

#### IQAC recommendation

IQAC, Vivekananda College, Thakurpukur, met on 18/June/2022, to envisage, formulate and design Add-On Courses, beyond prescribed Curriculum. The IQAC has also decided to organise a program on staff training:

- A. It was decided that all the departments of Humanities, Science and Commerce would design and formulate 30 hour Add-On Courses for 2022-23, Academic calendar, as per UGC guidelines.
- B. It was decided that the Departments would be free to choose the Courses on the basis of their (subject) relevance, practicality and feasibility.
- C. It was decided that the Departments would have a Course Coordinator, who would design the Course and Course materials, in consultation with all teachers of the Department.
- D. It was decided that each Department would design their own format; and could follow a blended mode of instruction.
- E. It was decided that the Departments would be encouraged to use and utilize their own resources while formulating the Add-On Courses, rather than relying on Outsourcing.
- F. IQAC would send its recommendations to the Principal/TIC for perusal and implementation.
- G. The IQAC would also organise a Staff Training programme - 'Effective Working Style' Conducted by IPE Of Professional Excellence On 25th June 2022 .

  
18/6/22  
Co-ordinator  
IQAC  
Vivekananda College  
Kolkata-700 063



# VIVEKANANDA COLLEGE

(GOVT. SPONSORED) (NAAC ACCREDITED GRADE 'A')

(033) 2497 6824  
(033) 2497 6834

Ref. No.....

Date.....

## Notice

It is hereby notified that Vivekananda College, Thakurpukur, will offer Add-On Courses to All Honours students for the Academic year 2022-23.

Each Department will offer an Add-On Course as per UGC guidelines. Each Course will be structured & overseen by a Course Coordinator, selected from the respective Department. Departmental Heads are requested to take up the matter on an urgent basis.

  
Principal

Principal  
Vivekananda College  
Thakurpukur, Koi-63

**DEPARTMENT OF ZOOLOGY**

A departmental meeting will be held on 08.08.2022 at 12:00 noon to discuss the following Agenda. All teachers are requested to kindly attend the meeting.

Agenda of the meeting:

- i) Introduction of Add-on course on "*Bee keeping and Honey processing*" in Collaboration with Entrepreneurship Development Cell VC and Baruipur Apiculture Industrial Cooperative Society Limited for UG Sem II and UG IV Honours students.
- ii) Introduction of Add-on course on "*Essentials of Research Methodology in Biology*" for PG Sem I Students from the session 2022-2023

HOD

**DEPARTMENT OF ZOOLOGY**

Resolution of the Departmental Meeting held on 08.08.2022

**A) Teachers present in the meeting:**



**B) Minutes of the meeting**

1. In the Departmental meeting dated 08.08.2022 the teachers of the UG & PG Department of Zoology unanimously decided that
  - a. The UG Sem II and UG Sem IV, Honours students would be offered a 30-hour Add-on Course on "**Bee keeping and Honey processing**" in Collaboration with Entrepreneurship Development Cell VC and Baruipur Apiculture Industrial Cooperative Society Limited.
  - b. Another 30-hour Add-on course on "**Essentials of Research Methodology in Biology**" will be offered to PG Sem I students from the Session 2022-2023.
2. It was also decided in the meeting that **Dr. Amal Patra** of Department of Zoology would be the Course Coordinator for the Add-On Course on "**Bee keeping and Honey processing**" for the Academic session 2022-2023 and **Dr. Malabika Bhattacharjee** would be the Course Coordinator for the Add-On Course on "**Essentials of Research Methodology in Biology**"
3. The Course structure of the course on "**Bee keeping and Honey processing**" would be submitted by Dr. Patra and was accepted by all teachers of the department.
4. The Course structure of the course on "**Essentials of Research Methodology in Biology**" would be submitted by Dr. Bhattacharjee and was accepted by all teachers of the department.
5. Certificates would be given to each student at the successful completion of the Course.

To  
THE PRINCIPAL  
Vivekananda College, Thakurpukur  
Kolkata-700063

Date: 1/11/2022

**Subject: PG Add-on Course for session 2022-2023**

**Respected Sir,**

This is for your kind information that for the purpose of Add-on Course preparation from PG Department of Zoology; the Add-on Course being "Essential of Research Methodology In- Biology" the following expenses will be incurred as per the Head mentioned.

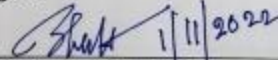
1.	Stationary	Certificates	25@ Rs.10/-	250/-
		Flexi		250
2.	Contingency	Printouts		1000/-
		Xerox		
		Miscellaneous		
TOTAL				1500.00

This is thus to request your kind self to sanction the Rs.1500.00/- for smooth conductance of the Add-On course of PG.

Thus, earnestly soliciting a positive response in this regard

Yours Sincerely,

Regards

  
Dr. Malabika Bhattacharjee  
Associate Professor  
UG & PG Department of Zoology  
Vivekananda College, Kolkata-700063



## Vivekananda College

### Post-Graduate Department of Zoology

#### Add on Course Title: Essentials of Research Methodology in Biology

#### Rationale for Selecting the Course for PG Sem-1 Students

The introduction of "Essentials of Research Methodology in Biology" in the first semester of a postgraduate program serves several important purposes. Below is a rationale outlining the reasons for including this course in the curriculum:

- 1. Foundation for Research Skills:** The course provides a foundational understanding of research methodology, ensuring that students entering the postgraduate program have a strong grasp of the essential research skills needed for advanced studies and future research endeavors.
- 2. Early Exposure to Research Practices:** By introducing research methodology early in the postgraduate program, students gain exposure to research practices from the beginning of their academic journey. This exposure helps them develop a research-oriented mindset and encourages them to integrate research thinking into their coursework.
- 3. Aligning with Advanced Courses:** Research methodology is a critical component for successfully undertaking advanced courses in specialized areas of biology. Early exposure ensures that students are well-equipped with the necessary skills to engage with more complex and specialized subjects later in their program.
- 4. Preparation for Thesis/Dissertation Work:** Calcutta University Postgraduate programs require students to conduct original research for their theses or dissertations in 3<sup>rd</sup> and 4<sup>th</sup> Semester. Introducing research methodology in the first semester prepares students for the independent research work they will undertake later in the program, allowing them to approach their thesis projects with confidence.
- 5. Critical Thinking and Problem-Solving:** Research methodology emphasizes critical thinking and problem-solving skills, which are crucial for students pursuing postgraduate studies. These skills are not only valuable for research but also contribute to a deeper understanding of biological concepts and the ability to analyze complex scientific problems.
- 6. Ethical Considerations:** Understanding the ethical principles of research is vital in any field. By introducing research methodology early, students are sensitized to ethical considerations in scientific research, ensuring responsible and ethical conduct throughout their academic and professional careers.

**Vivekananda College**  
**Post-Graduate Department of Zoology**

Add on Course Title: Essentials of Research Methodology in Biology

**Outline Syllabus**

Course	<b>30 Hour</b>
<b>Module 1: Introduction to Biological Research</b>	<b>2 Hours</b>
<ul style="list-style-type: none"> <li>• Definition and significance of research in biology</li> <li>• Historical context and landmark studies</li> <li>• Overview of contemporary research areas in biology</li> <li>• Ethical considerations in biological research</li> </ul>	
<b>Module 2: Formulating Research Questions and Hypotheses</b>	<b>2 Hours</b>
<ul style="list-style-type: none"> <li>• Developing clear and testable research questions</li> <li>• Constructing hypotheses in biological research</li> <li>• Significance of hypotheses in experimental design</li> </ul>	
<b>Module 3: Experimental Design in Biology</b>	<b>6 Hours</b>
<ul style="list-style-type: none"> <li>• Basics of experimental design</li> <li>• Control groups, variables, and replication</li> <li>• Randomized controlled trials in biology</li> <li>• Field studies and observational research</li> </ul>	
<b>Module 4: Sampling Techniques in Biological Research</b>	<b>4 hours</b>
<ul style="list-style-type: none"> <li>• Overview of sampling methods in ecology and biology</li> <li>• Random sampling, stratified sampling, and systematic sampling</li> <li>• Importance of representative samples</li> <li>• Sample size determination in biological studies</li> </ul>	
<b>Module 5: Data Collection Methods in Biology: A basic conceptual Approach</b>	<b>3 Hours</b>
<ul style="list-style-type: none"> <li>• Laboratory techniques (e.g., PCR, ELISA, microscopy, FACS)</li> <li>• Fieldwork and ecological surveys</li> <li>• Molecular biology techniques (e.g., DNA extraction, sequencing)</li> </ul>	
<b>Module 6: Measurement and Analysis in Biology</b>	<b>5 Hours</b>
<ul style="list-style-type: none"> <li>• Quantitative and qualitative data in biology</li> <li>• Statistical analysis in biological research</li> <li>• Data interpretation and visualization techniques</li> </ul>	
<b>Module 7: Advanced Techniques in Biological Research: A brief in-view</b>	<b>2 Hours</b>
<ul style="list-style-type: none"> <li>• Genomics and proteomics</li> <li>• CRISPR-Cas9 technology</li> <li>• Advanced microscopy and imaging techniques</li> </ul>	
<b>Module 8: Research Proposal and Project Presentation</b>	<b>6 Hours</b>
<ul style="list-style-type: none"> <li>• Developing a research proposal in biology</li> <li>• Effective presentation skills for scientific research</li> <li>• Peer review and constructive feedback</li> </ul>	

**Assessment:**

- Module quizzes and participation and MCQ based Examination

## Vivekananda College

### Post-Graduate Department of Zoology

Add on Course Title: **Essentials of Research Methodology in Biology**

#### FACULTY PLANNER

Course	30 Hours	Faculty
<b>Module 1: Introduction to Biological Research</b>	<b>2 Hours</b>	<b>TN</b>
<ul style="list-style-type: none"> <li>• Definition and significance of research in biology</li> <li>• Historical context and landmark studies</li> <li>• Overview of contemporary research areas in biology</li> <li>• Ethical considerations in biological research</li> </ul>		
<b>Module 2: Formulating Research Questions and Hypotheses</b>	<b>2 Hours</b>	<b>MB</b>
<ul style="list-style-type: none"> <li>• Developing clear and testable research questions</li> <li>• Constructing hypotheses in biological research</li> <li>• Significance of hypotheses in experimental design</li> </ul>		
<b>Module 3: Experimental Design in Biology</b>	<b>6 Hours</b>	<b>MB</b>
<ul style="list-style-type: none"> <li>• Basics of experimental design</li> <li>• Control groups, variables, and replication</li> <li>• Randomized controlled trials in biology</li> <li>• Field studies and observational research</li> </ul>		
<b>Module 4: Sampling Techniques in Biological Research</b>	<b>4 hours</b>	<b>TN &amp; MB</b>
<ul style="list-style-type: none"> <li>• Overview of sampling methods in ecology and biology <b>TN</b></li> <li>• Random sampling, stratified sampling, and systematic sampling <b>MB</b></li> <li>• Importance of representative samples <b>TN</b></li> <li>• Sample size determination in biological studies <b>MB</b></li> </ul>		
<b>Module 5: Data Collection Methods in Biology: A basic conceptual Approach</b>	<b>3 Hours</b>	<b>SMK, TN &amp; MB</b>
<ul style="list-style-type: none"> <li>• Laboratory techniques (e.g., PCR, ELISA, microscopy, FACS) <b>SMK</b></li> <li>• Fieldwork and ecological surveys <b>TN</b></li> <li>• Molecular biology techniques (e.g., DNA extraction, sequencing) <b>MB</b></li> </ul>		
<b>Module 6: Measurement and Analysis in Biology</b>	<b>5 Hours</b>	<b>MB</b>
<ul style="list-style-type: none"> <li>• Quantitative and qualitative data in biology</li> <li>• Statistical analysis in biological research</li> <li>• Data interpretation and visualization techniques</li> </ul>		
<b>Module 7: Advanced Techniques in Biological Research: A brief in-view</b>	<b>2 Hours</b>	<b>MB &amp; SMK</b>
<ul style="list-style-type: none"> <li>• Genomics and proteomics <b>MB</b></li> <li>• CRISPR-Cas9 technology <b>MB</b></li> <li>• Advanced microscopy and imaging techniques <b>SMK</b></li> </ul>		
<b>Module 8: Research Proposal and Project Presentation</b>	<b>6 Hours</b>	<b>MB &amp; TN</b>
<ul style="list-style-type: none"> <li>• Developing a research proposal in biology <b>MB</b></li> <li>• Effective presentation skills for scientific research <b>TN</b></li> <li>• Peer review and constructive feedback <b>MB</b></li> </ul>		

**TN: Dr. Trijit Nanda; MB : Dr. Malabika Bhattacharjee; SMK: Dr. Samita Kundu**