

2.6 programmes and course outcomes

1. Department of Microbiology

PO1 Acquire knowledge about the fundamental principles and scientific theories related to various scientific phenomena in day-to-day life.

PO2 To develop communication skills and get expertise in scientific writing.

PO3 Acquire the skills in handling scientific instruments, planning and performing in laboratory experiments. Equip them with the skills to think creatively and draw logical inferences from the scientific experiments to draw the objective conclusions or provide new solutions to the problems. To make them Capable of working effectively in diverse teams in both classroom, laboratory and in industry and field-based situations.

PO4 To get an awareness of the impact of science on the environment and society.

PROGRAMME SPECIFIC OUTCOMES (PSOS)

PSO1 Gain integrated knowledge on different aspects of microbiology, biochemistry, biostatistics and computer applications bioinformatics and emerging worldwide microbiological technologies, issues, and perspectives.

PSO2 Acquire skills specific to microbiology and allied fields for converting information to knowledge through hypothesis, design, execution and analysis.

PSO3 Analysis of scientific issues across the spectrum of related disciplines.

PSO4 Enable the students to improve the quality of human lives in relation to the environment with the knowledge in microbiology.

PSO5 Capacity to develop, employ and integrate technical and professional skills as a member of a team upholding the essence of collaboration, cooperation, ethics and integrity.

2. Department of Botany

AIMS AND OBJECTIVES OF THE PROGRAMME

- The fundamental objective of the curriculum is to impart effective science education at the undergraduate level, exposing them to recent trends and developments in the subject.
- Creating scientific temper is another major objective of this curriculum. Incorporating research components along with a sound academic foundation enables students to develop independent creative thinking. Sufficient emphasis is given for training in laboratory skills and instrumentation. The curriculum is meant to inspire creativity and combine passion with critical thinking skills in students who one day will be the citizens working to convert the world to more sustainable systems.
- Another major thrust given here is to develop an environmental concern in all activities of the students. 'Go green', the motto of the syllabus emphasizes the urgent need to conserve nature without destruction of natural resources.

PROGRAMME OUTCOMES (POs)

1. Critical Thinking: Take informed actions after identifying the assumptions that frame students' thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at their ideas and decisions (intellectual, organizational, and personal) from different perspectives.

2. Problem Solving: Understand and solve problems of relevance to society to meet the specified needs using the knowledge, skills and attitudes acquired.

3. **Effective Communication:** Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and make meaning of the world by connecting people, ideas, books, media and technology.
4. **Effective Citizenship:** Demonstrate empathetic social concern and equity centered national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.
5. **Environment and Sustainability:** Understand the issues of environmental contexts and sustainable development.
6. **Self-directed and Life-long Learning:** Acquire the ability to engage in independent and lifelong learning in the broadest context of socio-technological changes

PROGRAMME SPECIFIC OUTCOMES (PSOs)

1. **Scope and importance of Botany:** Understand scope and importance of Botany in every field especially in dealing with societal and environmental issues, agriculture, ethics and healthcare.
2. **Environmental concern:** Understand the and the role of plants in sustaining life on earth and the interrelationship between human beings and nature, create awareness on natural resources and their importance in sustainable development, analyze the importance of biodiversity conservation, estimate biodiversity loss and develop conservation strategies.
3. **Scientific temper:** Develop scientific temper and undertake scientific projects.
4. **Practical applications:** Identify and classify plants according to the principles of plant systematics, apply techniques like plant propagation methods, organic farming, mushroom cultivation, preparation of biofertilizers, biopesticides etc. in daily life.
5. **Awareness on life processes:** Understand plant life processes, biomolecules, basic hereditary and evolutionary principles.

3. Department of Mathematics

Programme Outcomes

The programme outcome of the B.Sc Mathematics undergraduate course are the summation of the expected course learning outcomes given below.

PO1 **Disciplinary knowledge :** Capability of demonstrating comprehensive knowledge of mathematics and understanding of one or more disciplines which form a part of an undergraduate programme of study.

PO2 **Communications skills :** (i) Ability to communicate various concepts of mathematics effectively using examples and their geometrical visualizations. (ii) Ability to use mathematics as a precise language of communication in other branches of human knowledge. (iii) Ability to show the importance of mathematics as precursor to various scientific developments since the beginning of the civilization.

PO3 **Critical thinking :** Ability to employ critical thinking in understanding the concepts in every area of mathematics.

PO4 **Analytical reasoning :** Ability to analyze the results and apply them in various problems appearing in different branches of mathematics.

PO5 **Problem solving :**

(i) Capability to solve problems using concepts of linear algebra.

(ii) Capability to solve various models such as growth and decay models, radioactive decay model, LCR circuits and population models using techniques of differential equations.

(iii) Ability to solve linear system of equations, linear programming problems and network flow problems.

(iv) Ability to provide new solutions using the domain knowledge of mathematics acquired during this programme.

PO6 Research-related skills :

(i) Capability for inquiring about appropriate questions relating to the concepts in various fields of mathematics.

(ii) To know about the advances in various branches of mathematics.

PO7 Information/digital literacy : Capability to use appropriate software to solve system of equations and differential equations.

PO8 Self-directed learning : Ability to work independently and do in-depth study of various notions of mathematics.

PO9 Lifelong learning : Ability to think, acquire knowledge and skills through logical reasoning and to inculcate the habit of self-learning.

PO10 Application skills : Ability to apply the acquired knowledge in all aspects.

PO11 Experimental skills :

PO12 Moral and ethical awareness/reasoning : Ability to identify unethical behaviour such as fabrication, falsification or misrepresentation of data and adopting objective, unbiased and truthful actions in all aspects .Course learning outcomes of each course in B.Sc. Mathematics and B.A./B.Sc. Programme with Mathematics as a complementary course have been enshrined in the beginning of course contents of each course.

4. Department of Environment and Water management

Program Objectives (PEOs) The B. Sc. Environment and water management program defines various achievements that the students are expected to attain after graduation

PO1 The course is designed to benefit the students to have an in-depth knowledge on Environmental Science, the issues related to environment and its practical solutions.

PO2 The course is designed to inculcate a thorough knowledge on various physical processes associated with the earth, the nature and composition of domains like lithosphere, hydrosphere, atmosphere, biosphere and their interconnections.

PO3 The course emphasizes current environmental issues and the need for technology-based interventions and various conservation and management efforts to combat such issues.

PO4 This course will help students to pursue higher studies in Environmental sciences and to take up careers in the field of environmental protection, resource conservation, technology development and management.

Program Specific Outcomes (PSOs) After the successful completion of B.Sc. Environment and Water Management program, the students are expected to have acquaintance with the following:

PSO1 The course aims at exposing the students to the various aspects of ecosystem structure and functions. Also, it enables the students to understand the fundamental and applied aspects of Environmental science.

PSO2 The Course enables the students to have an understanding of the major processes and problems associated with the Earth. It enables the students to have in depth knowledge on the quantitative depletion and pollution associated with resources like atmosphere, water, land and biota.

PSO3 To equip students with the necessary knowledge and skills in the areas of Energy and Environment. In particular, it caters to the rising demand from the public and private sectors for environmental managers in the field of energy, environment and sustainability.

PSO4 To have better understanding of the water resources associated with the Earth and their estimations using technological means like Remote Sensing and Geographical Information System. Also it provides understanding on microbial systems associated with various environmental domains and the interventions of Biotechnology and other Engineering approaches in Environmental Management.

PSO5 To have an analytical perspective on resource depletion and pollution associated with various domains and to suggest management measures for the same.

Program Outcomes (POs) On successful completion of the B.Sc. Environment and water management program, the students will have:

PO1 A higher level of scientific knowledge on Earth, its domains, interrelationships and energy transfer processes.

PO2 Ability to undertake studies on the Environment and to develop techniques or measures for their management.

PO3 Knowledge of the toxicological impacts of chemicals on the biological systems and their monitoring techniques.

PO4 Better understanding of various issues associated with the environment, using environmental tools and techniques and monitoring methods

PO5 Address the current issues and challenges associated with Biodiversity and its conservation.

PO6 Develop sustainable management plans for the earth and its domains.

5. Department of Chemistry

AIMS

This curriculum has been prepared with the objective of giving sound knowledge and understanding of chemistry to undergraduate students. The goal of the syllabus is to make the study of chemistry stimulating, relevant and interesting. It has been prepared with a view to equip students with the potential to contribute to academic and industrial environments. This curriculum will expose students to various fields in chemistry and develop interest in related disciplines. Chemistry, being a border science to biology, physics and engineering, has a key role to play in the understanding of these disciplines. The updated syllabus is based on an interdisciplinary approach to understand the application of the subject in daily life.

BROAD OBJECTIVES To enable the students To understand basic facts and concepts in chemistry. To apply the principles of chemistry. To appreciate the achievements in chemistry and to know the role of chemistry in nature and in society. To familiarize with the emerging areas of chemistry and their applications in various spheres of chemical sciences and to apprise the students of its relevance in future studies. To develop skills in the proper handling of instruments and chemicals. To familiarize with the different processes used in

industries and their applications. To develop an eco-friendly attitude by creating a sense of environmental awareness. To be conversant with the applications of chemistry in day-to-day life.

6. Department of Zoology

AIMS AND OBJECTIVES OF THE PROGRAMME

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- Another major thrust given here is to develop an environmental concern in all activities of the students. 'Go green', the motto of the syllabus emphasizes the urgent need to conserve nature without destruction of natural resources.

PROGRAMME OUTCOMES (POs)

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2. Problem Solving: Understand and solve problems of relevance to society to meet the specified needs using the knowledge, skills and attitudes acquired.
3. Effective Communication: Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and make meaning of the world by connecting people, ideas, books, media and technology.
4. Effective Citizenship: Demonstrate empathetic social concern and equity centered national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.
5. Environment and Sustainability: Understand the issues of environmental contexts and sustainable development.
6. Self-directed and Life-long Learning: Acquire the ability to engage in independent and lifelong learning in the broadest context of socio-technological changes

PROGRAMME SPECIFIC OUTCOMES (PSOs)

1. Scope and importance of Botany: Understand scope and importance of Botany in every field especially in dealing with societal and environmental issues, agriculture, ethics and healthcare.
2. Environmental concern: Understand the and the role of plants in sustaining life on earth and the interrelationship between human beings and nature, create awareness on natural resources and their importance in sustainable development, analyze the importance of biodiversity conservation, estimate biodiversity loss and develop conservation strategies.
3. Scientific temper: Develop scientific temper and undertake scientific projects.
4. Practical applications: Identify and classify plants according to the principles of plant systematics, apply techniques like plant propagation methods, organic farming, mushroom cultivation, preparation of biofertilizers, biopesticides etc. in daily life.
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7. Department of Economics

Outcome based education (OBE) is student-centered instruction model that focuses on measuring student performance through learning outcomes. OBE is an educational theory that believes that by the end of the educational experience, each student should have achieved the specified programme outcomes. Outcomes include expected knowledge, skills and attitudes and corresponding behavioural changes in cognitive, psycho-motor and affective domain of a student. The focus of OBE remains on evaluation of expected outcomes attained by a student upon the completion of the 3 years of graduation programme. In this method there is no single specified style of teaching or assessment; instead, classes, opportunities, and assessments should all help students to achieve the specified outcomes. The role of the faculty adapts into instructor, trainer, facilitator, and also as a mentor based on the outcomes targeted. The OBE model measures the progress of the graduate in three parameters, which are; 1). Programme Outcomes (POs), 2). Programme Specific Outcomes (PSOs) and 3). Course Outcomes (COs). Programme outcomes are broad statements that describe the career and professional accomplishments that the program is preparing the graduates to achieve within the first few years after graduation. POs should be consistent with the mission of the Institution. The PO's should evolve through constant feedback from alumni, students, industry, management etc.,. Program Specific outcomes are narrower statements that describe what students are expected to know and be able to do by the time of graduation. Programme outcomes are more specifically split in to the Programme Specific Outcomes for making the expected outcomes more specific. Course outcomes are the measurable parameters which evaluates each students performance for each course that the student undertakes in every semester. It looks in to the specified outcomes that the students are expected to have at the end of the each course.

Programme Outcomes PO: 1. Students understand the theoretical and practical knowledge that makes accurate analysis of the economic situation possible.

PO: 2. Students understand and evaluate the interrelation between the economy and society.

PO: 3. Students understand and evaluate the economic problems from a global perspective and take a local approach to solving them.

PO: 4. Students understand different economic system and analyse the implications of decisions related to economic policy.

PO: 5. Students respond to the economic problems arising from society in general and the different units that interact therein (e.g. institutions, private companies and sectors of the economy).

PO: 6. Students assimilate skill needed to carry a careers in government and private enterprise as BA Economics Curriculum: CBCSS 2019 6 well as those pursuing graduate degrees in professional schools or in the field of economics.

PO: 7. Students develop the attitude to conduct research in the socio economic issues arising in their environment.

PO: 8. Students assimilate the necessary skills for analyzing the data set related to socio economic issues.

PO: 9. Students develop the capacity to analyze the socio-political and economic issues in the language of an economist.

PO: 10. Students analyse economic data, interpret the economic events and visualise the economic future of the nation. Above mentioned programme outcomes are more specifically split in to the Programme Specific Outcomes.

PSO: 1. Students critically evaluate and apply the theories and techniques of economics.

PSO: 2. Students demonstrate subject-specific „thinking“ skills that are readily transferable to problem solving and decision making in a wider context.

PSO: 3. Students develop interest for lifelong learning, employing a range of practical and professional skills.

PSO: 4. Student find, evaluate, synthesize and use information from a variety of sources

PSO: 5. Students articulate an awareness of the social and community contexts within their disciplinary field

PSO: 6. Students assimilate knowledge of fundamental concepts and theoretical propositions

PSO: 7. Students understand the methodology by which economic ideas are framed, tested and modified.

PSO: 8. Students take up a career in economics and related areas.

PSO: 9. Students analyse the economic issues of national and international importance and realize the dynamics behind them.

PSO: 10. Students generalise how the economic policies of the government and governmental institutions affect the common people.

PSO: 11. Students critically evaluate and apply the theories and techniques of economics.

PSO: 12. Students demonstrate subject-specific „thinking“ skills that are readily transferable to problem solving and decision making in a wider context.)

8. Department of English

Functional English UG outcomes

Programme Specific Outcomes of BA Functional English On successful completion of this programme, a student will be equipped in the following areas:

PSO 1: Having acquired the fundamentals of English grammar and its nuances, the student will be able to read, write and communicate fluently in English.

PSO 2: The student has a better understanding of human life and values through the acquaintance with literary masterpieces.

PSO3: Understands the intricacies of politics of marginalisation and gets equipped to be proactive in real life situations.

PSO4: Apply theories in the reading of texts and extend it to an understanding of problematics of human situations.

PSO5: Having gained a deeper knowledge of the linguistic rubrics, the student is able to use it as a tool for better communication

PSO6: Use English language with an acceptable pronunciation, accent and intonation.

PSO7: The learner will have acquired skills to use modern technology for academic purposes.

PSO8: The learner will be able to effectively draft correspondences for official and business purposes and other professional writing skills.

PSO9: The student knows how to handle formal situations like conducting meetings, interviews etc.

PSO10: The theoretical and practical knowledge of the translation enables a student to pursue it on a professional basis.

PSO11: Having acquired skills in media writing like writing editorials, features, columns etc and also a knowledge of the techniques and layout of a newspaper introduces the student into the vistas of Print media and its prospects.

PSO12: Introduction to the technical and technological aspects of the electronic media provides an insight into the prospects of Electronic media.

PSO13: The learner gains communicative skills, self confidence and personality development through the initiation into theatrical performances.

PSO14: The theoretical knowledge of the practices of the theatre enables a student to appreciate, analyse and evaluate theatrical performances as a means of social criticism.

PSO15: The learner acquires the skills to direct and stage theatrical performances.

PSO16: The learner acquires the basic skills of acting.

PSO17: The learner gets sensitised to the negotiations of meaning within social categorisations.

PSO18: The learner masters the basics of language teaching, learning and acquisition, using various techniques and approaches of Language Teaching.

PSO19: The learner gains competence in tackling English in competitive exams.

PSO20: The scope of employability in the advertising field is enhanced as the learner acquires the basic skill for creating advertisements using creativity.

PSO21: The introduction to different approaches to film appreciation using theories enables the learner to reflect on films as mass media for representations and its politics within the social structures of hierarchy, powerdoms, etc.

PSO22: The art of creative writing is fostered in the learner and is brought to a technical perfection.

PSO23: At the end of the programme the learner gets introduced to a wide range of academic and employable opportunities that can be pursued to the enhancement of the future career of the student.

9. Department of Commerce(B.Com)

Programme Objectives:

1. To bring up students with competitive edge with clear vision of concepts, skills for application of knowledge in all the areas of Commerce and Management.
2. To improve interdisciplinary thoughts and application in business decisions.
3. To improve innovative thinking, creative insights, analytical ability, methodological approach and critical judgments by students.
4. To provide a strong foundation for higher learning in commerce and management.
5. To improve communication skills to facilitate mobility of men, materials and knowledge.
6. To bring up young people with thorough knowledge of Business organisations, its establishment and conduct.
7. To equip students with latest information about the methods of accounting prevalent in the country and the refinements taking place in the world.
8. To equip students with up-to-date knowledge on basic economic principles, its significance and application in business and business decisions.
9. To equip students with thorough knowledge on the theory and application of descriptive, analytical and inferential statistics in business situations.
10. To bring up students with up-to-date knowledge on the principles, theories and practices of Management.
11. To provide students with information on the legal frame work of business organisations and various statutory requirements to be complied with.

12. To provide students with a provision to specialize in an area of their interest like Finance, Cooperation, Islamic Finance, Banking & Insurance, Marketing, Taxation, Travel & Tourism, Computer applications and Human Resource.

13. To provide young entrepreneurs with clear understanding of its Prospects and Possibilities capable of establishing and managing business units.

14. To provide students with clear understanding of direct and indirect taxation system in the country.

Programme Outcomes: On completion of the B.Com Programme, the Students will be capable of:

1. The students will get new ideas, insights and thoughts. The mindset of students will change. They get new ideas and practical experience. Such students can face challenges with confidence and succeed in life.

2. The students will be thorough with the procedures and formalities of establishment and management of business units. As all aspects are well debated, it will be easy for them to establish and successfully run business units.

3. The students will be conversant with the various accounting principles and practices. All will be capable of recording, generating financial reports and arriving at conclusions and predictions.

4. The inter-disciplinary approach will help students to solve business issues easily and will emerge as successful entrepreneurs in future.

5. The multidisciplinary in-depth learning across all related topics of business and industry will definitely pave a strong foundation for higher learning in commerce and management.

6. In depth understanding of management principles will help to create managerial aptitude and skills in students will foster successful managers for future.

7. In depth understanding of Accounting principles and practices coupled with interdisciplinary learning will help to create newer ideas in accounting and will bring in innovative and creative professionals in Finance, Cost and Management.

8. The knowledge of direct and indirect taxation will open up a new area of living by students. Information on both direct and indirect taxation systems will cut open a wider area of employment and professionalism. 9. The improved communication skills and basic understanding of laws in force of the country will definitely add to the content level and level of interaction by students. 10. Students become more confident, self-reliant, competent and Competitive with practical insights and thorough learning.

10. PG Department of Zoology(Self financing)

PROGRAM OUTCOME FOR M.SC. ZOOLOGY Student will be able to develop knowledge and understanding of living organisms at several levels of biological organization from the cellular through molecular to whole organisms level and at ecosystem level in an evolutionary perspective. Student will be able to acquire knowledge related to concepts like ecology, evolution, taxonomy, biochemistry, molecular biology etc. and apply the knowledge in new situations. The student will develop skills in experimental techniques in the subjects of study. The student will be able to develop scientific way of thinking and scientific attitude pertaining to the concepts in ecology, evolution, taxonomy, biochemistry, molecular biology etc.

11. PG Department of Mathematics

MSC Mathematics

PROGRAMME OUTCOME: Upon completing the M. Sc degree in the field of Mathematics, students have/capable of: • A solid understanding of graduate level algebra, analysis and topology. • Using their mathematical knowledge to analyze certain problems in day to day life. • Identifying unsolved yet relevant problems in a specific field. • Undertaking original research on a particular topic. • Communicate mathematics accurately and effectively in both written and oral form. • Conducting scholarly or professional activities in an ethical manner.

12. PG Department of English

MA English

Programme Outcomes The students are expected to develop both an understanding of the cultures represented by the literatures discussed and abilities of critical thinking. The courses on marginalized discourses promote values-based thinking. The Project/Dissertation in the Fourth Semester is expected to be a window to research/project writing for prospective research scholars and professionals. The elective course on Teaching of English is directly career-oriented

13. Pg Department of Commerce(M.Com)

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