

Theory Paper

Part A Introduction

Program: Degree	Class: B.Sc.	Year: III	Session: 2024-25
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Subject: Zoology

S3-ZOOLIG

1	Course Code	S3-ZOOLIG
2	Course Title	Fish and Fisheries
3	Course Type (Core Course/Elective/Generic Elective/Vocational/)	Generic Elective
4	Pre-requisite (if any)	To study this course a student must have qualified Diploma. This course can be opted as an elective course by student of any other faculty. OPEN TO ALL
5	Course Learning outcomes (CLO)	Upon completion of the course a student will - 1. Gain sufficient knowledge of fish and its utility to Human. 2. Acquire knowledge regarding Nutritive value and Biochemical composition of fish. 3. Identify Marine and Fresh water fish and Fisheries resources of India. 4. Learn about various edible, culturable fish and various steps involved in Fish culture practice. 5. Gain knowledge of preservation, processing and valuable products and by products of fish. 6. Acquire skill based knowledge to start a small scale business and later enter the Fish Industry.
6	Credit Value	4
7	Total Marks	Max. Marks: 30+70 Min. Passing Marks:35

Part B- Content of the Course

Total No. of Lectures-Tutorials-Practical (2 hours per week): L-T-P: 60

Unit	Topics	No. of Lectures
I	<p>1. Introduction to Indian Fisheries</p> <p>1.1 History of Indian Fisheries. 1.2 Definition – Fish, Fisheries, Finfish, Shellfish. 1.3 Habitat of Fish – Fresh water, Brackish water, Marine water.</p> <p>2. Fisheries resources of India</p> <p>2.1 Marine capture fisheries resources – Fin fish – Oil sardines, Mackerel, Tuna, Anchovies, Seer fish, Flat fishes. Shell fish – Crustaceans, Shrimps and Prawns, Crabs, Lobsters and Molluscs.</p> <p>2.2 Inland capture fisheries resources – Fin fish - Major Carps, Cat fishes, Live fishes, Feather</p>	15

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(Dr. Sunil Sharma)

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Dr. U. S. Parmar

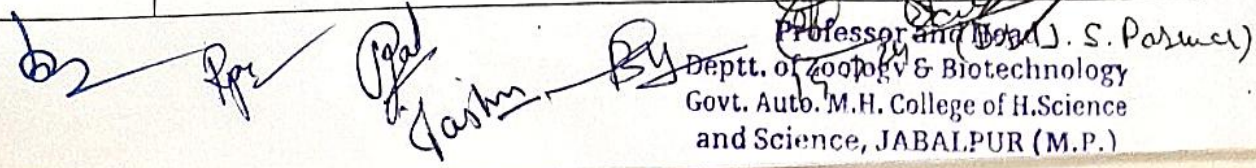
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Dept. of Zoology
Govt. Auto. M. College
and Science, HALPUR

	<p>backs.</p> <p>2.3 Fishing and fishing gears – Nets, Seines, Trawls, Hooks and Lines, used to capture fish.</p> <p>2.4 Importance of fish to Human Life</p> <p>Keywords/Tags: History Marine, Inland, Capture, fishing Gears, Importance of fish.</p>	
<p>II</p>	<p>1. Fish Farming</p> <p>1.1 Breeding, seed production and supply of fish seed. Types of Breeding – Natural and Induced Breeding</p> <p>1.2 Basic categories -</p> <p>(a) Extensive Fish Culture</p> <p>(b) Intensive Fish Culture</p> <p>1.3 Basic categories of fish culture – Pond fish culture, Culture in manmade reservoirs, Paddy cum fish culture, Coastal fish culture.</p> <p>2. Pond fish culture – Sources and supply of seed to ponds</p> <p>2.1 Fish seed collection from Rivers.</p> <p>2.2 Fish seed collection from Bundhs.</p> <p>2.3 Induced breeding</p> <p>2.4 Transport of fish seed to ponds.</p> <p>3. Composite fish culture / poly culture to increase fish production</p> <p>Principle and technique of composite fish culture.</p> <p>3.1 Food and feeding habits of fish. Qualities of edible cultivable fish.</p> <p>3.2 Commonly cultured fish - Major carps – Catla, Rohu, Mrigal, Grass carp, Common carp, Silver carp.</p> <p>Keywords/Tags: Fish farming, Breeding, Fish Seed, Major Carps, Polyculture.</p>	<p>15</p>
<p>III</p>	<p>1. Fisheries Technology</p> <p>1.1 Fish Decomposition, Postmortem changes and Rigor Mortis.</p> <p>1.2 Fish spoilage due to post rigor decay, Microbial, Enzymatic, and Chemical Spoilage of fish.</p> <p>1.3 Signs of sickness in fish, Common diseases of farm fish and treatment. Common factors for outbreak of diseases.</p> <p>2. Fish processing</p> <p>1.1 Procurement of live fish and prevention of spoilage by proper handling of the catch, sorting, grading, removal of scales, cutting, filleting of fish.</p> <p>2.2 Fish preservation - For short duration and long duration.</p> <p>2.3 Importance of fish processing and preservation.</p> <p>2.4 Fish By Products and their utility.</p> <p>Keywords/Tags: Fish diseases, Spoilage, Preservation, Processing, By product.</p>	<p>15</p>

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 Professor and Head (J. S. Parmar)
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 and Science, JABALPUR (M.P.)

1. Fish Trade and Employment

- 1.1 Marketing of fish and its role in promotion of economy.
- 1.2 Role of fisheries in Rural Development.
- 1.3 Role of women in fisheries sector.

2. Opportunities in fisheries

- 2.1 Small scale culture unit with the funding of State Govt.
- 2.2 Employment in fish by product industry.
- 2.3 Preparation, repair and maintenance of craft and gears used in fishing.
- 2.4 Preservation and processing industry.
- 2.5 Integrated fish farming to utilize extensive, waste water bodies such as Swamps and Marshes.
- 2.6 Fish culture side by side of agriculture to enhance economy by more returns.

Keywords/Tags: Agriculture, Marketing, Opportunities, Rural Development.

Part C-Learning Resources

Text Books, Reference Books, Other resources

1. Gupta, S.K. & Bharti, P.K., Aquaculture and Fisheries Environment, Discovery Publication House Pvt. Ltd., New Delhi, 2014.
2. Jhingran, V.G., Fish and Fisheries of India. Hindustan Publishing Corporation, New Edn., 1997
3. Khanna, S.S. & Kapoor, N., An Introduction to Fish Biology and Fisheries, Surjeet Publication, 2019.
4. Kulshresth, S.D., मत्स्य एवं मात्स्यिकी, Hindi edn., Rastogi Publication, Meerut, 2001.
5. Kulshresth, S.D., Fish & Fisheries, (Vol. 1&2) English edn., Rastogi Publication, Meerut, 2001.
6. Pandey, K. & Shukla, J.P., Fish & Fisheries, Rastogi Publication, Meerut, 2005.
7. Rath, R.K., Fresh Water Aquaculture, 3rd edn., Scientific Publishers, 2018.
8. Sarkar, U.K. & Das, B.K., Fisheries Biology, New Approaches and Changing Perspectives. Narendra Publication, 2020.
9. Shammi, G.J., Fish & Fisheries, (English), Kailash Pustak Sadan, Bhopal, 2016.
10. Shammi, G.J., मत्स्य एवं मात्स्यिकी, (Hindi), Kailash Pustak Sadan, Bhopal, 2016.
11. Shrivastava, C.B.L., T.B. of Fishery Science & Indian Fisheries, Kitab Mahal, Allahabad, 2000.
12. Upadhyay, G.S. & Upadhyay, V.B., Economic Zoology, English edn., Rastogi Publication, Meerut, 2001.
13. Upadhyay, G.S. & Upadhyay, V.B., आर्थिक प्राणि विज्ञान, Hindi edn., Rastogi Publication, Meerut, 2001.
14. Books Published by MP Hindi Granth Academy, Bhopal

Suggestive digital platforms web links:

1. <http://www.fishbase.in>>relinks
2. <https://epgp.inflibnet.ac.in> /e-PG Pathshala/ (MHRD) Portal
3. e-Krishi Shiksha
4. <https://ndl.iitkgp.ac.in> /National Digital Library
5. <https://www.sciencedirect.com/book>

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 and Science, JABALPUR (M.P.)
 Dr. J. S. Parmar

6. <https://vikaspedia.in> >fisheries> pro/
7. <https://nfdb.gov.in/PDF/Fish>
8. <https://www.harfish.gov.in> (Hindi)

Suggested equivalent online courses:

1. <https://courses.icar.gov.in>
2. <https://storage.googleapis.com/Swayam> online courses
3. <http://nptel.ac.in/courses/120108002/8>
4. <http://www.100.org/fishery>
5. <https://www.mphindigranthacademy.org/>

Part D-Assessment and Evaluation


Suggested Continuous Evaluation Methods:





Maximum Marks : 100


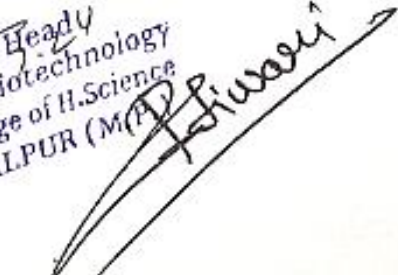
Continuous Comprehensive Evaluation (CCE) : 30 marks University Exam (UE) 70 marks

Internal Assessment : Continuous Comprehensive Evaluation (CCE):	Class Test Assignment/Presentation	30
External Assessment : University Exam Section: Time : 03.00 Hours	Section (A) : Very Short Question Section (B) : Short Questions Section (C) : Long Questions	70

Any remarks/ suggestions:


 (Dr. W. S. Parmar)


 Professor and Head
 Deptt. of Zoology & Biotechnology
 Govt. Auto. M.H. College of H. Science
 and Science, JABALPUR (M.P.)


Syllabus of Practical

Program: Degree

Part A Introduction

Class: B.Sc.

Year: III

Session: 2024-25

1	Course Code	Subject: Zoology	Session: 2024-25
2	Course Title	S3-ZOOL1R	
3	Course Type (Core Course/Elective/Generic Elective/Vocational/)	Fish Culture Generic Elective	
4	Pre-requisite (if any)	To study this course a student must have qualified Diploma. This course can be opted as an elective course by student of any other faculty. OPEN TO ALL	
5	Course Learning outcomes (CLO)	Upon completion of the course a student will - 1. Develop expertise to identify Major Carps, Cat fish and Live fish. 2. Acquire skill based knowledge of different aspects of fisheries. 3. Know the process of composite fish culture. 4. Get a basic idea of a fish culture farm. 5. Gain knowledge of fish market during his visit. 6. Know the role of women in fish market and industry.	
6	Credit Value		
7	Total Marks	2	
		Max. Marks: 100	Min. Passing Marks:35


Part B- Content of the Course

Total No. of Lectures-Tutorials-Practical (2 hours per week): L-T-P: 30

Unit	Topics	No. of Lectures
I	Museum specimens study for Morphological variations in Body form, Shape of caudal fin, and scales in fishes	4
II	Study of Air breathing fishes.	2
III	Morphological study of common edible fishes - Major carps - Catla, Rohu, Mrigal, Grass carp, Common carp, Silver carp.	4
IV	Study of Cat fishes and feather backs.	4
V	Collection and Identification of Local fishes, Aquatic insects and macrophytes	2
VI	Study of mouth in relation of to Food and Feeding habits.	2
VII	Identification of common gears and nets used in Fishing operation	2
VIII	Collection of scales and Determination of age of fish by scales.	4
IX	Study of Ornamental fish.	2
X	Visit / Virtual visit to a local fish farm / fish market and write a report.	4

Keywords/Tags: Fish culture, Major carps, Scales, Nets, Fish farm.

Department of Zoology
 Government College, Jabalpur
 Professor and Head
 Dr. H. G. G. (M.F.)


 (Dr. U.S. Parmar)

NEW EDUCATION POLICY 2020
DEPARTMENT OF HIGHER EDUCATION
GOVT. OF M.P.

Under Graduate Syllabus for B.Sc (Bio) 3 Years
As Recommended by Central Board of Studies in Zoology



**GOVERNMENT M.H. COLLEGE OF HOME SCIENCE AND
SCIENCE FOR WOMEN, JABALPUR, (M.P.) 482002**

DEPARTMENT OF ZOOLOGY

UNDER GRADUATE SYLLABUS
B.Sc II Year

ELECTIVE - ZOOLOGY
(NUTRITION AND HEALTH)

2024-25

Theory Syllabus

Part A- Introduction			
Program : Diploma	Class: B. Sc.	Year: II.	Session : 2024-25
Subject: Zoology			
1	Course Code	S2-ZOOLIG	
2	Course Title	Nutrition and Health	
3	Course Type:	Generic Elective	
4	Pre-requisite (if any)	The course can be opted as Generic Elective by the students of all streams. (Open for All)	
5	Course Learning outcomes (CLO)	On completion of the course students will be able to 1. Form a perspective of health by studying association of food and nutrition in promoting healthy living. 2. Understand the importance of balanced diet and essential nutrients of food at different stages of life. 3. Relate signs, symptoms of diseases in body and understand the advantage of being hygienic. 4. Learn ill effects of modern lifestyle that will be motivated them to adopt clean healthy habits.	
6	Credit Value	4	
7	Total Marks	Max. Marks: 30+70	Min. Passing Marks: 35
Part B- Content of the Course			
Total No. of Lectures-Tutorials-Practical – (in hours per week): 02 hours per week): 60 hours			
Unit	Topics	No. of Lectures	
I	Food, Nutrition and Health 1.1 Basic food components, nutrients – Carbohydrates, Protein, Fats, Vitamins, Minerals – sources and importance. 1.2 Concept of Balanced diet, nutrient needs and dietary patterns for infants, school going children, adolescents, adults and aged. 1.3 Importance of Immunity booster food. 1.4 Malnutrition disorders - Anemia (B12 and iron deficiency), Obesity, Vitamin deficiencies – causes and symptoms precautions and treatment. 1.5 Defects of modern food habits (fast food, Soft drinks) Keywords/Tags: Nutrients, Hemoglobin, Vitamin , Fast foods	16	
II	Health and Hygiene 1.1 Health definition, need of health education. 1.2 Physical and Mental Health, necessity of mental well being. 1.3 Personal hygiene, oral hygiene, hand washing, and toiletry hygiene. 1.4 Immunization- Importance, immunization schedules and Vaccination Key words/ Tags: Hygiene, Health, Immunization, Vaccines	16	
	Health Hazards 1.1 Communicable diseases and their preventive measures - Influenza, chicken pox, measles, Rabies, T.B. And COVID. 1.2 Non-Communicable diseases and their preventive measures -Coronary heart diseases, Hypertension, Diabetes, Insomnia, Keywords/Tags: Influenza, T.B., Blood pressure, Diabetes, Insomnia	16	

Govt. of Andhra Pradesh
 Department of Science, J. A. B. A. U.
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19.7.2024
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R. Singam

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19/07/24

IV	Social health problems 1.1 Smoking, alcoholism, drug addiction 1.2 Lack of exercises, excessive usage of Mobile phones, computers, T.V. (Electronic gadgets) - effects and remedies Keywords/Tags: Smoking, Alcohol, Drug, Addiction, Electronic gadget	12
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Part C: Learning Resources

Text Books, Reference Books, Other resources

Suggested Readings :

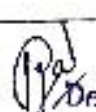
- Goyal, Shashi and Gupta Pooja, "Food, Nutrition and Health" 3rd Edition, Publisher: S. Chand (2012).
- Sharma, Avenika. "Principles of therapeutic nutrition and dietetics" Edition -I, CBS Publishers Distributions Pvt. Ltd (2017).
- Bowman, Logan., " Food and Health, Nutrition Science and Technology", Callisto Reference, (2017).
- Modi, V., Chawan, Renjith, S., "Essentials of Public Health and Sanitation", Edition-III, All India Institute of Local Self Govt. (2006).
- Swaminathan, MS., "Food and Nutrition (Vol. I and II)", Editor-V, Bappa Publishers (1986).
- Mehra, P. J., "Common Medical Symptoms" The National Book Depot (2017).
- Park, K "Text book of Preventive and Social Medicine", 24th edition, Banarasi Das Bhanot, Jabalpur. 2017
- Chauhan, S.S., "Mental Hygiene and A Science of Adjustments", Edition-II, Allied Publishers (1991).
- The complete manual of fitness and well being, The Reader's Digest Assoc Inc., New York (1998).
- Mahajan, B.K., Gupta, M.C., "Text:book of Preventive and Social Medicine". Jaypee Brothers Medical Publications, New Delhi (2013)
- Srilakshmi, B., "Food Science"and the Colour Edition. New Age International Pvt. Ltd. (2009)
- Rekhi, T., & Yadav, H., "Fundamentals of food and Nutrition" Elite Publishing House (P) Ltd. Delhi (2015)
- आहार एवं पोषण, स्वास्थ्य विज्ञान विद्यापीठ, उत्तराखण्ड मुक्त विश्वविद्यालय, देहरादून
- सामान्य पोषण, "भूख हार्मोनोइड और स्वस्थ जीवन" ईश्वर प्रकाशन, नया दिल्ली/बेनारस, (2019)
- श्रीवास्तव, डी.ए., "आव्यवहारिक प्रार्थना विज्ञान एवं मानव स्वास्थ्य", संजय प्रारक्षित प्रकाश, SBPD Publishing House, (2017)
- कुलकर्णी, ज्योति, पलठा, अरुणा., "सामान्य एवं रसायनशास्त्र पोषण", विजय प्रकाशन, देहली
- काको, गंगा., "आहार एवं पोषण", गणप्रकाश हिंदी प्रकाश अकादमी
- शेरी, पी., एंड लक्ता, पी., " आहार विज्ञान, पोषण एवं सुरक्षा" एशियन पब्लिशिंग हाउस दिल्ली (2015)
- Books Published by MP Hindi Grant: Academy, Bhopal

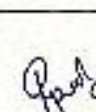
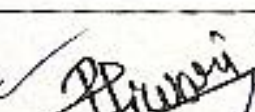
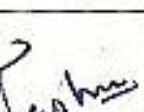
Suggestive digital platforms. web links

- <https://ncert.nic.in/textbook/pdf/che103.pdf>
- <https://www.mphindigrantacademy.org/>

Suggested equivalent online courses:

- <https://www.coursera.org/learn/food-and-health?action=enroll>
- <https://nptel.ac.in/>
- <https://www.coursera.org/learn/food-and-health>


Professor and Head
 Deptt. of Zoology & Biotechnology
 Govt. Auto. M.H. College of Health Sciences
 Jabalpur

Part D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:

Maximum Marks : 100

Continuous Comprehensive Evaluation (CCE) : 30 marks University Exam (UE) 70 marks

Internal Assessment : Continuous Comprehensive Evaluation (CCE):30	Class Test Assignment/Presentation	Total - 30
External Assessment : University Exam Section: 70 Time : 03.00 Hours	Section(A) : Objective Type Question Section(B) : Short Question Section(C) : Long Questions	Total 70

Any remarks/ suggestions:

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Professor and Head
Deptt. of Zoology & Biotechnology
Govt. Auto. M.H. College of H. Science
and Science, JABALPUR (M.P.)

Practical Syllabus

Programme: Diploma Course

Part A-Introduction

Class : B. Sc.

Year: II year

Session: 2024-25

Subject: Zoology

1	Course Code		
2	Course Title	S2-ZOOLIR	
3	Course Type	Health and Nutrition	
4	Pre-requisite (if any)	Generic Elective	
5	Course Learning outcomes (CLO)	<p>The course can be opted as Generic Elective by the students of all streams.</p> <p>On completion of the course students will be able</p> <ol style="list-style-type: none"> 1. To know the significance and need of food nutrients in all age groups. 2. To check quality of food by learning simple methods to check food adulteration. 3. To know the role of hemoglobin for health status and importance of being healthy by knowing BMI and other diseases. 4. To enhance their practical knowledge of nutrition and its association with health. 5. To gain confidence through Project, assignment writing, presentation and improve communication skills. 	
6	Credit Value		
7	Total Marks	2	
		Max. Marks: 30+70	Min. Passing Marks: 35

Part B- Content of the Course

Total No. of Lectures-Tutorials-Practical (2 hours per week) :
30 hours

S.No.	Practical Topics	No. of Lectures
I	1. Estimation of Vitamin C in a given sample 2. Detection of protein in egg 3. Detection of Lactose in milk	8
II	1. To detect adulteration in milk/ghee/turmeric/or any other food material 2. Determination of hemoglobin by haemometer 3. Preparation of Nutritional chart for child/adult/aged/pregnant woman and aged 4. Planning and preparation of diets for Obesity, Diabetes	8
III	- Spotting (Slides and charts of diseases and Instruments) Sphygmomanometer, haemometer, Glucometer	7
IV	Calculation of Body Mass Index (BMI)	5
V	Visit to health centre, Immunization Centre, ICDS centre	2

Keywords/Tags: Vitamins, Food Adulteration, Anemia, Diabetes, BMI, Communicable Diseases, Sphygmomanometer

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 and Science, JABALPUR (M.P.)

Part C - Learning Resources

Text Books, Reference Books, Other resources

Suggested Readings:

1. Prakash, G., "Lab manual on Blood analysis and medical diagnostics", S Chand and Co. 2012
2. Yadav, Akanksha., Arora, Monica., Swayamiddha., "Practical Manual of Nutrition and Dietetics", kalpaz Publication, 2009
3. Guru, Pravabati., Mishra, Jayshri., "A Practical Handbook of FOOD and NUTRITION", Shivalik Prakashan, Edition 1st, 2019.
4. Modi, Jatin V., Chawan, Renjith, S., "Essentials of Public Health and Sanitation Part I, Bappco Publishers.
5. Swaminathan, M., "Handbook of Food and Nutrition" Fifth Ed.; Bappco Publishers (1986).
6. Park, K., "Parks Textbook of Preventive and Social Medicine", Banarsidas Bhanot, Jabalpur (2017) .
7. The complete manual of fitness and well being, The Reader's Digest Assoc Inc., New York
8. Mathur, P., " Food safety and quality control", Orient Blackswan (2018)
9. Books Published by MP Hindi Granth Academy, Bhopal

Suggestive digital platforms web link

1. <https://ncert.nic.in/textbook/pdf/kehe103.pdf>
2. <https://www.hsph.harvard.edu/nutritionsource/healthy-eating-plate/translations/hindi/> भोजन की थाली
3. <https://www.fssai.gov.in/> (The Food Safety And Standard Authority of India)
4. <https://www.mphindigranthacademy.org/>

Suggested equivalent online courses:

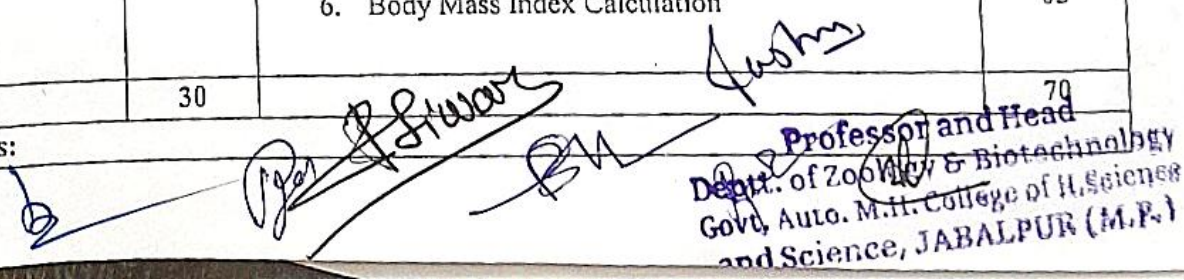
1. E- Lesson-4 " Food ,Nutrition and Health, nios.ac.in/online course

Part D-Assessment and Evaluation

Suggested Continuous Evaluation Methods:

Internal Assessment	Marks	External Assessment	Marks
Class Interaction /Quiz	15	Viva Voce on Practical	10
Attendance	5	Practical Record File	10
Assignments (Charts/ Model Seminar / Rural Service/ Technology Dissemination/ Report of Excursion/ Lab Visits/ Survey / Industrial visit)	10	Table work / Experiments 1. Estimation of Vitamin C / protein/ Lactose in a given sample (any one) 2. To detect adulteration in a) Milk b) Ghee c) Turmeric (any one) 3. Detection of anemia by hemoglobin test 4. Preparation of nutritional chart for any one age group / diet chart for Obese / diabetic person (any one) 5. Spotting (charts of diseases and instruments) (any five) 6. Body Mass Index Calculation	10 10 10 05 10 05
TOTAL	30		70

Any remarks/ suggestions:



Professor and Head
 Dept. of Zoology & Biotechnology
 Govt. Auto. M.H. College of H. Sciences
 and Science, JABALPUR (M.P.)

NEW EDUCATION POLICY 2020
DEPARTMENT OF HIGHER EDUCATION
GOVT. OF M.P.

Under Graduate Syllabus for B.Sc (Bio) 3 Years
As Recommended by Central Board of Studies in Zoology



**GOVERNMENT M.H. COLLEGE OF HOME SCIENCE AND
SCIENCE FOR WOMEN, JABALPUR, (M.P.) 482002**


DEPARTMENT OF ZOOLOGY
UNDER GRADUATE SYLLABUS
B.Sc I Year


ELECTIVE - ZOOLOGY
(HUMAN DISEASES)


2024-25

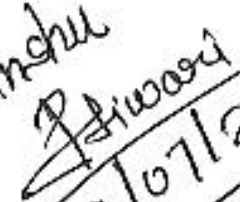
THEORY SYLLABUS

PART A INTRODUCTION			
Programme : Certificate Course	Class : B.Sc.	Year : 1 year	Session : 2024-25
SUBJECT: ZOOLOGY			
1	Course Code	SI-ZOOLIG	
2	Course Title	Human Diseases	
3	Course Type (Core Course/Elective/Generic Elective/Vocational/.....)	Elective	
4	Pre-requisite (if any)	The course can be opted as Generic Elective by the students of all streams after passing class 12 th .	
5	Course Learning outcomes (CLO)	Upon completion of the course students will be able 1. To gain the knowledge of various human diseases. 2. To understand the causes of human diseases. 3. To explain the structures of disease causing virus, bacteria and protozoa.	
6	Credit Value	3	
7	Total Marks	Max. Marks: 30+70	Min. Passing Marks: 25

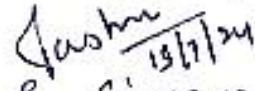

 29.05.2021
 (Chairman)
 C. B. S. Zool.


 19.7.2021
 (Dr. Sumit Sharma)


 19/7/2024
 (Dr. Rakhi Vaish)

Priyanshu

 19/07/24


Professor and Head
 Deptt. of Zoology & Biotechnology
 Govt. Auto. M.H. College of H. Science
 and Science, JABALPUR (M.P.)


 Mrs. R. Singare
 19/7/24

PART B - CONTENT OF THE COURSE		
Total No. Of Lectures-Tutorials-Practical (in hours per week): 02 hours per week		
Unit	Topics	No. Of Lectures
1	Human diseases: Historical background, Disease and causes 1.1 The historical background of human diseases with reference to India. 1.2 A brief description regarding active Indian scientists in the field of Human diseases. 1.3 Disease, definitions and types. 1.4 The causes of diseases. A brief study of Viruses, Bacteria, Protozoans, round worms and flat worms. 1.5 A brief study of diseases caused by different pollutants. 1.6 Classification of Diseases Keywords/Tags : Human diseases, Virus, Bacteria, Protozoan, Worms, Pollutants.	9+6=15
2	Viral diseases : Pathogenicity therapy and Structure of Virus 1.1 Small pox 1.2 Hydrophobia (Rabies) 1.3 AIDS 1.4 Influenza 1.5 SARS, 1.6 Hepatitis A and B Keywords/Tags : Pathogenicity, Small pox, Hydrophobia (Rabies), AIDS, Influenza, SARS	12+3=15
3	Bacterial diseases Pathogenicity therapy and Structure of Bacteria 1.1 Diphtheria 1.2 Tuberculosis 1.3 Typhoid 1.4 Leprosy 1.5 Pneumonia 1.6 Tetanus Keywords/Tags : Diphtheria, Tuberculosis, Typhoid, Leprosy, Pneumonia	12+3=15
4	Protozoan diseases Pathogenicity therapy and Structure and Life Cycle 1.1 Malaria 1.2 Amoebiasis 1.3 Pyrohoea 1.4 Trypanosomiasis 1.5 Trichomoniasis. 1.6 Leishmaniasis (Kala Azar) Keywords/Tags : Malaria, Amoebiasis, Pyrohoea, Trypanosomiasis, Trichomoniasis	12+3=15

Dr. U.S. Parmar

Dr. U.S. Parmar
Chairman

Central Board of Studies
Subject - Zoology

Date - 29.05.2021

Professor and Head
Deptt. of Zoology & Biotechnology
Govt. Auto. M.H. College of H. Science
and Science, JABALPUR (M.P.)

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Part C-Learning Resources	
Text Books, Reference Books, Other resources	
Suggested readings :	
1.	Crowley, "An Introduction to human diseases", Jones and Bartlett.
2.	Wright, K, "The Big book of Infectious diseases Trivia", Ulysses press.
3.	Tamparo , "Diseases of Human Body", F.A. Davis.
4.	Neighbors, "Human diseases", Cengage Learning Inc.
5.	https://www.hindinotes.org (मानव रोग : Free e-book)

Part D-Assessment and Evaluation		
Suggested Continuous Evaluation Methods :		
Maximum Marks: 100		
Continuous Comprehensive Evaluation (CCE): 30 Marks University Exam (UE): 70 Marks		
Internal Assessment: Continuous Comprehensive Evaluation (CCE) : 30	Class Test Assignment/ Presentation	10
	Attendance + 10	10
Total		30
External Assessment: University Exam : 70	Section (A): Three Very Short Questions (50 Words Each)	$03 \times 02 = 06$
	Section (B): Four Short Questions (200 Words Each) Section (C): Two Long Questions (500 Words Each)	$04 \times 8.5 = 34$
		$02 \times 15 = 30$ Total 70
Time : 03.00 Hours		
Any remarks/suggestions :		



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(Handwritten signatures and initials)

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PRACTICAL SYLLABUS

PART A - INTRODUCTION			
Programme : Certificate Course		Class : B.Sc.	Year : I year
		Session : 2024-25	
SUBJECT: ZOOLOGY			
1	Course Code	S1-ZOOL1R	
2	Course Title	Laboratory work on Human Diseases	
3	Course Type (Core Course/Elective/Generic Elective/Vocational/.....)	Generic Elective	
4	Pre-requisite (if any)	The course can be opted as Generic Elective by the students of all streams after passing class 12 th .	
5	Course Learning outcomes (CLO)	Upon completion of the course students will be able 1. To gain the knowledge of various human diseases. 2. To understand the pathological tests of various human diseases. 3. To explain the structures and lifecycles of various parasites.	
6	Credit Value	2	
7	Total Marks	Max. Marks: 30+70	Min. Passing Marks: 35

PART B - CONTENT OF THE COURSE		
Total No. Of Lectures-Tutorials-Practical (in hours per week): 02 hours per week		
L-T-P :		
Unit	Topics	No. of Lectures
1.	Study of museum specimens and slides relevant to theory paper : Human diseases	10
2.	Study of life cycle of various ectoparasites and endoparasites, viz. Mosquito, round worm, Schistosoma etc.	10
3.	Study of simple instruments : Microscope, Centrifuge, Stethoscope, Sphygmomanometer etc.	05
4.	Virtual demonstration of various diagnostic tests, viz, T.B Skin test, VIDAL Test, Malaria antigen test etc.	05
Keywords/Tags : Human diseases, Ectoparasites, Endoparasites, Mosquito, Round worm, Schistosoma, Diagnostic tests		

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PART C-LEARNING RESOURCES
Text Books, Reference Books, Other resources

Suggested readings

1. Mohan, Text-book of Diagnostic Micro-biology
2. Sunil K. Sen. Essentials of clinical diagnosis
3. Lakhani & Khan, Manual of Experiments in Biotechnology

Part D- Assessment and Evaluation

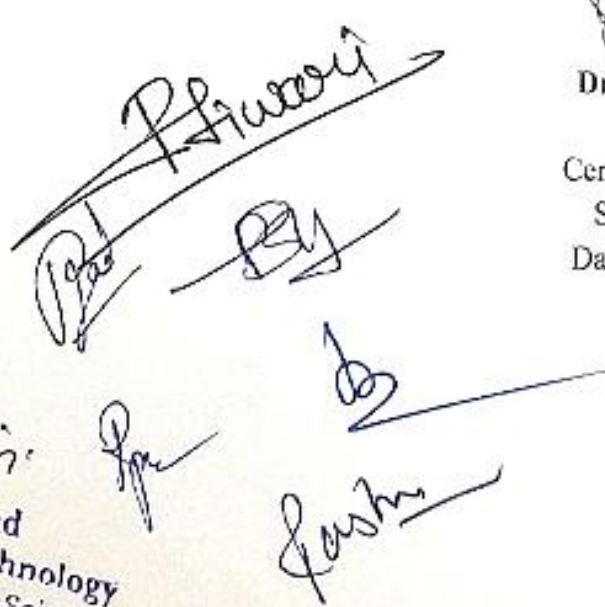
Suggested continuous Evaluation Methods:

Internal Assessment		External Assessment	
	Marks		Marks
Class Interaction/Quiz	10	Viva Voce on Practical	10
Attendance	10	Practical Record File	10
Assignments (Charts/Model Seminar/Rural Service/Technology Dissemination/ Report of Excursion/lab Visits/Survey/Industrial visit)	10	Table work/Experiments	
		a. Museum Specimen (5)	50
		b. Life Cycle (2)	10
		c. Instruments	20
		d. Diagnostics tests	10
TOTAL	30		70

Any Remarks/Suggestion:



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