REGULATIONS M.Sc. MARINE BIOLOGY

(Effective from the academic year 2011-2012 onwards)

AIM OF THE COURSE

The M.Sc Marine Biology course aims to develop man power in the field of Marine Biology. At the end of the course students are expected to have good working knowledge in Marine Biology.

ELIGIBILITY

A pass in the B.Sc. Degree examination in Life Sciences (Zoology, Botany, Biochemistry, Marine Biology, Microbiology, Biotechnology, and Fisheries & Aquaculture) with not less than 55% of marks in Part III.

COURSE STRUCTURE

The Duration of the completion of Masters Programme in Marine Biology is two years of four semesters. An academic year is divided into two semesters, Odd semester and Even semester. Odd semester: July to November (90 Working Days) Even Semester: December to April (90 Working. The maximum duration to complete the course will be five years.

COURSES

Each course will consist of lectures / tutorials / laboratory work / seminar / project work / practical training / report / viva voce, etc.

INTAKE

52 (Fifty Two) + Super numeric seats, Govt. MHRD.

ATTENDANCE

Every teaching faculty handing a course shall be responsible for the maintenance of attendance register for candidates who have registered for the course. The teacher of the course must intimate the Head of the Department at least seven calendar days before the last instruction day in the semester about the attendance particulars of all students. Each student should earn 75% attendance in the courses of the particular semester failing which he or she will not be permitted to sit for the end – semester examination. However, it shall be open to the authorities to grant exemption to a candidate who has failed to obtain the prescribed 60% attendance for valid reasons on payment of a Condonation fee and such exemptions should not under any circumstance be granted for attendance below 60%.

EXAMINATIONS

The internal assessment of each course carries 40% marks and is based on two sectional tests and a variety of assessment tools such as seminar, assignment, interaction, etc. For the internal assessment evaluation the break up marks shall be as follows.

	Theory	**Marks**	**Practical**	**Marks**
1	First test	15	First test	15
2	Second test	15	Pre exam test	15
3	Seminar & Assignments	10	Record Submission	10
	Total	**40**		**40**

There will be one end Semester Examination (60% marks) of 3 hours duration for each course. External examiner will set the question paper and an external panel of examiners will evaluate the answer papers. Board of studies will recommend the panel of Examiners for various papers

QUESTION PATTERN

Time 3 hours **Max Marks: 60**

Section A

(10 x 2 = 20 marks)

Answer any **TEN** Questions each in not more than **50** words
(*Twelve Questions to be given*)

Section B

(4 x 5 = 20marks)

Answer any **FOUR** Questions each in not more than **200** words
(*Seven Questions to be given*)

Section C

(2 x 10 = 20 marks)

Answer any **TWO** Questions each in not more than **1000** words
(*Four Questions to be given)*

PASSING MARKS

Minimal mark needed to pass is 50% of total, inclusive of internal and external, as well as the candidate should also get minimum of 50% of marks in external examination.

RESULTS**

Students with a CGPA of 9.0 and above shall be awarded Distinction.

A CGPA of 6.0 and above shall be place in First class.

Student who has secured less than 50% marks in any papers gets F Grade and he/she is treated as failed in the paper.

Toppers of the total marks are declared as First Rank Holder. Rank Declaration is if only the candidate passes all the papers in single attempt.

STRUCTURE OF THE PROGRAMME
CHOICE BASED CREDIT SYSTEM (CBCS)

Masters in both the Programme Marine Biology consists of a number of Core courses and the normal duration of the course shall be 4 semesters. The academic year is divided into two semesters- Odd and Even semesters.

Odd semester	July to November	(90 Working Days)
Even Semester	December to April	(90 Working Days)

A student who has less than 75% attendance in any course shall not be permitted to attend the end-semester examination and will be given grade of FA-failure due to lack of attendance. He shall be asked to repeat that course the next time when it is offered.

CREDITS, COURSE AND DEGREE

The term credit is used to describe the quantum of syllabus for various programmes in terms and hours of study. It indicates differential weightage given according to the contents and duration of the courses in the curriculum design.

A candidate who has successfully completed all the core courses, project prescribed and optional for the programme and accumulated not less than 76 credits and who has put in the minimum residence time shall be eligible to receive the degree.

One credit shall mean one teaching period per week for one semester (of 16 weeks) for theory course and one laboratory session of two periods /week for one semester.

Each course may consist of lectures/ tutorials/ laboratory work/ seminar/project work/ practical training / report / viva voce, etc.

The normal duration of the course shall be 4 semesters. No student shall be permitted to graduate earlier than 3 semesters nor take more than 8 semesters.

EVALUATION

Evaluation is based on 40% continuous /session assessment marks and it is based on two written sectional examinations spread periodically during the semester and select best two for the final marks. The remaining 10% of the total marks shall be for assignments/quizzes/seminars etc. There will be a 3 hour end-semester examination (60% marks) of duration for each course.

GRADING AND GRADE CARD

Performances of students in each paper are expressed in terms of Marks as well as in Letter Grades. In case of fractions the marks shall be rounded off to next higher integer. The absolute marks secured by the students in each course shall be converted to percentiles. The Letter Grades, in a **Seven point** scale, are awarded based on the percentiles as detailed below:

Table

Range of Percentiles	Letter Grade	Points for Calculate of CGPA
X to (X-K)+1	A+	10
(X-K) to (X-2K)+1	A	9
(X-2K) to (X-3K)+1	A-	8
(X-3K) to (X-4K)+1	B+	7
(X-4K) to (X-5K)+1	B	6
(X-5K) to 50	C	5
Below 50	F	0
Failure Due to Lack of Attendance	FA	0

Percentiles are to be calculated only for those who have passed the course by securing 50% or above.

If the number of students in a course in less than 10 then the grading may be based on the absolute marks secured by the students as detailed below:

Range of Percentiles	**Letter Grade**	**Points for Calculate of CGPA**
81-100	A+	10
71-80	A	9
66-70	A-	8
61-65	B+	7
56-60	B	6
50-55	C	5
Below 50	F	0

The GPA and CGPA will be calculated as weighted average of points secured by the student in all the papers registered by him / her. The weights are the number of credits for each paper. For example, a student getting in A grade in 4 credit course, A- grade in 2 credit course, A+ grade in a 3 credit course and F grade in a 3 credit course will have a GPA as (9x4 + 8x2 + 10x3 + 0x3) / (4+2+3+3) = (36+16+30+0) / 12 = 82 / 12 = 6.83 out of 10.0; GPA = 6.83. The CGPA shall also be calculated in similar lines taking all subjects taken by the students in all semester.

M.Sc., Marine Biology (Syllabus - April 2011 Onwards)
(Semester Pattern – Revised March 2012)

Course Code	Theory / Practical	Assessment Internal	Assessment External	Credit	Total Marks
	I SEMESTER				
MABO 411	Physical Oceanography	40	60	4	100
MABO 412	Chemical Oceanography	40	60	4	100
MABO 413	Biological Oceanography	40	60	4	100
MABO 414	Invertebrates	40	60	4	100
MABO 415	Practical - I covering courses 411, 412, 413 & 414	40	60	4	100
	II SEMESTER				
MABO 421	Vertebrates	40	60	4	100
MABO 422	Marine Biotechnology	40	60	4	100
MABO 423	Cell Biology	40	60	4	100
MABO 424	Marine Microbiology	40	60	4	100
MABO 425	Practical - II covering courses 421, 422, 423 & 424	40	60	4	100
	III SEMESTER				
MABO 511	Physiology and Biochemistry	40	60	4	100
MABO 512	Marine Ecology	40	60	4	100
MABO 513	Fish and Fisheries	40	60	4	100
MABO 514	Practical - III covering courses 511, 512, 513 and Field Trip Report	40	60	4	100
	IV SEMESTER				
MABO 521	Marine Pollution	40	60	4	100
MABO 522	Coastal Aquaculture	40	60	4	100
MABO 523	Ocean Policies and Management	40	60	4	100
MABO 524-530	Soft Core I	40	60	2	100
MABO 531-537	Soft Core II	40	60	2	100
MABO 538	Project	40	60	4	100
		Total		**76**	**2000**

Soft Core I – Any one of the course to be selected by the student.

MABO 524 – Benthic Ecology (Offered by Dr. K.A. Jayaraj)

MABO 525 – Marine Environmental Impact Assessment (Offered by Dr. T.Ganesh)

MABO 526 – Marine Ornamental Fishes (offered by Dr. S.Venu)

MABO 527 – Methods in Marine Zooplankton Ecology (Offered by Dr. Gadi Padmavati)

MABO 528 – Marine Biodiversity and Conservation
(Offered by Dr. Jayant Kumar Mishra)

MABO 529 – Bacteriological Assessment of Seafood and Water Quality
(Offered by Dr. R. Mohanraju)

MABO 530 – Remote Sensing and GIS (Offered by Dr. P.M.Mohan)

Soft Core II – Any one of the course to be selected by the student.

MABO 531 – Biostatistics and Computer Applications in Biosciences
(Offered by Dr. T.Ganesh)

MABO 532 – Molecular Taxonomy of Fishes (Offered by Dr. S.Venu)

MABO 533 – Ecotoxicology (Offered by Dr. Gadi Padmavati)

MABO 534 – Bioactive Marine Natural Products (Offered by Dr. Jayant Kumar Mishra)

MABO 535 – Marine Organisms - Collection and Preservation
(Offered by Dr. R.Mohanraju)

MABO 536 – Meiobenthology (Offered by Dr. P.M.Mohan)

MABO 537 – Coral and Mangrove Ecosystems (Offered by Dr. P.M.Mohan)