



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 વાઇલ્ડ-લાઈફ સાયન્સીસ વિષયનો જીયોગ્રાફિક ઇન્ફોર્મેશન સીસ્ટમ એન્ડ રીમોટ સેન્સિંગ 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]
9/7/2025

ખાસ ફરજ પરના અધિકારી
(એકેડેમિક)

ક્રમાંક/બીકેએનએમયુ/એકેડેમિક/૩૪૧/૨૦૨૫

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 Certificate course as per NEP-2020

Faculty of Life Sciences

Effective from June 2025

Subject: Wildlife Sciences

Duration: Six Months (1 Semester)

Bhakta Kavi Narsinh Mehta University Junagadh



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

Programme: Certificate course in GIS and Remote Sensing

**Detailed curriculum, Rules and Regulations for
Short term Certificate Course
(wef June 2025)**

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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	Remote sensing and GIS: Theory and application		4	60	50	50	100	2 hours
	3	Major-3	Practical		4	120	50	50	100	2 hours
	4	Major-4	Project report		8	240	100	100	200	
				Total	20	480			500	

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Course Level	4.5	Internal Marks	50
Programme	Certificate course	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	CCGIS01	Exam Duration	2 hours
Course Title	Fundamentals of wildlife and conservation science		

Course Level	4.5	Internal Marks	50
Programme	Certificate course	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	CCGIS02	Exam Duration	2 hours
Course Title	Remote sensing and GIS: Theory and application		

Course Level	4.5	Internal Marks	100
Programme	Certificate course	External Marks	100
Semester	1	Practical Internal	--
Category of Course		Practical External	--
Course Credit	8	Prac. External Exam Duration	
Teaching Hours	240	Total	200
Course Code	CCGIS04	Exam Duration	
Course Title	Project work		

BHAKTA KAVI NARSINH MEHTA UNIVERSITY**Major****Syllabus of Certificate course as per NEP-2020****Faculty of Life Sciences****Effective from June 2025****Subject: Wildlife Sciences****Duration: Six Months (1 Semester)****Course Objectives:**

Remote sensing and Geographic information systems is one of the advanced tool used in several subjects of science including Wildlife Sciences. The course will focus on the basic principles of remote sensing, satellite systems and images. The applications of remotely sensed images in the field of wildlife habitat and population monitoring. The Geographic information science is a modern tool used in ecological modelling to study wildlife and habitats that can help in wildlife management and formulating conservation plans.

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. Confidence in use of universally available resources and open-access softwares.
5. Transferable skills necessary for employment.

Course Contents

Sem	Paper	Unit No.	Syllabi	Teaching Hours
1	CCGIS01	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	CCGIS02	1	Fundamentals of GIS and Remote Sensing	30
		2	Data Acquisition, Processing, and Management	30
		3	Spatial Analysis and Modelling	30
		4	Applications of GIS and Remote Sensing	30

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Suggested Reading:

1. Remote Sensing and Image Interpretation by *Thomas Lillesand, Ralph W. Kiefer, and Jonathan Chipman*
2. Geographic Information Systems and Science by *Paul A. Longley, Michael F. Goodchild, David J. Maguire, and David W. Rhind*
3. Principles of Geographic Information Systems by *Peter A. Burrough and Rachael A. McDonnell*
4. 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

CCGIS 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

CCGIS02: Remote sensing and GIS: Theory and application

Unit 1: Fundamentals of GIS and Remote Sensing

Introduction to GIS and Remote Sensing: Definitions, history, and development

Satellite Platforms and Sensors: Overview of major satellite systems

Types of Remote Sensing: Passive and active systems

Basics of GIS and GPS

Map Projections and Coordinate Systems

Types of Spatial Data: Raster and vector

Unit 2: Data Acquisition, Processing, and Management

Image Acquisition: Satellite and aerial imagery

Preprocessing of Remote Sensing Data: Radiometric and geometric corrections

Image Enhancement Techniques

Digital Image Classification: Supervised and unsupervised methods

Ground Truthing and Accuracy Assessment

Spatial Data Collection using GPS

Database Creation and Management in GIS

Unit 3: Spatial Analysis and Modelling

Spatial Query and Overlay Analysis

Buffering and Proximity Analysis

Digital Elevation Models (DEM): Creation and applications

Interpolation Techniques

Change Detection Analysis using Remote Sensing

Geostatistical Analysis: Basics and applications

Unit 4: Applications of GIS and Remote Sensing

Natural Resource Management (Forests, Water, Soil), Urban and Regional Planning

Disaster Management and Hazard Mapping, Agriculture and Crop Monitoring

Wildlife Research Applications: Species Distribution Modelling (SDM), Habitat

Suitability Analysis, Mapping Wildlife Corridors and Protected Areas

Climate Change Studies and Environmental Monitoring

CCGIS03: Practical

A student can take practical classes as per the schedule and with prior approval of the head of the program. The student taking the practical classes have to prepare and submit the practical journal in the examination followed by the practical exam and viva voce.

Student can also take a short-term internship or involve in ongoing projects to get hands-on experience in GIS.

List of Practical:

1. Toposheet reading and identification of features
2. Generation of GIS enabled files
3. Creation shp files for GIS analysis
4. Geo-referencing of toposheets
5. Construction of a maps on the GIS platform
6. Data extraction using GIS
7. Processing & classification of satellite image

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CCGIS04: Project report

The students have to select a short-term research project related to conservation genetics and prepare the report of the same to submit at the end of course. The same will be evaluated at the time of final examination followed by Viva voce.

The student can also work in any relevant institution with the prior permission of the head of the department. In such cases one of the faculty members from the department will act as a co-supervisor.