



**Barasat Government College**  
Government of West Bengal

Post Graduate Department of

# ZOOLOGY



## PROSPECTUS

(for Post Graduate Course 2020-21)



Affiliated to 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. Ivy Kundu, WBES**

*Assistant Professor & Invited Member, PGBOS*

Area of Specialization / Field of Research

Parasitology, Immunology, Endocrinology

**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

## STATE AIDED COLLEGE TEACHER II (SACT-II)

**Ms. Indrani Banerjee**

Area of Specialization : Endocrinology

## SUPPORTING STAFF

**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 55 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 have 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. 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. M.Sc. curriculum is affiliated to 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.





## 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 162 articles that includes books/monographs (11), research papers (141) and popular articles (10).

She has bagged few honours in these 30+ 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 **11<sup>th</sup> 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** (2016-20). 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](http://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 joined this college in the year 2016. She joined West Bengal Education Service in the year 2001 at Maulana Azad College as



Lecturer. She is presently serving Barasat Govt. College as Associate Professor after being transferred from Krishnagar Government College. She received her Ph.D. from Jadavpur University in the year 2010. Her major teaching areas are basic Invertebrate biology, Parasitology, Microbiology, Immunology and Animal physiology. Her area of research work includes parasitic prevalence, epidemiology and microbiology. She has published her research work in different peer reviewed journals like The Lancet, Journal of Parasitic Diseases and Journal of Mycopathological Research, Journal of Entomology and Zoology Studies etc. She has already successfully completed two UGC Minor Research Projects. Before joining in WBES she was involved in research in National

Institute of Cholera and Enteric Diseases (NICED) and Central Research Institute for Jute and Allied Fibers (ICAR-CRIJAF).

**3. Dr. Ivy Kundu** has joined WBES in the year 2006 and has been teaching both undergraduate and postgraduate students for the last 12+years. She initially has joined Bidhannagar College in 2006 and has continued her service till November 2011, then served Krishnagar Government College from 2011 to October 2019 and finally Barasat Government College from 2019 till now. She has completed her B.Sc., M.Sc. and B.Ed. from University of Calcutta, Ph.D. degree from University of Kalyani and has also qualified for CSIR-UGC NET. She is specialised in Parasitology, Immunology, Endocrinology and has guided many students in their review and project works for their Elective papers in postgraduate studies. She has contributed significantly in field of research and has numerous articles



in national and international journals to her attribute. She has successfully completed research project sponsored by WB-DST and has presented papers in both national and international seminars. She has actively participated in various academic and administrative committees of the college and is lifetime member of Zoological Society of India, Parasitology Society of India and Cell Biology Society of India.

4. **Dr. Enamul Haque** joined WBES as a lecturer in 2007. He did his M.Sc. in Zoology with specialization in Entomology from Budrwan 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 Chitranjan 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 48 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 has joined the Department in 2015. He did his Post-graduation in Zoology from Bidhannagar College, Kolkata. His area of specialization is Parasitology and Immunology. He has qualified CSIR-NET-LS in 2012. He has awarded Ph.D. degree in 2019 at Dept. of Zoology, West Bengal State University, under Prof. Chiranjib Pal. His area of research is Experimental Therapeutics against Kala-azar (VL). He is currently involved in exploring the different therapeutic/prophylactic strategies against Visceral Leishmaniasis and in establishing the involvement of inflammatory monocytes in development of chemokine axis during Leishmania donovani infection at Cellular Immunology and Experimental Therapeutics Laboratory, Dept. of Zoology, WBSU.



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

- Travel grants to early-career researchers from American Association of Immunologists for attendance and paper presentation (poster) at the 17th International Congress of Immunology, 2019, Beijing, China, organized by IUIS and CSI, on 19-23rd October, 2019. [Abstract published in European Journal of Immunology; [doi.org/10.1002/eji.201970400](https://doi.org/10.1002/eji.201970400)].

- Joint Winner of the BRIC idea exposition stipend of Rs. 25000/- (Theme: Pharmaceuticals and Nutraceuticals), organized by the Biotechnology Industry Research Assistance Council (BIRAC), IKP Knowledge Park (IKP), and IICB (TRUE), Salt lake, Kolkata on 20-21st September, 2019.
- 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.

Dr. Dey has also served as the Jt. Coordinator, System Management Committee (Administrative Committee), Jt. Convener, Admission Committee, and as the member of several other such important committees and PGBOS, Dept. of Zoology, Barasat Govt. College for the last couple of years.

## COURSE AFFILIATION

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

## NUMBER OF SEATS AVAILABLE

In pursuance of the Higher Education Departments Memo No. 808-EH/Edn(U)/1U-83/12 dated 29.9.2020, & WBSU notification dated 16.10.2020, 80% seats are reserved for Home University students and 20% seats reserved for other university students.

However, if 80% seats reserved for Home University remain unfilled, those may filled up with the Undergraduates of other universities. Similarly, if the 20% seats reserved for the students from other universities remain unfilled, those may filled up with the students of Home University. This order will be applicable for the Academic Session 2020-21 in view of the prevailing COVID pandemic situation.

2020-21		Seats Allocation	
Department	TOTAL SEATS	80%	20%
ZOOLOGY	32	26	06

**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

1. The choice based credit system (CBCS) of the PG courses are divided into four semesters. The course is grouped as core (Theory & Practical), soft (Theory only) and elective (Specialization) (Theory & Practical) papers. Course Structure in CBCS is comprised of:

- (A) Hard Core Subjects – Compulsory for all.
- (B) Soft Core Subjects – A student of 3rd and 4th Semester would have to choose any two of the four subjects offered by the department per semester.
- (C) Elective Subjects—Specialization (each student has to opt for only one Elective from the list of the courses offered by the department in the 3rd and 4th Semesters).
2. Examination Pattern : 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.
- A. Theory : For 40 marks: Class test 10; End term 30  
For 25 marks Class test 5; End term 20
- B. Lab : For 40 marks : Continuous evaluation 30 ; End term 10  
For 30 marks: Continuous evaluation 20 ; End term 10  
For Comprehensive viva: End term 20  
For Seminar : End term 20
3. Continuous evaluation would not be applicable for elective practical examinations which must be conducted in the presence of at least one external examiner along with internal examiner(s).

#### Semester wise distribution of marks:

Semester	Marks		
	Theory	Lab	Total
<b>1<sup>st</sup> Semester</b>	Hard Core 160	Hard Core 100	260
<b>2<sup>nd</sup> Semester</b>	Hard Core 160	Hard Core 100	260
<b>3<sup>rd</sup> Semester</b>	Hard Core 120	Hard Core 80	340
	Soft Core 50	Elective 40	
	Elective 50		
<b>4<sup>th</sup> Semester</b>	Hard Core 120	Hard Core 60	340
	Soft Core 50	Elective 60	
	Elective 50		
<b>Grand Total</b>	<b>760</b>	<b>440</b>	<b>1200</b>

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.

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

1. A candidate should obtain at least 40% 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 papers 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.

# FOSTERING RECIPROCITY





## 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.

3. **It is desirable that all students have necessary internet facilities so as to meet up the challenges in any emergent situation.**

## RESOURCES

### 1. Instruments

Phase Contrast Microscope with Photographic attachment	Shaking incubator
BOD incubator	Colorimeter
Rotary microtome with blade sharpener	Field binoculars
Microscope with digital photographic attachment	Distillation apparatus
Movie and still cameras for field studies	High sensitive balance
pH meters (digital & portable)	Micro centrifuge
High speed centrifuge	PCR
Cold centrifuge	Water Purification System
Gel electrophoresis apparatus-vertical slab and submarine	Desiccators
40 and Sub-zero Freezer	Elisa reader
Gel DOC	Spectrophotometer
Digital balance	Western Blotting apparatus
Soil Testing Apparatus	Laminar Flow Hood
Microbial Colony Counter	Ultrasonic disintegrator
Ice-flaker	UV Transilluminator
Microwave	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. (CBCS) in Zoology

#### SEM-I

	Paper Code	Course Content	Marks
<b>Hard Core Theory</b>	ZHT 101	Non-Chordates – Structure & Function	40
	ZHT 102	Chordates – Structure & Function	40
	ZHT 103	Animal Physiology & Biochemistry	40
	ZHT 104	Endocrinology & Neurobiology	40
<b>Hard Core Lab</b>	ZHL 101	Non-chordates & Chordates	40
	ZHL 102	Biochemistry	30
	ZHL 103	Histology & Histochemistry	30

#### SEM-II

	Paper Code	Course Content	Marks
<b>Hard Core Theory</b>	ZHT 201	Developmental Biology & Gamete Biology	40
	ZHT 202	Cell & Molecular Biology	40
	ZHT 203	Ecological theories & applications and Animal Behaviour	40
	ZHT 204	Biophysical Techniques & Biostatistics	40
<b>Hard Core Lab</b>	ZHL 201	Developmental Biology and Cell & Molecular Biology	40
	ZHL 202	Ecology & Biophysical Methods and Biostatistics	40
	ZHL 203	Seminar	20

**SEM-III**

	Paper Code	Course Content	Marks
<b>Hard Core Theory</b>	ZHT 301	Insect Biology	40
	ZHT 302	Parasitology, Immunology & Microbiology	40
	ZHT 303	Fish Biology	40
<b>Soft Core Theory (Any two)</b>	ZST 301	Environmental Physiology	25
	ZST 302	Ecosystem Services & Augmentation	25
	ZST 303	Toxicology	25
	ZST 304	Wildlife & Management	25
<b>Hard Core Lab</b>	ZHL 301	Entomology & Fisheries	40
	ZHL 302	Parasitology, Immunology & Microbiology	40
<b>Elective Theory</b>	ZET 301	Elective Papers (Any One) : Ecology & Environmental Biology/ Parasitology & Immunology	50
<b>Elective Lab</b>	ZEL 301	Elective Papers : (Any One) : Ecology & Environmental Biology/ Parasitology & Immunology	40

**SEM-IV**

	Paper Code	Course Content	Marks
<b>Hard Core Theory</b>	ZHT 401	Taxonomy, Biodiversity & Conservation Biology	40
	ZHT 402	Evolutionary Biology & Population Genetics	40
	ZHT 403	Applied Biology & Biotechnology	40
<b>Soft Core Theory (Any two)</b>	ZST 401	Economic Zoology	25
	ZST 402	Parasitic diseases & Management	25
	ZST 403	Genetic diseases/disorders & Management	25
	ZST 404	Tools & Techniques	25
<b>Hard Core Lab</b>	ZHL 401	Taxonomy, Biodiversity & Wildlife including Field Training	40
	ZHL 402	Comprehensive Viva	20
<b>Elective Theory</b>	ZET 402	Elective Papers (Any One) : Ecology & Environmental Biology/ Parasitology & Immunology	50
<b>Elective Lab</b>	ZEL 402	Elective Papers : (Any One) : Ecology & Environmental Biology/ Parasitology & Immunology	40
	ZEL 403	Dissertation/Project/ Review / Laboratory Exchange Programme	20

**Detailed Syllabus will be provided later**

# EXCURSION



# DEVELOPING RESEARCH SKILL







## **Barasat Government College**

10, K.N.C. Road, Barasat, Kolkata-700124  
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Website: [www.bgc.org](http://www.bgc.org)

Published by: PG Department of Zoology