ST. ALOYSIUS COLLEGE(AUTONOMOUS), JABALPUR

Reaccredited 'A++ 'Grade by NAAC(CGPA:3.58/4.00)

College with Potential for Excellence by UGC DST-FIST Supported & STAR College Scheme by DBT

Syllabus of Theory

Part A- Introduction			
Program: Certificate Course	**Class:** B. Sc.	Semester :II	**Session:** 2025-26
Subject: Zoology			

1	**Course Code**	
2	**Course Title**	**Ecology and Environmental Conservation**
3	**Course Type**	**Minor II**
4	**Pre-requisite (if any)**	To study this course, a student must have had the subject Biology in Class 12th.
5	**Course Learning Outcomes (CLO)**	After completion of the course students will able to: 1. Learning depth knowledge of basic concepts of ecology abiotic & biotic factors influencing ecosystem. 2. Know and understand the roots of ecological and environmental science in Indian Tradition. 3. Understand the structure e, function and dynamics of ecosystem. 4. Appreciate and learn importance of biodiversity and its conservation. 5. Examining global and local environmental issues including pollution, climate change. 6. Develop critical thinking skills to address complex environmental issues. 7. Prepare for careers in environmental management, research, education and policy making.
6	**Credit Value**	4 (2+2)
7	**Total Marks**	Max. Marks: 30+70 — Min. Passing Marks:35

Part B- Content of the Course		
Total No. of Lectures-Tutorials-Practical: 02 hours per week **LTP:** **No. of Lectures = 30 hours**		
Unit	**Topics**	**No. of Lectures**
I	**Historical background of ecology and environment conservation** 1. Contribution of Father of Indian Ecology – Shri Ramdeo Misra 2. Ecology in Indian Knowledge System: Ecology and environment conservation in Vedic period, (Reference: Smritis and Upanishads, Concept of Advaita) 3. Basic concepts of ecology, definition and history 4. Ecosystem: Structure and function, abiotic and biotic factor, food chain, food web, ecological pyramids, energy flow in an ecosystem. 5. Biogeochemical cycles: O_2, Co_2, H_2O, N & P.	08
	Keywords: Ecology, Limiting factors, Vedic, Advaita, Ecological Pyramids **Suggested Activity: -** Visit and study the flora fauna of nearest pond ecosystem and local water bodies.	
II	**Types of Ecosystems and Habitat Ecology:** 1. Characteristic features, structure and function of following Ecosystem: 2. Aquatic, fresh water, marine and terrestrial ecosystem. 3. Habitat Ecology – Introduction, types and components of habitat. 4. Community Ecology: Structure, function and succession 5. Ecology and human future.	08
	Keywords: Aquatic, Community, habitat, succession **Suggested Activity: -** Poster/Painting of flora and fauna worshipped in India	

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III	**Environmental Conservation** 1. Environmental contemplation in Valmiki Ramayana and Mahabharat. 2. Contribution of Indian Environmentalists in brief – Sundarlal Bahuguna of Chipko movement, Bishnois of Khejari village in Rajasthan known for environment conservation, Rajendra Singh "Waterman of India", Sunita Narayan known for Concept of Green sustainability. 3. Natural resources of Environment: Renewable and non-renewable resources and their management and conservation. 4. Environmental pollution: General Outline of various types of pollution, sources and remedies, global warming, greenhouse effect.	08
	Keywords: Contemplation, Folk life, Renewable, non-renewable, pollution **Suggested Activity:** - Survey on gases released by different types of vehicles in your area with the help of pollution control department	
IV	**Biodiversity and Wild Life Conservation** 1. Biodiversity- levels, values and conservative measures, biodiversity in M.P. 2. Wild Life Conservation – National Parks and Sanctuaries of M.P. 3. Invasive species, wild life protection act, IUCN categories, hotspots. 4. Ethical Responsibility – concept of 3R, zero waste.	06
	Keywords: Biodiversity, National parks, Sanctuaries, Invasive, IUCN, 3R **Suggested Activity:** -Collection of laminated or hand painted / posters of endangered species of Madhya Pradesh	

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Part C-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: Exam Section Time: 03.00 Hours	**Section(A):** Very Short Questions **Section (B):** Short Questions **Section (C) :** Long Questions	70
Any remarks/ suggestions:		

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Syllabus of Practical

Part A– Introduction

Program: Certificate Course	Class: B. Sc.	Semester :II	Session: 2025-26

Subject: ZOOLOGY

1	Course Code	
2	Course Title	Ecology and Environment Conservation
3	Course Type	Minor II
4	Prerequisite	To study this course a student must have had the subject Biologyin12th Class.
5	Course Learning Outcomes (CLO)	The student who completes this post will be able to- 1. Conduct experiments and field work to study ecological and environmental processes. 2. Understand the structure function of different components of the environment. 3. Understand its importance and need for its conservation. 4. Use techniques for sampling, analysis and monitoring of environmental parameters. 5. Communicate scientific findings through reports, presentations
6	Credit Value	02
7	Total Marks	Max. Marks:30+70 — Min. Passing Marks: 35

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Part B - Content of the course

Total No. Of Lectures-Tutorials-Practical (2 hours per week)

LTP: Total Number of Lectures:30

S. No.	Suggested List of Experiment.	No of Lecture
1	Analysis of soil: Texture and pH and moisture content	5
2	Analysis of water: pH, conductivity, turbidity, dissolved O_2, Free Co_2	5
3	To identify study and prepare slide/preservation of micro and macro-organism of water	5
4	To study fresh water ecosystem.	5
5	Identify and comment on specimen related to adaption and mimicry.	5
6	Identification and study of fresh water, marine and terrestrial fauna.	5
	Total	30 hours

Keywords in pH, Conductivity, turbidity, micro, macro-organism, mimicry, invasive

Suggested Activity: - Study of Traditional Practices of weather forecast / traditional method of conservation of water and other natural resources.

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Part -C: Assessment & Evaluation (Practical)				
Suggested Continuous Evaluation Methods:				
	Internal Assessment	**Marks**	**External Assessment**	**Marks**
1	Class Interaction/Quiz	30	Viva Voce on Practical	70
2	Attendance		Practical Record File	
3	Assignments (Charts/Model Seminar/Rural Service /Technology Dissemination/ Report of Excursion /Lab Visit/Survey/ Industrial visit)		Table work/Experiments	
	Total	**30**		**70**

Any remarks/Suggestions: e- Demonstrations & e-procedures can be opted.