



S.G.A. GOVERNMENT DEGREE COLLEGE (A)

(Re-Accredited with NAAC "A" Grade with CGPA 3.13)

Affiliated to Andhra University

YELLAMANCHILI, ANAKAPALLI DIST., ANDHRA PRADESH



Department of Zoology

Certificate Course

Basics in Biodiversity and Forest Conservation

2025- 2026



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Date: 13.10.2025

CIRCULAR

SGA Government Degree College, Yellamanchili, **Department of Zoology** is going to start an Add-on Certificate Course in "**Basics Biodiversity and Forest Conservation**" **16.10.2025** onwards. The enthusiastic students may register their names in the Department of zoology. A Certificate will be issued after the Completion of Course.

I/c Department of Zoology

dhruv
Head of Department
S.G.A. Government Degree College
Yellamanchili, Anakapalli Dist.
ANAKAPALLI DIST.



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DEPARTMENT OF ZOOLOGY

PERMISSION LETTER TO START CERTIFICATE COURSE

FROM

TO

THE HEAD OF THE DEPARTMENT,
DEPARTMENT OF ZOOLOGY
SGA GOVT. DEGREE COLLEGE
YELLAMANCHILI.

PRINCIPAL,
SGA GOVT. DEGREE COLLEGE,
YELLAMANCHILI.

SUB : Permission to start certificate course & and permission to nominate the zoology faculty as a faculty for that Certificate course - regarding

REF: Resolution copy of the department of zoology.

Respected sir,

As per the resolution of the department of zoology we are very much interested to start certificate course with a title "**Basics Biodiversity and Forest Conservation**" for the B.Sc., Hons. Zoology (Major) students from 16.10.2025 onwards. So, we are requesting you to give permission to start that Certificate course and also permit us to act as the faculty for the Certificate course.

Thanking you sir.

Accepted
[Signature]
Principal
S.G.A. Govt. Degree College
Yellamanchili-531 055
Anakapalli District. (A.P.)

[Signature]
Head of the Department
Department of Zoology
S.G.A. Govt. Degree College
Yellamanchili-531 055
Anakapalli District.



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Yellamanchili

13.10.2025

DEPARTMENT OF ZOOLOGY

DEPARTMENTAL MEETING

Minutes of the meeting

The faculty of department of zoology met on 13.10.2025 and discussed the following matters

1. Resolve to start an Certificate course in the Department of zoology
2. To submit a letter to the principal for getting the permission to start Certificate course.
3. To prepare syllabus to the Certificate course
4. To start the students with a minimum of 30 students.
5. To conduct six week Certificate course 60 hours.
6. Resolved to conduct the classes from 16-10-2026.
7. Permission to utilize the zoology lab to conduct the practical for this Certificate course.
8. Permission to conduct the Certificate course by the zoology faculty,



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VELLAMANCHILI, ANAKAPALLI DIST., ANDHRA PRADESH



Basics of Biodiversity and Forest Conservation

Syllabus

Unit- 1.Introduction to Biodiversity:

- 1.1 Species, genetic and ecosystem diversity, levels of biodiversity
- 1.2 Biodiversity indices, values of biodiversity, hotspots of biodiversity
- 1.3 Factors Responsible for Loss of Biodiversity
- 1.4 Endemic species and Endangered Species

Unit-2: Conservation of Biodiversity

- 2.1 'Ex-Situ' Conservation - Botanical gardens, Zoological Parks, Gene banks, and Cryopreservation
- 2.2 'In-Situ' Conservation – National Parks. Wild life sanctuaries, Biosphere Reserves, and Sacred Grooves
- 2.3 Protected Area Network (PAN)

Unit-3: Introduction to Forest:

- 3.1 Classification and Importance of Forest.
- 3.2 Ecological Succession.
- 3.3 Forest Soil: Soil and Soil Profile, Major soil types.
- 3.4 Deforestation: Factors leading to deforestation and effects of deforestation

Unit- 4: Forest Conservation and Forest Measurement:

- 4.1 Concept, scope, need and objectives of Community Based Forestry
- 4.2 Types of social forestry,
- 4.3 Bishnoi Community of Rajasthan, 'Chipko- Movement', Joint Forest Management (JFM), Forest (Conservation) Act, 1980, Indian forest Act (Revised) 1982

Practicals

1. Visit to local forest or Zoological Park
2. Study of some endangered and endemic species.
3. Importance of hotspots of biodiversity
4. Report on locally available floral and faunal Species

Books and References

1. Forests in India, Dr. A. K. Jain Vorha Publication, Allahabad (1989).
2. Remote Sensing for Environment and Forest Management: A. Mehrotra and R.K. Suri, Indus
3. Biodiversity: K. C. Agrawal, Agro Botanical Publishers, New Delhi, India (1996),
4. Environmental Biology: S.N. Prasad, Campus Books International, New Delhi (2000)
5. Environmental Biology: K. C. Agrawal, Agro Botanical Publisher, New Delhi, India. (1993).
6. The Biological Diversity Act 2002 and Biological diversity rules 2004: National Biodiversity Authority INDIA. 475, 9th South cross street, Kalpalocwar Nagar, Neelangarai Chennai – 600041.
7. Biodiversity and Environment: - S.K. Agarwal, S. Tiwari and P.S. Dubey, 1996.
8. Fundamentals of Ecology: - E.P. Odum, Revised Edition 1995-96, Edition 2003.
9. Biodiversity Measurement and Estimation: - D.L. Hawks worth Director International Mycological Institute Surrey, UK, Published: Chapman & Hall, Condou New York, Tokyo, Madras.
10. Ecology and Environment: - P.D. Sharma, 1994.
11. Biodiversity Conservation: - Global agreements and National Concerns. RAMSAR sites CBD, Quarantine, Regulation, National treaty policy Biodiversity Act wild life Act.
12. Biodiversity and environment – S. K. Agarwal.

INTRODUCTION

Bio means “life” and diversity means “variety”. Hence, biodiversity refers wide variety of life on the earth. Biodiversity may be defined as the sum total of species richness, i.e., the number of species of plants, animals and microorganisms occurring in a given region, country, continent of the entire globe.

Biodiversity protects the fresh air, clean water and productive land. It is also important for forestry, fisheries and agriculture, which depend on rich water variety of various biological resources available in nature. Loss of biodiversity has series economic and social costs for any country. It is very important for human life; we depend on plants, microorganisms, earth’s animals for our food, medicine and industrial products.

Biological diversity is usually considered at three different levels – a) Genetic diversity i.e. at genetic level b) Species diversity i.e. at the level of species c) Ecosystem diversity i.e. at the level of ecosystem.

Our country can be conveniently divided into ten major regions, based on the geography, climate and pattern of vegetation seen and the communities of mammals, birds, reptiles, amphibian, insects and other invertebrates that live in them. Each of these regions contains a variety of ecosystems such as forests, grasslands, lakes, rivers, wetlands, mountains and hills, which have specific plant and animal species.

Food, clothes, housing, energy, medicines are all resources that are directly (or) indirectly linked to the biological variety present in the biosphere. An agricultural community, biodiversity is used to grow their crops to suit the environment.

The IUCN Red List Categories The (International Union for Conservation of Nature) IUCN Red List is a catalogue of taxa (species) that are facing the risk of extinction. It is important to understand that the Red List aims to impart information about the urgency and scale of conservation problems to the public and policy makers.



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Objectives:

- To educate about Nature conservation and Forest management
- To provide understanding and knowledge on basic concepts in Biodiversity management
- To learn promote the conservation of flora, fauna, forests, and wildlife
- Creating awareness for protection and conservation of flora, fauna, forests and wildlife, biodiversity conservation
- To promote the efficient use of forest resources.
- To provide long-term forest productivity and conservation of forest resources through reforestation, soil conservation, afforestation etc
- To provide an insight into relevant conservation policies at Global and Local Level



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Outcomes:

- Students will be competent in basic biodiversity management principles
- Students will get the knowledge of importance of conservation of nature
- Students will be able to know and explain biodiversity, its threats and conservation methods
- Students will be able to develop critical thinking for developing strategies for environmental protection and conservation of Biodiversity
- Students will be able to engage in solving environmental problems
- Students will be able to adopt sustainable practices in life



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Department of Zoology

Add on Certificate Course – Basics in Biodiversity and Forest Conservation

List of Students

S. No	Name of the Student	Group	Regd. No.	Sign.
1	GARA SAI DURGA	II Zoo (Major)	202403275	G. Sai Durge
2	GONTHINA SRILAKSHMI	II Zoo (Major)	202403279	G. Sri Lakshmi
3	GUMMADI LEELA SOWJANYA	II Zoo (Major)	202403280	G. Sowjanya
4	MACHARLA SURYA DURGA VARALAKSHMI	II Zoo (Major)	202403285	M. S. D. Varalakshmi
5	MADISA BHARGAVI	II Zoo (Major)	202403286	M. Bhargavi
6	RAJANA TEJASWARI	II Zoo (Major)	202403294	R. Tejaswari
7	SUREDDY JNANESWARI	II Zoo (Major)	202403297	S. Jnaneswari
8	AGGALA GAYATHRI	II Zoo (Major)	202403271	A. Gayathri
9	ARJILLI LAKSHMI	II Zoo (Major)	202403272	A. Lakshmi
10	GONNABATHULA RAMYA	II Zoo (Major)	202403278	G. Ramya
11	KARANAM GAYATHRI	II Zoo (Major)	202403283	K. Gayathri
12	MUNASALA SWAMY DURGA PRASAD	II Zoo (Major)	202403287	M. Swami
13	NAMMI TEJASRI	II Zoo (Major)	202403288	N. Tejasri
14	PAPPALA CHANDRAKALA	II Zoo (Major)	202403289	P. Chandrakala
15	POLIREDDI PRAVALLIKA	II Zoo (Major)	202403292	P. Pravalika
16	RENUKA DHULI	II Zoo (Major)	202403295	D. Renuka
17	TULASI DHOOLI	II Zoo (Major)	202403298	D. Tulasi
18	VELUGULA DIVYA SRI	II Zoo (Major)	202403299	Divya Sri
19	JAGARAPU KRISHNA VENI	II Zoo (Major)	202403281	Krishna Veni

20	PATTEM GANGABHAVANI	II Zoo (Major)	202403290	P. Gengabha -vuni
21	YALLAPU KUSUMA LATHA	II Zoo (Major)	202403300	Y. Kusumakatha
22	KVVVARAPU .DANIEL	I Zoo (Major)	202503044	Ⓟ B. Sowmya K. Daniel
23	PEDAPATI. NUKESH	I Zoo (Major)	202503046	P. Nukesh K. DANIEL
24	SINGANA. GEETANJALI	I Zoo (Major)	202503048	S. Geetanjali
25	YARRAMSETI. MANI	I Zoo (Major)	202503051	Y. Mani
26	KOTHALA . SRUTHI	I Zoo (Major)	202503043	K. Sruthi
27	SHAIK TOUSMI SAMEERA	I Zoo (Major)	202503047	S. Sameera
28	TETAKALI. RAMYA SRI	I Zoo (Major)	202503049	V. Ramya Sri
29	VELAGA. PAVANI	I Zoo (Major)	202503050	V. Pavani
30	KALLA NAVYA	II Zoo (Major)	202403282	K. Navya



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Sl. No.	Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	GARA SAI DURGA	a	P	P	a	P	P	a	P	P	a	P	P	P	P	P	P
2	GONTHINA SRLAKSHMI	P	P	P	P	P	P	a	P	P	P	P	P	P	P	P	P
3	GUMMADI LEELA SOWJANYA	P	a	P	P	P	a	P	P	P	P	P	P	P	P	P	P
4	MACHARLA SURYA DURGA VARALAKSHMI	P	P	a	P	a	P	P	a	P	P	P	P	P	P	P	P
5	MADISA BHARGAVI	P	a	P	P	P	P	P	a	P	P	P	P	P	P	P	P
6	RAJANA TEJASWARI	P	P	P	P	P	P	P	a	P	P	P	P	P	P	P	P
7	SUREDDY JNANESWARI	P	P	P	P	a	P	P	P	P	P	P	P	P	P	P	P
8	AGGALA GAYATHRI	a	P	P	P	P	a	P	P	P	P	P	P	P	P	P	P
9	ARJILLI LAKSHMI	P	P	P	P	P	P	P	a	P	P	P	P	P	P	P	P
10	GONNABATHULA RAMYA	P	P	P	a	P	a	P	P	P	P	P	P	P	P	P	P
11	KARANAM GAYATHRI	a	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
12	MUNASALA SWAMY DURGA PRASAD	P	a	P	P	P	P	a	P	P	P	P	P	P	P	P	P
13	NAMMI TEJASRI	P	P	P	a	P	P	P	P	P	P	P	P	P	P	P	P
14	PAPPALA CHANDRAKALA	P	a	P	P	P	P	P	P	P	P	P	P	P	P	P	P
15	POLIREDDI PRAN ALIKA	a	P	P	P	P	a	P	P	P	P	P	P	P	P	P	P
16	MASSUKA SIVULLA	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P

15/11/2018 18/11/2018 19/11/2018 20/11/2018 21/11/2018 22/11/2018 23/11/2018 24/11/2018 25/11/2018 26/11/2018 27/11/2018 28/11/2018 29/11/2018 30/11/2018 01/12/2018 02/12/2018 03/12/2018 04/12/2018



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Department of Zoology Certificate Course: Basics of Biodiversity and Forest Conservation

Course End Assessment exam

- The variety of genes within a single species is known as:
a. Species diversity b. Ecological diversity c. Genetic diversity d. Biodiversity hot spots
- Global warming can significantly be controlled by _____
a. Increasing solid waste b. Reducing water wastage c. Burning human-generated waste
d. Reducing fossil fuel consumption
- According to the National Forest Policy (1988), what is the recommended forest cover for plains?
a. 20% b. 33% c. 50% d. 11%
- The "greatest biodiversity" on Earth is found in:
a. Temperate forests b. Grasslands c. Tropical rainforests d. Deserts
- Which of the following is an example of in-situ conservation?
a. Botanical Garden b. National Park c. Seed Bank d. Zoo
- Which of the following is the primary driver of biodiversity loss globally?
a. Overexploitation b. Habitat destruction c. Invasive species d. Climate change
- What is defined as an ecological state where a species is unique to a specific geographic location?
a. Exotic species b. Endemic species c. Invasive species d. Rare species
- Which organization is responsible for maintaining the 'Red Data Book' of threatened species?
a. WWF b. IUCN c. CITES d. UNESCO
- The 'Chipko Movement' was significantly strengthened under the leadership of:
a. Amrita Devi Bishnoi b. Medha Patkar c. Sunder Lal Bahuguna d. A.K. Banerjee

ny biodiversity hotspots are currently identified worldwide?

b. 25

c. 36

d. 55

Of these is a major biodiversity hotspot in India?

getic Plain

b. Sunderbans

c. Western Ghats

d. Eastern

h rainforest is often referred to as the 'Lungs of the Planet'?

African Rainforest

b. Amazon Rainforest

c. Australian Rainforest

d. Southeast Asian

rest

What is the protection of species within their natural habitat called?

a. In-situ conservation

b. Ex-situ conservation

c. In-vivo conservation

d. Ex-vivo

ervation

In which year was the Indian Wildlife (Protection) Act implemented?

a. 1962

b. 1972

c. 1982

d. 1992

5. What is the primary international treaty for the conservation of all levels of biodiversity?

a. Kyoto Protocol

b. Montreal Protocol

c. Convention on Biological Diversity (CBD)

d. CITES

16. Which of these activities is considered "anti-forest conservation"?

a. Afforestation

b. Clear felling

c. Preservation of wild animals

d. Selective logging

17. The maximum temperature required for vermicomposting is _____.

a. 20C to 25C

b. 25C to 30C

c. 30C to 35C

d. 35C to 40C

18. When the death of the last individual in a species occurs is known as

a. Adaptation

b. Phylogenetic diversity.

c. Speciation

d. Extinction

19. _____ has the maximum genetic diversity in India

a. Potato

b. Tea

c. Mango

d. Teak

20. Nandan-Kanan Zoo is Popular for Its _____.

a. Nilgiri Tahr

b. Whale

c. White tiger

d. Hippo



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DEPARTMENT OF ZOOLOGY

CERTIFICATE COURSE IN

“Basics of Biodiversity and Forest Conservation”

Summary Report

The Department of Zoology has started Add-on Course on the topic entitled **“Basics of Biodiversity and Forest Conservation”** with 30 Students from B.Sc., (CBZ) Group. The faculty of Zoology Department has conducted 40 theory and 20 practical classes to complete the syllabus within stipulated time. The Exams were conducted to registered students for 50 marks and issued certificates to 30 successful students.

From this add on course the students gained the following skills.

1. The students learned The knowledge about **Basics of Biodiversity and Forest Conservation**
2. The students got the idea of the local fresh water fishes and their importance.
3. The students got the knowledge of the scientific names of the local fishes.
4. The students got the importance of fishes for the production of sufficient food for the growing population.

Add on course – synopsis:

1. **Number of students enrolled: 30**
2. **Number of students completed: 30**
3. **Theory hours: 40**
4. **Practical hours: 20**
5. **Assessment Exam - Maximum Marks: 40**
6. **Time: 1 hours**
7. **Internal assessment – 10M**



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Department of Zoology

Certificate Course

“Basics of Biodiversity and Forest Conservation”

Certificate of Participation

This is to certify that Miss / Mr -----
with Regd. No. ----- has completed in Certificate Course entitled
“Basics of Biodiversity and Forest Conservation” from 16.10.25 to 02.01.26
organized by the Department of Zoology, S.G.A Government Degree
College (A), Yellamanchilli.



Convenor



Coordinator



Principal

Certificate Distribution

