



Sree Narayana College Kollam



Department of Zoology

**Certificate Course in Ornamental
fish culture (2017-2018)**

Duration : 30 hours, Seats available: 30

Course Co-Ordinator: Dr Babitha G S

Contact: 9846743648

Department of Zoology
CERTIFICATE COURSE IN
ORNAMENTAL FISH CULTURE

OBJECTIVES OF THE COURSE

- To inculcate importance of ornamental fish farming in relation with entrepreneurship development.
- To give students knowledge about various techniques of ornamental fish breeding, rearing and its marketing to make them self sustainable after graduation.
- To teach techniques of construction of glass aquarium and its maintenance.
- To teach students about fish food production and health related problems with ornamental fish.

RELEVANCE AND OUTCOME OF THE COURSE

- Maintain ecological balance in nature by way of domestication of honey bee.
- Develop entrepreneurial skills in beekeeping.
- Build human resource in the beekeeping sector.
- Generate employment opportunities in Apiculture to the unemployed youth and women for rural development.
- Undertake research and development [R&D] in Apiculture.
- Encourage the new generation to maintain their security and stability.
- Help to conserve the natural resources

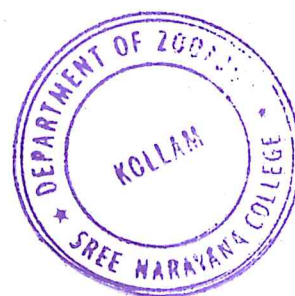
OUTLINE OF SYLLABUS OF THE COURSE

(TOTAL -30 hours, 15-hour theory and 15-hour practical)

THEORY-(15 hours)

UNIT- I Introduction to Ornamental fishes

- Introduction to aquarium and aquarium accessories.



(2 Hr)

- Basic knowledge on profile of ornamental fishes in world
- Basic knowledge and profile of some selected indigenous Indian ornamental

Unit II. Fish Breeding and rearing in Live Bearers

(3 Hr)

- Breeding of ornamental fish with reference to live bearer species.
- Breeding of Guppies, Mollys, Swordtail fish and Platy fish
- Introduction hatchery management system for live bearers
- Nursery management of live bearers
- Rearing of live bearers

UNIT III. Fish Breeding and rearing in Egg layers

(5 Hr)

- Breeding of ornamental fish with reference to selected egg layer species.
- Introduction hatchery management system for egg layers
- Nursery management of egg layers

UNIT-IV Ornamental fish farming-Management Aspects

(5 Hr)

- Ornamental Fish-diseases and their management
- Live Food culture for tropical ornamental fish • Feeding for breeding and maintenance of ornamental fish.
- Health management in Ornamental Fish Farming.

UNIT-IV Introduction to Aquarium plants and its propagation techniques

(5Hr)

- Introduction to Aquarium plants and their export potential.
- Profiles of some selected aquarium plants.

Morphology, multiplication of aquarium plants – different methods.

Indigenous ornamental plants of Western Ghats.

- Aquarium plant propagation.



- Management of ornamental aquatic plants and its trading

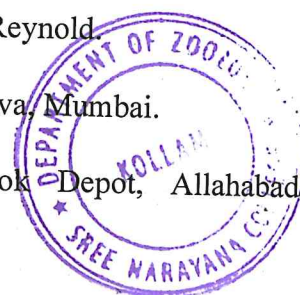
PRACTICAL

(15 hours)

- 1) Identification of common live bearer ornamental fishes: - Guppy, Molly, Platy, Sword Tail
- 2) Identification of common Egg layer ornamental fishes: - Angel, Neon tetra
- 3) Identification of common Egg layer ornamental fishes: Discus and Siamese fighter
- 4) Identification of common Egg layer ornamental fishes: Gold fish, Koi Carp
- 5) Identification of common Egg layer ornamental fishes: Danio- Zebra, and Flower Horn.
- 6) Field Visits-Field visits are to be organised to facilitate students to have firsthand experience and exposure to technology / production / functioning of an organisation / unit or witness a relevant activity. Each student must make at least two such visits to the units/markets/public aquarium out of 2 to 3 such visits organised by the college. i) Visit to one of the units with one or multiple activities such as. Ornamentalfishfarm/Nursery/Hatchery.

REFERENCES:

- Fish & Fisheries in India – By Jhingran V.G. – Hindustan Pub. Corporation – New Delhi.
- Hand Book of Fresh Water Fishes of India By Beaven C.R. – Narendra Pub. House.
- Fish Biology By C.B.C. Srivastava – Narendra Pub. House.
- Ecological Methods for Field & Laboratory Investigations By P. Michael.
- Fish & Fisheries By Chandy – National Book Trust.
- Fishery Science By Samtharam R. – Daya Pub. House – 1990.
- Aquaculture, Principles and Practices By Pillay T.V.R. – Fishing New Books (1988).
- Fisheries Biology, Assessment and Management By Michael King – Fishing News Publishers (1995).
- Handbook of Fish Biology and Fisheries Edited By J.B. Hart & John Reynold.
- Course Manual in Fishing Technology By Latha Shenoy, CIFE, Versova, Mumbai.
- An Introduction to Fishes By Khanna S.S. – Central Book Depot, Allahabad (1993).



BOARD OF STUDIES MEMBERS (2017-2018)

DEPARTMENT OF ZOOLOGY SREE NARAYANA COLLEGE, KOLLAM

CERTIFICATE COURSE IN ORNAMENTAL FISH CULTURE

Course Co-ordinator: Dr Babitha G S, Assistant Professor, Department of Zoology, S. N. College, Kollam

BOARD OF STUDIES FOR CERTIFICATE COURSE IN ORNAMENTAL FISH CULTURE

Members:

Dr Sherly P, Associate Professor, Head of the Department of Zoology, S. N. College, Kollam

Dr Sainudeen Sahib, Associate Professor, Department of Zoology, S. N. College, Kollam


Dr B T Sulekha, Assistant Professor, Department of Zoology, S. N. College, Kollam

Dr B Hari, Assistant Professor, Department of Zoology, S. N. College, Kollam

Dr S Sheeba, Assistant Professor, Department of Zoology, S. N. College, Kollam

Dr S Jisha, Assistant Professor, Department of Zoology, S. N. College, Kollam




Dr. SULEKHA B.T
Associate Professor & Head
P.G. & Research Dept. of Zoology
S.N. College, Kollam-691001


Principal
Sree Narayana College
Kollam



Sree Narayana College Kollam


Department of Zoology

Certificate Course in Ornamental Fish Culture 2017-2018

Time table

Dr B T Sulekha	Day	Time	Theory/lab
	Monday	3.15-4.45	Theory
	Tuesday	3.15-4.45	Lab
	Wednesday	3.15-4.45	Theory
	Thursday	3.15-4.45	lab
	Friday	3.15-4.45	Theory




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S.N. College, Kollam-691001

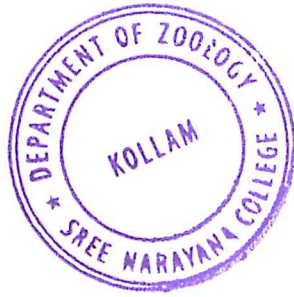
Sree Narayana College Kollam


Department of Zoology

Certificate Course in Ornamental Fish Culture 2017-2018

List of teachers who are handling classes for the certificate course

1. Dr B T Babaitha G S (Assistant Professor, Department of Zoology, Sree Narayana College, Kollam)




Dr. SULEKHA B.T
Associate Professor & Head
P.G. & Research Dept. of Zoology
S.N. College, Kollam-691001

Minutes of the Certificate Course (Ornamental Fish Culture)

Meeting for the Certificate Course by department Committee (Ornamental Fish Culture), Department of Zoology, S.N. College, Kollam was held on 14/09/2017 in the department staff room at 8:45pm

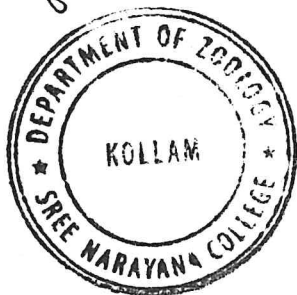
Members Attended

Dr. P. Shesly	Associate Professor HOD
Dr. Saimudeen Shihab	Associate Professor
Dr. B.I. Sulekha	Asst. Professor
Dr. B. Harijani	Asst. Professor
Dr. S. Sheela	Asst. Professor
Dr. Jisha	Asst. Professor
Dr. Babitha G.S.	Asst. Professor

Agenda: Fixation of Date of Board of Studies Meeting.

Decisions Taken: Members of the Board of Studies are fixed.

∴ Syllabus approval



Sulekha B.T.
Dr. SULEKHA B.T.
Associate Professor & Head
P.G. & Research Dept. of Zoology
S.N. College, Kollam-691001

Minutes of the Certificate Course (Ornamental Fish Culture).

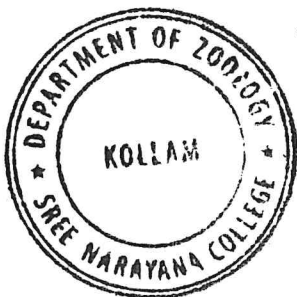
Meeting of the department Committee of the Certificate Course in Ornamental Fish Culture of the Department of Zoology, S.N. College, Kollam was held on 18.9.2019 in the department staffroom at 3:30 pm.

Members

Dr. P. Shesly Dr. P. Shesly	Associate Professor. HOD
Dr. Baiyudeen Sahib Dr. Baiyudeen Sahib	Associate Professor.
Dr. B. T. Sulekha Dr. B. T. Sulekha	Asst. Professor.
Dr. B. Hari Dr. B. Hari	Asst. Professor.
Dr. S. Sheeba Dr. S. Sheeba	Asst. Professor.
Dr. Tisha Dr. Tisha	Asst. Professor.
Dr. B. S. Babu Dr. B. S. Babu	Asst. Professor.

Agenda: 1. Applications inviting of Course
2. Commencement of Course

Decisions Taken: Announcement for
inviting applications
:- Date of commencement of Course.



Sulekha B.T.
Dr. SULEKHA B.T.
Associate Professor & Head
P.O. & Research Dept. of Zoology
S.N. College, Kollam-691001

Minutes of the Certificate Course (Ornamental Fish Culture)

Meeting of the department Committee of the Certificate Course in Ornamental Fish Culture of the Department of Zoology, S.N. College, Kollam was held on 19/11/2018 in the department staff room at 3:45 pm.

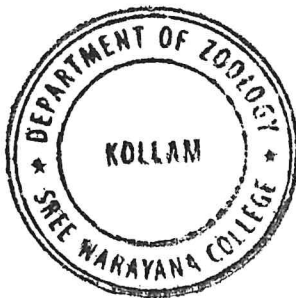
Members Attended

Dr. P. Shesha Shesha	Associate Professor, HOD
Dr. Saimudeen Sahib SS	Associate Professor
Dr. B. T. Sulekha Dr	Asst. Professor
Dr. B. Hari Dr	Asst. Professor
Dr. S. Sheeba Dr	Asst. Professor
Dr. Fisher Dr	Asst. Professor
Dr. Babitha G.S. Babu	Asst. Professor

Agenda:- To conduct examinations and issue certificates

Decisions : 1) Review of the Course after examination

2) Certificate issue



~~Sulekha~~
Dr. SULEKHA B.T
Associate Professor & Head
P.G. & Research Dept. of Zoology
S.N. College, Kollam-691001

Minutes of the Certificate Course (Ornamental Fish Culture)

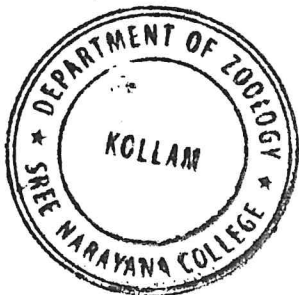
Meeting of the department Committee of the Certificate Course in Ornamental Fish Culture of the Department of Zoology, S.N. College, Kollam was held on 10/9/2018 in the department staffroom at 3:30pm.

Members

Dr. Saimudeen Sahib <i>SS</i>	Associate Professor, HOD
Dr. B.T. Sulekha <i>BT</i>	Asst. Professor
Dr. B. Hari <i>BH</i>	Asst. Professor
Dr. S. Sheeba <i>SS</i>	Asst. Professor
Dr. S. Jisha <i>JS</i>	Asst. Professor
Dr. Bindhu.V. Bini <i>BV</i>	Asst. Professor (On Contract)

Agenda: 1) Applications inviting of Course
2) Commencement of Course.

Decisions Taken: Announcement for inviting Applications



Sulekha B.T.
Date of Commencement of Course
DR. SULEKHA B.T.
Associate Professor & Head
P.G. & Research Dept. of Zoology
S.N. College, Kollam-691001

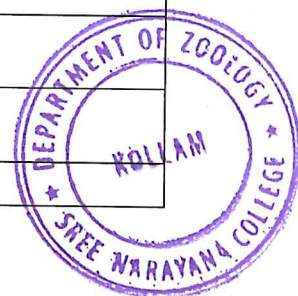
Sl. No.	Name of student	Date		12/10	13/10	14/10	15/10	16/10	17/10	18/10	19/10	20/10	21/10	22/10	23/10	24/10	25/10	26/10	27/10	28/10	29/10	30/10	No of Hours Attended	Signature
		Hour	Hour																					
1.	ARATHY A.S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Arathy
2.	ARATHY ARJUN.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Arathy
3.	BHAGYA. K.A.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Bhagya
4.	CHITRA .C.A	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Chitra
5.	FATHIMA H.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Fathima
6.	GREEESHMA SOMAN.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Greeeshma
7.	LAXMIKA ANIL A.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Laxmika
8.	MEENU .B.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Meenu
9.	MEERA .K.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Meera
10.	VEENA .BABU	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Veena
11.	VISJAY A.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Visjay
12.	VISHNU .O.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Vishnu
13.	ABHISHEK .S.MOHAN	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Abhishek
14.	ASITH .LAL .I	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Asith
15.	ASMIT .S.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Asmit
16.	AMAL .PRAKASH	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Amal
17.	AMRUTHA .J.R	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Amrutha
18.	ANANDHU .S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Anandhu
19.	JAYASURIYA .J.S.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Jayasuriya
20.	KARTHIKA .B.S.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Karthika
21.	KEERTHY R.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Keerthy
22.	MIDHUN VIJAY	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Midhun
23.	MUHAMED YASEEN.S.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Muhammed
24.	NEETHU .J	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Neethu
25.	PRAJITH .J.K.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Prajith
26.	PREMJITH.S.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Premjith
27.	SHIBIN V.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Shibin
28.	SNEHITHA .S.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Snehitha
29.	BREELEKSHMI .S.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Breelekshmi
30.	VISHNU .KAR .M.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Vishnu



Signature of Teacher
Dr. SOLEKHA B.T

Sree Narayana College Kollam
Certificate Course in Ornamental fish culture 2017-2018
Student List


Sl No	Candidate Code	Name of the student	Name of the Department
1	25015132005	ARATHY A S	Zoology
2	25015132006	ARATHY ARJUN	Zoology
3	25015132007	BHAGYA K A	Zoology
4	25015132008	CHITRA C A	Zoology
5	25015132009	FATHIMA H	Zoology
6	25015132010	GREESHMA SOMAN	Zoology
7	25015132011	LAXMIKA ANIL. A	Zoology
8	25015132012	MEENU B	Zoology
9	25015132013	MEERA K	Zoology
10	25015132016	VEENA BABU	Zoology
11	25015132017	VIJAY A	Zoology
12	25015132018	VISHNU O	Zoology
13	25015132019	ABHISHEK S MOHAN	Zoology
14	25015132020	AJITH LAL L	Zoology
15	25015132021	AJMI S	Zoology
16	25015132022	AMAL PRAKASH	Zoology
17	25015132023	AMRUTHA J R	Zoology
18	25015132024	ANANDHU S	Zoology
19	25015132029	JAYASURIYA J S	Zoology
20	25015132030	KARTHIKA B S	Zoology
21			Zoology



Sree Narayana College Kollam
Certificate Course in Ornamental fish culture 2017-2018
Student List

	25015132031	KEERTHY R	
22			Zoology
	25015132032	MIDHUN VIJAY	
23			Zoology
	25015132033	MUHAMED YASEEN S	
24			Zoology
	25015132034	NEETHU.J	
25			Zoology
	25015132035	PRAJIETH J K	
26			Zoology
	25015132036	PREMJITH S	
27			Zoology
	25015132042	SHIBIN V	
28			Zoology
	25015132043	SNEHITHA S	
29			Zoology
	25015132044	SREELEKSHMIS	
30			Zoology
	25015132046	VISHNU LAL M	




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SREE NARAYANA COLLEGE, KOLLAM

Department of Zoology

Certificate Course in Ornamental fish culture

Assessment test 2017-2018

Maximum Marks: 25

Duration 30 minutes

Answer all questions. Each question carries 5 marks

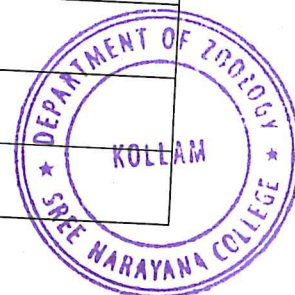
(5X5=25)

1. Briefly explain breeding of ornamental fish with reference to live bearer species.
2. Write notes on health management in Ornamental Fish Farming
3. Explain aquarium plant propagation.
4. Write notes on the importance of aerators, filters and lighting.
5. Briefly explain rearing of live bearers

Sree Narayana College Kollam
Certificate Course in Ornamental fish culture 2017-2018

Mark List

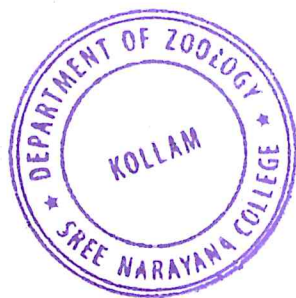
Sl No	Candidate Code	Name of the student	Marks obtained/25
1	25015132005	ARATHY A S	23
2	25015132006	ARATHY ARJUN	17
3	25015132007	BHAGYA K A	19
4	25015132008	CHITRA C A	24
5	25015132009	FATHIMA H	19
6	25015132010	GREESHMA SOMAN	18
7	25015132011	LAXMIKA ANIL. A	21
8	25015132012	MEENU B	24
9	25015132013	MEERA K	19
10	25015132016	VEENA BABU	20
11	25015132017	VIJAY A	17
12	25015132018	VISHNU O	20
13	25015132019	ABHISHEK S MOHAN	16
14	25015132020	AJITH LAL L	17
15	25015132021	AJMI S	25
16	25015132022	AMAL PRAKASH	25
17	25015132023	AMRUTHA J R	20
18	25015132024	ANANDHU S	17
19	25015132029	JAYASURIYA J S	23
20	25015132030	KARTHIKA B S	22




Sree Narayana College Kollam
Certificate Course in Ornamental fish culture 2017-2018

Mark List

21	25015132031	KEERTHY R	16
22	25015132032	MIDHUN VIJAY	19
23	25015132033	MUHAMED YASEEN S	18
24	25015132034	NEETHU.J	23
25	25015132035	PRAJIETH J K	24
26	25015132036	PREMJITH S	21
27	25015132042	SHIBIN V	20
28	25015132043	SNEHITHA S	19
29	25015132044	SREELEKSHMIS	24
30	25015132046	VISHNU LAL M	23

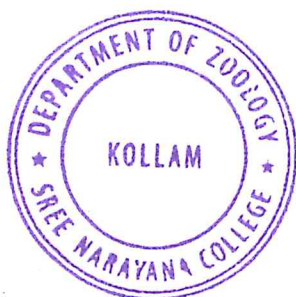



Dr. SULEKHA B.T
Associate Professor & Head
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Department of Zoology

Report of Ornamental fish culture (2017- 2018)

- Application was invited for the course on 18/9/2017
- 30 Candidates applied for the course
- 30 Of them were selected
- Classes were conducted on offline mode. Classes commenced on 3/10/2018
- Exams were conducted on online mode on 3/1/2019
- Results were published on 4/1/2019
- Certificates were distributed on 7/2/2019



A handwritten signature in blue ink, appearing to read "Sulekha B.T.", written over a blue stamp.

Dr. SOLEKHA B.T
Associate Professor & Head
P.G. & Research Dept. of Zoology
S.N. College, Kollam-691001

A handwritten signature in green ink, appearing to read "Purtha Harajil", written over a blue stamp.

Principal
Sree Narayana College
Kollam





SREE NARAYANA COLLEGE KOLLAM

DEPARTMENT OF ZOOLOGY

CERTIFICATE COURSE IN ORNAMENTAL FISH CULTURE

This is to certify that Mr./Ms./Mrs.....*Arathy A.S.*.....Department of.....
.....*Zoology*.....has successfully completed Certificate Course in Ornamental

Fish Culture during the Academic Year.....*2017-2018*.....

Babji

Course Coordinator

Principals

Principal



SREE NARAYANA COLLEGE KOLLAM
DEPARTMENT OF ZOOLOGY
CERTIFICATE COURSE IN ORNAMENTAL FISH CULTURE

This is to certify that Mr./Ms./Mrs. *A. A. Thuy*.....*A. S. J. M.*.....Department of.....
Z. S. S. S. S......has successfully completed Certificate Course in Ornamental
Fish Culture during the Academic Year.....*2017-2018*.....

[Signature]

Course Coordinator

[Signature]

Principal



SREE NARAYANA COLLEGE KOLLAM
DEPARTMENT OF ZOOLOGY
CERTIFICATE COURSE IN ORNAMENTAL FISH CULTURE

This is to certify that Mr./Ms./Mrs.....*M. Leena. B.*.....Department of.....
Zoology.....has successfully completed Certificate Course in Ornamental
Fish Culture during the Academic Year.....*2017-2018*.....

[Signature]

Course Coordinator

[Signature]

Principal



SREE NARAYANA COLLEGE KOLLAM

DEPARTMENT OF ZOOLOGY

CERTIFICATE COURSE IN ORNAMENTAL FISH CULTURE

This is to certify that Mr./Ms./Mrs.....*Meesa.....k*.....Department of.....
Z.S.S. Rajy.....has successfully completed Certificate Course in Ornamental

Fish Culture during the Academic Year.....*2017-2018*.....

bab

Course Coordinator

Principal

Principal



SREE NARAYANA COLLEGE KOLLAM

DEPARTMENT OF ZOOLOGY

CERTIFICATE COURSE IN ORNAMENTAL FISH CULTURE

This is to certify that Mr./Ms./Mrs. *Ajith Lal S*.....Department of.....
Zoology.....has successfully completed Certificate Course in Ornamental

Fish Culture during the Academic Year.....*2017-2018*.....

Babla

Course Coordinator

Principals

Principal



SREE NARAYANA COLLEGE KOLLAM

DEPARTMENT OF ZOOLOGY

CERTIFICATE COURSE IN ORNAMENTAL FISH CULTURE

This is to certify that Mr./Ms./Mrs. *Ajimi V*.....Department of.....
Zoology.....has successfully completed Certificate Course in Ornamental

Fish Culture during the Academic Year.....*2017-2018*.....

Babb

Course Coordinator

Principals

Principal



SREE NARAYANA COLLEGE KOLLAM

DEPARTMENT OF ZOOLOGY

CERTIFICATE COURSE IN ORNAMENTAL FISH CULTURE

This is to certify that Mr./Ms./Mrs. A. Mrs. S. R......Department of.....
Z. S. S. S. S......has successfully completed Certificate Course in Ornamental

Fish Culture during the Academic Year.....2017-2018.....

babu

Course Coordinator

Principals

Principal



SREE NARAYANA COLLEGE KOLLAM

DEPARTMENT OF ZOOLOGY

CERTIFICATE COURSE IN ORNAMENTAL FISH CULTURE

This is to certify that Mr./Ms./Mrs. *Karthika B.S.*.....Department of.....
Zoology.....has successfully completed Certificate Course in Ornamental

Fish Culture during the Academic Year.....*2017-2018*.....

Babu

Course Coordinator

Principals

Principal