



UNIVERSITY OF JAMMU

(NAAC ACCREDITED 'A ++' GRADE' UNIVERSITY)
Baba Sahib Ambedkar Road, Jammu-180006 (J&K)

Academic Section

Email: academicsectionju14@gmail.com

NOTIFICATION (25/August/Adp./42)

It is hereby notified for the information of all concerned that the Vice-Chancellor, in anticipation of the approval of the Academic Council, is pleased to authorize the adoption of the revised syllabus and Courses of studies of the subject of **Industrial Fish and Fisheries (Skill Enhancement Course)** for semester I, II and III for **Four Year Undergraduate Programme** as per **Nep-2020 (as given in annexure)** for the **Regular Candidates** for the examinations to be held in the years as per the details given below:-

Subject	Semester	Existing Code Course	New Code Course	For the examinations to be held in the year
Industrial Fish and Fisheries	Semester-I	USEIFT-104 (Skill Enhancement Course)	USEIFT -111 (Skill Enhancement Course)	Dec. 2025, 2026 and 2027
	Semester-II	USEIFT-204 (Skill Enhancement Course)	USEIFT-211 (Skill Enhancement Course)	May 2026, 2027 and 2028
	Semester-III	USEIFT-305 (Skill Enhancement Course)	USEIFT -311 (Skill Enhancement Course)	Dec. 2026, 2027 and 2028

The Syllabi of the courses is also available on the University website:
www.jammuuniversity.ac.in

Sd/-

DEAN ACADEMIC AFFAIRS

No. F. Acd/II/25/ 7420-52
Dated: 25/8/25

Copy for information and necessary action to:

1. Dean, Faculty of Life- Science
2. HOD/Convener, Board of Studies in Industrial Fish and Fisheries
3. All members of the Board of Studies
4. Sr. P.A.to the Controller of Examinations
5. Director, Centre for IT Enabled services and Management, University of Jammu for information and for uploading on University Website.
6. C.A. to the Controller of Examinations
7. Director, Computer Centre, University of Jammu.
8. Joint Registrar/Deputy Registrar/Asst. Registrar (Conf./Exam UG/Exam. Non Prof.)

Abuoca
22/8/25
Joint Registrar (Academic)

CS
22/8
SM
22/8/25

UNIVERSITY OF JAMMU
SYLLABI AND COURSE OF STUDY IN INDUSTRIAL FISH AND FISHERIES
For the Examination to be held in Year 2025, 2026 & 2027
(SKILL ENHANCEMENT COURSE)
UG SEMESTER-I
UNDER NEP-2020

SKILL ENHANCEMENT COURSE NO.	:	USEIFT111
SKILL ENHANCEMENT COURSE TITLE:		CULTURE PRACTICES OF INDIAN MAJOR CARPS
CREDIT	:	03
MAXIMUM MARKS	:	75
Mid-Term Examination (Part-1)	:	25
Final Examination (Part-2)	:	50
DURATION OF UNIVERSITY EXAM	:	03 Hours

Objectives and Expected Learning Outcomes

The course is designed to acquaint the students with basic understanding of the fish farming with special reference to Carp culture. The course consists of the basic necessities, management and benefits of fish farming. The learners will be skilled to choose fish farming as the source of self employment and self earning in the near future.

UNIT-I: Carp Culture

(7 Hrs.)

- 1.1 Morphological characteristics of Indian major carps
- 1.2 Criteria of selection of cultured fish species
- 1.3 Food and feeding habits of carps
- 1.4 Breeding habits of carps

UNIT-II: Pond Management

(8 Hrs.)

- 2.1 Criteria of selection of suitable site for fish farms
- 2.2 Types of fish ponds-nursery, rearing and stocking pond
- 2.3 Harvesting and Transportation of fishes
- 2.4 Role of F.F.D.A.in providing financial assistance to carp fish farmers

Practicum

(60 Hrs.)

1. Museum survey of Indian major carps.
2. Determination of physical parameters of pond water
 - i) Temperature
 - ii) Turbidity
3. Determination of chemical parameters of pond water
 - i) Dissolved oxygen
 - ii) Free carbon dioxide

FYUGP (SEMESTER-I) 2025-2027
TITLE-CULTURE PRACTICES OF INDIAN MAJOR CARPS
COURSE CODE- USEIFT111

- iii) Alkalinity
- iv) pH
- 4. Collection of fish food organisms
 - i) Phytoplanktons
 - ii) Zooplanktons
- 5. Feed formulation using locally available feed ingredients
- 6. Types of fishing gears
- 7. Control of weeds and predators in fish pond
- 8. Pre-stocking management of ponds
- 9. Post stocking management of ponds
- 10. Visit to local fish ponds and farms

NOTE FOR CONDUCTING EXAMINATION IN USEIFT111 & PAPER SETTERS

Note for paper setter for Mid Term Examination: Part-1

The question paper will be of 25 marks. There shall be 2 Sections in the question paper with pattern as follows:

Section-A shall comprise of 4 short answer type questions of (2½marks each) covering all three units with atleast one question from each unit. The students have to attempt all the 4 questions from Section-A.

Section-B shall comprise of a total of 6 questions with two questions selected from each unit. Each question shall be of 5 marks. The students have to attempt 3 questions selecting only one question from each unit.

EVALUATION OF SKILLS:

Final Examination Part-2

The Evaluation of Skills will be internal. The Examination of Skills shall be of 50 marks. The evaluation of skills will be done internally through the Board of three Members (including the trainer of the Course).

SUGGESTED READINGS

1. Fish and Fisheries by Pandey and Shukla
2. Srivastava, C.B.L (2006) A Textbook of Fishery Science and Indian Fisheries
3. Khanna, S.S Introduction to Fishes
4. Jhingran, V.G. (1985) Fish and Fisheries of India
5. Rath, R.K. (2000) Freshwater Aquaculture
6. Agarwal, S.C. (2007) A Handbook of Fish Farming
7. Ayyappan, S (2010) Handbook of Fisheries and Aquaculture
8. Pillay, T.V.R (1993) Aquaculture: Principles and Practice



FYUGP (SEMESTER-II) 2025-2028
TITLE- AQUARIUM SET UP AND MANAGEMENT
COURSE CODE- USEIFT211

UNIVERSITY OF JAMMU
SYLLABI AND COURSE OF STUDY IN INDUSTRIAL FISH AND FISHERIES
For the Examination to be held in Year 2026, 2027 & 2028
(SKILL ENHANCEMENT COURSE)
UG SEMESTER-II
UNDER NEP-2020

SKILL ENHANCEMENT COURSE NO.	:	USEIFT211
SKILL ENHANCEMENT COURSE TITLE	:	AQUARIUM SET UP AND MANAGEMENT
CREDITS	:	03
MAXIMUM MARKS	:	75
Mid-Term Examination (Part-1)	:	25
Final Examination (Part-2)	:	50
DURATION OF UNIVERSITY EXAM	:	03Hours

Objectives and Expected Learning Outcomes

The course is designed to skill the students with the knowledge of aquarium construction, management and entrepreneurship related to aquarium business, its benefits and the basic requirements. The students will be able to start their own small scale business of aquaria. The students will also be made aware of the different ornamental fish species having a sound commercial value.

UNIT-I: Aquarium-construction, setting and its management **(7 Hrs)**

- 1.1 Definition and types of aquaria
- 1.2 Construction and setting of aquarium
- 1.3 Maintenance of aquarium - Basic and Ornamental aquarium accessories
- 1.4 Business opportunities in ornamental / aquarium industry

UNIT-II: Ornamental fishes and their management **(8 Hrs)**

- 2.1 Important Indigenous ornamental fishes
- 2.2 Important Exotic ornamental fishes
- 2.3 Common ornamental fish diseases and their management
- 2.4 Types of feeds for ornamental fishes

Practicum **(60 Hrs)**

1. Museum survey of indigenous aquarium fishes
2. Museum survey of exotic aquarium fishes
3. Basic accessories required for aquarium setting
 - i) Aerators
 - ii) Filters
 - iii) Thermostat
4. Ornamental accessories required for aquarium setting
5. Determination of water parameters of aquarium
 - i) pH
 - ii) Temperature
 - iii) Dissolved Oxygen



FYUGP (SEMESTER-II) 2025-2028
TITLE- AQUARIUM SET UP AND MANAGEMENT
COURSE CODE- USEIFT211

6. Construction of all glass aquarium
7. Study of fish pathogens through slides/charts
8. Museum survey of freshwater aquarium plants
9. Museum survey of marine aquarium plants
10. Visit to Aquarium Cum Awareness Centre at Bagh-e-Bahu
11. Visit to Local ornamental fish shops

NOTE FOR CONDUCTING EXAMINATION IN USEIFT211 & PAPER SETTERS

Note for paper setter for Mid Term Examination: Part-1

The question paper will be of 25 marks. There shall be 2 Sections in the question paper with pattern as follows:

Section-A shall comprise of 4 short answer type questions of (2½marks each) covering all three units with atleast one question from each unit. The students have to attempt all the 4 questions from Section-A.

Section-B shall comprise of a total of 6 questions with two questions selected from each unit. Each question shall be of 5 marks. The students have to attempt 3 questions selecting only one question from each unit.

EVALUATION OF SKILLS:

Final Examination Part-2

The Evaluation of Skills will be internal. The Examination of Skills shall be of 50 marks. The evaluation of skills will be done internally through the Board of three Members (including the trainer of the Course).

SUGGESTED READINGS

1. Fish and fisheries by Shukla and Pandey
2. Srivastava, C.B.L (2006) A textbook of Fishery Science and Indian Fisheries
3. Khanna, S.S Introduction to Fishes
4. Khanna, S.S and Singh, H.R. A textbook of Fish Biology and Fisheries
5. Jhingran, V.G. (1985) Fish and Fisheries of India
6. Rath, R.K. (2000) Freshwater Aquaculture
7. Zaidi, S.G.S (2002) Ornamental Fish Culture
8. Mahapatra, B.K., Dutta S., Pailan, G.H. (2015) Ornamental Fish Breeding, Culture and Trade
9. Ahilan, B., Felix, N., Santham, R., (2008) A textbook of Aquariculture
10. Dholakia, A.D. (2010) Ornamental Fish Culture and Aquarium Management



UNIVERSITY OF JAMMU
SYLLABI AND COURSE OF STUDY IN INDUSTRIAL FISH AND FISHERIES
For the Examination to be held in Year 2026, 2027 & 2028
(SKILL ENHANCEMENT COURSE)
UG SEMESTER-III
UNDER NEP-2020

SKILL ENHANCEMENT COURSE NO.	:	USEIFT311
SKILL ENHANCEMENT COURSE TITLE	:	FISH FEEDING TECHNIQUES
CREDITS	:	03
MAXIMUM MARKS	:	75
Mid-Term Examination (Part-1)	:	25
Final Examination (Part-2)	:	50
DURATION OF UNIVERSITY EXAM	:	03 Hours

Objectives and Expected Learning Outcomes

The course provides an opportunity for students to understand the basic principles of fish nutrition as this aspect of aquaculture has gained an importance in recent years. Feed employed in the culture of fish and shellfish is becoming a limiting factor in terms of economics as well as availability of quality ingredients and Nutrition and feed not only play a crucial role in enhancing the growth of fish, but also inbreeding and health management so it is aimed to create awareness among students on feed additives in aquafeed.

UNIT-I: Fish Food and Feeding

(7 Hrs.)

- 1.1. Types of fish food and natural feeding habits of fishes
- 1.2. Nutritional requirements of fishes – Sources and Importances
- 1.3. Nutritional requirements of shellfishes – Palaemon and Unio.
- 1.4. Live food organisms – Culture and importance
Rotifers
Artemia

UNIT-II: Feed Formulation

(8 Hrs.)

- 2.1. Feed formulation – Methods (Pearson's square method) and Steps of feed formulation
- 2.2. Feed mills – Components and their management
- 2.3. Feed storage units and Quality control
- 2.4. Feeding methods – Manual, Mechanical and Demand feeder

Practicum

(60 Hrs.)

1. Museum survey of morphology of locally available food fishes
 2. Protein estimation test
 3. Feed Formulation
 4. Feed preparation using locally available feed ingredients
 5. Gastro somatic indices of fishes
- 

6. Demand Feeder – construction and working
7. Identification and Collection of phytoplankton's as fish food organism
8. Identification and Collection of zooplanktons as fish food organism
9. Feed additives
 - I. Binders
 - II. Attractants
 - III. Probiotics
 - IV. Antioxidants
10. Visit to nearby Fish feed manufacturing units

NOTE FOR CONDUCTING EXAMINATION IN USEIFT311 & PAPER SETTERS

Note for paper setter for Mid Term Examination: Part-1

The question paper will be of 25 marks. There shall be 2 Sections in the question paper with pattern as follows:

Section-A shall comprise of 4 short answer type questions of (2½marks each) covering all three units with atleast one question from each unit. The students have to attempt all the 4 questions from Section-A.

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EVALUATION OF SKILLS:

Final Examination Part-2

The Evaluation of Skills will be internal. The Examination of Skills shall be of 50 marks. The evaluation of skills will be done internally through the Board of three Members (including the trainer of the Course).

RECOMMENDED READINGS

1. Pandey, K. and Shukla, J.P. (2005). Fish and Fisheries (4th edition), Rastogi Publications.
2. De Silva, S.S. and Anderson, T.A. (1995). Fish Nutrition in Aquaculture.
3. New, M.B. (1987). Feed and Feeding of Fish and Shrimp. A Manual on the Preparation and Preservation of Compound Feeds for Shrimp and Fish in Aquaculture. ADCP/REP/87/26, FAO.
4. Nelson, D.L. and Cox, M.M. (2005). Lehninger Principles of Biochemistry. W.H. Freeman.
5. Halver, J.E. and Tiews, K.T. (1979). Finfish Nutrition and Fish Feed Technology, Vols. I and II. Heenemann.
6. Hopher, B. (1988). Nutrition of Pond Fishes. Cambridge University Press.
7. Houlihan, D., Boujard, T. and Jobling, M. (2001). Food Intake in Fish. Blackwell.
8. Lovell, R.T. (1998). Nutrition and Feeding of Fishes. Kluwer.