



HAJEE KARUTHA ROWTHER HOWDIA COLLEGE

(An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai.)

Uthamapalayam, Theni District. Pin Code: 625 533.

DEPARTMENT OF ZOOLOGY

PART – IV NME ZOOLOGY

SYLLABUS

Choice Based Credit System – CBCS

(As per TANSCH/MKU Guidelines)

(Academic Year 2020 -2021 onwards)

Details of Course Category, Code, Credits & Title

Course Category	Course Code	Course Title	Hrs	CIAE	TEE	Max. Marks	Credits
Semester - I							
Part - IV							
NME - I	20UZYN11	Lifestyle Related Ailments	2	25	75	100	2
Semester - II							
Part - IV							
NME - II	20UZYN21	Ornamental Fish Culture	2	25	75	100	2

Course Code	Course Title	Category	Total Hours	Credits
20UZYN11	Life Style Related Ailments	NME -I	30	2

Nature of Course	
Knowledge Oriented	
Skill Oriented	✓
Employability Oriented	
Entrepreneurship Oriented	

Course Relevance	
Local	
Regional	
National	✓
Global	

Preamble

To enable non-zoology students to get the basic insights in to day to day healthcare, most common functions and malfunctions of human body.

Syllabus

- UNIT I** 6 Hours
Changing patterns in health foods: Changing patterns in health foods. Obesity, gall bladder stones, ulcers, structure of the stomach, role of enzymes. Liver cirrhosis, Fatty liver, regenerative capacity of liver etc. How can we safeguard the liver? Importance of maintaining blood sugar through production of insulin. Diabetes mellitus. Role of Pancreas.
- UNIT II** 6 Hours
Understanding the role of stress: Understanding the role of stress ,Study of the basic structure of heart and its functions. Understanding bypass, stenting, angioplasty, angina, AF (atrial fibrillation), myocardial infarction and arteriosclerosis/ atherosclerosis, ECG.
- UNIT III** 6 Hours
Allergies leading to wheezing, asthma: Allergies leading to wheezing, asthma-causes, smoking and its ill effects, their influence on the alveoli of the lung. Pollution through inhalation of carbon monoxide and other pollutants.
- UNIT IV** 6 Hours
Kidney stones: Kidney stones -significance of urea, creatinine, electrolytes in blood, urinary infection, ultra-filtration, kidney transplants, dialysis.
- UNIT V** 6 Hours
Concept of fertility and infertility: Concept of fertility and infertility - Male and Female reproductive systems, Impotency, Endometriosis, ectopic, IVF, ICSU, Surrogacy, STD, Birth control measures.

Text Books

P.S Verma, B.S. Tyagi, and V.K. Agarwal- *Animal Physiology*- S.Chand & Co. Limited, New Delhi, (2015).

Reference Books

Goel and Sastry *Animal Physiology*, Rastogi Publications, Meerut, 2006.

Pedagogy

E-Resources, Chalk & Talk, Group Discussion

Teaching aids

LCD Projector, Chart models, Interactive White Board

Course Contents and Lecture Schedule

Module No.	Topic	No. of Lectures	Content Delivery Methods
UNIT - I			
1.1	Changing patterns in health foods. Obesity, gall bladder stones, ulcers, structure of the stomach, role of enzymes.	2	Chalk & Talk
1.2	Liver cirrhosis, Fatty liver, regenerative capacity of liver etc. How can we safeguard the liver?	2	Group discussion
1.3	Importance of maintaining blood sugar through production of insulin.	1	E-Resources
1.4	Diabetes mellitus and Role of Pancreas.	1	Chalk & Talk
UNIT - II			
2.1	Understanding the role of stress	1	Group discussion
2.2	Study of the basic structure of heart and its functions	1	Chalk & Talk
2.3	Understanding bypass, stenting, angioplasty, angina	2	Group discussion
2.4	AF (atrial fibrillation), myocardial infarction	1	E-Resources
2.5	arteriosclerosis / atherosclerosis, ECG	1	Chalk & Talk
UNIT - III			
3.1	Allergies leading to wheezing,	1	Group discussion
3.2	asthma-causes	1	E-Resources
3.3	smoking and its ill effects, their influence on the alveoli of the lung	2	Chalk & Talk

3.4	Pollution through inhalation of carbon monoxide and other pollutants	2	Chalk & Talk
UNIT - IV			
4.1	Kidney stones	1	Chalk & Talk
4.2	significance of urea, creatinine, electrolytes in blood	2	Group discussion
4.3	urinary infection, ultra-filtration	1	E-Resources
4.4	kidney transplants	1	Chalk & Talk
4.5	Dialysis	1	Group discussion
UNIT - V			
5.1	Concept of fertility and infertility	1	Chalk & Talk
5.2	Male reproductive system	1	Group discussion
5.3	Female reproductive system	1	E-Resources
5.4	Impotency, Endometriosis, ectopic,	1	Chalk & Talk
5.5	IVF, ICSU, Surrogacy, STD	1	Group discussion
5.6	Birth control measures	1	E-Resources
Total		30	

Course Designer

Dr. M. Ashiq Ur Rahman

Assistant Professor of Zoology

Course Code	Course Title	Category	Total Hours	Credits
20UZYN21	Ornamental Fish Culture	NME - II	30	2

Nature of Course	
Knowledge Oriented	
Skill Oriented	
Employability Oriented	✓
Entrepreneurship Oriented	

Course Relevance	
Local	
Regional	
National	✓
Global	

Preamble

To collect baseline data on the ecosystem, socio-economy and diversity of fishes and to encourage local entrepreneurship, eco-tourism. The commercialization of sustainable natural resources.

Syllabus

- UNIT I** 6 Hours
Identification of popular Ornamental fishes: Siamese fighter fish - Gold fish - Black molly – Guppy - Sword tail.
- UNIT II** 6 Hours
Construction of fish tank: Size - shape of fish tank; bottom settings; stocking of fish; Accessories of fish tank; aerators - types of filters – nets - lights and hood.
- UNIT III** 6 Hours
Transport of fishes: Oxygen packing- Food and feeding: culture of live food organisms - *Chironomous* larva and *tubifex*; artificial feed.
- UNIT IV** 6 Hours
Breeding methods: Siamese fighting fish - Gold fish – Guppy - Sword tail
- UNIT V** 6 Hours
Common diseases and treatment of ornamental fishes: Protozoan disease - White spot; Fungal disease - Gill rot; Bacterial diseases - dropsy and ecto & endo parasitic diseases - Argulosis & Ligulosis.

Text Books

Jameson J.D & R. Santhanam, *Manual of Ornamental fishes and forming technologies*, Fisheries College & Research Institute, Tamil Nadu, 2010.

Reference Books

- Felix S. Sunderraj and S. Thilakar, *Manual of tropical fish diseases diagnosis*. Tamil Nadu Veterinary & Animal Sciences University, Chennai.
- Ramanathan, N and T, Francis, *Manual of Breeding & Larval rearing of Cultivable fishes*, Tamil Nadu Veterinary & Animal Sciences University, Chennai.
- Sampathkumar J.S. & Sundararaj.V. *Manual of Aquatic Engineering*, Tamil Nadu Veterinary & Animal Sciences University, Chennai.

Pedagogy

E-Resources, Chalk & Talk, Group Discussion

Teaching aids

LCD Projector, Chart models, Interactive White Board

Course Contents and Lecture Schedule

Module No.	Topic	No. of Lectures	Content Delivery Methods
UNIT - I			
1.1	Introduction to ornamental fish culture	1	Chalk & Talk
1.2	Identification of popular Ornamental fishes- Siamese fighter fish	1	Group Discussion
1.3	Gold fish	1	E-Resources
1.4	Black molly	1	Chalk & Talk
1.5	Guppy	1	Group Discussion
1.6	Sword tail	1	E-Resources
UNIT - II			
2.1	Construction of fish tank	1	Chalk & Talk
2.2	Size - shape of fish tank	1	Group Discussion
2.3	bottom settings	1	E-Resources
2.4	stocking of fish	1	Chalk & Talk
2.5	Accessories of fish tank; aerators, lights, hood and nets	1	Group Discussion
2.6	Types of filters	1	E-Resources
UNIT - III			
3.1	Transport of fishes and Oxygen packing.	1	Chalk & Talk
3.2	Food and feeding: culture of live food organisms <i>Chironomous larva and tubifex;</i>	2	Group Discussion
3.3	Artificial feed.	3	E-Resources

UNIT - IV			
4.1	Breeding methods- for live bearer and egg layers and induced breeding	2	Chalk & Talk
4.2	Siamese fighting fish	1	Group Discussion
4.3	Gold fish	1	E-Resources
4.4	Guppy	1	Chalk & Talk
4.5	Sword tail	1	Group Discussion
UNIT - V			
5.1	Common diseases and treatment of ornamental fishes: Protozoan disease - White spot	2	Chalk & Talk
5.2	Fungal diseases- gill rot	1	Group Discussion
5.3	Bacterial diseases, Dropsy	1	E-Resources
5.4	Ectoparasites (Argulosis) and endo parasite (Ligulosis)	2	Group Discussion
Total		30	

Course Designer

Dr. K. Arifa Banu

Assistant Professor of Zoology