



॥ मा विद्या या विमुक्तये ॥

परिपत्रक - ७७ (१) ST

स्वामी रामानंद तीर्थ मराठवाडा विद्यापीठ, नांदेड

'ज्ञानतीर्थ', विष्णुपुरी, नांदेड - ४३१ ६०६ (महाराष्ट्र राज्य) भारत

SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY, NANDED

'Dnyanteerth', Vishnupuri, Nanded - 431 606 (Maharashtra State) INDIA

स्वामी रामानंद तीर्थ
मराठवाडा विद्यापीठ, नांदेड

Established on 17th September, 1994, Recognized By the UGC U/S 2(F) and 12(B), NAAC Re-accredited with 'B++' grade

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विज्ञान व तंत्रज्ञान विद्याशाखे अंतर्गत राष्ट्रीय
शैक्षणिक धोरण २०२० नुसार पदवी प्रथम
वर्षाचे अभ्यासक्रम (Syllabus) शैक्षणिक
वर्ष २०२४-२५ पासून लागू करण्याबाबत.

परिपत्रक

या परिपत्रकान्वये सर्व संबंधितांना कळविण्यात येते की, या विद्यापीठा अंतर्गत येणा-या सर्व संलग्नित महाविद्यालयामध्ये शैक्षणिक वर्ष २०२४-२५ पासून पदवीस्तरावर राष्ट्रीय शैक्षणिक धोरण -२०२० लागू करण्याच्या दृष्टीकोनातून विज्ञान व तंत्रज्ञान विद्याशाखे अंतर्गत येणा-या अभ्यासमंडळांनी तयार केलेल्या पदवी प्रथम वर्षाचे अभ्यासक्रमांना मा. विद्यापरिषदेने दिनांक १५ मे २०२४ रोजी संपन्न झालेल्या बैठकीतील विषय क्रमांक १५/५९-२०२४ च्या ठरावाअन्वये मान्यता प्रदान केली आहे. त्यानुसार विज्ञान व तंत्रज्ञान विद्याशाखेतील खालील बी. एस्सी प्रथम वर्षाचे अभ्यासक्रम (Syllabus) लागू करण्यात येत आहेत.

- 1) B. Sc. I year - Botany
- 2) B. Sc. I year - Seed Technology
- 3) B. Sc. I year - Horticulture
- 4) B. Sc. I year - Geology
- 5) B. Sc. I year - Dairy Science
- 6) B. Sc. I year -Electronics
- 7) B. Sc. I year - Environmental Science
- 8) B. Sc. I year - Fishery Science
- 9) B. Sc. I year - Mathematics
- 10) B. Sc. I year - Microbiology
- 11) B. Sc. I year - Agricultural Microbiology
- 12) B. Sc. I year - Physics
- 13) B. Sc. I year - Food Science
- 14) B. Sc. I year - Computer Science (N M D College Hingoli)

सदरील परिपत्रक व अभ्यासक्रम प्रस्तुत विद्यापीठाच्या www.srtmun.ac.in या संकेतस्थळावर उपलब्ध आहेत. तरी सदरील बाब ही सर्व संबंधितांच्या निदर्शनास आणून द्यावी, ही विनंती.

'ज्ञानतीर्थ' परिसर,

विष्णुपुरी, नांदेड - ४३१ ६०६.

जा.क्र.:शौ-१/एनइपी/विवत्रविपदवी/२०२४-२५/१११

दिनांक १२.०६.२०२४

प्रत : १) मा. आधिष्ठाता, विज्ञान व तंत्रज्ञान विद्याशाखा, प्रस्तुत विद्यापीठ.

२) मा. संचालक, परीक्षा व मुल्यमापन मंडळ, प्रस्तुत विद्यापीठ.

३) मा. प्राचार्य, सर्व संबंधित संलग्नित महाविद्यालये, प्रस्तुत विद्यापीठ.

४) मा. संचालक, सर्व संकुले परिसर व उपपरिसर, प्रस्तुत विद्यापीठ

५) मा. प्राचार्य, न्यू मॉडल डिग्री कॉलेज हिंगोली.

६) सिस्टीम एक्सपर्ट, शैक्षणिक विभाग, प्रस्तुत विद्यापीठ. याना देवून कळविण्यात येते की, सदर परिपत्रक संकेतस्थळावर

प्रसिध्द करण्यात यावे.

डॉ. सरिता लोसरवार

सहा.कुलसचिव

शैक्षणिक (१-अभ्यासमंडळ) विभाग

B.Sc. First Year Semester I (Level 4.5)
Teaching Scheme Fishery Science

	Course Code	Course Name	Credits Assigned			Teaching Scheme (Hrs/ week)	
			Theory	Practical	Total	Theory	Practical
Optional 1	SFSCCT1101	Fish Pond Construction and Management	02	--	04	02	--
	SFSCCP1101	Title of paper 2 (practical)	-	02			04
Optional 2	SFSCMT1101	Title of paper 1	02	--	04	02	--
	SFSCMP1101	Title of paper 2 (practical)	-	02			04
Optional 3	SFSCMT1101	Title of paper 1	02	--	04	02	--
	SFSCMP1101	Title of paper 2 (practical)	-	02			04
Generic Electives <i>(from other Faculty)</i>	SFSCGE1101	Culture of Indian Major Carps (Basket 3 of respective Faculty)	02	--	02	02	--
Skill Based Course <i>(related to Major)</i>	SFSCSC1101	Fish identification techniques	--	02	02	--	04
Ability Enhancement Course	AECENG1101	L1 – Compulsory English	02	--	02	02	--
Indian Knowledge System (IKS)	IKSXXX1101	Select from Basket 5	02	--	02	02	--
Community Engagement Services (CES)	CCCXXX1101	Any one of NCC/ NSS /Sports/ Culture /Health Wellness /Yoga Education / Fitness (Basket 6)	-	02	02	--	04
Total Credits			14	08	22	12	20



B. Sc. First Year Semester I (Level 4.5)

Examination Scheme Fishery Science

[20% Continuous Assessment (CA) and 80% End Semester Assessment (ESA)]

(For illustration we have considered a paper of 02 credits, 50 marks, need to be modified depending on credits assigned to individual paper)

Subj ect (1)	Course Code(2)	Course Name (3)	Theory				Practical		Total Col (6+7) / Col (8+9) (10)
			Continuous Assessment (CA)			ESA	CA (8)	ESA (9)	
			Test I (4)	Test II (5)	Average of T1 & T2 (6)	Total (7)			
Optional 1	SFSCCT1101	Fish Pond Construction and Management	10	10	10	40	--	--	50
	SFSCCP1101	Title of paper 2 practical	--	--	--	--	20	30	50
Optional 2	SFSCMT1101	Title of paper 1	10	10	10	40	--	--	50
	SFSCMP1101	Title of paper 2 practical	--	--	--	--	20	30	50
Optional 3	SFSCMT1101	Title of paper 1	10	10	10	40	--	--	50
	SFSCMP1101	Title of paper 2 practical	--	--	--	--	20	30	50
Generic Elective	SFSCGE1101	Culture of Indian Major Carps (Basket 3)	10	10	10	40	--	--	50
Skill Based Course	SFSCSC1101	Fish identification techniques	--	--	--	--	20	30	50
Ability Enhancem entCourse	AECENG1101	L1 – Compulsory English	10	10	10	40	--	--	50

Indian Knowledge System	IKSXXX1101	Title (Basket 5)	10	10	10	40	--	--	50
Community Engagement Services (CC)	CCCXXX1101	Any one of NCC/ NSS/Sports/ Culture /Health Wellness /Yoga Education / Fitness (Basket 6)	--	--	--	--	20	30	50

B.Sc. First Year Semester II I(Level 4.5)

Teaching Scheme

	Course Code	Course Name	Credits Assigned			Teaching Scheme (Hrs/ week)	
			Theory	Practical	Total	Theory	Practical
Optional 1	SFSCCT1151	Freshwater fish culture system	02	--	04	02	--
	SFSCCP1151	Title of paper 2 (practical)	-	02		--	04
Optional 2	SFSCMT1151	Title of paper 1	02	--	04	02	--
	SFSCMP1151	Title of paper 2 (practical)	-	02		--	04
Optional 3	SFSCMT1151	Title of paper 1	02	--	04	02	--
	SFSCMP1151	Title of paper 2 (practical)	5-	02		--	04
Generic Electives (from other Faculty)	SFSCGE1151	Freshwater fish breeding techniques (Basket 3 of respective Faculty)	02	--	02	02	--
Skill Based Course (related to Major)	SFSCSC1101	Fish processing and preservation	--	02	02	--	04
Ability Enhancement Course	AECENG1101	L1 – Compulsory English	02	--	02	02	--

Indian Knowledge System (IKS)	IKSXXX1101	Select from Basket 5	02	--	02	02	--
Community Engagement Services (CES)	CCCXXX1101	Any one of NCC/ NSS /Sports/ Culture /Health Wellness /Yoga Education / Fitness (Basket 6)	-	02	02	--	04
Total Credits			14	08	22	12	20

B. Sc. First Year Semester II (Level 4.5)

Examination Schemme

[20% Continuous Assessment (CA) and 80% End Semester Assessment (ESA)]

(For illustration we have considered a paper of 02 credits, 50 marks, need to be modified depending on credits assigned to individual paper)

Subj ect (1)	Course Code(2)	Course Name (3)	Theory				Practical		Total Col (6+7) / Col (8+9) (10)
			Continuous Assessment (CA)			ESA	CA (8)	ESA (9)	
			Test I (4)	Test II (5)	Average of T1 & T2 (6)	Total (7)			
Optional 1	SFSCCT1151	Freshwater fish culture system	10	10	10	40	--	--	50
	SFSCCP1151	Title of paper (practical)	--	--	--	--	20	30	50
Optional 2	SFSCMT1151	Title of paper 1	10	10	10	40	--	--	50
	SFSCMP1151	Title of paper 2 (practical)	--	--	--	--	20	30	50
Optional 3	SFSCMT1151	Title of paper 1	10	10	10	40	--	--	50
	SFSCMP1151	Title of paper 2 (practical)	--	--	--	--	20	30	50
Generic Elective	SFSCGE1151	Freshwater fish breeding techniques(Basket 3 of respective Faculty)	10	10	10	40	--	--	50
Skill Based Course	SFSCSC1101	Fish processing and preservation	--	--	--	--	20	30	50

Ability Enhancement Course	AEC ENG1101	L1 – Compulsory English	10	10	10	40	--	--	50
Indian Knowledge System	IKSXXX1101	Title (Basket 5)	10	10	10	40	--	--	50
Community Engagement Services (CC)	CCC XXX1101	Any one of NCC/ NSS/Sports/ Culture /Health Wellness /Yoga Education / Fitness (Basket 6)	--	--	--	--	20	30	50

Course Structure: Major 1 -Teaching Scheme Sem I

Course Code	Course Name (Paper Title)	Teaching Scheme(Hrs.)		Credits Assigned		
		Theory	Practical	Theory	Practical	Total
SFSCCT1101	Fish Pond Construction	02	--	02	--	02

Major 1 -Assessment Schem Sem I

Course Code (2)	Course Name (3)	Theory				Practical		Total [Col (6+7) or Col (8+9)] (10)
		CA			ESA (7)	CA (8)	ESA (9)	
		Test I (4)	Test II (5)	Avg of T1 & T2 (6)				
SFSCCT1101	Fish Pond Construction	10	10	10	40	--	--	50

Major 1 -Teaching Scheme Sem II

Course Code	Course Name (Paper Title)	Teaching Scheme(Hrs.)		Credits Assigned		
		Theory	Practical	Theory	Practical	Total
SFSCCT1101	Freshwater fish culture system	02	--	02	--	02

Major 1 -Assessment Scheme Sem II

Course Code (2)	Course Name (3)	Theory				Practical		Total [Col (6+7) or Col (8+9)] (10)
		CA			ESA (7)	CA (8)	ESA (9)	
		Test I (4)	Test II (5)	Avg of T1 & T2 (6)				
SFSCCT1101	Freshwater fish culture system	10	10	10	40	--	--	50

Course pre-requisite:

1. Students should have a 10+2 (HSC) Examination passed.
2. Students should have Science subjects at HSC level examination

Course objectives:

- 1.To get the knowledge of induced breeding technique and fish seed production.
- 2.To get the knowledge fish farm construction and management.
- 3.To get the knowledge of hatcheries management.
- 4.To acquire the techniques regarding the fish culture methods.

Course outcomes:

- 1.Students will understand details about fish identification techniques
2. Students will get knowledge of Pond construction and management.
3. Students will get knowledge of Aquaculture and fish breeding Technology.
4. Students can start own fish farm and Ornamental fish production center.

SYLLABUS FOR FIRST YEAR

SFISCT 1101 (Theory 2 CREDIT) Fish Pond Construction and Management

Module	Unit	Topic	hrs
1	1	Introduction to freshwater fisheries	8
	2	Selection of site	
	3	Topography	
	4	Soil type	
	5	Water quality and supply	
2	1	Physico chemical and biological factors affecting fish culture	8
	2	Layout and design of different types of pond	
	3	Hatching pits	
	4	Nursery pond	
	5	Rearing pond	
3	1	Stocking pond	8
	2	Marketing pond	
	3	Pre stocking Management	
	4	Pre-stocking Management:	
	5	i. Drying, ii. Ploughing, iii. Liming, iv. Manuring, v. Fertilization of ponds.	
	6	Eradication of aquatic weeds	
4	1	Eradication of predatory and weed fishes	8
	2	Eradication of predatory insects and animals	
	3	Post stocking Management	
	4	Stocking Management:	
	5	Seed selection	
	6	Acclimatization	
	7	Stocking fish seed	
	8	Post-stocking Management:	
	9	Food and feeding management	
	Water quality management		
	Harvesting		
	Disease management		

SFISCP 1101 (Practical 2 Credits)

Module	Unit	Topic	hrs
1	1	Estimation Dissolved Oxygen from pond water	30
	2	Estimation Dissolved carbon dioxide from pond water	
	3	Estimation Dissolved salinity from pond water	
	4	Estimation alkalinity from pond water	
	5	Study of phytoplankton and zooplanktons	
	6	Identification of predatory and Weed fishes (Any three)	
	7	Identification predatory insects (Any three)	
	8	Identification of aquatic weeds (Any three)	
	9	Identification of fish feed ingredient (Any three)	
	10	Preparation and submission of layout plan of fish farm/hatcheries model	

SFISGE 1101 (2 Credit) Culture of Indian Major Carps

Module	Unit	Topic	hrs
1		History of Pisciculture	8
	1	Aims, Objective, scope and importance of pisciculture	
	2	Water quality for fish culture	
	3	Types of cultivable fishes	
	4	Qualities of cultivable fishes	
2		Types of culture	8
	1	Culture based on commercial consideration	
	2	Extensive culture	
	3	Intensive culture	
	4	Semi-intensive culture	
	5	Mono and composite culture	
6	Cold and warm water fish culture.		
3	1	Pond culture	8
	2	Reservoir fish culture	
	3	Paddy fish culture.	
	4	Aquaponics fish culture	
4	1	Raceway culture	8
	2	Cage culture	
	3	Pen culture.	
	4	Biofloc fish culture	

SFISSC 1101 Fish identification techniques (2 Credits)

Module	Unit	Topic	hrs
1		Fish and its general characters	30
	1	Fin and its types	
	2	Body forms in fishes	
	3	Types of scales in fishes	
	4	Procedure of fish identification	
	5	Identification of fishes based on morphometric characters: Length measurement	
	6	Identification of fishes based on meristic characters: Scale count,	
	7	Fin ray and spine count, Fin formula	
	8	Morphometric characters of Teleost and Elasmobranchii fishes (Each one)	
9	Meristic characters of Teleost and Elasmobranchii fishes (Each one)		

Semester-II
SFISCT 1151(Theory 2 Credits)- Freshwater Fish Culture

Module	Unit	Topic	Hrs
1	1	Historical perspective of aquaculture.	8
	2	Objective scope and importance of aquaculture	
	3	Water quality for fish culture	
	4	Types of cultivable fishes	
	5	Qualities of culturable fishes	
2	1	Culture based on economic consideration:	8
	2	Extensive culture	
	3	Intensive culture	
	4	Semi-intensive culture	
	5	Culture based on number of species-Mono and polyculture	
	6	Culture based on climate condition- Cold and warm waterfish culture.	
3	1	Fish culture in pond	8
	2	Fish culture in reservoirs,	
	3	Fish culture in paddy fields,	
	4	Fish culture in tanks,	
4	1	Raceway culture	8
	2	Cage culture	
	3	Pen culture.	

SFISCP1151 (Practical 2 Credits)

Module	Unit	Topic	hrs
1	1	Identification of spawn, fry and fingerlings of Indian Major Carps.	30
	2	Fish Identification Techniques (Any locally available fish):	
	3	Study of any five morphometric characters.	
	4	Study of any five meristic characters.	
	5	Taxonomical study of Indian Major Carps: Catla catla Labeo rohita Cirrhinus mrigala	
	6	Taxonomical study of Exotic Carps: Hypophthalmichthys molitrix Ctenopharyngodon idella Cyprinus carpio	
	7	Permanent mounting Cycloid and Ctenoid scales (Submission):	
	8	Permanent mounting Placoid scales (Submission):	
	9	Dissection of any locally available teleost: Digestive System	
	10	Visit to fish market and submission of report.	

SFISGE1151 (2 Credit)- Freshwater fish breeding techniques

Module	Unit	Topic	hrs
1		Introduction of Bundh breeding	8
	1	Types of bundhs –	
	2	Wet bundhs ii) Dry bundhs iii) Modern bundhs	
	3	Artificial fertilization by stripping	
	4	Dry Method ii) Wet Method	
2		Induced breeding by hypophysation	8
	1	History of induced breeding	
	2	Identification & selection of brooders	
	3	Dissection and removal of pituitary gland	
	4	Preservation and storage of pituitary gland	
	5	Preparation of gland suspension for injection and dosage	
	6	Hormones responsible for induced breeding	
7	Synthetic hormones used in induced breeding		
3		Hatcheries and management (Principle, structure and management)	8
	1	Hatching happa	
	2	Glass jar hatchery	
	3	CIFE D 80 model (Dwivedi – 80)	
	4	Chinese circular hatchery	
4		Fish seed transportation	8
	1	Open transportation system	
	2	Close transportation system	
	3	Causes of mortality in transportation	
	4	Use of chemicals in live-fish transportation	
	5	Aesthetic drugs use in transport	
6	Antiseptic and antibiotics used in transportation.		

SFISSC1151 (Practical 2 Credits) Fish Processing and Preservation

Module	Unit	Topic	hrs
	1	Fish Processing: Washing, Gutting,	30
	2	Lowering the temperature,	
	3	Rising the temperature,	
	4	Dehydration, Salting, Drying,	
	5	Use of preservatives,	
	6	Methods of Preservation:-	
	7	Drying: Sun drying, Mechanical drying.	
	8	Salting: Dry salting, Wet salting	
	9	Cold storage.	
	10	Canning	
	11	Smoking	
	12	Pickling	

SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY, NANDED
B. Sc. First Year (NEP 2020)
Effective from June 2024
Semester- I
Subject: - Fishery Science
SFISCP 1101 based on SFISCT 1101
Fish Pond Construction and Managements

Time: 4 hrs.
Batch No:

Marks: 30
Date:

-
- | | | |
|------|---|----------|
| Q.1 | Analyze given water sample for estimation of Dissolved Oxygen/Free Carbon Dioxide/Salinity/Alkalinity | 8 |
| Q.2) | Identify and comment on predatory and weed fishes (Any Three) | 6 |
| Q.3) | Identify and comment on predatory insects and aquatic weeds (Any four) | 6 |
| Q.4) | Identify and comment on fish feed ingredient (Any two) | 4 |
| Q.5) | Preparation and identification of slide of planktons from given material. | 6 |

SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY, NANDED

B. Sc. First Year (NEP 2020)

Effective from June 2024

Semester- II

Subject: - Fishery Science

SFISCP1151 based on SFISCT 1151(Theory 2 Credits)- Freshwater Fish Culture

Time: 3 hrs.

Marks: 30

Batch No:

Date:

-
- | | |
|--|-----------|
| Q.1) Dissect given fish to expose system. | 09 |
| Q.2) Permanent Mounting and identification of scales | 06 |
| Q.3) Define and measure morphometric and meristic characters from the given fish (Five each) | 05 |
| Q.4) Identify, Classify and describe on given fish specimen (Any Three) | 06 |
| Q.5) Identify and comment on fish seed (Any two) | 04 |

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