



# ST. ALOYSIUS COLLEGE(AUTONOMOUS), JABALPUR

Reaccredited 'A+' Grade by NAAC(CGPA:3.68/4.00)

College with Potential for Excellence by UGC

DST-FIST Supported & STAR College Scheme by DBT

## Faculty of Science

Bachelor of Science (B.Sc.)

**SUBJECT:ZOOLOGY**

B.Sc. I Semester

Paper-Elective

**ANIMAL DIVERSITY: NON-CHORDATA**

### Course Outcomes

S. No.	Course Outcomes	
	<b>Upon completion of the course students should be able to:-</b>	
01	Learn about the importance of systemic, taxonomy and phylogeny to get a concrete idea of evolution of non-chordate phyla.	U
02	Understand the various morphological, anatomical structures and functions of animals of different phyla.	U
03	Get the knowledge about economic, ecological and medical significance of various animals in human welfare.	Apply
04	Understand the important parasites and their control measures.	U

### Credit and Marking Scheme

	Credits	Marks		Total Marks
		Internal	External	
<b>Theory</b>	3	40	60	<b>100</b>
<b>Practical</b>	1	40	60	<b>100</b>
<b>Total</b>	<b>4</b>		<b>200</b>	

### Evaluation Scheme

	Marks	
	Internal	External
<b>Theory</b>	3 Internal Exams each of 20 Marks (During the Semester) (Best 2 will be taken)	1 External Exams (At the End of Semester)
<b>Practical</b>	3 Internal Exams (During the Semester) (Best 2 will be taken)	1 External Exams (At the End of Semester)

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## Content of the Course

### Theory

No. of Lectures (in hours per week): 2 Hrs. per week

Maximum Marks: 60

Total No. of Lectures: 45 Hrs.

Units	Topics	No. of Lectures
I	<p><b>Taxonomy, Phylogeny and Protozoa</b></p> <p><b>1. Taxonomy</b></p> <p>1.1 Elementary Knowledge of Zoological Nomenclature and International Code</p> <p>1.2 Outline Classification of Animal Kingdom up to Phylum of acoelomate and coelomate non-chordates according to Parker and Haswell 7<sup>th</sup> edition</p> <p><b>2. Phylogeny</b></p> <p>2.1 Definition and Examples</p> <p><b>3. Protozoa</b></p> <p>3.1 Phylum Protozoa: General characters of the phylum and outline classification up to classes with distinctive characters and suitable examples</p> <p>3.2 Structure, life history and pathogenicity of malarial Parasite (<i>Plasmodium vivax</i>)</p> <p>3.3 Protozoa and disease - Amoebiasis, Trypanosomiasis, Leishmaniasis &amp; Trichomoniasis</p> <p><b>Keywords/Tags:</b> ICZN, Classification, Protozoa, Plasmodium,</p>	11
II	<p><b>Porifera, Coelenterata</b></p> <p><b>1. Porifera</b></p> <p>1.1 Phylum Porifera: General characters of the phylum and outline classification up to classes with distinctive characters and suitable examples</p> <p>1.2 Type study of Sycon Morphology, Reproduction &amp; Development</p> <p>1.3 Canal system of Sponges</p> <p><b>2. Coelenterata</b></p> <p>2.1 Phylum Coelenterata: General characters of the phylum and outline classification up to classes with distinctive characters and suitable examples.</p> <p>2.2 Type Study of Obelia -Morphology, Life cycle</p> <p>2.3 Corals and Coral reef formation</p> <p><b>Keywords/Tags:</b> Classification, Porifera, Sycon, Coelenterata, Obelia, Coral reefs</p>	11

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III	<p><b>Platyhelminthes, Nematelminthes, Annelida</b></p> <p><b>1. Platyhelminthes</b></p> <p>1.1 Phylum Platyhelminthes: General characters of the phylum and outline classification up to classes with distinctive characters and suitable examples</p> <p>1.2 External morphology, larval forms and life history <i>Fasciola hepatica</i> (Liver fluke)</p> <p><b>2. Nematelminthes</b></p> <p>2.1 Phylum Nematelminthes: General characters of the phylum and outline classification up to classes with distinctive characters and suitable examples</p> <p>2.2 Pathogenic symptoms of Nematodes and diseases – Ascariasis, Trichuriasis, <i>Enterobiasis</i>, <i>Filariasis</i> &amp; <i>Trichinosis</i> (Trichinellosis)</p> <p><b>3. Annelida</b></p> <p>3.1 Phylum Annelida: General characters of the phylum and outline classification up to classes with distinctive characters and suitable examples</p> <p>3.2 Type study of Earthworm (<i>Pheretima</i>)</p> <p>3.3 Structure and significance of Trochophore larva</p> <p><b>Keywords/Tags:</b> Classification, Platyhelminthes, Liver fluke, Nematode disease, Annelida, <i>Pheretima</i>, Trochophore</p>	10
IV	<p><b>Arthropoda, Mollusca, Echinodermata, Hemichordata</b></p> <p><b>1. Arthropoda</b></p> <p>1.1 Phylum Arthropoda: General Characters of the phylum and outline classification up to classes with distinctive characters and suitable examples</p> <p>1.2 Type study of Prawn</p> <p>1.3 Insects as a vector of human disease - <i>Culex</i>, <i>Aedes</i>, Tsetse fly &amp; Housefly.</p> <p><b>2. Mollusca</b></p> <p>2.1 Phylum Mollusca: General characters of the phylum and outline classification up to classes with distinctive characters and suitable examples</p> <p>2.2 Type study of <i>Pila</i></p> <p><b>3. Echinodermata</b></p> <p>3.1 Phylum Echinodermata: General characters of the phylum and outline classification up to classes with distinctive characters and suitable examples</p> <p><b>4. Hemichordata</b></p> <p>4.1 Phylum Hemichordata: General characters of the phylum hemichordate and relationship with non-chordates and chordates</p> <p><b>Keywords/Tags:</b> Classification, Arthropoda, Prawn, Crustacea larva, Insects, Mollusca, <i>Pila</i>, Glochidium, Classification of Echinodermata, and Hemichordata,</p>	13

References



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## Text Books, Reference Books and Other Resources:-

### Suggested readings

1. Parker, J, Haswell, WA, "A Text Book of Zoology". VII edition, Vol. I & II, Low Price Publications, Delhi, 1990.
2. Barnes, RD, "Invertebrate Zoology", VII Edition, Cengage Learning, India, 2006.
3. Pechenik, JA, "Biology of the Invertebrates" McGraw-Hill Educations, VII Edition, 2015.
4. Sedgwick, A, "A Students Text Book of Zoology", Vol.I. II & Vol. III., Low Price Publications, Delhi, 1990.
5. Dhami and Dhami, "Invertebrate Zoology" R., Chand & Co., India, 2009.
6. Jordan and Verma, "Invertebrate Zoology," S. Chand & Company. New Delhi, 2013.
7. Agarwal, VK, "Zoology for Degree Students: Non-Chordata", S Chand & Company, 2017.
8. Kotpal, R, "Modern Text Book of Invertebrates", Rastogi Publications, Meerut, 2017
9. Kotpal, R. "Protozoa to Echinodermata (Phylum Series)", Rastogi Publications, Meerut, 2017.
10. <https://zoologylearningpoint.wordpress.com>
11. <https://zoologyresources.com>

### Suggested equivalent online courses:

1. Swayam Online Courses  
<https://storage.googleapis.com/uniquecourses/online.html>
2. National Digital Library  
<https://ndl.iitkgp.ac.in/>
3. e-PG Pathshala (MHRD) Portal(<https://epgp.in/libnet.ac.in/>)
4. Animal diversity <https://swayam.gov.in/courses/5686/animal-diversity>  
Advances in Animal Diversity, Systemics and Evolution  
(<https://swayam.gov.in/courses/5686-zoology>)
5. Science Direct Open Access Content  
(<https://www.sciencedirect.com/book/9781843342038/open-access>)