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Programme Outcomes for All Programmes Offered by the Institution



Surendranath College
24/2 M. G Road, Kolkata-700009
West Bengal, India

Programme outcomes

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Department of Botany:

Programme Outcome (PO) of Botany Honours CBCS), University of Calcutta

Over the years, Botany has shown enormous gain in information and applications owing to tremendous inputs from research in all its aspects. With global recognition of the need for conservation, field plant biologists have contributed significantly in assessing plant diversity. Taxonomists have explored newer dimensions for the classification of plants. New insights have been gained in functional and structural aspects of plant development by utilizing novel tools and techniques for botanical research. Challenging areas of teaching and research have emerged in ecology and reproductive biology. Concern for ever increasing pollution and climate change is at its highest than ever before. Today plant science is a fusion of the traditional components with the modern aspects of biochemistry, molecular biology and biotechnology. Keeping these advancements in view, a revision of the curriculum at the undergraduate level is perfectly timed. The carefully-crafted course structure has taken care of different aspects of plant science, namely plant diversity, physiology, biochemistry, molecular biology, reproduction, anatomy, taxonomy, ecology, economic botany and the impact of the environment on the growth and development of plants. All these aspects have been given due weightage over the six semesters. It is essential for the undergraduate students to acquaint themselves with various tools and techniques for exploring the world of plants up to the sub- cellular level. A paper on this aspect is proposed to provide such an opportunity to the students before they engage themselves with the learning of modern tools and techniques in plant science. Keeping the employment entrepreneurship in mind, applied courses have also been introduced. These courses shall provide the botany students hands on experience and professional inputs. On the whole, the curriculum is a source of a lot of information and is supported by rich resource materials. It is believed that a student graduating in Botany with the new CBCS curriculum will be a complete botanist at Honours level.

Programme Specific Outcomes include

Knowledge and understanding of: 1. The range of plant diversity in terms of structure, function and environmental relationships. 2. The evaluation of plant diversity. 3. Plant classification and the flora of West Bengal. 4. The role of plants in the functioning of the global ecosystem. 5. A selection of more specialized, optional topics. 6. Statistics as applied to biological data

Intellectual skills – Able to: 1. Think logically and organize tasks into a structured form. 2. Assimilate knowledge and ideas based on wide reading and through the internet. 3. Transfer of appropriate knowledge and methods from one topic to another within the subject. 4. Understand the evolving state of knowledge in a rapidly developing field. 5. Construct and test hypothesis. 6. Plan, conduct and write a report on an independent term project.

Practical skills: Students learn to carry out practical work, in the field and in the laboratory, with minimal risk. They gain introductory experience in applying each of the following skills and gain greater proficiency in a selection of them depending on their choice of optional modules. 1. Interpreting plant morphology and anatomy. 2. Plant identification. 3. Vegetation analysis techniques. 4. A range of physiochemical analyses of plant materials in the context of plant physiology and biochemistry. 5. Analyze data using appropriate statistical methods and computer packages. 6. Plant pathology to be added for sharing of field and lab data obtained.

Transferable skills: 1. Use of IT (word-processing, use of internet, statistical packages and databases). 2. Communication of scientific ideas in writing and orally. 3. Ability to work as part of a team. 4. Ability to use library resources. 5. Time management. 6. Career planning.

Scientific Knowledge: Apply the knowledge of basic science, life sciences and fundamental process of plants to study and analyze any plant form.

Problem analysis: Identify the taxonomic position of plants, formulate the research literature, and analyze non reported plants with substantiated conclusions using first principles and methods of nomenclature and classification in Botany.

Design/development of solutions: Design solutions from medicinal plants for health problems, disorders and disease of human beings and estimate the phytochemical content of plants which meet the specified needs to appropriate consideration for the public health

Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and development of the information to provide valid conclusions.

Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern instruments and equipments for Biochemical estimation, Molecular Biology, Biotechnology, Plant Tissue culture experiments, cellular and physiological activities of plants with an understanding of the application and limitations.

The Botanist and society: Apply reasoning informed by the contextual knowledge to assess plant diversity, its importance for society, health, safety, legal and environmental issues and the consequent responsibilities relevant to the biodiversity conservation practice.

Environment and sustainability: Understand the impact of the plant diversity in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

Ethics: Apply ethical principles and commit to environmental ethics and responsibilities and norms of the biodiversity conservation.

Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

The broad aims of Botany Honours (CBCS), University of Calcutta are:

1. To provide an environment that ensures cognitive development of students in a holistic manner. A dialogue about plants and its significance is fostered in this framework, rather than didactic monologues on mere theoretical aspects

2. To provide the latest subject matter, both theoretical as well as practical, such a way to foster their core competency and discovery learning. A botany graduate as envisioned in this framework

would be sufficiently competent in the field to undertake further discipline-specific studies, as well as to begin domain-related employment.

3. To enable the graduate prepare for national as well as international competitive examinations, especially UGC-CSIR NET and UPSC Civil Services Examination

4. To become a responsible citizen who is aware of most basic domain-independent knowledge, including critical thinking and communication and can utilize their knowledge for the benefit of the society.

Department of Chemistry:

Programme Outcomes: B. Sc Chemistry	
Department of Chemistry	After successful completion of three-year degree (six semesters) program in Chemistry a student should be able to:
Programme Outcomes (PO)	PO-1. Demonstrate, solve and an understanding of major concepts in all disciplines of chemistry.
	PO-2. The branches of Chemistry such as Organic Chemistry, Inorganic Chemistry, Physical Chemistry and Analytical Chemistry expose the diversified aspects of chemistry where the students experience a broader outlook of the subject.
	PO-3. Solve the problem and also think methodically, independently and draw a logical conclusion.
	PO-4. Employ critical thinking and the scientific knowledge to design, carry out, record and analyze the results of chemical reactions.
	PO-5. Create an awareness of the impact of chemistry on the environment, society, and development outside the scientific community.
	PO-6. Find out the green route for chemical reaction for sustainable development.
	PO-7. To inculcate the scientific temperament in the students and outside the scientific community.
	PO-8. The practical exercises done in the laboratories impart the students the knowledge about various chemical reagents and reactions. Thereby, hone their skills of handling the corrosive, poisonous, explosive and carcinogenic chemicals making themselves employable in any kind of chemical industries. They are also trained about the adverse effects of the obnoxious chemicals and the first aid treatment.
Programme Specific Outcomes (PSO)	PSO-1. Gain knowledge about the fundamentals and applications of chemical and scientific theories
	PSO-2. Will become familiar with the different branches of chemistry like analytical, organic, inorganic, physical, environmental, polymer and biochemistry
	PSO-3. To explain nomenclature, stereochemistry, structures, reactivity, and mechanism of the chemical reactions.
	PSO-4. Identify chemical formulae and solve numerical problems.

PSO-5. Students will learn to estimate inorganic salt mixtures and organic compounds both qualitatively and quantitatively using the classical methods of analysis in practical classes.
PSO-6. Students will grasp the mechanisms of different types of reactions both organic and inorganic and will try to predict the products of unknown reactions.
PSO-7. Develops analytical skills and problem solving skills requiring application of chemical principles.
PSO-8. Use modern chemical tools, Models, Chem-draw, Charts and Equipments
PSO-9. Know structure-activity relationship.
PSO-10. Understand good laboratory practices and safety.

Department of Computer Science

B. Sc. Computer Science

Program Outcomes:

Student outcomes describe what students are expected to know and be able to do by the time of graduation. The Computer Science Department's Bachelor of Science program must enable students to attain, by the time of graduation:

- An ability to apply knowledge of computing and mathematics appropriate to the discipline.
- An ability to identify, formulate, and develop solutions to computational challenges.
- An ability to design, implement, and evaluate a computational system to meet desired needs within realistic constraints.
- An ability to function effectively on teams to accomplish shared computing design, evaluation, or implementation goals.
- An understanding of professional, ethical, legal, security, and social issues and responsibilities for the computing profession.
- An ability to communicate and engage effectively with diverse stakeholders.
- An ability to analyze impacts of computing on individuals, organizations, and society.
- Recognition of the need for and ability to engage in continuing professional development.
- An ability to use appropriate techniques, skills, and tools necessary for computing practice.
- An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computational systems in a way that demonstrates comprehension of the trade offs involved in design choices.
- An ability to apply design and development principles in the construction of software systems of varying complexity. Program Educational Objectives Our program educational objectives for students 3 years after graduating with a Bachelor of Science degree in Computer Science are that they will be:
- Broadly Educated and Versatile. Able to draw upon foundational knowledge, learn, adapt and successfully bring to bear analytical and computational approaches on changing societal and technological challenges.
- Inspiring and Collaborative. Is a leader and a responsible citizen whose strengths come from an ability to draw on and contribute to diverse teams, expertise, and experiences.

- Innovative. Drives scientific and societal advancement through technological innovation and entrepreneurship.
- Engaged. Is and remains engaged with the University of Colorado, the state of Colorado, and technical and scientific professional communities.

M. Sc. Computer Science

Program Outcomes:

The master of science in Computer Science Program provides the students with knowledge, general competence, and analytical skills on an advanced level, needed in academics, industry, research.

Knowledge outcomes:

Students will

PO1: Be technology-oriented with the knowledge and ability to develop creative solutions, and better understand the effects of future developments of computer systems and technology on people and society.

PO2: Get some development experience within a specific field of Computer Science, through project work.

PO3: Get ability to apply knowledge of Computer Science to the real-world issues.

PO4: Be familiar with current research within various fields of Computer Science.

PO5: Use creativity, critical thinking, analysis and research skill.

Skill Outcomes

Students will

PO6: Learn new technology, grasping the concepts and issues behind its use and the use of computers.

PO7: Get prepared for placement by developing personality & soft skills.

PO8: Communicate scientific information in a clear and concise manner.

PO9: Build up programming, analytical and logical thinking abilities.

General Competence:

The students will

PO10: Be able to understand the role of Computer Science in solving real time problems in society.

PO11: Know the recent developments IT, future possibilities and limitations, and understand the value of lifelong learning.

PO12: Get an ability to participate in debates, discussions in the society constructively.

Program Specific Outcome:

After completing M.Sc. Computer Science Program students will be able to:

PSO1: Enrich the knowledge in the areas like Artificial Intelligence, Web Services, Cloud Computing, Paradigm of Programming language, Design and Analysis of Algorithms, Database Technologies Advanced Operating System, Mobile Technologies, Software Project Management and core computing subjects. Choose to study any one subject among recent trends in IT provided in the optional subjects.

PSO2: Students understand all dimensions of the concepts of software application and projects.

PSO3: Students understand the computer subjects with demonstration of all programming and theoretical concepts with the use of ICT.

PSO4: Developed in-house applications in terms of projects. PSO5: Interact with IT experts & knowledge by IT visits.

PSO6: Get industrial exposure through the 6 months Industrial Internship in IT industry.

PSO7: To make them employable according to current demand of IT Industry and responsible citizen.

PSO8: Aware them to publish their work in reputed journals.

Department of Economics:

The Curriculum of Economics Honours has been designed to encompass the various aspects of economics, starting with microeconomics, where the students get the micro level understanding of markets and agents participating in the markets. Moreover the market conditions of the economy are discussed in macroeconomics where the students get an elaborate idea of the economy as a whole with the movements of the macroeconomic indicators, the banking and financial system. Discussion of the annual budgets helps them more in this respect. Theories of development economics and their adoption in the policies for various economies with special focus on Indian Economy. The techniques of using mathematics and statistics are very important in economic analysis. The course is designed to train the students in this regard with papers dedicated for Mathematical Economics and Statistics. Special mention is of Econometrics which equips the students with theories of data analysis, finally done with the help of Econometric softwares like STATA, SPSS or R. As an outcome of this thorough training, the students finally have an elaborate idea of the economy, the theories, the monetary system, and techniques of analysis which helps them to move forward for higher academic achievements in post graduate levels, management courses, banking and finance, civil services as well as in print or electronic media.

Department of Geography:

In compliance with recent directives from the University Grants Commission, the undergraduate syllabus for Geography is reframed into Choice Based Credit System largely following the model syllabus prepared by the West Bengal State Council of Higher Education. The main objective of this new curriculum is to give the students a holistic understanding of the subject, putting equal weightage to the core content and techniques used in Geography. The syllabus tries to give equal importance to the two main branches of Geography: Physical and Human. The principal goal of the syllabus is to enable the students to secure a job at the end of the undergraduate programme. Keeping this in mind and in tune with the changing nature of Geography, adequate emphasis is rendered on applied aspects of the subject such as emerging techniques of mapping and field-based data generation, especially in the honours course. The syllabus emphasises on development of basic skills of the subject, so that everyone need not go for higher studies in search of professional engagement or employment.

Programme outcomes: This syllabus is designed to impart basic knowledge on geography as a spatial science and train the undergraduates to secure employment in the sectors of geospatial analysis, development and planning, mapping and surveying.

Department of Microbiology

Programme learning outcomes relating to B. Sc degree programme in Microbiology

The programme learning outcomes relating to B. Sc degree programme in Microbiology may include the following:

(i) A systematic or coherent understanding of the fundamental concepts, principles and processes underlying the academic field of Microbiology, its different subfields (Industrial, Medical, Food and Environmental), and its linkages with related disciplinary areas/subjects.

(ii) A procedural knowledge that creates different types of professionals in the field of Microbiology and related fields such as biomedical, bio-pharmaceuticals, food industry, teaching, research, environmental quality control, wastewater treatment, hospital and health care management, product quality control, consumer goods industry, food products, cosmetics industry, etc.

(iii) Skills related to specialisation areas within microbiology as well as within subfields of microbiology (Molecular diagnostics, quality control of food, water, air and pharmaceuticals), 20 Learning Outcomes-based Curriculum Framework for Undergraduate Education inorganic, organic and physical), and other related fields of study, including broader interdisciplinary subfields (life, environmental and material sciences).

(iv) Apply appropriate methodologies in order to learn techniques for isolation of microorganisms, working with biomolecules - its extraction, purification and quantification, basic gene level work including PCR and gel electrophoresis etc. They are also trained to apply relevant knowledge and skills to seek solutions to problems that emerge from the subfields of microbiology as well as from broader interdisciplinary subfields relating to biological sciences.

(v) Use microbial techniques relevant to academia and industry, generic skills and global competencies, including knowledge and skills that enable students to undertake further studies in the field of microbiology and/or molecular biology or a related field, and work in the food, beverage, bio-pharmaceuticals and non-chemical industry sectors.

(vi) Undertake hands-on lab work and practical activities which develop problem solving abilities required for successful career in pharmaceuticals, bio-medical industry, teaching, research, environmental monitoring, product quality, consumer goods industry, food products, cosmetics industry, etc.

(vii) Recognize and appreciate the importance of the microbial sciences and its application in academic, industrial, economic, environmental and social contexts.

Department of Molecular Biology:

Program Outcome	Molecular biology is the most advanced branch of bioscience that dissects the events that happen in the biological world at the molecular level. Knowledge of molecular biology has helped mankind to acquire tools to manipulate biological processes for betterment of humans...like development of high yielding crops, new drugs etc. Molecular biology paves the pathway of research in multiple dimensions that finally leads to improvement of quality of human life on earth.
Program specific Outcome	Modern day biology has crossed the level of phenomenology and stepped into mechanistic science. Biological processes can only be understood if the Interactions of the participating molecules are envisaged. The undergrad program of Molecular Biology is designed to make the students acquainted with biology at the molecular level. The fundamentals of replication transcript and translation as well as the chemistry of the biomolecules are included in the program. Inclusion of cell biology, biophysical techniques, biostatistics, radiation biology and several other important topics has made this program a holistic one to shape up a student for research and industry.

Department of Mathematics:
Programme Outcome of Mathematics Honours (CBCS)

1. Bachelor's degree in mathematics is the culmination of in-depth knowledge of algebra, calculus, geometry, differential equations and several other branches of mathematics. This also leads to study of related areas like computer science and statistics.
2. The skills and knowledge gained has intrinsic beauty and this can be utilised in modelling and solving real life problems.
3. Students completing this programme will be able to present mathematics clearly and precisely, make vague ideas precise by formulating them in the language of mathematics, describe mathematical ideas from multiple perspectives and explain fundamental concepts of mathematics to non-mathematicians.
4. After completing this program students will also be able to join teaching professions in primary and secondary schools. This programme will also help students to enhance their employability for government jobs, jobs in banking, insurance and investment sectors, data analyst jobs in various other public and private enterprises.
5. Completion of this program will also help students to go for higher studies. Syllabus of this programme covers a large part of so many Examinations like NET SET. Thus this program helps learners in building a solid foundation for higher studies in mathematics.

Programme outcome of B. Sc general Mathematics.

1. Bachelor's Degree in BSc general, mathematics as a general subject is the combined knowledge of algebra, calculus, geometry, differential equations and several other branches of mathematics. This also helps students to study of related areas like computer science and statistics.
 2. Students completing this program will be able to present mathematics clearly and precisely, make vague ideas precise by formulating in the language of mathematics, describe mathematical ideas from multiple perspectives and explain fundamental concepts of mathematics to non-mathematician.
 3. After completing this programme students will also be able to join teaching professions in primary and secondary schools.
 4. This program will also help students to enhance their employability in government jobs, jobs in banking, insurance, investment sectors and jobs in various other public and private sectors.
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Department of Physics:

The department offers UG physics honours and general programs. The honours program covers topics like Quantum Mechanics, Electricity and Magnetism, Optics, Mathematical Physics, Thermal Physics, Electronics, Statistical Mechanics, Solid State Physics etc. Apart from these we also offer specific elective course on Astronomy and Astrophysics, Laser and Fiber Optics etc. The students also learn advance scientific programming in Python and also scientific writing in LaTeX. We also conduct weekly student seminars and encourage them to participate in seminar, quiz etc. All these enhances the students' skill for communication, problem-solving and logical reasoning. After obtaining their degree from this department, a large number of students enter into various universities to pursue masters' degree in Physics, Material Sciences, Data Science, etc. Some students also take admission in B. Tech, M.C.A., B.Ed. etc. Many students from our department are in service as school teacher, college professor as well as pursuing active research activity in research institutes of repute besides following other professions. The students from our department can also appear in various competitive examinations like SSC, JAM, JEST, NET, GATE, SET etc.

Department of Physiology

Physiology as a subject aims to deliver an in depth scientific understanding of human body function in a harmonic and sequestrated milieu of the organ systems. Cardiovascular system, Nervous System, Respiratory system, Excretory system, Digestive system, Musculoskeletal system, Endocrine system play an important role in controlling our bodily functions. These systems form the core area of our subject, while Biochemistry, Biophysics, Microbiology & Immunology, Molecular Biology, Nutrition, Sports and Exercise Physiology, Ergonomics, Biostatistics, Environmental Physiology, Toxicology and Pharmacology are taught as allied subjects that form the Discipline Specific Electives courses. All these help nurture and develop a comprehensive understanding of Human Physiology. At the same time certain Skill Enhancement Courses like Clinical Biochemistry, Hematological techniques,

Bioinformatics, Xenobiotics aim to develop more specialized areas which involve Physiology of health and disease. A student of this course would be able to pursue in academic spheres as well as attain capabilities of entrepreneurship and work in diversified research areas both in applied and basic fields.

Department of Statistics:

B. Sc. Statistics (Honours) Programme Outcome:-

Programme Learning Outcomes in B.Sc.(Hons.) Statistics The student graduating with the Degree B.Sc. (Honours) Statistics should be able

1. Demonstrate the ability to use skills in Statistics and its related areas of technology for formulating and tackling Statistical related problems and identifying and applying appropriate principles and methodologies to solve a wide range of problems associated with Statistics.
2. acquire (i) a fundamental/systematic or coherent understanding of the academic field of Statistics, its different learning areas and applications in Medical Statistics, Actuarial Statistics, Agricultural Statistics, Geo-Statistics, Financial Statistics, Population Statistics, Financial Econometrics, Clinical Trials and Epidemiology, Queuing Theory, Stochastic Processes, etc., (ii) procedural knowledge that creates different types of professionals related to the disciplinary/subject area of Statistics, including professionals engaged in research and development, teaching and government/public service; (iii) skills in areas related to one's specialization area within the disciplinary/subject area of Statistics and current and emerging developments in the field of Statistics.
3. Recognize the importance of statistical modeling simulation and computing, and the role of approximation and mathematical approaches to analyze the real world problems.
4. Plan and execute Statistical related experiments or investigations, analyze and interpret data/information collected using appropriate methods, including the use of appropriate software such as programming languages and purpose-written packages, and report accurately the findings of the experiment/investigations while relating the conclusions/findings to relevant theories of Statistics.
5. Demonstrate relevant generic skills and global competencies such as
 - (i) problem-solving skills that are required to solve different types of Statistics related problems with well-defined solutions, and tackle open-ended problems that belong to the disciplinary-area boundaries;
 - (ii) investigative skills, including skills of independent investigation of Statistics related issues and problems;
 - (iii) communication skills involving the ability to listen carefully, to read texts and research papers analytically and to present complex information in a concise manner to different groups/audiences of technical or popular nature;
 - (iv) analytical skills involving paying attention to detail and ability to construct logical arguments using correct technical language related to Statistics and ability to translate them with popular language when needed;
 - (v) ICT skills;
 - (vi) personal skills such as the ability to work both independently and in a group.
6. Demonstrate professional behavior such as
 - (i) being objective, unbiased and truthful in all aspects of work and avoiding unethical, irrational behavior such as fabricating, falsifying or misrepresenting data or committing plagiarism;

(ii) the ability to identify the potential ethical issues in work-related situations; (iii) appreciation of intellectual property, environmental and sustainability issues; and (iv) promoting safe learning and working environment.

Program Outcome of B. Sc. Statistics (General):-

The student graduating with the Degree B.Sc. (General) Statistics should be able to

1. Demonstrate the ability to use skills in Statistics and different practicing areas for formulating and tackling Statistics related problems and identifying and applying appropriate principles and methodologies to solve a wide range of problems associated with Statistics.

2. Acquire

(i) fundamental/systematic or coherent understanding of the academic field of Statistics and its different learning areas and applications. (ii) procedural knowledge that creates different types of professionals related to subject area of Statistics, including professionals engaged in government/public service and private sectors; (iii) skills in areas related to one's specialization area within the disciplinary/subject area of Statistics and emerging developments in the field of Statistics.

3. Recognize the importance of statistical modeling and computing, and the role of approximation and mathematical approaches to analyze the real problems using various statistical tools.

4. Plan and execute Statistical experiments or investigations, analyze and interpret data/information collected using appropriate methods, including the use of appropriate statistical software including programming languages, and report accurately the findings of the experiment/investigations.

5. Demonstrate relevant generic skills and global competencies such as

(i) problem-solving skills that are required to solve different types of Statistics related problems with well-defined solutions, and tackle open-ended problems that belong to the disciplinary-area boundaries;

(ii) investigative skills, including skills of independent thinking of Statistics-related issues and problems;

(iii) communication skills involving the ability to listen carefully, to read texts and reference material analytically and to present information in a concise manner to different groups/audiences of technical or popular nature;

(iv) analytical skills involving paying attention to detail and ability to construct logical arguments using correct technical language related to Statistics and ability to translate them with popular language when needed;

(v) ICT skills; (vi) personal skills such as the ability to work both independently and in a group.

6. Demonstrate professional behavior such as

(i) being objective, unbiased and truthful in all aspects of work and avoiding unethical, irrational behavior such as fabricating, falsifying or misrepresenting data or committing plagiarism;

(ii) the ability to identify the potential ethical issues in work-related situations;

(iii) appreciation of intellectual property, environmental and sustainability issues; and (iv) promoting safe learning and working environment.

Department of Zoology:**Program Outcome:**

The program provides awareness to the students about knowledge and skill in the fundamentals and systematics of animal kingdom. The students gain the knowledge of anatomical structure and various

metabolic functions of organisms and understand the various physiological processes at molecular level of animals from different phyla. Information and skill of advanced biological techniques for experimental purposes are inculcated among the students. Students are exposed to awareness about the environment and its conservation processes, pollution control and its importance and gaining knowledge of protection of vulnerable and endangered species. Information and knowledge of applied zoology including sericulture, apiculture, fisheries, poultry, vermiculture, agricultural pests and their control etc are provided to the students with pragmatic understanding and knowledge. Students are made to learn about various concepts of genetics and its importance in social wellbeing and are made aware about ethical principles and commit to professional ethics and responsibilities. Students are made to understand the application of knowledge and understanding of Zoology to one's own and social life along with the gaining of knowledge concerning communicable and non-communicable diseases to improve personal and public health.

Program specific Outcome

The student will be able to understand, classify and identify the diversity of animals. The student understands the importance of classification of animals and classifies them effectively using the six levels of classification. The student knows his role in nature as a protector, preserver and promoter of life which he/she has achieved by learning, observing and understanding life. Acquire knowledge on the various aspects of life sciences, cell biology, genetics, taxonomy, physiology, applied zoology, general embryology and public health. Understand good laboratory practices and safety, Carry out experimental techniques and methods of Physiology, Cell biology, pathology, Genetics, Applied Zoology, Biological techniques, Toxicology, Entomology, Sericulture, Biochemistry, Microtomy. Understand the applications of biological sciences in Biotechnology, Apiculture, Poultry, Fisheries, Aquaculture, Agriculture and Vermiculture. The students gain the knowledge to use modern sophisticated equipment and tools. Recognize the scientific facts behind natural phenomena. In the Practical papers the students gain knowledge to identify various animals based on morphological features and understand the principle and use of microscopes and micrometry.

Department of Commerce

The Bachelor's Degree in B. Com. awarded to the student on the basis of demonstrated achievement of outcomes (expressed in terms of knowledge, understanding, skills, attitudes, and values) and academic criteria expected of graduates at the end of the programme. Therefore, the learning outcomes of this particular programme are aimed at facilitating the students to acquire these attributes, keeping in view changes in the current socio-economic environment.

The overall aim of B. Com. as a programme is to:

- Provide a conducive environment that holistically engages students through an all-encompassing knowledge impartation;
- Widen the scope and depth of the course enabling them to undertake further studies in commerce and its allied areas on multiple disciplines concerned with commerce;
- Construct a sound theoretical footing;
- Acquainting students with recent market practices;

- Encourage the students to advance a range of generic skills helpful in employment, internships, and social activities;
- Formulating business problems and provide innovative solutions to enable the students to be future ready management leaders who are compassionate and yet efficient.

The B. Com. Programme provides an extensive and rigorous base for learning, application, research, entrepreneurship, and holistic development. The key areas of study in Commerce and Business are:

1. Marketing Management,
2. Human Resource Management,
3. Accountancy (both Financial and Cost and Management Accounting) ,
4. Business Mathematics and Statistics (including Advance Business Mathematics),
5. Finance (including Indian Financial System and Finance Management),
6. Economics (both Micro and Macro)
7. Tax (both Direct and Indirect)
8. Investment,
9. Banking & Insurance,
10. Business & Corporate Laws, etc.

Graduate Attributes in B. Com. are the outline of the expected course learning outcomes mentioned in the beginning of each course. The characteristic attributes that a B. Com. graduate will be able to demonstrate through learning various courses are listed below:

- a.** Disciplinary Knowledge : Capability of executing comprehensive knowledge and understanding of one or more discipline that form part of commerce.
- b.** Communication Skills : Ability to communicate long standing unsolved problems in commerce show the importance of commerce as precursor to various market developments since the beginning of the civilization.
- c.** Critical Thinking: Ability to engage in reflective and independent thinking by understanding the concepts in every area of Commerce and Business and examine the results and apply them to various problems appearing in different branches of Commerce and Business.
- d.** Problem solving: Capability to deduce a business problem and apply the class room learning into practice to offer a solution for the same; capabilities to analyse and synthesize data and derive inferences for valid conclusion and able to comprehend solution to sustain problems originating in the diverse management areas such as Finance, Marketing, Human Resource, and Taxation.
- e.** Research Related Skills: Ability to search for, locate, extract, organise, evaluate, and use or present information that is relevant to a particular topic; ii. Ability to identify the developments in various branches of Commerce and Business. 3.6 Information and Communication Technology (ICT) digital literacy Capability to use various technical ICT tools (like spreadsheet) for exploring, analysis, and using the information for business purposes.
- f.** Self-directed Learning: Capability to work independently in diverse projects and ensure detailed study of various facets of Commerce and Business.
- g.** Moral and Ethical Awareness/Reasoning : Ability to ascertain unethical behaviour, falsification, and manipulation of information and manage self and various social systems.
- h.** Lifelong learning: Capability of self-paced and self-directed learning aimed at personal development and for improving knowledge/skill development and reskilling in all areas of Commerce.

The outcomes and attributes described in qualification descriptors are attained by students through learning acquired on completion of a programme of study. The term 'programme' refers to the entire scheme of study followed by students leading to a qualification.

Programme learning outcomes for B. Com. include various subject specific skills and generic skills like mind management, creativity, and innovation of competencies in diverse areas of Commerce and Business, the achievement of which will be demonstrated by the students of B. Com. Programme for the award of bachelor degree. The programme learning outcomes of B. Com. also enable a student to prepare for further study, employment, and good citizenship. Further, the difference in the level of achievement of programme outreach provides for comparing of learning levels and standards across different college/institution. The various learning outcomes of the programme are mentioned below:

- i. Bachelor's Degree in Commerce results in giving comprehensive knowledge of Marketing, Human Resource Management, Business and Corporate Law, Economics, Finance, Accounting, Management, Tax and several other branches of Commerce that includes Investment, Insurance, and Banking. Thus, this programme helps students in building a concrete footing for advanced studies in Commerce and to stand with the requirement of business sector, insurance, and banking seeking youth fit for employment.
- ii. Students undergoing this programme will be equipped to the world of work, particularly, work of the future. The student will get a first-hand exposure of working in the real world.
- iii. Students completing this programme will be able to develop managerial knowledge and tactical dexterity, with a broader skill set and encourages them to seek out audacious, innovative solutions for today's business.
- iv. Completion of this programme will also enable the students to formulate business problems and provide innovative solutions thus, molding them into future visionaries, management leaders that are compassionate yet efficient. v. The course provides an extreme and rigorous base for teaching, research, and allied business administrations.

Department of Bengali:

Programme Outcome:

1. Students are expected to develop the language skill to communicate both in writing and verbally.
2. It is expected that after completion of the programme students will get a fair knowledge of the Bengali language and literature. They will also know the rich cultural heritage of Bengal and how it emerged, evolved and sustained despite several upheavals.
3. After graduation they are expected to develop the sense of art, language and literature that will enable them to better understand the social and cultural relationships as well as human relationships.
4. Students will also grow the sense of how to appreciate art, culture, language and literature.
5. Students are also expected to develop their analytical skills by this programme so that they can judge literary works properly.

6. Students are also expected to have some experience by doing field study on folk language, literature and culture for better understanding the heritage of a specific locality which has a rich resource of folk elements.

Department of English:

Courses Offered:

1. Bachelor of Arts in English Honours (Under C.B.C.S System of Calcutta University)
2. B.A General Programme in English. (Under C.B.C.S System of Calcutta University)

Programme Learning Outcomes (BA Hons, English):

The programme learning outcomes relating to BA (Hons) degree programme in English:

1. Demonstrate a set of basic skills in literary communication and explication of literary practices and process with clarity.
 2. Demonstrate a coherent and systematic knowledge of the field of English literature and Bhasha literatures in English showing an understanding of current theoretical and literary developments in relation to the specific field of English studies.
 3. Display an ability to read and understand various literary genres and stylistic variations and write critically.
 4. Cultivate ability to look at and evaluate literary texts as a field of study and as part of the wider network of local and global culture.
 5. Demonstrate a critical aptitude and reflexive thinking to systematically analyze the existing scholarship and expand critical questions and the knowledge base in the field of English studies using digital resources.
 6. Display knowledge to cultivate a better understanding of values – both literary values that aide us in literary judgment and also values of life at all stages; apply appropriate methodologies for the development of the creative and analytical faculties of students, their overall development of writing, including imaginative writing.
 7. Recognize employability options in English studies programme as part of skill development and as career avenues open to graduates in today's global world such as professional writing, translation, teaching English at different levels, mass media, journalism, aviation communication and personality development.
 8. Channelize the interests of the students and analytical reasoning in a better way and make more meaningful choices regarding career after completion of graduate programme.
 9. To enable students to develop an awareness of the linguistic-cultural richness of India as an important outcome of English literary studies in India.
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Department of Hindi:**Programme outcome**

1. The first part of any language is communication. With the help of this we express our feelings in front of others. AECC1 and LCC2 (HINDI) have been included in the curriculum keeping these objectives in mind.
 2. The essay poem and short story included in the curriculum is just one example. If a person from another field wants to speak in poetry or essay then it helps in that. Apart from this many English words have been given in it, which are useful while doing correspondence in the office.
 3. The basics of the language have been done in LCC2 Hindi. Special care has been taken about how the language can be written pure, along with accuracy there is a special emphasis on how the language can be expressed.
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Department of History:

1. The students will get a broad overview of the chronological span ranging from the prehistoric to the contemporary era with a focus on South Asia. Besides, students would be acquainted with aspects of East Asia, West Asia and Europe.
 2. The students would be able to grasp historical trends, historiography and historical debates after completion of the Programme.
 3. The Programme will help to meet the growing needs of the students to take NET/SET or other academic competitive examinations like, Teacher Eligibility Test (TET), School Service Commission (SSC), and other competitive examinations like the Civil Service Examinations.
 4. The Project Paper is intended to give the students a first-hand feel of independent research and act as a foundation for their future research activities.
 5. The departmental e-magazine “Chronicles Of The Past” offers a unique opportunity to inculcate research potentiality among students and hone their writing skills while student webinars help sharpen their speaking power.
 6. The department takes a proactive role in orienting the students for soft skill which is now an essential requisite for the scholars who intend to pursue higher studies and research.
 7. Visits to museums is designed to generate interest among students for museology and archaeology, both inalienable parts of history.
 8. Tours to historical sites help develop among the students a better understanding and love for the subject as well as reveal their organizational and leadership skills.
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Department of Journalism & Mass Communication:

Name of the Programme	Programme outcome
<p>B. A JOURNALISM & MASS COMMUNICATION (Honours)</p>	<p>A. Students graduating through B.A honours program from this college are expected to develop knowledge, understanding, skills, attitudes and values which will enable them to solve the problem related issues that he/ she faces in the next level of Studies.</p> <p>B. At the initial stage the students feel uncomfortable with their language skill but when they complete their program then they feel pretty comfortable to communicate.</p> <p>C. Students of this program are able to participate in interactive sessions for asking questions to resource persons and he/she can also present ppt of the relevant studies.</p> <p>D. Students graduating from this college are also able for any field study, internal assessment and project work with any social, economical, cultural topic.</p> <p>E. Students completing the programme become confident in the sense that they feel they are employable.</p> <p>F. Students of this college are able to do any research work using methodologies and surveys as a step of research for their higher studies.</p> <p>G. This program makes our students as a complete future citizen and give proper value education.</p> <p>H. Particularly in this subject like journalism is a mix of all streams like pol.sc history, philosophy, education, economics, psychology and so on. Bcz mass communication deals with so many areas of our society where human communication deals with these subjects.</p> <p>I. Journalism UG syllabus contains with journalistic writings, history of Indian journalism, press laws, reporting editing, PR advertising with a theoretical and practical blended mode. So students can do hands-on experiments using cameras, video and film, radio, TV and social media.</p> <p>J. Journalism is a professional job oriented subject under B.A honours programme. Like other arts subjects. We also focus on career building through internships. After that they can absorb themselves or it may be an added qualification.</p> <p>K. Now so many colleges under Indian universities introduced JORA as a job oriented subject. In the last century. In the last century there was only one college with journalism. Now so</p>

	many colleges are running successfully with both honours and pass courses. Many of them are starting PG also.
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Department of Philosophy:

Programme Outcome

1. The syllabus of B.A Philosophy (Hons. and General) of University of Calcutta is designed in such a way that it aims to motivate the students to be more rational, analytical, argumentative and open-minded towards every sphere of life and at the same time to be respectful to Indian tradition & culture.
2. The programme of Philosophy (Hons. And General) is framed so that the students will be able to acquire knowledge that is vital to the discipline of Philosophy including knowledge of core concepts of Indian Philosophy, Western Philosophy, Ethics, Logic, Social and Political Philosophy and religion.
3. This programme helps the students to develop a strong sense of critical, imaginative and informative reasoning skills. At the same time they will be able to understand the nature of the human mind, language, morality, politics, logic and will also become aware of the contemporary world and environment.
4. After thoughtful learning of the subject, students can analyze the issues like fairness, justice, human rights and duties, sense of responsibility of the citizens towards the nation. This type of awareness is very important in the present scenario of our country. After the completion of a three-year course, a student of Philosophy is able to feel that truth cannot be known intellectually, rather it must be realized within himself.

Department of Political Science:

Programme Outcome: B. A Honours

- Students of this programme become capable to ask questions, and debate upon the issues which in turn generate discussions.
- Students graduating through B.A. Hons Programme from the college are expected develop an analytical skill which would in turn enable them to solve various issues that they face in next level of studies.
- The programme also trains the students to undertake primary level of research work and thus they in turn become motivated for advanced research when they go for higher studies in future.

Programme Outcome: Political Science B. A Honours

- Students graduating through B.A. Political Science Honours Programme from the college develop analytical skills which enables them to understand the current affairs related issues in the national and international scenario.
- Students of this programme become capable to ask questions, and debate upon the political issues as well which in turn generate discussions.
- Various assignments and project works which are given also enable the students to develop a theoretical framework they learnt in class.
- The Programme provides an introduction to the issues in Foreign Policy, Indian and World Constitutions, Comparative Politics, International Relations, Indian Politics, Political Theory, Public Administration, Western and Indian Political Thought. The students of the department are also taught special papers on gender and politics, public policy, citizenship, legal issues and the legal system of India.
- This program also equips the student for competitive exams conducted by UPSC, WBSC, NET, and SET examinations.

Programme Outcome: Political Science B. A General

- Students graduating through B.A. Political Science General Programme from the college develop analytical skills which enable them to understand the current affairs related issues in the national and international scenario.
- The Programme provides an introduction to the issues in Foreign Policy, Indian and World Constitutions, Comparative Politics, International Relations, Indian Politics, Political Theory, Public Administration. The students of the department are also taught special papers on Human Rights, legal issues and the legal system of India, along with papers on research methods and dimensions of research.
- This program also equips the student for competitive exams conducted by UPSC, WBSC, NET, and SET examinations.

Department of Psychology:

The discipline of psychology has grown as a science of mental processes and behaviour. Nonetheless, strong attempts have been made to humanize the discipline and retrieve its connection to themes and issues that are closer to lived realities. The following learning outcomes can be mentioned –Practical training, internship and field placement. (Available Internships are communicated to students by faculty members). Learning planning and conducting small scale studies and analyzing data following scientifically (Collaborative research work is done by teachers – students). Mastery of the use of computers and internet in conducting experiments and surveys. (Laptops are installed with SPSS Software)

Department of Sanskrit:**Courses Offered**

1. Bachelor of Arts in Sanskrit Honours (CBCS)
2. Bachelor of Arts in Sanskrit General (CBCS)

Programme Outcomes

1. To enable students to develop an awareness of Ancient Intellectual tradition through Sanskrit.
 2. To enable students to write in Devanagari
 3. To grow the interests of the students on Ancient Indian Culture, History, Life etc. so that they can analysis past richness of the human mind.
 4. Try to enhance students for skill development like translator, news reporter and mass media for their career
 5. To cultivate Sanskrit Literary methodologies is the important outcome of Sanskrit Literary studies.
 6. Demonstrate current theoretical and literary systems to understand the present field.
 7. To show a more expansive view of world Sanskrit Literature.
 8. To aware students for the existing scholarships and opportunities.
 9. To focus on Spoken Sanskrit for language usage and career development.
 10. To able students to understand various literary genres like (Veda, Dharmasastra, Darshana, Grammar, Epigraph, Purana etc.) critically.
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Department of Sociology**Program outcome**

After completion of graduate honours course, students are expected to develop an awareness of our society from a perspective different from others. It is expected that at the end of the programme students will adept the skill of specifying sources of varied social problems and thus will be able to provide solution. Students will able to view social world from diversity of cultural perspective and thereby will develop objective rational outlook. This programme will enhance student's understanding about their own social condition which in turn will throw more insight for betterment of their condition.

Department of Urdu:**Programme Outcome**

The college is approved under Graduate (B.A) General program by University of Calcutta as per new UGC- norms (CBCS). Students have the option to choose the AECC-1 and LCC-2 in their course combination. The students have completed their graduation programme which are expected to all round development. The centric significant of this programme as follows-

- Developing intellectual, personal and professional abilities
 - Enhance effective communication skill
 - Developing high standard behavioural attitude
 - Shaping the socially and responsible citizens
 - Students can go for higher studies like M.A, B. Ed. or choose teaching as career in school
 - Employment opportunities in various field like banking job
 - Students can go to appear competitive examination like SCS, WBPS, UPSC, etc
 - Study of language makes students socially aware
 - Many students can pursue in mass communication field
 - Many students can pursue as translator in media house
 - Possess knowledge of linguistic, Urdu language teaching, advanced phonetics.
 - Demonstrate a command of written academic Urdu
 - Demonstrate critical and analytical skill in the evaluation of any text.
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