## <u>College of Fisheries Science</u> <u>Bachelor of Fisheries Science (B.F.Sc.) course curriculum</u>

**COURSES: SEMESTER WISE** 

Semester I	S. No.	Course No.	Course Title Cre	edit hour		
2         FRM 101 (FS)         Taxonomy of Finfish         3(1+2)           3         FRM 102(FS)         Taxonomy of Shellfish         2(1+1)           4         AEM 101         Meteorology, Climatology and Geography         2(1+1)           5         FEES 101         Statistical Methods         3(2+1)           6         AQC 102         Fundamentals of Biochemistry         3(2+1)           7         AHM 101         Fundamentals of Microbiology         3(2+1)           8         AEM 102         Soil and Water Chemistry         3(2+1)           9         FPT 101         Fish in Nutrition         1(1+0)           10         NCC/NSS activity         2 (0+2)           11         TUT         Tutorial         1 (1+0)           Total         25(14+11)           Semester II           1         AQC 103         Elementary Fresh Water Aquaculture         3 (2+1)           2         FRM 103(FS)         Anatomy and Biology of Finfish         3(2+1)           3         AEM 103         Limnology         3(2+1)           4         AEM 104         Marine Biology         3(2+1)           5         FRM 104(FS)         Inland Fisheries         3(2+1)	Semester I					
3         FRM 102(FS)         Taxonomy of Shellfish         2(1+1)           4         AEM 101         Meteorology, Climatology and Geography         2(1+1)           5         FEES 101         Statistical Methods         3(2+1)           6         AQC 102         Fundamentals of Biochemistry         3(2+1)           7         AHM 101         Fundamentals of Microbiology         3(2+1)           8         AEM 102         Soil and Water Chemistry         3(2+1)           9         FPT 101         Fish in Nutrition         1(1+0)           10         NCC/NSS activity         2(0+2)           11         TUT         Tutorial         1 (1+0)           NCC/NSS activity         2(0+2)           Total         25(14+11)           Semester II           1         AQC 103         Elementary Fresh Water Aquaculture         3 (2+1)           2         FRM 103(FS)         Anatomy and Biology of Finfish         3(2+1)           3         AEM 103         Limnology         3(2+1)           4         AEM 104         Marine Biology         3(2+1)           5         FRM 104(FS)         Inland Fisheries         3(2+1)           6         FPT 102	1	AQC 101	Principles of Aquaculture	2 (1+1)		
4         AEM 101         Meteorology, Climatology and Geography         2(1+1)           5         FEES 101         Statistical Methods         3(2+1)           6         AQC 102         Fundamentals of Biochemistry         3(2+1)           7         AHM 101         Fundamentals of Microbiology         3(2+1)           8         AEM 102         Soil and Water Chemistry         3(2+1)           9         FPT 101         Fish in Nutrition         1(1+0)           10         NCC/NSS activity         2 (0+2)           11         TUT         Tutorial         1 (1+0)           Semester II           1         AQC 103         Elementary Fresh Water Aquaculture         3 (2+1)           2         FRM 103(FS)         Anatomy and Biology of Finfish         3(2+1)           3         AEM 103         Limnology         3(2+1)           4         AEM 104         Marine Biology         3(2+1)           5         FRM 104(FS)         Inland Fisheries         3(2+1)           6         FPT 102         Food Chemistry         3(2+1)           7         FEES 102         Information and Communication Technology         2(1+1)           8         AQC 104         Aquaculture in Reservoi	2	FRM 101 (FS)	Taxonomy of Finfish	3(1+2)		
5         FEES 101         Statistical Methods         3(2+1)           6         AQC 102         Fundamentals of Biochemistry         3(2+1)           7         AHM 101         Fundamentals of Microbiology         3(2+1)           8         AEM 102         Soil and Water Chemistry         3(2+1)           9         FPT 101         Fish in Nutrition         1(1+0)           10         NCC/NSS activity         2 (0+2)           11         TUT         Tutorial         1 (1+0)           Semester II           1         AQC 103         Elementary Fresh Water Aquaculture         3 (2+1)           2         FRM 103(FS)         Anatomy and Biology of Finfish         3(2+1)           3         AEM 103         Limnology         3(2+1)           4         AEM 104         Marine Biology         3(2+1)           5         FRM 104(FS)         Inland Fisheries         3(2+1)           6         FPT 102         Food Chemistry         3(2+1)           7         FEES 102         Information and Communication Technology         2(1+1)           8         AQC 104         Aquaculture in Reservoirs         2(1+1)           9         Physical Education, First Aid & Yoga Practices         <	3	FRM 102(FS)	Taxonomy of Shellfish	2(1+1)		
6         AQC 102         Fundamentals of Biochemistry         3(2+1)           7         AHM 101         Fundamentals of Microbiology         3(2+1)           8         AEM 102         Soil and Water Chemistry         3(2+1)           9         FPT 101         Fish in Nutrition         1(1+0)           10         NCC/NSS activity         2 (0+2)           11         TUT         Tutorial         1 (1+0)           Semester II           1         AQC 103         Elementary Fresh Water Aquaculture         3 (2+1)           2         FRM 103(FS)         Anatomy and Biology of Finfish         3(2+1)           3         AEM 103         Limnology         3(2+1)           4         AEM 104         Marine Biology         3(2+1)           5         FRM 104(FS)         Inland Fisheries         3(2+1)           6         FPT 102         Food Chemistry         3(2+1)           7         FEES 102         Information and Communication Technology         2(1+1)           8         AQC 104         Aquaculture in Reservoirs         2(1+1)           9         Physical Education, First Aid & Yoga Practices         1(0+1)CNC*           10         TUT         Tutorial </th <th>4</th> <th>AEM 101</th> <th>Meteorology, Climatology and Geography</th> <th>2(1+1)</th>	4	AEM 101	Meteorology, Climatology and Geography	2(1+1)		
7         AHM 101         Fundamentals of Microbiology         3(2+1)           8         AEM 102         Soil and Water Chemistry         3(2+1)           9         FPT 101         Fish in Nutrition         1(1+0)           10         NCC/NSS activity         2 (0+2)           11         TUT         Tutorial         1 (1+0)           Semester II           1         AQC 103         Elementary Fresh Water Aquaculture         3 (2+1)           2         FRM 103(FS)         Anatomy and Biology of Finfish         3(2+1)           3         AEM 103         Limnology         3(2+1)           4         AEM 104         Marine Biology         3(2+1)           5         FRM 104(FS)         Inland Fisheries         3(2+1)           6         FPT 102         Food Chemistry         3(2+1)           7         FEES 102         Information and Communication Technology         2(1+1)           8         AQC 104         Aquaculture in Reservoirs         2(1+1)           9         Physical Education, First Aid & Yoga Practices         1(0+1)CNC*           10         TUT         Tutorial         1(1+0)           Total         23(15+8)           2 <td< th=""><th>5</th><th>FEES 101</th><th>Statistical Methods</th><th>3(2+1)</th></td<>	5	FEES 101	Statistical Methods	3(2+1)		
8         AEM 102         Soil and Water Chemistry         3(2+1)           9         FPT 101         Fish in Nutrition         1(1+0)           10         NCC/NSS activity         2 (0+2)           11         TUT         Tutorial         1 (1+0)           Semester II           1         AQC 103         Elementary Fresh Water Aquaculture         3 (2+1)           2         FRM 103(FS)         Anatomy and Biology of Finfish         3(2+1)           3         AEM 103         Linnology         3(2+1)           4         AEM 104         Marine Biology         3(2+1)           5         FRM 104(FS)         Inland Fisheries         3(2+1)           6         FPT 102         Food Chemistry         3(2+1)           7         FEES 102         Information and Communication Technology         2(1+1)           8         AQC 104         Aquaculture in Reservoirs         2(1+1)           9         Physical Education, First Aid & Yoga Practices         1(0+1)CNC*           10         TUT         Tutorial         1 (1+0)           Total         23(15+8)           Semester III           1         FRM 201(FS)         Physiology of Finfish and Shellfish	6	AQC 102	Fundamentals of Biochemistry	3(2+1)		
9         FPT 101         Fish in Nutrition         1(1+0)           10         NCC/NSS activity         2 (0+2)           11         TUT         Tutorial         1 (1+0)           Semester II           1         AQC 103         Elementary Fresh Water Aquaculture         3 (2+1)           2         FRM 103(FS)         Anatomy and Biology of Finfish         3(2+1)           3         AEM 103         Limnology         3(2+1)           4         AEM 104         Marine Biology         3(2+1)           5         FRM 104(FS)         Inland Fisheries         3(2+1)           6         FPT 102         Food Chemistry         3(2+1)           7         FEES 102         Information and Communication Technology         2(1+1)           8         AQC 104         Aquaculture in Reservoirs         2(1+1)           9         Physical Education, First Aid & Yoga Practices         1(0+1)CNC*           10         TUT         Tutorial         1 (1+0)           8         AQC 104         Aquaculture in Reservoirs         2(1+1)           9         Physical Education, First Aid & Yoga Practices         1(0+1)CNC*           10         TUT         Tutorial         1 (1+0)	7	AHM 101	Fundamentals of Microbiology	3(2+1)		
NCC/NSS activity   2 (0+2)	8	AEM 102	Soil and Water Chemistry	3(2+1)		
TUT	9	FPT 101	Fish in Nutrition	1(1+0)		
Total   Semester II	10		•	` '		
Semester II	11	TUT		, ,		
1         AQC 103         Elementary Fresh Water Aquaculture         3 (2+1)           2         FRM 103(FS)         Anatomy and Biology of Finfish         3(2+1)           3         AEM 103         Limnology         3(2+1)           4         AEM 104         Marine Biology         3(2+1)           5         FRM 104(FS)         Inland Fisheries         3(2+1)           6         FPT 102         Food Chemistry         3(2+1)           7         FEES 102         Information and Communication Technology         2(1+1)           8         AQC 104         Aquaculture in Reservoirs         2(1+1)           9         Physical Education, First Aid & Yoga Practices         1(0+1)CNC*           10         TUT         Tutorial         1 (1+0)           Total         23(15+8)           Semester III           1         FRM 201(FS)         Physiology of Finfish and Shellfish         3(2+1)           2         AQC 201         Fish Food Organisms         2(1+1)           3         AEM 201         Aquatic Ecology, Biodiversity and Disaster Management         3(2+1)           4         AEM 202         Fishery Oceanography         2(1+1)           5         AQC 202         Ornamental Fish Production				25(14+11)		
2         FRM 103(FS)         Anatomy and Biology of Finfish         3(2+1)           3         AEM 103         Limnology         3(2+1)           4         AEM 104         Marine Biology         3(2+1)           5         FRM 104(FS)         Inland Fisheries         3(2+1)           6         FPT 102         Food Chemistry         3(2+1)           7         FEES 102         Information and Communication Technology         2(1+1)           8         AQC 104         Aquaculture in Reservoirs         2(1+1)           9         Physical Education, First Aid & Yoga Practices         1(0+1)CNC*           10         TUT         Tutorial         1 (1+0)           5         Total         23(15+8)           Semester III           1         FRM 201(FS)         Physiology of Finfish and Shellfish         3(2+1)           2         AQC 201         Fish Food Organisms         2(1+1)           3         AEM 201         Aquatic Ecology, Biodiversity and Disaster Management         3(2+1)           4         AEM 202         Fishery Oceanography         2(1+1)           5         AQC 202         Ornamental Fish Production and Management         2(1+1)           6         FPT 201         F	1	100100		2 (2 - 1)		
3         AEM 103         Limnology         3(2+1)           4         AEM 104         Marine Biology         3(2+1)           5         FRM 104(FS)         Inland Fisheries         3(2+1)           6         FPT 102         Food Chemistry         3(2+1)           7         FEES 102         Information and Communication Technology         2(1+1)           8         AQC 104         Aquaculture in Reservoirs         2(1+1)           9         Physical Education, First Aid & Yoga Practices         1(0+1)CNC*           10         TUT         Tutorial         1 (1+0)           1         Total         23(15+8)           Semester III           1         FRM 201(FS)         Physiology of Finfish and Shellfish         3(2+1)           2         AQC 201         Fish Food Organisms         2(1+1)           3         AEM 201         Aquatic Ecology, Biodiversity and Disaster Management         3(2+1)           4         AEM 202         Fishery Oceanography         2(1+1)           5         AQC 202         Ornamental Fish Production and Management         2(1+1)           6         FPT 201         Freezing Technology         2(1+1)           7         AQC 203         Genetics and Bre		_				
4         AEM 104         Marine Biology         3(2+1)           5         FRM 104(FS)         Inland Fisheries         3(2+1)           6         FPT 102         Food Chemistry         3(2+1)           7         FEES 102         Information and Communication Technology         2(1+1)           8         AQC 104         Aquaculture in Reservoirs         2(1+1)           9         Physical Education, First Aid & Yoga Practices         1(0+1)CNC*           10         TUT         Tutorial         1 (1+0)           Semester III           1         FRM 201(FS)         Physiology of Finfish and Shellfish         3(2+1)           2         AQC 201         Fish Food Organisms         2(1+1)           3         AEM 201         Aquatic Ecology, Biodiversity and Disaster Management         3(2+1)           4         AEM 202         Fishery Oceanography         2(1+1)           5         AQC 202         Ornamental Fish Production and Management         2(1+1)           6         FPT 201         Freezing Technology         2(1+1)           7         AQC 203         Genetics and Breeding         2(1+1)		` ′		, ,		
5         FRM 104(FS)         Inland Fisheries         3(2+1)           6         FPT 102         Food Chemistry         3(2+1)           7         FEES 102         Information and Communication Technology         2(1+1)           8         AQC 104         Aquaculture in Reservoirs         2(1+1)           9         Physical Education, First Aid & Yoga Practices         1(0+1)CNC*           10         TUT         Tutorial         1 (1+0)           Semester III           1         FRM 201(FS)         Physiology of Finfish and Shellfish         3(2+1)           2         AQC 201         Fish Food Organisms         2(1+1)           3         AEM 201         Aquatic Ecology, Biodiversity and Disaster Management         3(2+1)           4         AEM 202         Fishery Oceanography         2(1+1)           5         AQC 202         Ornamental Fish Production and Management         2(1+1)           6         FPT 201         Freezing Technology         2(1+1)           7         AQC 203         Genetics and Breeding         2(1+1)			- 1	` ′		
6         FPT 102         Food Chemistry         3(2+1)           7         FEES 102         Information and Communication Technology         2(1+1)           8         AQC 104         Aquaculture in Reservoirs         2(1+1)           9         Physical Education, First Aid & Yoga Practices         1(0+1)CNC*           10         TUT         Tutorial         1 (1+0)           Semester III           1         FRM 201(FS)         Physiology of Finfish and Shellfish         3(2+1)           2         AQC 201         Fish Food Organisms         2(1+1)           3         AEM 201         Aquatic Ecology, Biodiversity and Disaster Management         3(2+1)           4         AEM 202         Fishery Oceanography         2(1+1)           5         AQC 202         Ornamental Fish Production and Management         2(1+1)           6         FPT 201         Freezing Technology         2(1+1)           7         AQC 203         Genetics and Breeding         2(1+1)						
7         FEES 102         Information and Communication Technology         2(1+1)           8         AQC 104         Aquaculture in Reservoirs         2(1+1)           9         Physical Education, First Aid & Yoga Practices         1(0+1)CNC*           10         TUT         Tutorial         1 (1+0)           Semester III           1         FRM 201(FS)         Physiology of Finfish and Shellfish         3(2+1)           2         AQC 201         Fish Food Organisms         2(1+1)           3         AEM 201         Aquatic Ecology, Biodiversity and Disaster Management         3(2+1)           4         AEM 202         Fishery Oceanography         2(1+1)           5         AQC 202         Ornamental Fish Production and Management         2(1+1)           6         FPT 201         Freezing Technology         2(1+1)           7         AQC 203         Genetics and Breeding         2(1+1)		` ′				
8         AQC 104         Aquaculture in Reservoirs         2(1+1)           9         Physical Education, First Aid & Yoga Practices         1(0+1)CNC*           10         TUT         Tutorial         1 (1+0)           Semester III           1         FRM 201(FS)         Physiology of Finfish and Shellfish         3(2+1)           2         AQC 201         Fish Food Organisms         2(1+1)           3         AEM 201         Aquatic Ecology, Biodiversity and Disaster Management         3(2+1)           4         AEM 202         Fishery Oceanography         2(1+1)           5         AQC 202         Ornamental Fish Production and Management         2(1+1)           6         FPT 201         Freezing Technology         2(1+1)           7         AQC 203         Genetics and Breeding         2(1+1)			5			
Physical Education, First Aid & Yoga Practices  1 (0+1)CNC*  10 TUT Tutorial 1 (1+0)  Total 23(15+8)  Semester III  1 FRM 201(FS) Physiology of Finfish and Shellfish 3(2+1)  2 AQC 201 Fish Food Organisms 2(1+1)  3 AEM 201 Aquatic Ecology, Biodiversity and Disaster Management  4 AEM 202 Fishery Oceanography 2(1+1)  5 AQC 202 Ornamental Fish Production and Management 2(1+1)  6 FPT 201 Freezing Technology 2(1+1)  7 AQC 203 Genetics and Breeding 2(1+1)						
Tutorial 1 (1+0)  Total 23(15+8)  Semester III  FRM 201(FS) Physiology of Finfish and Shellfish 3(2+1)  AQC 201 Fish Food Organisms 2(1+1)  AEM 201 Aquatic Ecology, Biodiversity and Disaster Management 3(2+1)  AEM 202 Fishery Oceanography 2(1+1)  AQC 202 Ornamental Fish Production and Management 2(1+1)  FPT 201 Freezing Technology 2(1+1)  AQC 203 Genetics and Breeding 2(1+1)		AQC 104	-			
Total  Semester III  FRM 201(FS) Physiology of Finfish and Shellfish 3(2+1)  AQC 201 Fish Food Organisms 2(1+1)  AEM 201 Aquatic Ecology, Biodiversity and Disaster Management 3(2+1)  AEM 202 Fishery Oceanography 2(1+1)  AQC 202 Ornamental Fish Production and Management 2(1+1)  Freezing Technology 2(1+1)  AQC 203 Genetics and Breeding 2(1+1)			-	i i		
Semester III  1 FRM 201(FS) Physiology of Finfish and Shellfish 3(2+1)  2 AQC 201 Fish Food Organisms 2(1+1)  3 AEM 201 Aquatic Ecology, Biodiversity and Disaster Management  4 AEM 202 Fishery Oceanography 2(1+1)  5 AQC 202 Ornamental Fish Production and Management 2(1+1)  6 FPT 201 Freezing Technology 2(1+1)  7 AQC 203 Genetics and Breeding 2(1+1)	10	TUT		` ′		
1FRM 201(FS)Physiology of Finfish and Shellfish3(2+1)2AQC 201Fish Food Organisms2(1+1)3AEM 201Aquatic Ecology, Biodiversity and Disaster Management3(2+1)4AEM 202Fishery Oceanography2(1+1)5AQC 202Ornamental Fish Production and Management2(1+1)6FPT 201Freezing Technology2(1+1)7AQC 203Genetics and Breeding2(1+1)						
AQC 201 Fish Food Organisms 2(1+1)  AEM 201 Aquatic Ecology, Biodiversity and Disaster Management  AEM 202 Fishery Oceanography 2(1+1)  AQC 202 Ornamental Fish Production and Management 2(1+1)  FPT 201 Freezing Technology 2(1+1)  AQC 203 Genetics and Breeding 2(1+1)	1	FRM 201(FS)		3(2+1)		
3 AEM 201 Aquatic Ecology, Biodiversity and Disaster Management 4 AEM 202 Fishery Oceanography 2(1+1) 5 AQC 202 Ornamental Fish Production and Management 2(1+1) 6 FPT 201 Freezing Technology 2(1+1) 7 AQC 203 Genetics and Breeding 2(1+1)	2	, ,		i i		
Management  4 AEM 202 Fishery Oceanography 2(1+1)  5 AQC 202 Ornamental Fish Production and Management 2(1+1)  6 FPT 201 Freezing Technology 2(1+1)  7 AQC 203 Genetics and Breeding 2(1+1)						
4AEM 202Fishery Oceanography2(1+1)5AQC 202Ornamental Fish Production and Management2(1+1)6FPT 201Freezing Technology2(1+1)7AQC 203Genetics and Breeding2(1+1)	-	1312111 201		(= . 2)		
6 FPT 201 Freezing Technology 2(1+1) 7 AQC 203 Genetics and Breeding 2(1+1)	4	AEM 202		2(1+1)		
6 FPT 201 Freezing Technology 2(1+1) 7 AQC 203 Genetics and Breeding 2(1+1)	5	AQC 202	Ornamental Fish Production and Management	2(1+1)		
7 AQC 203 Genetics and Breeding 2(1+1)	6		Freezing Technology	2(1+1)		
	7	AQC 203	Genetics and Breeding	2(1+1)		
	8		Introductory Fish Immunology	2(1+1)		

9	FEES 201	Fisheries Economics	3(2+1)				
10	FRM 202(FS)	Aquatic Mammals, Reptiles and Amphibians	1(1+0)				
11		NCC/NSS activity	2 (0+2)				
12	TUT	Tutorial	1 (1+0)				
		Total	25(14+11)				
	1	Semester IV	1				
1	AQC 204	Coastal Aquaculture and Mariculture	3(2+1)				
2	AHM 202	Therapeutics in Aquaculture	2(1+1)				
3	AQC 205	Fish Nutrition and Feed Technology	3(2+1)				
4	FPT 202	Fish Canning Technology	2(1+1)				
5	FPT 203	Fish Packaging Technology	2(1+1)				
6	AHM-203	Fish and Shellfish Pathology	3(2+1)				
7	FE 201	Fishing Craft Technology	2(1+1)				
8	FEES 202	Fisheries Extension Education	2(1+1)				
9	AQC 206	Shellfish Hatchery Management	2(1+1)				
10	FEES 203	Communication Skills and Personality Development	1(0+1)				
11		Swimming	1(0+1) <b>CAA*</b>				
12	TUT	Tutorial	1 (1+0)				
		Total	22(12+10)				
	T	Semester V	T = 12 13				
1	AQC 301	Finfish Hatchery Management	3 (2+1)				
2	FRM 301(FS)	Anatomy and Biology of Shellfish	2 (1+1)				
3	AHM 301	Pharmacology	3 (2+1)				
4	AHM 302	Fish Toxicology	2 (1+1)				
5	FRM 302(FS)	Marine Fisheries	3(2+1)				
6	FEES 301	Fisheries Co-operatives and Marketing	2(1+1)				
7	FE 301	Fishing Gear Technology	2(1+1)				
8	FRM 303(FS)	Fish Population Dynamics and Stock Assessment	3(2+1)				
9	<b>AEM 301</b>	Coastal Zone Management	2(1+1)				
10	TUT	Tutorial	1 (1+0)				
		Total	23(14+9)				
	Semester VI						
1	AQC 302	Introduction to Biotechnology and Bioinformatics	2(1+1)				
2	FE 302	Refrigeration and Equipment Engineering	3(2+1)				
3	FEES 302	Fisheries Policy and Law	1(1+0)				
4	AEM 302	Aquatic Pollution	2(1+1)				
5	FE 303	Fishing Technology	2(1+1)				
6	FPT 301	Fish Products and Value Addition	3(2+1)				
7	FPT 302	Microbiology of Fish and Fishery Products	3(2+1)				
8	FE 304	Navigation and Seamanship	2(1+1)				
9	FPT 303	Fish By-Products and Waste Utilization	2(1+1)				

10	<b>FEES 303</b>	Fisheries Business Management and Entrepreneurship	1(1+0)				
		Development					
	TUT	Tutorial	1 (1+0)				
		Total	22(14+8)				
	Semester VII						
		Student READY Programme					
1		In-plant attachment (for 8 weeks)	10 (0+10)				
2		Rural Fisheries Work Experience Prog. (for 8 weeks)	8(0+8)				
3		Study Tour (in and outside State) (for 4 weeks)	2(0+2)				
		Total	20(0+20)				
	Semester VIII						
1	FE 401	Fundamentals of Aquaculture Engineering	3 (2+1)				
2	AHM 401	Microbial and Parasitic Diseases of Fish and Shellfish	3 (2+1)				
3	FPT 401	Quality assurance of Fish and Fishery Products	3(2+1)				
4		Student READY Experiential Module(concurrent with the semester)  This will include capacity building and skill development of the students inplanning, development, formulation, monitoring and evaluation of project for entrepreneurial proficiency  Skill Development (for one week)	5(0+5)				
5		Experiential Learning Programme	12(0+12)				
		Project Work	2(0+2)				
6		Seminar Testal	1(0+1)				
		Total	29(6+23)				

Total Credit Hours 180 (84+96)+2 Compulsory Co-curricular Activity \*CCA= Compulsory Co-curricular Activity