FISHERY SCIENCE- Syllabus-2015

Semester	Paper	Paper Code No	
Semester – I	Paper-I : (Theory) Paper-I (Practical)	FISC-101 FISC- 101 (P)	75 25
Semester – II	Paper-II : (Theory) Paper-II : (Practical)	FISC-201 FISC-201(P)	75 25
Semester – III	Paper-III (Theory) Paper (Practical)	FISC-301 FISC-301(P)	75 25
Semester – IV	Paper-IV : (Theory) Paper IV : (Practical)	FISC-401 FISC-401(P)	75 25
Semester – V	Paper-V : (Theory) Paper V (Practical) Ppaper VI : (Theory) Paper :VI (Practical)	FISC-501 FISC-501(P) FISC-502 FISC-502(P)	75 25 75 25
Semester – VI	Paper-VII (Theory) Paper-VII : (Practical) Paper-VIII. (Theory Paper VIII: (Practical)	FISC-601 FISC-601(P) FISC-602 FISC-602(P)	75 25 75 25

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NORTH-EASTERN HILL UNIVERSITY
SHILLONG

Syllabus
For
B. Sc. (Honours) Fishery Science (Semester system)
2013

Year	Semester	Name of the Paper	Paper& Marks	Paper number	Paper-wise marks
First year	1st Semester	Fish Biology and Taxonomy	Paper1 100	Paper 1A (Theory)	75
				Paper 1B (Practical)	25
	2nd Semester	Aquatic Ecology	Paper 2 100	Paper 2A (Theory)	75
				Paper 2B (Practical)	25
Second year	3rd Semester	Capture Fisheries	Paper 3 100	Paper 3A (Theory)	75
				Paper 3B (Practical)	25
	4th Semester	Aquaculture	Paper 4 100	Paper 4A (Theory)	75
				Paper 4B (Practical)	25
Third year	5th Semester	Fishery Technology, Pathology and Extension Education	Paper 5 100	Paper 5A (Theory)	75
				Paper 5B (Practical)	25
		Fish Physiology, Biochemistry and Applied Genetics	Paper 6 100	Paper 6A (Theory)	75
				Paper 6B (Practical)	25
	6th Semester	Advanced Aquaculture	Paper 7 100	Paper 7A (Theory)	75
				Paper 7B (Practical)	25
		Fish Breeding and Hatchery Management	Paper 8 100	Paper 8A (Theory)	75
				Paper 8B (Practical)	25
Total Marks			800 (32 Credits)		800 (32 Credits)

1st Semester B. Sc. (Honours) Paper 1A

Full marks: 75
Time: 3 hours

Fish Biology and Taxonomy(Theory)

Unit 1: Taxonomy and Classification:

Taxonomy, Systematics, Species and Species Concept. Classification of fishes (Fin fish and shellfish). Affinities and evolution of fishes. Importance of fishery science.

Unit 2: Body Forms, Fins and Locomotion:

External morphology: Diversity of body forms and compensation factors. Fins: types, structural modifications, origin and evolution of paired fins. Locomotion with special reference to muscles and fins. Non-swimming locomotion.

Unit 3: Fish Anatomy:

Structure and function of digestive system, gills, accessory respiratory organs, air bladder, heart, kidney and skin. Types of scales. Types of pigments and significance of colouration. Basic concepts of skeletal system.

Unit 4: Nervous System and Sense Organs:

Central, peripheral and autonomic nervous system. Cutaneous senses: Touch, taste, temperature and salinity. Sense of smell, hearing and sight. Lateral line and neuromast organs.

Unit 5: Poison Gland, Electric Organ, Bioluminescence:

Poison gland and their significance. Ichthyoacanthotoxism and Ichthyosarcotoxism. Bioluminescence: photophores (Structure and function), significance. Electric organs: Structure, origin, mechanism of electric discharge and significance.

Suggested Reading:

1. Biswas, K. P. (2011). Marine prawns and shrimps. Daya Publishing House, New Delhi-35
2. Day Francis. (2007). The fishes of India, Vol 1 & 2. Jagmander Book Agency, New Delhi.
3. Dholakia, A. D. (2010). Identification of prawns/shrimps and their culture. Daya Publishing House, New Delhi-35
4. Dholakia, A. D. (2011). Identification of marine and fresh water mollusc shells. Daya Publishing House, New Delhi-35.
5. Jayram, K. C. (2002). The fresh water fishes of India, A hand book. Zoological Survey of India.
6. Jyoti Sharma (2006). Fishes: Aid to collection and identification. Daya Publishing House, New Delhi-35.
7. Kar, D. (2013) Essentials of Fish Biology, Dominant publishers and distributors(p) Ltd, Delhi-110053
8. Kar, D. (2012).Taxonomy,APH Publishing Corporation, Ansari Road,Darya Ganj, New Delhi-110002.
9. Khanna. S. S. & Singh. H. R. (2005). A Textbook of Fish Biology and Fisheries, Narendra Publishing House, Delhi-6.
10. Lagler, K. F. (1981). Fresh Water Fishery Biology. (2nd edition). W. M. C. Brown Company Publishers, Dubugur, IOWA.
11. Norman, J. R. (2002). A history of fishes: a complete known account of fishes. Asiatic publishing house, Delhi.
12. Parihar, R. P. (2004). A Text book of Fish Biology and Indian Fisheries. Central Publishing House, Allahabad
13. Sandhu, G. S. (2005). A Text book of Fish and Fisheries. Daya Publishing House, New Delhi-35.
14. Yadav, B. N. (2002). Fish and Fisheries, 2nd revised and enlarged edn. Daya Publishing House, Delhi – 35.

1st Semester B. Sc. (Honours) Paper 1B Full marks: 25
Time: 4 hours

Fish Biology and Taxonomy (Practical)

1. Identification and classification of fresh water fish.
2. Identification and classification of fresh water prawn and mollusc.
3. Analysis of morphometric and meristic counts in fish population.
4. Dissection: gill, accessory respiratory organ, digestive system, Weberian ossicle, air bladder, and afferent branchial vessels in commonly available fish.
5. Study of different types of scales and age determination of fishes.

DISTRIBUTION OF MARKS:

1. Classification and Identification
2. Morphometric and Meristic counts
3. Dissection/ Scale preparation
4. *Viva voce*
5. Laboratory record