 admission onwards.

a) M.Sc Marine Genomics
b) M.Sc Marine Biology

The modified curriculum of the above programmes are appended.

Orders are, therefore, issued accordingly.

Dr. Arun A U *
Registrar

To:

1. The Dean, Faculty of Marine Sciences
2. The Chairperson, BoS in Marine Biology
3. The Head, Department of Marine Biology
4. All AR/DR Examination wing - with a request to forward to concerned sections
5. The Director, IQAC/ DoA
6. CIRM/Conference Sections
7. PS To VC/PVC;PA To Registrar/CE.

* This is a computer generated document. Hence no signature is required.

DEPARTMENT OF MARINE BIOLOGY, MICROBIOLOGY AND BIOCHEMISTRY

COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY

M.Sc. Marine Genomics - Scheme and Syllabus

Duration of the Course – 4 Semesters

Total Credits = 82

Semester I (Total credits = 19)

Course Code	Course	C/ E	Credits	Internal Marks	External Marks	Total Marks
24-864-0101	Introduction to Marine Sciences	C	3	50	50	100
24-864-0102	Fundamentals of Genetics and Genomics	C	3	50	50	100
24-864-0103	Introduction to Marine Genomics	C	3	50	50	100
24-864-0104	Molecular Biology (Practical)	C	2	100	-	100
24-864-0105	Marine Biodiversity (Practical)	C	2	100	-	100
	Elective-1	E	2	50	50	100
	Elective-2	E	2	50	50	100
	Elective-3	E	2	50	50	100

C – Core, E – Elective

Semester 2 (Total credits = 20)

Course Code	Course	C/E	Credits	Internal Marks	External Marks	Total Marks
24-864-0201	Marine Microbiology and Microbial Genomics	C	3	50	50	100
24-864-0202	Biosafety, Bioethics, IPR and Entrepreneurship	C	3	50	50	100
24-864-0203	Discovery of Marine drugs and Nutraceuticals	C	3	50	50	100
24-864-0204	Aquaculture Genomics	C	3	50	50	100
24-864-0205	Marine Microbiology & Microbial Genomics – Practical	C	2	100	-	100
24-864-0206	Discovery of Marine drugs and Nutraceuticals (Practical)	C	2	100	-	100
	Elective-1	E	2	50	50	100
	Elective-2	E	2	50	50	100

C – Core, E - Elective

Semester 3 (Total credits = 22)

Course Code	Course	C/E	Credits	Internal Marks	External Marks	Total
24-864-0301	Biochemistry and Nutrigenomics	C	3	50	50	100
24-864-0302	Conservation Genomics	C	3	50	50	100
24-864-0303	Transcriptomics & Proteomics	C	3	50	50	100
24-864-0304	Bioinformatics	C	3	50	50	100
24-864-0305	Bioinformatics - Practical	C	2	100	-	100
24-864-0306	Bioanalytical Techniques and Instrumentation - Practical	C	2	100	-	100
24-864-0307	Transcriptomics & Proteomics - Practical	C	2	100	-	100
	Elective-1	E	2	50	50	100
	Elective-2	E	2	50	50	100

C – Core, E - Elective

Semester 4* (Total credits = 21)

Course Code	Course	C/ E	Credits	Internal Marks	External Marks	Total
24-864-0401	Project work and Dissertation	C	18	50	50	100
24-864-0402	**MOOC	E	3	-	100	100

Electives

Course Code	Course	C/ E	Credits	Internal Marks	External Marks	Total
24-864-0106	Marine Genetic Biodiversity & Conservation	E	2	50	50	100
24-864-0107	Biological Oceanography	E	2	50	50	100
24-864-0108	Developmental Genomics	E	2	50	50	100
24-864-0109	Marine Botany	E	2	50	50	100
24-864-0110	Applied Molecular Biology	E	2	50	50	100
24-864-0207	Immunogenomics & Pharmacogenomics	E	2	50	50	100
24-864-0208	Systems Biology	E	2	50	50	100
24-864-0209	Marine Microbiology	E	2	50	50	100
24-864-0308	Marine Ecology	E	2	50	50	100
24-864-0309	Ecological and Evolutionary Genomics	E	2	50	50	100

Credit Distribution of M.Sc. Marine Genomics

Sl. No.	Courses	CC/EC	No. of Courses	Credit Per Course	Total Credit
1	Core Courses (other than Project and Dissertation)	CC	11	3	33
2	Core Courses (Lab)	CC	7	2	14
3	Elective Courses (excluding MOOC course)	EC	7	2	14
4	Elective Courses (MOOC course)	EC	1	3	3
5	Project work and Dissertation	CC	1	18	18
	Total Courses	-	27	-	82

Note: CC – Core courses and EC – Elective Courses

There are 19 core subjects and 8 electives, which are interdisciplinary in nature. A student shall register for a minimum of 55 credits in the first three semesters before he/she registers for the fourth semester. Accumulated minimum credit required for successful completion of the programme is 72 credits.

The student has to devote the fourth semester to dissertation work related to a relevant area of specialization either in the Department or in an industry/research/academic institution outside the University. All the students have to submit a project dissertation at the end of the fourth semester. Besides the major project in the 4^{th} semester, each semester should have an internship/industry training of a minimum duration of one week to 10 days duration.

**In addition, it is mandatory for the students to register for a suitable MOOC (as recommended by the faculty members of the department from

time to time), available in the SWAYAM platform (www.swayam.gov.in).

The students can avail the courses at any time during the first three semesters, based on the availability of suitable courses at www.swayam.gov.in and should procure the required credits for MOOC before completion of the fourth semester. Grading of MOOC will be decided by the Department Council and University based on the results obtained from www.swayam.gov.in

The award of maximum 100 marks for the project dissertation to student is based on:

A) *Continuous assessment by his/her guide based on his/her performance and progress during the dissertation work will carry a maximum of 50 marks.*

B) *The Project dissertation submitted by the student at the end of the semester will be evaluated internally for a maximum of 50 marks.*

Equal weightage shall be given for the continuous assessment and the end-semester components.

Grading Scale

Range of Marks	Grade	Weightage
Below 50%	F (FAILED)	0
50 – 59	D (SATISFACTORY)	6
60 - 69	C (GOOD)	7
70 - 79	B (VERY GOOD)	8
80 – 89	A (EXCELLENT)	9
90 and above	S (OUTSTANDING)	10

Faculty of Marine Sciences

Dept. of Marine Biology, Microbiology and BiochemistryCochin University of Science and Technology

Scheme & Syllabus applicable from 2020 admission

Semester I

CourseCode	Course	C/E	Credits	Internal Marks	External Marks	Total
24-315-0101	Marine Biology	C	3	50	50	100
24-315-0102	Cytology and Fish Genetics	C	3	50	50	100
24-315-0103	Biochemistry	C	3	50	50	100
24-315-0104	Marine Biology Practical	C	2	100	-	100
24-315-0105	Biochemistry and Instrumentation-Practical	C	2	100	-	100
24-315-0106	Planktonology	E	2	50	50	100
24-315-0107	Coral Reef Ecology	E	2	50	50	100
24-315-0108	Ornamental Fish culture	E	2	50	50	100
24-315-0109	Biological Oceanography	E	2	50	50	100
24-315-0110	Applied Molecular Biology	E	2	50	50	100

Semester 2

Course Code	Course	C/E	Credits	Internal Marks	External Marks	Total
24-315-0201	Marine Microbiology	C	3	50	50	100
24-315-0202	Fish and Fisheries	C	3	50	50	100
24-315-0203	Marine Pollution	C	3	50	50	100
24-315-0204	Marine Biotechnology	C	3	50	50	100
24-315-0205	Marine	C	2	100	-	100

	Microbiology and Biotechnology – Practical					
24-315-0206	Fish and Fisheries – Practical	C	2	100	-	100
24-315-0207	Aquarium plants and culture of live feed organisms	E	2	50	50	100
24-315-0208	Marine Conservation Biology	E	2	50	50	100
24-315-0209	Ornamental fish culture and live food organisms- Practical	E	2	100	-	100
24-315-0210	Discovery of Marine drugs and Nutraceuticals	E	2	50	50	100
24-315-0211	Marine Genomics	E	2	50	50	100

Semester 3

Course Code	Course	C/E	Credits	Internal Marks	External Marks	Total
24-315-0301	Fish Pathology	C	3	50	50	100
24-315-0302	Aquaculture	C	3	50	50	100
24-315-0303	General Animal Physiology	C	3	50	50	100
24-315-0304	Marine Ecology	C	3	50	50	100
24-315-0305	Marine Ecologyand Aquaculture – Practical	C	2	100	-	100
24-315-0306	Fish Physiologyand Pathology – Practical	C	1	100	-	100
24-315-0307	Seafood Microbiologyand Quality Control	E	2	50	50	100
24-315-0308	Marine Botany	E	2	50	50	100

24-315-0309	Health Management in Aquaculture	E	2	50	50	100
24-315-0310	Advanced Taxonomy and Phylogenetics of Marine Organisms	E	2	50	50	100

Semester 4

CourseCode	Course	C/E	Credits	Internal Marks	External Marks	Total
24-315-0401	Project work and Dissertation	C	16	50	50	100
24-315-0402	MOOC	E	2	-	100	100

Credit Distribution of M.Sc. Marine Biology

Sl. No.	Courses	CC/EC	No. of Courses	Credit Per Course	Total Credit
1	Core Courses (other than Project and Dissertation)	CC	11	3	33
2	Core Courses (Lab)	CC	7	2	14
3	Elective Courses (including MOOC course)	EC	4	2	8
4	Elective Courses (interdepartmental)	EC	3	3	9
5	Project work and Dissertation	CC	1	16	16
	Total Courses	-	26	-	80

Note: CC – Core courses and EC – Elective Courses

There are 18 core subjects and 20 electives, which are interdisciplinary in nature. A student shall register for a minimum of 56 credits in the first three semesters before he/she registers for the fourth semester. Accumulated minimum credit required for successful completion of the programme is 72 credits.

***** The student has to devote the fourth semester on dissertation work related to a relevant area of specialization either in the Department or in an industrial/ research/ academic institution outside the University. All the students have to submit a project dissertation at the end of the fourth semester.

******In addition, it is mandatory for the students to register for a suitable MOOC (as recommended by the faculty members of the department from time to time), available in the SWAYAM platform (www.swayam.gov.in)The students can avail the courses at any time

during the first three semesters, based on the availability of suitable courses at www.swayam.gov.in and should procure the required credits for MOOC before completion of the fourth semester. Grading of MOOC will be decided by the Department council and University based on the results obtained from www.swayam.gov.in

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70 - 79	B (VERY GOOD)	8
80 – 89	A (EXCELLENT)	9
90 and above	S (OUTSTANDING)	10

CLASSIFICATION SCALE

Classification	CGPA
First Class with Distinction	8 & above
First Class	7 & above
Second Class	6 & above

$$GPA = \frac{G_1C_1 + G_2C_2 + GnCn}{C_1 + C_2 + \_ \; Cn}$$

G = Grade Weightage C = Credit Value

$$GPA = \frac{A_1T_1 + A_2T_2 + AnTn}{T_1 + T_2 + \_ \; Tn}$$

A = GPA

T = Total Credit Value for a Semester

Percentage of Marks = [55 + 10 (CGPA – 6)] Approximately

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