

## Departmental Profile (Zoology)

Department			<b>ZOOLOGY</b>
Department Profile	College Vision and Mission		<p><b>VISION-</b></p> <ul style="list-style-type: none"> <li>-Education for all</li> <li>- Education as a means of elimination of poverty.</li> <li>- Education as means of social inclusiveness and communal harmony.</li> </ul> <p><b>MISSION-</b></p> <ul style="list-style-type: none"> <li>-To provide advance quality education and knowledge to all, specially to the deprived section of the society</li> <li>- To cater for all-round development of the students including academic sports and cultural development</li> <li>- To develop a sense of community feeling among the students</li> <li>- To develop social awareness and social commitment in the students</li> <li>- To develop leadership and proactive qualities among the students so as to be competitive and successful in career building</li> </ul> <p><b>OBJECTIVES</b></p>
	Departmental Goals/Aims/Objective	must be streamline with the College Vision and Mission	<p><b>We will Improve the Teaching and try to use advanced methods of teaching as per the University syllabus in concern. Teaching incorporated with ICT Teaching, charts, Models, Class Seminars, Study Tours, Field visit, Small projects etc. which could be applicable to the society. Teaching also includes survey projects which percolates the Classroom knowledge to the society. Recently our department has started one month Certificate course on “fresh Water Aquaculture” (Fish Culture) as carrier oriented Program for Final year students of all faculties and farmers in the area.</b></p>

	Introduction		Department of Zoology was started in 1971 under the leadership of Dr. Mrs. Laxmi Nathan. Initially the college had only pre university and B.Sc. I classes. From 1975, B.Sc. II classes were also started. Later on separate Zoology lab was constructed on the first floor of college building.
	Brief History		Department of Zoology was started in 1971 under the leadership of Dr. Mrs. Laxmi Nathan. Initially the college had only pre university and B.Sc. I classes. From 1975, B.Sc. II classes were also started. Later on separate Zoology lab was constructed on the first floor of college building. In 1978, Dr. Dubewar was appointed as a lecturer and he left the Department in 1980. Dr. R.C. Dabhade was appointed in 1982 as a lecturer in place of Dr. Dubewar. The UGC vocational Degree course of Industrial fish and fisheries was introduced in the academic year 1996-97. S.K.Porwal college, Kamptee has the distinction of being selected as the only college by the UGC to introduce this course in the whole of central India in 1996. Dr. Mrs. Laxmi Nathan was retired due to superannuation of age in 2001 and Dr. R.C. Dabhade took over the charge of the Department of Zoology as well as the co-ordinator of Industrial Fish and Fisheries Department. Add on Certificate Course in Aquaculture under the Jeewan Shikshan Abhiyan of RTM Nagpur University, Nagpur was started in 2007-08 under the co-ordinatorship of Dr. R.C. Dabhade. Industrial fish and fisheries course discontinued due to lack of students admission in the year 2011. Mr. N.P. Meshtram was appointed as a lecturer in this Dept. in 2003. Dr. R.C. Dabhade was retired on 31 <sup>st</sup> Oct. 2014 and Mr. N.P.Meshram took over the charge of the Department of Zoology. Dr..Mrs A.V. Ramteke is appointed as assistant professor on dated 17-11-2015.
	Facilities		One zoology Laboratory, Internet connectivity, departmental Library
	Departmental Achievements and Activities		<b>More than 80% result of Final year from last five year.</b> <b>Bridge Course Lectures</b> <b>Remedial Teaching</b> <b>Field Visits</b> <b>Study Tours</b> <b>Group Discussions</b> <b>Unit Tests</b> <b>Science Exhibition</b> <b>Tree plantation</b> <b>Organized awareness programmes in schools and villages about conservation and protection of environment</b> <b>Students involved in Colligate and Intercollegiate Activities like, essay, poster, Drawing,</b>

			<b>Rangoli, Sports and games, NSS and NCC photography, Debate, quiz etc competitions.</b>
	Best Practices of the department		<b>1.Visit to fish markets to study fishes in the area, food value, classification, economy</b> <b>2.Visit to farmlands/cropfield to study pests and other diseases on crops in the area.</b> <b>3.Field visit to study rainy season diseases in the community.</b> <b>4.Aquarium manufacturing by final year students.</b> <b>5.One month Certificate course in Fresh water Fisheries (Aquaculture) for final year students and farmers.</b>
Academic Courses / Programmes	Program- <b>B.Sc 6 semester degree course (UG)</b> Group Available- <b>Chemistry, Botany, Zoology</b>	Course Outcome- <b>Course Outcomes and Programme Specific Outcomes for B.Sc Zoology Degree Course 2022-23</b> S K Porwal College of Arts and Science and Commerce, Kamptee. <b>First Semester</b> <b>Paper – I : Life and Diversity of Animals - Nonchordates (Protozoa to Annelida)</b> CO1. Familiar with the non-chordate world that surrounds us. CO2. Able to appreciate the process of evolution (unicellular cells to complex, multicellular organisms) CO3. Able to identify the invertebrates and classify them up to the class level with the basis of systematic CO4. Understand the basis	Syllabus Link <a href="https://www.nagpuruniversity.ac.in/links/Syllabus/UG/Faculty_of_Science/Syllabus_for_B.Sc_Zoology_semester_Pattern_2013.pdf">https://www.nagpuruniversity.ac.in/links/Syllabus/UG/Faculty_of_Science/Syllabus_for_B.Sc_Zoology_semester_Pattern_2013.pdf</a>

		<p>of life processes in the non-chordates and recognize the economically important invertebrate fauna.</p> <p><b>Paper – II : Environmental Biology</b></p> <p>CO1. Understanding on the basic theories and principles of ecology.</p> <p>CO2. Learn current environmental issues based on ecological principles.</p> <p>CO3. Gain critical understanding on human influence on environment.</p> <p>CO4. Positive attitude towards Biodiversity conservation.</p> <p><b>Practicals :- Paper I and II</b></p> <p>CO1. Experience in anatomy through simple ICT dissections</p> <p>CO2. Aware about economically important specimen (preserved)</p> <p>CO3. Familiar with Scientific method</p> <p>CO4. Recognise the importance of conservation</p> <p><b>Second Semester</b></p> <p><b>Paper – III : Life and Diversity of Animals – Nonchordates (Arthropoda to Hemichordata)</b></p>	
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		<p>CO1. Familiar with the non-chordate world that surrounds us.</p> <p>CO2. Able to appreciate the process of evolution (unicellular cells to complex, multicellular organisms)</p> <p>CO3. Able to identify the invertebrates and classify them up to the class level with the basis of systematic</p> <p>CO4. Understand the basis of life processes in the non-chordates and recognize the economically important invertebrate fauna.</p> <p><b>Paper – IV: Cell Biology</b></p> <p>CO1. Develop deeper understanding of what life is and how it functions at cellular level.</p> <p>CO2. Describe cellular membrane structure and function, fine structure and function of cell organelles.</p> <p>CO3. Perform a variety of molecular and cellular biology techniques</p> <p><b>Practicals :- Paper III and IV</b></p> <p>CO1. Experience in anatomy through simple ICT dissections</p> <p>CO2. Aware about</p>	
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		<p>economically important specimen (preserved)  CO3. Familiar with Scientific method</p> <p><b>Third Semester</b>  <b>Paper – V : Life and Diversity of Animals - Chordates (Protochordata to Amphibia)</b></p> <p>CO1. Describe the diversity in form, structure and habits of vertebrates  CO2. Explain general characteristics and classification of different classes of vertebrates  CO3. Experience in anatomy through simple ICT dissections</p> <p><b>Paper – VI : Genetics</b></p> <p>CO1. Appreciate the contribution of great scientists  CO2. Distinguish Classical Genetics and Molecular Genetics  CO4. Familiar with the tools and techniques of Genetics</p> <p><b>Practicals :- Paper V and VI</b></p> <p>CO1. Experience in anatomy through simple ICT dissections  CO2. Aware about economically important</p>	
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		<p>specimen (preserved)</p> <p>CO3. Familiar with Scientific method</p> <p>CO4. Ability to observe chromosomal arrangements during cell division</p> <p>CO5. Distinguish different chromosomal aberrations in man</p> <p><b>Fourth Semester</b></p> <p><b>Paper - VII : Life and Diversity of Animals – Chordates (Reptilia, Aves and Mammals)</b></p> <p>CO1. Inculcate in the student a fascination for nature and learn the bionomics of vertebrates.</p> <p>CO2. Learn the evolution, hierarchy and classification of different classes of chordates</p> <p>CO3. Get an overview of the morphology and physiology of typical examples.</p> <p>CO4. Familiarise the adaptations and economic importance of specific vertebrates.</p> <p><b>Paper - VIII : Molecular Biology and Immunology</b></p> <p>CO1. Understanding on the details of the basic unit of</p>	
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		<p>life at the molecular level.</p> <p>CO2 Explain the fine structure and functions of cell organelles.</p> <p>CO3. Introduce the new developments in molecular biology and its implications in human welfare.</p> <p>CO4. Expose the learners to the emerging field of research in Molecular Biology</p> <p>CO5.Appreciate the contribution of great immunologists</p> <p>CO6.Distinguish Innate immunity and Acquired Immunity</p> <p>CO7.Understand the importance of Immune system</p> <p><b>Practicals :- Paper VII and VIII</b></p> <p>CO1.Handling of Lab Instruments and Equipments</p> <p>CO2.Understand the importance of Bio molecules</p> <p>CO3. Understand the working principle of Lab Instruments and equipments.</p> <p>CO4 .Ability to perform routine blood analysis</p> <p>CO5.Develop skill in simple biochemical laboratory procedures</p>	
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		<p><b>Fifth Semester</b>  <b>Paper - IX : General Mammalian Physiology –I</b>  CO1.Understand the function of various systems  CO2.Apply the knowledge to lead a healthy life  CO3.Familiar with various biochemical pathways  CO4. Compare the functioning of organ systems across the animal world.  CO5. Learn more about human physiology and anatomy.</p> <p><b>Paper –X : Applied Zoology-I (Aquaculture and Economic Entomology )</b>  CO1. Identify various methodology and perspectives of applied branches of zoology for the possibilities of self-employment.  CO2. Learn the basic principles involved in the culture and breeding of common edible and ornamental fishes of India and the art of aquarium keeping.  CO3.Aware the economic importance of invertebrates with the special reference to</p>	
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		<p>insect pest and their control.</p> <p><b>Practicals :- Paper IX and X</b></p> <p>CO1. Experience in anatomy through simple ICT dissections</p> <p>CO2. Familiarize organ system.</p> <p>CO3.Aware about the structure and function of each system in the human body.</p> <p>CO4. Ability to carry out routine clinical analysis of blood and urine</p> <p>CO5.An understanding of the potential roles of biological research in aquaculture (diseases, nutrition, parasitology,</p> <p>CO6.Knowledge of the diversity and research needs of local fisheries and aquaculture</p> <p>CO7.Knowledge of fish harvesting techniques and selected research methods</p> <p>CO8.Aware about economically important specimen (preserved)</p> <p>CO9.To be able to examine insects deeply within a biological level of analysis and compare strategies used by different groups</p> <p><b>Sixth Semester</b></p>	
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		<p>collect various Biological data</p> <p>CO7.Demonstrate an understanding of the central concepts of modern statistical theory</p> <p>CO8.Select from, use, and interpret results of, the principal methods of statistical inference and design</p> <p><b>Practicals :- Paper XI and XII</b></p> <p>CO1. Experience in anatomy through simple ICT dissections</p> <p>CO2. Familiarize organ system specially Endocrine system.</p> <p>CO3.Aware about the structure and function of each system in the human body.</p> <p>CO4.Familiarise knowledge of conventional biotechnological procedures</p> <p>CO5.Recognise the importance of various databases</p> <p>CO6.Skill in observing and to some extent in analysing various Biological Data</p> <p>CO7.Introduce the commonly used computational, statistical and analytical</p>	
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		<p>approaches to post genomic analysis and make meaningful predictions</p> <p><b>Program specific Outcomes:</b></p> <p>PSO1. Identify and list out common animals</p> <p>PSO2. Explain various physiological changes in our bodies</p> <p>PSO3. Analyze the impact of environment on our bodies</p> <p>PSO4. Understand various genetic abnormalities</p> <p>PSO5. Develop respect for nature</p> <p>PSO6. Explain the role and impact of different environmental conservation programmes</p> <p>PSO7. Identify animals beneficial to humans</p> <p>PSO8. Identify various potential risk factors to health of humans</p> <p>PSO9. Explain the importance of genetic engineering</p> <p>PSO10. Use tools of information technology for all activities related to zoology</p> <p>PO11. Enable the learners to take certification of Bachelor's degree in Zoology.</p>	
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Opportunities	PG Certifications Diploma PG Any other		<b>Students can take admission in PG courses.</b> <b>Students can take admission in pathology courses, Paramedical courses.</b>
Faculties	Head – <b>NITIN PURUSHOTTAM MESHARAM</b> Other faculty- <b>DR. Mrs A V RAMTEKE, Assistant Professor</b> Other Staff- <b>Supporting Staff- Shri.Sachin Sayam, Shri. Rajan Meshram</b>		<b>Message from Head of the Department –</b> Dear Friends, Aristotle is regarded as the father of zoology because of his valuable contributions in this field. Charles Darwin (Natural selection) and Gregor. John. Mendel (Inheritance) etc. greatly advanced the field. <b>Zoology</b> is the branch of science which deals with the studies of animals and its life, biosystematics, genetics etc. Department of Zoology in our college was started in 1971 under the leadership of Dr. Mrs. Laxmi Nathan. Initially the college had only pre university and B.Sc. I classes. From 1975, B.Sc. II classes were also started. Later on separate Zoology laboratory was constructed on the first floor of college building. B. Sc. Course, At present (2022 - 23) there are 150 students studying in Zoology department at UG level. Out of total strength nearly 30% students are boys and 70% are girls. Our students take part in various collegiate and intercollegiate competitions, co-curricular and extracurricular activities. The Zoology Department has excellent teaching facilities including well-equipped laboratory, Internet facility, Museum specimens of different classes for systematic and ecological study, charts, slides and educational aids. All said subjects are taught by lecture and practical work. The practical work is mainly in the laboratory, but there are some opportunities to carried out some practicals at Fields. Our view is to impart the curriculum Knowledge to the society through students of zoological society. The members of department penned books, conduct research and published research papers in various renowned journals.

	Retired staff of the department with period and their contribution to the department		<b>Dr. Mrs. Laxmi Nathan-1971 to 2001.</b> <b>Dr. Dubewar- 1978 to1980</b> <b>Dr. R.C. Dabhade-1982 to2014</b>
	Approved Certificate Courses and Vocational Courses		<b>One Month Certificate Course in FRESH WATER AQUACULTURE (Fish Culture)</b> <b>Syllabus-</b> <p style="text-align: center;"><b>SYLLABUS</b></p> <p style="text-align: center;"><b>S K Porwal College of Arts and Science and Commerce, Kamptee</b></p> <p style="text-align: center;"><b>1 Month Certificate Course</b></p> <p style="text-align: center;"><b>Fresh water Aquaculture [ Fish Culture]</b></p> <p><b>Unit I :- Fish Aquaculture ( 9 periods )</b></p> <ol style="list-style-type: none"> <li>1) Selection of soil and Construction of Pond</li> <li>2) Nursery, Rearing and Stocking Ponds</li> <li>3) Aquatic Weeds and its management</li> <li>4) Study of parameters- ph, BOD, CO, Alkalinity, Hardness</li> <li>5) Manuring and Liming of Pond</li> <li>6) Food and Feeding of Fingerlings and Adults</li> <li>7) Fish Diseases and its Management</li> <li>8) Gears and Crafts in Freshwater Aquaculture</li> <li>9) Food Value and Marketing</li> </ol> <p><b>Unit II :- Aquarium Management ( 9 periods )</b></p> <ol style="list-style-type: none"> <li>1) Fabrication of an Aquarium</li> <li>2) Setting up and maintenance of aquarium</li> <li>3) Aerators and Filters</li> <li>4) Live Bearers aquarium fishes</li> </ol>

			<p>5) <b>Egg layers aquarium fishes</b>  6) <b>Parental Care</b>  7) <b>Decorative Material and Ornaments</b>  8) <b>Aquarium fish food and feeding</b>  9) <b>Marketing</b></p> <p><b>PRACTICALS</b> <span style="float: right;"><b>(12 periods )</b></span></p> <p>1) <b>Study of Planktons and aquatic Weeds in Pond</b>  2) <b>Analysis of ph, BOD, CO, Alkalinity, Hardness of water</b>  3) <b>Netting practices</b>  4) <b>Preparation of fish food and Doses</b>  5) <b>Fabrication setting up and Maintenance of an aquarium</b>  6) <b>Classification of an aquarium fishes</b></p> <p><b>STUDY TOUR :- Study Tour of Chinese Hatchery Breeding centre/fish farm</b></p>
Research For each Teacher Separately	Research Profile of Department		<p>NITIN P MESHRAM  Head of Department</p> <p>Ph.D Topic-  <b>STUDY ON INTERSTITIAL CELLS IN THE OVARIES OF THREE SPECIES OF INDIAN BATS. ROUSETTUS LESCHENAULTI, MEGADERMA LYRA LYRA AND HIPPOSIDEROS SPEORIS</b>  Date of Ph.D Award-25/05/2022  <b>Specialization-Fish and Fisheries</b>  Dr. Mrs. A V RAMTEKE  Assistant Professor  <b>Specialization-General mammalian Physiology</b>  Ph.D Topic-<b>Studies on the tongue of some species of Indian bat.</b>  Date of Ph.D Award-3/12/2011</p>
	Publications		NITIN P MESHRAM, Head of Department



			<p>Total research paper published-19  In international Journal-15  In National Journal-4  1 book penned with state level publisher</p> <p>Dr. Mrs. A V RAMTEKE  Assistant Professor  Total research paper published-17  In international Journal-9  In National Journal-8  2 chapters in book at state level</p>
Admissions and Results	Students Strength	Year wise strength / See table bellow	
	Result statistics	See table bellow	
	Students Progression	See table bellow	
Students	Students Achievements Placements of the students if any		<p><b>More than 80% result of Final year from last five year.</b>  <b>Students involved in Colligeate and Intercollegiate Activities like, essay, poster, Drawing, Rangoli, Sports and games, NSS and NCC photography, Debate, quiz etc competitions and secure Ist and II prizes .</b>  <b>Students Placements-</b></p> <ol style="list-style-type: none"> <li>1. Ku. Khushbu Varma-BDA Healthcare PVT LTD, Nagpur- 2017</li> <li>2. Ku. Smruti Murkute-Western coalfield LTD, Nagpur-2019</li> <li>3. Mr. Takshit Kadbe- South Central Railway, Secunderabad, Telangana-2019</li> </ol>
	Student Committees		<b>Zoological Society</b>
News and Events	Events, and Activities, etc Invited lecturers		<p><b>Invited Lectures/Guest Lectures-06</b></p> <ol style="list-style-type: none"> <li>1. Beekeeping and Its Application in Agriculture-KVIC-CSBR-20/05/2017</li> <li>2. Beekeeping and cross pollination-KZS College, Bramhani-30-10-2017</li> <li>3. Sublethal Effect of Nickel Nanoparticles on The Liver of Fingerlings of Fish Labeo Rohita. Hislop College-03/02/2018</li> <li>4. Rapid Growth in Global Population-Taywade College, Koradi-2018</li> </ol>

			5. Conservation of Honey Bee and its application in the Farmland. 20/05/2019 6. Biodiversity and its Conservation-Vidhi Seva Samiti, Bhandara- 22/05/2021
Contacts			<b>Nitin P meshram, Head of Department- 9922671332</b> <b>Dr. Mrs. A V Ramteke, Assistant Professor- 7057624600</b>
Photo gallery			

#### Guest speakers

Name of the Guest Speakers	Topic Covered	Date	Number of Students Attended	Outcome
<b>Dr. R S Bagade</b>	<b>Future After B Sc graduation</b>	<b>24-03-2017</b>	<b>21 students</b>	<b>Information about opportunities after completion of degree.</b>
<b>Dr. Arun. A Deore</b>	<b>SICKLE CELL ANAEMIA - A SOCIAL ISSUE.</b>	<b>26-04-2019</b>	<b>50 students</b>	<b>Students took information about disease and its social distribution.</b>
<b>Dr. Zeenat Kashmiri</b>	<b>Vermicomposting</b>	<b>22-07-2021</b>	<b>150 Students</b>	<b>Create self-employments</b>
<b>Dr. Pravin Meshram</b>	<b>Air Pollution- Sources, Impact and Mitigation Measures</b>	<b>10-08- 2021</b>	<b>31 students</b>	<b>Create Social awareness among students about environment and its protection</b>
<b>Dr. Suresh Masram</b>	<b>DNA SEQUENCING</b>	<b>14-08-2021</b>	<b>84 students</b>	<b>Create advanced Scientific approach among students</b>

### Student Strengths

Year	Course			Intake Capacity	Eligibility	Link to syllabus
	B Sc Part I	Part II	Final			
2016-2017	62	57	21	70	12 <sup>th</sup> pass	
2017-2018	66	36	24			
2018-2019	66	51	25			
2019-2020	64	50	26			
2020-2021	58	56	80			
2021-2022	45	51	55			

### Student Progression

Year	PG Diploma	PG Degree	Other Courses	
2016-2017		33%		
2017-2018		38%		
2018-2019		40%		
2019-2020		20%	1 Student-MBA	
2020-2021		20%		
2021-2022		40%	MBA, D.Farm, D.Edu	

Result Analysis for Department

Year	Number of Student Admitted in batch		App eared in In Final Year	Number in Final Years		Number of Students in final Year		Drop out ratio	College Result in Percent age	Univ ersity Result in Percent	Number of Students in			
	Fir st Year	Final year			B oy s	Gir ls	Pass ed				Fail ed			
2016-2017	62	21	21	06	15	19	02		90.47%			15	04	
2017-2018	66	24	24	06	18	22	02		91.66%			16	06	
2018-2019	66	25	25	02	23	24	01		96%			20	04	
2019-2020	64	26	26	04	22	26	00		100%			20	06	
2020-2021	58	80	80	10	70	79	01		98.79%			60	19	
2021-2022	45	55	53		43	10	02		96.22%			40	13	

Faculties

	Name	Specialisation	Area of Research		
Head	Nitin P meshram	<b>Fish and Fisheries</b>	Histology and Histochemistry of Bats Ovaries		
Faculties	Dr. Mrs. A V Ramteke	<b>General mammalian Physiology</b>	Histology and Histochemistry of Bats Tongue		
Ex-Head	Name	Duration			
	<b>Dr. Mrs. Laxmi Nathan</b> <b>Dr. R C Dabhade</b>	<b>1971 to 2001</b> <b>1982 to 2014</b>			
Ex-Faculties	<b>Dr. Dubewar</b>	<b>1978 to 1980</b>			