

TEMPLATE OF OUTCOME-BASED CURRICULUM 2022



Institutional Quality Assurance Cell (IQAC)

Khulna University, Khulna 9208

Bangladesh

**Outcome-based Curriculum of
Bachelor of Science in Fisheries (Honours)**



Fisheries and Marine Resource Technology Discipline
Khulna University
Date: [June 2022]

OUTCOME-BASED CURRICULUM

PART-A

01. Title of the Academic Program

Bachelor of Science in Fisheries (Honours)

Program Overview	
Degree	Bachelor of Science in Fisheries (Honours)
Abbreviated form of the Degree	BSc in Fisheries (Honours)
Discipline/Program Offering Entity (POE)	Fisheries and Marine Resource Technology Discipline
School	Life Science School
Awarding Institution	Khulna University
Location	Khulna, Bangladesh
Bangladesh National Qualifications Framework (BNQF) Level	7
International Standard Classification of Education (ISCED) Code	[0831]
Mode of Study	Full Time
Language of Study	English
Applicable Session	2021-22 and onwards

02. Name of the University

Khulna University

03. Vision of the University

Khulna University strives to create a knowledge-based just society through accelerating inclusive and transformative growth of Khulna, Bangladesh and the world. The university aims to achieve this vision through cross-cutting research, scholarly enquiry and development of new knowledge.

04. Mission of the University

UM1	To explore human potential to its fullest extent and produce self-motivated, aspiring leaders to work for the betterment of the humankind.
UM2	To create a transformative educational experience for students

	focusing on poverty eradication, food and nutritional security, environmental sustainability, socio-economic well-being and climate resilient development through judicious management of natural resources of the country.
UM3	To foster creative learning, entrepreneurship and inquisitiveness among students based on moral values, professional ethics, and social responsibilities.
UM4	To ensure a quality educational experience that enables graduates to make demonstrable economic and social impacts through translating knowledge and innovation into practice.
UM5	To nurture an enabling environment that produces human resource inspired by wisdom, freethinking, creativity and unhindered intellectual exercises.

UM = University Mission

05. Name of the Discipline/Program Offering Entity (POE)

Fisheries and Marine Resource Technology Discipline

06. Vision of the Discipline/POE

To be a globally recognized center of excellence in education, research, entrepreneurs for sustainable fisheries and marine resource development

07. Mission of the Discipline/POE

M1	To generate pioneer scholars through quality education in all aspects of fisheries sciences.
M2	To conduct innovative research for the improvement of fisheries sector.
M3	To establish an effective collaboration with reputed institutions of home and abroad for strengthening institutional capacity.
M4	To promote a culture of continuous learning to build up a knowledge-based community, dynamic leadership, and competent civil services.

M = Mission of the Discipline/POE

08. Objectives of the Discipline/POE

O1	To provide quality education and to maintain the highest academic standard in all aspects of fisheries and marine science in line with the international standard of education;
O2	To build up high level analytical and critical thinking skills for solving emerging problems in the field of fisheries and marine science;
O3	To undertake fundamental and applied research in order to endow developed knowledge and experience to students;
O4	To enhance communication skills, leadership capacity, adaptability, and social interactions;

O5	To impart technology based and need oriented higher education befitting the age;
O6	To generate skilled manpower in order to fulfill the global demands by equitable participation.

O = Objective of the Discipline/POE

09. Name of the Degree

Bachelor of Science in Fisheries (Honours)

10. Description of the Program

Fisheries and Marine Resources Technology Discipline (FMRT) is one of the important disciplines under Life Science School of Khulna University, which started its journey in 1992, the second year of establishment of Khulna University. The Bachelor of Science in Fisheries (honours) program was started with a view to better utilization and sustainable development of fisheries and marine resources in Bangladesh. The Bay of Bengal with its huge coast lines along Bangladesh has made the country a unique piece of land enriched with brackish and marine water fish. Particularly the Khulna region has the world-famous mangrove forests ‘Sundarbans’ which is harboring more than 400 small and medium-size creeks within it. This area is an ideal breeding and nursery ground for many fishes. Surrounds by such natural resources the FMRT Discipline launched the program with a mandate to establish an avenue for education and research in all aspects of fisheries and marine science. The course-curriculum followed in the program includes multifaceted subjects in aquaculture, fish biology, fish ecology, fish genetics and biotechnology, coastal resource management, post-harvest technology and quality control. In addition to these professional courses, the program also offers courses on socio-economics, statistics, GIS and remote sensing, computer application, biostatistics etc. The Major strengths of the program are continually updated syllabus, interdisciplinary approach of the courses with the support of experienced faculty members, well-equipped laboratories and experimental fish farms. The program is generating quality graduates who are competent enough to meet the future challenges of fisheries related issues for the sustainable development of fisheries sector.

11. Graduate Attributes

GA1	Comprehensive knowledge	[<i>fundamental domain</i>]
GA2	Critical thinking, problem solving and decision making skills	[<i>thinking domain</i>]
GA3	Competency in information and communication technology	[<i>fundamental domain</i>]
GA4	Integrity and professionalism	[<i>personal domain</i>]
GA5	Leadership and communication skills	[<i>social domain</i>]
GA6	Competence in Ethics and morality	[<i>social domain</i>]
GA7	Lifelong learning skills and self-awareness	[<i>personal domain</i>]

GA = Graduate Attributes

12. Program Educational Objectives (PEOs)

PEO1	To conceptualize the basic knowledge, theories, principles, processes and procedures of the areas including aquaculture, genetics, management, post harvest technology and oceanography.
PEO2	To demonstrate high level analytical and critical thinking skills to solve emerging problems through the application of fundamental principles.
PEO3	To develop skill to demonstrate safe and acceptable skills in field and laboratory works and independent research.
PEO4	To enhance the communication skill in written, oral and interactive presentation.
PEO5	To facilitate enthusiasm in making scientific investigation and realizing the roles of graduates on industrial, environmental, social and economic aspects nationally and globally.
PEO6	To flourish moral and ethical values in all spheres of life.

PEO = Program Educational Objective

13. Program Learning Outcomes (PLOs)

After successful completion of the degree, the learner will be able to:

A. Fundamental Skills	
PLO1	apply acquired knowledge and understanding in various aspects of fisheries and marine resources;
PLO2	explore different issues and find out probable strategies to manage and produce fisheries and marine resources mostly independently with limited supervision;
PLO3	use available resources to carry out any work in the laboratory and field following the safety rules and regulations;
PLO4	expose innovative ideas, credentials and intellectuals in all levels of responsibilities; tackle any situation independently getting information from various secondary sources; collect, arrange and analyze required data and make decision for probable solution for any raised problem;
B. Social Skills	
PLO5	demonstrate social values and practice professional ethics in the conduct of science;
PLO6	communicate and interact effectively for social, academic and professional purposes;
C. Thinking Skills	
PLO7	judge the veracity and value of scientific outcomes related to fisheries and marine bioscience;
D. Personal Skills	
PLO8	demonstrate the ability to incorporate entrepreneurial and managerial skills in planning daily activities;
PLO9	apply ICT skills for information management in daily and professional life.

PLO = Program Learning Outcome

14. Mapping Mission of the University with PEOs

Missions PEOs	UM1	UM2	UM3	UM4	UM5
PEO1	1	1	2	3	1
PEO2	2	3	2	2	3
PEO3	2	1	3	3	2
PEO4	1	1	1	2	2
PEO5	3	2	2	2	1
PEO6	2	1	3	2	3

Level of Correlation: 3=High, 2=Medium, 1=Low

15. Mapping PLOs with PEOs

Program Learning Outcomes (PLOs)		Program Educational Objectives (PEOs)					
		PEO1	PEO2	PEO3	PEO4	PEO5	PEO6
A. Fundamental Domain	PLO1	*					
	PLO2		*				
	PLO3		*	*			
	PLO4		*				
B. Social Domain	PLO5					*	*
	PLO6				*		
C. Thinking Domain	PLO7		*	*			
D. Personal Domain	PLO8					*	
	PLO9				*		

16. Mapping Courses with PLOs

Course Code and Course Title		PLOs								
		Fundamental Domain				Social Domain		Thinking Domain	Personal Domain	
		PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9
First Year First Term										
<i>Core Course</i>										
0831 06 FMRT 1101	Fisheries Zoology	X	X			X				X
0831 06 FMRT 1102	Fisheries Zoology Sessional	X	X	X	X			X		
0831 06 FMRT 1103	Fresh Water Ecology	X	X				X		X	
0831 06 FMRT 1104	Fresh Water Ecology Sessional and Field Work	X	X	X	X			X		X
0531 06 CHEM 1151	Chemistry	X	X			X	X			X
0531 06 CHEM 1152	Chemistry Sessional	X	X		X			X		
0231 06 HSS 1105	Communicative English	X	X			X			X	X
0541 06 MATH 1105	Mathematics	X	X			X			X	
<i>Optional Course</i>										
0831 06 FMRT 1105	Aquatic Resources	X	X		X	X			X	
0831 06 FMRT 1106	Aquatic Resources Sessional and Field Work	X		X	X			X		
0613 06 CSE 1150	Word Processing and Spread Sheet Analysis Lab	X	X					X	X	
First Year Second Term										
<i>Core Course</i>										
0831 06 FMRT 1201	Estuarine and Marine Ecology	X	X			X			X	
0831 06 FMRT 1202	Estuarine and Marine Ecology Sessional and Field Work	X	X		X	X		X		X
0831 06 FMRT 1203	Planktology	X	X	X			X		X	X
0831 06 FMRT 1204	Planktology Sessional and Field Work	X	X			X		X		X
0831 06 FMRT 1205	Fish Biochemistry	X	X			X			X	
0831 06 FMRT 1206	Fish Biochemistry Sessional	X	X				X	X		X
0831 06 FMRT 1207	Ichthyology	X	X				X		X	
0831 06 FMRT 1208	Ichthyology Sessional	X	X					X		
<i>Optional Course</i>										
0811 06 SOIL 1251	Soil Science	X	X			X			X	
0811 06 SOIL 1252	Soil Science Sessional and Field Work	X	X		X	X	X	X	X	
0533 06 PHY 1253	Physics	X	X			X			X	
0533 06 PHY 1254	Physics Sessional	X	X			X		X		

Course Code and Course Title		PLOs								
		Fundamental Domain				Social Domain		Thinking Domain	Personal Domain	
		PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9
Second Year First Term										
<i>Core Course</i>										
0831 06 FMRT 2101	Fisheries Microbiology	X	X	X	X			X	X	
0831 06 FMRT 2102	Fisheries Microbiology Sessional and Field Work	X	X	X		X	X	X		X
0831 06 FMRT 2103	Fish Physiology	X	X	X	X		X	X	X	
0831 06 FMRT 2104	Fish Physiology Sessional	X	X	X	X	X		X		X
0831 06 FMRT 2105	Fish Nutrition and Feed Formulation	X	X	X	X			X	X	
0831 06 FMRT 2106	Fish Nutrition and Feed Formulation Sessional and Field Work	X	X	X		X	X		X	X
0831 06 FMRT 2107	Shellfish Biology	X	X		X			X	X	
0831 06 FMRT 2108	Shellfish Biology Sessional and Field Work	X	X	X		X	X			X
0831 06 FMRT 2109	Fundamentals of Aquaculture	X	X	X	X			X	X	
0831 06 FMRT 2110	Fundamentals of Aquaculture Sessional and Field Work	X	X	X	X	X	X			X
<i>Optional Course</i>										
0831 06 FMRT 2111	Fisheries Systematics and Evolution	X	X	X	X			X	X	
0831 06 FMRT 2112	Fisheries Systematics and Evolution Sessional and Field Work	X	X	X	X	X	X	X		X
0631 06 CSE 2150	Database and Statistical Analysis Lab	X	X	X	X	X		X		X
Second Year Second Term										
<i>Core Course</i>										
0831 06 FMRT 2201	Freshwater Aquaculture	X	X			X		X	X	
0831 06 FMRT 2202	Freshwater Aquaculture Sessional and Field Work	X	X	X	X		X	X		X
0831 06 FMRT 2203	Live Food Culture	X	X	X		X		X	X	
0831 06 FMRT 2204	Live Food Culture Sessional	X	X	X	X		X	X		X
0831 06 FMRT 2205	Physical Oceanography	X	X	X		X		X	X	
0831 06 FMRT 2206	Physical Oceanography Sessional and Field Work	X	X	X	X		X	X		X
0542 06 STAT 2207	Principles of Statistics	X	X	X		X		X	X	
0542 06 STAT 2208	Principles of Statistics Sessional	X	X	X	X		X	X		X
<i>Optional Course</i>										
0314 06 HSS 2255	Rural Sociology	X	X		X	X	X	X	X	
0532 06 URP 2258	GIS and Remote Sensing Sessional and Field Work	X	X	X	X	X		X		X

Course Code and Course Title		PLOs								
		Fundamental Domain				Social Domain		Thinking Domain	Personal Domain	
		PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9
Third Year First Term										
<i>Core Course</i>										
0831 06 FMRT 3101	Coastal Aquaculture and Mariculture	x	x			x		x	x	
0831 06 FMRT 3102	Coastal Aquaculture and Mariculture Sessional and Field Work	x	x	x				x	x	
0831 06 FMRT 3103	Chemical and Geological Oceanography	x	x	x	x	x	x			
0831 06 FMRT 3104	Chemical and Geological Oceanography Sessional and Field Work	x	x	x	x	x	x	x	x	x
0542 06 STAT 3105	Biostatistics				x			x		x
0542 06 STAT 3106	Biostatistics Sessional				x			x		x
0831 06 FMRT 3107	Fish Harvest Technology	x	x	x		x		x	x	
0831 06 FMRT 3108	Fish Harvest Technology Sessional and Field Work	x	x	x				x		
<i>Optional Course</i>										
0831 06 FMRT 3109	Integrated Coastal Zone Management	x	x	x		x	x		x	
0831 06 FMRT 3111	Aqua Farm Design and Construction	x	x	x	x					
0831 06 FMRT 3112	Aqua Farm Design and Construction Sessional & Field Work	x	x	x	x			x		
Third Year Second Term										
<i>Core Course</i>										
0831 06 FMRT 3201	Fish Population Dynamics	x	x	x	x			x		
0831 06 FMRT 3202	Fish Population Dynamics Sessional and Field Work	x	x		x					
0831 06 FMRT 3203	Fish Breeding and Hatchery Management	x	x	x				x		
0831 06 FMRT 3204	Fish Breeding and Hatchery Management Sessional & Field Work		x	x	x			x	x	
0511 06 GEN 3205	Principles of Genetics	x	x	x	x	x	x	x	x	
0511 06 GEN 3206	Principles of Genetics Sessional			x	x		x	x	x	x
0831 06 FMRT 3207	Fish Parasitology	x	x	x				x		
0831 06 FMRT 3208	Fish Parasitology Sessional and Field Work	x	x				x		x	
0111 06 RM 3209	Research Methodology	x	x	x	x	x	x	x		
0111 06 RM 3210	Research Methodology Sessional	x		x	x	x		x	x	x
<i>Optional Course</i>										
0831 06 FMRT 3211	Marine Botany	x	x	x						
0831 06 FMRT 3212	Marine Botany Sessional & Field Work	x	x	x	x					
0613 06 CSE 3250	Computer Programming	x	x	x	x		x		x	x

Course Code and Course Title		PLOs								
		Fundamental Domain				Social Domain		Thinking Domain	Personal Domain	
		PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9
Fourth Year First Term										
<i>Core Course</i>										
0831 06 FMRT 4101	Fish Processing	x	x	x				x		
0831 06 FMRT 4102	Fish Processing Sessional and Field Work		x		x	x	x	x	x	
0831 06 FMRT 4103	Fish Pathology and Immunology	x	x	x	x			x		
0831 06 FMRT 4104	Fish Pathology and Immunology Sessional and Field Work		x		x	x		x	x	
0831 06 FMRT 4105	Fish Biotechnology and Genetic Engineering	x	x	x	x			x		x
0831 06 FMRT 4106	Fish Biotechnology and Genetic Engineering Sessional		x	x			x	x		
0831 06 FMRT 4107	Aquaculture Extension	x	x			x	x	x	x	
0831 06 FMRT 4108	Aquaculture Extension Sessional and Field Work				x	x	x	x	x	
0831 06 FMRT 4110	Project Thesis - I	x	x	x	x	x	x	x	x	x
<i>Optional Course</i>										
0712 06 EIA 4111	Environmental Impact Assessment	x	x	x				x	x	x
0831 06 FMRT 4113	Fish Food Safety and Quality Control					x		x	x	x
0512 06 BIOI 4114	Bioinformatics Sessional	x	x	x			x	x		x
Fourth Year Second Term										
<i>Core Course</i>										
0831 06 FMRT 4201	Aquatic Pollution and Toxicology	x	x	x	x			x		
0831 06 FMRT 4202	Aquatic Pollution and Toxicology Sessional & Field Work		x		x	x		x		
0831 06 FMRT 4203	Fisheries Management & Conservation	x	x	x	x	x		x	x	
0831 06 FMRT 4204	Fisheries Management & Conservation Sessional and Field Work		x	x	x	x	x	x	x	
0831 06 FMRT 4205	Fish Pharmacology	x	x	x	x			x		
0831 06 FMRT 4206	Fish Pharmacology Sessional and Field Work	x	x		x	x		x		
0311 06 ECON 4251	Fisheries Economics	x	x			x	x	x	x	
0831 06 FMRT 4210	Project Thesis - II	x	x	x	x	x	x	x	x	x
<i>Optional Course</i>										
0831 06 FMRT 4209	Mangrove Fisheries	x	x				x	x	x	x
0532 06 CLC 4211	Climate Change and Fisheries	x	x				x	x	x	
0831 06 FMRT 4213	Fisheries Product and Byproducts	x			x	x	x	x	x	

OUTCOME-BASED CURRICULUM

PART-B

17. Structure of the Curriculum

a) Duration of the Program	[4 years]	[8 terms]
b) Admission Requirements	The applicants having HSC or equivalent degree will be eligible for admission into this program. Other terms and conditions are set or revised periodically by the appropriate authority.	
c1) Graduating Credits / Total Minimum Credit Requirement to Complete the Program	[160]	
c2) Available Credits	[Total 191 credits including core 145 and optional 46 credits]	
d) Total Class Weeks in a Term*	14	
e) Minimum CGPA Requirements for Graduation	2.50	
f) Maximum Academic Years of Completion	[7 years]	

* Term Duration				
Teaching and Learning	Preparatory Leave	Term Final Examination	Term Break	Total
14 Weeks	2 Weeks	4 Weeks	2 Weeks	22 Weeks

g1) Area-wise Credit Distribution

Area	Course Type	Number of Courses	Credits	Total Credits
General Education (GED) Courses**	Theory	13	37	56
	Sessional	12	19	
Core/Compulsory Courses	Theory	27	80	107
	Sessional	27	27	
Optional/Elective Courses	Theory	6	18	22
	Sessional	4	4	
Capstone Courses***	Sessional	2	6	6
Total		91	191	191

** 29.32% from GED courses

*** Thesis, project, internship etc. courses

g2) Category of Courses

Area	Course Type	Course Title	Credits
General Education (GED) Courses	Theory	01. Chemistry 02. Communicative English 03. Mathematics 04. Soil Science 05. Physics 06. Principles of Statistics 07. Rural Sociology 08. Biostatistics 09. Principles of Genetics 10. Research Methodology 11. Climate Change 12. Fisheries Economics 13. Environmental Impact Assessment	37
	Sessional	01. Chemistry Sessional 02. Soil Science Sessional & Field Work 03. Physics Sessional 04. Word Processing and Spread Sheet Analysis 05. Data Base and Statistical Analysis 06. Principles of Statistics Sessional 07. GIS and Remote Sensing 08. Principles of Genetics Sessional 09. Research Methodology Sessional 10. Computer Programming 11. Biostatistics Sessional 12. Bioinformatics	19
Core/ Compulsory Courses	Theory	01. Fisheries Zoology 02. Fresh Water Ecology 03. Estuarine and Marine Ecology 04. Planktology 05. Fish Biochemistry 06. Ichthyology 07. Fisheries Microbiology 08. Fish Physiology 09. Fish Nutrition and Feed Formulation 10. Shellfish Biology 11. Fundamentals of Aquaculture 12. Freshwater Aquaculture 13. Live Food Culture 14. Physical Oceanography 15. Coastal Aquaculture and Mariculture 16. Chemical and Geological Oceanography 17. Fish Harvest Technology 18. Fish Population Dynamics 19. Fish Breeding and Hatchery Management 20. Fish Parasitology 21. Fish Processing 22. Fish Pathology and Immunology 23. Fish Biotechnology and Genetic Engineering 24. Aquaculture Extension 25. Aquatic Pollution and Toxicology 26. Fisheries Management and Conservation 27. Fish Pharmacology	80

	Sessional	01. Fisheries Zoology Sessional 02. Fresh Water Ecology Sessional & Field Work 03. Estuarine and Marine Ecology Sessional and Field Work 04. Planktology Sessional and Field Work 05. Fish Biochemistry Sessional 06. Ichthyology Sessional 07. Fisheries Microbiology Sessional and Field Work 08. Fish Physiology Sessional 09. Fish Nutrition and Feed Formulation Sessional and Field Work 10. Shellfish Biology Sessional and Field Work 11. Fundamentals of Aquaculture Sessional and Field Work 12. Freshwater Aquaculture Sessional and Field Work 13. Live Food Culture Sessional 14. Physical Oceanography Sessional and Field Work 15. Coastal Aquaculture and Mariculture Sessional and Field Work 16. Chemical and Geological Oceanography Sessional and Field Work 17. Fish Harvest Technology Sessional and Field Work 18. Fish Population Dynamics Sessional and Field Work 19. Fish Breeding & Hatchery Management Sessional and Field Work 20. Fish Parasitology Sessional and Field Work 21. Fish Processing Sessional and Field Work 22. Fish Pathology and Immunology Sessional and Field Work 23. Fish Biotechnology and Genetic Engineering Sessional 24. Aquaculture Extension Sessional and Field Work 25. Aquatic Pollution and Toxicology Sessional & Field Work 26. Fisheries Management and Conservation Sessional and Field Work 27. Fish Pharmacology Sessional and Field Work	27
Optional/ Elective Courses	Theory	01. Aquatic Resources 02. Fisheries Systematics and Evolution 03. Integrated Coastal Zone Management 04. Aqua Farm Design and Construction 05. Marine Botany 06. Fisheries Product and Byproducts	18
	Sessional	01. Fisheries Systematics and Evolution Sessional and Field Work 02. Aqua Farm Design and Construction Sessional 03. Marine Botany Sessional & Field Work 04. Fish Food Safety and Quality Control	4
Capstone Courses	Sessional	01. Project thesis-01 02. Project thesis-02	6
Total			191

18. Year/Term-wise Distribution of Courses

First Year First Term						
Course code	Course Title	Course status	Contact hours/week		Credits	Prerequisites
			Theory	Sessional		
0831 06 FMRT 1101	Fisheries Zoology	Core	3		3	None
0831 06 FMRT 1102	Fisheries Zoology Sessional	Core		1.5	1	None
0831 06 FMRT 1103	Fresh Water Ecology	Core	3		3	None
0831 06 FMRT 1104	Fresh Water Ecology Sessional and Field Work	Core		1.5	1	None
0531 06 CHEM 1151	Chemistry	Core	3		3	None
0531 06 CHEM 1152	Chemistry Sessional	Core		1.5	1	None
0231 06 HSS 1105	Communicative English	Core	3		3	None
0541 06 MATH 1105	Mathematics	Core	3		3	None
0831 06 FMRT 1105	Aquatic Resources	Optional	3		3	None
0831 06 FMRT 1106	Aquatic Resources Sessional and Field Work	Optional		1.5	1	None
0613 06 CSE 1150	Word Processing and Spread Sheet Analysis Lab	Optional		3.0	2	None
Total	Core: Theory - 05; Sessional – 03, Optional: Theory - 01; Sessional - 02		18.0	9.0	24.0	
			27.0			
First Year 2nd Term						
Course Code	Course Title	Course status	Contact hours/week		Credits	Prerequisites
			Theory	Sessional		
0831 06 FMRT 1201	Estuarine and Marine Ecology	Core	3	–	3	None
0831 06 FMRT 1202	Estuarine and Marine Ecology Sessional and Field Work	Core	–	1.5	1	None
0831 06 FMRT 1203	Planktology	Core	3	–	3	None
0831 06 FMRT 1204	Planktology Sessional and Field Work	Core	–	1.5	1	None
0831 06 FMRT 1205	Fish Biochemistry	Core	3	–	3	None
0831 06 FMRT 1206	Fish Biochemistry Sessional	Core	–	1.5	1	None
0831 06 FMRT 1207	Ichthyology	Core	3	–	3	None
0831 06 FMRT 1208	Ichthyology Sessional	Core	–	1.5	1	None
0811 06 SOIL 1251	Soil Science	Optional	3	–	3	None
0811 06 SOIL 1252	Soil Science Sessional and Field Work	Optional	–	1.5	1	None
0533 06 PHY 1253	Physics	Optional	3	–	3	None
0533 06 PHY 1254	Physics Sessional	Optional	–	1.5	1	None
Total	Core: Theory - 04; Sessional – 03, Optional: Theory - 02; Sessional - 02		18.0	9.0	24.0	
			27.0			

Second Year First Term						
Course Code	Course Title	Course status	Contact hours/week		Credits	Prerequisites
			Theory	Sessional		
0831 06 FMRT 2101	Fisheries Microbiology	Core	3	-	3	None
0831 06 FMRT 2102	Fisheries Microbiology Sessional and Field Work	Core	-	1.5	1	None
0831 06 FMRT 2103	Fish Physiology	Core	3	-	3	None
0831 06 FMRT 2104	Fish Physiology Sessional	Core	-	1.5	1	None
0831 06 FMRT 2105	Fish Nutrition and Feed Formulation	Core	3	-	3	None
0831 06 FMRT 2106	Fish Nutrition and Feed Formulation Sessional and Field Work	Core	-	1.5	1	None
0831 06 FMRT 2107	Shellfish Biology	Core	3	-	3	None
0831 06 FMRT 2108	Shellfish Biology Sessional and Field Work	Core	-	1.5	1	None
0831 06 FMRT 2109	Fundamentals of Aquaculture	Core	3	-	3	None
0831 06 FMRT 2110	Fundamentals of Aquaculture Sessional and Field Work	Core	-	1.5	1	None
0831 06 FMRT 2111	Fisheries Systematics and Evolution	Optional	2	-	2	None
0831 06 FMRT 2112	Fisheries Systematics and Evolution Sessional and Field Work	Optional	-	1.5	1	None
0631 06 CSE 2150	Database and Statistical Analysis Lab.	Optional	-	3	2	None
Total	Core: Theory - 05; Sessional – 05, Optional: Theory - 01; Sessional – 02		17.0	12.0	25.0	
			29.0			
Second Year Second Term						
Course Code	Course Title	Course status	Contact hours/week		Credits	Prerequisites
			Theory	Sessional		
0831 06 FMRT 2201	Freshwater Aquaculture	Core	3	-	3	None
0831 06 FMRT 2202	Freshwater Aquaculture Sessional and Field Work	Core	-	1.5	1	None
0831 06 FMRT 2203	Live Food Culture	Core	2	-	2	None
0831 06 FMRT 2204	Live Food Culture Sessional	Core	-	1.5	1	None
0831 06 FMRT 2205	Physical Oceanography	Core	3	-	3	None
0831 06 FMRT 2206	Physical Oceanography Sessional and Field Work	Core	-	1.5	1	None
0542 06 STAT 2207	Principles of Statistics	Core	3	-	3	None
0542 06 STAT 2208	Principles of Statistics Sessional	Core	-	3	2	None
0314 06 HSS 2255	Rural Sociology	Optional	3	-	3	None
0532 06 URP 2258	GIS and Remote Sensing Sessional and Field Work	Optional	-	3	2	None
Total	Core: Theory - 04; Sessional – 04, Optional: Theory - 01; Sessional - 01		14.0	10.5	21.0	
			24.5			

Third Year First Term						
Course Code	Course Title	Course Status	Contact Hours/Week		Credits	Prerequisites
			Theory	Sessional		
0831 06 FMRT 3101	Coastal Aquaculture and Mariculture	Core	3	-	3	None
0831 06 FMRT 3102	Coastal Aquaculture and Mariculture Sessional and Field Work	Core	-	1.5	1	None
0831 06 FMRT 3103	Chemical and Geological Oceanography	Core	3	-	3	None
0831 06 FMRT 3104	Chemical and Geological Oceanography Sessional and Field Work	Core	-	1.5	1	None
0542 06 STAT 3105	Biostatistics	Core	3	-	3	Principles of Statistics
0542 06 STAT 3106	Biostatistics Sessional	Core	-	3	2	Principles of statistics
0831 06 FMRT 3107	Fish Harvest Technology	Core	3	-	3	None
0831 06 FMRT 3108	Fish Harvest Technology Sessional and Field Work	Core	-	1.5	1	None
0831 06 FMRT 3109	Integrated Coastal Zone Management	Optional	2	-	2	None
0831 06 FMRT 3111	Aqua Farm Design and Construction	Optional	2	-	2	Fundamental of Aquaculture
0831 06 FMRT 3112	Aqua Farm Design and Construction Sessional & Field Work	Optional	-	1.5	1	Fundamental of Aquaculture
Total	Core: Theory - 04; Sessional – 04, Optional: Theory - 02; Sessional - 01		16.0	9.0	22.0	-
			25.0			
Third Year Second Term						
Course Code	Course Title	Course Status	Contact Hours/Week		Credits	Prerequisites
			Theory	Sessional		
0831 06 FMRT3201	Fish Population Dynamics	Core	3	-	3	None
0831 06 FMRT 3202	Fish Population Dynamics Sessional and Field Work	Core	-	1.5	1	None
0831 06 FMRT 3203	Fish Breeding and Hatchery Management	Core	3	-	3	None
0831 06 FMRT 3204	Fish Breeding and Hatchery Management Sessional & Field Work	Core	-	1.5	1	None
0511 06 GEN 3205	Principles of Genetics	Core	3	-	3	None
0511 06 GEN 3206	Principles of Genetics Sessional	Core	-	1.5	1	None
0831 06 FMRT 3207	Fish Parasitology	Core	3	-	3	None
0831 06 FMRT 3208	Fish Parasitology Sessional and Field Work	Core	-	1.5	1	None
0111 06 RM 3209	Research Methodology	Core	3	-	3	None
0111 06 RM 3210	Research Methodology Sessional	Core	-	3	2	None
0831 06 FMRT 3211	Marine Botany	Optional	2	-	2	None
0831 06 FMRT 3212	Marine Botany Sessional & Field Work	Optional	-	1.5	1	None
0613 06 CSE 3250	Computer Programming	Optional	-	3	2	Basic computer including operating system, MS Office software
Total	Core: Theory - 05; Sessional – 05, Optional: Theory - 01; Sessional – 02		17.0	13.5	26.0	-
			30.5			

Fourth Year First Term						
Course Code	Course Title	Course Status	Contact Hours/Week		Credits	Prerequisites
			Theory	Sessional		
0831 06 FMRT 4101	Fish Processing	Core	3	–	3	None
0831 06 FMRT 4102	Fish Processing Sessional and Field Work	Core	–	1.5	1	None
0831 06 FMRT 4103	Fish Pathology and Immunology	Core	3	–	3	None
0831 06 FMRT 4104	Fish Pathology and Immunology Sessional and Field Work	Core	–	1.5	1	None
0831 06 FMRT 4105	Fish Biotechnology and Genetic Engineering	Core	3	–	3	None
0831 06 FMRT 4106	Fish Biotechnology and Genetic Engineering Sessional	Core	–	1.5	1	None
0831 06 FMRT 4107	Aquaculture Extension	Core	3	–	3	None
0831 06 FMRT 4108	Aquaculture Extension Sessional and Field Work	Core	–	1.5	1	None
0831 06 FMRT 4110	Project Thesis – I	Core	–	4	2	None
0712 06 EIA 4111	Environmental Impact Assessment	Optional	2	–	2	None
0831 06 FMRT 4113	Fish Food Safety and Quality Control	Optional	2	–	2	None
0512 06 FMRT 4114	Bioinformatics Sessional	Optional	–	1.5	1	None
Total	Core: Theory - 04; Sessional - 05 Optional: Theory - 02; Sessional - 01		16.0	9.5	23.0	-
			25.5			
Fourth Year Second Term						
Course Code	Course Title	Course Status	Contact Hours/Week		Credits	Prerequisites
			Theory	Sessional		
0831 06 FMRT 4201	Aquatic Pollution and Toxicology	Core	3	–	3	None
0831 06 FMRT 4202	Aquatic Pollution and Toxicology Sessional & Field Work	Core	-	1.5	1	None
0831 06 FMRT 4203	Fisheries Management & Conservation	Core	3	–	3	None
0831 06 FMRT 4204	Fisheries Management and Conservation Sessional and Field Work	Core	–	1.5	1	None
0831 06 FMRT 4205	Fish Pharmacology	Core	3	–	3	None
0831 06 FMRT 4206	Fish Pharmacology Sessional and Field Work	Core	-	1.5	1	None
0311 06 ECON 4251	Fisheries Economics	Core	3	–	3	None
0831 06 FMRT 4210	Project Thesis - II	Core	–	8	4	None
0831 06 FMRT 4209	Mangrove Fisheries	Optional	3	–	3	None
0532 06 CLC 4211	Climate Change and Fisheries	Optional	2	–	2	None
0831 06 FMRT 4213	Fisheries Product and Byproducts	Optional	2	–	2	None
Total	Core: Theory - 04; Sessional - 04 Optional: Theory - 03; Sessional - 0		19.0	8.5	26.0	-
			27.5			