

Program Outcomes, Program Specific Outcomes and Course Outcomes

Two academic programmes are run by the college-

- 1) The Undergraduate programme - B. A., B. Sc., B. Com. and B. B. A.
- 2) The Post-graduate programme - M. Sc.

The sequence of Higher education levels are -Undergraduate-Postgraduate-Research-Job oriented learning and its implementation in various jobs and inventions in the welfare of man and Nation.

The Undergraduate as well as Postgraduate programmes aim towards the success of students in Research, Inventions, Industrial jobs and contributions in Nation building and in the interest of the Globe.

UG PROGRAMME IN HUMANITIES:

UG programme in Humanities enhances the students' ability in Cultural aspects, sense of Literature, History, Politics, Religious devotion and ethical qualities. It also upgrades the students to acclimatize in the changing scenario of the above fields with critical evaluation. Our college with its running programmes has been trying its best to deliver the above responsibility with its well skilled and experienced faculty members.

UG AND PG PROGRAMMES IN SCIENCE:

Both UG and PG programmes in Science train the students in scientific skill both in theory and practice. It develops their aptitude for Chemical and Material science, Astrophysical Science, Science of Nature, Environment and Biodiversity, Agricultural and Floral science, the Parasitological and Molecular aspects of life forms-its problems and solutions and the science of Economics and mathematical analysis.

The programmes have been instigating our students to secure skilfully their jobs as researchers and scientists in the institutes, teachers-both in schools and higher education institutes, administrators in government jobs as well as in private companies, personnels in industries, naturalists and in many other positions.

From the programmes, both UG and PG the learners develop their aptitude of individual planning, habit of working in groups, field survey, literature reviews, diligence and other skills which fit them in various spheres of life.

Besides the above University approved programmes the college allows some of the extracurricular programmes of multidirectional cultural activities, like, singing, dancing, photography, drama and national service scheme which bring the students closer to the society, at large.

Bachelor of Business Administration

Course outcomes:

1. Study of Business Administration enables the student to enter the area of Management of organizations, industrial activities and individuals, and also crisis management.
2. Study of Finance Management enlightens the students to understand the financial requirement, availability, allocation and utilization of financial resources.
3. Study of Marketing Management enables the students to learn about marketing strategies, viability of a project, marketing techniques, market demand study, etc.
4. Human Resource Management enriches style of management of people, management of

self, effective communication including counseling.

5. The curriculum also contributes towards personality development of an individual.

The Bachelor of Education (B.Ed.) Programme of the Calcutta University aims at developing the understanding and competencies required by student- teachers for effective teaching-learning process in schools. .

Programme Outcomes:

1. To systematize experiences and strengthen the professional competencies of student-teachers.
2. To develop the student-teachers' personality in being humane to the school learners.
3. To imbibe knowledge of the significant developments in education, particularly National Curriculum Framework 2005 and Right of Children to Free and Compulsory Education 2009.
4. To develop an appreciation of the role of the teacher in the prevailing socio-cultural and political system in general and the educational system in particular.
5. To impart teacher education pervaded by the universal principles and spiritual and moral values based on the life and teachings of Jesus Christ and produce intellectually sound, morally upright, socially concerned and spiritually oriented teachers to be of service to the nation.

The B.Ed. curriculum 2015 in the light of the stipulations of the NCTE Regulations 2014 has been organised in three broad categories namely, Perspectives in Education; Curriculum and Pedagogic Studies and Engagement with the Field.

Programme Specific Outcomes:

Perspectives in Education

1. To imbibe knowledge and develop an understanding of
 - the growth and development of the child and adolescents
 - contemporary India and Education
 - issues of diversity, inequality and marginalisation in Indian education
 - theoretical foundations of knowledge and curriculum
 - learning and teaching
 - gender in the context of school and society
 - creating an inclusive school

Curriculum and Pedagogic Studies

1. To develop competencies for organizing various instructional and student support activities: various methods and approaches of organizing learning experiences of secondary school students.
2. To develop skills required in selecting and organizing learning experiences.
3. To develop skills involved in dealing with the academic and personal problems of learners.
4. To acquire knowledge and develop an understanding of the various procedures and techniques of evaluation and their classroom applications.
5. To develop skills involved in selecting, developing and using evaluation tools.
6. To acquire knowledge and develop an understanding of various aspects of school

management and activities

Engagement in the Field/ Practicum

To provide sustained engagement with the

- Self
- Child
- Community
- School

1. To establish close connections between different curricular areas
2. To connect theoretical curricular areas with practicum through tasks and assignments
3. To provide a reflective school experience through a 20 week internship programme
4. To enhance the professional capacities of the student-teachers through EPC courses

Course Outcomes/ Objectives

Perspectives in Education:

Course-I (1.1.1): Childhood and Growing Up

1st Half - Development and its Characteristics

Objectives

The student teachers will be able to:-

1. Explain the concept of growth and development and stages of development with special reference to the stage of adolescence.
2. Know about the developmental characteristics
3. Be aware of influence of heredity, environment including socio-cultural factors on developmental process
4. Develop the skills of applying the principles of development in improving the teaching learning process.

2nd Half - Aspects of Development

Objectives

The student teachers will be able to:-

1. Know about various aspects related to development.
2. Be acquainted with theories, types and factors of motivation, attention and interest.
3. Understand the nature of intelligence and know various theories related to it.
4. Develop skills for identifying and nurturing creativity.

Course-II (1.1.2): Contemporary India and Education

1st Half - Education in Post-Independent India

Objectives

The student teachers will be able to :-

1. Comprehend the various constitutional provisions
2. Develop the knowledge about the recommendations of various commissions and National Policies of Education.
3. Examine the problems and solutions of elementary and secondary education and find out probable solution.
4. Acquire the skill to eradicate inequality, discrimination and marginalization in education.
- 5 Develop an idea about National Values.

2nd Half - Policy Framework for Education in India

Objectives

The student Teachers will be able to :-

1. Realize the policy framework for Education in India
2. Know the contemporary issues in education
2. Develop the knowledge about various policies on education
3. Examine the role and functions of different monitoring agencies of education
4. Understand community participation and development in education
5. Acquire skill to develop educational planning and management.

Course-III (1.2.3): Learning and Teaching

1st Half - Learning

Objectives

The student teachers will be able to :-

1. Comprehend the range of cognitive capacities among learners.
2. Reflect on their own implicit understanding of the nature and kinds of learning.
3. Gain an understanding of different theoretical perspectives on learning
4. Demonstrate his/her understanding of different skills at different phases of instruction

2nd Half - Teaching for Learning

Objectives

The student teachers will be able to :-

1. Understand the process of teaching
2. Understand and efficiently used different models of teaching.
3. Engage in teaching with proper approach.
4. Develop skills required for teaching

Course-VIII-(A) (1.2.8A) Knowledge and Curriculum- Part-I

Objectives

The student teachers will be able to :-

1. Introduce themselves to perspectives in education focusing on epistemological, philosophical and sociological bases of education.
2. Distinguish between knowledge and skill, teaching and training, knowledge and information and reason and belief.
3. Understand education in relation to constitutional goal, social issues and modern values.
4. Understand the concept, scope and objectives of education.
5. Realize the concepts of curriculum and syllabi.
6. Design curriculum in the context school experiences, evaluation, power, ideology, process and practice & its transactional modes.

Course-VI (1.4.6) Gender, School and Society

Objectives

The student teachers will be able to :-

1. Develop gender sensitivity among the student teachers.
2. Understand the gender issues faced by the schools.

3. Understand the paradigm shift with reference to gender studies.
4. Understand how gender, power and sexuality relate to education (in terms of access, curriculum and pedagogy).

Course-VIII(B) (1.4.7B) Knowledge and Curriculum- Part-II

Objectives

The student teachers will be able to :-

1. Realize the concepts of curriculum and syllabi.
2. Discover the relationship between power, ideology and curriculum.
3. Design curriculum in the context of school experiences, evaluation, power, ideology, process and practice & its transactional modes.

Course-X (1.4.10) Creating an Inclusive School

Objectives

The student teachers will be able to :-

1. Sensitize to the concept of inclusive education and social inclusion
2. Familiarize with the legal and policy perspectives behind inclusion in education
3. Understand the types, probable causes, preventive measures and characteristics of different types of disability.
4. Understand street children, platform children, and orphans, children born and brought up in correctional homes, child labour and other socioeconomically backward children
5. Know how inclusion can be practiced in mainstream class.

Pedagogy and Curriculum Studies:

Course-IV(1.1.4) Language across the Curriculum

Objectives

The student teachers will be able to :-

1. Recognize nature, function and role of language across the curriculum
2. Acquaint with obstacles in language usage while using the language and ways to overcome them.
3. Understand the importance and use of first and second language, multilingualism and impact of culture.
4. Acquire knowledge about the communication process and verbal and nonverbal communication skills.
5. Familiarize the students with barriers to (Listening, Speaking, Reading, Writing) LSRW skills and activities for developing these skills

Course-V (1.1.5) Understanding Discipline and Subjects

Objectives

The student teachers will be able to:-

- Know the basis of knowledge and branches of emerging knowledge
- Be aware of the emergence of various disciplines
- Develop among the teacher trainees, an understanding of science as a discipline
- Understand the nature of Mathematics as a discipline

- Develop among the teacher trainees an understanding of language as a discipline
- Develop among the teacher trainees an understanding of social science as a discipline

Course-VII-(A) (1.2.7A) Pedagogy of a School Subject Part-I

Pedagogy of Language Teaching (Bengali, English, Sanskrit, Hindi, Urdu & Arabic)

Objectives

The student teachers will be able to :-

1. Merit effective and constructive acquaintance with the basic foundations of Language teaching in India and West Bengal
2. Acquire practical expertise in pedagogical analysis and develop behavioural competencies in teaching skills
3. Apply principles abstracted from the study of various methods and approaches as regards purpose and procedure of planning lesson
4. Work out and practice strategies for teaching language skills and communication skills
5. Credit working acquaintance with concepts of language learning assessment
6. Turn in to resourceful user of different kinds of Language Test
7. Become efficient in construction of Test and Test Items
8. Explore and experience various resources for target language learning
9. Try out various means of organizing various resources for target Language Learning.

Pedagogy of Social Science Teaching (History, Geography, Political Science, Economics, Education, Commerce, Sociology, Philosophy, Music, Fine Arts, Psychology)

Objectives

The student teachers will be able to :-

1. Appreciate the significance of teaching Social Science
2. Be acquainted with the approaches & Methods of Teaching Social Science.
3. Be used to the application of knowledge and skills in Social Science
4. Be acquainted with various practical aspects of Social Science.

Pedagogy of Science Teaching (Physical Science, Life Science, Computer Science & Application)

Objectives

The student teachers will be able to :-

1. Appreciate the significance of teaching Science.
2. Be acquainted with the Approaches & Methods of Teaching Science
3. Be used to the application of scientific knowledge and skills
4. Be acquainted with various practical aspects of science

Pedagogy of Mathematics Teaching (Mathematics)

Objectives

The student teachers will be able to :-

1. Understand the nature of mathematics and mathematics education
2. Know the Objectives of teaching mathematics and the principles of the preparation of relevant curriculum and text books.
3. Understand Teaching methodologies in mathematics education.

4. Apply Mathematics education in cross-cultural perspectives.
5. Understand the Assessment and evaluation in the teaching learning of mathematics.

Course-IX(1.2.9) Assessment for Learning

1st Half - Assessment of the Learning Process

Objectives

The student teachers will be able to :-

- Get basic knowledge of assessment for learning
- Know the process of evaluation and it uses
- Write educational objectives
- Know different techniques of evaluation, tools of evaluation and their uses
- Know different characteristics of instruments of evaluation
- Know different types of teacher made tests and will construct them
- Compute simple statistics to assess the learning

2nd Half - Assessment of the Learning System

Objectives

The student teachers will be able to:-

1. Understand different aspects of the complexities of the learning system.
2. Know various school records designed for specific purposes.
3. Understand the relationship between school and the community.
4. Acquire knowledge about physical, infrastructural and human resources available in the schools.
5. Understand the curricular process in the school.
6. Evaluate the school effectiveness and other functional aspects of the schools.
7. Explore the students support services available and achievements of the schools.

Course-VII-(B) (1.3.7B) Pedagogy of a School Subject Part-II

Pedagogy of Language Teaching (English, Bengali, Sanskrit, Hindi, Urdu & Arabic)

Objectives

The student teachers will be able to :-

1. Design appropriate teaching – learning strategy/approach suited to particular content.
2. Be at home with the principles of constructing content analysis of school curriculum.
3. Use ICT and various teaching aids in teaching of Languages.
4. Understand the historical development of Language Teaching.
5. Develop various skills related to language learning.
6. Prepare a blueprint before entering into a class.

Pedagogy of Social Science Teaching (History, Geography, Political Science, Economics, Education, Commerce, Sociology, Philosophy, Music, Fine Arts, Psychology)

Objectives

The student teachers will be able to :-

1. Be aware of teaching & learning of the subject concerned
2. Examine critically the major concept, ideas, principles & values relating the subject concerned

3. Engage the students into the methods of Teaching & learning the subject.
4. Provide the students authentic historical knowledge with the proposed content & make them to be competent to do pedagogical analysis of the subject.

Pedagogy of Science Teaching (Life Science, Physical Science, Computer Science and Application)

Objectives

The student teachers will be able to :-

1. Be aware of teaching & learning of the subject concerned.
2. Examine critically the major concept, ideas, principles & values relating to the subject concerned.
3. Engage the students into the methods of Teaching & learning the subject.
4. Make them competent to do the pedagogical analysis of the subject concerned

Pedagogy of Mathematics Teaching (Mathematics Education)

Objectives

The student teachers will be able to :-

1. Know about Mathematics curriculum and text-book preparation
2. Know how Practical activities are associated with mathematical concepts
3. Understand about assessment and evaluation related to mathematics teaching-learning.
4. Apply the Concept of Pedagogical analysis of mathematics content of school level mathematics curriculum and learning designing
5. Understand about Simulated and integrated lesson

EPC Papers:

Course EPC –1 (1.1EPC1) Reading and Reflecting on Texts

Objectives

The student teachers will be able to :-

- Know the meaning, process, importance and characteristics of reading
- Appreciate and apply different levels, types, techniques and methods of reading
- Acquaint with the skills of reading different types of texts
- Develop different types of reading skills through various activities and met cognition
- Learn the skills of reading comprehension and to enhance vocabulary
- Acquaint with the problems of reading across curriculum

Course EPC-2 (1.2EPC2) Drama and Arts in Education

Objectives

The student teachers will be able to :-

- Understand the use of ‘Drama’ as Pedagogy
- Use ‘Role play’ technique in the teaching learning process
- Understand the importance of dramatic way of presentation
- Integrate singing method in teaching learning process
- Understand various ‘Dance forms’ and their integration in educational practices.
- Use art of drawing and painting in teaching learning process
- Develop creativity through different creative art forms
- Understand the efficacy of different art forms in education.

Course EPC-3 (1.4EPC3) Critical Understanding of ICT

Objectives

The student teachers will be able to :-

1. Understand the social, economic, security and ethical issues associated with the use of ICT
2. Identify the policy concerns for ICT
3. Describe a computer system;
4. Operate the Windows and/or Linux operating systems;
5. Use Word processing, Spread sheets and Presentation software;
6. Acquire the skill of maintaining the computer system and the skill of trouble shooting with the help of Anti-Virus and Other tools.
7. Operate on Internet with safety
8. Elucidate the application of ICT for Teaching Learning
9. Develop various skills to use computer technology for sharing the information and ideas through the Blogs and Chatting groups

Course EPC-4 (1.4EPC4) Understanding the Self

Objectives

The student teachers will be able to :-

1. Understand the meaning and importance of self-concept and self esteem.
2. Be aware of different factors related to self-concepts and self-esteem.
3. Understand the concept and importance of yoga and well-being.
4. Be sensitized about the concepts and interrelationships of interpersonal intelligence, personality development and emotional intelligence
5. Know and develop their personality through various practices.

Optional papers:

Course-XI (1.4.11) Optional Health and Physical Education

Objectives

The student teachers will be able to :-

- Build a scenario of Health Education in India.
- Develop a Knowledge Base of the Most Common and Uncommon Diseases in India; their Diagnosis & Remediation.
- Learn the Tech Related Health Risks & Learn How to Fix These.
- Study the Health Education Vision & Mission of India.

Course-XI (1.4.11) Optional Peace & Value Education

Objectives

The student teachers will be able to :-

1. Understand the meaning and role of peace education and value education in present context.
2. Understand the components of peace education.
3. Understand different perspectives of peace education.
4. Be acquainted with methods and evaluation of value education.

Course-XI (1.4.11) Optional Guidance and Counseling

Objectives

The student teachers will be able to :-

1. Understand guidance and counseling in details
2. Understand the mental health
3. Develop the knowledge about adjustment and maladjustment.
4. Acquire skill to develop tools and techniques.
5. Understand the idea about Abnormal Behaviour and Mental illness.

Course-XI(1.4.11) Work & Vocational Education

Objectives

The student teachers will be able to :-

1. Make a teacher-trainee aware of the modern approaches to teaching of Work Education in the perspectives of its development from traditional approaches.
2. Make the teacher-trainee acquainted with the basic skills required for the inculcation of the modern approaches to teaching of Work Education.
3. Make the teacher trainees aware of different methods of teaching suitable to different topics of Work Education.
4. Make the teacher trainees acquainted with the ways and means for managing class-room from the stand point of inclusive education.

Course-XI (1.4.11) Yoga Education

Objectives

The student teachers will be able to :-

1. Understand the concept and principles of Yoga
2. Understand the ancient system of yoga
3. Develop awareness about the historical aspects of Yoga
4. Learn some meditational practices and techniques
5. Learn to maintain a healthy condition of body and mind
6. Learn the utility of yoga in modern life

Course-XI (1.4.11) Optional Environmental & Population Education

Objectives

The student teachers will be able to :-

1. Understand the concept of population and environmental education
2. Know the objectives and methods of teaching environmental and population
3. Be aware of population and environmental education policies
4. Help teachers students analyze the various issues related to population and environmental education

Bengali

Programme Specific Outcome

1. Grasp the complexity of language as a communication system shaped by cognitive, biological, cultural, and social factors.

2. Demonstrate understanding of the concepts, theories, and methodologies used by linguists in qualitative and quantitative analyses of linguistic structure, and patterns of language use.
3. Demonstrate understanding of processes of language change and variation, the role of language in reflecting and constructing social identities, and the distinctive properties of human language.
4. Are able to collect, organize and analyze linguistic data from diverse languages, to form hypotheses about language structure/use and to test those hypotheses against new data.
5. Acquire the technical vocabulary and theoretical tools of the field, necessary to read published linguistic research.
6. Can synthesize research findings and construct a readable, well supported research report.
7. Are ready for significant scholarly participation in the field of linguistics.
8. Studying Bengali Literature can raise students' awareness of aspects of Bengali culture
9. It enables students to understand that culture is a broad concept that can mean different things to different people.
10. Students can understand and respond to ideas, viewpoints, themes and purposes in texts.
11. They can relate texts to the social, historical and cultural contexts in which they were written and can analyse how writers' use of linguistic and literary features shapes and influences meaning writers' use of organisation, structure, layout and presentation.
12. They also can generate ideas, planning and drafting.
13. They are able to use and adapt the conventions and forms of texts on paper and on screen.
14. Students can vary sentences and punctuation for clarity and effect.
15. Studying Literature helps the students to improve vocabulary for precision and impact.
16. It also helps the students to develop varied linguistic and literary techniques. Students learn structuring, organising and presenting texts in a variety of forms on paper and on screen.
17. The course of Literature helps them to develop and use editing and proofreading skills on paper and on screen.
18. Help them Commenting on language use and also locating and extracting information.

Course Outcome

Paper I and II

The course provides a brief introduction to the history of Bengali language. The beginning of writing system in Bengali within the emergence of writing culture in India is addressed to start with. The followed by a discussion on the language family of the Indian sub-continent and *IndoAryan* family of languages to which Bengali belongs to. The subsequent three parts deal with Old Bengali, Middle Bengali & Modern Bengali phases of the language. Rather than discussing the features only, we plan to introduce some texts of the said periods (i.e :Chorjapod, Srikrisnokirton, Mongolkabya)

Paper III and IV

The spoken language is very different in various geographical locations. Also there are dissimilarities in various social groups within a language – community. We tend to present before the students various dialects spoken in various parts of Bengal and surrounding areas. Also we will discuss different language styles in various social groups in this course.

Cultural Behavior of the language community Here the students will get to know the behavior of this cultural community called *Bengali*. Both the historical and descriptive approach will be taken into account.

Paper V

Bengali has a rich oral tradition from the olden days. Objective of this paper is to focus upon various oral traditions like Folktales, Folklore/Songs and Myths and proverbs of Bengali and to make the students familiar to that abundance of beliefs and practices which had been a source of energy for our everyday life and had been passed down from earlier generations to us.

To enhance students' knowledge to words Bengali culture, folk elements are most important component. In this paper, students will be acquainted with some of the performing arts of Bengal.

This paper will survey the literary History from modern period to contemporary. Trends in these periods are to be discussed.(i.e:Modern Novel and short stories, Essay literature etc)

Paper VI

Rabindranath Tagore is the first recipient of Nobel prize in Literature in the Asia continent. So, we tend to introduce some of his literary works in this paper.

Paper VII

A Text of collected Essays by important Authors to be studied in this course. There will be ten essays to be studied in the whole semester/Courses

Paper VIII

This paper will highlight the cultural background and history of Bengali Culture ,and history of Sanskrit,and English Literature also.

Botany

Programme specific output

- Students develop a holistic knowledge in the undergraduate course starting from archegoniate group, Taxonomy of Angiosperm, Palaeobotany, Anatomy to advanced fields of plant science such as Cell and Molecular Biology, Plant protection , Plant metabolism.
- In practical classes students work out the specimens which help them to understand and to identify the specimens.
- The local and long field excursions help the students to develop knowledge about the

local flora and flora of specific phytogeographic region in their natural habitat.

- Students build up awareness and knowledge in environmental related issues such as waste management, biodiversity conservation, pollution monitoring, etc.
- Students after passing post graduate course can explore in various field of research viz. Conservation of Ecosystem, Environmental Disaster Management, herbal drugs and medicinal plants, Host pathogen interaction, crop protection and plant disease management, GIS and remote sensing, Intellectual Property Rights, Quarantine etc.
- Students of UG course get the chance to have an exposure in skill enhancement courses such as Plant breeding, Mushroom culture and elective courses such as Industrial and environmental Biology, Medicinal and Ethno Botany etc. This will open up new avenues and job opportunities for the students.
- The students of Post Graduate Department get a hands on experience in Research during carrying out dissertation work. This helps the students to have research exposure which will be beneficial for those who will join the Ph.D. programme in future.
- The contents of core course and optional courses in PG curriculum are beneficial for the students to get prepared for NET/SET/GATE and also GRE and other competitive examinations.

Course specific outcome

Undergraduate

The undergraduate course in Botany under CBCS credit system has been semesterised in 2018.

In each semester the **core courses** have theoretical and practical papers.

Sem I

In Sem I there are two core courses Phycology and Microbiology (CC1) and Mycology and Phytopathology (CCII). A brief account on classification, life history and economical importance of different algal and fungal genera are taught in these two papers which help the students to develop a clear concept on these two cryptogamic groups of plant kingdom. Besides, the practical classes the local field excursions enable the students to identify the fungal and algal genera. In Microbiology part the students develop a clear knowledge on different aspects of bacteria and virus. Students learn various culture techniques and bacterial staining method in practical class. In Phytopathology, students study about important plant diseases, host pathogen interaction and plant disease management. The study of Phytopathology is very much essential in the field of crop protection and disease management.

Sem II

In Sem II there are two core courses Plant Anatomy (CCIII) and Archaeogoniate (CC IV). The subject Plant Anatomy helps the students to know about Internal structural organisation of plant organs. The students also do practical to study the anatomical details of plant tissue and organs. In archaeogoniate paper the students study about Bryophyte, Pteridophyte and Gymnosperm groups of plant kingdom. In this semester students go for a long excursion in a place of higher altitude to observe and identify these groups of plants in their natural habitat.

Sem III

In Sem III there are three core courses. In Palaeobotany and Palynology (CC5) paper the students are taught about plant fossils, pollen structure and applied palynology viz. Forensic palynology,

aeropalynology etc. In Reproductive Biology of Angiosperms (CC6) the students learn about morphology of angiosperm and embryology. Plant systematics paper (CC7) deals with the Taxonomy of Angiosperms. This is a very important field of Plant Science which deals with Plant nomenclature, System of Classification and Taxonomic families. The students work out on angiosperm specimens in practical class and they also learn to identify plants. A number of local field excursions are in the curriculum during this semester. Students learn to prepare field note book, voucher specimen book and herbarium specimens.

Sem IV

In Sem IV students are offered three core courses. In Plant Geography paper (CC8) students study about plant evolution, plant ecology and plant evolution. Long excursion to a phytogeographic region in India is being carried out in this semester. This field trip helps the students to understand the characteristic flora of that particular phytogeographic region. In Economic Botany paper (CC9) students study about economically rich groups of plant crops viz. cereals, legumes, sugar and starches, spices, beverage, oil and fat, drug yielding plants etc. In Genetics paper (CC10) students get a clear concept on various topics of Genetics. In practical classes the students study about mitotic and meiotic chromosomes.

Sem V

In this semester two core courses are offered. In Cell and Molecular Biology paper (CC11) students come to know about origin and evolution of cells, DNA replication, transcription, translation, gene regulation and recombinant DNA technology. In Practical classes students carry out a number of experiments on Plant Molecular Biology. In Plant Biochemistry (CC12) paper students study about basic molecules of life, energy flow and enzymology and other biochemical processes of plant cell.

Sem VI

There are two core courses in this semester. In Plant Physiology (CC13) paper students acquire knowledge about various physiological processes viz. Photomorphogenesis, plant growth regulators, seed dormancy etc. In plant metabolism paper (CC14) students study about primary and secondary metabolic pathways such as photosynthesis, respiration, nitrogen and lipid metabolism etc.

Skill enhancement course and Discipline specific elective course :

In third and fourth semesters students have to take one skill enhancement course such as Plant Breeding, Mushroom Culture technique, Biofertiliser etc. In fifth and sixth semesters students have to opt for two Discipline specific elective courses in each semester such as Industrial and environmental Biology, Medicinal and Ethno Botany, Plant Biotechnology, Natural Resource Management etc. These special courses will open up new avenues for the students and they will be able to acquire knowledge in the applied fields of Plant Sciences.

Post Graduate Course

The PG course under CBCS system comprises of four semesters. There are 12 core courses in the four semesters. In third semester students have to study two subjects other than the parent subject viz. Human Genetics, Plant biochemistry, Concepts in Zoological Science, Fundamentals of Bacteriology etc. In third and fourth semesters students have to opt for one optional paper such as Applied virology, Advanced Cell Biology, Plant Molecular Biology, Immunology etc. These subjects help the students to get preparation in the competitive exams such as NET/ GATE/ SET etc. The students have to carry out the dissertation work during third and fourth semesters. The dissertation work helps the students to have a research exposure which will be beneficial for those who will join the Ph.D. programme in future.

CHEMISTRY

- PSO1. Understand bonding, physical properties, stereochemistry and reaction mechanism in organic molecules.
- PSO2. Understand reactions in unsaturated, carbonyl and associated compounds and organometallics.
- PSO3. Study nitrogenous compounds, rearrangement reactions and logical synthesis of organic molecules.
- PSO4. Study and analyze organic spectroscopy.
- PSO5. Study carbocycles, heterocycles, pericyclic reactions, carbohydrate and biomolecules.
- PSO6. Analyze solid binary mixtures; determine boiling points of organic liquid samples; prepare small scale organic compounds; identify pure solid and liquid samples, Separate organic mixture in chromatographic method and analyzes organic compounds by spectroscopy.
- PSO7. Understand atomic structure, radioactivity, periodic properties and acid base reactions.
- PSO8. Understand chemical bonding, structure and properties of covalent compound, structure, defects and properties and chemical forces of ionic and non ionic crystalline solids.
- PSO9. Study preparation, bonding, structure and properties and reactions of compounds of s, p, d and f block elements.
- PSO10. Study organometallic and coordination compounds and bioinorganic chemistry.
- PSO11. Understand principles of separation techniques, quantitative estimation of metal ion single or present in a mixture, ore and mineral analysis, spectroscopic techniques.
- PSO12. Identify cation and anion present in a mixture of inorganic salts, oxides, hydroxides or carbonates.
- PSO13. Estimate quantitatively metal ions present in mixture by volumetric analysis.
- PSO14. Understand basic principal of thermodynamics, thermochemistry, equilibrium, colligative properties, phase rule and statistical thermodynamics.
- PSO15. Study and understand properties of ideal gases; speed, kinetic energy heat capacity, real gases, intermolecular forces, liquefaction.
- PSO16. Understand properties of liquid; viscosity and surface tension.
- PSO17. Understand principle of quantum mechanics and analyze related phenomenon, study quantum mechanical model.
- PSO18. Understand and analyze molecular spectroscopy.
- PSO19. Determine physical properties like surface tension, viscosity, partition coefficient, rate constant of a reaction, pKa, pKIn etc.
- CO1. Understand physical and chemical properties of chemical compounds and correlate these properties with their structure, bonding, intermolecular forces and other features as explained by different theories and principles of chemistry.
- CO2. Understand periodic correlation of properties of metals, nonmetals and metalloids.
- CO3. Understand and practice basic principle of analytical techniques used for identification, separation and estimation of chemical species.
- CO4. Understand laws of nature and apply them to explain the behavior of solid, liquid and gases and their mixture.
- CO5. Understand different laws which guide the physical processes and chemical reactions and measure the parameters involved.

- CO6. Understand principle of spectroscopy and analyze molecules by spectroscopic techniques.
CO7. Understand and practice instrumental methods used in chemical analysis.

COMMERCE

Program Specific Outcomes:

After successfully completing B.Com(H) in Accounting and Finance Specialization(only specialisation offered in our college) :-

- PSO1. Students will be able to prepare and regularly maintain books of accounts for any individual or corporate entities.
- PSO2. Students will be able to analyse and interpret the financial statements of organizations to depict their financial performance.
- PSO3. Students will be capable to perform Tax Management and Tax Planning and will be able to compute income tax liability of an individual assessee.
- PSO4. Students will develop drafting skills and writing techniques of business letter, circulars and other formal notices.
- PSO5. Students will get the basic structural idea of various Management disciplines, which will help them to perform managerial functions in the future.
- PSO6. Students will acquire basic legal knowledge to understand various Acts and draft contracts and other legal documents.
- PSO7. Basic knowledge of Accounting Software is acquired by the students.
- PSO8. Analysis of Capital Market, Stock Exchange, Financial Instruments and Financial Services are learnt by the students. They acquire working knowledge of the financial markets prevalent in India and financial system currently running in the Indian Economy.
- PSO9. Students will acquire economics based knowledge for various strategic investment decision making and savings planning.
- PSO10. Students will get the knowledge on Auditing and its quality assurance and gets updated understanding of all the current changes of statutes and laws taking place in the Indian Economy as well as in the World Economy.

Course Outcomes:

- CO1. Proper commerce-based understanding will help in developing rational individuals in the society to deal with relevant economic dilemma.
- CO2. Helps the student individually in understanding the concept of Saving-Investment and its impact in the Macro-economic development of the society.
- CO3. Updated knowledge of computation and management of direct and indirect taxation helps in curtailing black money and secures the Government's estimated revenue.
- CO4. Helps in development of the tertiary sector of the economy by providing rational decision makers, managerial personnel and marketing sales force to the market. Also the upkeep and management of the human resource department of every corporate or non-corporate entity is facilitated with the help of the knowledge gained by studying Financial Management, Human Resource Management and Marketing Management.
- CO5. Updated knowledge of Accountancy and Book-keeping at par with the World helps India to shine in the World Economy and encourages the MNCs to invest in India Inc. and in turn develops the overall market and economy of our country.
- CO6. The study of Human Resource Management helps in positioning the right person to the right job and in turn increases the efficiency of every sector. It also helps in addressing employees' grievances leading to job satisfaction; stress relief and overall sense of containment of every working individual in the society.

COMPUTER SCIENCE

Program specific Outcomes (PSO):

After successful completion of B.Sc. in Computer Science, students gain the knowledge of the following:

1. An essential skill of problem solving with different dimensions of computer science and computing.
2. Ability to understand the principles and working of computer systems to assess both the hardware and software aspects.
3. Professional skills of software design including familiarity and practical competence with a broad range of programming language and open source platforms.
4. Ability to apply mathematical methodologies to solve computation task, model real world problem using appropriate data structure and suitable algorithm.
5. Ability to use knowledge in various domains to identify research gaps and hence to provide solution to new ideas and innovations.
6. Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
7. Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
8. Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

Course Outcomes (CO):

1. Study of Computer Fundamentals, Digital Circuits and Basic Electronics enables the students to describe the usage of computers, why computers are essential components in business and society and identify categories of programs, system software and applications.
2. Computer Networks and Data Communication helps the students to utilize the Internet Web resources, evaluate on-line e-business system and solve common business problems using appropriate Information Technology applications. It also gives the knowledge to distinguish various types of network standards and communication software.
3. Study of Numerical Analysis and Discrete Mathematics helps to apply algorithmic, mathematical and scientific reasoning to a variety of computational problems.
4. Study of Software Engineering helps to gather requirements, design correctly, implement and document solutions to significant computational problems and analyze performance standards.
5. Data Structure and Algorithm helps to analyze and compare alternative solutions to computing problems.
6. Study of Computer Organization, helps to learn about the design of computers which includes both overall design, or architecture, and their internal details, or organization.
7. Study of Operating System & System Software helps them to understand how operating system allows a computer's hardware components, including processors and drives, to communicate with its software components, such as applications and data instruction sets.
8. Formal Languages and Automata Theory helps to perform computations on an input by

moving through a series of states or configurations.

9. Study of C language can be used for low-level programming, such as scripting for drivers and kernels and it also supports functions of high level programming languages, such as scripting for software applications etc.
10. Study of C++ will allow the students to build multi-device, multi-platform app, GUI applications to 3D graphics for games to real-time mathematical simulations.
11. Study of 8085 Microprocessor helps the students to understand the design of personal computers as well as a number of other embedded products. They will understand and devise techniques for faster execution of instructions, improve speed of operations and enhance performance of microprocessors.
12. Computer Graphics will help the students to design abstract, synthetic objects such as mathematical surface in 3D, animations, motion dynamics and update dynamics.
13. Database Management System (DBMS) helps the students to understand how to handle huge volumes of data and multiple concurrent users, data integrity, consistency, security, and appreciable system performance.
14. Study of UNIX helps students to create and manage simple file processing operations, organize directory structures with appropriate security, and develop shell scripts to perform more complex tasks, monitor system performance and network activities.
15. Visual Basic 6.0 supports Rapid Application Development (“RAD”) which helps to develop graphical user interfaces and to connect them to handler functions provided by the application.

ECONOMICS

Programme specific outcome:

1. Sound financial understanding and application in day to day life.
2. Understand how government helps in mediating between consumers and producers.
3. Understanding international relation in terms of economic co-operation.
4. Addressing various economic problems like unemployment, inflation etc.
5. How economic growth of a country affects in general income of a person.
6. Prescribe methods of improving health, education and other activities of life.
7. Good employment opportunity in teaching, research and industry.
8. Helps in starting new ventures as successful entrepreneurs.

Course outcome:

1. Introductory microeconomics:

This course is designed to expose the students to the basic principles of microeconomic theory. The emphasis will be on thinking like an economist and the course will illustrate how microeconomic concepts can be applied to analyze real-life situations.

2. Mathematical method for economics:

This is the first of a compulsory two-course sequence. The objective of this sequence is to transmit the body of basic mathematics that enables the study of economic theory at the

undergraduate level, specifically the courses on microeconomic theory, macroeconomic theory, statistics and econometrics set out in this syllabus. In this course, particular economic models are not the ends, but the means for illustrating the method of applying mathematical techniques to economic theory in general. The level of sophistication at which the material is to be taught is indicated by the contents of the prescribed textbook.

This course is the second part of a compulsory two-course sequence. This part is to be taught in Semester II following the first part in Semester I. The objective of this sequence is to transmit the body of basic mathematics that enables the study of economic theory at the undergraduate level, specifically the courses on microeconomic theory, macroeconomic theory, statistics and econometrics set out in this Syllabus. In this course, particular economic models are not the ends, but the means for illustrating the method of applying mathematical techniques to economic theory in general. The level of sophistication at which the material is to be taught is indicated by the contents of the prescribed textbook.

3. Introductory macroeconomics:

This course aims to introduce the students to the basic concepts of Macroeconomics. Macroeconomics deals with the aggregate economy. This course discusses the preliminary concepts associated with the determination and measurement of aggregate macroeconomic variable like savings, investment, GDP, money, inflation, and the balance of payment.

4. Intermediate microeconomics:

The course is designed to provide a sound training in microeconomic theory to formally analyze the behaviour of individual agents. Since students are already familiar with the quantitative techniques in the previous semesters, mathematical tools are used to facilitate understanding of the basic concepts. This course looks at the behaviour of the consumer and the producer and also covers the behavior of a competitive firm

5. Intermediate macroeconomics:

This course introduces the students to formal modeling of a macro-economy in terms of analytical tools. It discusses various alternative theories of output and employment determination in a closed economy in the short run as well as medium run, and the role of policy in this context. It also introduces the students to various theoretical issues related to an open economy.

6. Statistical method for economics:

This is a course on statistical methods for economics. It begins with some basic concepts and terminology that are fundamental to statistical analysis and inference. It then develops the notion

of probability, followed by probability distributions of discrete and continuous random variables and of joint distributions. This is followed by a discussion on sampling techniques used to collect survey data. The course introduces the notion of sampling distributions that act as a bridge between probability theory and statistical inference. The semester concludes with some topics in statistical inference that include point of interval estimation.

7. Intermediate microeconomics 2:

This course is a sequel to Intermediate Microeconomics I. The emphasis will be on giving conceptual clarity to the student coupled with the use of mathematical tools and reasoning. It covers general equilibrium and welfare, imperfect markets and topics under information economics.

8. Intermediate macroeconomics 2:

This course is a sequel to Intermediate Macroeconomics I. In this course, the students are introduced to the long run dynamic issues like growth and technical progress. It also provides the micro-foundations to the various aggregative concepts used in the previous course.

9. Indian economy 1:

This course provides a comprehensive introduction to basic econometric concepts and techniques. It covers statistical concepts of hypothesis testing, estimation and diagnostic testing of simple and multiple regression models. The course also covers the consequences of and tests for misspecification of regression models.

10. Development economics 1:

Using appropriate analytical frameworks, this course reviews major trends in economic indicators and policy debates in India in the post-Independence period, with particular emphasis on paradigm shifts and turning points. Given the rapid changes taking place in India, the reading list will have to be updated annually.

11. Indian economics 2:

This is the first part of a two-part course on economic development. The course begins with a discussion of alternative conceptions of development and their justification. It then proceeds to aggregate models of growth and cross-national comparisons of the growth experience that can help evaluate these models. The axiomatic basis for inequality measurement is used to develop measures of inequality and connections between growth and inequality are explored. The course ends by linking political institutions to growth and inequality by discussing the role of the state

in economic development and the informational and incentive problems that affect state governance.

12. Development economy 2:

This course examines sector-specific policies and their impact in shaping trends in key economic indicators in India. It highlights major policy debates and evaluates the Indian empirical evidence. Given the rapid changes taking place in the country, the reading list will have to be updated annually.

This is the second module of the economic development sequence. It begins with basic demographic concepts and their evolution during the process of development. The structure of markets and contracts is linked to the particular problems of enforcement experienced in poor countries. The governance of communities and organizations is studied and this is then linked to questions of sustainable growth. The course ends with reflections on the role of globalization and increased international dependence on the process of development.

ENGLISH

Course outcomes:

To help students to become sensitive human beings possessing aesthetic awareness.

To produce more humane individuals in this fast paced world of mechanized existence.

Programme Specific Outcomes:

- The Department of English sees itself as a centre for intellectual and creative thinking which will help students to become sensitive human beings possessing aesthetic awareness. Partaking of the legacy of a 189 year old department it attempts to redefine the parameters of knowledge dissemination within the rich cultural heritage of the College. In the process students will imbibe more humane qualities which will equip them to deal with the challenges of a fast paced world of mechanical existence.
- Analytical skills in linguistic communication and literary criticism enables them to analyse oral and written discourse of various genres, social, cultural, political and historical contexts and use them in advanced studies in a wide range of corporate, communication, research and knowledge fields.
- Students who have graduated from the department of English have used their newly acquired knowledge practices and aesthetic expressions to engage in research work and higher studies. Others have used their writing and reading skills to take up professions like teaching, journalism, copywriting, editing, publishing, advertising and marketing as well as analogous disciplines like theatre and film studies. Knowledge of English and precise communication skills stand them in good stead in professions like banking, public administration and human resource.

Course Specific Outcomes:

- Canonical English Literature gives the students a solid grounding in British Literature that helps them to be grounded research scholars and teachers.
- Stress on the Classical Papers and History of Literature gives a synchronic view of literature and helps contextualize.

- The innovative and interdisciplinary courses like Popular Literature help the students to expand their expertise over various other disciplines which help them to survive in an increasing interdisciplinary world of academics.
- Postcolonial, Indian and Partition literature makes the students aware of their immediate surroundings and expands the possibility of relevant and localized research.
- The courses on translation help the students to bridge the gap of language in academics and daily life. In a multi linguistic country like India reading literature of various languages help the students to diversify their knowledge base.
- The Skill Enhancement Courses (SEC) explores the practical side of English language in a globalised world and makes them ready for the demands of the work place. It also helps them to understand the process of business communication and augments their competency in reading and writing skills.
- Courses like American Literature, Philology and Linguistics broaden the scope of the discipline and acquaint students with the subsidiary branches of English studies.
- The DSE courses with a focus on specific target areas helps students to gain specialization in specific fields that gives them an edge in the world of academia.

HINDI

Program Specific Outcomes:

PSO1. Understand the gradual progress of language and its literature with orientations and changes occurred during the flow of time and history.

PSO2. Analyse the relationship among language, literature and society.

PSO3. Understand the behavioural approach of human beings.

PSO4. Perform more scientifically for the betterment of mankind by learning functional Hindi and basics of journalism.

Course Outcomes:

CO1. Describe the history of Hindi literature with evolution of language.

CO2. Write down the characteristics of ancient and medieval literature in context of different socio-economic environments.

CO3. Identify the modern literary reactions towards the changes of society.

CO4. Write down the characteristics of official language of India and its implementation in society.

HISTORY

Programme specific Outcome:

After completing History Honours Undergraduate Course

2. Students shall be able to demonstrate thinking skills by analyzing, synthesizing, and evaluating historical information from multiple sources.
3. Students will develop the ability to distinguish between fact and fiction while understanding that there is no one historical truth.
4. Students will produce well researched written work that engages with both primary sources and the secondary literature.
5. Students will develop an informed familiarity with multiple cultures.
6. Students will employ a full range of techniques and methods used to gain historical knowledge.
7. Students will develop an ability to convey verbally their historical knowledge.
8. Students will demonstrate their understanding of cause and effect along with their

knowledge of the general chronology of human experience.

Course Outcomes:

1. Study of Historiography helps in constructing original historical arguments based on primary source material research along with the development of the ability to convey verbally thesis research and relevant historiography and theory.
2. The Study of Early World History and Cultures proposes the idea that humankind as a whole has a history to be investigated and that a world history course may be more than study of various “cultures,” each disconnected from the others. It encourages to think explicitly about the aims of world history education and about the knowledge and understandings It is conceived on the premise that students will achieve will greater competence in world history and more successfully meet content and performance standards, if they are guided to relate particular subject matter to larger patterns of historical meaning and significance.
3. Students will acquire a sophisticated awareness of the relationships that develop through time between political, social, economic, cultural, intellectual, and religious factors, weaving into “patterns” and trends.
4. Students will learn the methods and techniques of research and analysis in the discipline of history, including the “social sciences” and “humanities” traditions as well as the “rules of evidence” employed in historical thinking and writing – all components of “critical thinking.”
5. Students will acquire a rudimentary sense of historiography – historical argumentation and debate – on key questions of professional research.
6. Students will develop communications skills to express historical perspectives, including writing and oral presentations of expression.

MATHEMATICS

Program Specific Outcomes (PSO):

10. Develop the skill to deal with the abstract ideas of Mathematics.
11. Become proficient in writing proofs.
12. Expertise in problem solving.
13. Acquire the skill to pursue career not only in school education but also in business, civil services, banking, finance etc.
14. Can continue study of Mathematics at the post graduate level and more.
15. Can apply Mathematical methods in problems of Mathematics and related fields of science and engineering.
16. Learn how to teach Mathematics in undergraduate level.
17. Develop the ability of analytical and logical thinking which will help them in all aspects of life.

Course Outcomes (CO)

1+1+1 System

PAPER I

CLASSICAL ALGEBRA, MODERN ALGEBRA I, ANALYTICAL GEOMETRY OF TWO AND THREE DIMENSIONS AND VECTOR ALGEBRA:

Learn concepts of Classical Algebra such as Complex numbers, Inequality, Integers, Theory of Equations, introductory ideas of Modern Algebra such as Set, Mapping,

Relations and introduction of Group Theory and Analytical Geometry which includes Transformation of axes, Pair of Straight Lines, Circle, Ellipse, Parabola, Hyperbola, Rectangular Cartesian coordinates in Space, Equations of Plane, Straight lines in Space, Position Vectors, Vector Products, Application of Vector Algebra, Vector Equations

PAPER II

ANALYSIS I, EVALUATION OF INTEGRALS, LINEAR ALGEBRA AND VECTOR CALCULUS I:

Get the basic knowledge of Analysis including Real Number System, Set and Sequences of Real Numbers, Countability of Sets, Continuity of Real Valued Functions of Real Variables. Apart from that Methods of Evaluation of Definite and Indefinite Integrals, Matrices, Determinants, Vector Space, Vector Differentiation, Scalar and Vector Field.

PAPER III

MODERN ALGEBRA II AND LINEAR PROGRAMMING, GAME THEORY, ANALYSIS II AND DIFFERENTIAL EQUATIONS I:

In extension to the Modern Algebra Course in Paper I student learns Cosets, Cyclic Groups, Rings and Fields. Learn theories and problem solving mechanisms of Linear Programming Problems and Game Theory. Also as an extension of Paper II Analysis course, learns the Infinite Series of Real Numbers, Derivatives of Real Valued Functions of Real Variables. Finally methods to solve ordinary Differential equations and introduction to Partial Differential Equations

PAPER IV

REAL VALUED FUNCTIONS OF SEVERAL VARIABLES, APPLICATION OF CALCULUS, ANALYTICAL GEOMETRY OF THREE DIMENSIONS II, ANALYTICAL STATICS I AND ANALYTICAL DYNAMICS OF A PARTICLE I:

Learn concepts of function of several variables, for example Point Sets, Limit, Continuity, Differentiability, Jacobian etc. Then Application of Calculus which involves Asymptotes, Curvature, Envelopes, Concavity, Convexity, Sphere, Cone, Cylinder, Ellipsoid, Hyperboloid, Paraboloid, Surface of Revolution, Transformation of Axes, Friction, Astatic Equilibrium, Newton's Laws, Impact of Elastic Bodies, Accelerations, Damped Harmonic Oscillators, Motion in a Plane under Laws of Resistance,

PAPER V

ANALYSIS III, LINEAR ALGEBRA II, MODERN ALGEBRA II, TENSOR CALCULUS, DIFFERENTIAL EQUATION II OR GRAPG THEORY:

Get ideas of Compactness in \mathbb{R} , Functions of Bounded Variations, Riemann Integration, Sequence and Series of Real Functions, Linear Transformation, Normal Subgroup, Homomorphism, Isomorphism, Tensor Calculus, Laplace Transformation and Series Solution of Ordinary Differential Equations or Graph Theory

PAPER VI

VECTOR CALCULUS II, ANALYTICAL STATICS II, ANALYTICAL DYNAMICS OF A PARTICLE II, HYDROSTATICS AND RIGID DYNAMICS:

Learns advance Vector Calculus, advance Analytical Statics and Dynamics, Hydrostatics and Rigid Dynamics

PAPER VII

ANALYSIS IV, METRIC SPACE, COMPLEX ANALYSIS, PROBABILITY AND STATISTICS:

Learns Improper Integral, Fourier Series and Multiple Integrals, Metric Space and Complex Functions and probability and statistical methods in detail.

PAPER VII

NUMERICAL ANALYSIS, COMPUTER PROGRAMMING AND PRACTICALS:

Familiarize oneself with the application of method of estimation in absence of exact solution or when finding exact solution is tough and also learn to write the computer programming of the numerical methods in C or Fortran, fundamentals of Computer Science and Boolean Algebra.

Course Outcomes (CO)

CBCS System

CC1

CALCULUS, GEOMETRY AND VECTOR ANALYSIS: Learn the foundational knowledge of Calculus, Geometry and Vector Analysis and learn to plot graphs of functions, sketch parametric curves, trace conics etc using free software.

CC2

ALGEBRA: Develop the basic ideas of Classical Algebra(Complex Number, Theory of Equation, Inequality), Abstract Algebra(Relation, Mapping, Integers) and Linear Algebra(Rank of a Matrix, System of Linear Equations etc).

CC3

REAL ANALYSIS: Get the ideas of Real Numbers, Countable and Uncountable Sets, Bounded and Unbounded Sets, Limit Points, Interior Points, Real Sequence, Subsequence in detail and learn to plot sequences and verify theorems through plotting of sequences.

CC4

GROUP THEORY-I: Learn Group, its properties and examples, Subgroup, its properties and examples, Cyclic Group, Permutation, Quotient Group, Homomorphisms, Isomorphisms.

CC5

THEORY OF REAL FUNCTIONS: Acquire the knowledge of Limit, Continuity and Differentiability of Real Functions.

CC6

RING THEORY AND LINEAR ALGEBRA-I: Learn the definition of Ring, Subring, Integral Domain, Field, Ideals, Ring Homomorphism and their properties and theorems in the Ring Theory and in Linear Algebra, the fundamentals of vector Space, Linear Transformation, Algebra of Linear Transformation, Eigen Values, Eigen Vectors.

CC7

ORDINARY DIFFERENTIAL EQUATION & MULTIVARIATE CALCULUS-I:

Learn methods to solve Ordinary Differential Equations and introductory ideas of Multivariate Calculus(Concept of Neighbourhood, Limit Point, Interior Point, Chain Rule, Directional Derivatives).

CC8

RIEMANN INTEGRATION & SERIES OF FUNCTIONS: Get the knowledge of Riemann Integration, Improper Integral, Sequence and Series of Functions, Power Series, Fourier Series.

CC9

PARTIAL DIFFERENTIAL EQUATION & MULTIVARIATE CALCULUS-II:

Learn methods to solve Partial Differential Equations (PDE) and some problems involving PDE and in Multivariate Calculus, learn Multiple Integrals, Vector Field, Divergence, Curl, Green's Theorem, Stoke's Theorem and Divergence Theorem.

CC10

MECHANICS: Learn Coplanar Forces in general, an arbitrary force system in space, Equilibrium in the presence of Sliding Friction force, Virtual Work, Stability of Equilibrium, Kinematics of a particle, Newton Laws of Motion and Law of Gravitation, Problems in Particle Dynamics, Planar motion of a particle, Motion of a particle in three dimensions, Linear Momentum Principle, Angular Momentum Principle, Energy Principle.

CC11

PROBABILITY & STATISTICS: Learn probability and statistical methods in detail and also learn to do the graphical representation of data.

CC12

GROUP THEORY-II & LINEAR ALGEBRA-II: Get the idea of Automorphism, External Direct Product, Inner Product Spaces and Norms, Dual Spaces, Eigen Spaces.

CC13

METRIC SPACE & COMPLEX ANALYSIS: Get the concept of Metric Spaces, Compactness, Connectedness and in Complex Analysis Stereographic Projections, Differentiability, Power Series, Complex Integration etc.

CC14

NUMERICAL METHODS: Familiarize oneself with the application of method of estimation in absence of exact solution or when finding exact solution is tough and also learn to write the computer programming of the numerical methods.

- From the elective **SKILL ENHANCEMENT COURSES** one can learn C, C++, Scientific Computing with SageMath and R and Mathematical Logic.
- From the elective **DISCIPLINE SPECIFIC ELECTIVE COURSES** one can get an overview of specialized sections of Mathematics which will help to choose the right track for future.

MICROBIOLOGY

Programme Specific Outcome:

1. Microbiology as a 3-years degree course offers a number of avenues to the students. 'Microbiology'-refers to study of microorganisms. It includes their theoretical as well as practical aspects. The theoretical aspect consists of studies of their habitats and metabolism, life cycle, ways of reproduction, relay of their genetic information, whereas, applied microbiology refers to application of the microorganisms in different fields for human welfare.
2. After studying microbiology, students have both theoretical and practical knowledge about the microorganisms in laboratory.
3. Students can have direct, hands on experience on the techniques used in Modern Biology. They start the course, learning about theoretical aspects and the course ends in teaching application of these theoretical ideas to accomplish learning of Microbiology as a whole.

Course specific outcome:

1. Microbiology as a 3-years degree course offers various fields of study. In the 1st year, it teaches basic structure and functions of microorganism, studies of their growth and reproduction and very basics of Biochemistry. After studying the basics of Microbiology, in 2nd year they learn the application of microorganisms in different fields like Food processing and Dairy Industry, Agricultural industry, public health and hygiene and pharmaceutical industry.
2. In 3rd year, they learn the application of microbes in recombinant DNA technology and Industrial Microbiology. They get to know a lot about the microbes being the causative agents of different diseases. They also learn about the immune system in mammals.
3. After studying all these in detail most of the students go for post graduation and higher studies. (They mainly go for research and get established in different biotechnological as well as pharmaceutical industries).
4. Many of our ex-students are successfully doing their research work and many are placed in different hospitals and industries as microbiologist.

PHILOSOPHY

Program specific Outcomes:

After successfully completing B.A. in Philosophy:

1. Students will be able to explain philosophical texts and positions accurately, to identify and apply philosophical research methods consistently, to articulate and defend precise philosophical positions.
2. Students will be able to apply their philosophical learning to important public issues and to articulate why philosophical understanding is valuable in such debates.
3. Students will develop their own philosophical areas of interest and investigate them from various perspectives.
4. Students will attain the research skills necessary for writing a research paper that engages with primary and, where applicable, secondary literature on a topic in philosophy.
5. Students will be able to describe the ways in which the formal techniques of logic are important to philosophical research.
6. Students will acquire reading skills necessary to understand and critically engage with historical and contemporary philosophical texts.

7. Students will be aware of the existence of multiple philosophical traditions, and will be able to reflect on the cultural specificity of some of their own concepts and values.

8. Students will be able to explain epistemological concepts such as the nature of knowledge, justification, evidence and skepticism, and to summarize and evaluate major philosophical positions in relation to each.

Course outcomes:

IndianPhilosophy: CC1, CC3, CC11, CC13

1.Students will read and critically assess the work of central thinkers in the history of Indian philosophy.

2.Students will explore and understand the historical development of major Indian philosophical ideas.

3.Students will develop a critical understanding of various key concepts in philosophy such as ‘prama’, ‘pramana’, ‘prameya’, ‘manas,’ ‘jiva’ ‘jagat’, ‘ishwara’ ‘karma’, ‘janmantara’, and ‘vedic authority’.

WesternPhilosophy: CC2, CC4

1.Students will read and critically assess the work of central thinkers in the history of western philosophy.

2.Students will explore and understand the historical development of major western philosophical ideas.

3.Students will develop a critical understanding of various key concepts in philosophy such as ‘substance’, ‘God’, ‘scepticism’, ‘mind-body problems’, ‘man and the god relation’ and ‘Universal’.

WesternMetaphysics: CC10

1. Students will read and critically assess the work of central thinkers in the history of western metaphysics.

2. Students will explore and understand the historical development of major western metaphysical ideas.

3. Students will develop a critical understanding of various key concepts in philosophy such as ‘reality’, ‘mind,’ ‘causal theory’, ‘evolution theory’, and different views on metaphysical thought of the philosophers.

Ethics: CC12, CC14

1. Students will learn to identify and evaluate ethical principles, values and traditions of moral reasoning.

2. Students will learn to identify and evaluate critically the ethical foundations of key social institutions and professions with a view toward social justice.

3. Students will be able to explain and discriminate between major approaches to moral philosophy such as consequentialism, deontology and virtue ethics, and to summarize and evaluate the views of at least one philosopher associated with each.

Logic: CC8, CC9

1.A solid understanding of the basic concepts of logic, and in particular what it means for an argument to be valid, and the related notion of what it means for a set of statements to be consistent.

2.The ability to apply formal techniques and systematically codify deductively valid arguments.

3.The ability to translate natural language sentences into precise symbolic form and rigorously

evaluate standard inferences.

4.Acquire a firm foundation for the study of other disciplines where logic plays an important role (mathematics, computer science, formal semantics in linguistics).

5.Generic analytical and critical thinking skills, including: the ability to identify the argument in a piece of prose and analyse its logical structure.

Psychology: CC5

1.Application of knowledge with critical thinking skills: Students should be able to use critical thinking to evaluate and interpret evidence, and to apply psychological concepts, theories, and research findings to individual, social, and cultural issues.

2. Study of Psychology will help students to understand themselves and others better and to solve, to a great extent, their own problems. Mutual understanding and respect will produce a society where peace and harmony will prevail.

Social and Political Philosophy: CC6

1. Students will be able to explain philosophical texts and positions accurately, to identify and apply philosophical research methods consistently, to articulate and defend precise philosophical positions, and to anticipate and rebut objections to those positions.

2. Students will be able to apply their philosophical learning to important public issues and to articulate why philosophical understanding is valuable in such debates.

3. Students will develop their own philosophical areas of interest and investigate them from various perspectives.

4. Students will attain the research skills necessary for writing a research paper that engages with primary and, where applicable, secondary literature on a topic in philosophy.

5. Students will acquire reading skills necessary to understand and critically engage with historical and contemporary philosophical texts.

6. Students will be aware of the existence of multiple philosophical traditions, and will be able to reflect on the cultural specificity of some of their own concepts and values.

7. Students will be able to explain and discriminate between major approaches to political philosophy such as Libertarianism, Marxism, Liberalism and Communitarianism, and to summarize and evaluate the views of at least one philosopher associated with each.

Philosophy of Religion: CC7

1. Students will be able to read complex texts from a variety of traditions

2. Students will understand and be able to apply the methodological tools used in the study of religion including textual analysis, sociology of religion, anthropology of religion and comparative religions

3. Students will understand the basic features of Western, Eastern and indigenous religious traditions, be able to recognize the foundations of traditions and be able to compare them

PHYSICS

Programme Specific Outcome:

1. Physics deals with wide variety of systems that is to be tested both theoretically and experimentally. The subject needs proper blending of both theory and experiment. Each theories needs to be tested experimentally and the varieties of experimental facts needs proper explanation from its theoretical viewpoint. Physics uses mathematics to organize

and formulate experimental results. From those results new predictions can be made or a theory can be ruled out. Computational physics is playing a vital role in this regard. The students need proper understanding of the different aspects of physical theories and experimental techniques so that they can apply those techniques in the upcoming advanced courses when they have finished their UG 3 year syllabus.

2. Students are expected to acquire knowledge in physics, including the major disciplines of classical mechanics, quantum mechanics, electromagnetic theory, electronics, optics, special theory of relativity and modern physics. They must have a proper understanding of programming so that they can apply appropriate scientific programming skills wherever necessary.
3. Students should have the skill of identifying the key factors and applying appropriate principles and assumptions in the formulation of physical problems.
4. Students should learn how to design and conduct an experiment (or series of experiments) demonstrating their understanding of the scientific method and processes. Not only that they are expected to have an understanding of the analytical methods required to interpret and analyze results and draw conclusions as supported by their data.
5. Students will realize and develop an understanding of the impact of physics and science on society.
6. Students are also expected to develop written and oral communication skills in communicating physics-related topics.
7. Apply conceptual understanding of the physics to general real-world situations.
8. Discover physics concepts in other major disciplines such as mathematics, computer science, engineering, and chemistry.
9. After the completion of program, students will be able to have in-depth knowledge of basic concepts in physics.
10. Students will be able to apply the laws of physics in real life situations to solve the problems.
11. Student develop attitude of doing research through undertaking small projects.
12. Student will have set his foundation to pursue higher education in physics.
13. After completing the program student will have developed interdisciplinary approach and can pursue higher studies in subjects other than physics.

Course Outcomes:

Course Title: Mathematical Physics

- To formulate problems mathematically from the theoretical understanding.
- Different techniques in solving those problems.
- To understand the true mathematical rigor in stating and justifying a physical problem.

Course Title: Optics and Modern Physics

Student should be able to:

- To provide a good foundation of optics.
- Understand the basic philosophy of Interference, diffraction, polarization.
- To verify above mentioned phenomena experimentally and also to real world situations.
- Learn to use methods for solving differential equations.
- Experience the diverse applications of the wave equation.
- Analyze the intensity variation of light due to Polarization, interference and diffraction
 - Explain working principle of lasers
 - Explain fundamentals of quantum mechanics and apply to one dimensional motion of

- particles
- Calculate Q-value of nuclear reactions and describe particle detectors and accelerators

Course Title: Foundation of Physics

Student should be able to:

- To solve the classical and wave mechanics problems
- To develop the understanding of laws of thermodynamics and their application in various processes
- To formulate and solve the engineering problems on Electromagnetism
- To aware of limits of classical physics & to apply the ideas in solving the problems in their parent streams

Course Title: Basic Science

Student should be able to:

- Formulate general mechanics parameters and distinguish between central and non-central forces
- Explain types of waves and interference of light
- Derive thermodynamic parameters and apply fundamental laws to solve thermodynamic problems
- Differentiate between the terms atomic number, atomic mass, isotopes etc and apply various rules such as Hund's rule ,octet rules and Bohr's energy levels
- Categorize between various environmental pollutants, study harmful effects of pollutants, elaborate the concepts such as global warming, BOD,COD , ozone depletion and acid rain

Course Title: Semiconductor Physics and Electromagnetism

Student should be able to:

- Classify solids on the basis of band theory and to calculate conductivity of semiconductors
- Explain the working p-n junction diode
- Determine gradient, divergence and curl of scalar and vector fields
- To formulate and solve the engineering problems on electromagnetism
- To acquire knowledge and apply it to various electronic instruments.
- To motivate students to apply their knowledge and understanding in day-to-day problems.

Course Title: Solid State Physics & Statistical Thermodynamics

Student should be able to:

- To analyze the structural properties of elemental solids
- To calculate electronic conductivity of solids
- To apply distribution function to quantum and classical systems

- To evaluate thermal properties of solids using statistical approach
- To classify magnetic and super-conducting behaviour of solids
- Understand basic concepts and mathematical methods of solid state physics.
- Practice problem solving by using selected problems in solid state physics.
- Explore important connections between theory, experiment, and current applications.

Course Title: Statistical Mechanics

Student should be able to:

- Understand how statistics of the microscopic world can be used to explain the thermal features of the macroscopic world.
- Be able to use thermal and statistical principles in a wide range of applications. Learn a variety of mathematical and computer techniques.
- Develop a basis for future learning and work experience.

Mechanics, properties of matter

- To learn motion of bodies
- Acquire basic knowledge of mechanics, general properties of matter and Gravitation.
- Understand the important connections between theory and experiment.
- Connect concepts and mathematical rigor in order to enhance understanding
- **Employ conceptual understanding to make predictions, and then approach the problem mathematically.**

Heat and Thermodynamics

- To understand the basic laws and formulations of Thermodynamics.
- Understand the concept of entropy and 2nd law and to apply these ideas in real situations.
- **Application of Maxwell velocity distribution and equipartition of energy in varieties of situations.**

Electricity and Magnetism

- **Know the fundamental concepts of physics as it applies to: Principles of Electric Fields, Gauss's Law, Electric Potential, Capacitance and Dielectrics, Current and Resistance, Direct Current Circuits, Magnetic Fields, Sources of Magnetic Fields, Faraday's Law, Inductance, Alternating Current Circuits, and Electromagnetic Waves.**
- be able to use electromagnetic theory and principles in a wide range of applications.
- Learn a variety of advanced mathematical methods and computer techniques.
- Develop skill to solve numerical problems on it.
- Develop explicit problem-solving strategies that emphasize qualitative analysis steps to describe and clarify the problem.
- Gain confidence in their ability to apply mathematical methods to understand electromagnetic problems to real-life situations.

Atomic Physics and Spectroscopy

- To obtain a detailed study of atom.
- To study the behavior of atoms in different excited states.

- To investigate different phenomena under the action of external electric and magnetic field.
- To provide a knowledge of the application of the observed theories.

Quantum Mechanics

- Learn the mathematical tools needed to solve quantum mechanics problems.
- Solutions of ordinary and partial differential equations that arise in quantum mechanics will also be studied.
- Build connections between mathematical development and conceptual understanding
- To understand the difference in classical Newtonian mechanics and new Quantum mechanics.

Nuclear and Particle Physics

- Acquire knowledge in the content areas of nuclear and particle physics, focusing on concepts that are commonly used in this area.
- Develop familiarity with the vast areas of nuclear and particle physics as well as develop an interest in these subjects.
- To get a glimpse of the modern innovations and technologies used in this arena.

Special Theory of Relativity

- To understand the genesis of the theory
- Proper development of the theory from Electromagnetic theory.
- Experimental verification
Use of STR in different situations like GPS,

Computational Physics

On successful completion of this subject the students have the programming ability in C/FORTRAN/Python Language.

In addition to this various graph plotting software such as origin, GNU plot, grapher etc. students would find suitable jobs in future.

POLITICAL SCIENCE

Program Specific Outcomes:

1. This course in B.A. in Political Science enables the students to develop an overall understanding on political institutions, society, culture, politics and international relations. More specifically, it shall enable the students to evolve a critical understanding on Indian Politics and its nature and contemporary trends.
2. The exposure to Political Science also encourages them to develop a scientific outlook on above-stated subjects, as it emphasizes the role of empirical methods and theories in building up the knowledge over discipline.
3. It not only introduces the students to the structural and functional dimensions of political institutions but also a range of theories which equips them with a critical understanding on society and politics. For example, after studying the degree programme, the students shall be capable of providing political analysis on political parties, party system, and models of democracy.
4. The contemporary topics as included in the syllabus shall generate interest for research among the students in future.

Course Outcome:

1. This program on Political theory aims to introduce certain key aspects of conceptual analysis in political theory and the skills required to engage in debates surrounding the

application of the concepts. In today's inter-disciplinary world, this program equips students to take on in-depth analysis of concepts like rights, equality, justice, freedom which are emerging as ever-pertinent questions.

2. The program on International Relations will provide students with great insights on political affairs, public policies, economic trends, social issues, law and many more. As an international relations specialist a student will have a broad set of career options in addition to politics, including in fields like economics, social systems and the cultural life of communities. Students can either opt for higher education such as master's degree or prepare for various competitive examinations such as UPSC and other state governments. They can also act as a link between the country you represent and the country where they are stationed; collect and report on all the information that would affect nation's interests.
3. The program on Public Administration is a system through which the government carries out its business of ruling and controlling effectively. Public Administrators may choose careers in the government sector. It will prepare the students to work in many governmental and other management careers, including health care administration, human resources management and even city management. Students can either opt for higher education such as master's degree or prepare for various competitive examinations such as UPSC and other state governments.
4. The program on Comparative Government and Politics will enable the students to have the access to a broad range of career options and job opportunities. They can apply their knowledge and critical thinking skills in political analysis as well as public policy analysis. The students can find the jobs in various non-profit organizations, in the scientific and academic fields. The typical employers are: government, nonprofit organizations, research institutes or think-tanks, private companies including foreign corporations, educational institutions.
5. The program Indian Government and Politics enables the students to hone their skills in analysing the current political events in the country. It trains them to take up news analysis and journalism as possible career prospects. It also allows them to take up a career in mass media - with mass communication and public relations.

PSYCHOLOGY

Program specific outcome:

Part I:

PSO 1. Understanding the basic psychological process, nature, scope and branches of psychology, sensory processes and perception, difference between sensation and perception, gestalt theory of perception, attention, emotion.

PSO 2. Understanding the biological bases of behaviour including nervous system and endocrine glands.

PSO 3. Understanding developmental psychology, its methods for research, the relative importance of hereditary and environmental factors, and different phases of life span development.

PSO 4. Understanding educational psychology and the relation between psychology and education, nature and scope of educational psychology, learning and memory processes, forgetting and intelligence.

PSO 5. Understanding social psychology, attitude formation and change, social perception, person perception, conformity and compliance.

PSO 6. Understanding Industrial psychology, personnel selection, job motivation, job satisfaction, leadership style, work culture, work environment and human resource management.

PSO 7. Understanding psychopathology, criteria of normality, methods used in clinical psychology, causes and symptoms of abnormal behaviour and basic idea regarding counselling and psychotherapy.

PSO 8. Understanding adjustment, conflict, stress management.

PSO 9. Conducting experiments on psychological variables and administration of psychological tests.

PSO 10. Application of statistics in data analysis.

Course outcome:

CO1. Understanding basic psychological processes and biological basis of behaviour

CO 2. Understanding developmental and educational psychology

CO 3. Understanding social and industrial psychology.

CO 4. Understanding psychopathology and adjustment.

CO 5. Conducting experiments and psychological tests; use of statistics in data analysis.

Course outcome

Part I:

In module 1.1 students will learn the basic psychological process. It covers a wide range of topics: nature, scope and branches of psychology, sensory processes and perception, difference between sensation and perception, gestalt theory of perception, attention, emotion and biological bases of behaviour including nervous system and endocrine glands. Module 1.2 is all about Developmental psychology and educational psychology. In developmental psychology one learns the scope and methods used in developmental researches, the controversy regarding the relative importance of hereditary and environmental factors and different phases of life span development. In educational psychology students learn the relation of psychology with education, nature and scope of educational psychology, learning and memory processes, forgetting and its causes and intelligence.

Part II:

Part II has four modules (two is for theory and two is for practical). In the theory portion there is social psychology, industrial psychology, psychopathology and adjustment. In practical portion one learns to use statistical techniques for data analysis, conducting experiments on attention, learning, memory, administration of intelligence and personality assessment.

CBCS system

Semester 1: Foundation of psychology- here students learn the historical background of the

subject, perspectives, methods, Indian context in studying psychology, cognitive processes, motivation, emotion, personality and intelligence. They have an experiment on memory and an Intelligence test in their practical syllabus.

Semester II: Introduction to social psychology- here students learn the historical background of the subject, scope, methods, approaches to understand social behaviour, attitude (formation and change) interpersonal processes, and group dynamics. Practical on group cohesiveness and group influence on behaviour are also included in the curriculum.

Semester III: Psychological disorders- The aim of studying this part is to develop an understanding of the development of psychological disorder, theoretical perspectives of psychological disorder, clinical features of various psychological disorders, and the treatment of those psychological disorder. Practical on anxiety and stress are also in the syllabus.

Semester IV: Statistical methods and psychological research- here the objective is to introduce basic statistical methods, psychological testing, qualitative methods and their uses. The topics covered are measurement procedures, graphical representation of data, data analysis, psychological testing and qualitative methods.

SANSKRIT

Course Outcome:

Paper I:

1. Basic introduction to Sanskrit syntax, Morphological generation, and Semantics.
2. Textual analysis of Sanskrit prose literature and different composing styles (i.e. Kādambarī and Daśakumāracarita)
3. Textual and literary criticism of Kālidāsa's Abhijñānaśakuntala (act 1-3)
4. Basic introduction to Sanskrit Poetics with the help of Kāvyaśāstra

Paper II:

1. Study of Sanskrit Metres (i.e. Chandomañjarī)
2. Textual and literary analysis of drama from pre-kālidāsa era (i.e. Svapnavāsavadatta)
3. Textual and literary criticism of Kālidāsa's Abhijñānaśakuntala (act 4-7)
4. Textual and literary analysis of Mahākāvya from post-kālidāsa era (i.e. Kirātārjunīya)

Paper III:

1. General Introduction of Indian Poetology (Poetological Text in Sanskrit: Sāhityadarpaṇa of Viśvanātha-Kavirāja; chapter 6-10)
2. Introduction and basics of Vedic, scientific and Technical Sanskrit Literature

Paper IV:

1. Essay in Sanskrit; on topics of Indic culture, idols, ideals, social values, current sensibility and the like.
2. Post-Kālidāsa Sanskrit Mahākāvya: Bhaṭṭikāvya (or Rāvaṇavadha) of Bhaṭṭi (Canto 2)
3. History of classical Sanskrit Literature including Inscriptional and Historical Works

Paper V:

1. Vedic texts and Vedic grammar (Vedic texts: Hymns of Ṛgveda — 1.1. Agnisūkta, 10.121. Hiranyagarbhasūkta, 10.125. Devīsūkta, 10.34. Akṣasūkta, 10.191. Saṃjñānasūkta)
2. Vedic Grammar: Padapāṭha and general outline of Vedic grammar.

3. Vedic texts; Yajurveda; Atharvaveda and Brāhmaṇa, Upaniṣad (Rudrādhyāya (Śukla-Yajurveda, 16.1-14), Atharvaveda (12.1.1-10), Maumatsyakathā (śatapathabrahmaṇam), śunaḥṣepopakhyānam (Aitareyabrāhmaṇam, 3.3.3), Bṛhadāraṇyakopaniṣad (4.4. and 4.5.)

Paper VI:

1. Texts on Dharmaśāstra and Arthaśāstra
 - a) Basic introduction to ancient Indian legal system
 - b) Comparison with Modern Indian legal system (specially with Indian Penal Code) (Yājñavalkya-saṃhitā - Chapter 2 Vyavahārādhyāya)
 - c) Different perspectives on ancient Indian polity (i.e. rājadharmaprakaraṇā of Manu and arthaśāstra of kauṭilya)
 - d) History of Indian Dharmaśāstra, Arthaśāstra and Nītiśāstra

Paper VII:

1. Sanskrit Grammatical text :Siddhāntakaumudī of Bhaṭṭojidīkṣita.
2. General Acquaintance with Phonetic Tendencies (The following topics — Assimilation, dissimilation, epenthesis, prosthesis, metathesis, anaptyxis, haplology, syncope, apocope, aphaeresis, cerebralisation, analogy).
3. Siddhāntakaumudī of Bhaṭṭojidīkṣita — Samāsaprakaraṇa; excluding Samāsāntavidhāna
4. Elementary knowledge about ‘Science of Language’, the IE family of language and the phonetic laws, history of the concept of IE language, divisions of IE. (Among phonetic laws the following are important — Grimm’s law, Verner’s law, Grassmann’s law, Bartholomae’s law, Collitz’s law, Fortunatov’s law)

Paper VIII:

1. General Acquaintance with the Indian philosophical systems.
2. Elementary knowledge about the subject of Annambhaṭṭa’s Tarkasaṃgraha.

SOCIOLOGY

Program specific Outcomes (PSOs):

After successfully completing B.A. in sociology Students will be able to explain sociological texts and positions accurately, to identify and apply sociological research methods consistently, to articulate and defend precise sociological positions.

1.Sociological Imagination

Students will be able to apply “sociological imagination” to analyzing current events, political, economic and cultural context.

- Describe how sociology differs from and is similar to other social sciences and give examples of these differences and similarities.
- Apply the sociological imagination and sociological concepts and principles to her/his own life. Participate actively in civic affairs.

2.Sociological Understanding:

The ability to demonstrate sociological understandings of phenomena, for example, how individual biographies are shaped by social structures, social institutions, cultural practices, and multiple axes of difference and/or inequality.

3.Critical Thinking:

The ability to demonstrate critical thinking through the ability to analyze and evaluate social, political, and/or cultural arguments.

- Apply critical thinking skills to sociological data and theory.
- Easily move from memorization to analysis and application to synthesis and evaluation.
- Identify underlying assumptions in particular methodological approaches to an issue.

4.Social Structure

To understand how social structure operates, such that the student will be able to:

- Demonstrate how global processes shape local social structures and the effects on individuals.
- Show how institutions interconnect in their effects on each other and on individuals.
- Demonstrate how social change factors, such as population, urbanization, or technology affect social structure and individuals.
- Describe how social structure varies across time and place and the effects of such variations.
- Demonstrate how social change affects social structure and individuals and show how structure is constantly in a process of becoming.

5.Social Theory:

The ability to demonstrate an understanding of, and the ability to use, several of the major classical and/or contemporary perspectives in social theory.

6.Creating Sociological Knowledge

Sociology uses sociological methods to systematically Creating Knowledge and also uses sociological methods to systematically investigate social phenomena. They organize and analyze empirical materials to develop findings that illuminate social processes and problems.

7.Social Problems

Sociology focuses on the ways in which problems come to be socially defined, understood, debated, and resolved. Students learn about the varied processes through which problems reflect underlying social conflicts.

8. Social Research Method

At the end of the course, students should be able to:

- understand the characteristics and issues that make science different from other ways of knowing.
- understand the historical antecedents of methodology as they relate to the social sciences today and also understand the links between theory and research.

STATISTICS

Programme Specific Outcome:

The students can understand that the subject statistics has wide application in different branch of science, arts and commerce. They can understand that there is no such a branch that the subject does not creep in.

1. Descriptive statistics which includes different representation of statical data and analysis of univariate quantitative data. This also includes Fitting of Binomial, Poisson and Normal distributions, analysis of Baivariate quantitative data (Correlation and Regression

Analysis, Rank Correlation)

2. The students have their course on Analysis of Multivariate quantitative data. All these Courses help the students to do their research work in future study.
3. All the topics of statistics do help the students to do their research works in medical sciences, agricultural sciences, management sciences etc.

ZOOLOGY

Programme Specific Outcome:

After successfully completing B.Sc. in Zoology:

1. The Zoological study will enable students to gain knowledge on the overall animal world their habit and habitat and the role in environment. This will inculcate them the importance of every surviving animal in the earth and necessity of their presence for the survival of the ecosystem.
2. The concept of Ecology will enable the students to have an idea about the various pollutions in the ecosystem that are disturbing the balance of the nature. The concept of sustainable development teaches the students to learn the optimum uses of the non-renewable resources of the earth and to apply methodologies for the use of renewable resources in the survival of the mankind.
3. The study of Molecular Biology, Biochemistry, Immunology, Parasitology, and Developmental Biology will help the students to gain knowledge in the life processes and will provide them scope in researches.
4. Biotechnology will provide impetus to the students to the use of various technologies in the field of biology. The use of animals in the welfare of human society like Apiculture, Sericulture, Poultry, Lac-culture, etc., Researches in this field will provide different job-oriented courses which will be beneficial to the students.
5. Field Excursion conducted is very much beneficial to the students. The visit to National Park or Sanctuary or Biosphere Reserve help the students to learn the various conservation strategies, both in-situ as well as ex-situ, for animals and plants. This forest study will help students to understand the importance of forests and their resources. This study provides them the idea about the status of different animals on the ecosystem and also the need of conservation of the threatened or endangered species.
6. The study of animal dissections will benefit the students to have an idea of the internal anatomy of the animal which will provide them a sound knowledge about the internal environment of the living animals.
7. The study harmful microbes help the students to know about the mode of infection of those pathogens. Moreover the control measures and the prophylactic measures will give a clear idea about how to manage the diseases and to design new medicines in combating the infections caused by harmful microbes.
8. Taxonomical studies enable the students to learn about the different variety and variability of the animal world. Taxonomy helps them to identify unknown specimens and also to group animals in a systematic way by way of phenotypic or genotypic or behavioural characteristics. This study is particularly important to the students in understanding the overall diversity.
9. The study of various ecosystems including marine, forest, aquatic, wetland etc., provide good idea to the students about the variety of ecosystems and their difference and interrelationships. The study also provides an idea about the floral and faunal communities of those ecosystems and give an idea about the native species of respective ecosystems.