



પરિપત્ર:

ભક્તકવિ નરસિંહ મહેતા યુનિવર્સિટીની લાઈફ સાયન્સ વિદ્યાશાખાનાં અભ્યાસક્રમ ચલાવતા સેન્ટર ઓફ એક્સેલેન્સ ફોર વાઇલ્ડ-લાઈફ એન્ડ કન્ઝર્વેશન સ્ટડીઝનાં ડાયરેક્ટર તેમજ લાઈફ સાયન્સ ડીપાર્ટમેન્ટનાં હેડને જણાવવાનું કે લાઈફ સાયન્સ વિદ્યાશાખા અંતર્ગતનો વાઈલ્ડ-લાઈફ સાયન્સીસ વિષયનો પી.જી ડીપલોમાં ઇન વાઈલ્ડ બાયોલોજી સર્ટીફિકેટ કોર્સનો અભ્યાસક્રમ આ સાથે સામેલ છે.

માનનીય કુલપતિશ્રીની મંજૂરી અનુસાર સદર અભ્યાસક્રમ શૈક્ષણિક વર્ષ જુન, ૨૦૨૫ થી અમલવારી કરવાની રહે છે. લાઈફ સાયન્સ વિદ્યાશાખા માં સેન્ટર ઓફ એક્સેલેન્સ ફોર વાઇલ્ડ-લાઈફ એન્ડ કન્ઝર્વેશન સ્ટડીઝનાં ડાયરેક્ટરશ્રીને અમલવારી કરવા જણાવવામાં આવે છે



[Signature]
૧૧/૪/૨૦૨૫

ખાસ ફરજ પરના અધિકારી
(એકેડેમિક)

ક્રમાંક/બીકેએનએમયુ/ એકેડેમિક/૩૪૪/૨૦૨૫

ભક્તકવિ નરસિંહ મહેતા યુનિવર્સિટી,

સરકારી પોલીટેકનિક કેમ્પસ,

ભક્તકવિ નરસિંહ મહેતા યુનિવર્સિટી રોડ,

ખડીયા, જૂનાગઢ-૩૬૨૨૬૩

તા.૦૮/૦૭/૨૦૨૫

પ્રતિ,

- ભક્તકવિ નરસિંહ મહેતા યુનિવર્સિટીનાં સેન્ટર ઓફ એક્સેલેન્સ ફોર વાઇલ્ડ-લાઈફ એન્ડ કન્ઝર્વેશન સ્ટડીઝનાં ડાયરેક્ટરશ્રી અને લાઈફ સાયન્સ ડીપાર્ટમેન્ટનાં હેડશ્રી તરફ....

નકલ સાદર રવાના:-

- માન.કુલપતિશ્રી/કુલસચિવશ્રીનાં અંગત સચિવશ્રી.
- પરીક્ષા નિયામકશ્રી, ભક્તકવિ નરસિંહ મહેતા યુનિવર્સિટી, જૂનાગઢ

નકલ રવાના જાણ તથા યોગ્ય કાર્યવાહી અર્થે:

- સીસ્ટમ મેનેજરશ્રી, આઇ.ટી.સેલ વિભાગ (વેબસાઇટ ઉપર પ્રસિદ્ધ થવા અર્થે.)



BHAKTA KAVI NARSINH MEHTA UNIVERSITY

Major

Syllabus of PG Diploma as per NEP-2020

Faculty of Life Sciences

Effective from June 2025

Subject: Wildlife Sciences

SEMESTER- I & II

Bhakta Kavi Narsinh Mehta University Junagadh



**Faculty of Life Sciences
Subject: Wildlife Science**

Programme: PG Diploma in Wildlife Biology

**Detailed curriculum
(wef June 2024)**

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SUMMARY OF THE SYLLABUS

Sem No.	Sr. No.	Category of Course	Course Title	Course Level	Credit	Teaching Hrs.	SEE Marks	CCE Marks	Total Marks	Exam Duration
Sem-1	1	Major-1	Fundamentals of wildlife and conservation biology		4	60	50	50	100	2 hours
	2	Major-2	Wildlife conservation and management in India		4	60	50	50	100	2 hours
	3	Major-3	Practical		4	120	25	25	50	2 hours
	4	Major-4	Project progress report		8	240	100	100	200	
				Total	20	480			450	

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Sem No.	Sr. No.	Category of Course	Course Title	Course Level	Credit	Teaching Hrs.	SEE Marks	CCE Marks	Total Marks	Exam Duration
Sem-2	1	Major-5	Tools and Techniques in Wildlife Sciences		4	60	50	50	100	2 hours
	2	Major-6	Project		16	480	200	200	400	
				Total	20	540			500	

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Course Level	5	Internal Marks	50
Programme	PG Diploma	External Marks	50
Semester	1	Practical Internal	25
Category of Course		Practical External	25
Course Credit	6 (4 theory, 2 practical)	Prac. External Exam Duration	2 hours
Teaching Hours	120	Total	150
Course Code	PGDWLB01	Exam Duration	2 hours
Course Title	Fundamentals of wildlife and conservation biology		

Course Level	5	Internal Marks	50
Programme	PG Diploma	External Marks	50
Semester	1	Practical Internal	25
Category of Course		Practical External	25
Course Credit	6 (4 theory, 2 practical)	Prac. External Exam Duration	2 hours
Teaching Hours	120	Total	150
Course Code	PGDWLB02	Exam Duration	2 hours
Course Title	Wildlife conservation and management in India		

Course Level	5	Internal Marks	50
Programme	PG Diploma	External Marks	50
Semester	1	Viva voce Internal	25
Category of Course		Viva voce External	25
Course Credit	8	Prac. External Exam Duration	
Teaching Hours	240	Total	200
Course Code	PGDWLB03	Exam Duration	
Course Title	Project progress report		

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Course Level	5	Internal Marks	50
Programme	PG Diploma	External Marks	50
Semester	2	Practical Internal	25
Category of Course		Practical External	25
Course Credit	4	Prac. External Exam Duration	2 hours
Teaching Hours	60	Total	150
Course Code	PGDWLB04	Exam Duration	2 hours
Course Title	Tools and Techniques in Wildlife Sciences		

Course Level	5	Internal Marks	100
Programme	PG Diploma	External Marks	100
Semester	2	Viva voce Internal	50
Category of Course		Viva voce External	50
Course Credit	16	Project report evaluation	100
Teaching Hours	480	Total	400
Course Code	PGDWLB05	Exam Duration	
Course Title	Project report		

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Course Objectives:

Wildlife Science focuses on the biology and management of wild animals, plants and microorganisms including the ecology and conservation as well as their natural habitat including. As a wildlife scientist, one will study native and exotic species in natural or created environments, their biodiversity and human-wildlife interactions, and to evaluate wildlife management programs for captive and free-ranging wildlife.

Course Learning Outcomes: After completion of the course:

1. Knowledge of wildlife conservation, and a critical understanding of concepts such as sustainability and sustainable development
2. An understanding of the construction and analysis of data sets for different purposes.
3. Practical skills in mapping biodiversity and running spatial analysis to understand and illustrate conservation issues (GIS)
4. An understanding of ecological networks and ecosystem services.
5. An understanding of environmental changes and the consequences.
6. Approaches to habitat restoration.
7. Understanding of socio-political and ethical dimensions of conservation problems.
8. Confidence in use of universally available resources and open-access softwares.
9. Transferable skills necessary for employment.

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Sem	Paper	Unit No.	Syllabi	Teaching Hours
1	PGDWLB 01	1	Biogeography and Biological diversity	30
		2	Introduction to Indian wildlife and habitats	30
		3	Conservation biology	30
		4	Research in wildlife sciences	30
1	PGDWLB 02	1	Agencies in wildlife conservation	30
		2	Important legislations on wildlife in India	30
		3	Wildlife conservation practices in India	30
		4	Human -Wildlife interactions (HWI)	30

Course Contents

Sem	Paper	Unit No.	Syllabi	Teaching Hours
2	PGDWLB 04	1	Research design	30
		2	Field methods	30
		3	Advanced Statistics -I	30
		4	Advanced Statistics - II	30

Suggested Reading:

1. Conservation Biology for All by N S Sodhi and P R Ehrlich (2010), Oxford University Press
2. Biodiversity: challenges for science and governance by Michel Loreau (2007), Jardin botanique de Montréal
3. Wildlife Ecology, Conservation and Management by John M Fryxell et al., (2014), Wiley Blackwell
4. Evolution by Mark Ridley (2004), Blackwell Publishers
5. Principles of Environmental Sciences by Joeri Bertels and Henk Bezemer (2009), Springer Science

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6. Remote Sensing and Image Interpretation by Thomas Lillesand, Ralph W. Kiefer, and Jonathan Chipman
7. Geographic Information Systems and Science by Paul A. Longley, Michael F. Goodchild, David J. Maguire, and David W. Rhind
8. Principles of Geographic Information Systems by Peter A. Burrough and Rachael A. McDonnell
9. Spatial Data Analysis in Ecology and Agriculture using R by Richard E. Plant

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INTERNAL EVALUATION SCHEME		
NO	Particulars	Marks
1	Mid Semester Exam (Mandatory)	25
2	Class Test	05
3	Open book exam/test	05
4	Open note exam/test	05
5	Self-test/ Online test	05
6	Essay/Article writing	05
7	Quizzes/Objective test	05
8	Class assignment	05
9	Home assignment	05
10	Reports Writing	05
11	Research/Dissertation	05
12	Case Studies	05
13	Viva/Oral exam	05
14	Group Discussion	05
15	Role Play	05
16	Paper presentation/Seminar	05
17	Language Lab work	05
18	Interview	05
19	Craft work	05
20	Co-curricular work	05
21	Field Assignment	05
22	Poster Presentation	05
23	Attendance	05
24	Project Work	05
	Total	50

Note: Sr.No.1 is mandatory. Select any five from Sr.No.2 to 24. Each Contains five marks. Student should secure 18 Marks for passing in internal Exam.

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Ques. No.	Particulars	From which Unit	Marks
1	Descriptive question/ short notes from unit 1	1	10
2	Descriptive question/ short notes from unit 2	2	10
3	Descriptive question/ short notes from unit 3	3	10
4	Descriptive question/ short notes from unit 4	4	10
5	Short questions of one/two marks	From Each Unit	10
		Total Marks	50

Paper Style: Practical

Ques. No.	Particulars	Marks
1	Perform as per the instructions Major Exercise	20
2	Perform and explain to the examiner Minor Exercise	10
3	Do as directed	10
4	Field report and Viva voce	10
		50

POST GRADUATION DIPLOMA IN WILDLIFE BIOLOGY (SEM-I)

PGDWLB 01: Fundamentals of Wildlife and Conservation Biology

Unit 1: Biogeography and Biological diversity

Classical biogeography: Continental drift, dispersal, bio-geographical realms and provinces

Applied biogeography, biogeographical process, endemism, refugia. The differences between plant and animal geography. Biogeographic classification of India.

Concept of Biodiversity, types and levels of biodiversity, Biodiversity hotspots and types of species

Outline of Diversity of plant, animals and microorganisms

Unit 2: Introduction to Indian wildlife and habitats

Concept and scope of wildlife, wildlife as a natural resource, threatened wildlife in India

Wildlife management history and current practices

Wildlife population estimation

Concept of habitat, habitat and niches, Important habitats of Indian subcontinent and India

Habitat suitability and evaluation techniques

Unit 3: Conservation biology

Introduction to conservation biology, types of conservation, conservation ethics

Biological consequences of habitat fragmentation, covering barriers and isolation, edge effects, ecological corridors

Human-wildlife interactions and human dimension in management

Community based conservation, role of different organizations in conservation

Ecological restoration and its significance in conservation

Unit 4: Research in wildlife sciences

Concept of scientific research, Basic descriptive statistics and non-parametric statistics

Basics of scientific writing, referencing and literature review

Formation of scientific article and presentations

General introduction of Remote sensing, GIS and their applications in wildlife research

PGDWLB 02: Wildlife conservation and management in India

Unit 1: Agencies in wildlife conservation

IUCN red data book and their classification, Endangered species and conservation status. Ministry of Environment, Forest & Climate Change (MoEF & CC), National Tiger Conservation Authority (NTCA), Wildlife Crime Control Bureau, National Bank for Agriculture and Rural Development (NABARD), Department of Science and Technology (DST). Zoological Survey of India (ZSI), Botanical Survey of India (BSI), Wildlife Institute of India (WII), Salim Ali Centre for Ornithology & Natural History (SACON), etc.

NGOs -World Wildlife Fund for nature (WWF), Wildlife Trust of India (WTI), Bombay Natural History Society (BNHS), Wildlife Conservation Society (WCS), etc.

Unit 2: Important legislations on wildlife in India

Indian Wildlife Protection Act 1972, Forest Conservation Act 1980, Environment Forest Act 1986, National Forest policy 1988, Biodiversity Act 2002, Forest dwellers act 2006. Conservation on International Trade in Endangered Species of Wildlife Fauna and Flora (CITES).

National Green Tribunal, State biodiversity boards, National and state pollution control boards. Concepts of private forests, community reserve, coastal regulation zone, and sacred groves. Case studies related to wildlife laws

Protected areas network in India and their significance.

Unit 3: Wildlife conservation practices in India

Single species and single habitat-based conservation programme (Project Lion, Species Recovery Programme-Dolphin-Dugong-Swamp Deer-Great Indian Bustard-Vultures). Conservation in human modified landscape. Role of indigenous and local communities in conservation, case studies (movements-Chipko movement, Narmada Bachavo Aandholan, PaniPanchayats, Seed Movement etc.). Prioritizing and action plans to conserve threatened species case studies.

Integration of science and conservation on ground.

Outreach and awareness in conservation, case studies.

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Unit 4: Human -Wildlife interactions (HWI)

Definition, history, current situation and scope of HWI, Critical evaluation of the factors leading to HWI through Original Data, Hypothetical Data, Case studies

Practice problem-solving and apply solutions to mitigate HWI, Issues and Challenges of HWI

Social research methods and their importance in combating HWI

Patterns of HWI conflict, case studies and conservation schemes.

From conflict to coexistence, awareness and role of local stakeholders in HWI mitigation.

Case studies on major species involved in the HWI.

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PGDWLB 03: Practical

Each student will be assigned with a field and lab-based practical based on the courses 01 and 02 under the supervision of concerned faculty member.

List of Practical:

1. Determination of different population parameters:
 - a. Density
 - b. Abundance
 - c. Diversity
 - d. Dominance
2. Species-area curve method
3. Study of population dynamics using examples
 - a. Population growth rate
 - b. Carrying capacity
 - c. Population doubling time
4. Principle and applications of different field instruments
5. Mapping of different biogeographic zones and biomes in India
6. Preparation of survey design to study HWI
7. Identification of threatened wild animals
8. Identification of various signs of wild animals
9. Immobilization of wild animals
10. Wildlife rescue tools and techniques

Semester-II

PGD WLB 04: Tools and Techniques in Wildlife Sciences

Unit 1: Research design

Basics of research design, ethics, data collection and common bias in study design.

Formulation of hypothesis, review of literature and synopsis. Legal procedures and permission for wildlife research.

Sampling techniques, Sampling error, sampling size, advantage and limitation of sampling, Types of data, Primary and secondary data, limitations and cautions.

Unit 2: Field methods

Designing field study and different data collection techniques.

Types of samples, Sampling protocol, Error and biases in sampling, Collection, storage and management of field data and samples

Basics of GIS and its applications in wildlife research

Unit 3: Advanced Statistics -I

Overview of R and Rstudio, R layout, basic operations

Multivariate statistics and its applications,

Different software and packages used in statistical analysis using R and Python

Unit 4: Advanced Statistics -II

Working variables and functions, importing data into R studio, reading data from csv, text and excel.

Introduction to ggplot, creating basic plots: scattered, histograms and barplots.

linear regression in R

Information theory, Likelihood theory, Akaike's Information Criterion (AIC), Second order information criterion, Akaike weight, evidence ratio.

Basics of model selection and inference. Formal inference from one and multimodel (MMI), model averaging. Model selection uncertainty.

Brief idea of GLM, GAM, GLMM and GAMM.

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PGDWLB 06: RESEARCH PROJECT

Each student will continue with the research project which was started in Sem I and final report of the project shall be submitted followed by the presentation and viva voce.

Student can also undergo the internship or work under the supervision of external supervisors, in such cases, one of the faculty members of CWCS shall remain as a Co Supervisor.