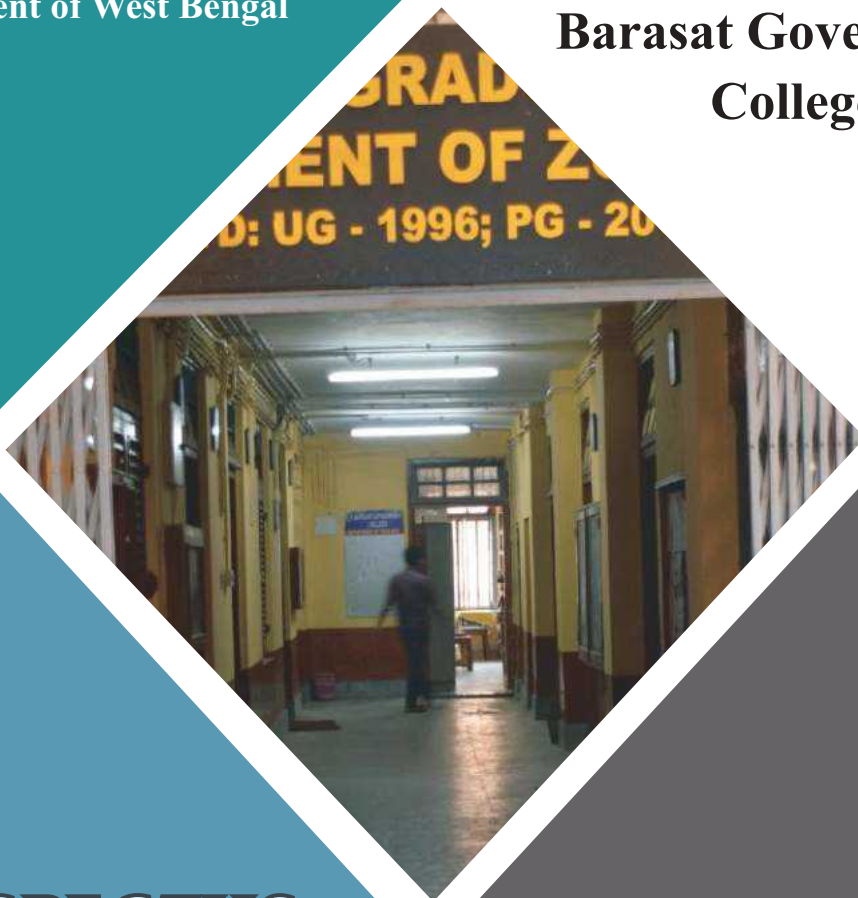




Government of West Bengal



Barasat Government
College



PROSPECTUS

(for Post Graduate Course 2019-20)

Post Graduate Department
of

ZOOLOGY

Affiliated to The West Bengal State University
NAAC Accredited Grade - A & DST-FIST Awarded

PERSONNEL

ADMINISTRATIVE

Dr. Debesh Roy, WBSES

Principal, Barasat Govt. College, Barasat

ACADEMIC

Dr. Sumana Saha, WBES

Associate Professor, Head & Member, PGBOS

Area of Specialization / Field of Research
Entomology, Taxonomy, Biodiversity, Ecology

Dr. Jayati Ghosh, WBES

Associate Professor & Invited Member, PGBOS

Area of Specialization / Field of Research
Parasitology, Microbiology

Dr. Sanjoy Podder, WBES

Assistant Professor & Invited Member, PGBOS

Area of Specialization / Field of Research
Immunology, Ecology, Environmental Biology

Dr. Enamul Haque, WBES

Assistant Professor & Invited Member, PGBOS

Area of Specialization / Field of Research
Immunology

Dr. Srikanta Guria, WBES

Assistant Professor & Invited Member, PGBOS

Area of Specialization / Field of Research
Immunology, Cell Biology, Endocrinology

Dr. Somaditya Dey, WBES

Assistant Professor & Invited Member, PGBOS

Area of Specialization / Field of Research
Immunology, Experimental Therapeutics

*Prospectus
for
Post-Graduate Course*



**Post Graduate Department
of Zoology**

GUEST FACULTY

Dr. S. K. Gupta, Ph.D., D.Sc.

Emeritus Scientist of Ministry of Environment & Forest and
Department of Science & Technology, Govt. of India
Ex-Joint Director, ZSI, India
Area of Specialization : Entomology & Ecology

Dr. Rupendu Roy

Former Associate Professor & Head, Department of Zoology
Barasat Govt. College
Area of Specialization : Parasitology

Dr. Manas Ranjan Ray

Former Assistant Director
Officer-in-Charge (Research) & Head
Department of Experimental Haematology
Chittaranjan National Cancer Institute, Kolkata
Area of Specialization : Ecology & Environmental Biology

PART TIME FACULTY

Ms. Indrani Banerjee

Area of Specialization : Endocrinology

SUPPORTING STAFF

Sri Asutosh Das, Laboratory Assistant

Sri Ajoy Kumar Biswas, Laboratory Attendant

Sri Gopal Ghosh, Temporary Staff



FROM THE PRINCIPAL'S DESK

This is my pleasure to introduce the Post-Graduate Department of Zoology of this Institution as a “Department of Promise”. During its sojourn in the arena of spreading knowledge, this department has succeeded in developing infrastructure and livewires in such a way that I can now proudly state that it has acquired a position among the leading institutions of this state. It offers both under-graduate and post-graduate courses in Zoology. Utilizing the benefit of academic autonomy under the affiliating umbrella of WBSU the teachers of this department has taken initiatives to design an updated syllabus for their M.Sc. course which will cater the demand of the students of present generation who wants to succeed in competitive examinations like NET, SET, GATE, etc.

The faculties of this department are well reputed, experienced and blessed with an academic orientation. They have research experiences in almost all the possible branches of life sciences and are quite up-to-date as revealed by the quality of research publications they possess. Most of them are young, energetic and student-friendly, qualities that make any academic endeavour a success.

I always prefer to stay beside such academic domain and try to patronize the well-being of the same. Within a few years the infrastructure of this department thus have reached gold standard. A long way to go, though.

I congratulate the teachers of this department as they are going to publish this prospectus, a source of introducing the students and their guardians the competent profile of this department vis-à-vis the syllabus made with keeping parity to UGC National Curriculum.

I wish the department every success.

A handwritten signature in black ink, appearing to read 'Dr. Debesh Roy'.

Dr. Debesh Roy
Principal
Barasat Government College

ABOUT THE DEPARTMENT

Established in 1996 under University of Calcutta for undergraduate study with limited resources, the Department of Zoology, has taken giant strides to gain reputation of being one of the premiere Departments for undergraduate study with 51 seats under West Bengal State University (WBSU). It has also upgraded itself to Post Graduate status (with academic autonomy under WBSU) in 2009, adding to the prestige of the College. An updated course based on the UGC National curriculum for both undergraduate and postgraduate caters to the present needs of the students.

The Department has gradually become well equipped with spacious and modern e-classrooms and laboratories, an enriched zoological museum and a seminar library. Separate laboratories are available for the various specializations of M.Sc. curriculum while the faculties also have their own laboratories for research. In addition, an air conditioned computer laboratory is there to meet the requirements of the B.Sc. and M.Sc. curricula. The Department has a central instrumentation facility, well equipped with sophisticated instruments. As such the Department has been awarded DBT BOOST II in the year 2017 for three years for infrastructural upgradation of research laboratories.

The Department, which has provision for nine teaching posts, including one Professor (vacant), is currently run by six experienced and energetic teachers. Reputed retired teachers and scientists also impart quality education in the capacity of part-time and guest lecturers. Apart from giving emphasis on teaching, the Department has also consistently encouraged collaborative research programmes that will take it to new heights of excellence in the years to come. The teachers have a rich academic background with publications in reputed journals and keep themselves cognizant with the latest information and developments. Considerable research funding has been tapped from various national and state agencies for both major and minor projects and teachers provide guidance to research scholars pursuing their Ph.D. degree. The laboratory technicians and attendants are friendly and dutiful and work in tandem with the teachers to ensure smooth functioning of the Department.

The rate of success of the students is impressively high with many securing First Class and some procuring top positions in the University Merit List. They always maintain their high scholastic achievements throughout the country. Educational excursions are regularly organised not only to observe animals in their natural habitat and their biodiversity but also to strengthen the camaraderie between the students themselves and with the teachers. Warm relationships shared by the faculty and students add to the general richness of the academic environment of the Department.

Learning is an odyssey that never ends. Team Zoology of the Department is making this journey interesting and fruitful.

DEPARTMENTAL HIGHLIGHTS

General

1. High success rate (>90%) each year with good number of First Classes (40%) in Under-Graduate Examinations under WBSU.
2. The faculty members hold Ph.D. degree or is pursuing Ph.D.
3. Approximately more than 90 articles had been published by the faculties during the last 5 years in reputed and popular research journals and books.
4. Departmental seminar library contains adequate number of books; students can regularly borrow books from there in addition to the books borrowed from central library of the college.
5. Guardian meeting and Career counselling is regularly done.
6. In each year teachers and students participate in excursions locally and beyond to study the ecosystem and bio-diversity.
7. The M.Sc. syllabus of the Department is based on the UGC National Curriculum which enables the students to prepare themselves for competitive examinations like NET, SET, GATE etc.
8. The M.Sc. curriculum is affiliated to the WBSU and enjoys academic autonomy.
9. The department has three research laboratories and one central instrumentation facility well equipped with sophisticated instruments.
10. The Post-Graduate course is divided into 4 semesters, each of 6 months duration.
11. The Examination pattern of the M.Sc. course is contemporary, based on regular class tests, continuous and comprehensive evaluation (CCE), seminars, projects, review work, etc.
12. The results are published after every term-end examinations. Mark-sheets are prepared according to national standard with credit scores, grade points, etc. The traditional number system is also retained.
13. The M.Sc. students visit different laboratories of renowned Research institutes like Bose Institute; CNCI; NICED; I.P.G.M.E. & R. Calcutta; National Medical College, Kolkata; School of Tropical Medicine, Kolkata; Indian Institute of Chemical Biology; UGC-DAE, Kolkata Centre; WBSU.
14. For Departmental DBT Twining Programme, College has MoA with Govt. of India.

PROJECTS

Ongoing Major Research Projects of Dr. Sanjoy Podder

Sl. No.	Project Title	Funding Agency
1.	Identification of house dust mites in relation to characterization of molecular pathway associated with asthma among West Bengal Population, India Acting as Principal Investigator	Department of Biotechnology, Govt. of West Bengal
2.	Studies on the diversity of mites infesting Tea in North Bengal, their management with biopesticides and assessing the resistant / susceptible varieties by biochemical methods. Acting as Principal Investigator	Department of Science & Technology, Govt. of West Bengal
3.	Identification and molecular characterization of offending food allergen towards different allergic manifestations among Kolkata population Acting as Principal Supervisor	Council of Scientific and Industrial Research



FACULTIES

1. **Dr. Sumana Saha**, CSIR-NET, joined the Entomology Laboratory of the University of Calcutta in 1990 as Research Fellow. She joined Lady Brabourne College, Govt. of West Bengal as Assistant Professor, WBES in 1997 following her doctoral. Later she served the college in the capacity of Associate Professor and Head till January, 2012. She is presently serving Barasat Government College as Associate Professor & Head, after being transferred from Darjeeling Government College.



Her area of research is on taxonomy/biodiversity/ecology/biology of insects and spiders of agricultural crops/forests trees. As one of the dedicated researcher of the contemporary period, she is the author of 157 articles that includes books/monographs (11), research papers (136) and popular articles (10).

She has bagged few honours in these 28+ years of research career. Dr. Saha is the listed '**Invertebrate Specialist**' of 'Zoo-Outreach Organization', Coimbatore/CBSG, India & South Asia; '**Spider Specialist**' of 'International Society of Arachnology (ISA), Paris, France; '**Taxon-Editor**' of National Chemical Laboratory for Biodiversity Informatics, Pune, India. Her name is there in the database of teachers, 'Indian Academy of Sciences', Bangalore. She is one of the identified '**Book Reviewer**', West Bengal Council of Higher Secondary Education. She is in the panel of '**Advisor**' of Staff Selection Committee, GOI (Eastern Region). She was one of the **invited participants & exhibitors** in the **11th Conference of the Parties to the Convention on Biological Diversity (COP 11)**, 2012. She is the recipient of "**Science Excellence Award 2015**" for her contribution in the field of **Science Education and Research in Zoology**. She is the awardee of much coveted "**J. L. Bhaduri memorial medal for excellence in research 2015-16**" of Zoological Society, Kolkata. She has bagged prestigious "**National Teaching Excellence Award 2016**" from International Benevolent Research Foundation, Kolkata in association with Confederation of Indian Universities, New Delhi and praiseworthy "**Pearl Foundation Best Women Associate Professor Award 2016**" from Pearl – A Foundation for Educational Excellence, Madurai, Tamil Nadu, India in recognition of outstanding contributions in the field of Zoology in India. She is identified as **Associate Editor** for the Journal **MUNIS ENTOMOLOGY & ZOOLOGY** published from **Turkey** (2016-18). She is also the recipient of prestigious "**Outstanding Paper Award**" in 26th West Bengal State Science and Technology Congress, 2019. Since 2018 Dr. Saha is acting as **Reviewer** of the Journal '**Proceedings Zoological Society**' – Springer Publication.

She has handled eight **Collaborative Major Research Projects** as **Co-Investigator/ Technical Supervisor** funded by UGC, New Delhi (2001-2004), MoEF, GOI, New Delhi (2001-2004; 2014-2017), NTRF, C/o Tea Board, Kolkata (2002-2005; 2008-2011), DBT, GOI, New Delhi (2006-2010), WWBB (2009-2011), Tea Board (2011- 2013), All India Coordinated Project on Capacity Building in Taxonomy (AICOPTAX), MoEF & CC, GOI

(2014-2017) and two **Minor Research Projects as Principal Investigator funded by UGC** (2008-2011, 2012-2014).

She is the discoverer of **several new taxa of insects/spiders** which are the major contribution of her in the field of research. Her entire contributions till date are in the citation of World Spider Catalog prepared by Natural History Museum Bern, online at <http://wsc.nmbe.ch>, version 18.0. Her contributions are also available at www.spiderbioresource.com/index.html (**Spider Bioresources : Reserve Forests, Dooars and Darjeeling, West Bengal. 2012 Version 1.0**).

2. Dr. Jayati Ghosh, Associate Professor of Zoology, WBES, has joined this college in the year 2016. She has served Maulana Azad College and Krishnagar Govt. College prior to the present posting. She did her Ph.D. from Jadavpur University in the year 2010. Her area of research work includes Parasitology and Microbiology. She has published her research work in different journals like The Lancet, Journal of Parasitic Diseases, Journal of Entomology and Zoology Studies etc. She has completed two UGC Minor Research Projects.



3. Dr. Sanjoy Podder, Assistant Professor of Zoology, WBES, has joined in this Department in the Year of 2010 after serving PG Dept. of Zoology, Darjeeling Government College. He did his Ph.D on Dust mite allergy from Dept. of Zoology, Calcutta University with UGC fellowship. He is SET qualified. He has published his research work in various national and international reputed peer reviewed journal with impact factor like, Aarina, Aerobiologia, Animal Biology, World Allergy Organisation Journal, Allergy & Clinical Immunology International, ZOOS' Print Journal, International Journal of Scientific Research, Proceedings of Zoological Society, Calcutta, Journal of Medical Entomology (Oxford), African Health Sciences etc. He has been invited and presented his research works in various National and International Conferences. He recently visited Seoul, South Korea for presenting his research work at the World Allergy Congress. He has 11 years of Post-graduate and Under-graduate teaching experiences. Dr. Podder is now working on molecular aspects of Dust allergy as well as different ecological and biochemical aspects on tea mites. One Research Fellow under DST, Govt. of West Bengal funded research project has already been awarded with Ph.D degree under his supervision from Dept. of Zoology, Calcutta University. He has supervised a number of dissertation project of Post-graduate students of Barasat Govt. College and Darjeeling Govt. College. Dr. Podder is the registered Supervisor of Calcutta University and West Bengal State University. He has already completed two research project as Principal Investigator : one from UGC and another from DST, Govt. of West Bengal. Dr. Podder is the Principal Investigator of two ongoing Major Research Project funded by DST and DBT, Govt. of West Bengal. Presently he is supervising five (05) research scholars: two of WBDST Fellow, One of WBDDBT Fellow, One CSIR Fellow and one research fellow under his guidance.



- 4. Dr. Enamul Haque** joined W.B.E.S as a lecturer in 2007. He did his M.Sc. in Zoology with specialization in Entomology from Budwan University. He had qualified CSIR-NET twice in 2002 (LS-NET) and 2003 (CSIR-JRF) and started his research work at Department of Immunoregulation and Immunodiagnostics at Chittranjan National Cancer Institute, Kolkata. His research work is on Neem Leaves induced inhibition of murine tumor on which he awarded Ph.D. degree in Life Science from J.U. in the year 2009. He has published his paper in good journals like Immunopharmacology and Immunotoxicology, Immunobiology, International Immunopharmacology, Vaccine etc.



- 5. Dr. Srikanta Guria** qualified NET & SLET. He did his Ph.D. from Dept. of Zoology, University of Calcutta. He has published his research work in different journals like Indian Journal of Exp. Biology, Recent advance in Animal Science & Research, Tribal World, NBU Journal of Animal Science, Endocrine Journal, Animal Biology Journal, International Journal of Endocrinology, Proceedings of Zoology Society, Journal of Atoms & Molecules, IJRDP, The Experiment & International Journal of Pharm Tech Research. He has 45 publications. He taught in Darjeeling Govt. College prior to Barasat Govt. College. His area of research in Endocrinology, Cell Biology, Parasitology & Immunology.



- 6. Dr. Somaditya Dey**, Assistant Professor, WBES, PG Dept. of Zoology, Barasat Govt. College, Area of specialization: Parasitology and Immunology. Area of research: Experimental Therapeutics against Kala-azar (VL).



Dr. Somaditya Dey, WBES has joined the Department on 2015. He did his Post-graduation in Zoology from Bidhannagar College, Kolkata. He has qualified CSIR-NET-LS on 2012. He has recently awarded Ph.D. degree at Dept. of Zoology, West Bengal State University, under Prof. Chiranjib Pal. He is currently working on the different therapeutic/prophylactic strategies against Visceral Leishmaniasis and the involvement of inflammatory monocytes in development of chemokine axis during Leishmania donovani infection at CIET, Dept. of Zoology, WBSU.

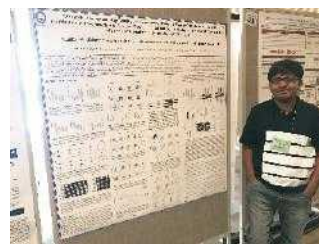
He is the recipient of the following prestigious International Travel Support Grant/fellowship as young scientist for presenting his research papers in several conferences and seminars.

- ECI- AAI Travel Grant award, from American Association of Immunologists for participating and poster presentation of the thesis work at the European congress of Immunology, September, 2018, organized by, EFIS and DSI, NVVI at Amsterdam, Netherland.

- Poster presentation at 'Gordon Research Conference on Biology of Host- Parasite Interactions,' June, 2018, at Newport, RI, USA. [Travel Grant Recommended by University Grants Commission, India for full support]
- 'Young Scientist Travel Support Award from ICMR and CSIR India, sponsored by Govt. of India, for participating and paper presentation (poster) at ASM/ESCMID Conference on Drug Development to Meet the Challenge of Antimicrobial Resistance, September, 2017, organized by the ASM & ESCMID, at Boston, USA.
- '100 students initiative scheme' Travel Support Award from KAMRC, India, sponsored by WHO & DNDi, Geneva for participating and paper presentation (ORAL) at 6th World Congress on Leishmaniasis, May, 2017, organized by WHO Collaborating Centre for Leishmaniasis, Madrid and the Drugs for Neglected Diseases initiative, Geneva , at Toledo, Spain.
- International Travel Support Grant as young scientist (DST Science & Engineering Research Board) for attendance & paper presentation (ORAL) at International Congress of Immunology, August, 2016, Melbourne Australia, organized by International Union of Immunological Societies and the Australasian Society for Immunology. [Abstract published in European Journal of Immunology; 46(1): 2016].

He is also one of the applicants for a patent on “Synthesis and anti-leishmanial profile of novel water soluble ferrocenylquinoline derivatives” [Indian Patent Application No. 201831027970 of 25.07.2018; The Patent Office Journal No. 42/2018 Dated 19/10/2018; International Classification: A61K31/00]. He has also attended the training Course on Clinical Flow Cytometry, organized by CRNN, University of Calcutta in association with BD Biosciences (India and the National Workshop on Scanning Electron Microscopy, organized by University Science Instrumentation Centre, The University of Burdwan.

Dr. Dey has several publications in different peer-reviewed international (12) and national (1) research journals with high impact factors including, Future Microbiology (Future Science Group), European Journal of Medicinal Chemistry and Experimental Parasitology (Elsevier); Infection and Immunity (under revision) and Antimicrobial Agents and Chemotherapy (ASM); Chemmedchem (Wiley online library) etc.



COURSE AFFILIATION

Academically autonomous Post Graduate degree (M.Sc.) in Zoology affiliated to West Bengal State University, Barasat.

NUMBER OF SEATS AVAILABLE

60% – Direct Admission of WBSU Students and **40%** – Selection after Admission Test.

2019-20		Seats Allocation	
Department	TOTAL SEATS	60%	40%
ZOOLOGY	32	19	13

Reservation : As per the rules of Govt. of West Bengal SC / ST / OBC-A / OBC-B / PH seats will be reserved.

ELIGIBILITY CRITERIA

Science graduates of WBSU / other universities with honours in Zoology

USEFUL INFORMATION

Class timing : 10.30 am to 4.45 pm (week days)
10.30 am to 2.00 pm (Saturday)

Attendance : At least 75%

THE EXAMINATION PATTERN

The course is equally divided in the four semesters. Every semester will be of 300 marks, of which four papers of 50 marks each will be dealt theoretically and the rest 100 marks will be practicals divided in three papers.

At the end of every semester there will be "Term end examination" but in between, in lieu of continuous evaluation of the students' progress 20% marks will be evaluated through "class tests". A number of class tests will be conducted in the form of multiple choice and/or short answer type questions to determine the regular average improvement of the student.

REGULATIONS FOR THE TWO YEAR M.SC. COURSE IN ZOOLOGY BARASAT GOVERNMENT COLLEGE

1. A candidate should obtain at least 30% in each of the theory and practical (Lab) courses to qualify for the next semester.
2. If a candidate obtains “F” letter grade in a particular theory paper, he/she would be deemed to have failed in that paper only. If the said candidate desires to continue the course he/she would be required to repeat that course in a supplementary examination in the next coming semester when offered. The candidate would have a maximum of two chances (excluding the first) to appear and qualify the examination in the said paper in next two consecutive years. A candidate who still fails to pass the examination or remain absent in the examinations of the said paper would be dropped from the rolls of the University.
3. If a candidate gets “F” letter grade in three or more theory papers, he/she will be declared failed and the candidate may seek admission as per rule during the next academic session.
4. If a candidate gets “F” letter grade in a particular practical paper, he/she will be declared failed and he/she may seek fresh admission as per rule during the next academic session.
5. If a candidate remains absent in not more than two theory papers, he/she may be allowed to continue in the following semesters, provided the candidate secures at least 30% marks in rest of the papers appeared in the concerned semester. However, the candidate would have to appear for the supplementary examination and qualify in the same paper(s) in the following year. However, such a candidate would have a maximum of two chances (excluding the first) to qualify a semester in next two consecutive years. A candidate who still fails to qualify the semester or remain absent in the examinations of the said paper(s) would be dropped from the rolls of the University.
6. If a candidate is dropped from the rolls of the University, he/she may seek admission as per rule during the next academic session.
7. There would be no provision for supplementary examination in the same year for a given semester (except 3rd & 4th semester) and a candidate who remains absent in one/two paper(s) would have to wait for one academic year for clearing the same 'absent' paper(s) of the said semester.
8. If a candidate obtains “F” letter grade in not more than two theory papers in 3rd or 4th semester examination, he/she may be allowed to appear in supplementary examinations for the said paper(s) arranged by the department as per convenience, in the same year. Candidate will be allowed for maximum of two supplementary examinations to clear a paper.

Semester wise distribution of marks:

Semester	Term-End Examination	Average of Class Tests	Number of Papers	Total Theory	Practical	Total Marks
I	40 marks each	10 marks each	4	200	100	300
II	40 marks each	10 marks each	4	200	100	300
III	40 marks each	10 marks each	4	200	100	300
IV	40 marks each	10 marks each	4	200	100	300

The Practical papers will be evaluated regularly in order to follow the nationally accepted “continuous and comprehensive” evaluation pattern. Following demonstration and adequate practice of each of the experiments, the same will be evaluated judiciously.

The progress of the students in practical courses will also be judged through Grand Viva-Voce by the External Examiners from different Post-graduate Colleges, Universities and Research Institutions.

FOSTERING RECIPROACITY



M.Sc. ZOOLOGY ACADEMIC CALENDAR

July – December	Semester I classes
December – January	Semester I examination
January	Break
January – June	Semester II classes
June – July	Semester II examination
July	Break
July – December	Semester III classes
December - January	Semester III examination
January	Break
January – June	Semester IV classes
June – July	Semester IV examination

Semester fees (for four semester) :

Rs.6000/-

Important Notes:

1. Tuition fees till the month of December in the current year should be deposited at the time of admission. All other fees/ charges etc. are to be deposited in full at the time of admission.
2. All students are required to take part in the compulsory field study programme to be organized by the department during any semester. Approximate expenditure of such programme will be around Rs.10,000/- and the entire expenditure are to be borne by the students.

Students opting for “Ecology and Environmental Biology” Special paper during second year of the course (semester III and IV) may have to participate in another short compulsory field training programme to study Ecosystem and Biodiversity.

RESOURCES

1. Instruments

Phase Contrast Microscope with Photographic attachment
 BOD incubator
 Rotary microtome with blade sharpener
 Microscope with digital photographic attachment
 Movie and still cameras for field studies
 pH meters (digital & portable)
 High speed centrifuge
 Cold centrifuge
 Gel electrophoresis apparatus-vertical slab and submarine
 40 and Sub-zero Freezer
 Gel DOC
 Digital balance
 Soil Testing Apparatus
 Microbial Colony Counter
 Ice-flaker
 Microwave

Shaking incubator
 Colorimeter
 Field binoculars
 Distillation apparatus
 High sensitive balance
 Micro centrifuge
 PCR
 Water Purification System
 Desiccators
 Elisa reader
 Spectrophotometer
 Western Blotting apparatus
 Laminar Flow Hood
 Ultrasonic disintegrator
 UV Transilluminator
 Aquariums

2. Permanent slides, charts, models, skeletons, museum specimens.

3. Modern teaching methods like Over head projector, Slide projector and Computer devices like digital visualizer are employed. Two LCD projectors has been routinely used by the department for audio-visual class room.



Semesterwise Distribution of Curriculum for M.Sc. in Zoology

SEM-I

Theory	Module	Course Content	Marks
Paper - 1	BGCZ-01TH	Non-Chordate-structure and function	50
Paper - 2	BGCZ-02TH	Biochemistry and Biotechnology	50
Paper - 3	BGCZ-03TH	Cell and Tissue	50
Paper - 4	BGCZ-04TH	Methods in Biology-I	50
Paper - 5A	BGCZ-05PR	Non-Chordate	30
Paper - 5B	BGCZ-06PR	Biochemistry	30
Paper - 5C	BGCZ-07PR	Methods in Biology-I (including Seminar : 10)	40

SEM-II

Theory	Module	Course Content	Marks
Paper - 6	BGCZ-08TH	Chordate-structure and function	50
Paper - 7	BGCZ-09TH	Development Biology	50
Paper - 8	BGCZ-10TH	Animal Physiology and Animal Behaviour	50
Paper - 9	BGCZ-11TH	Methods in Biology-II	50
Paper - 10A	BGCZ-12PR	Chordate	30
Paper - 10B	BGCZ-13PR	Development Biology, Histology and Endocrinology	30
Paper - 10C	BGCZ-14PR	Methods in Biology-II (including Seminar : 10)	40

SEM-III

Theory	Module	Course Content	Marks
Paper - 11	BGCZ-15TH	Parasitology, Immunology and Microbiology	50
Paper - 12	BGCZ-16TH	Cytogenetics and Molecular Biology	50
Paper - 13	BGCZ-17TH	Applied Biology and Quantitative Biology	50
Paper - 14	BGCZ-18TH	Elective Paper	50
Paper - 15A	BGCZ-19PR	Parasitology, Immunology and Microbiology	30
Paper - 15B	BGCZ-20PR	Cytogenetics and Molecular Biology	30
Paper - 15C	BGCZ-21PR	Elective Paper (including Seminar : 10)	40

SEM-IV

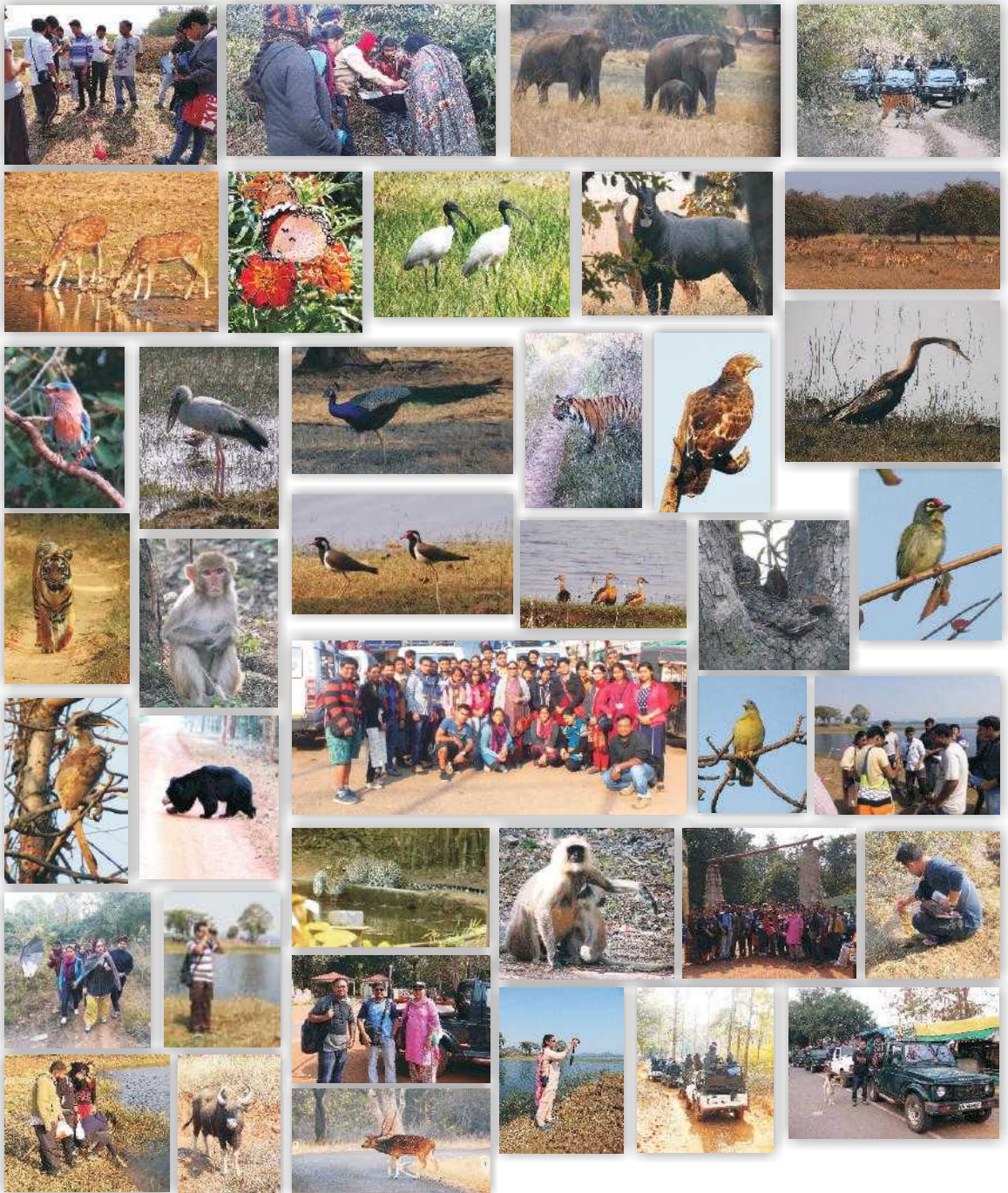
Theory	Module	Course Content	Marks
Paper - 16	BGCZ-22TH	Taxonomy, Evolution and Biodiversity	50
Paper - 17	BGCZ-23TH	Ecology, Environment and Conservation Biology	50
Paper - 18	BGCZ-17TH	Neurobiology and Endocrinology	50
Paper - 19	BGCZ-18TH	Elective Paper	50
Paper - 20A	BGCZ-19PR	Ecology, Wildlife Biology and Taxonomy (including Field Trip : 15 marks)	30
Paper - 20B	BGCZ-20PR	Elective Paper	70

Elective Papers:

- A. Parasitology and Immunology
- B. Ecology and Environmental Biology

Detailed Syllabus will be provided later

EXCURSION



LABORATORY VISIT



DEVELOPING RESEARCH SKILL







Barasat Government College

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