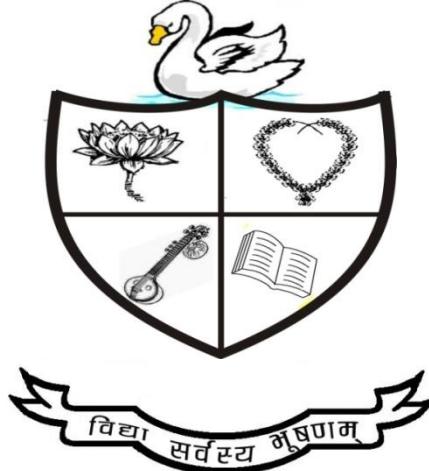


SYLLABUS FOR THE FOUR-YEAR UNDERGRADUATE PROGRAMME (FYUGP)

As per provisions of NEP_2020 to be implemented from
academic year 2022 onwards.

Semester: VII	Session: 2025-26
Course Type: Discipline specific Elective (DSE)	Title: Research Methodology and Ethics



Department of Biotechnology

**GOVT. DIGVIJAY AUTONOMOUS POST GRADUATE
COLLEGE, RAJNANDGAON (C.G.)**



GOVT. DIGVIJAY AUTONOMOUS P.G. COLLEGE, RAJNANDGAON (C.G.)
FYUGP (NEP 2020 Course)
Department: Biotechnology

Session: 2025-26	Program: B.Sc.
Semester: VII	Subject: Biotechnology
Course Type: Discipline specific Elective (DSE)	Course Code:
Course Title: Research Methodology and Ethics	
Credit: 4	Lecture: 60
M.M. 100 = (ESE 80+IA 20)	Minimum Passing Marks: 40%

Title	Calculus
Course Learning Outcome:	<p>After completing this course, the students will be able to -</p> <ul style="list-style-type: none"> • Understand about the fundamental concept of research • Gather and review literatures • Design research methods, and compile data • Publish research papers • Understand research ethics

Theory

Units	Lectures	Lectures	Credit
I	15	<p>Fundamental of Research</p> <ol style="list-style-type: none"> 1. Research – definitions and types 2. Research plan – conceptualization, statement of problem, finding research gap, selection and component of research problems 3. Literature collection and review – sources and types of literatures, UGC library tools 4. Research design – study area and sampling procedures, resources, methodology 	1
II	15	<p>Data compilation and Report writing</p> <ol style="list-style-type: none"> 1. Data processing – general and advance statistical tools – mean, median, mode, dispersion and correlation 2. Hypothesis and its testing – t and chi square test. 3. Research report - Types of research report, components of research report, concept of bibliography and references 4. Use of tools in report writing – Endnote, Mendeley, Photoshop, Canva. 	1
III	15	<p>Research Publications and its quality</p> <ol style="list-style-type: none"> 1. Types of research publications – books, journals, patents, seminar proceedings 2. Indexing of journals – WOS, Scopus, SCI, DOAJ 	1

		<p>3. Citation – Google scholar, H-index, Impact factor</p> <p>4. Research based academic networking – LinkedIn, ResearchGate</p>	
IV	15	<p>Research ethics, Plagiarism and IPR</p> <p>1. Author Credits and acknowledgement</p> <p>2. Ethical issues in experiments with animals and humans, Animal rights</p> <p>3. Plagiarisms – reasons and software tools</p> <p>4. Intellectual Properties – Patent, Copyright, GI and Trademark</p>	1

List of Books	<ul style="list-style-type: none"> • C. R. Kothari and Gaurav Garg - Research Methodology: Methods and Techniques • D N SANSANWAL- RESEARCH METHODOLOGY AND APPLIED STATISTICS • Dr. Upendra Pratap Singh, Ms. Sakshi Ahlawat- Research and Publication Ethics • T. Padma, K.P.C. Rao - THE PRINCIPLES OF INTELLECTUAL PROPERTY LAW
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Evaluation Scheme		
Exam Type	Mode of Exam	Marks
Theory	External	80
	Internal	20

Evaluation Scheme for Theory (External)					
Type of Question	No. of questions	Marks	Word Limit	Choice	Total Marks
Very Short Answer	08	02	30	No	16
Short Answer	04	06	75	Yes	24
Long Answer	04	10	150	Yes	40

Evaluation Scheme for Theory (Internal)					
Based on Mid-term Exam					20
Total					100

Approval of the Board of Studies						
Date:						
Name	Prof. S. K. Jadhav	Sabiha Naz	Dr. Shubha Diwan	Shri Sanjay Bhagwat	Ku. Varsha Meshram	Dr. Pramod Kumar Mahish
Designation	VC Nominee	Subject Expert	Subject Expert	Employment/ Industrial Member	Merit Alumni	Chairman/ HOD
Signature	Joined Online by Google meet https://meet.google.com/don-uoue-pce And Online approval by BOS					