

B. Com. course

Programme Outcomes

B.Com (Honours & General) courses under CBCS System of the University of Calcutta has been designed to help the under graduate students of commerce to enhance their learning in different fields of the study. The course offers four areas of specialization, namely, Accounts and Finance, Consumer Behavior and Sales management, Public Finance and Taxation, Fundamentals of Computer. The University has structured the syllabus of B.CoM (H & G) in such a way that shall help the students to gather knowledge & skills not only in the subjects of Commerce but also in other allied subjects like Economics, Statistics, Information Technology etc with the object of attaining an integrated knowledge. The learning skills shall also help the students to be a successful entrepreneur as well as to be a professional in different fields of commerce.

Programme Specific Outcomes

B.Com. Honours & General Course Curricula / Structure

Paper Code	Subject	Outcome
AECC 1.1 & 6.1 & 2 (Ability Enhancement compulsory Course)	1.1: Language	1.1: Language is inevitable in the field of commerce.
	6.1 & 2: Environmental Studies	6.1: Environmental studies shall make the students to learn about the utilization and preservation of natural resources
(Honours) GE 1.1, GE 2.1, GE 3.1, GE 4.1 (General) GE 1.1, GE 2.1, GE 3.1, GE 4.1 (Common Group for both honours & general)	1.1: Micro Economics I & Statistics	1.1 This paper helps to build the concept on market mechanism through demand & supply, production & cost analysis, consumer's & producer's optimization.
	2.1: E-Commerce & Business Communication (50+50)	Statistics:- This course is to familiarize the students with the basic statistical tools which can help them to analyse the business data to formulate the new business plan, policies and forecast trends of sales, demand, supply and market fluctuations etc. Statistical tools and techniques are used in market research before launching new products, stock market development and banking sectors etc. It is also helpful to make scientific business decision even in uncertain business environment.
	3.1: Business Mathematics & Statistics	2.1: The subject is essential for building the communication skills in trade, commerce & business electronically
	4.1: Microeconomics II & Indian Economy (50+50)	3.1 This subject helps to record, realize, and

		<p>summarize the business transaction data. So practically it is used to record and manage the business operations, such as percentage calculation, ratio, equation, interest calculation, checking accounts, accounting equation, forecast sales, price discount, payroll calculation, asset, liabilities, capital calculation, and business decision.</p> <p>Business Mathematics: This subject helps to record, realize and summaries the business transaction data. So practically it is used to record and manage the business operations, such as percentage calculation, ratio, equation, interest calculations, and checking accounts, accounting equations, forecast sales, price discounts, payroll calculations, assets, liabilities, capital calculations and business decisions.</p>
		<p>4.1 The first part of the paper helps to understand the students to enrich knowledge on several market types & optimization of the firms through equilibrium & model analysis.</p> <p>The second part of this subject paper helps the students to develop their understandings on basic issues & problems of Indian economy with the role of the Government as the solver of those economical issues.</p>
<p><u>CC (Core Course)</u> <u>(Honours)</u> 1.1, 2.1, 3.1, 3.2, 4.1, 4.2, 5.1, 5.2, 6.1 <u>CC(General)</u> 1.1, 2.1, 3.1, 4.1, 4.2, 5.1,</p>	1.1: Financial Accounting –I	1.1 & 3.1: The subject helps to study the method of maintaining the books of accounts for a partnership firm, sole proprietorship business, nonprofit seeking organization etc. Thus,, augmenting their accounting & entrepreneurial skills.
	2.1: Cost and Management Accounting – I	2.1 & 4.2: The subject encompasses with the study of analyzing the cost of manufacturing of a product. It helps to analyze the various elements of costs.
	3.1: Financial Accounting II	4.1 & 5.2: The subject helps the students to learn the different provisions of both direct and indirect taxation. The students also learn the computation of income tax.
	3.2: Indian Financial System	5.1: The study helps the students to learn the role, importance and responsibilities of
	4.1: Taxation-I	
	4.2: Cost and Management Accounting II	
	5.1: Auditing & Assurance	

	5.2 Taxation –II	an auditor in a company and a firm.
	6.1: Project Work	3.2: The subject enriches with the scope of learning the Indian Financial System including Capital and Money Market and the Banking system.
		6.1: The study helps the students to undergo empirical research work in different fields.
CC (Core course) 1.1Chg, 1.2 Chg, 2.1 Chg, 2.2Chg. 4.1 Chg (Common for both honours & general)	1.1: Business Laws	1.1: The subject encompasses with the study of various civil legal Acts and provisions of India.
	1.2: Principles of Management	1.2: The subject helps the students to learn the various principles and theories of management.
	2.1: Company Law	2.1: The subjects entitles with the study of learning various statutory provisions of the Indian Companies Act 2013.
	2.2: Marketing Management and Human Resource Management	2.2: The subject entitles with the study of sales, marketing, promotions, and advertising of a product and enlarges itself with the scope of analyzing various aspects of human resource management.
	4.1: Entrepreneurship Development and Business Ethics	4.1: The subjects teach the students how to be an ethical entrepreneur.
(Skill Enhancement Elective Course) SEC 3.1 Chg, SEC 6.1Chg	3.1 Information Technology & Its Application in Business (50+50)	3.1: The subject aims to provide the fundamental knowledge on Information Technology (IT) which is very vital in today's business, commerce & economy. It shall make the students enabled to learn database management system.
	6.1 Computerized Accounting and e-Filing of Tax Returns	6.1: The subject encompasses with the study of professional filing of e-tax returns and various accounting software like Database management system, payroll, tally, GST, preparation and submission of e- income tax files. The paper is fully practical that shall be helping the students in professional arena.
(Honours) DSE 5.1 A, DSE 5.2 A, DSE 6.1 A, DSE 6.2 A. (General) DSE 5.2 A, DSE 6.1 A, DSE 6.2 A. DSE 5.1 A (Discipline Specific	5.1A: Economics II and Advanced Business Mathematics	5.1A This paper of the subject helps to build the concept on Macro economics with special emphasis on determination of equilibrium National Income, Equilibrium of Commodity & money market, Money & Inflation etc.
	5.2 A: Corporate Accounting	<u>Advance Business Mathematics</u> This subject is made up of two branches of
	6.1A: Financial Reporting and Financial Statement Analysis	
	6.2A: Financial Management	

Elective)	DSE 5.1 A Taxation II (GENERAL)	<p>mathematics. These are calculus and matrices. In differential calculus, concept of function is used to find different types of functions like, cost function, profit function and revenue function etc. Concept of differentiation is used to find different types of marginal functions, like marginal profit, marginal costs, marginal revenue, and maximum and minimum values of costs, profit etc.</p> <p>Integral calculus is used to calculate total revenue from the marginal revenue given.</p> <p>Matrix is used to deal with the unique needs of the various sectors of industry. It gives opportunities to finance and logistics management, and customer relationship by providing them a variety of solutions.</p> <p>At last, this course acts as a bridge between Economics and Operation Management (Management Accounting).</p>
		5.2A: The subject teaches the students to learn the applications of accounting principles, practices and Indian accounting standards for a Public limited company along with the students learn various financial statement analysis of companies.
		6.1A: The subject encompasses with the study of analyzing the different aspects of financial statements for the purpose of comparative analysis among firms and companies.
		6.2A: The subject helps the students to learn financial, investment and dividend aspects with the object of profit and wealth maximization of financial institutions
		DSE 5.1 A: The subject shall help the students to learn the various provisions of Income Tax Act 1961 along with all relevant amendments.

B.A COURSE

After graduating with a B.A degree with subjects like English, Hindi, Bengali, Journalism and Mass communication, Political Science or History, candidates can pursue Masters in these subjects or opt for the B.Ed course to join the teaching profession. Completion of the B.A course also makes candidates eligible to appear for competitive exams. Some of the career options that candidates can pursue include content writing, journalism, publishing, advertising and film production.

For all programmes, two compulsory courses AECC1 and AECC2 (Ability Enhancement compulsory Course) includes Language and Environmental studies in the syllabus. Other than the course courses mentioned below, students have to select two courses from SEC (Skill Enhancement Elective course) and four courses from DSE (Discipline specific elective course).

DEPARTMENT OF ENGLISH

Programme Outcome

Career options after graduating with B.A Honours in English are more than just becoming a teacher or journalist. There are several openings for content developers in various fields as companies and brands strive to enhance their online presence through digital marketing. Script writing and copywriting are high paying jobs. Public Relations is another option for English graduates if they are capable of convincing people with words. Graduates with proficiency in another foreign language along with English can take up jobs as translators at an Embassy. Editing and proofreading is an attractive career option for graduates who are ready to go through several manuscripts every day. Publishing houses as well as academic institutions offer diplomas in editing which can help students secure jobs faster. Graduates with a creative bent of mind can try their hand at authoring books or copywriting for advertisements.

Course Outcome

Course Name	Description
CC1	HISTORY OF LITERATURE AND PHILOLOGY-Comprehensive knowledge about different periods of English literature and development of English as a language
CC2	EUROPEAN CLASSICAL LITERATURE- Introduction to seminal texts of Greek and Latin literature
CC3	INDIAN WRITING IN ENGLISH- Analysis of works by Indian authors, written or translated in English
CC4	BRITISH POETRY AND DRAMA (14TH – 17TH CENTURY)- Introduction to Elizabethan drama and poetry as well as Metaphysical poetry
CC5	AMERICAN LITERATURE- History of American literature and analysis of seminal texts
CC6	POPULAR LITERATURE- Texts covering multiple genres like crime fiction, children's literature, fantasy

CC7	BRITISH POETRY AND DRAMA (17TH – 18TH CENTURY)- Introduction to Jacobean drama, Restoration and Augustan drama and poetry
CC8	BRITISH LITERATURE (18TH CENTURY)- Travel literature, beginning of the English novel
CC9	BRITISH ROMANTIC LITERATURE- Analysis of works of major poets, essay writers and novelists of the Romantic period
CC10	19TH CENTURY BRITISH LITERATURE- Introduction to Victorian poetry and novel of Romantic and Victorian periods
CC11	WOMEN'S WRITING- Glimpses of works by female authors belonging to different nationalities
CC12	EARLY 20TH CENTURY BRITISH LITERATURE- Introduction to modern British poetry and drama
CC13	MODERN EUROPEAN DRAMA- Analysis of plays by European writers of the 20 th Century
CC14	POSTCOLONIAL LITERATURE- Introduction to theory of post-colonialism and analysis of seminal texts

DEPARTMENT OF JOURNALISM AND MASS COMMUNICATION

Programme Outcome

The Department of Journalism and Mass Communication offers 3 years B.A Honours and General Courses under the University of Calcutta. The department believes in pragmatic learning where theory and practice meet the social and professional needs. Today is the age of technology and here information is power. Our subject builds career to successfully run the information industry. After successfully completing the course, the students can choose and build a successful career in different fields like Print Media, Television Journalism, Radio Production, Film production, Web Content Development, Advertising Industry, Public Relations in Private Sector and Public Sector, Event Management, Marketing Communication. If interested the candidates can go for higher studies in the fields of Mass Communication, clear competitive examinations like NET and SET and can join the Academics or go for Research & Development. The students of this subject can easily Work from Home as well, like by doing content writing.

Course Outcome

Course Name	Description
CC1	INTRODUCTION TO JOURNALISM- In this core course the students are introduced to the concept of journalism and basic terms used in the field of journalism along with basic knowledge of computer for print journalism and writing for newspapers.
CC2	HISTORY OF INDIAN JOURNALISM- It is very important that the students studying journalism and mass communication should have a deep knowledge about the history of Indian journalism and in this part of the syllabus it is explained to the students.
CC3	REPORTING AND EDITING- The students of Journalism and mass communication should have in-depth knowledge about the reporting and

	editing process to build their career in the field of journalism, in this part reporting and editing is being taught to the students in details.
CC4	MEDIA AND COMMUNICATION- Media and media persons have certain social obligations towards the betterment of our society. The students are introduced to the world of Media and communication in this core course, where they get to know about the different types and forms of communication and the role of media in our society.
CC5	COMMUNICATION, MEDIA, SOCIETY- Different models and theories of communication are being taught to the students in this part of the Syllabus for building their strong knowledge base about this subject.
CC6	Media and Cultural Studies- In this Core Course the students are introduced to different schools of Media studies and Cultural Studies.
CC7	INTRODUCTION TO RADIO-Along with practical this Core Course introduces the students to the world of Radio journalism. In this part SEC is also included to enhance the practical skills and knowledge base of the students in the field of Radio and Photo Journalism.
CC8	INTRODUCTION TO TELEVISION-Along with practical this Core Course introduces the students to the world of Television journalism.
CC9	FILM THEORIES AND PRODUCTION- Film is an important medium of Mass Communication. This Core Course introduces the students with Film Theories and Production.
CC10	MEDIA MANAGEMENT, PRESS LAWS- To survive in the field of journalism one should have good knowledge about the Laws and ethics related to Media and know about Media Management. This part of the syllabus introduces the students to Media Management and Press Laws. In this part SEC is also included to make the students learn about Documentary Film Production and Feature Film Production.
CC11	INTRODUCTION TO NEW MEDIA- In today's time it is very important to know about the world of New Media. This core Course introduces the students to the amazing and interesting world of New Media along with Practical.
CC12	DEVELOPMENT COMMUNICATION- Communication plays a vital role in development throughout the world. The concept of Development Communication is introduced to the students in this Core Course. In this part of the syllabus Global Media and Politic Media, Human Rights, Gender and Environmental Studies are also included in the DSE for the students. Multi Media Journalism, Communication Research are also introduced so that students can gain knowledge in these fields which shall help them to build their career in future.
CC13	ADVERTISING- Advertising is introduced in this Core Course for the students so that they can get an in-depth knowledge about the field of advertising along with practical.
CC14	PUBLIC RELATIONS- Public Relations is introduced in this Core Course for the students so that they can get an in-depth knowledge about the field of Public Relations where there are huge job opportunities for the students in their future.

DEPARTMENT OF GEOGRAPHY

Programme Outcome

Geography is an inter-disciplinary subject which brings together all other subjects and will give an oversight. Geography is the study of Earth's landscapes, peoples, places and environments. Geographers asks where things are located on the surface of the earth, why they are located where they are, how places differ from one another and how people interact with the environment. It will provide a strong research and analytical skill. Geography has now acquired the status of science that explains the arrangements of various natural and cultural features on the earth surface.

Course Outcome

Course Name	Description
CC1	GEOTECTONIC AND GEOMORPHOLOGY- Geotectonic is related to the form and structure of rock masses and geomorphology is the scientific study of landforms. Geotectonic and Geomorphology is the study of individual features and the processes that create them.
CC2	CARTOGRAPHIC TECHNIQUES- Cartographic Techniques is preparing the base for cartographers who are concerned with all aspects of map making.
CC3	HUMAN GEOGRAPHY- Human geography explores the relationships between society and the natural environment. Human geography offers operations, education, sales and marketing sectors for us.
CC4	THEMATIC MAPPING AND SURVEYING- Surveying is a science of measuring the distance, position and angles of earth surface. Thematic mapping is a technique of map making on the basis of a particular theme or subject area.
CC5	CLIMATOLOGY- Climatology is more than just the study of weather that analyze climate patterns to provide an overview of the conditions of weather a particular area.
CC6	HYDROLOGY AND OCEANOGRAPHY- Hydrology is the study of movement, distribution and quality of water throughout the earth. Oceanography is the general studies of water in the oceans and estuaries. It is an integrated study of sea-land system and its environmental functionary.
CC7	STATISTICAL METHODS IN GEOGRAPHY- Statistical methods in geography are applied in the field of academic research. This is the study and practice of collecting, analyse and presenting data that has a geographic dimension.
CC8	ECONOMIC GEOGRAPHY- Economic Geography deals with all matters of economic interest which aims to equip, the positions in organization such as Governmental Ministries, Urban and Country Planning Consultancies.
CC9	REGIONAL PLANNING AND DEVELOPMENT- Regional planning and Development play a key role in managing and developing a region. This field of geography offers positions in organization such as Urban Design, Civil service Administrator and Planning and Development Surveyor.
CC10	SOIL AND BIO GEOGRAPHY- The main aim of Soil and Bio Geography obtain position in environmental science,

	production, agriculture, conservation, consulting, research, teaching, extension and natural resource management.
CC11	RESEARCH METHODOLOGY AND FIELDWORK- Research Methodology and Field Work in Geography does not provide practical field procedure but also lay a background for the understanding of geography as a discipline. This field of geographic study related with data collection processes outside a laboratory.
CC12	REMOTE SENSING, GIS AND GNSS- Remote sensing is a technique used to survey and collect data regarding an object without any physical contact with the object. GIS (Geographical Information System) is a computer based tool for mapping and analyzing features on earth. GNSS (Global Navigation Satellite system) is a satellite navigation system that provides autonomous geo spatial positioning with global coverage. They have opened a new research frontier in the different field of geography such as- weather and climate change, forest and biodiversity, land use pattern, monitoring of natural hazard and disasters.
CC13	EVOLUTION OF GEOGRAPHICAL THOUGHT- Evolution of Geographical Thoughts covers a wide canvas of the story of geographical thoughts, ideas and knowledge right from the early Greek period to Modern Contemporary Geography.
CC14	HAZARD MANAGEMENT- A Hazard is any source of potential damage or harm on someone or something. Hazard Management is basically a field that involves identifying, analyzing and eliminating potential hazards.

B.Sc. COURSE

There are various career-based subjects offered under the B.Sc course like Microbiology, Botany, Zoology, Chemistry, Physics, Computer Science, Food and Nutrition or Mathematics. Candidates graduating with B.Sc degree have diverse job profiles available to them like immunologist, food technologist, medicinal chemist, dietician, food research analyst, farming consultant, ecologist and marine scientist to name a few. In order to be well-equipped to pursue these career options, candidates can opt for a Masters course in the discipline of their graduation.

For all programmes, two compulsory courses AECC1 and AECC2 (Ability Enhancement compulsory Course) includes Language and Environmental studies in the syllabus. Other than the course courses mentioned below, students have to select two courses from SEC (Skill Enhancement Elective course) and four courses from DSE (Discipline specific elective course).

DEPARTMENT OF FOOD AND NUTRITION

Programme Outcome

The course in Food and Nutrition is a comprehensive course dealing in subjects such as Food Science, Human Nutrition, Human Physiology, Therapeutic Nutrition, Community Nutrition, Nutritional Biochemistry, Food Microbiology and Food Preservation as well as Processing. It is the study of the effects of Food Components on the Metabolism, Health, Performance and Disease Resistance of Humans.

Course Outcome

Course Name	Description
CC1	BASIC FOOD SCIENCE-I- It is the study of nutrients in food, how the body uses nutrients, and the relationship between diet, health, and disease.
CC2	HUMAN PHYSIOLOGY-I-Human physiology seeks to understand the mechanisms that work to keep the human body alive and functioning, through the help of Food and Nutrients.
CC3	BASIC FOOD SCIENCE-II- It is the study of nutrients in food, how the body uses nutrients, and the relationship between diet, health, and disease.
CC4	HUMAN PHYSIOLOGY-II- Human physiology seeks to understand the mechanisms that work to keep the human body alive and functioning, through the help of Food and Nutrients.
CC5	HUMAN NUTRITION-I- The ultimate goal of this is to promote optimal health and reduce the risk of chronic diseases as well as to prevent classic nutritional deficiency diseases.It also includes the study of human behaviours related to food choices largely on Dietary concerns and Health issues in various age groups.
CC6	COMMUNITY NUTRITION- The goal of community nutrition is to educate individuals and groups so that they adopt healthy eating habits.
CC7	FOOD COMMODITIES- This is the study about commonly consumed foodsthat are ingested for their nutrient properties.
CC8	HUMAN NUTRITION-II- The ultimate goal of this is to promote optimal health and reduce the risk of chronic diseases as well as to prevent classic nutritional deficiency diseases.It also includes the study of human behaviours related to food choices largely on Dietary concerns and Health issues in various age groups.
CC9	DIET THERAPY-I- Studying about Individualized diet therapy can provide the patient important insight into food-related illnesses and education regarding how various nutrients (protein, carbohydrate, fat, alcohol) affect illness, diseases, or obesity.
CC10	NUTRITIONAL BIOCHEMISTRY-I- Nutritional biochemistry deals with various studies in nutrients, food constituents and their function regarding humans , nutritional biochemistry specifically focuses on nutrient chemical components, and how they function biochemically, physiologically, metabolically, as well as their impact on disease.
CC11	DIET THERAPY-II- Studying about Individualized diet therapy can provide the patient important insight into food-related illnesses and education regarding how various nutrients (protein, carbohydrate, fat, alcohol) affect illness, diseases, or obesity.
CC12	NUTRITIONAL BIOCHEMISTRY-II-Nutritional biochemistry deals with various studies in nutrients, food constituents and their function regarding humans , nutritional biochemistry specifically focuses on nutrient chemical components, and how they function biochemically,

	physiologically, metabolically, as well as their impact on disease.
CC13	FOOD MICROBIOLOGY- Microbiology is important to food safety, production, processing, preservation, and storage. The study of food microbiology includes understanding not only the factors influencing the growth of microorganisms in food systems but also the means of controlling them.
CC14	FOOD PRESERVATION- Food preservation consists of the application of science-based knowledge through a variety of available technologies and procedures, to prevent deterioration and spoilage of food products and extend their shelf-life, while assuring consumers a product free of pathogenic microorganisms.

DEPARTMENT OF ZOOLOGY

Programme Outcome

Zoology Honours programme is planned to promote general and practical education in Zoology and Biological Sciences. The knowledge of Zoology is the central theme in such emerging areas like Classification, Genetics, Cell biology, Developmental biology, Evolution, Biochemistry, Microbiology, Immunology, Ecotoxicology, Biotechnology, Biodiversity Studies, Ecosystem Monitoring, Environmental Management, Animal Bioinformatics and economic aspects. Zoology encompassing such multidisciplinary areas has become an important issue in animal biodiversity prospecting wildlife conservation and environmental management. Hence, it is imperative that the student should be properly trained to enable him/her play the expected pivotal roles in these emerging field of learning. Thus to play this role, adequate knowledge of Zoology is imperative and has been built into the curriculum.

Course Outcome

Course Name	Description
CC1	NON CHORDATA – I (PROTISTS TO PSEUDOCOELOMATES)- Study of invertebrate diversity upto the acoelomate phyla.
CC2	MOLECULAR BIOLOGY- Study of molecular biology covering the main part of classical genetics and central dogma.
CC3	NON CHORDATA – II (ALL COELOMATE PHYLA)-Rest of the invertebrates having true coelom.
CC4	CELL BIOLOGY- Cell biology comprising all the cellular organelles, interaction and communication between them with some part of endocrine regulation. Control of cell cycle and apoptosis.
CC5	CHORDATA- Diversity of Chordates with interesting characteristic features of every class. Evolution of chordates.
CC6	ANIMAL PHYSIOLOGY: CONTROLLING & CO-ORDINATING SYSTEM- Physiology of vertebrates. Control and co-ordination between organs and systems of vertebrate body. Endocrine regulation in vertebrate body. Neuro-endocrine regulation.
CC7	FUNDAMENTALS OF BIOCHEMISTRY- Fundamentals of biochemistry. Carbohydrate, protein and lipid as basic building blocks of vertebrate body and their function.
CC8	COMPARATIVE ANATOMY OF VERTEBRATE- Comparative

	anatomy of vertebrates with details of every organ and system and co-ordination between them.
CC9	ANIMAL PHYSIOLOGY: LIFE SUSTAINING SYSTEM- All the physiological process of animal body.
CC10	IMMUNOLOGY- Immune system of animals. Basic cells and organs associated with immune system, and co-ordination between them. Types of immunity.
CC11	ECOLOGY- Study of ecology and ecosystem. Components of ecosystem and environment. Relation between biotic and abiotic components of environment. Conservation of wildlife.
CC12	PRINCIPLE OF GENETICS- Principal of classical genetics, Mendeliangenetics and study of sex determination.
CC13	DEVELOPMENTAL BIOLOGY- Study of embryonic development. Modern use of developmental biology.
CC14	EVOLUTIONARY BIOLOGY- Origin of life. Theories of evolution. Mathematical use of evolutionary biology in population genetics.

DEPARTMENT OF MICROBIOLOGY

Programme Outcome

Microbiology is a broad discipline that involves the study of microorganisms and their role on the environment and on other living organisms. Increasing evidence of the potential impact of microbes on human, animals, soil, water, food etc. has already made the subject to be emerged as one of the key disciplines of biology. Researches on biochemical and molecular level unwound the mystery of microbial world in many ways.

The three year B.Sc. Honours Course in Microbiology is divided into six semesters. The subject is aimed at providing knowledge and application based guidance in many interdisciplinary subjects like Bacteriology, Virology, Environmental and Agricultural Microbiology, Biochemistry, Molecular Biology, Cell biology, Metabolism, Genetics, Recombinant DNA Technology, Industrial Microbiology, Medical Microbiology, Immunology etc. Students graduating in this subject can pursue higher studies like M.Sc. and Ph.D. or may get the opportunity of working in different government and public sector units which include Teaching Institutes, Healthcare sectors, Research & Development, Pharmaceuticals, Food and Dairy Industries.

Course Outcome

Course Name	Description
CC1	INTRODUCTION TO MICROBIOLOGY AND MICROBIAL DIVERSITY-This core course focuses on the historical account and scope of microbiology, diversity of the microbial world and their systemic position.
CC2	BACTERIOLOGY-The core course includes the study of morphology, cellular organization, growth, nutritional requirements and different reproduction methods of bacteria. It also provides knowledge about several important groups of bacteria and various microscopic techniques used for microbiological isolation and cultivation processes.

CC3	BIOCHEMISTRY-This core course is designed to provide thorough knowledge about the structure and function of important biomolecules (carbohydrate, protein, and lipid) and catalytic role of enzymes and vitamins in biological system.
CC4	CELL BIOLOGY-Cell Biology course provides a detailed idea about the structural organization of the cell and its signaling mechanism, regulation and control of cell cycle and other cellular events.
CC5	VIROLOGY-This course highlights the structure and types of viruses, isolation and cultivation of viruses, role of viruses in disease development and their replication strategies, prevention, treatment and control of viral diseases.
CC6	MICROBIAL PHYSIOLOGY AND METABOLISM-This core course gives the scope to acquire knowledge about different metabolic processes of important groups of bacteria and their significance.
CC7	MOLECULAR BIOLOGY-The syllabus of this core course is designed for in-depth study of the structure of different forms of DNA and RNA, mechanism of replication, transcription and translation in prokaryotes and eukaryotes, regulation of gene expression.
CC8	MICROBIAL GENETICS-The CC8 core course provides detailed idea about the pattern of organization of both prokaryotic and eukaryotic genomes, fundamental and applied aspects of various cellular genetic constituents.
CC9	ENVIRONMENTAL MICROBIOLOGY-This core course is focuses on the diversity of microflora presents in air, soil, water and food, their physicochemical features, mechanism of diseases caused by them and their overall impact on the environment.
CC10	RECOMBINANT DNA TECHNOLOGY-This course is designed to make students familiarized with various basic cloning tools, gene delivery methods and essential techniques of DNA, RNA and protein analysis. Students will also gather good knowledge about DNA amplification and sequencing methods and strategies for constructing and screening of genomic libraries.
CC11	FOOD AND DAIRY MICROBIOLOGY- This core course is framed in such a way so that the students will be able to understand the types of food spoilage management of food- borne diseases, methods of food preservation and the concept of quality control.
CC12	INDUSTRIAL MICROBIOLOGY-From this core course, students will have gained in-depth knowledge about the principles of microbial fermentation, recovery of important products such as antibiotics, enzymes etc., their purification scheme and applications in large industrial scale.
CC13	IMMUNOLOGY-This core course focuses on the components of our immune system, its role in combating microbial diseases.
CC14	MEDICAL MICROBIOLOGY-Medical Microbiology is the field of science that inculcates knowledge based approach on the etiology, pathophysiology, prognosis, diagnosis, treatment and prevention of microbial disease.

DEPARTMENT OF BOTANY

Programme Outcome

Botany-previously recognized as a Mother Subject is presently an interdisciplinary branch of Biology and one of the most preferred career options in India. It encompasses phycology, mycology, phyto-pathology, microbiology, bryology, pteridology, gymnospermae, plant anatomy, reproductive biology, plant systematic, palaeobotany, palynology, ecology, evolution, phytogeography, economic botany, genetics, cytology, molecular biology, plant physiology, biochemistry, phytometabolism, biometry and even more application based topics. The wide domain of coverage makes it suitable as a basic graduation course to be preferred for students who want to flourish in biological field.

Course Outcome

Course Name	Description
CC1	PHYCOLOGY AND MICROBIOLOGY- Phycology deals with the scientific study of Algae, including structure of algal cell, thallus organization, classification by different eminent phycologists and life cycles of different alga of different classes. Microbiology deals with the study of micro-organisms with sub-disciplines virology and bacteriology.
CC2	MYCOLOGY AND PHYTO-PATHOLOGY- Mycology deals with the scientific study of Fungi, including classification by different eminent mycologists and life cycles of different fungal species along with study of Mycorrhiza and lichen. Plant pathology deals with scientific study of diseases in plants caused by pathogens and environmental conditions including host parasite interaction, plant disease management, etc.
CC3	PLANT ANATOMY- Plant anatomy deals with the internal plant structure along with primary and secondary structure, developmental anatomy, ecological anatomy, etc.
CC4	ARCHAEGONIATE- This core course deals with the scientific study of Bryophytes, Pteridophytes and Gymnosperms along with their classification, life histories, phylogeny, ecological and economical importance, etc.
CC5	PALAEOBOTANY AND PALYNOLOGY- Palaeobotany is the study of plant fossils, including different modes of preservations, study of different reconstructed fossil Pteridophytes and fossil Gymnosperms along with spore and pollen morphology.
CC6	REPRODUCTIVE BIOLOGY OF ANGIOSPERMS- It deals with the study of morphology of different types of inflorescence, flowers, fruits, seeds. Pre-and post-fertilization changes, apomixis, polyembryony, etc.
CC7	PLANT SYSTEMATICS- It deals with different components of systematic like nomenclature, identification, different systems of classification of angiosperms along with phonetics and cladistics and data sources in taxonomy.
CC8	PLANT GEOGRAPHY, ECOLOGY AND EVOLUTION- Phytogeography deals with the phytogeographical regions of India, dominant flora of Eastern and Western Himalayas and Sunderbans including Endemism. Ecology is the study of interaction of Organisms in

	an area with their environment along with conservation of Biodiversity. Evolution deals with the study of changes in the characteristics of a species over several generations and various theories supporting the process of selection including the study of phylogeny of different members of plant kingdom including fungi.
CC9	ECONOMIC BOTANY- A newly introduced course on Economic botany deals with the applications of Botany. It highlights the origin and cultivation of cereals, legumes, sugar and starch. It also includes spices, beverages, oils and fats, drugs, timber and fibre yielding plants, their production, extraction and uses.
CC10	GENETICS- A course of concepts of Mendelian genetics, its extension, linkage, crossing over, gene mapping techniques, epistasis, polygenic inheritance, ploidy, chromosomal aberration, mutations and structural organization of a gene.
CC11	CELL AND MOLECULAR BIOLOGY- A course on cell biology detailing the origin and evolution of cell, structural and functional features of nucleus and chromosomes, cell cycle and its regulation, Central Dogma in prokaryotes, eukaryotes, gene regulation and a brief concept on Recombinant DNA Technology.
CC12	BIOCHEMISTRY- A conceptual and brief course on biochemistry covering the basics about nucleic acids, proteins, amino acids, carbohydrates, lipids and fatty acids. It also deals in detail about enzymology, cell membrane transport and phosphorylation- chemiosmotic model.
CC13	PLANT PHYSIOLOGY- It deals with the basic concepts of physiology behind plant-water relations, mineral nutrition, organic translocation and detailed discussion on photogenesis, plant growth regulators, seed dormancy and senescence.
CC14	PLANT METABOLISM- A conceptual and detailed course on different metabolic aspects of plant system: photosynthesis and respiration- the carbon cycles, nitrogen and lipid metabolism along with a brief idea on signal transduction pathways and second messengers.

DEPARTMENT OF COMPUTER SCIENCE

Programme Outcome

B.Sc. Computer Science program deals with subjects and topics related to computer application and services. After successful completion of three year degree program in Computer Science a student should be able to build the computer based solutions for real life problems, to imbibe quality software development practice. This course also prepares students with necessary knowledge base for research and development in Computer Science.

Course Outcome

Course Name	Description
CC1	DIGITAL LOGIC- Have a thorough understanding of the fundamental

	concepts and techniques used in digital electronics. The ability to understand, analyze and design various combinational and sequential circuits.
CC2	PROGRAMMING FUNDAMENTALS USING C- The ability to develop logics, create programs, applications in C. Also by learning the basic programming constructs they can easily switch over to any other language in future.
CC3	DATA STRUCTURE- Ability to analyze algorithms and algorithm correctness. Ability to summarize searching and sorting techniques. Ability to describe stack, queue and linked list operation, tree and graphs concepts.
CC4	BASIC ELECTRONICS DEVICES AND CIRCUITS- Get an understanding of the current voltage characteristics of semiconductor devices. Can analyze dc circuits and relate ac models of semiconductor devices with their physical Operation.
CC5	COMPUTER ORGANIZATION & ARCHITECTURE- Get an understanding of the theory and architecture of CPU. Ability to analyze some of the design issues in terms of speed, technology, cost, performance.
CC6	COMPUTATIONAL MATHEMATICS- Ability to apply knowledge of computing and mathematics appropriate to the discipline. Ability to identify, formulates, and develops solutions to computational challenges.
CC7	OPERATING SYSTEMS- Ability to analyze the structure of OS and basic architectural components involved in OS design. Have a thorough understanding of the Mutual exclusion, Deadlock detection and agreement protocols of operating system.
CC8	DATA COMMUNICATION, NETWORKING AND INTERNET TECHNOLOGY- Have a thorough understanding of how computers communicate. Be familiar with the architecture of a number of different networks. Gets an understanding of the principles of protocol layering.
CC9	INTRODUCTION TO ALGORITHMS & ITS APPLICATIONS- Can solve basic recurrence equations. Get the knowledge of the standard comparison based sorts and their strengths and weaknesses. Get the knowledge of variety of divide-and-conquer algorithms. Get knowledge of variety of greedy algorithms. Know the Graph algorithms and their applications.
CC10	MICROPROCESSOR AND ITS APPLICATIONS- Can recall and apply a basic concept of digital fundamentals to Microprocessor based personal computer system. Get the ability to identify a detailed s/w & h/w structure of the Microprocessor. Have a thorough practical knowledge through laboratory experiments.
CC11	DATABASE MANAGEMENT SYSTEM AND RDBMS LAB USING MY SQL & PHP- Have a thorough understanding of database concepts and structures and query language, E R model and relational model. Have a thorough understanding of functional dependency and normalization techniques. Ability to execute various SQL queries with a overview of MySQL and PHPMyAdmin.
CC12	OBJECT ORIENTED PROGRAMMING USING JAVA- Can identify classes, objects, members of a class and relationships among them

	needed for a specific problem. Ability to write Java application programs using OOPs principles and proper program structuring.
CC13	SOFTWARE ENGINEERING- Have a thorough understanding of how to apply the software engineering lifecycle by demonstrating competence in communication, planning, analysis, design, construction, and deployment. Get the ability to use the techniques and tools necessary for engineering practice.
CC14	THEORY OF COMPUTATION-Get an ability to explain the models of computation, including formal languages, grammars and automata, and their connections. Ability to analyze and design finite automata, pushdown automata, Turing machines, formal languages, and grammars.

BBA COURSE

After graduating with B.B.A Honours, a graduate can get expect job offers from firms dealing with accounting, business analytics, finance services, retail management, etc. Candidates can also opt for an M.B.A degree to upgrade their profile and stand a better chance of gaining employment.

DEPARTMENT OF BUSINESS ADMINISTRATION

Programme Outcome

BBA (Hons) pertains to Management studies. Management is a multi-disciplinary curriculum which enables a student to run an organization effectively. On successful completion of the program a student will be able to demonstrate the knowledge of management science to solve complex problems using limited resources. The student will be able to identify business opportunities, design and and implement innovations at work place. He or she will be able to apply the faculty of reasoning informed by the contextual knowledge to assess social, ethical, legal and cultural issues and the consequent responsibilities relevant to management practice. Management studies enables a student to practically apply the functions of Planning, Organizing , Selecting , Delegating etc to achieve organizational goals and objectives.

Course Outcome

Course Name	Description
C-1	PRINCIPLES OF MANAGEMENT & ORGANIZATIONAL BEHAVIOUR- This course acquaints the students with the fundamentals of managing business and introduces him to the basic functions of Management. This also exposes the student to the fundamentals of individual and group behaviour at work place which acts as a tool to improve the effectiveness of an organization. The course uses and focuses on Indian experiences, approaches and cases.
C-2	BUSINESS ACCOUNTING-Business Accounting familiarizes the students with the mechanics of preparation of financial statements, understanding corporate financial statements, their analysis and interpretation. This course exposes the students to the present accounting

	standards and its reporting which introduces him to prevalent methods and techniques of how a present corporate records and maintains its books.
C-3	STATISTICS FOR BUSINESS DECISIONS-Statistics for business decisions includes various statistical data analysis tool that helps in effective decision making. This paper introduces the methods of data collection, tabulations and preparing of charts and tables with the data collected. The paper exposes the students to the tools of correlation and regression analysis and trend analysis which in turn helps the students in future with respect to analysis of data in the business environment and business context.
C-4	MANAGERIAL ECONOMICS- The purpose of this course is to apply micro economic concepts and techniques in evaluating business decisions taken by firms. The emphasis is on explaining how tools of standard price theory can be employed to formulate a decision problem, evaluate alternative courses of action and finally choose among alternatives. This paper gives the student an idea about the theory of the firm and market organizations and different types of firms operating in a competitive environment.
C-5	HUMAN RESOURCE MANAGEMENT-Human Resource Management is the process of recruiting, selecting, inducting employees, providing orientation, imparting training and development, appraising the performance of employees, deciding compensation and providing benefits, motivating employees, maintaining proper relations with employees and their trade unions, ensuring employees safety, welfare and healthy measures in compliance with labour laws of the land. The objective of this course is to help the students to develop an understanding of the concept & techniques of essential functions of Human Resource Management.
C-6	MARKETING MANAGEMENT-Marketing management is “planning, organising, controlling and implementing of marketing programmes, policies, strategies and tactics designed to create and satisfy the demand for the firms' product offerings or services as a means of generating an acceptable profit. This course aims to familiarize students with the marketing function in organizations. It will equip the students with understanding of the Marketing Mix elements and sensitize them to certain emerging issues in Marketing. The course uses and focuses on Indian experiences, approaches and cases.
C-7	MANAGEMENT ACCOUNTING- Management accounting, also called as cost accounting, is the process of analyzing business costs and operations to prepare internal financial report, records, and account to aid managers' decision making process in achieving business goals. This course acquaints the students with the role of Management accounting in planning, control & decision making.
C-8	BUSINESS RESEARCH- Business research helps businesses understand their customers' buying patterns, preferences and pain points, gain deeper insights into the contenders, current market trends, and demographics. Using effective strategies to understand the demand and supply of the market, businesses can always stay ahead of the competition. Using business research, they can reduce costs and design

	<p>solutions that aim at the market demand and their target audience. This paper provides an exposure to the students pertaining to the nature and extent of research orientation, which they are expected to possess when they enter the industry as practitioners. This course also gives them an understanding of the basic techniques and tools of business marketing research.</p>
C-9	<p>MACROECONOMICS-Macroeconomics is a branch of economics that studies how an overall economy, the market systems that operate on a large scale, behaves. Macroeconomics studies economy-wide phenomena such as inflation, price levels, rate of economic growth, national income, gross domestic product (GDP), and changes in unemployment. The course is designed to study the impact of monetary and fiscal policy on the aggregate behaviour of individuals.</p>
C-10	<p>FINANCIAL MANAGEMENT-Financial management refers to the strategic planning, organizing, directing, and controlling of financial undertakings in an organization . It also includes applying management principles to the financial assets of an organization, while also playing an important part in fiscal management. The objectives of financial management include Maintaining enough supply of funds for the organization, Ensuring shareholders of the organization to get good returns on their investment; optimum and efficient utilization of funds; Creating real and safe investment opportunities to invest in. This course acquaints the students with the techniques of financial management and their applications for business decision making.</p>
C-11	<p>QUANTITATIVE TECHNIQUES FOR MANAGEMENT-Quantitative techniques are needed to process the information needed for planning, controlling, leading and decision making. Quantitative methods are productive tools in solving organizational problems. Quantitative analysis concentrates on facts, data and numerical aspects associated with a problem. The emphasis is on the development of mathematical expression to describe the objectives and constraints connected with a business or management problem. This course acquaints the student with the various quantitative techniques and methods and empowers him or her to approach a business decision or problem with mathematical tools.</p>
C-12	<p>LEGAL ASPECTS OF BUSINESS-This course discusses the fundamental concept, principles and rules of law that apply to business transactions. This course acquaints the student to the meaning and nature of law, sources of Indian law, Legal Environment of Business , Mercantile law and Essentials of Law. This course spans across Laws of Contract, Contracts of Guarantee and indemnity, bailment, pledge, Partnership, sale of goods, law of negotiable instruments , banking and insurance law, company's act etc. Upon successful completion of this paper the student will be able to : Demonstrate an understanding of the Legal Environment of Business , Apply basic legal knowledge to business transactions, communicate effectively using standard business and legal terminology.</p>
C-13	<p>BUSINESS POLICY & STRATEGY-This paper introduces to the concept of Business Policy and Strategy Management. This course spans across analyzing a company's internal and external environment and strategic decisions pertaining to it. The objective of this course is to</p>

	provide the student a foundation on strategic thinking about the company's present position, its long term direction, its resources and competitive capabilities. The course acquaints the student on the concepts of Strategic Analysis, Strategy Formulation & Strategy Implementation.
C-14	FINANCIAL INSTITUTIONS & MARKETS-This course provides an understanding of the functions, and operations of the financial markets and institutions operating in India. It explains the role of financial system on economic development. Various conceptual issues related to risk and return, the role of regulatory bodies, mechanism of commercial banking, operations of insurance companies and mutual funds are discussed elaborately. It also describes the importance of small savings, provident funds, pension funds and the institutions and markets related to it and credit rating agencies.