SCHOOL OF STUDIES IN ZOOLOGY

Programmes Offered:

1. M.Sc.
2. M.Phil.

Profile of the Department:

The School of Studies in Zoology was established in 1971 as one of the teaching departments of the Jiwaji University, Gwalior. The mandate of the School is to impart quality education and training to the students and to conduct research in Zoology and interdisciplinary areas leading to M.Sc., M.Phil, Ph.D. and D.Sc. degrees. The School is well known for excellent research work in various fields of Zoology and allied disciplines. More than 35 research projects have been sanctioned to the School by various agencies like UGC, DST, DBT, DAE, DRDO, DRDE, DOE, CSIR, ICMR, ICAR, MPCOST, CCRUM, GTZ (Germany) etc. In recent years, the department has received research grants worth more than two crore of Rupees. A good number of candidates have completed their research work from the School and have obtained D.Sc. (one), Ph.D. (125), and M.Phil (66) degrees. At present more than 40 Research scholars including Post-doctoral (5), Ph.D. (25) and M.Phil. (10) Scholars are working in various fields. A large number of articles and research papers (more than 600) have been published by the teaching staff and Research Scholars of the Department in various national and international journals of repute and some books (10) have been written and edited by Researchers of the School. The School is equipped with good teaching and research facilities including library, computer, internet and networking laboratory, animal bio-diversity laboratory (museum), radiation laboratory, walk-in cold room, tissue culture laboratory, animal house, power supply back-up and sophisticated instruments such as atomic absorption spectrophotometer, liquid scintillation counter, all types of electrophoretic and blotting systems, vacuum concentrator, UV-visible spectrophotometers, high-speed and refrigerated centrifuges, auto-analyzer, ELISA reader, liquid and gas liquid chromatography, gel documentation system, phase contrast microscope, fluorescent microscope and inverted microscope, PCR, cryo-cut and ultra-cut microtomes etc. Recent addition of facilities in the department include UV-visible micro-plate spectrophotometer-cum ELISA reader, & microplate washer, trinocular stereozoom microscope, ultrasonic homogenizer, trinocular phase contrast and bright field research microscope and lyophilizer.

Besides teaching and research, the School is also involved in popularization of science and extension activities in the fields of wild life conservation, beekeeping, viernicomposting & organic farming.

On successful completion of first phase (5 years) of Departmental Research Support under Special Assistance Programme (DRS-SAP) with thrust area Aquatic Biology, the University Grants Commission, New Delhi has sanctioned DRS-SAP phase II programme for five years with thrust area Biodiversity Characterization and Environmental Impact. The School has also received funds under Improvement of Science & Technology Infrastructure (FIST) scheme from Department of Science & Technology (DST), New Delhi. University Grants Commission, New Delhi has sanctioned a special infrastructural grant of Rs. 40 lakhs, in two phases, for strengthening of teaching and research activities. Five Research Fellowships, under scheme of research fellowships for meritorious students in identified SAP departments, and three research fellowships, under the scheme of Rajiv Gandhi fellowships for SC/ST candidates, have been sanctioned by UGC, New Delhi.

The faculty members and Research Fellows of the Department have visited several countries for research work, training and for participation in conferences, seminars, symposia, workshops and other scientific and academic events. Several awards and achievements have been given by national and international organizations to the faculty members and Research Fellows. The alumni of the Department are well placed in India and abroad, and some of them have entered in entrepreneurship and running their own company. In 2009-10, nine candidates including M.Sc. students and Research Scholars were selected for recruitment as Trainee Executives by Pest Control (India) Pvt. Ltd. (PCI) in a campus selection programme organized in the Department.

1. **M.Sc. : (Two year / Four Semester )**

   **Eligibility**: Graduation with 50% marks with Zoology as one of the subjects.

   **Available Seats**: Open = 30

   **Payment**: 10

   **NRI**: 06

   **Mode of Selection**: On the basis of the Index based on the merit in qualifying examinations.
**Course Structure:**

<table>
<thead>
<tr>
<th>I – Semester</th>
<th>II – Semester</th>
<th>III – Semester</th>
<th>IV – Semester</th>
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<tbody>
<tr>
<td>Structure &amp; Function of Invertebrates</td>
<td>Population Ecology &amp; Environmental Physiology</td>
<td>Gamete Biology, Genes, Development &amp; Differentiation</td>
<td>Eco-toxicology</td>
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<tr>
<td>Quantitative Biology, Biodiversity &amp; Wild Life Biology</td>
<td>Tools &amp; Techniques in Molecular Cell Biology &amp; Genetics</td>
<td>Zool. 303: Specialization*</td>
<td>Zool. 304: Specialization*</td>
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<tr>
<td>Biomolecules &amp; Structural Biology Practical – 1</td>
<td>Practical</td>
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<td>Practical – 2</td>
<td>Practical – 4</td>
<td>Practical</td>
<td>Practical – 8</td>
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*Any one of the following specializations is to be opted by each student: (A) Entomology, (B) Endocrinology, (C) Cell Biology and (D) Aquatic Ecology & Aquaculture*

1. **M.Phil. Zoology:** (One year / Two semesters)

   **Eligibility:** M.Sc. Zoology with 55% marks.

   **Available seats:** OPEN =10  NRI = 02

   **Mode of Selection:** On the basis of merit in test conducted by the university.

2. **Course Structure:**

   **I – Semester**
   - MPHZ-101: Research Principles & Methodology
   - MPHZ-102: Instrumentation

   **II – Semester**
   - Optional Paper MPHZ-201: Any one of the following
     - (A) Fish Physiology, (B) Insect Physiology, (C) Reproductive Biology, (D) Environmental Toxicology, (E) Wildlife Biology & Management., (F) Neurobiology, (G) Molecular & Human Genetics, (H) Aquatic Biology & Fisheries
     - MPHZ-201: Dissertation based on project work

3. **Ph.D.:** Area of Research for Ph.D Degree

   - Limnology & Pisciculture: Prof. D N Saksena
   - Pigment Cell Biology: Prof. Ajai Jain
   - Insect Physiology & Biochemistry: Prof. O P Agrawal
   - Neurobiology & Aging: Prof. I K Patro
   - Matal Toxology & Hepatoprotection: Prof. Sangeeta Shukla
   - Cytogenetics & Molecular Biology: Prof P K Tiwari
   - Wild life conservation & Biodiversity: Prof. R J Rao

4. **Fees for the course:** Open Seat

<table>
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<tr>
<th>Course</th>
<th>I Semester</th>
<th>II Semester</th>
<th>III Semester</th>
<th>IV Semester</th>
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<tbody>
<tr>
<td>Prof.</td>
<td>Prof. D N Saksena</td>
<td>Prof. Ajai Jain</td>
<td>Prof. O P Agrawal</td>
<td>Prof. I K Patro</td>
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<tr>
<td>Course</td>
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<td>2nd Sem</td>
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<tr>
<td>M.Sc. Zoology</td>
<td>Rs. 09915.00</td>
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<td>M.Phil.</td>
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<td>Rs. 17525.00</td>
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Payment seat: M.Sc. Rs. 7000/- per semester additional to the fees for Open Seat