



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 કન્ઝર્વેશન જિનેટીક્સ સર્ટીફિકેટ કોર્સનો અભ્યાસક્રમ આ સાથે સામેલ છે.

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



[Signature]
૧/૪/૨૦૨૫

ખાસ ફરજ પરના અધિકારી
(એકેડેમિક)

ક્રમાંક/બીકેએનએમયુ/ એકેડેમિક/૩૪૦/૨૦૨૫

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 Sciences**

Programme: Certificate Course in Conservation Genetics

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

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)

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	Applications of genetics in conservation biology		4	60	50	50	100	2 hours
	3	Major-3	Practical based on Major 1 and 2		4	120	50	50	100	2 hours
	4	Major-4	Project report		8	240	100	100	200	
				Total	20	480			500	

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 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	06 (4 theory, 2 Practical)	Prac. External Exam Duration	2 hours
Teaching Hours	120	Total	150
Course Code	CCCG01	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	06 (4 theory, 2 Practical)	Prac. External Exam Duration	2 hours
Teaching Hours	120	Total	150
Course Code	CCCG02	Exam Duration	2 hours
Course Title	Applications of genetics in conservation biology		

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	CCCG04	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:**

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 the theory and applications of advanced molecular biology for the conservation of wildlife using conservation genetics.

Course Learning Outcomes: After completion of the course:

1. The basics of wildlife biology and the significance of conservation.
2. the important principles of genetics
3. the field and laboratory techniques of genetics and their applications in conservation biology

Course Contents

Sem	Paper	Unit No.	Syllabi	Teaching Hours
1	CCCCG01	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	CCCCG02	1	Field and lab techniques for wildlife research	30
		2	Genetic diversity of life and population structure	30
		3	Ethical and policy considerations in conservation genetics	30
		4	Evolution	30

Suggested Reading:

1. Conservation and genomics of populations by Fred, W. Allendorf et al (2022). Oxford University Press
2. Conservation Biology for All by N S Sodhi and P R Ehrlich (2010), Oxford University Press
3. Molecular Ecology by Joanna R. Freeland (2020), Wiley Blackwell
4. Bio-instrumentation by Morgen and Claypool (2006) Elsevier publishers

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)

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.

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)****Paper Style: Theory**

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

CERTIFICATE COURSE IN CONSERVATION GENETICS

CCCG01: 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

CCCG02: Applications of genetics in conservation biology

Unit 1: Field and lab techniques for wildlife research

Different field instruments and gears used in wildlife research, 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.

DNA extraction and preservation, Quality control in genomic data, Genomic data analysis pipelines. Population genetic analysis using software tools.

Interpreting genomic results for conservation strategies.

Unit 2: Genetic diversity of life and population structure

Genetic diversity and its significance, measuring of genetic diversity, Hardy Weinberg equilibrium (HWE), Molecular Markers to study genetic diversity, Techniques for measuring genetic diversity in DNA, Role of genetic diversity in evolution of natural population, Inbreeding and Inbreeding depression.

Habitat and population fragmentation, Population structure, Isolation, Dispersal and Gene flow.

Unit 3: Ethical and policy considerations in conservation genetics

Ethical guidelines and regulations, Indigenous rights and genetic resources, Socio-economic aspects of conservation genetics, international conservation agreements, Policy implications of genomic research, Integrating genomics into conservation planning

Unit 4: Evolution

Evolution in large population: Natural selection and adaption, Mutation, migration and interaction with selection, Evolution in small population, Relation between low genetic diversity and fitness, Genetic drift and Effective population size, Measuring effective population size, Phylogenetic diversity and conservation

CCCG03: Practical & Exposure visits

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.

At least one exposure visit to state or national level institute/ genetics lab should be conducted and the report of the same should be submitted in the final examination.

List of Practical

- i) Isolation of DNA from blood/ tissue
- ii) Isolation of DNA from non-invasive sample
- iii) Field techniques for genetic sampling and preservation
- iv) Molecular genetics in wildlife forensics
- v) DNA barcoding and phylogenetic analysis
- vi) Diet analysis using different non-invasive samples

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)

CCCG04: 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.