PROGRAMME OURCOMES OF BACHELOR OF ARTS (B.A)

Bachelor of Arts (B.A) provides three year degree programmes (both Major and General) in a wide variety of subjects like Assamese, Economics, English, Education, History, Political Science and Philosophy. It also includes compulsory subjects like General English, Alternative English/Modern Indian Language and Environmental Science. The programme aims to offer education that is accessible to students with a wide range of educational backgrounds. Besides the Programme Outcomes mentioned below, the institution offers several meaningful learning experiences and opportunities inside and outside the classroom that enhance the learning outcomes. Students after completion of Bachelor of Arts programme will be able to

- Analyse, synthesize and integrate various aspects of knowledge and develop the capability to evaluate the validity of arguments and conclusion. In other words, develop advanced critical skills
- Effectively communicate in English and one Indian language to diverse audiences in a variety of contexts and genres
- Promote active citizenship and community engagement and participate in civic life.
- Understand the issues of environmental contexts and sustainable development.
- Engage in scholarly inquiry to identify and investigate questions of a theoretical and applied nature.
- After the completion of the course, students will have the option of going for higher studies and then pursue research
- Arts graduate can also join professional course like journalism, designing, mass communication, law etc

DEPARTMENT OF HISTORY

B.A (History) Major

Programme Specific Outcome	• Know the past events of a Country, Continent or of the World. • Raise questions like why and how the historical events took place. • Understand and analyse critically the existing social, political, religious and economic conditions of the people. • Know every branch of the society relating to socio-

	economic and socio- cultural history. • Develop Analytical and Communication Skill to solve all kinds of situation and challenges in personal and professional life. • It can help students to pursue higher education and research work. • After doing graduation in history, apart from appearing in Competitive Examination one can get employment in different fields like- Archives, Museum, Library, Marketing, Law, Media, Journalism, Archaeology, Tourism Department etc.

Course Outcomes

B.A. History (General)

Semester	Subject and Paper Code	Outcomes
1st	Paper-1.1 Early History up to 1200 A D	After completion of the course students will be able to learn- • About the Ancient Civilizations like Harappan Cultures and Vedic Civilization. • Condition of India in the 6th Century BC. • Emergence of Territorial States and Foreign Invasions, Rise of Regional Powers in the Post Gupta periods. • Post Harshavardhan Polity.
2nd	Paper-2.2 Early Assam up to 1228 AD	The paper will give a general outline of- • The History of Assam from the earliest times to the advent of the Ahoms in the 13th century. • Major stages of developments in the political, social and cultural history of Assam during the early times.

3rd	Paper-3.3 History of India (1206-1757)	After studying this paper a student will be able to learn about- • Political and administrative history of Medieval period of India from 1206-1757. • The Sources of Medieval India history, regional variations, social cultural and economic set up of the period. • Linkage of History of India under the Mughal. • The Socio -economic and religious orientation of the people of Medieval period India.
4th	Paper-4.4 History of Assam (1228-1826)	On completion of this paper, students will be able to- • Identify the major stages of developments in the political, social and cultural history of Assam during the medieval times. • The history of Assam from the 13th century to the occupation of Assam by the English East India Company in the first quarter of the 19th century.
5th	Paper-5.1 History of India (1757-1857)	After completion of this paper the students will be able to understand • The major factors that led to the establishment and consolidation of Company's rule in India. • The expansionist policies followed by the British ruler for expanding their rule in India. • The Rise against British rule.

	Paper-5.2 History of Europe (1453-1815)	The paper will give the students the knowledge of- • Transition of Europe from Medieval to Modern which was started with Renaissance and Reformation. • The historical evolution and the political development that occurred in Europe in the period between 1453-1815.
6th	Paper-6.1 History of India (1857-1947)	At the completion of this course, the learners will be able to analyse- • The course of British colonial exploitation, the social-cultural mobilisation during the period between 1857-1947. • The techniques of Indian resistance to British policies. • Initial period of Indian Independence.
	Paper-6.2 History of Assam (1826-1947)	After studying this paper the students will acquire the knowledge of- • Polity, Society and Economy of colonial Assam from 1826-1947. • Colonial maneuver for exploiting Assam. • Role of Assam in Freedom Struggle as a part pan nationalism.

B.A. History (Major)		
1st	Paper-1.1 Introduction to History	After studying this paper the learner will be able to know- • The meaning and scope history • The socio-economic trend of writing history. • How history has been written by applying both Primary and Secondary Sources.
	Paper-1.2 History of India up to 300	After studying the paper the students will be able to explore- • The Indian historiography and Greco-Roman and Chinese historiography. • The remote past of ancient India. • The rise and development of political history and dynastic rule of India during the period.
2nd	Paper-2.1 History of India (300 AD-1200 AD)	On completion of this paper the students will be able to know- The socio-economic connections, stratifications in the ruling houses, empires and the politico administrative conditions of early Indian history from 300-1200.
	Paper-2.2 History of Ancient Civilizations of the World.	This paper give the students the knowledge of-

		• The process and stages of the evolution of the variety of civilizations in the world. • The contributions of different civilizations to the world civilizations.
3rd	Paper 3.1 India under theTurko-Afghans.	On completion of this paper students will be able to learn- • The sources of mediaval India, regional variations, social, cultural and economic set up of the period. • The political and administrative history of medieval India from 1206-1526.
	Paper-3.2 History of Assam (5th Century A D to 1228)	The paper will help the students to explore the knowledge of- • The Source materials of pre historic and proto history of Assam. • Forces and factors moulding the society and culture of Assam through the ages. • Political History of Assam earliest times to the rise of the Ahoms.
4th	Paper-4.1 India under the Mughals	At the completion of the course the students will be able to explain - • And reconstruct the linkage the history of India under the Mughal. • Socio-economic and religious orientation of the people Medieval period of India. • Rise of the Marathas and disintegration of the Mughals.

	Paper-4.2 History of Europe (1453-1789)	On completion of this paper students will be able to learn - • The major factors and forces of the European history from 1453-1789. • Transition of the European society from feudalism to capitalism. • Geographical exploration and early colonial expansion, • Renaissance and Reformation.
5th	Paper- 5.1 India under the East India Company.	After completion of this paper student will get the knowledge of- • The major factors that led to the establishment and consolidation of Company's rule in India. • Ade policies of the British rulers. • The expansionist policies followed by the British ruler for expanding their rule in India. • The Rise against British rule.
5th	Paper-5.2 History of Assam (1228-1826)	On completion of this paper, students will be able to- • Identify the major stages of developments in the political, social and cultural history of Assam during the medieval times. • The history of Assam from the 13th century to the occupation of Assam by the English East India Company in the first quarter of the 19th century.

	Paper-5.3 History of Europe (1789-1870)	After completion of this course students will be able to- • Crisis of Ancient Regime, Intellectual Currents and participation of Social Classes . • Rise and fall of Napoleon • Unification of Germany and Italy.
	Paper-5.4 History of Science and Technology in pre-colonial India.	After completion of this paper the students will be able to learn • How technology was developed in India since the earliest days to the medieval period. • The contributions made by Indian Astronomers, Physicians and Mathematicians.
	Paper-5.5 History of Great Britain (1485-1820)	This paper will give knowledge to the students about- • Transformation of England from Feudalism to absolute Monarchy. • Conflict between Crown and Parliament. • Constitutional Development • Industrialisation and Social changes.
5th	Paper-5.6 History of China (1839-1949)	The paper will give knowledge to the students about-

		• Socio-economic and cultural changes of China after its opening for western world. • Reactions and resistance of Chinese people against foreign penetration. • Emergence of Nationalism and growth of communism in China.
6th	Paper-6.1 India under the Crown-	On completion of this course students will be able to know about- • The course of British colonial exploitation, the social-cultural mobilisation during the period between1857-1947. • The techniques of Indian resistance to British policies. • Initial period of Indian Independence.
	Paper-6.2 History of Assam (1826-1947)	After studying this paper the students will acquire the knowledge of- • Polity, Society and Economy of colonial Assam from 1826-1947. • Colonial exploitation of Assam. • Role of Assam in Freedom Struggle as a part Indian nationalism.
	Paper-6.3 History of Europe (1871-1945)	The Paper will give knowledge to student about- • Evaluate the historical evolution and political development that occurred in Europe during the period 1871-

		• The Social classes, nation states and nationalist sentiments in Europe • Various factors that dragged the world into devastating world wars.
	Paper-6.4 World since 1945	After completion of this paper the learners will be able understand- • The historical development of the world after the end of the second world war. • The various measures adopted by UNO for world peace.
	Paper-6.5 History of Japan (1853-1941)	On completion of the paper students will be able to learn • Transition of Japan from Feudalism to modernisation. • Emergence of Japan as a world power. • Japan between the two World Wars.
	Paper-6.6 Project Paper	After completion of the paper, students will be able to learn- • How to write a dissertation by using primary and secondary sources • How to differentiate primary and secondary sources • How to apply research methodology • How to make a conclusion by critically analyzing the facts that had been collected from different sources by the students

DEPARTMENT OF ECONOMICS

B.A Economics (Major)

Programme Specific Outcome	• Basic understanding of various economic theories and models which have applicability in practice. • Students will get to know about the market structure which is the core of microeconomics. • Students can acquire knowledge regarding the macroeconomic variables which play an important role in shaping the economy • Students can apply the various economic theories in real life situation using the devices of econometrics and mathematics • They can also infer broad conclusion from the various economics economic models which are extensively used in policy formulation, • The programme will make the students prepare for various competitive examinations. • After completion of the programme, there is scope for the students to make it to the IES. The programme will also prepare students for the banking sector, financial sector, stock market etc

Course Outcomes

Semester	Subject and Paper	Outcomes
Semester 1 And Semester 2 (Major & General)	Microeconomics I Microeconomics II	Micro economics is that branch of economics that studies the behaviour of individuals and economic agents. It will enable the students to analyse the market mechanism that establish relative prices among goods and services.
	Macroeconomics I Macroeconomics II	This will help the students to learn how the economy as a whole function and how the level of national income and employment are determined. Helps to study poverty, unemployment, inflation etc.

Semester 3 (Major)	Elementary Mathematics for Economics Mathematical Applications in Economics	Students will get to know about the various mathematical tools to form understanding of the subject. The proper application of various economic theories and models can be better understood with the use of these mathematical tools.
Semester 3 (Major & General)	The Monetary System	This will help the students to learn about the different competing theories of money, provide a framework for analyzing money and consider its function such as medium of exchange, store of value and so on. Important areas are the central bank, which influence the interest rate, the commercial banks which reveal the balance sheet of financial institutions.
Semester 4 (Major)	Introduction to Development Economics	This will help the students to study about the various growth models and development measures for the countries. Various models explain why some countries are more developed and some are less. Also studies about various human development indices which shows better opportunities for the people as a whole.
Semester 5 And Semester 6 (Major & General)	Elements of Public Finance and Public Economics	This will help the students to learn about the role of government in the economy in respect to efficient allocation of resources, distribution of income and stabilisation and also about govt. revenue and expenditures.

	Basic statistics And Applied Statistics	This will help the students to know about various statistical tools and devices to better understand the trends in economy and also about the various central tendency and dispersion tools and regression analysis.
	Introduction to Environmental Economics And Economics of Natural Resources and Sustainable Development	This will help the students to learn the economics of natural resources, use of waste product, pollution control measures and its impact.
	International Trade and Policy And International Economics	This will help the students to know the trade theories, its applications and relation with other countries regarding trade and tariffs.
	History Economics Thought I And History of Economics Thought II	This will help the students to understand the origin of economics and theories given by early economists.
	Policy and the Indian Economy And Planning for Development: India and the Northeast	This will help the students to learn about the growth and trends of Indian economy and its various growth indicators, various developmental plans for north eastern economy and measures to fasten the growth.

DEPARTMENT OF EDUCATION	
B.A (Education) Major	
Programme Specific Outcome	The purpose of studying Education subject is to guide each student towards attaining a broad background as a foundation to his or her eventual profession and to ensure that students develop fundamental skills and lifelong commitment to learning. Through course syllabus students will able to achieve the outcomes and competencies of the general education curriculum. • Acquire the knowledge of education and get acquainted with the instructional techniques and different models of teaching. • Acquire the knowledge of the impact of education on role of family, social institution and religious institution. • Know about the cognitive approach of development and thus to understand the process and factors of cognition. • Will be acquainted with some social problems like delinquency, child labour and drug abuse and technique for solving the same. • Acquire the knowledge of vocational educational for implementation in the school education. • Develop an understanding of ICT & e-learning. • Create awareness in application oriented research. • Acquire skill on curriculum construction and preparation of co-curricular activities. • Acquire Skill on data collection, statistical application, analysis and interpretation of data and application of educational psychology in teaching and learning process. • After completion of the programme, students can find employment as Academic consultant, Educational Counselor, Psychological Counselor, Programme manager and Curriculum Developer.

Course Outcomes		
Semester	**Subject and Paper Code**	**Outcomes**
	1. Foundation of Educational Theories and Principles Paper 1.01(Major) Paper 1.01 (General)	This topic will enable a student to gain: 1. Scientific & sound Knowledge of principles and theories of education. 2. Exposure to modern trends of education, particularly value education.
1st Sem to 6th Sem	2. Educational Psychology Paper 1.02 (Major) Paper 2.01 (General)	This topic will enable a student to gain: 1. Importance of psychology to develop & promote a healthy mental life. 2. Knowledge of psychology of all stages of human life. **Skill:** 1. Ability to identify and nature the creative talent of an individual. 2. Develops an effective problem solving skill with the ability to analyze different perspectives.
	3. Development of Education in India Paper 2. 01 (Major) Paper 3.01 (General)	This topic will enable a student to gain: 1. Exposure to different system of education from ancient to modern in chronological way. 2. Understanding the development of education both in pre independence and post-independence period.
	4. Sociological Foundations of Education Paper 2.02 (Major) Paper 4.01 (General)	This topic will enable a student to gain: 1. Ability to understand different socio-economic, political, cultural & religious background. 2. Inculcate the knowledge of education from social perspectives.

		Skill: 1. Improves team work abilities.
	5. Emerging Issues and Education Paper 3.01 (Major) Paper 5.01 (General)	This topic will enable a student to gain: 1. Develop awareness and understanding about different literacy programs, women empowerment, human rights, globalization and vocationalization of secondary education. 2. Need and importance of national integration and international understanding and the role of education in promoting them.
	6. Measurement and Evaluation Paper 3.02 (Major) Paper 5.02 (General)	This topic will enable a student to gain: 1. Knowledge about procedure of test construction and standardization. 2. Acquaintance of characteristics of reliability and validity of a test. 3. To understand about new trends in evaluation. **Skill:** 1. Ability of constructing good evaluating instrument.
	7. Educational Technology Paper 4.01 (Major) Paper 6.01 (General)	This topic will enable a student to gain: 1. Innovations in education through educational technology- team teaching, e-learning and e-library. 2. Acquaintance of teaching technology, behavioral technology and instrumental technology. 3. Educational technology at macro level & micro level.

	8. Environmental and Population Education Paper 4.02 (Major) Paper 6.02 (General)	This topic will enable a student to gain: 1. Understanding the programmes of environmental education at different levels of education. 2. Awareness on environmental stressors and disaster management education. 3. Develop awareness about the effect of population growth on poverty, health and hygiene.
	9. Philosophy of Education Paper 5.01 (Major)	This topic will enable a student to gain: 1. Understanding the relationship between philosophy and education. 2. Acquaintance with Indian & Western philosophy. 3. Understanding the Indian philosophical thoughts- Vedic, Buddhist & Islamic.
	10. Educational Thinkers- Oriental & Occidental Paper 5.02 (Major)	This topic will enable a student to gain: 1. Acquaintance of the views of the Western & Indian educational thinkers on aim, curriculum, method of teaching, discipline and role of teacher. 2. Understanding the philosophical ideas of different educational thinkers and their contribution to present day educational thought.
	11. Teacher Education Paper 5.03 (Major)	This topicr will enable a student to gain: 1. Understanding the different policies & practices and quality assurance in teacher education. 2. Understanding of professional ethics and accountability of teacher. 3. Importance of skill based and competency based teacher education.

	12. Teaching- Learning Method and Pedagogy Paper 5.04 (Major)	This topic will enable a student to gain: 1. Acquaintance with the teaching-learning process, principles, maxims and fundamentals of teaching. 2. Understanding the teaching effectiveness and classroom management.
	13. Statistics in Education Paper 5.05 (Major)	This topic will enable a student to gain: 1. Understanding the need and importance of statistics in educational psychology. 2. Acquaintance with the different statistical procedures used in education. **Skill:** 1. Application of appropriate statistical tool to collect data. 2. To employ the correct analysis and efficient presentation of data.
	14. Practical Paper 5.06 (Major)	This topic will enable a student to gain: 1. Inculcate scientific attitude amongst students. 2. Understanding the concept of experimental psychology. **Skill:** 1. Efficiency of conducting various psychological experiments and tests.
	15. Developmental Psychology Paper 6.01 (Major)	This topic will enable a student to gain: 1. Acquaintance of the influence of hereditary and environmental factors in the process of development of an individual. 2. Acquaintance with the problems associated with the adolescence period.

		Skill: 1. Ability to nurture a child in the right way. 2. Ability to counsel an individual to lead a healthy mental life.
	16. Continuing Education and Distance Education Paper 6.02 (Major)	This topic will enable a student to gain: 1. Understanding the importance of continuing education in the context of changing society. 2. Acquaintance with the different forms of instructional strategies in distance mode of learning.
	17. Special Education Paper 6.03 (Major)	This topic will enable a student to gain: 1. Acquaintance with the behavioral characteristics of different types of special children. 2. Understanding the different government policies and legislations regarding person with disabilities. 3. Acquaintance with the different issues, education provisions and support services of special education.
	18. Guidance and Counseling Paper 6.04 (Major)	This topic will enable a student to gain: 1. Understanding the need and importance of guidance & counseling. 2. Acquire counseling techniques to help problem solving
	19. Educational Management and Administration Paper 6.05 (Major)	This topic will enable a student to gain: 1. Understanding the basic concept of management, organization & administration. 2. Acquaintance with the principle and functions of educational management.

		Skill: 1. Ability of institutional structural and administrational planning.
	20. Project Work Paper 6.06 (Major)	This topic will enable a student to gain: 1. Basic knowledge about the procedure and method of research work. **Skill:** 1. Data collection. 2. Statistical application. 3. Analysis and interpretation of data.

DEPARTMENT OF POLITICAL SCIENCE	
B.A (Political Science) Major	
Programme Specific Outcome	Understand the nature and scope of Political Science and follow changes in patterns of political behaviour, ideas and structures. Understand and be able to inter-relate the leading theories, literature and approaches in the sub fields of Comparative Government, Political Theory and methods of International Relations and Comparative Politics. Deepen the knowledge and understanding of a person regarding the most powerful forces operating on people, communities and corporation today, namely Government and Politics. Its study will help us to understand the mechanism of constitutional system and modern government. Write clearly and with purpose on issues of international and domestic policies and public policies. Participate as a civically engaged member of a society. Analyze policy and formulate policy options. After the completion of the programme, the student can opt for higher studies or pursue a career in conflict management, law, International Politics or become a psephologist or social scientist.

Course Outcomes		
B.A. Political Science (Major)		
Semester	Subject and Paper Code	Outcomes
1st	Paper 1.1 Political Theory(I)	This will enable the students : To understand the nature, scope of Political Science and Political Theory. To appreciate about the concept of Power, Authority and Legitimacy. To understand the various concepts of Political Theory like Rights, Citizenship, Justice, Liberty etc. To be acquainted with various theories of state.
	Paper 1.2 Politics in India (I)	This will enable the students : To understand the philosophy of Indian Constitution. To identify the phases and causes of British colonial rule. To appreciate the various phases of India's Freedom Movement. To understand various Constitutional Acts and their role regarding the evolution of the Constitution.
2nd	Paper 2.1 Political Theory(II)	This will enable the students : To appreciate the problems and challenges of different theoretical ideas in Political Science. To understand about the concepts of Sustainable Development, Human development, Gandhi's view on development etc. To develop the idea on the concept of Justice and Multiculturalism. To be acquainted with nature of state in Third World, Dependency Theory etc.

	Paper 2.2 Politics in India (II)	This will enable the students : Examining the Fundamental Rights and Duties with a study of the Directive Principles of State Policy. Assessing the nature of Indian Federalism with focus on Union State relations. Assessing the role of Political dignitaries from President, Prime Minister to Council of Ministers or Governor. Develop knowledge regarding the Judicial system of the country.
3rd	Paper 3.1 International Relations (I)	This will enable the students : To get an idea about International Relations and Politics. Through the approaches and methods to study the discipline. Studying the role of National Interest, Ideology, balance of power etc. Studying the role of Diplomacy and Foreign Policy.
	Paper 3.2 Public Administration (I)	This will enable the students : To get an idea about Public Administration, its nature scope and Public-Private relation. Evaluate the role of Public Administration in modern days. To grasp the ideas of various concepts like Department, Corporation etc. Acquainted with Hierarchy, Unity of Command etc.
4th	Paper 4.1 International Relations (II)	This will enable the students : Understanding the cold war phases and the Post Cold Warera. Evaluate the working of United Nations and Peace Keeping Force. To get an idea about Globalization and its impact.
	Paper 4.2 Public Administration (II)	This will enable the students : Studying about the role and procedure of Personnel Administration and Financial Administration.

		Study about the role of Civil Servants and their recruitment, promotion etc. Good Governance and morality in administration along with the concept of Developmental Administration etc are very interesting and useful topics for the young generation.
5th	Paper 5.1 Western Political Thinkers	This will enable the students : Providing an insight into the dominant feature of Western Political Thinkers Plato, Aristotle etc. Examining the features of Medieval Political Thinkers like St.Augustine, Machiavelli etc. Analyzing the views of contractualists like Hobbes, Locke regarding state and sovereignty. Studying the concept of Marxian Political Thought.
	Paper 5.2 Select Constitutions (I)	This will enable the students : Tracing the evolution of Comparative Politics and draw a distinction between Comparative Politics and Comparative Government. Investigating the nature and scope of Comparative Politics. Critically analyzing the features of the political system of United Kingdom and United States of America.
5th	Paper 5.3B General Sociology (I)	This will enable the students : To understand the nature and scope of Sociology. To acquaint with the methods of sociology. To analyze the social stratification system including class and caste.
	Paper 5.4A Contemporary Political Issues	This will enable the students : Study the role of various Environmental Conferences. Looking into the issues of Gender to understand Gender Justice, Gender Budgeting etc.

		Understanding the concept of Human Development and Human Security. Providing an insight into the meanings and forms of Terrorism including North East India.
	Paper 5.5B Political Sociology (I)	This will enable the students : Understand the development of the concept of Political Sociology and its nature and scope. To acquaint with the meaning of Socialization. Develop the knowledge regarding Political Mobility and Political Culture.
	Paper 5.6B Human Rights	This will enable the students : To acquaint with the concept of Human Rights, its growth and evolution. To understand the approaches to the study of Human Rights. Assess the role of Conventions on Women, Child Rights etc. To make aware about Human Rights and the role of Non Governmental Organisations.
6th	Paper 6.1 Indian Political Thinkers	This will enable the students : Providing an insight into the dominant ideas of Indian Political Thinkers. To know about the ideas of Manu and Kautilya. Insight on the ideas of Raja Ram Mohan Roy, Jyotirbarao Phule, M.N Roy, Gandhi, Nehru etc.
	Paper 6.2 Select Constitutions (II)	This will enable the students : Critically analyzing the features of the political system of China and Switzerland. Conducting an intense study about their executive, legislature and judiciary. Evaluation of the concepts of Direct Democracy, Plural executive etc are possible.
	Paper 6.3D General Sociology (II)	This will enable the students : Providing an insight about the concept of social control, culture etc. Looking into the issues of social change. Develop knowledge regarding meaning and agencies of socialization.

6th	Paper 6.4C Contemporary Political Ideologies	This will enable the students : To learn about the concepts of Neo Liberalism, views of Hayek and Nozick. To draw a sketch about the concept of Feminism. Looking at the issues relating to Religious Fundamentalism and Multiculturalism in the context of India.
	Paper 6.5D Political Sociology (II)	This will enable the students : To understand the views of Elitist Thinkers like Pareto, Mosca etc. To develop the knowledge in regard to Modernization, Political change etc. To understand and evaluate the role of Bureaucracy in society and politics.
B.A(General)		
1st	Paper I Political Theory (I)	This will enable the students : To understand the nature, scope of Political Science and Political Theory. To appreciate about the concept of Power, Authority and Legitimacy. To understand the various concepts of Political Theory like Rights, Citizenship, Justice, Liberty etc. To be acquainted with various theories of state.
2nd	Paper I Political Theory (II)	This will enable the students : To appreciate the problems and challenges of different theoretical ideas in Political Science. To understand about the concepts of Sustainable Development, Human development, Gandhi's view on development etc. To get an idea about the moral values in politics.
3rd	Paper I International Relations (I)	This will enable the students : To get an idea about International Relations and Politics.

		Through the approaches and methods to study the discipline. Studying the role of National Interest, Ideology, balance of poweretc. Studying the role of World in 20th century.
	Paper II Politics in India(I)	This will enable the students : To understand the philosophy of Indian Constitution. To identify the phases and causes of British colonial rule. To appreciate the various phases of India's Freedom Movement. To understand various Constitutional Acts and their role regarding the evolution of the Constitution.
4th	Paper I International Relations (II)	This will enable the students : Studying the role of Diplomacy and Foreign Policy Evaluate the working of United Nations and Millennium DevelopmentGoals. To get an idea about Globalization and its mechanisms.
5th	Paper I PublicAdministration(I)	This will enable the students : To get an idea about Public Administration, its nature scope and Public-Private relation. Evaluate the role of Public Administration in modern days. To grasp the ideas of various concepts like Department, Corporation etc. Acquainted with different administrative theories.
	Paper II Select Constitutions (I)	This will enable the students : Tracing the evolution of Comparative Politics and draw a distinction between Comparative Politics and ComparativeGovernment. Investigating the nature and scope of Comparative Politics. Criticallyanalyzingthefeaturesofthepolitical system of United Kingdom and United States of America.

6th	Paper I Public Administration II	This will enable the students : Studying about the role and procedure of Personnel Administration and Financial Administration. Study about the role of Civil Servants and their recruitment, promotion etc. Good Governance and morality in administration along with the concept of Developmental Administration etc are very interesting and useful topics.
	Paper II Select Constitutions (II)	This will enable the students : Critically analyzing the features of the political system of China and Switzerland. Conducting an intense study about their executive, legislature and judiciary. Evaluation of the concepts of Direct Democracy, Plural executive etc are possible.

DEPARTMENT OF ENGLISH	
B.A (English) Major	
Program Specific Outcome	• Students will gain a deeper understanding of the resources of the written word. • Will help to explore the entire range of human experience in the resources of language in Fiction, Poetry, Non-Fiction, Prose and Drama • Will help to build skills of analytical and interpretive arguments; become careful and critical readers, practice writing in a variety of genres as a process of intellectual inquiry, creative expression and ultimately to become more effective thinkers and communicators who are well equipped for a variety of careers in our information intensive society. • Will acquiant students with the opportunity to study influential writings from the British, American and global Anglophone traditions. • Will provide imagination and critical insights into all areas of human experience- war and peace, nature and culture, love and sexuality, selfhood and social identity, justice and atrocity, the burdens of history and the dreams of the future. • Read complex texts, actively recognize key passages, raise questions, appreciate complexity and ambiguity, and comprehend the literal and figurative uses of language. • Will increase confidence in speaking publicly, articulate clear questions and ideas in class discussion; listen thoughtfully and respectfully to other ideas and prepare, organize and deliver engaging oral presentations.

Course Outcomes		
B.A English (Major)		
Semester	**Subject and Paper Code**	**Outcomes**
Semester - I	PAPER 1. The Social and Literary Context: Medieval and Renaissance	This paper will help students to: Understand the circumstances that influenced, shaped and contributed to the process of literary production from the medieval period to the Renaissance.
	PAPER 2. Medieval and Renaissance: Poetry and Plays	This paper will help students to: Analyze the poetry and drama that emerged against the literary and historical contexts of the medieval period to the Renaissance.
Semester - II	PAPER 3. The Social and Literary Context: Restoration to the Romantic Age	This paper will help students to: Understand the circumstances that influenced, shaped and contributed to the process of literary production from the Restoration of Charles II and the reopening of the theatres in 1660 to the Age of Romanticism
	PAPER 4. English Poetry, Drama and Fiction: Restoration to Romanticism	This paper will help students to: Analyse the literary texts that reflect the socio-cultural and political interests of the period studied in Paper III and also examine the ways in which texts take part in and are produced by urgent issues of a time
SEMESTER-III	PAPER 5. The Social and Literary Context: The Victorian World	This paper will help students to:

		Understand the contexts of the English literary tradition as it develops in the Victorian age and analyze the texts that emerged against the social and cultural history of the Victorian world
	PAPER 6. Victorian Poetry and Fiction	This paper will help students to: • Identify the poetry that is characteristic of the Victorian period – forms like the dramatic monologue, the love poem, pre-Raphaelite experiments and the beginnings of modern poetic experience in Hopkins. • Describe the great Victorian fiction that closely followed the social concerns of the period and experimented with narrative voice and perspective
SEMESTER IV	PAPER 7 The Social and Literary Context: Modernism and After	This paper will help students to: Understand the circumstances that shaped the processes of literary production from the twentieth century to the present
	PAPER 8. English Poetry and Fiction: Modernism and After	This paper will help students to: Analyze the poetry and fiction of the modern and postmodern eras that is representative of important trends, critical shifts and formal experimentation of not only British but also other literary cultures like the American and the Latin American.

SEMESTER-V	PAPER 9. Modern Drama I	This paper will help students to: Analyse the prescribed theoretical texts of 20th century English and European drama in the context of the cultural and situation of this period.
	PAPER 10. Modern Drama II	This paper will help students to: Discuss the impact of contemporary philosophy, ideas and art movements like existentialism, expressionism, impressionism, Marxism and the Absurd in the prescribed modern texts.
	PAPER 11. The Essay in English: Addison to Dickens	This paper will help students to: • Describe the development of the essay form from the time of Francis Bacon (1561-1626), and examine the emergence of the periodical essay in the 18th century in the hands of Addison and Steele particularly. • Analyse the wider political, social, and cultural context while noting the variety of themes that have been treated in the genre as also the diversity of styles of writing from the personal, intimate note of Lamb which is in keeping with the subjective thrust of Romantic literature to the detached, argumentative strain of later times.
	PAPER 12. The Essay in English: The Twentieth Century	This paper will help students to: Understand the developments in the genre of the essay in the 20th century and will be able to

		analyse how the genre has adapted in order to address a variety of contemporary issues and become the vehicle for representing personal experiences, moved into literary, social, and cultural criticism and engaged in polemic and persuasion.
	PAPER 13. Life Writing: Biographies, Memoirs and Letters	This paper will help students to: • Appreciate the element of narrativization in seemingly linear, transparent, straight forward accounts of lives of significant people set down in memoirs, biographies and letters. • The student will be able to identify the 'literary' or constructed nature of life-writing purportedly telling nothing but the truth, as also note the 'textual' nature of all lives- that these lives in a way are re-made for each succeeding generation of readers through the act of transmission/ telling.
	PAPER 14. Women's Writing	This paper will help students to: Understand the body of literature that has emerged with growing feminist awareness of women's lives and their representation and appreciate how women's texts pay attention to the historical and political conditions of their times, to the status and condition of women and to the ways in which they embody a politics of resistance.

SEMESTER-VI	PAPER 15. Literary Criticism	This paper will help students to: Understand the key ideas of Western literary criticism from Graeco- Roman antiquity to the modern period and analyse the implications of ideas (e.g. mimesis or imagination), and orientations (classicism, romanticism and modernism) that have marked the history of literary criticism. Students will be able to appreciate the key concepts associated with the names of significant thinkers in this history.
	PAPER 16. Twentieth Century Criticism and Theory	This paper will help students to: Understand the intellectual shifts in the reading of culture, language and literature in the 20^{th} century and the emergence of Theory and appreciate the notions and ideas associated with movements like structuralism, poststructuralism, psychoanalytical criticism, feminism, new historicism and postcolonialism.

	PAPER 17. Nature	This paper will help students to: Appreciate the process through which language and literature – as manifestations of culture – are produced by the interconnections between both nature and culture; and will be able to position nature not just as a passive background in literary texts but as a central presence determining the dynamic interpretations of the text itself
	PAPER 18. Western Mythology: Introducing Classical & Judeo-Christian Myth	This paper will help students to: Discuss Classical and Judeo-Christian myth and their recurrence in later social, historical, cultural and literary contexts and will gain knowledge of a specific range of myths and mythical characters and their function, and the presentation of myths in a variety of literary material – in poetry, drama and fiction.
	PAPERS 19 AND 20 (Optional Papers) Option A: Indian English Literature	This paper will help students to: Gain knowledge of the distinctive literature produced in India in the wake of English education, first under British colonial rule and then after independence.

B.A (General English)

Semester	Subject and Paper Code	Course outcome

Semesters I & II	2 Papers	This paper will help students to • Appreciate representations of issues in contemporary life and culture in the English language. • Make correct usage of sentences using common phrases and idioms, Voice Change, Tag Question, Determiners. • Identify errors in sentences
BA Alternative English Semester-I	. PAPER - 1	This paper will help students to: Appreciate poetry with great ideas, issues of immediate social and cultural concern and will also enable them to acquire a facility with the English language.
Semester- II	PAPER 2- Drama	This paper will help students to: Understand drama from various periods and different literary cultures will be able to appreciate representation of character, significance of scenes and dramatic techniques employed.
Semester- III	PAPER 3 Fiction	This paper will help students to: Understand the different aspects of the genres of the novel and the short story.
Semester- IV	PAPER 4 Non-Fictional Prose	This paper will help students to: Understand the developments in the genre of the essay from the beginning to the early 20th century.

DEPARTMENT OF ASSAMESE	
B.A (Assamese) Major	
Programme Specific Outcome	• Assamese is the mother tongue of Assamese people and it is the state language of Assam. So each and every student is expected to have proper knowledge of Assamese language. The three year degree programme in Assamese will enrich Assamese literature by increasing the number of readers and writers. Besides it will acquaint students with Assamese Fiction, Poetry, Prose and Drama. • The programme will help to build skills of analytical and interpretive arguments; become careful and critical readers, practice writing in a variety of genres as a process of intellectual inquiry, creative expression and ultimately to become more effective thinkers and communicators in Assamese. • In Assam, a large number of schools and college have been opened in other than Assamese medium. In these institutions, there are a large number of posts of Assamese language teachers. So teaching and learning of Assamese as a subject will help them to pursue a career in teaching. • News paper and magazine publication at present is a big industry in Assam. There is a large scope of being appointed as Reporter, Journalist, Proof reader, Compositor, Sub- Editor, Editor and office –assistant etc. for the students of this programme.

Course Outcomes		
B.A. Assamese (Major)		
Semester	**Subject and Paper Code**	**Outcomes**
1st	Paper: 1.1(Major) (History of Assamese Literature)	After completion of the course, the students will be able to: • Know Assamese oral literature like Ai Nam ,Biya Nam ,Dhai Nam, Proverbs, phrase and idioms etc. • Know about the characteristics of the literature of the Pre Sankariyan Yug.Know about the speciality of the SankariyanYug and can explore its literature like Ankiya Nat, Bargeet, Bhatima, translation of Shrimadbhagawat Puranetc. of Sankardeva, Madhavdeva and any other litterateur and their literature of this era. • Acquire knowledge in the origin and development of the Assamese language.
	Paper 1.2 (Major) Ancient Assamese Poetry	After completion of the course, the students will be able to • Learn about the origin, development and characteristics of the ancient Assamese poetry. • Learn about the Charyapada(the first written Assamese literature) • Acquire knowledge about some important and famous ancient

		classical Assamese poems like Chitrakutar Chitra of MadhavKandal ,Nanndotsaw of Sankardeva etc.
2nd	Paper.2.1 (Major) History of Assamese literature from Uttar Sankariyan Yug to Awahan Yug	After completion of the course, the students will be able to (1) Acquaint themselves with the background of the Post Sankariyanyug and the various literature of the period. (2) Gain knowledge about the beginnings of popular Assamese magazines (like Arunoday, Jonakee and Awahan) and its influence on Assamese literature and its prose style in the late 19th and early 20th centuries. They can also learn how romanticism and modernism had come to Assamese literature through these magazines.
	Paper 2.2.(Major) Modern Assamese Poetry	This paper will help the students in acquiring some knowledge on romantic and modern Assamese poetry
	Paper 3.1 (Major) Assamese Language	After completion of the course, the students will be able to: • Acquaint them with the Indo-European

3rd		language family and will get an opportunity to learn some aspects of the world's biggest and primary language family. • Understand the concept of evolution of the Pali- Prakrit-Apabhrangsha language from Old-Indo-Aryan language and relation between Pali-Prakrit-Apabhrangsha and Assamese language. • Learn about the origin of the Assamese language and the brief introduction of the Non- Aryan languages of surrounding the Northeast states of Assam and the contribution of these languages to the Assamese language. • Acquire knowledge about the dialects of Assamese language and the words stocks of Assamese language.
	Paper 3.2 (Major) Special Study on Assamese Literature (Sankardeva or Lakshminath Bezbaruah)	This is an optional paper. There are two options—one is some special literature of ShrimantaSankardeva like 'Kirtanghoxa', 'Rukminee Haran Kavya' , 'Bargeet' , 'Parijat Haran Nat' and another is some special literature of Lakshminath Bezbaruah like' XadhukatharKuki' (collection of Assamese folk tale), 'Xuravee' (collection of short story)etc. From this paper the students will be able to learn about the main theme and the style of Sankariyan and Bezbaruahan literature.
4th	Paper 4.1(Major) Assamese Grammer	The paper will help the students in acquiring knowledge on the structure of Assamese

		language. They can learn about the uniqueness of Assamese phonology and morphology.
	Paper 4.2 (Major) Prefatory on Assamese Race and Culture	The paper will help the students in acquiring knowledge about the rich and colourful Assamese elite culture as well as folk culture.
5th	Paper 5.1 (Major) Ancient Assamese Drama	Acquire knowledge about the characteristics and methodology of Ankiya Nat which is a one act play written by Sankardeva and his followers for spreading the New Vaishnavism religion in 15th century Assam.
	Paper 5.2 (Major) Ancient Assamese Prose	The paper will help the students in acquiring knowledge about Assamese prose and its development from 16th century to mid 19th century.
	Paper 5.3 (Major) Study on Brajawalee literature	The Students can acquire knowledge about the origin, development and characteristics of Brajawalee language through some Brajawalee poems.

	Major 5.4 (Major) Language and Literature of Pali and Prakrit	The paper will help the students in acquiring knowledge about Pali, Prakrit, and Apabhrangsha literature and language.
	Paper 5.5(Major) Criticism of Literature	From this paper the students will be able to learn eastern and western criticism of literature.
	Paper 5.6 (Major) Nature of Language	The paper will help the students in acquiring knowledge about the various language families of the world. On the other hand they can also learn the various form of language like standard language, dialect, state language, international language etc.
6th	Paper 6.1 (Major) Modern Assamese Drama	From this paper the students will acquire knowledge about the origin of modern Assamese drama and its history and analyse some famous modern Assamese drama like *Rupalim, Maniram Dewan* and *Hengdang*
	Paper 6.2(Major) Modern Assamese Prose	After completion of the paper, the students will get acquainted with the style of modern

		Assamese prose by studying some important prose works of the period.
	Paper:6.3(Major) Study on Modern Assamese Indian Literature	This paper will help the students to acquire knowledge on various modern Indian literatures through some famous short stories like *Kaphan* (Hindi) and *Post Master* (Bengali) and novels like *Padma Nadir Manji* (Bengali) and *Maila Anchal*(Hindi).
	Paper 6.4(Major) Assamese Short Story and Novel	Students will acquire knowledge on different types of Assamese short stories like 'Xakha Damodar' of Dr.Lakshminandan Borah , 'Byarthaterdan, of Praweena Saikia etc. and famous Assamese novel 'Mamare Dhara Torowal' of Jnanpith awardee Dr.MamoniRaysomGoswami.
	Paper 6.5(Major) Verse and Figure of Speech	From this paper the students will learn about Assamese 'Sanda' and 'Alankar' (Figure of speech and verse) as eastern criticism of literature.
	Paper 6.6 (Major)	

	Prefatory on Linguistics	This paper will help the students in acquiring knowledge in various branches of linguistics like Descriptive linguistics, Historical linguistics etc. and the various levels of linguistics like Phonology, Morphology, Syntax, and Semantics etc.
B.A. (General) (Assamese - MIL)		
1st	Paper : 103 Assamese Poetry	From this paper, the students will be able to learn the theme and form of Assamese poems of the 16th century like' Sarat Barnana' of Sankardeva, and Assamese romantic poems like 'Niyar' of Chandrakumar Agarwalla,the first Assamese romantic poet and Assamese modern poems like 'Biplavee" of Amulya Baruah etc.
2nd	Paper: 203 Assamese Prose	From this paper the students will be able to learn about Assamese prose by studying some famous prose pieces..
3rd	Paper: 308 Assamese Drama	From this paper the students will be able to acquire some knowledge on Ankiya Nat and Assamese modern drama in literary aspect.
4th	Paper : 408	

	Assamese Short Story, Novel and Essay	The students will be acquainted with some famous Assamese short stories and one famous Assamese historical novel namely ‘ Nirmal Bhakat’ of Rajanikanta Bordoloi.
B.A. (General) (Assamese - Elective Course)		
1st	Paper :101 History of Assamese Literature	The paper will help the students in understanding about the evolution of Assamese scripts, folk literature and the literature of PrakSankariyanYug, SankariyanYug as well.
2nd	Paper :201 Assamese Language	From this paper the students will be able to acquire some knowledge about the Aryan and Non- Aryan elements on Assamese language.
3rd	Paper :304 History of Assamese Literature	From this paper the students will be able to learn about the history of Assamese literature from the’ Post –SankariyanYug’ to ‘AwahanYug’
4th	Paper :403 Assamese Grammar	This paper will help the students in acquiring knowledge about Assamese phonology and morphology.
5th	Paper :503	

	Assamese Poetry	This paper contains some famous Assamese poems which will help the students in appreciating Assamese poetry.
	Paper: 504 Assamese Drama	From this paper the students can learn about the Assamese drama.
6th	Paper : 603 Assamese Prose	From this paper the students will be able to learn about Assamese prose through study of some selected prose pieces.
	Paper: 604 Assamese Short Story and Novel	The paper will help the students in acquiring knowledge of Assamese short story and novel.

DEPARTMENT OF PHILOSOPHY	
B.A (Philosophy) General	
Programme Specific Outcome	• Philosophy thrives on logical thinking; its laboratory is the human mind. By studying Philosophy, students will learn to think logically. Thought is an instrument of philosophical enquiry and this enquiry will be fruitful when it will be undertaken with logical thinking. • Philosophy is also necessary for other enquires in the

	field of arts and humanities. Students studying Philosophy will help them in building arguments in other Social sciences like Political Science, Economics, Education and Sociology. • Philosophy uses the tools of Logic and reason to analyze the ways in which humans experience the world. Hence students will be able to develop critical thinking, close reading and logical analysis. • Students will be able to asses philosophical theories and methods on the basis of different position within Philosophy and in this way identify possible answers to philosophical questions. • After completion of the programme, students will be able to appear in competitive examinations or can pursue a career in teaching.

Course Outcomes

B.A. (General)

Semester	Subject and Paper Code	Outcomes
1st	Paper 1.1 Logic-I	After completion of the course students will be able to learn- • Nature of Logic • Argument and Validity • Development of symbolic logic • Modern classification of Propositions
2nd	Paper 2.1 Logic-II	The paper will give a general outline of- • Shorter Truth-table Method • Universal and Existential proposition • Nature and kinds, grounds of induction

3rd	Paper -3.1 General Philosophy-I	After studying this paper a student will be able to learn about- • Nature and Scope of Philosophy • Theories of knowledge: Rationalism, Empiricism, Kant's Critical theory • Objective and Subjective concept of Idealism • Naïve and Scientific Realism
4th	Paper-4.1 Indian Philosophy-I	After studying this paper a student will be able to learn about- • The Astika-Nastika dichotomy in Indian Philosophy • Theory of Knowledge and Materialism • Philosophical Concepts of Jainism and Buddhism
5th	Paper 5.1 General Philosophy-I	After studying this paper a student will be able to learn about- • Theories of Truth • Freedom and Determinism • General Characteristics of Existentialism
	Paper 5.1 Indian Philosophy-II	After studying this paper a student will be able to learn about- • Nyaya, Vaisesika, Sankhya, Yoga and Samkara

6th	Paper 6.1	After studying this paper a student will be able to learn about- • Morality and Moral Philosophy • Fact and Value • Concepts of Normative Ethics, Meta-Ethics & Practical Ethics • Teleological Theories
	Paper 6.2 Philosophy of Religion	After studying this paper a student will be able to learn about- • Nature and Scope of Philosophy of Religion of Religion • Religion, Philosophy and Science • Origin of religion • Arguments for the existence of God

DEOARTMENT OF ENVIRONMENTAL STUDIES

Course Outcome

'Environment' means the surroundings of us and it provides all the goods and services which are necessary for our daily lives. The degradation of our environment is linked with the development processes and the ignorance of people about retaining the environmental balance. Therefore, now a days it has become essential that the study of environment has become an integral part of the education process.

Environmental Studies (EVS/ENS) is a compulsory subject in degree third and fourth semester in arts and science stream. It is also compulsory in third semester of commerce stream. The syllabus of EVS covers all aspects of environment like natural resources, biodiversity, ecosystem, pollution, social issues, human environment etc. After completion of this study, students are able to identify the causes and impacts of all environmental issues. They have the scope to work in different government and non-governmental organisation as environmental professionals. They are also able to take measures to control local environmental problems. They can aware the general people about the effects of environmental problems and also they can suggest steps for environmental conservation.

PROGRAMME OUTCOMES OF BACHELOR OF COMMERCE (B.COM)

Bachelor of Commerce (B.Com) is a three year degree programme (both Major and General) in Commerce related subjects. Some important outcomes are highlighted below-

- After completing three years of Bachelors in Commerce (B.Com) programme, students would gain a thorough grounding in the fundamentals of Commerce and allied subjects.
- This course helps to build a foundation for various professional courses also such as Chartered Accountancy, Company Secretary, and Cost Accountancy etc.

- After completion of this course, students can also pursue higher studies in the field of Commerce, Management, and Banking etc. as well as undertake research.

- The knowledge from this course can help a student to work in various public as well as private sector organisations in the field of accounting, auditing, marketing, sales, administrative management etc.

- This course can also help students to undertake entrepreneurial ventures on their own.

DEPARTMENT OF COMMERCE

B.Com (Major and General)

Programme Specific Outcome	The purpose of B.Com course is to attain a thorough knowledge about the various aspects in the field of Commerce. Commerce is a broad and dynamic field comprising of a vast number of subjects that are inter-related. This course is hence helpful for building a foundation for a student's eventual profession and to ensure that students develop fundamental skills and lifelong commitment to learning. Some points are highlighted below- • **Outcome 1:** To understand the needs, objectives and learn the uses of various types of accounting and auditing functions in various fields. • **Outcome 2:** To learn about the financial system and various financial institutions as well as the various laws governing the commerce and business in the country. • **Outcome 3:** To develop an understanding about concept, nature, types and need of management in organisations and learn about the significant role it plays in marketing, business and entrepreneurship. • **Outcome 4:** To enable the students to acquire skills required in the job sector as well as to pursue entrepreneurship. • **Outcome 5:** To enable a student to pursue higher studies as well as appear for competitive exams in this field.

Course Outcomes

B.Com Major course comprises of General, Core and Specialised Papers

B.Com General course comprises of General and Core Papers only.

Semester	Paper	Subject and Paper Code	Outcomes

Semester I	General Paper	101 Business Mathematics (Compulsory for Major Students)	The objective of this paper is to enable the students to have such minimum knowledge of Mathematics as is applicable to business and economic situations.
		101 Fundamental of Insurance	This paper gives a broad view on insurance and its types. The students shall learn about Life insurance, General insurance such as Fire, Marine; Insurance institutions, qualification required for becoming insurance agents. The students having an aim of joining the insurance sector will be benefitted from this paper. Further the students shall understand the importance of insurance and thus, can also encourage their families and friends towards having insurance of their life and property.
	Core Paper	102 Financial Accounting-I	This paper gives an overall view of theoretical as well as practical knowledge of maintaining various books of accounts which makes a student eligible to take up a job as an accountant. Moreover, there are various fields which a student can choose in the department of

			finance & accounts division in any organization.
		103 Business organization and Entrepreneurship Development	The paper has much more socio - economic benefits because it helps the students to think outside the box and nurtures unconventional skills and talents. This paper teaches the students some crucial life skills such as collaborate and work with a team and also helps in building creativity and innovation. The students who wishes to become an entrepreneur in future is benefitted from this paper as this paper deals in entrepreneur development training programmers and also helps in generating new start up ideas
		104 Indian Financial System	This paper gives an overall idea about the financial system and structure in our country. The students learn about the various investment avenues such as shares, debentures, mutual fund etc. They become aware of the investment process and other concepts associated with it. They get an idea about stock exchange and its functioning. This paper shall also help them if they pursue further studies like MBA, M.Com, PG in Finance, Stock Broking courses etc.
	Specialised Paper	105 Cost Accounting(Accy)	This subject imparts knowledge regarding various cost concepts, costing techniques, ascertainment of material and labour cost, etc. A student having

			knowledge of cost accounting can opt for various jobs such as cost accountant, cost and work accountant, etc.
		105 Human Resource Management(Mgt)	This paper focuses on wide variety of topics such as manpower planning, human resource policies, recruitment and selection, training and development, career planning etc. The objective of this paper is to enhance the skill and personal characteristics of the students. A student who wants to make a career in the Human Resource Department of an organization is hugely benefitted from this paper.
		105 Rural and Micro Finance(Fin)	This paper gives an insight about the rural sector, its problems and the various financial avenues available for the assistance of the rural people. The rural environment and the various rural based industries are elaborated along with the sources of rural finance via government policies and through agencies.
Semester II	General Paper	201 Communicative and functional English –I	This paper, prescribed for B.Com 2nd Semester students, is particularly aimed towards making the students acquainted with the usage of English language. The effective use of the English language assumes a great deal of importance in the life of an individual as it makes and mars the difference in success and failure.

			Hence, this paper serves as a medium for the students to learn and acquire the various communication skills and teaches the students alongside, how to be an active listener, how to write in an effective manner and how to be an eloquent speaker. The paper also deals with the types of communication- verbal and non verbal, formal and informal; and the role of body language in making a speech effective and interesting
		201 Functional MIL I (Assamese)	
	Core Paper	202 Financial Accounting -II	This paper gives an overall view of theoretical as well as practical knowledge of maintaining various books of accounts which makes a student eligible to take up a job as an accountant. Moreover, there are various fields which a student can choose in the department of finance & accounts division in any organization.

		203 Principles of Management	This paper focus on various concept of mgt thoughts, theories and principles of scientific, pre scientific mgt principles, motivation, leadership etc. the objectives of this paper is to help the students to learn about managerial skill, organizational hierarchy authority and responsibility of work while they work in an organization in future after completion of their study.
		204 Business Statistics	To familiarise the concept of statistics. To make students familiar with calculation of various types of averages and variation. To use correlation And regression analysis to estimate the relation between two variables.etc
	Specialised Paper	205 Management Accounting(Accy)	This course helps the students to understand the conceptual framework of Management Accounting. Through this subject a student acquires the managerial techniques of decision making. Moreover, he can become a management accountant who has got a high demand in both private and public sector.
		205 Human Resource Planning and Development(Mgt)	This paper contains various topics like nature and scope of HRP and HRD, employees training, executive development, career management etc. basically this paper helps the students to grow their personality skill,

			communication skill and also helps in maintain their managerial skill and human relation skill. Further the study of this paper helps the students to build a career in HRM department of different of organization where they can manage the manpower or employee in the organization.
		205 Micro Credit Institutions(Fin)	This paper focuses on the concept of microfinance along with the structure, institutions, development programmers and models of micro finance. The role of some important microfinance institutions such as RBI, NABARD, RGVN and the RRBs are also elaborated. The objective of this paper is to help the students learn about the grass root level financial products and services made available for the poor people. This paper provides scope for research as well as to work in institutions dealing with microfinance such as PNRD, RRBs, and RGVN etc.
Semester III	General Paper	301 Environmental Studies	This paper covers all aspects of environment like natural resources, biodiversity, ecosystem, pollution, social issues, human environment etc. After completion of this study, students are able to identify the causes and impacts of all environmental issues.
		302 Communicative and functional English -I	This paper, prescribed for B.Com 2nd Semester students, is particularly aimed towards making the students acquainted with the usage of English language. The

			effective use of the English language assumes a great deal of importance in the life of an individual as it makes and mars the difference in success and failure. Hence, this paper serves as a medium for the students to learn and acquire the various communication skills and teaches the students alongside, how to be an active listener, how to write in an effective manner and how to be an eloquent speaker. The paper also deals with the types of communication- verbal and non verbal, formal and informal; and the role of body language in making a speech effective and interesting
		302 Functional MIL-II (Assamese)	This paper, prescribed for B.Com 2nd Semester students, is particularly aimed towards making the students acquainted with the usage of Assamese language. The paper also deals with the types of communication- verbal and non verbal, formal and informal
	Core Paper	303 Corporate Accounting	This course provides the knowledge on the various accounting procedures followed by the Companies Act, 2013. A student learns about issue and redemption of shares, preparation of final accounts etc.
		304 Direct Taxes	Through this subject a student can acquire knowledge about computation of income, submission of income tax return, tax deducted at source, etc. After getting the basic knowledge in the degree level, it becomes easier for a student to opt for courses such as Diploma in

			Taxation, Diploma in Tax & Company law, CA, etc. which will further provide immense job opportunities for the students such as Tax Policy Analyst, Auditors, Financial Analyst, etc.
		305 Corporate Law	This paper enables students to learn in depth about Company, its types, formation, structure and internal control. A student having knowledge of Corporate Law can also opt for Company Secretary course. This paper shall also benefit students who opt for law with corporate law as specialization.
	Specialised Paper	306 Advance Corporate Accounting(Accy)	A student learning this subject makes him perfectly eligible for becoming a Chartered Accountant because he learns in depth the various provisions of Company Law and Accounting as per Indian Accounting Standard
		306 Industrial Relations and Labour laws(Mgt)	This paper gives an idea about the relationship between workers, employing entities, trade unions and government. This paper deals in different kind of laws regarding the safety and protection of workers - Industrial Dispute Act, 1947, Factories Act, 1948, The Trade Union Act, 1926, The Payment of Wages Act, 1936, The Payment of Wages Act, 1965. A student who has an aim of becoming a lawyer

			specializing in labour acts is immensely benefitted from this paper
		306 Financial Institutions and Markets(Fin)	This paper emphasizes on the two most important constituents of the financial system of any country, and with reference to India, i.e. financial institutions, namely banking as well as non-banking institutions, their functions and significance, and, financial markets, namely money market and capital market and their associated concepts. It also gives an overview of the regulatory framework governing the financial system in India
Semester IV	General Paper	401 Business Economics	This particular paper deals with the basic economic problems, the issue of scarcity, the basic market model of demand and related issues, various market structure, the input market and remuneration of production factors' etc. Students will be acquainted with the basics of economics and make them prepare for various competitive examinations where candidates' knowledge regarding the basic economic phenomenon are tested.
	Core Paper	402 Auditing and Assurance	This paper focuses on the concept of cost accounting. Moreover, a student learns about the concept of fund flow and cash flow statement, develop the know-how and concept of marginal costing with practical problems, develop the

			knowledge about remuneration and incentives, concept of overhead cost, etc.
		403 Indirect Taxes	This paper focuses on the meaning and theories associated with international trade. It also elaborates concepts associated with international trade such as Marine Insurance, Foreign Exchange, sources of information for trade and various international trade arrangements such as trading blocks, RTA, FTA etc. This paper can help students to bag job opportunities in banking, trade etc. and also prepare students for getting a professional qualification in foreign trade and business field.
		404 Financial Services	The focus of this paper is on the concept of financial services along with its various types. It gives an idea about some asset and fee based financial services such as lease and hire purchase, mutual funds, merchant banking and some relatively newer services such as venture capital, broking, portfolio management etc.
	Specialised Paper	405 Advanced Financial Accounting(Accy)	This paper provides the knowledge about accounting procedures, methods and techniques in conformity with the provisions of Companies Act and Accounting as per Indian Accounting Standard which makes a student aware about the conceptual as well as practical aspect of financial accounting. Further it

			enables the students to develop skills for computerized accounting. This paper will help students in pursuing CA course.
		405 Cost and Management Accounting(Mgt)	This paper focuses on the concept of cost accounting. Moreover, a student learns about the concept of fund flow and cash flow statement, develop the know-how and concept of marginal costing with practical problems, develop the knowledge about remuneration and incentives, concept of overhead cost, etc.
		405 International Banking(Fin)	This paper focuses on the meaning and theories associated with international trade. It also elaborates concepts associated with international trade such as Marine Insurance, Foreign Exchange, sources of information for trade and various international trade arrangements such as trading blocks, RTA, FTA etc. This paper can help students to bag job opportunities in banking, trade etc. and also prepare students for getting a professional qualification in foreign trade and business field.
Semester V	General Paper	501 Business Environment	The subject matter of this paper is to give an idea about the existing business ambiance. It also incorporates the study of national income and its measurement, some basic macroeconomic variables such inflation, poverty, unemployment, black economy etc. further this paper deals with various international trade

			organization and related issues. It also emphasizes on the issue of various industries in Assam. The students will have an opportunity to get familiar with the various macroeconomic phenomenons and can acquire knowledge about how an economy can be stabilized after it gets disturbed because of various discrepancies. They can also form preliminary ideas regarding government's fiscal and monetary policies which are crucial to various general knowledge based phenomenon.
	Core Paper	502 Marketing Management	Marketing lies at the core of all business. Understanding fundamental marketing concepts, theories, marketing environment, role of marketing as a fundamental organizational policy process. the marketing concentration is designed to prepare students who are interested in a marketing or marketing management career. While gaining environment, the course provides an overview os social, political, legal, theological ethical and international aspects of marketing
		503 Financial Management	This paper focuses on the concepts of capital budgeting, capital structure, financial planning, various financial resources, etc. which will help the students to land into many career options like financial managers, financial analyst, personal financial advisors, etc.

		504 Regulatory Framework of Business-I	This paper makes the students learn about various Acts such as Indian Contract Act, Partnership Act, RTI Act, and Sale of Goods Act etc. This paper assists students who prefer to study for LLB. The students get an insight about various laws that are prevalent while doing business.
	Specialised Paper	505 Financial Statement Analysis(Accy)	A student studying the subject of Financial Statement Analysis makes him eligible to analyze the financial statements prepared by accountant. By analyzing the statements he provides information to the management which helps them to take up decisions.
		505 Customer Relations and Retail Trade Management(Mgt)	Basically this paper help to describe overall changes in the structure of retail trade industry, role of information system have played in the changing retail industry, along with customer relationship management.
		505 International Trade(Fin)	This paper focuses on the meaning and theories associated with international trade. It also elaborates concepts associated with international trade such as Marine Insurance, Foreign Exchange, sources of information for trade and various international trade arrangements

			such as trading blocks, RTA, FTA etc. This paper can help students to bag job opportunities in banking, trade etc. and also prepare students for getting a professional qualification in foreign trade and business field.
Semester VI	General Paper	601 Information Technology in Business	The purpose of Information Technology in business be able to design implement and evaluate a computer based system, process, component or programme to meet desired needs. Be able to function effectively on term to accomplish a common goal. Use of current technique, skill and tools necessary for computing practice.
	Core Paper	602 Marketing of Services	To provide the students with an appreciation of concepts, functions, and techniques of marketing services. Service marketing mix, service system and customer behaviour. The students will be able to provide theoretical and practical basis for assessing service performance using company example. They will be able to explain describe and utilize key services framework and concepts including customer satisfaction loyalty and customer lifetime value.
		603 Modern Banking Practices	In this paper, students get an idea about the functions of a commercial bank, different types of banking, and the various banking operations. It also gives an insight on the bank's assets and

			liabilities, its relationship with the customers and the management of credit.
		604 Regulatory Framework of Business-II	This paper makes the students learn about various Acts such as Consumer protection Act, Partnership Act, RTI Act, FEMA Act, IT Act, SEBI etc. This paper assists students who prefer to study for LLB. The students get an insight about various laws that are prevalent while doing business.
	Specialised Paper	605 Project Report	Project reports help the students to gain firsthand knowledge and little bit experience of their own choice able topic.

PROGRAMME OURCOMES OF BACHELOR OF SCIENCE (B.Sc)

Bachelor of Science (B.Sc) provides three year degree programme (both Major and General) in different subject areas like Physics, Chemistry, Mathematics, Computer Science, Botany and Zoology. It also includes some compulsory subjects like Environmental Science and Functional English.The programme is most beneficial for students who have a strong interest and background in Science and Mathematics. The programme is also beneficial for students who wish to pursue multi and inter-disciplinary science careers in future. Following are the various programme outcomes:

- It will help to develop scientific temper which is extremely beneficial for the growth and development of society.
- Acquire the ability to engage in independent and life-long learning in the broadest context of socio-technological changes
- Perform procedures as per laboratory standards in different areas of science.
- Understand the issues of environmental contexts and sustainable development.
- Engage in scholarly inquiry to identify and investigate questions of a theoretical and applied nature.
- After the completion of the course, students will have the option to go for post graduation and then pursue research activities
- They can also go for professional job oriented courses
- They can turn entrepreneurs and establish their own industrial units
- Science graduates can also join the armed forces, industries, banking sector etc

DEPARTMENT OF CHEMISTRY		
B. Sc (Chemistry)		
Programme Specific Outcome	To be familiarized with emerging areas of chemistry and their application in various spheres of chemical science and to appear the students of the relevance in future studies. To develop skills in the proper handling of apparatus and chemicals to be exposed to the different processes used in industries and their application.	
Course Outcomes		
B. Sc (Major)		
Semester	**Subject and Paper Code**	**Course outcome**
Sem - I	Chemistry paper 101 (Physical chemistry)	This paper will acquaint knowledge on laws of thermodynamics, thermodynamic function, relation between thermodynamic properties, rate law of chemical transformation, experimental method of rate law determination etc
	Chemistry paper 102 (Organic chemistry)	To enable the students to learn the basic functions, structures and enable to identify different classes of organic compounds, describe their reactivity and analyze their chemical and stereo chemical aspects.
	Chemistry practical 103 (Physical chemistry)	Students will gain an understanding of separation technique such as chromatography; students will be able to determine solubility of salts and water of crystallization
	Chemistry paper 201 (Physical chemistry)	Students will gain knowledge on gaseous and liquid states. In gaseous state students will learn the kinetic theory of gases, ideal gas and real gases. In liquid state students will learn the qualitative treatment of the structure of liquid

Sem - II		along with physical properties of liquid. Students will also learn the theories of electrochemistry.
	Chemistry paper 202 (Organic chemistry)	Students will be able to describe and classify organic compounds in terms of their functional group and reactivity.
	Chemistry practical 203 (Organic chemistry)	Students will gain an understanding of methods of analysis such as detection of functional groups and preparation of their respective derivatives.
Sem - III	Chemistry paper 301 (Iorganic chemistry)	Students would have clear understanding of the concepts related to atomic and molecular structure and basic concepts of chemical bonding.
	Chemistry paper 302 (Iorganic chemistry)	Students will be able to learn different aspects of chemical bonding, ionic bond and solids.
	Chemistry practical 303 (Iorganic chemistry)	Students will gain an understanding of qualitative analysis of different salt mixtures.
	Chemistry paper 401 (Iorganic chemistry	Students will be able to identify the variety of s and p bolck compounds and comprehend their preparation, structure, bonding, properties and uses.

Sem - IV	Chemistry paper 402 (Iorganic chemistry)	Students will be able to name coordination compounds according to IUPAC, appreciate the general trends in the properties of transition elements in the periodic table and identify differences among the rows.
	Chemistry practical 403 (Iorganic chemistry	Students will gain an understanding of preparation of different inorganic compounds, and execution of green chemistry experiments such as to determine water of crystallization, hardness of water etc.
Sem - V	Chemistry paper 501 (Quantum chemistry	Students will be able to understand the application of quantum mechanics in some simple chemical systems such as hydrogen atom or hydrogen like ions. The students will also learn chemical bonding in some simple molecular systems.
	Chemistry paper 502 (Physical chemistry)	Students will be able to learn phase rule and its application in some specific systems, different types of surface adsorption processes and basic of catalysis including enzyme catalysis, acid base catalysis and particle size effect on catalysis. Students will also learn basics of photochemistry.
	Chemistry paper 503 (Organic chemistry)	Students shall demonstrate the ability to identify and classify different types of N, S and P-based derivatives, and heterocyclic compounds and explain their structure, mechanism and reactivity.
	Chemistry paper 504 (Iorganic chemistry)	Students will learn bonding in coordination compounds, their various properties in terms of CFSE and predict reactivity. Students will also learn about organometallic compounds, comprehend their bonding, stability, reactivity and uses.

	Chemistry practical 505 (Inorganic chemistry)	Students will gain an understanding of iorganic quantitative analysis and chromatographic separation techniques
	Chemistry practical 506 (Organic chemistry)	Students will gain an understanding of organic quantitative analysis and preparation of organic compounds.
Sem -VI	Chemistry paper 601 (Spectroscopy)	Students will be able to understand the basics of various kinds of spectroscopic technique
	Chemistry paper 602 (Physical chemistry)	Students will be able to learn the basic solid state chemistry, application of x-ray crystallography for the determination of some very simple crystal structures. Students will also gain knowledge on macromolecules, colloids and statistical thermodynamics.
	Chemistry paper 603 (Organic chemistry)	Students will be able to gain knowledge on theory of photochemistry, polymers, fibers, natural products and aspects of medicinal chemistry
	Chemistry paper 604 (Inorganic chemistry)	Students will be able to learn spectra of coordination compounds, properties of inner transition elements and radioactivity.
	Chemistry practical 605 (Physical chemistry)	Students will gain an understanding of different analytical techniques of physical chemistry experiments.

	Chemistry paper 606 (Project work)	Student will develop their understanding on the assigning topic. They will also learn to do literature survey.

B.Sc (General)		
Sem- I	Chemistry paper 101 (General chemistry)	Students will learn the atomic structure through the basic concepts of quantum mechanics, chemical bonding through VB approach. Students will also able to learn kinetic theory of gasses, structure of liquids, different crystal systems.
Sem-II	Chemistry paper 201 (General chemistry)	Students will learn various classes of organic molecules-alkyl halides, laws of thermodynamics, phase rule and its application in specific cases.
Sem-III	Chemistry paper 301 (General chemistry	Students will learn periodic properties in main group elements, transition metals (3d series). Students will also able to name coordination compounds according to IUPAC and learn theories of conductance and electrochemistry.
	Chemistry practical 302	Students will gain an understanding of qualitative organic analysis such as detection of functional groups, paper chromatography
	Chemistry paper 401 (General chemistry)	Students will gain knowledge on different classes of organic compounds, chemical kinetics, adsorption process and ionic equilibrium.

Sem-IV	Chemistry practical 402	Students will gain an understanding of qualitative iorganic analysis such as identification of radicals in a salt mixture and quantitative inorganic analysis such as estimation by volumetric method.
Sem-V	Chemistry paper 501 (General chemistry)	Students will learn electrical and magnetic properties of solids, principles and applications of different types of spectroscopy, properties of inner transition elements, radioactivity and its application
	Chemistry practical 502	Students will gain an understanding of different analytical techniques and will also learn to prepare organic compounds
Sem-VI	Chemistry paper 601 (General chemistry)	Students will gain knowledge on different aspects of industrial, environmental, biological and medicinal chemistry
	Chemistry practical 602	Students will gain an understanding on preparation of inorganic compounds. Students will learn to study the kinetics of reactions and determination of hardness of water.

DEPARTMENT OF COMPUTER SCIENCE	
B.Sc (Computer Science) Major	
Programme Specific Outcome	Graduates of the Computer Technology Program will, by the time of graduation, have the following knowledge, abilities and appreciation of professional standards. a) An ability to apply knowledge of computing and mathematics appropriate to the discipline. (b) An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution. (c) An ability to design, implement and evaluate a computer based system, process, component, or program to meet desired needs. (d) An ability to function effectively on teams to accomplish a common goal. (e) An understanding of professional, ethical, legal, security and social issues and responsibilities. (f) An ability to communicate effectively with a range of audiences. (g) An ability to analyze the local and global impact of computing on individuals, organizations, and society. (h) Recognition of the need for and an ability to engage in

	continuing professional development. (i) An ability to use current techniques, skills, and tools necessary for computing practice.

Course Outcomes

Semester	Subject and Paper Code	Outcomes
1st	M101 Computing Fundamentals and 'C' Programming	On successful completion of this subject, the students have the programming ability in C Language.
	M102 Basic Electronics	On successful completion of this subject the students should have Knowledge on Digital circuits.
2nd	M201 ICT Hardware	This will help the students to acquire basic knowledge about the computer hardware, installation etc.
	M202 Discrete Mathematics	This will help the students to inculcate knowledge and understanding of the notation of mathematical thinking, mathematical proofs and algorithmic thinking and able to apply them in problem solving.
3rd	M301 Data Structure	This will enable the students to understand the abstract data types stack, queue, dequeue and list. To be able to implement the ADTs stack, queue, and dequeue.
	M302 Computer Organization and Architecture	On successful completion of this subject, the students should have knowledge on Digital circuits, Microprocessor architecture and Interfacing of various components.
4th	M401 Operating System	This will enable the students to get sufficient knowledge on various system resources, system software and Operating system concepts.
	M402 Database Management System	This will help the students to inculcate knowledge on RDBMS concepts and Programming with Oracle.

5th	M501 Object Oriented Programming with C++	This will help the students to inculcate knowledge on Object-oriented programming concepts using C++.
	M502 Computer oriented numeric methods and statistical techniques	This will help the students to inculcate knowledge on algebraic equations solved by Numerical Methods.
	M503 Computer Networks	This will provide an introduction to Computer networks and cover the fundamental topics like data, information to the definition of communication and computer networks which enable seamless exchange of data between any two points in the world.
	M504 Microprocessor and assembly language programming	This will help the students to get a thorough understanding of the microprocessor demands concepts and skills from two different disciplines: hardware concepts from electronics and programming skills from computer science.
6th	M601 Automata theory and languages	This will provide formal language and automata theory.
	M602 Web Technologies	This will help the students to inculcate knowledge in web technological concepts and functioning internet.
	M603 System administration using linux	This will provide a comprehensive introduction to Basic Linux Shell Programming Logic and enhance the students to write simple and complex shell scripts.

DEPARTMENT OF PHYSICS		
B.Sc (Physics) Major and General		
Programme Specific Outcome	The theory of classical mechanics(it is a branch of physics) accurately describes the motion of objects, provided they are much larger than atoms and moving at much less than the speed of light. These theories continue to be areas of active research today.	
Course Outcomes		
Semester	**Subject and Paper Code**	**Outcomes**
	Mechanics, Properties of Matter and Sound (Major: Paper-101, Paper-102, Paper-201, Paper-501) (General: Paper-101)	This topic will help the students to gain the knowledge in order to learn motion of bodies and sound waves and acquire basic knowledge of mechanics, properties of matter and gravitation and know how to apply the conservation of rotational motion.
	Heat and Thermo Dynamics (Major: Paper-202) (General: Paper-301)	This topic will help the students : • To understand the principle of calorimetry • Understand the basic principle and laws of Thermodynamics • Understand the concepts of Entropy
	Optics (Major: Paper-102, Paper-402, Paper-603) (General: Paper-401)	This topic will help the students : • To get a good foundation in optics • To learn about the behavior of light • To inspire interest for the knowledge of

		concepts in physical and geometrical physics.
	Atomic Physics and Spectroscopy (Major: Paper-502) (General: 501)	This topic will help the students: • To undertake a detailed study of atom • To learn the impact of magnetic fields in spectra • To learn the behavior of atom in various states • To provide a knowledge of the application of observed theories
	Mathematical Physics (Major: Paper-101, Paper-201, Paper-301, Paper-401, Paper-501, Paper-602) (General: Paper-501)	This topic will help the students: • To acquire knowledge and apply it to various physical problems • To apply and develop the problem solving ability • To motivate the students to apply matrices or solving problems in spectroscopy, nuclear physics • To apply vectors to non linear dynamics
	Electronics (Major: Paper-504) (General: Paper-601)	This topic will help the students to acquire knowledge and apply it to various electronically instruments, to apply the development of the electronic instruments and motivate the students to apply the principles of electronics in their day-to-day life.

	Electricity and Magnetism (Major: Paper-301, Paper-302, Paper-603) (General: Paper-201, Paper-601)	This topic will help the students to gain knowledge about the electrical energies in order to learn motion of charges, acquire basic knowledge of magnetic properties, know about the alternating current and its circuits and get depth knowledge about electricity and magnetism.
	Digital and Microprocessor (Major: Paper-401, Paper-604)	This topic will help the students • To give description for the students in order to give basic idea to operate the device • Learn the logic gates • Acquire basic knowledge of binary addition • Understand the action and application of counters • Get a deep knowledge of various memories used in computer circuits
	Quantum Mechanics and Relativity (Major: Paper-503, Paper-402) (General: Paper-501)	This topic will help the students : • To acquire knowledge and apply it to various physical problems • To apply the develop problem solving ability • To apply schrodinger equation or solving problems in Wave mechanics, Nuclear physics etc.

	Nuclear Physics (Major: Paper-601) (General: Paper-601)	This topic will help the students to acquire knowledge and apply it, study of the structure of nucleus, know the formation of nucleus and their binding energy and motivate the students and analyze the energy released by the nucleus during the fission and fusion process.
	Instrumentation (Major: Paper-504)	This topic will help the students to study the instrument with its principle and observe the method and their functioning, and provide good communication in measurements, and also provide knowledge of the behaviour of instruments.
	Principles of Programming Concepts and C Programming (Major: Paper-401)	On successful completion of this subject the students have the programming ability in C Language.
	Object-oriented programming with C++ (Major: Paper-604)	This topic will help the students to inculcate knowledge on Object-oriented programming concepts using C++
	Statistical Mechanics (Major: Paper-604)	This topic will help the students to understand how to study classical and quantum particles are distributed in various energy states.
	Solid State Physics (Major: Paper-602) (General: Paper-601)	This topic will help the students to understand the various properties of matter in solid states or condensed phase.

	Astrophysics (Major: Paper-503)	This topic will help the students to study the motion and other physical properties of celestial bodies.

DEPARTMENT OF STATISTICS		
B.Sc Statistics		
Programme Specific Outcome	The Degree of Bachelor of Science in Statistics aims to train the students both in the theoretical development and in the real life applications of modern statistical methodology. It will provide a platform for getting exposed to real life data and their statistical analysis using modern statistical softwares. It is also aimed to train the students to enable them to find an appropriate place in the modern Information Technology oriented society . This is an introductory three year course designed to provide students with the basic concepts of data analysis and statistical computing. Topics covered include basic descriptive measures, measures of association, probability theory, confidence intervals, and hypothesis testing. The main objective is to provide students with pragmatic tools for assessing statistical claims and conducting their own statistical analyses.	
Course Outcomes		
Semester	**Subject and Paper**	**Outcomes**
1st	First paper: Descriptive Statistics-1	At the end of first semester students will be able- • Understand different types data and will able to classification of data in tabular form. • To draw diagrammatic and graphic representation of statistical data using bar diagram, histogram, multiple bar

		diagram, ogive, boxplot etc • Calculate problems based measures of central tendency and dispersion. • Understand the concept on grouped and ungrouped data, skewness and kurtosis. • Perform bivariate analysis and will be understand the basic concepts of correlation and regression and their properties. • Fit linear regression line and can solve problem based on multiple correlation and partial correlation coefficient. • Understand basic concepts of probability and Baye's theorem,. • Understand the concept on discrete or continuous random variable, pmf and pdf functions. • Know the concepts of expectation, moment generating function and characteristics function, probability generating functions and their individual properties.
	Second paper: Probability -1	
2nd	First paper: Numerical and computational Technique-1	At the end of second semester students will be able- • Construct and solve difference table, interpolation and extrapolation, missing term and to solve algebraic equations by numerical methods. • Solve problem based on divided difference and central difference. • Solve different problems on based numerical integration using Simpson's $1/3^{rd}$, Simpson's $3/8^{th}$ and Trapezoidal rule etc. • Find the roots of the equations using Newton Raphson and Bisection Method, Regula Falsi and Iterated Method. • Understand the concept of Rolle's Theoream, Mean value theorem, Taylor's Theorem, Maxima and Minima for single and two variables. • Understand the idea of partial derivatives, application on lagrange's multipliers, Reimann Integral.
	Second Paper: Mathematical Methods-1:	

<table>
<tr><td></td><td></td><td>Solve the problems of Beta and Gamma functions, infinite and proper integrals.</td></tr>
<tr><td rowspan="2">3rd</td><td>First paper:
Mathematical methods-2</td><td rowspan="2">At the end of third semester students will be able-
Understand different forms of matrices.
Solve different matrices, inverse of matrix, rank estimation.
Understand different properties of rank and their proofs.
Solve linear and non linear homogeneous equations.
Understand different types of quadratic forms such as positive definite matrix, positive semi definite matrix ,negative definite matrix etc.
Understand different forms of discrete distributions such as Bernoulli, Binomial, Poisson and other related distributions and continuous distribution such as Normal, Gamma, Beta etc.
To apply the discrete and continuous distribution for analyzing the data.</td></tr>
<tr><td>Second Paper:
Distribution-1</td></tr>
<tr><td rowspan="2">4th</td><td>First paper:
Mathematical Methods-3 & OperationResearch-1</td><td rowspan="2">At the end of fourth semester students will be able to
Develop the concepts of algebra of vectors, their properties and eigen values and eigen vectors and some basic theorems.
Understand the concept of optimization problem.
Solve Assignment and Transportation Problem using simplex method, graphical method.
Gain knowledge about concave function, convex function. Hyper-planes</td></tr>
<tr><td>Second paper:
Descriptive Statistics-2 and
Probability -2</td></tr>
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<tr><td></td><td></td><td>Understand basic concepts on sampling theory, large sample test, central limit theorem, law of large numbers.
Solve different problems based on stochastic process, classification of states such as discrete and continuous.
Construct transition probability matrix and will understand the basic concepts of its applications</td></tr>
<tr><td rowspan="3">5th</td><td>First paper:
Sampling Distribution and
Statistical Inference – I</td><td rowspan="3">At the end of fifth semester students will learn-
Basic concepts on sampling distribution like t test, Chi-square test F test and their derivations.
Understand the problem of statistical inference, problem of point estimation
Properties of point estimator such as Unbiasedness, Consistency, Sufficiency.
Obtain the estimator using estimation methods such as Maximum likelihood, Minimum chi-square, Methods of moments, properties of Maximum likelihood estimator.
To understand the concepts of sample frame and sampling unit.
To understand the different sampling techniques such as Simple Random Sampling, Stratified Sampling, Systematic sampling etc.
To compare various allocations using stratified random sampling
To draw a conclusion about the best sampling procedure.
To use practical applications of ratio and regression method of estimation.
Understand different types of index number, such as cost of living index</td></tr>
<tr><td>Second paper:
Sample Survey</td></tr>
<tr><td>Third paper:
Applied Statistics–I</td></tr>
</table>

		number, consumer price index number, wholesale price index number and also construction of index number. • Understand the concept of linear and multiple regressions. • Check for the violation of model assumptions using residual analysis and other statistical tests. • Understand the problems of Multicollinearity, Autocorrelation, Heteroscedasticity. • To understand different types of models in time series, determination of trend by curve fitting, moving averages methods. • To solve problems on seasonal indices, and concepts of forecasting and its application. • Understand the basic concepts of inventory problems and solve various types of EOQ models. • Understand the different concepts of Network Analysis, Construction of Network Diagrams, draw conclusion from Network using PERT analysis and CPM analysis.
	Fourth paper: Operations Research – II	
6th	First paper: Statistical Inference 2	At the end of sixth semester students will be able to- • Understand the basic concepts of confidence interval and confidence co-efficient, confidence intervals for parameters of univariate normal & two independent normal. • Explain critical regions, test functions, two kinds of errors, size function and power function. • Construct Most Powerful test using NP Lemma. • Understand situation when LRT and UMP test exists. • Understand the advantages and disadvantage of NP test.
	Second paper: Design of Experiments	

		• Solve different problems using NP test such as test of randomness, one sample test, sign test, KS test. • Understand the concepts of analysis of variance and different types of models such as fixed effect, random effect and random effect model and its AOV table. • Understand different types of design such CRD, RBD, LSD and Factorial experiment. • To apply various designs for agricultural data / agricultural field. • To explain which design will give the maximum yield of a crop. • To use factorial experiment for agricultural data. • To describe the concepts of confounding for different experiment. • To solve different mortality and fertility rates and to construct life table. • Will be able to draw various types of control charts such as **X** bar and **R** chart **c** and **p** charts and draw conclusion there from. • Different performance measure of control chart such as OC, ASN, ATI, AOQ etc. • Know Bivariate and Multivariate Normal Distribution and its properties, Hotelling T^2 statistic and its null distribution and its applications. • Know Basic idea of different parts of a computer, brief idea of software, hardware; high level languages. • To write program using FORTRANN 77 and will be able to carry out simple statistical analysis. • Will know to construct the flowcharts and algorithms. • The aim of the project work is to acquire the knowledge of data collection, analysis those data using different statistical tests, conclusion and report writing.
	Third paper: Applied Statistics – 2	
	Fourth paper: Computer Programming and Multivariate Analysis	
	Fifth paper: Project Work.	

B. Sc Statistics (General)

Course	Outcome
First Semester Courses: Paper: Descriptive Statistics and Finite Difference, Index number	. At the end of first semester students will be able- • Understand different types data and will able to classification of data in tabular form. • To draw diagrammatic and graphic representation of statistical data using bar diagram, histogram, multiple bar diagram, ogive, boxplot etc • Calculate problems based measures of central tendency and dispersion. • Understand the concept on grouped and ungrouped data, skewness and kurtosis. • Know the concepts of expectation, moment generating function and characteristics function, probability generating functions and their individual properties. • Construct and solve difference table, interpolation and extrapolation, missing term and to solve algebraic equations by numerical methods. • Solve problem based on divided difference and central difference. • Solve different problems on based numerical integration using Simpson's $1/3^{rd}$, Simpson's $3/8^{th}$ and Trapezoidal rule etc. • Find the roots of the equations using Newton Raphson Method. • Understand different types of index number, such as cost of living index number, consumer price index number, wholesale price index number and also construction of index number

Second semester: Courses: Paper: Probability and Distribution	. At the end of second semester students will be able- • Understand the concepts and definitions of probability. • Understand basic concepts of probability and Baye's theorem,. • Understand the concept on discrete or continuous random variable, pmf and pdf functions. Understand different forms of discrete distributions such as Bernoulli, Binomial, Poisson and other related distributions and continuous distribution such as Normal Distribution
Third Semester Courses: Paper: Applied Statistics I & Correlation Regression	. At the end of third semester students will be able- • Understand the concepts of vital events, different fertility and mortality rates**,** and construction of life table. • Perform bivariate analysis and will be understand the basic concepts of correlation and regression and their properties. • Fit linear regression line and can solve problem based on multiple correlation and partial correlation coefficient. • Basic concepts on sampling distribution like t test, Chi-square test F test, hypothesis such as null and alternative hypothesis. • Understand the different types of error and will be able to perform different types of tests.
Fourth Semester: Courses paper: Sample Survey and Design of Experiments	At the end of fourth semester students will be able to

	• To understand the concepts of sample frame and sampling unit. • To understand the different sampling techniques such as Simple Random Sampling, Stratified Sampling, Systematic sampling etc. • To compare various allocations using stratified random sampling. • To draw a conclusion about the best sampling procedure. • Understand the concepts of analysis of variance and different types of models such as fixed effect, random effect and random effect model and its AOV table. • Understand different types of design such CRD, RBD, LSD and Factorial experiment. • To apply various designs for agricultural data / agricultural field. • To explain which design will give the maximum yield of a crop. • To use factorial experiment for agricultural data.
Fifth Semester: Courses: Paper: Distribution Theory and Applied Statistics	At the end of fifth semester students will learn- • Understand different forms of discrete distributions such as Negative Binomial, Hypergeometric distribution and other related distributions and continuous distribution such as gamma, beta, exponential and uniform distribution. • The concepts of Components of time series. • To determination of trend by different methods and determination of seasonal variation by ratio to trend, ratio to MA and link relative method.

	• Theory of consumption and demand, demand function, elasticity of demand, determination of elasticity of demand by family budget method, Lorentz curve and Gini's coefficient, Engel's law and Engel's curve, Pareto's law of income distribution. • LP problem formulation and to determine the solution with graphical method.
Sixth Semester: Courses: Paper: Estimation Outcomes:	At the end of sixth semester students will be able to- • Understand the problem of statistical inference, problem of point estimation. • Properties of point estimator such as Unbiasedness, Consistency, Sufficiency. • Will be able to draw various types of control charts such as **X** bar and **R** chart **c** and **p** charts and draw conclusion there from. • Understand scope and relation between variables of linear model and to estimate the regression parameters of linear models. • Understand Basic idea of different parts of a computer, brief idea of software and hardware. • Understand different types of numeric variables used in FORTRAN language and their uses, use of Do Loop, • Write small programmes for determining commonly used statistical measure.

DEPARTMENT OF ZOOLOGY		
B.Sc (Zoology)		
Programme Specific Outcome	Three year degree course in Zoology gives a deeper understanding of animal world, taxonomical classification, anatomy, physiology, cell biology, genetics, biochemistry, immunology, conservation of environment and wildlife etc. This syllabus also provides details of advanced tools and techniques used in the field biotechnology, their principles and procedures as well as bioinformatics and computer application. Moreover, it presents general idea about sericulture, aquaculture and apiculture techniques.	
Course Outcomes **B.Sc Zoology (Major)**		
Semester	**Subject and Paper Code**	**Outcomes**
Semester I:	M-101: Biosystematics and Taxonomy	This paper will provide basic idea about biosystematics, its approaches and aspects, toxonomical procedures, nomenclature techiniques etc.
	M-102: Animal Diversity-I (Non-Chordates)	This paper will help students gain knowledge about invertebrate world, their characteristics, classification, physiology etc. with the help of type specimen study.
Semester II:	M-201: Animal Diversity-II (Chordates)	This paper will help students to get an idea about the chordate animal kingdom from protochordates up to mammalian, their characteristics, body organization, classification and unique features.

	M-202: Ecology, wildlife conservation and Management	This paper enables the students to get sufficient knowledge about ecology, wildlife conservation, importance and their management.
Semester III:	M-301: Comparative Anatomy & Histology	This paper will give students a better view about comparative anatomy of different organs and organ systems viz. heart, aortic arches, skin, kidney, thyroid, brain, respiratory system etc. It also includes different types of tissues, their functions, structures, compositions etc. Moreover, students will get idea about stains, dyes, staining procedures etc.
	M-302: Cell Biology	This paper will help students to learn about cell structure, division, cycle, cellular components, cell membranes, cytoskeleton and cell movements etc.
Semester IV:	M-401: Developmental Biology	This paper will help students to enhance knowledge about developmental stages viz. gametogenesis, parthenogenesis, fertilization, embryonic development, fate map construction, cellular organization and induction etc.
	M-402: Genetics	This paper will help students to provide deep idea about genetic material (DNA, RNA), their transfer, crossing over, linkage, sex determination, mutation, karyotype study, genetic diseases etc.
Semester V:	M-501: Animal Physiology	This paper will help students to get an account on different physiological processes in organism's body such as respiration, nutrition, excretion, heart and circulation, nerve physiology, signal transmission etc.

	M-502: Biochemistry & Bioenergetics	This paper will help students to enhance their knowledge about chemical foundation of the body, pH, buffers, biomolecules, enzymes, macromoles of cells etc. Bioenergetics includes ATP synthesis, redox reactions, oxidative phosphorylations etc.
	M-503: Endocrinology & Immunology	This paper will help students to learn about endocrine glands, their secretions, functions, regulations as well as different types of immunity, immune components, structure and function of antibodies, antigen-antibody reactions etc.
	M-504: Biological Techniques and Biostatistics	This course presents different types of advanced techniques used in the field of biology including analytical instruments, microscopy, electrophoresis, chromatography, microtomy, cryopreservation etc. Biostatistics deals with sampling techniques, ANOVA, correlation and regression analysis, standard error, computational analysis techniques, utility, and graphical representations.
Semester VI:	M-601: Animal Behaviour	This paper presents ideas of ethology, animal behavioural patterns, Circadian rhythms, genetic and neural control of behaviours etc.
	M-602: Evolution and Adaptation	This paper will help students to get ideas about origin of life, theories of evolution, evidences of evolution, phylogeny of horse, human evolution, bird's evolution, geological time scale etc. This also includes principles of adaptation and adaptive radiation occurred in mammals in due course of time.

	M-603: Economic Zoology	Economic zoology gives general account on sericulture, aquaculture, apiculture, lac culture etc for economic purpose. It also provides knowledge about pest, types of pest control techniques and management.
	M-604: Biotechnology, Bioinformatics and Computer application	This course presents about basic concepts of genetic engineering, cell culture, cloning, construction of gene libraries, gene transfer etc. Moreover, this course provides ideas about computer applications in data presentation, data analysis, and statistical techniques.

B.Sc. in Zoology (General):

Course outcomes (CO):

Course	Outcome
Semester-I: E-101: Biosystematics, Taxonomy, Wildlife Conservation & Management	To understand the basic concept of biosystematics, taxonomy, systems of classification, nomenclature as well as importance and ways of wildlife conservation.
Semester-II: E-201: Ecology, Evolution and Adaptation	To get a better comprehension of scope of ecology, types and composition ecosystem, theories of evolution and different types of adaptations found in case of living organisms.
Semester-III: E-301: Animal Diversity-I (Non Chordates)	This paper gives an idea about non-chordate, invertebrate kingdom of animals including different phyla, their characteristic features and physiology.

Semester-IV: E-401: Animal Diversity-II (Chordates)	To gain knowledge about the chordate animal kingdom, their classification and organization. This paper also includes comparative anatomy of different organ systems in different groups of organisms.
Semester-V: E-501: Cell Biology, Genetics & Developmental Biology	To give a better idea about cellular world, cell components as well as genetics including, linkage, mutation, crossing over, sex determination etc. It also includes processes of gametogenesis, fertilization, cleavage, regeneration and parthenogenesis in different organisms.
Semester-VI: E-601: Physiology, Biochemistry and Endocrinology	To understand different physiological processes occurring inside an organism's body, hormones and their regulation mechanisms, enzymes and biomolecules etc. It will also give an idea about utility of bio-statistics, statistical calculations and their graphical representations.

DEPARTMENT OF BOTANY	
B.Sc (Botany) Major and General	
Programme Specific Outcome	The student graduating with the Degree B.Sc (Honours) Botany should be able to acquire **A) Core competency:** • Students will acquire core competency in the subject Botany, and in allied subject areas. The student will be able to identify major groups of plants and compare the characteristics of lower (e.g. algae and fungi) and higher (angiosperms and gymnosperms) plants. • Students will be able to use the evidence based comparative botany approach to explain the evolution of organism and understand the genetic diversity on the earth. • The students will be able to explain various plant processes and functions, metabolism, concepts of gene, genome and how organism's function is influenced at the cell, tissue and organ level. • The students will know the origin and evolution of angiosperms with the morphology of different aspects of a complete flowers, the role of the morphology in the classification, understand the aspects and prospects of

	Palynology and the significance of embryology n the field of embryology. • Students will be able to demonstrate the experimental techniques and methods of their area of specialization in Botany. **B) Analytical ability:** The students will be able to demonstrate the knowledge in understanding research and addressing practical problems. They will be able to design the methods of crop improvement using modern techniques for crop improvements. **C) Critical Thinking and problem solving ability:** An increased understanding of fundamental concepts and their applications of scientific principles is expected at the end of this course. **D) Team Player:** Students will learn team workmanship in order to serve efficiently institutions, industry and society. **E) Research-skills:** Graduates are expected to be keenly observant about what is going on in the natural surroundings to awake their curiosity. Apply reasoning informed by the contextual knowledge to assess plant diversity, its importance for society, health, safety, legal and environmental issues and the consequent responsibilities relevant to the biodiversity conservation practice

Course Outcomes

B.Sc Botany (Major)

Semester	Subject and Paper Code	Outcomes
Semester I:	Paper: M 101 (Theory) (Plant Kingdom, Algae and Fungi)	This paper will help increase the awareness and appreciation of human friendly fungi and algae and their economic importance. • Conduct experiments using skills appropriate to subdivisions. • Gain knowledge about the different classes of algae and fungi and know about the diversity and ecological status of the plant kingdom.

	Paper: M 102 (Theory) (Bryophytes and Pteridophytes)	This paper will help • Develop critical understanding on morphology, anatomy and reproduction of Bryophytes, Pteridophytes.
	Paper: M 103 (Practical)	This paper will help • Gain knowledge about the detailed morphological and reproductive structure of algae, fungi, bryophytes and pteridophytes.
Semester II:	Paper: M 201 (Theory) (Gymnosperms, Paleobotany and Plant Anatomy)	This paper will help • Know the detailed structure of a monocot and a dicot plant. • Know about the anatomy and evolutionary significance of gymnosperms. • Know about the process of fossilization and about the different paleobotanical specimens.
	Paper: M 202 (Theory) (Cell Biology)	On completion of this course, the students will be able to: • Examine the structure, function and replication of DNA and RNA. • Know about the cell cycle and signalling mechanism. • Identify the concept that explains chemical composition and structure of cell membrane.
	Paper: M 203 (Practical)	The students will gain practical skills by dissecting the anatomy of different gymnospermic specimens. Also they will know the various stages of cell division in details through microscopic observation.
Semester III:	Paper: M 301 (Theory) (Ecology, Plant Geography, Evolution)	This paper will help

		• Understand core concepts of biotic and abiotic. • Classify the soils on the basis of physical, chemical and biological components • Analyse the phytogeography or phytogeographical division of India. • Evaluate energy sources of ecological system. • Assess the adaptation of plants in relation to light, temperature, water, wind and fire. • Conduct experiments using skills appropriate to subdivisions.
	Paper: M 302 (Theory) (Instrumentation and Laboratory Techniques)	This paper will help • Know the working principles of different types of microscope and laboratory equipments which will enhance the knowledge of the students. • Know about the sterilization techniques followed in laboratory • Understand the field and herbarium techniques. • Understand chromatographic techniques in details.
	Paper: M 303 (Practical)	This paper will help to • Practically know the different laboratory techniques in details (microtomy,chromatographic techniques, autoclaves etc) • Also it will help the students to build a ecological relationship with the environment.
Semester IV:	Paper: M 401	On completion of the course, students are able to 1. Know the origin and evolution of Angiosperms 2. Understand the different parts of complete flower 3. Know the morphology of plant classification.

		4. Know the aspects of pollen morphology 5. Know the production of pollen. 6. Know the evolutionary significance of embryology 7. Know the development of endosperm 8. Understand the role of embryology in crop improvement
	Paper: M 402	On completion of the course, students are able to 1. Understand the evolutionary Trends in Taxonomy 2. Detailed study of different systems of classifications. 3. Know the principles of binomial nomenclature 4. Understand the concept of biocode. 5. Know the role of anatomy embryology palynology in plant classification 6. Know the economic importance of various Angiospermic families.
	Paper: M 403, (Practical)	On completion of the course, students are able to • Understand the Morphology of different inflorescences, study of special types of fruits • Understand the morphological nature of pollen grains by preparing permanent slides. • Know the embryological studies of ovules and anther, embryo • Learn to prepare a field report. • Learn to prepare herbarium sheets of plant materials
Semester V:	Paper: M 501	This paper will help

		1. Know the scope of Microbiology 2. Understand the modern trends of Microbiology 3. Understand the role of microorganisms in the different biogeochemical cycles in nature. 4. Know the classification of Bacteria, genetic recombination and the diseases caused by Rikettsiae and Chlamydae. 5. Know the general characteristics and classification of viruses. 6. Know the concept of immunology
	Paper: M 502	On completion of the course, students are able to 1. Understand the common symptoms of plant disease 2. Understand the host-parasite interactions. 3. Understand the epidemiology and disease forecasting 4. Know the defiance mechanisms 5. Understand the causative organisms, symptoms, disease cycle and control measures of different diseases of plants 6. Know details about Lichens
	Paper: M 503	On completion of the course, students are able to 1. Know Mendel's Laws 2. Understand sex linked inheritance 3. Know about evolutionary significance , linkage and crossing over and linkage map

		4. Understand the biometrics using mean, mode, standard deviation, t-test, chi-square test. 5. Understand the Hardy-Weinberg equilibrium
	Paper: M 504	On completion of the course, students are able to 1. Understand detailed about algae, its commercial, agricultural and medicinal uses 2. Know role of fungi in agriculture, medicine, as food, as well as its commercial uses. 3. Understand detailed about bacteria and its application in the field of agriculture, medicine, bioremediation. 4. Know about crop breeding and crop improvement 5. Understand about deforestation and its impact on environment and climate change. 6. Know details about different methods of plant propagations and the application of PGR.
	Paper: M 505 (Practical)	On completion of the course, students are able to 1. Understand the different practical of microbiology and plant pathology 2. Understand detailed about the sterilization, preparation of culture media and broth in the cultivation of bacteria and fungi in the laboratory conditions

		3. Know about the isolation of soil and air microorganisms as well as from diseased infected plant parts. 4. Know about the different pure culture techniques. 5. Know about the different plant disease, their symptoms, making permanent slides. 6. Preparation of field reports, on diseased plant specimen. 7. Know about the thallus organization of different types of Lichens
	Paper: M 506 (Practical)	On completion of the course, students are able to 1. Know the karyotype study in garlic, onion and Aloe vera 2. Understand the gene interaction, emasculation in plant 3. Understand the application of mean, mode, standard deviation and standard error. 4. Isolation of *Rhizobium* from the nodules of root of plants.
Semester VI:	Paper: M 601, Theory	On completion of the course, students are able to 1. Know detailed of molecular biology including gene expression, genetic code structure and organization of gene. 2. Understand DNA replication, different forms of RNA, Transcription, Translation, mutations.

		3. Understand biochemistry including nitrogen metabolism, amino acid metabolism, and protein synthesis. 4. Understand the classification of enzymes, carbohydrate metabolism.
	Paper: M 602, Theory	On completion of the course, students are able to 1. Understand the aim scope and application of bioinformatics in research. 2. Understand the basics of computer applications 3. Know the scope and significance of biotechnology. 4. Understand different tissue culture techniques, plant genetic engineering.
	Paper: M 603, Theory	On completion of the course, students are able to 1. Understand detailed of plant physiology including plant soil water relationship, osmotic potential, absorption, transcription, ascent of sap. 2. Know about micro and macro nutrients. 3. Understand the process of photosynthesis, different C_2, C_3 and C_4 cycles. 4. Know about respiration, translocation and growth and development in plants.
	Paper: M 604, Theory	On completion of the course, students are able to

		1. Understand the origin of cultivated plants and their importance in medicinal uses. 2. Know about intellectual property rights, scope of ethno botany.
	Paper: M 605, (Practical)	On completion of the course, students are able to 1. Understand to determine the protein content in plant, separation of amino acids by Paper Chromatography, TLC, estimation of reducing and total sugars, separation of chlorophyll by Paper Chromatography 2. Know to estimate the total nitrogen by Kjeldhl method 3. Understand in detailed about the practical on biotechnology including micro propagation, homology modeling, and construction of restriction map. 4. Know the application of computers, bioinformatics including construction of phylogenetic tree.
	Paper: M 606, (Practical)	On completion of the course, students are able to 1. Know to determine the practical of plant physiology including determination of osmotic pressure, RQ value determination of CO_2 concentration. 2. Chemical test for tannins, phamacognosical study and histochemical test of the given plant specimens. 3.

B.Sc Botany (General)

Semester	Subject and Paper Code	Outcomes
1st	Paper: E 101(Theory) (Diversity of Microbes and Cryptogams)	On completion of the course, students are able to: • Understand the diversity among Algae. Know the morphology and structure and the life cycle pattern of Algae. • Understand the Biodiversity of different classes of Fungi Know the Economic Importance of Fungi. • Understand the structure of bacteria and viruses and their economic importance. • Understand the morphological diversity of Bryophytes and pteridophytes and its economic importance.
2nd	Paper: E 201(Theory) (Cell Biology and Genetics)	On completion of the course, students are able • To understand the eukaryotic cell cycle and mitotic and meiotic cell division. • To study the phenomenon of dominance, laws of segregation, independent assortment of genes. • To understand the different types of genetic interaction, incomplete dominance, codominance, crossing over, mutation etc
3rd	Paper: E 301 (Theory) (Diversity of Seed Plants and their Systematic)	On completion of the course, students are able • To understand the general characters and classification of gymnosperms. • To know about the mechanism of fossilization and fossil plants. • To have a better concept about the angiosperms taxonomical classification. • To know about the general characters and economic importance of different angiospermic families,

	Paper: E 302 (Practical)	This paper will help • Know practically the vegetative and reproductive structures of different groups of algae and fungi. • To understand the anatomical structure of bryophytes, pteridophytes and gymnosperms, • Practically have a better knowledge about the different angiosperm species present by field visit.
4th	Paper: E 401, Theory	On completion of the course, students are able to • Understand about plant water relationships, mineral nutrition, plant metabolism ,plant growth and development and biochemistry. •
	Paper: E 402, (Practical)	This paper will help to know about the practical of plant physiology and biochemistry
5th	Paper: E 501, Theory	On completion of the course, students are able to • Understand the structure, development and reproduction in flowering plants
	Paper: E 502, (Practical)	On completion of the course, students are able to • Understand the structure, development and reproduction including the types of stomata, study of secondary growth, epidermal hairs.

6th	Paper: E 601, Theory	On completion of the course, students are able to 1. Know the concepts of ecology, including ecological succession, biogeochemical cycles ecological grouping of plants 2. Understand the utilization of different plants and plant products.
	Paper: E 602, (Practical)	This paper will help to • Determine the frequency and density of herbaceous plants using quadrate methods • Study of anatomical features of hydrophytes and xerophytes. • Understand the morphology, chemical nature and the uses of the different plant and plant parts of the given specimens.

DEPARTMENT OF MATHEMATICS
Programme Specific Outcome A graduate in Mathematics will be able to- 1. Skillfully manipulate problems related to algebra, calculus, trigonometry etc. 2. Critically interpret organise and analyse numerical and graphical data. 3. Understand both concrete and abstract problems. 4. Develop logical thinking and expertise required in proving or disproving facts after mathematical formulation. 5. Use reasoning skills, logical skills and analytical skills required to qualify various competitive examinations. 6. Utilise his skills in fields like Astronomy, Astrology, Weather forecast, Education, Planning, Accounts. Finance, Economics, Statistics, Computing etc.

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	Course **(Mathematics Major)**	**Course Outcomes**
1st Semester	Paper 1.1 (Algebra and Trigonometry)	Students will be able to • Analyse relation, mapping ,binary composition ,groups, subgroups , abelian groups, cyclic groups, normal subgroups and quotient groups. • Describe the relation between roots and coefficients. • Transform the equation through roots multiplied by a given number, increase the roots, decrease the roots, removal of terms. • Find the solution of cubic equation by Cardon's method. • Gain knowledge on complex numbers, their properties and proofs. • Gain knowledge in the expansion of trigonometric functions,relation between hyperbolic and circular functions. • Distinguish the tupes of matrices in detail.

		• Determine the iinverse of a matrix,solving the linear equation by matrix method.
	Paper 1.2 (Calculus)	Students will be able to • Learn that Calculus serves as a basis for advanced mathematics. • Develop the knowledge of application of derivatives and integration etc. • Create the relationship of mathematics with other subjects.

2nd Semester	Paper 2.1 (Coordinate Geometry)	Students will be able to • Gain knowledge about the coordinate geometry. • Learn about the various form of equation of a plan, straight line, sphere, cone and cylinder • Define an idea about regular geometrical figures and their properties.
	Paper 2.2 (Differential equation)	Student will be able to • Gain knowledge of various methods in solving differential equation utilizing the standard techniques for separable , exact, linear, homogeneous etc. • Categorize partial differential equation with suitable standard form. • Gain knowledge that differential equation are a powerful tool in solving sciences. • Apply specific methodology , techniques and resources to conduct research and produce innovative results in the area of specialisation.
3rd Semester	Paper 3.1 (Abstract Algebra)	Students will be able • Understand the importance of algebraic properties with regard to working within various number systems. • Distinguish the concept of Homomorphism and Automorphism etc. • Understand Cayley's theorem, Cauchy theorem & Syloio's theorem . • Investigate symmetry using group theory. • Gain knowledge in Ring theory.

		• Understand the concepts of Ideal, Quotient Rings and Fields.
	Paper 3.2 Linear Algebra and Vector)	Students will be able to • Identify and construct linear transformation of a matrix. • Learn the concept vector spaces and linear transformation in their abstract generality. • Develop the knowledge of solving linear equations, working with matrices in particular eigenvalues and eigenvectors. • Understand the concept of curl, gradient and divergence of a vector function. • Explain the concept of vector integration of a plane and in space. • Define Line integral, surface integral and volume integral. • Compute length, area, and volume of surface using vector integration. • Evaluate integrals by using Green's theorem, Stokes theorem and Gauss's theorem.
4th Semester	Paper 4.1 (Real Analysis)	Students will be able to • Develop the knowledge of real number and real valued functions such as sequences convergence and continuity. • Acquire a conceptual understanding of concepts such as infinite series, limits, differentiation and integration. • Learn various field axioms, the Archimedean property, triangle etc. • Investigate the ideas of continuity and inverse images of open and closed sets. • Investigate properties of monotonic functions. • Gain knowledge of the derivative of functions and apply few theorems based on it'
	Paper 4.2 (Mechanics)	Students will be able to • Understand necessary conditions for the equilibrium of particles acted upon by various forms and learn the principle of virtual work for a system of coplanar forces acting on a particle.

		• Determine the centre of gravity of some materialistic systems and discuss the equilibrium of a uniform cable hanging freely under its own weight. • Learn that a particle moving under a central force describes a plane curve and know the Kepler's laws of the planetary motions, which were deduced by him long before the mathematical theory given by Newton.
5th Semester	Paper 5.1 (Real and Complex Analysis)	Students will be able to • Gain working knowledge of differentiability for complex functions and be familiar with the Cauchy-Riemann equations. • Evaluate integrals along a path in the complex plane and understand the statement of Cauchy's theorem. • Understand the concept of limit ,continuity, differentiability of a real valued function and be familiar with the statements and proofs of the standard results about continuous and differentiable functions. • Learn about Riemann integrability of bounded functions and algebra of R-integrable functions.
5th Semester	Paper 5.2 (Topology)	Students will be able to • Understand metric spaces and convergence of sequences, completeness and continuous functions in metric spaces. • Understand topological spaces and concept of base and sub base. • Understand the concept of product of finite and arbitrary topological spaces. • Understand the concept of compactness, separation and connectedness in metric and topological spaces.
5th Semester	Paper 5.3 (Spherical Trigonometry and Astronomy)	Students will be able to • Understand the concept of spherical triangle and their properties, sine-cosine formulae, celestial sphere, altitude of celestial pole, planetary motion and Kepler's law. • Develop the knowledge of trigonometric functions defined for any angle as well as circular functions, identities and equations etc. • Understand the motion of bodies in the solar system.

		• Describe and explain the observed daily and long-term motion of objects (sun, moon, planets, stars) • Sketch the ecliptic and identify location of the sun, moon and planets for various times of the year. • Understand the relationship of objects in solar and lunar eclipses.
5th Semester	Paper 5.4 (Rigid Dynamics)	Students will be able to • Develop the kinematics of displacement, velocity and acceleration for systems of particles and rigid bodies. • Determine the dynamic response of the system to applied loading, using Newton's laws. • Apply the Principle of work and energy and the Principle of impulse and momentum to mechanical systems. • Choose carefully among different fundamental equations of dynamics to solve problems such as conservation of energy ,conservation of momentum.
	Paper 5.5 (Probability)	Students will be able to • Gain knowledge about the concepts of probability. • Develop a good understanding of conditional probability Bay's theorem and applications. • Distinguish between discrete and continuous random variable. • Create knowledge about various probability distributions which are used in statistical investigation of real life situation. • Understand probability distribution, probability densities and mathematical expectation. It gives an understanding of how to calculate mathematical expectation of an event and quantities associated to multivariate probability distributionand densities.
	Paper 5.6 (Optimization Theory)	Students will be able to • Analyze and solve linear programming models of real life situations. • Provide graphical solutions of linear programming problem with two variables, and illustrate the concept of convex set and extreme points. • Understand the theory of the simplex method.

		• Know about the relationships between the primal and dual problem, and to understand sensitivity analysis. • Learn about the applications to transportation, assignment problem.
6th Semester	Paper 6.1 (Hydrostatics)	This course will enable the student to • Understand the concept of fluid, pressure, gas, energy, pressure equation, equilibrium of floating body etc. • Describe the physical properties of a fluid. • Calculate the hydrostatic pressure and forces on plane and curved surfaces. • Describe the principle of motion for fluids. • Solve hydrostatic problem.
	Paper 6.2 ((Numerical Analysis)	This course will enable the students to • Obtain numerical solutions of algebraic and transcendental equations. • Understand the theoretical and practical aspects of the use of numerical analysis. • Gain knowledge about various mathematical operation and tasks such as interpolation ,differentiation, integration, the solutions of linear, non-linear equations and the solutions of differential equation. • Apply various numerical methods in real life problem.
	Paper 6.3 (Computer Programming in C)	This course will enable the students to • Understand the basic structure,operators and statements of Clanguage. • Develop their programming skills. • Familiar with programming environment with C program structure. • Define decision making statements and solve problem based on it. • Gain knowledge about arrays ,functions and solve problems based on it.
	Paper 6.4 (Discrete Mathematics)	This course will enable the student to • Understand the concepts of mathematical logic such as connections, concepts of tautology etc. • Understand the concepts of relation and function. • Understand Boolean algebra and Boolean functions.

	Paper 6.5 (Graph and Combinatories)	This course will enable the student to • Appreciate the definition and basics of graphs along with types and their examples. • Distinguishes Eulerian and Hamiltonian graphs. • Understand the definition of a tree and learn its application to fundamental circuits. • Know the application of graph theory to network flows. • Relate the graph theory to the real world problem.
	Paper 6.6 (Project)	In this course students are encourage to choose the topic of their interest and indepth study of the same.

B.Sc Mathematics (General)

Semester	Subject and Paper	Outcomes
1st	**Classical Algebra and Trigonometry**	On completion of the course, students are able to: • . Understanding inequalities involving arithmetic, geometric and harmonic means. • Understand sequences and series of real numbers and the convergence, different tests of convergence. • Understand geometric interpretations of complex numbers, solving problems on concepts of modulus, argument of a complex number, De Moiver's theorem, hyperbolic functions.

		• Understand the relation between roots and coefficients. •
2nd	**Abstract Algebra and Matrices**	On completion of the course, students are able to • Understand the abstract structure 'Groups', its subgroups, cyclic groups, permutation groups and order of group. • Understand the concept of cosets, Lagrange's theorem and its applications, homomorphism and isomorphism of groups. • Understand the structure 'Rings' and some special type of rings. • Understand the type of matrices in details and to find solution of linear equations if it exists. •
3rd	**Calculus Methods and applications**	On completion of the course, students are able to • Be familiar with continuous functions and their properties, techniques of differentiation of function. • Identify and apply the Mean Value theorem, Rolle's theorem,etc. Develop knowledge in limit and continuity, differentiation. • Understand the concept of curvature, asymptotes, application of integration in evaluating arc length, area and volume of revolution of a curve. • Develop problem solving skills for solving various types of differential equations.

4th	**Co-ordinate Geometry and Vector Analysis**	On completion of the course, students are able to • Understand geometry of lines and conics in planes • Understand to Solve the problems of lines in three dimension, planes, spheres, cone and cylinder. • Understand the concept of scalar and vector triple product, curl, gradient and divergence of a vector function.
5th	**Statics and Dynamics**	On completion of the course, students are able to • Understand about the nature of forces, centre of gravity, friction and various forms. • Understand the dynamic changes in the body under the action of forces. • Gain knowledge regarding projectiles, central orbits, impact and impulse of a particle on a surface.
	Numerical methods and Spherical Astronomy	On completion of the course, students are able to • . Understand the concept of finite differences, interpolation for equal and unequal intervals. • Understand the use of numerical methods for finding appropriate root of algebraic equations by bisection method, iteration method,etc.

		• Understand the concept of spherical and polar triangle and their properties, sine-cosine formulae, celestial sphere, altitude of celestial pole, signs of zodiac, planetary motion
6th	**Linear Algebra and Complex analysis**	On completion of the course, students are able to • Understand the concept of vector spaces and linear transformations in their abstract generality. • Understand how to find rank of matrices by elementary transformation, solving linear equations, working with matrices, in particular eigen values and eigenvectors.. • Understand the concept of limit and continuity and theorems on them, analytic functions and Cauchy Riemann equations, evaluate complex integration using Cauchy's theorem. .
	Advanced Calculus	This paper will help to • . Understand the basic ides on open sets, closets, limit point, convergence of sequence and series of functions, completedness. • Understand Riemann integral, improper integrals and its applications. • Understand to compute double and triple integrals, beta and gamma function and its application to area and volume.