BABBAR AKALI MEMORIAL KHALSA COLLEGE, GARHSHANKAR (HOSHIARPUR)

Under the Management of SGPC, Sri Amritsar Sahib

Affiliated to Panjab University, Chandigarh

Key Indicator for SSR: 2017-22	
2.6.1	**PSOs, POs and COs for various programmes**

Website: https://bamkc.edu.in/

Babbar Akali Memorial Khalsa College, Sri Anandpur Sahib Road,

Garhshankar (Hoshiarpur) – Punjab (144527)

Key Indicator - Index	
1	PSOs, POs and COs for various programmes

DEPARTMENT OF COMMERCE & ECONOMICS

The Department of Commerce was established in the year 1998 with a vision of providing excellence in the fields of Commerce and management by imparting quality and value based education in this rural and 'Kandi Area' of Punjab. Over the years, this department has carved an enviable niche in the field of Commerce and management education and got Master of Commerce (M.Com.) in 2012.In February 2021, the Department of Economics was merged with the Department of Commerce and it became the "Department of Commerce & Economics".

The department is proud to be the Alma Mater of many Chartered Accountants. Since its inception, the primary aim of the department has been to make the commerce students respond to changing social realities through the development and application of knowledge.

VISION

To be a department of academic excellence with total commitment to quality education in Commerce, management, economics and related fields, with a holistic concern for better life, environment and society.

MISSION

- Empowering students with all the knowledge and guidance that they need to become worthy management professionals
- Learning through doing
- Providing for holistic and value based development of students which ultimately enhances their employability
- Developing social consciousness among students
- To carve a niche for students in the specialized field of commerce and management

- Provide a nurturing and motivating environment to exploit the full potential of the students
- Grooming youth to become a truly global personality well equipped to deal with the modern world and its challenges
- Enable holistic development of personality with a humane and global outlook

OBJECTIVES

In order to fulfill its stated vision and mission the department is committed to:

- ***Academic Excellence:*** Our primary objective is to enable every student to cope up with the latest developments in contemporary, national and global level through effective transaction of the curricular and co-curricular aspects.
- ***Professional Excellence:*** The department motivates molds and prepares the students for positions of leadership in business organizations at the local, national and international levels. The ultimate objective is to produce commerce graduates who possess the skills, problem solving tools and professionalism essential for being successful.
- ***Total Commitment:*** The department is focused on the all-round development of the students' personality through proper education and exposure to the vast treasure of knowledge and by providing platforms for their socialization.
- ***Holistic Development:*** Department provides exposure to learners in the latest trends in relevant branches of knowledge, competence and creativity to face global challenges.
- ***Socially Responsible Citizen:*** Department inculcates the sense of civic responsibility, social commitment and moral accountability among the students through social activities with exposure to human rights, value system, culture, heritage and environment.
- ***Value-based Development:*** To impart quality and need based education our objective is to sensitize the students to their changing roles in society through awareness raising activities.

Programme run by department:

1. Bachelor of Commerce (Programme Code: BCOM)
2. Master of Commerce (Programme Code: MCOM)

Bachelor of Commerce

The aim of three years degree programme in B.Com. is to provide the learners a platform for character building to perform well & contribute to the society. Learning outcomes based curriculum framework (LOCF) is adopted to impart students with sound knowledge and humanistic skills, constructive & productive character developments so that they can respect the best people of the society. LOCF approach requires Teacher-Learner's interactions so that students can easily identify the purpose of each course and can understand their learning needs. B.Com. programme is focused on developing comprehensive understanding of subject matters and to encourage them to apply ethical practices in business & profession. LOCF approach in B.Com. programme is adopted with a purpose to prepare result based courses with an object to make the course more flexible & to provide more options for the students to structure learning experiences in a more student's centric way. Here the approach of LOCF is not only to provide employment opportunity to students but also to provide personal and social skills to balance their personal & social needs. Learning outcomes of B.Com. programme are modified with due justification in view of context and texts selected in the course and requirements of the stakeholders, which are as diverse as are regions in the country.

INTRODUCTION

Providing quality higher education to youth has become demand of the time. B.Com. programme is prepared to encourage these youth to imparting-depth skills and analytical to be applied in every walk of business and entrepreneurship. The three years degree programme is structured not only for making learners to be competent enough to get employment in their desired field but also to contribute lot in the society by their entrepreneurial skill.The purpose of quality education is not said to be fulfilled unless it provides social, environmental and ethical values to the learners hence the programme is formulated to inject these values in the students.

B.Com. programme provides for clear conceptual understanding among learners and to equip them with modern sophisticated tools and technique to deal businesses with quality leadership style, to have tactful decision making ability and to prepare them to drive and face challenges in ever changing world scenario.

Learning Outcome based Approach to Curricular Planning

Nature & extent of B.Com. Programme

- B.Com. programme is designed to train learners with conceptual and practical knowledge of business, leadership, entrepreneurship quality.
- The programme will help the learner to understand systematically about various theories & practices, policy framework & strategies needed to manage the organisation throughout the world by respecting environmental & ethical issues.
- The optimum linkage of principles with prevailing practices will help them to handle real life problems and decision making ability.
- B.Com. programme is designed to classroom learning group and individual learning.
- The programme is made with an idea to integrate social needs and teaching practices in a manner that is responsive to the need of the community.

Objectives of B.Com. Programme

- Three years degree programme in B.Com. will help the learners to gain in depth and systematic knowledge by enhancing their capability of understanding the challenges faced by business in real world.
- It will also develop the ability & competence to have a problem solving approach towards the issues which accompany and dynamism attached to the business world.
- The programme is helpful to the students in understanding, expansion & application of subject knowledge in their academic progression.
- The programme aims to instil mind-set and character that will help students evolve into sensitive & technically sound future business leaders rather than managers and aims at enhancing employability options of the students. The curriculum helps instilling learn ability among students for up skilling in practical life.

Programme Outcomes (POs)

On successful completion of B.Com. programme, the students will be able to develop following attributes, qualities and skills:

PO 1	**Disciplinary Knowledge**	LOCF based curriculum three years degree B.Com. programme help students to develop in depth knowledge of the areas like accounting, finance, marketing, human resource management, economics and business laws. This systematic and intensive knowledge will help them to apply in businesses & real life.
PO 2	**Communication Skills**	• Communication skills required for internal & external stakeholders of the business through written or verbal way. • To help the learners to have sufficient knowledge of required communication skills in business affairs and to communicate with organisational staff in a better way. • To sharpen the ability of writing skills of various business letters, reports & notes.
PO 3	**Critical Thinking**	The graduates of B.Com. Programme will be able to develop skills and attitudes needed for critical thinking which will help them in a comprehensive problem solving approach. They shall be exposed to the pedagogy that helps them understand real life situations through class room training & and case studies. It aims at building the basic ability to think critically, evaluate dispassionately and solve complex problems creatively. The content is organised in such a way that the students would be able to think from diverse perspectives and suggest solutions according to their own sensibilities.
PO 4	**Problem Solving**	B.Com. Programme is prepared in such a way that it helps students to solve various issues related to business: • Basics of accounting will help them to solve the problems like making accurate financial statements.

		● Managerial skills will help them to tackle various managerial centric problems like; to plan, to organise, decision- making, ideas formulating, controlling.
PO 5	**Analytical Reasoning**	The programme will help the students to develop reasoning based analytical ability which often requires in practical business life.
PO 6	**Research Related Skills**	B.Com. programme encourages students to gain proper research skills required in economics, business & management field. ● Ability to find research problems. ● Statistical Analysis will provide them research tools to identify & solve the research problems. ● Programme will develop ability to formulate & test hypothesis & research questions so that they find appropriate answers.
PO 7	**Team Work & Time Management**	B.Com. programme contains various courses like principles of management, HR management, Industrial Relations which will help to learn managerial & entrepreneurial skills to work &timely manage the affairs of the business. These attitudes are developed through application of concept based practices, participative classroom discussions, problem solving tasks, case studies etc.
PO 8	**Scientific Reasoning**	● Ability to analyse situations, evaluate ideas and apply scientific approach in accomplishment of organizational objectives. ● Ability to formulate logical & persuasive arguments.
PO 9	**Reflective Thinking**	● Ability to understand the influence of local, national and global factors on critical thinking. ● This programme enables the students to analyse the situation objectively and give effective arguments &judgements based on the analysis being done. ● This programme teaches the students how to move sequentially

		to solve a problem effectively.
PO 10	**Digital Literacy**	• Ability to utilise digital sources for broadening knowledge base of the learners. • This programme will encourage the learners to use digital resources by adopting latest technologies to survive and excel in ever-changing global scenario. • The programme contains courses and topics to make the learners acquainted with latest accounting software's, knowledge of latest IT Act, Digital Awareness, E-filling of income tax return etc. • Sufficient digital literacy can be ensured through smart classrooms and web based learning resources. Frequent webinars can also be arranged for greater degree of effectiveness.
PO 11	**Self Directing Learning**	• This programme enables the students to have self directing learning approach. • Various courses of B.Com. programme have been formulated in such a way that these will help the learners to postulate questions, eliciting responses from various sources and finding out the most suitable solutions to relevant problems. • This encouraging them towards the self direction, experimentation and intrinsically motivated research work.
PO 12	**Multicultural Competence**	B.Com. programme pass graduates possess knowledge of the values and beliefs of multiple cultures and a global perspective; and capability to effectively engage in a multicultural society and interact respectfully with diverse groups.
PO 13	**Moral & Ethical Values**	• B.Com. programme has been designed in such a manner that it inculcates moral & ethical values in the learners.

		• These values will help them not only to be successful business persons, entrepreneurs and professionals but also to be persons having responsible approach towards environment, nation & society. • The courses also involve training the students to check unethical behaviour, falsification & manipulation of information to avoid debacles which are seen rising persistently over the period of time. • It would also help in becoming responsible citizens & facilitate character building.
PO 14	**Leadership Readiness/Qualities:**	B.Com. programme pass graduates has the capability for mapping out the tasks of a team or an organization, and setting direction, formulating an inspiring vision, building a team which can helpin achieving the vision, motivating and inspiring team members to engage with that vision, and using management skills to guide people to the right destination, in a smooth and efficient way.
PO 15	**Lifelong Learning:**	B.Com. programme pass graduates have the ability to acquire knowledge and skills, including 'learning how to learn', that are necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at personal development, meeting economic, social and cultural objectives, and adapting to changing trades and demands of workplace through knowledge and skill development.

Qualification Descriptors

The Qualification Descriptors for the B.Com. programme shall be five learning attributes such as deciphering, understanding, communication, analysis & application of subject knowledge. It involves awareness on the part of the students towards their society, community & nation. The key Qualification Descriptors for B.Com. programme shall be clarity of conceptual framework as well as critical thinking & rational approach. Each graduate in commerce should be able to:

- Demonstrate a coherent and systematic knowledge and understanding of the field of Business & Management. This would also include the student's ability to identify, speak & write about the forms of business enterprises, their respective advantages and limitations, accounting procedures, relevant laws & environmental awareness.
- Demonstrate the ability to understand the role of commerce in the changing world from the ethical perspective through promoting fair business & professional practices. The objective is to encourage the learners to practice peaceful co-existence.
- Demonstrate the ability to think & write critically & clearly about the role of each entrepreneur and commerce professional in giving benefits to the society and the community so far as financed based issues are concerned.
- Communicate ideas, opinions & values-both theoretical values & values of life in all.
- Demonstrate the ability to share the results of academic and disciplinary learning through different forms of communication such as essays, dissertations, reports, finding, notes etc. on different platforms of communication such as the classroom, the media & internet.
- Recognize the scope of study of commerce in terms of career opportunities, employment generation & lifelong engagement in teaching, publishing, translation, communication, media, soft skills & other allied fields.
- Apply subject-specific skills in commerce to foster a large sense of ethical & moral responsibility among the learners towards general interest of the society & the nation. The programme will encourage the students to develop a rational & scientific approach in solving real life problems based on managerial theories & principles. The best practices are to be encouraged so that the interests of the nation are served in the short & long run.

Program Specific Outcomes (PSOs)

PSO 1	Understanding of accounting, economics, operation research and management systems of the organisations.
PSO2	Understand the ethical practices, communication skills, functions and operations of sectors like banking and insurance.
PSO3	Adequate knowledge of various laws including Taxation, GST, Commercial & Business Laws, Company Laws etc. & their provision, implication & practices. Understanding of individual and company accounting system.

Course Outcomes of Bachelor of Commerce (COs)

Semester	Course Title	College Code	Course Outcomes On completion of the course students will be able to	
Semester-I	**Punjabi**	**BCOM101A**	**CO1**	Generalize the commercial knowledge in mother tongue
			CO2	Recognize the correct-incorrect words
			CO3	Explain a book of punjabi & various courses
			CO4	Develop essay writing skills on National & International Problems
			CO5	Recall business vocabulary
			CO6	Develop the knowledge of Translation of Business Advertisement from English to Punjabi
	History and Culture of Punjab -I	**BCOM101B**	**CO1**	Develop the knowledge of history of the Punjab region
			CO2	Identify the culture of Punjab region
			CO3	Analyze Harappan Civilization & Life in Vedic Age, Growth of Jainism and Buddhism
			CO4	Develop the knowledge of Society and Culture under Maurayas & gupta, Cultural Reorientation.
			CO5	Discuss Evolution of sikhism
			CO6	Develop the knowledge of Changes in Society in 18th century
	English and Business Communication	**BCOM102**	**CO1**	Develop oral and written communication skills of the students so that their employability enhances
			CO2	Discuss a variety of topics that dominate contemporary socio-economic and cultural life.
			CO3	Develop communication skills effectively.
			CO4	Develop overall linguistic competence and communicative skills of students
			CO5	Recall vocabulary in English.
			CO6	Develop communicative competence.
	Psychology for Managers	**BCOM103**	**CO1**	State the imperative of interpersonal skills in the workplace
			CO2	Describe the abject importance of association between personal attributes and individual

				behaviour
			CO3	Discuss the lessons on personality, its measurement, antecedents, and power in predicting the behaviour
			CO4	Outline the factors shaping the perception, components of attitudes and their linkage with organizational behaviour
			CO5	Explain the motivational theories, intrinsic and extrinsic motivators in ensuring employee engagement that further results in job satisfaction
			CO6	Discuss the leadership roles in fostering trust in organizational culture
	Business Economics-I	**BCOM104**	**CO1**	Develop the basic concepts of microeconomics relevant for Business decision making
			CO2	Define the application of economic principles in business management
			CO3	Develop the knowledge of Micro Economic concepts and inculcate an analytical approach to the subject matter
			CO4	Examine the demand and supply analysis in business applications
			CO5	Discuss the concepts of cost, nature of production and its relationship to Business operations.
			CO6	Generalize the pricing and output decisions under various market structure
	Principles of Financial Accounting	**BCOM105**	**CO1**	Develop the conceptual knowledge of financial accounting
			CO2	Discuss the skills for recording various kinds of business transactions
			CO3	Develop the knowledge in the practical applications of accounting & Learn to maintain the books of accounts for further reference.
			CO4	Explain the conceptual knowledge of Partnership Firm
			CO5	Compute the profit and other necessary items in Consignment and Branch accounting
			CO6	Analyses of accounting procedures related to Joint Venture and Royalty
	Commercial Law	**BCOM106**	**CO1**	Develop understanding for Indian Contract Act
			CO2	Describe Contracts performed in routine
			CO3	Analysing Special type of contracts

			CO4	Acquaint with other general Commercial Laws
			CO5	To Describe Right to Information Act
			CO6	To Describe Consumer Protection Act
	Principles and Practices of Management	**BCOM107**	**CO1**	Describe the process of business management & Learn the management functions
			CO2	Discuss the principles, functions and different management theories.
			CO3	Analyse the development of organisation Structure.
			CO4	Explain the principles governing delegation of authority.
			CO5	Recognition of essential elements in the process of directing.
			CO6	Gain an understanding about important tools of control in the hands of management.
Semester-II	**Punjabi**	**BCOM201A**	**CO1**	Develop the commercial knowledge in mother tongue
			CO2	Analyses the value of mother tongue
			CO3	Explain a book of punjabi & various courses
			CO4	Develop ability of business correspondence: letters & punctuation
			CO5	Discuss and enrich business vocabulary
			CO6	Discuss and develop the art of business advertisement
	History and Culture of Punjab	**BCOM201B**	**CO1**	Discuss the history of the Punjab region
			CO2	Discuss the culture of Punjab region
			CO3	Explain the Colonial Rule in Punjab, western education, agrarian development
			CO4	Develop the knowledge of Early socio religious reform, Socio Religious Reform Movements
			CO5	Discuss Gurudwara Reform Movement, Emergence Of Political Consciousness & struggle for freedom
			CO6	Discuss the major historical places in Punjab
	English and Business Communication	**BCOM202**	**CO1**	Develop overall linguistic competence and communicative skills of students
			CO2	Develop literary sensibilities and communicative abilities among students.

			CO3	Describe writing skills
			CO4	Discuss Modern Forms of Communication
			CO5	Identify skills of Group Discussion.
			CO6	Drive the knowledge of Effective Listening, Non-Verbal Communication.
	E- Commerce	**BCOM203**	**CO1**	Learn the fundamental knowledge about E-Commerce
			CO2	Gaining robust understanding of E-Commerce models in the context of transactional relationships
			CO3	Imbibing the legal environment with regard to E-Commerce and its impact on digital business
			CO4	Understanding the influence of E-Commerce on the organization structure
			CO5	Acquaint with the Impact of E-Commerce on Various Business Sectors
			CO6	Acquire the knowledge Electronic Payment System
	Business Economics-II	**BCOM204**	**CO1**	Recognise the basic concept of Macro Economics and its application.
			CO2	Analyses the Per Capita Income, Disposable Income, GNP, NNP, PI etc.
			CO3	Apply economic reasoning to solve the problems of the economics
			CO4	Demonstrate marginal productivity theory of distribution, theory of wages, identify different types of rent, illustrate different theories of interest and profits.
			CO5	Distinguish Say's law of market, classical theory of employment and Keynes objection to the classical theory,
			CO6	Outlines the relationship between investment and savings, demonstrate investment multiplier, and understand the meaning of MEC and MEI.
	Corporate Accounting	**BCOM205**	**CO1**	Develop the knowledge about basic corporate accounting
			CO2	Discuss the shares, Debentures with the relevant accounting standards
			CO3	Explain the accounting procedure of Banking and Insurance companies
			CO4	Examine the underwriting of shares & debentures

			CO5	Analyze the issue & redemption of shares
			CO6	Discuss the preparation of Final Accounts of Companies
	Business Laws	**BCOM206**	**CO1**	Describe the Sale of Goods Act
			CO2	Discuss negotiable instruments and their provisions under Negotiable Instruments Act
			CO3	Acquaint with the use of negotiable instruments
			CO4	Discuss various provisions under the Factories Act
			CO5	Discuss various provisions under the Industrial Dispute Act
			CO6	Acquaint with the redressal of Industrial Dispute under the Industrial Dispute Act
	Human Resource Management	**BCOM207**	**CO1**	Familiarized with the different aspects of managing human resource in the organization
			CO2	Discuss the Job Analysis and Job Design
			CO3	Analyze the process of Recruitment and Selection
			CO4	Acquire the knowledge about Training and Development
			CO5	Explain the concepts of Internal Mobility and Transfers
			CO6	Learn about the requisites of suitable incentive plan
	Env & Road Safety Edu & Violence against Women & Children	**ENV**	**CO1**	Define the value of environment
			CO2	Drive the knowledge of road safety provisions
			CO3	Discuss various laws regarding violence against women and children
			CO4	Develop basic knowledge about the environment and its allied problems
			CO5	Analyse the roles of organisms as part of interconnected food webs, populations, communities, and ecosystems
			CO6	Discuss about the environment and the resources to act at our own level to protect them.
Semester-III	**Issues in Indian Commerce**	**BCOM301**	**CO1**	Add to the knowledge about Foreign Direct Investment
			CO2	Analyse "Make in India" An Initiative of Government of India
			CO3	Discuss about Stock Exchanges in India

			CO4	Describe different issues faced in progress and prospects of commerce in India
			CO5	Integrate with corporate scams and SFIO
			CO6	Identification of credit rating agencies in India
	Cost Accounting	**BCOM302**	**CO1**	Construct Cost Sheet and Reconciliation Statement.
			CO2	Appraise Operation Costing and apply Cost Ledger Accounting.
			CO3	Determine, allocate and apportion overheads.
			CO4	Compare methods of pricing of issue of materials and implement material control.
			CO5	Recognize the measures taken to control the labour cost and material cost.
			CO6	Formulate and apply good methods of payment of wages in business enterprise.
	Company Law	**BCOM303**	**CO1**	Describe various provisions of Companies Act 2013
			CO2	Acquaint with the important documents of a company
			CO3	Discuss various provisions about company's prospectus
			CO4	Discuss about shares and share capital
			CO5	Determine the duties and responsibilities of Key Managerial Personnel under Companies Act 2013
			CO6	Discuss the concept of company's winding up
	Business Mathematics and Statistics	**BCOM304**	**CO1**	Explain the mathematical and statistical tools in business decisions
			CO2	Outline the applications of matrices in business
			CO3	State the applications of derivatives in business
			CO4	Explain the collection, classification, Presentation of data
			CO5	Analyse the univariate data
			CO6	Illustrate the fitting of trend line and construction of price and quantity indices
	Banking and Insurance	**BCOM305**	**CO1**	Explain the basics of Indian banking system
			CO2	Develop the understanding of monetary policy in augmenting the economic growth of India

			CO3	Discuss the pivotal role played by reforms in Indian banking sector in reshaping the Indian economy
			CO4	List and describe the electronic trends in banking
			CO5	Develop the conceptual knowledge of insurance sector and its legal environment
			CO6	Discover the practical implications of complete subject
	Goods and Service Tax	**BCOM306**	**CO1**	Describe the Basics of GST & Get Familiar with CGST/ SGST/ IGST
			CO2	Discuss the meaning of supply under GST law, differentiate between intra-state and inter-state supply
			CO3	Discuss about the rules related to the place of supply and compute the value of supply
			CO4	Explain utilization of Input tax credit, Levy scheme & composition scheme
			CO5	Explain the provisions for registration under GST & Registration procedure
			CO6	Develop comprehensive knowledge of Returns and Payment under GST
Semester-IV	**Security Analysis and Portfolio Management**	**BCOM401**	**CO1**	Comprehensive knowledge about security analysis and portfolio management
			CO2	Develop methods for taking profitable investment decisions
			CO3	Analyze the risk and retrun of a portfolio
			CO4	Describe the portfolio performance evaluation methods
			CO5	Identify the risk diversification techniques.
			CO6	Define the terms used in security analysis
	Advanced Accounting	**BCOM402**	**CO1**	Discuss about advanced accounting problems with the relevant Indian Accounting Standards
			CO2	Develop comprehensive knowledge of Insurance Claims, Investment Accounts & Hire Purchase system
			CO3	Determine the valuation of shares and goodwill and prepare financial statements accordingly
			CO4	Explain the Accounting for Amalgamation, Absorption (Excluding Inter-Holding) & External and Internal Reconstructions.
			CO5	Discuss Accounting of Holding Companies

			CO6	Discuss about Liquidation of Companies
	Auditing and Secretarial Practice	**BCOM403**	**CO1**	Explain concepts and issues in Auditing
			CO2	Discuss Auditing Process
			CO3	Identifying Auditing objectives
			CO4	Determining the Auditors position in a company
			CO5	Comprehensive knowledge about Secretarial Practice
			CO6	Determining the Position of a Company secretary in a company
	Cost Management	**BCOM404**	**CO1**	Analyse and apply Marginal Costing technique.
			CO2	Develop ability to reduce the expenditure and maximize profits of business organizations.
			CO3	Make use of specific order costing.
			CO4	Categorize budgets and apply Budgetary Control technique.
			CO5	Calculate profits and losses in process costing.
			CO6	Estimate the future by applying Standard Costing technique.
	Marketing Management	**BCOM405**	**CO1**	Describe the basic concepts, philosophies, processes and techniques of marketing.
			CO2	Define the concept of consumerism and buying behavior of consumers.
			CO3	Outline the ways in which companies divide the market into various segments to target the respective fields.
			CO4	Developing the marketing strategies for product planning and its branding and packaging attributes.
			CO5	Discuss the pricing, promotional and distribution strategies in marketing.
			CO6	State contemporary trends in online or digital marketing and its challenges.
	Quantitative Techniques and Methods	**BCOM406**	**CO1**	Define various quantitative techniques and methods used in managerial decisions
			CO2	Describe the concept of probability and probability distributions
			CO3	Solve the LPP to maximize the profit and to minimize the cost.
			CO4	Define interpolation and extrapolation
			CO5	Describe correlation, its types and methods

			CO6	Describe regression analysis to estimate the relationship between two variables and to use frequency distribution to make decision
Semester-V	**Income Tax Law**	**BCOM501**	**CO1**	Discuss the various provisions of Income tax laws in India
			CO2	Compute the taxable income from salary
			CO3	Determine the income from house property
			CO4	Compute the taxable income from business and profession
			CO5	Explain the Capital Gain and various exemptions allowed under the head Capital Gain
			CO6	Determine the Income from Other Sources
	Management Accounting	**BCOM502**	**CO1**	Understand Management Accounting as an information system for decision making and critically analyse financial statements.
			CO2	Evaluate the financial position by using ratios.
			CO3	Investigate the 'flow of sources' and 'application of funds'.
			CO4	Evaluate the financial position of a concern through Cash Flow Statement.
			CO5	Show the effect of price level changes on the financial statements.
			CO6	Apply the concept of Social Cost Benefit Analysis and Human Resource Accounting in a corporate entity.
	Indian Economy	**BCOM503**	**CO1**	Acquire the knowledge of Indian Economic structure and economic planning system
			CO2	Apply economic reasoning to solve the problems of the economy.
			CO3	Analyze the present status of the Indian Economy
			CO4	Compose the interest by showing the relevance and use of various economic theories.
			CO5	Estimate the importance, causes and impact of population growth and its distribution, translate and relate them with economic development.
			CO6	Recognise agriculture as the foundation of economic growth and development, analyse the progress and changing nature of the agricultural sector and its contribution to the economy as a whole.

	Production and Operation Management	**BCOM504**	**CO1**	Describe the concepts of production and Discuss techniques of production
			CO2	Analyze operations management of an industrial undertaking
			CO3	Explain the techniques of location and layout planning
			CO4	Application of the method of processing 'n jobs' through two machines.
			CO5	Learn to use the CPM and PERT techniques, to plan, schedule and control project activities.
			CO6	Acquaint with the Inventory Management
	Entrepreneurship and Small Business	**BCOM505**	**CO1**	Define and understand various issues involved in setting up a private enterprise
			CO2	Develop required entrepreneurial skills in economic development
			CO3	Discuss about the women entrepreneurship
			CO4	Identify the role of the government in promoting entrepreneurship.
			CO5	Develop the comprehensive knowledge about MSME'S
			CO6	Discuss about the Product Planning & Management and Logistic Management
	Financial Markets and Services	**BCOM506**	**CO1**	Analyze Indian financial system
			CO2	Explain the constituents of money market
			CO3	Identify the instruments used in Indian money market
			CO4	Describe the structure of share market
			CO5	Compare the traditional and modern financial services
			CO6	List the services of financial institutions like NABARD, IDBI, RBI, Commercial Banks etc.
Semester-VI	**Direct Tax Laws**	**BCOM601**	**CO1**	Discuss Deemed Incomes and Clubbing of Incomes, Set-off and Carry Forward of Losses.
			CO2	Explain the assessment of Individual under Income Tax Act
			CO3	Examine the various types of assessment of tax & procedure of assessment.
			CO4	Discuss the Deductions, Rebate & Relief under direct tax

			CO5	Explain the Penalties, Appeals & Revision under Income Tax Act
			CO6	Compute the income under HUF, Firm and AOP
	Financial Management	**BCOM602**	**CO1**	Interpret finance function and ascertain financial sources and calculate Cost of Capital.
			CO2	Analyse the factors influencing financial decisions.
			CO3	Ascertain the ratio of return of waiting or the time value of money.
			CO4	Make out the best Capital expenditure decisions and evaluate capital structure
			CO5	Apply Capital Budgeting methods to choose amongst various projects.
			CO6	Attain sufficient knowledge about estimation of Working Capital.
	Issues in Financial Reporting	**BCOM603**	**CO1**	Identify developments in financial reporting
			CO2	Contrast Indian Financial Reporting Standards and International Financial Reporting Standards.
			CO3	Describe reporting issues at the national and international level
			CO4	Explain Human Resource Accounting
			CO5	Summarize the techniques for accounting of price level changes
			CO6	Examine Indian accounting standards
	Social and Business Ethics	**BCOM604**	**CO1**	Develop the knowledge about adoption of Business Ethics by organizations to achieve corporate excellence.
			CO2	Apply ethical practices in business & professional environment
			CO3	Discuss about Whistle blowing policies
			CO4	Define the Corporate Social Responsibility
			CO5	Explain the Ethical Issues in environment
			CO6	Discuss about marketing & consumer protection
	Operational Research	**BCOM605**	**CO1**	Describe the concepts and techniques of Operations Research for business decision making
			CO2	Develop skills to solve various problems in Operations Research
			CO3	Formulate and solve problems by using LPP technique.

			CO4	Discuss how to use the CPM and PERT techniques, to plan, schedule and control project activities.
			CO5	Propose the best strategy using game theory.
			CO6	Analyze different strategies using decision making methods.
	Sectoral Aspects of Indian Economy	**BCOM606**	**CO1**	Define the various sectoral aspects of Indian economy
			CO2	Generalise the process of integration of the Indian Economy with other economics of the world.
			CO3	Recognise the objectives of economic Planning and strategy of India's development plans
			CO4	Associatie students with latest data and will enhance analytical skills
			CO5	Recall the importance of economic activities in the growth and development of a country.
			CO6	Develop critical understanding about relevant contributions of the various sectors of the economy.

Mapping of Course Outcomes(COs) with Programme Outcomes(POs)

College Code		**Programme Outcome**														
		PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PO13**	**PO14**	**PO15**
Semester-I																
BCOM101A	**CO 1**	2	1	1	x	1	x	x	1	1	1	x	x	1	x	1
	CO 2	3	2	2	2	2	3	x	x	1	x	1	x	x	x	2
	CO 3	2	1	1	x	1	x	x	1	1	1	x	x	1	x	2
	CO 4	2	2	2	x	2	x	x	x	2	x	x	1	1	x	2
	CO 5	2	2	x	x	1	x	x	x	1	1	x	x	x	x	2
	CO 6	3	2	2	x	2	x	x	x	2	2	x	x	x	x	2
BCOM101B	**CO 1**	3	x	x	x	1	1	x	x	1	x	1	2	x	x	2
	CO 2	3	x	1	x	1	x	x	x	1	x	x	2	1	x	2

	CO 3	3	x	2	x	2	x	x	x	2	x	1	3	1	x	2
	CO 4	2	x	x	x	2	x	x	x	1	x	1	2	x	x	2
	CO 5	2	x	1	x	1	x	x	x	1	x	1	2	1	x	2
	CO 6	2	x	1	x	2	x	x	x	1	x	1	2	1	x	1
BCOM102	**CO 1**	2	3	2	2	3	1	2	1	2	1	2	3	1	2	2
	CO 2	2	3	2	2	3	1	2	1	2	1	2	3	1	2	2
	CO 3	2	3	2	1	1	1	2	1	2	1	2	3	1	1	2
	CO 4	2	3	2	2	3	1	2	1	2	1	2	3	1	1	2
	CO 5	2	3	2	2	1	1	3	1	3	1	2	3	1	3	2
	CO 6	2	3	2	2	1	2	1	1	3	1	2	3	1	1	2
BCOM103	**CO 1**	3	3	x	x	x	x	2	x	x	x	1	x	1	2	1
	CO 2	3	1	3	3	3	3	2	2	2	x	1	2	1	2	1
	CO 3	3	1	3	3	3	1	2	2	2	x	1	1	1	2	1
	CO 4	3	1	2	2	3	3	2	2	2	x	1	2	1	x	1
	CO 5	3	1	1	x	x	1	2	x	x	x	1	x	1	2	1
	CO 6	3	3	1	x	x	1	2	x	x	x	1	2	1	3	1
BCOM104	**CO 1**	2	1	2	2	2	x	x	1	2	x	1	x	x	x	2
	CO 2	3	x	1	x	1	x	1	x	1	x	1	x	x	x	2
	CO 3	3	x	3	2	3	1	x	1	2	x	x	x	x	x	2
	CO 4	3	x	1	1	3	x	x	1	2	x	x	x	x	x	2
	CO 5	3	x	1	1	2	x	x	x	1	x	1	x	x	x	2
	CO 6	2	x	1	1	2	x	1	1	2	x	1	x	x	x	2
BCOM105	**CO 1**	3	x	2	3	2	x	x	x	1	x	x	x	2	x	1

	CO 2	2	1	1	1	2	x	1	x	1	x	1	x	1	x	2
	CO 3	2	1	2	1	1	1	x	x	1	x	1	x	1	x	2
	CO 4	3	1	1	1	1	x	x	x	1	x	1	x	1	x	2
	CO 5	2	1	1	1	2	x	1	x	1	x	1	x	1	x	2
	CO 6	2	1	2	1	1	1	x	x	1	x	1	x	1	x	2
BCOM106	**CO 1**	3	2	3	2	1	1	x	1	2	1	1	1	2	x	3
	CO 2	3	x	3	2	1	1	x	1	2	1	1	1	2	x	3
	CO 3	3	x	3	2	1	1	x	1	2	1	1	1	2	x	3
	CO 4	3	x	3	2	1	1	x	1	2	1	1	1	2	x	3
	CO 5	3	x	3	2	1	1	x	1	2	1	1	1	2	x	3
	CO 6	3	x	3	2	1	1	x	1	2	1	1	1	2	x	3
BCOM107	**CO 1**	3	1	2	2	1	1	2	1	1	1	x	x	x	x	1
	CO 2	3	1	2	2	1	1	2	1	1	1	x	2	x	x	1
	CO 3	3	1	1	2	1	x	1	1	1	1	x	x	x	x	1
	CO 4	3	1	2	2	1	x	1	2	2	1	x	x	1	1	1
	CO 5	3	3	1	2	2	1	1	2	2	1	2	x	2	3	2
	CO 6	3	1	2	2	1	1	1	1	1	1	1	x	x	x	1
Semester II																
BCOM201A	**CO 1**	2	1	1	x	1	x	x	1	1	1	x	x	1	x	1
	CO 2	3	2	2	2	2	3	x	x	1	x	1	x	x	x	2
	CO 3	2	1	1	x	1	x	x	1	1	1	x	x	1	x	2
	CO 4	2	2	2	x	2	x	x	x	2	x	x	1	1	x	2
	CO 5	2	2	x	x	1	x	x	x	1	1	x	x	x	x	2

	CO 6	3	2	2	x	2	x	x	x	2	2	x	x	x	x	2
BCOM201B	**CO 1**	3	x	x	x	1	1	x	x	1	x	1	2	x	x	2
	CO 2	3	x	1	x	1	x	x	x	1	x	x	2	1	x	2
	CO 3	3	x	2	x	2	x	x	x	2	x	1	3	1	x	2
	CO 4	2	x	x	x	2	x	x	x	1	x	1	2	x	x	2
	CO 5	2	x	1	x	1	x	x	x	1	x	1	2	1	x	2
	CO 6	2	x	1	x	2	x	x	x	1	x	1	2	1	x	1
BCOM202	**CO 1**	2	3	2	2	3	1	2	1	2	1	2	3	1	2	2
	CO 2	2	3	2	2	3	1	2	1	2	1	2	3	1	2	2
	CO 3	2	3	2	1	1	1	2	1	2	1	2	3	1	1	2
	CO 4	2	3	2	2	3	1	2	1	2	1	2	3	1	1	2
	CO 5	2	3	2	2	1	1	3	1	3	1	2	3	1	3	2
	CO 6	2	3	2	2	1	2	1	1	3	1	2	3	1	1	2
BCOM203	**CO 1**	3	x	1	x	x	x	x	x	2	3	1	x	x	x	1
	CO 2	3	1	1	1	2	2	x	2	2	3	2	x	x	x	1
	CO 3	3	x	x	x	2	2	x	2	2	3	2	x	x	x	1
	CO 4	3	x	2	1	2	3	x	2	2	3	2	x	x	x	1
	CO 5	3	x	2	x	2	3	x	2	2	3	2	x	x	x	1
	CO 6	3	x	x	x	x	x	x	x	2	3	1	x	x	x	1
BCOM204	**CO 1**	3	x	x	x	1	1	x	1	1	x	x	x	x	x	2
	CO 2	3	x	1	1	3	1	x	1	1	x	1	2	1	x	2
	CO 3	3	x	2	2	2	3	x	2	1	1	x	1	x	x	2
	CO 4	3	x	1	1	2	1	x	2	2	x	1	2	x	x	3

	CO 5	3	x	1	1	2	2	2	2	2	x	x	2	x	2	2
	CO 6	3	x	2	1	3	1	x	1	2	x	1	2	1	x	2
BCOM205	**CO 1**	3	x	1	2	2	x	x	1	x	1	x	x	x	x	2
	CO 2	3	x	1	x	2	x	x	x	1	x	2	x	1	x	2
	CO 3	3	x	1	2	2	x	x	1	2	x	1	x	x	x	2
	CO 4	2	x	1	1	2	x	x	x	1	x	1	x	1	x	2
	CO 5	3	x	x	1	2	x	x	x	1	x	1	x	1	x	2
	CO 6	3	x	2	x	2	x	x	x	2	x	1	x	x	x	2
BCOM206	**CO 1**	3	x	1	x	2	x	x	2	2	2	1	1	2	x	2
	CO 2	3	x	1	x	1	x	x	x	x	1	x	x	1	x	2
	CO 3	3	x	1	x	1	x	x	x	x	1	x	x	1	x	2
	CO 4	3	x	1	x	1	x	2	x	x	1	x	x	1	x	2
	CO 5	3	x	1	x	1	x	x	x	x	1	x	x	1	x	2
	CO 6	3	x	1	x	1	x	2	x	x	1	x	x	1	x	2
BCOM207	**CO 1**	3	2	2	2	2	1	2	1	1	1	1	1	1	1	1
	CO 2	3	2	2	2	2	1	2	1	2	1	2	x	1	1	1
	CO 3	3	2	2	2	2	1	2	1	1	1	2	x	2	1	1
	CO 4	3	2	2	2	2	1	2	2	2	1	2	x	1	1	1
	CO 5	3	2	2	2	2	1	2	2	1	1	1	x	1	1	1
	CO 6	3	2	2	2	2	1	2	2	1	1	1	x	1	1	1
ENV	**CO 1**	1	2	1	2	2	1	x	x	1	1	2	1	2	1	2
	CO 2	2	1	1	x	1	x	2	x	1	x	1	1	1	2	1
	CO 3	3	1	1	1	2	x	1	x	1	1	2	1	2	1	2

	CO 4	2	x	1	2	1	x	1	x	2	1	x	1	2	x	2
	CO 5	2	x	1	1	2	1	x	1	2	1	1	2	2	x	1
	CO 6	1	x	2	2	1	1	2	2	1	x	1	2	2	x	2
Semester III																
BCOM301	**CO 1**	3	x	2	1	3	1	x	1	2	2	1	2	1	x	2
	CO 2	3	x	1	1	2	x	x	1	2	3	1	1	x	1	2
	CO 3	3	x	1	2	3	1	2	1	3	3	1	2	1	2	2
	CO 4	3	x	1	3	2	x	x	x	1	2	1	2	1	x	2
	CO 5	3	1	2	3	1	1	1	2	2	3	1	3	1	x	2
	CO 6	3	1	1	2	2	1	1	2	1	3	1	2	3	x	2
BCOM302	**CO 1**	3	x	3	3	1	1	x	3	3	3	1	x	1	1	3
	CO 2	3	x	3	3	1	1	x	3	3	3	1	x	1	1	3
	CO 3	3	x	3	3	1	1	x	3	3	3	1	x	1	1	3
	CO 4	3	x	3	3	1	1	x	3	2	3	1	x	1	3	3
	CO 5	3	x	3	3	1	1	x	3	2	3	1	x	1	3	3
	CO 6	3	1	3	3	3	1	2	1	2	3	x	x	1	3	3
BCOM303	**CO 1**	3	x	2	2	1	1	x	x	2	1	1	1	2	x	3
	CO 2	3	1	2	2	1	1	x	x	2	1	1	1	2	x	3
	CO 3	3	x	2	2	1	1	x	1	2	1	1	1	2	x	3
	CO 4	3	x	2	2	1	1	x	1	2	1	1	1	2	x	3
	CO 5	3	1	2	2	1	1	1	1	2	1	1	1	2	1	3
	CO 6	3	x	2	2	1	1	x	1	2	1	1	1	2	x	3
BCOM304	**CO 1**	3	x	3	3	3	3	x	2	1	x	1	x	x	x	2

	CO 2	3	x	2	2	1	2	x	x	x	x	x	x	x	x	2
	CO 3	3	x	1	2	1	2	x	x	x	x	x	x	x	x	2
	CO 4	3	1	2	1	2	3	x	x	1	2	x	x	x	x	x
	CO 5	3	x	1	1	3	3	x	x	3	2	x	x	x	x	x
	CO 6	3	x	2	1	2	3	x	x	3	3	x	x	x	x	x
BCOM305	**CO 1**	3	x	x	x	x	x	x	2	2	1	2	x	x	x	3
	CO 2	3	x	3	x	x	x	x	2	2	x	2	x	x	x	3
	CO 3	2	x	2	x	1	1	x	2	2	x	3	x	x	x	3
	CO 4	2	x	2	x	x	3	x	1	3	3	3	x	x	x	3
	CO 5	3	x	x	x	x	x	x	x	2	x	2	x	x	x	3
	CO 6	1	x	2	x	1	3	x	3	3	x	3	x	x	x	3
BCOM306	**CO 1**	3	x	1	2	3	x	x	x	2	3	1	2	3	x	2
	CO 2	3	1	2	2	2	x	1	1	2	3	x	2	1	x	2
	CO 3	3	1	1	1	2	x	1	x	1	2	1	1	2	x	2
	CO 4	3	x	1	2	2	x	1	x	1	2	x	2	1	x	2
	CO 5	3	1	1	x	2	x	1	x	2	3	x	1	1	x	2
	CO 6	2	1	1	x	1	x	2	x	1	2	1	2	2	x	2
Semester IV																
BCOM401	**CO 1**	3	x	1	2	3	x	1	1	2	2	1	2	x	x	2
	CO 2	2	1	1	2	2	1	x	1	2	2	1	x	1	x	2
	CO 3	2	x	2	1	3	x	1	x	2	2	2	1	x	x	2
	CO 4	2	x	2	1	2	1	x	1	2	1	x	1	x	x	2
	CO 5	2	2	x	1	2	2	1	x	2	2	1	1	x	x	3

	CO 6	2	x	2	x	1	x	x	x	1	2	1	1	x	x	2
BCOM402	**CO 1**	3	1	2	1	2	1	x	1	2	1	2	1	2	x	2
	CO 2	3	x	1	1	2	1	1	x	2	x	2	1	2	1	2
	CO 3	3	x	1	2	3	x	1	1	2	1	2	1	x	1	2
	CO 4	3	1	2	1	3	1	2	1	2	3	1	2	1	2	2
	CO 5	3	2	1	1	2	x	2	x	2	2	1	3	1	1	2
	CO 6	3	2	1	2	3	1	2	1	3	2	2	3	1	1	2
BCOM403	**CO 1**	3	1	2	1	2	x	x	x	2	1	1	1	3	x	2
	CO 2	3	1	2	x	1	x	x	2	2	1	1	2	1	x	2
	CO 3	3	1	1	2	3	x	x	x	3	1	2	1	2	x	2
	CO 4	3	1	1	1	2	1	2	1	2	1	3	x	x	x	2
	CO 5	3	1	1	2	2	1	2	1	1	x	x	2	x	x	2
	CO 6	3	1	2	1	2	1	2	2	2	x	x	2	x	x	2
BCOM404	**CO 1**	3	x	3	3	2	1	x	x	1	3	1	x	x	1	3
	CO 2	3	1	3	3	2	1	x	x	1	3	1	x	x	1	3
	CO 3	3	x	3	3	2	1	x	x	1	3	1	x	x	1	3
	CO 4	3	x	3	3	2	1	x	x	1	3	1	x	x	1	3
	CO 5	3	x	3	3	2	1	x	x	1	3	1	x	x	1	3
	CO 6	3	x	3	3	2	1	x	x	1	3	1	x	x	1	3
BCOM405	**CO 1**	3	x	x	x	x	2	x	2	x	x	2	x	x	x	x
	CO 2	3	x	x	x	x	2	2	2	2	x	2	2	x	x	x
	CO 3	3	x	2	x	2	1	3	3	3	x	3	2	x	2	3
	CO 4	3	x	3	x	2	3	3	3	3	x	3	2	2	2	3

	CO 5	3	1	3	1	2	3	3	3	3	x	2	1	2	2	3
	CO 6	3	x	2	3	2	3	x	2	2	x	2	x	x	x	3
BCOM406	**CO 1**	3	x	x	2	3	3	x	3	3	3	3	3	x	x	3
	CO 2	3	x	x	x	3	3	x	2	2	1	x	x	x	x	3
	CO 3	3	x	3	2	2	3	x	2	3	3	x	x	x	x	3
	CO 4	3	x	2	x	x	x	x	x	1	1	x	x	x	x	3
	CO 5	3	x	3	1	3	3	x	3	3	3	x	x	x	x	3
	CO 6	3	x	3	3	3	3	x	3	3	3	x	x	x	x	3
Semester V																
BCOM501	**CO 1**	2	x	x	x	x	x	x	x	1	x	x	x	x	x	2
	CO 2	1	x	1	1	1	x	x	x	1	3	x	x	2	x	2
	CO 3	1	x	1	1	1	x	x	x	1	3	x	x	2	x	2
	CO 4	1	x	1	1	1	x	x	x	1	3	x	x	2	x	2
	CO 5	1	x	1	1	1	x	x	x	1	3	x	x	2	x	2
	CO 6	1	x	1	1	1	x	x	x	1	3	x	x	2	x	2
BCOM502	**CO 1**	3	2	3	3	3	3	x	3	3	3	2	x	1	1	3
	CO 2	3	2	3	3	3	3	x	3		3	2	x	1	1	3
	CO 3	3	2	3	3	3	3	x	3	3	3	2	x	1	1	3
	CO 4	3	2	3	3	3	3	x	3	3	3	2	x	1	1	3
	CO 5	3	2	3	3	3	1	x	3	3	3	2	x	3	x	3
	CO 6	3	2	3	3	3	1	x	3	3	3	2	x	3	x	3
BCOM503	**CO 1**	3	1	1	x	2	x	x	1	2	x	1	1	x	x	1
	CO 2	2	x	1	2	2	2	x	1	2	x	1	1	x	x	2

	CO 3	2	x	1	x	2	1	x	1	2	x	1	1	x	x	2
	CO 4	2	x	1	x	2	x	x	1	2	x	x	1	x	x	1
	CO 5	2	x	1	x	1	1	x	1	2	x	x	1	x	x	2
	CO 6	3	x	1	x	2	1	x	2	2	x	x	2	x	x	2
BCOM504	**CO 1**	3	x	1	2	1	x	x	1	2	x	1	x	x	1	1
	CO 2	3	1	1	2	1	x	x	1	2	x	1	x	x	1	1
	CO 3	3	x	1	2	1	x	x	1	2	x	1	x	x	1	1
	CO 4	3	x	1	2	1	x	x	1	2	1	1	x	x	1	1
	CO 5	3	x	1	2	1	1	2	1	2	1	1	x	x	1	1
	CO 6	3	x	1	2	1	x	x	1	2	1	1	x	x	1	1
BCOM505	**CO 1**	2	x	2	1	3	x	x	1	2	1	1	2	1	x	2
	CO 2	2	x	1	2	1	x	x	x	2	2	1	2	x	x	2
	CO 3	2	x	2	1	2	x	1	x	2	x	1	2	2	x	2
	CO 4	2	x	1	x	1	x	x	x	x	1	1	1	2	x	2
	CO 5	3	x	1	x	2	x	x	x	2	1	1	2	x	x	2
	CO 6	2	x	2	x	2	1	1	1	2	1	2	2	x	x	2
BCOM506	**CO 1**	3	x	1	x	2	x	x	x	2	1	2	1	x	x	2
	CO 2	2	x	x	x	2	x	x	x	1	3	1	x	1	x	2
	CO 3	3	x	1	x	2	1	x	x	2	1	1	2	x	x	2
	CO 4	3	x	2	x	1	2	x	1	2	3	1	1	1	x	1
	CO 5	3	x	2	1	2	x	x	x	2	1	1	x	x	x	1
	CO 6	3	x	1	x	2	x	x	x	2	1	1	1	x	x	1

Semester VI

BCOM601	**CO 1**	3	2	2	1	2	x	1	x	2	3	x	x	x	x	2
	CO 2	3	x	1	1	2	1	x	1	1	1	x	1	x	x	1
	CO 3	3	x	2	x	2	x	x	x	2	1	1	1	x	x	2
	CO 4	3	x	2	1	2	1	1	1	2	2	2	x	1	x	2
	CO 5	3	x	2	x	2	x	x	x	2	1	2	3	2	x	3
	CO 6	3	x	2	1	2	1	1	2	2	1	2	x	1	x	3
BCOM602	**CO 1**	3	3	2	3	3	3	x	3	3	3	2	x	x	2	3
	CO 2	3	3	2	3	3	3	x	3	3	3	2	x	x	2	3
	CO 3	3	x	2	3	1	3	x	3	3	3	2	x	x	2	3
	CO 4	3	3	2	3	3	3	x	3	3	3	2	x	x	2	3
	CO 5	3	x	2	3	3	3	x	3	3	3	2	x	x	2	3
	CO 6	3	1	2	3	1	3	x	3	3	3	2	x	x	2	3
BCOM603	**CO 1**	3	x	2	1	2	x	1	x	2	1	1	1	x	x	2
	CO 2	3	x	2	x	1	x	x	x	2	1	2	2	x	x	2
	CO 3	3	2	2	1	3	2	x	1	2	1	x	3	x	1	3
	CO 4	2	x	x	2	1	x	x	2	2	x	1	1	2	x	3
	CO 5	3	1	2	1	2	1	2	1	2	1	1	3	2	x	3
	CO 6	3	x	2	x	2	x	x	x	2	x	1	2	x	x	2
BCOM604	**CO 1**	3	1	2	1	3	1	2	1	2	1	1	3	3	x	2
	CO 2	2	x	2	1	2	x	1	2	2	1	2	x	3	x	3
	CO 3	2	2	1	2	1	1	x	2	x	x	1	x	2	x	2
	CO 4	2	x	1	1	2	x	1	x	2	x	1	2	1	x	2
	CO 5	3	1	2	1	2	1	1	x	1	x	2	x	3	x	3

	CO 6	3	1	2	2	2	x	1	x	2	1	x	2	2	1	2
BCOM605	**CO 1**	3	1	1	1	2	1	1	1	2	1	1	1	1	1	1
	CO 2	3	1	1	1	2	1	1	1	2	1	1	x	x	1	1
	CO 3	3	x	2	1	2	1	1	1	2	1	1	x	x	x	1
	CO 4	3	x	1	1	2	1	1	1	2	1	1	x	x	x	1
	CO 5	3	x	1	1	2	1	1	1	2	1	1	x	x	x	1
	CO 6	3	1	2	1	2	1	1	1	2	1	1	x	1	x	1
BCOM606	**CO 1**	2	x	x	x	1	x	x	x	1	x	1	x	x	x	1
	CO 2	3	1	2	1	3	1	2	1	2	x	1	2	x	x	2
	CO 3	3	1	1	x	2	x	x	1	2	x	1	1	x	x	1
	CO 4	3	2	1	x	3	x	x	1	1	1	1	x	x	x	2
	CO 5	2	x	1	x	2	x	x	x	2	x	1	x	x	x	2
	CO 6	3	x	3	x	2	x	x	1	1	x	1	2	x	x	2

Mapping of Course Outcomes(COs) with Programmme Specific Outcomes(PSOs)

College Code/Course Outcomes		**Programme Specific Outcome**		
		PSO1	**PSO2**	**PSO3**
BCOM101A	**CO 1**	x	x	x
	CO 2	x	2	x
	CO 3	x	1	x
	CO 4	x	3	x
	CO 5	x	2	x
	CO 6	x	3	x

BCOM 101B	**CO 1**	x	x	x
	CO 2	x	x	x
	CO 3	x	2	x
	CO 4	x	x	x
	CO 5	x	x	x
	CO 6	x	x	x
BCOM 102	**CO 1**	x	2	x
	CO 2	x	2	x
	CO 3	x	2	x
	CO 4	x	2	x
	CO 5	x	2	x
	CO 6	x	1	x
BCOM 103	**CO 1**	3	3	x
	CO 2	x	x	x
	CO 3	x	x	x
	CO 4	x	x	x
	CO 5	2	x	1
	CO 6	2	2	x
BCOM 104	**CO 1**	3	x	x
	CO 2	3	1	x
	CO 3	2	x	x
	CO 4	2	x	x
	CO 5	2	x	x
	CO 6	2	1	x

BCOM 105	**CO 1**	3	1	3
	CO 2	3	2	1
	CO 3	2	2	1
	CO 4	2	1	x
	CO 5	2	1	x
	CO 6	2	x	x
BCOM 106	**CO 1**	3	3	3
	CO 2	3	3	3
	CO 3	3	3	3
	CO 4	3	3	3
	CO 5	3	3	3
	CO 6	3	3	3
BCOM 107	**CO 1**	3	2	1
	CO 2	3	2	x
	CO 3	3	1	x
	CO 4	3	1	x
	CO 5	3	2	x
	CO 6	3	1	1
Semester II				
BCOM 201A	**CO 1**	x	x	x
	CO 2	x	2	x
	CO 3	x	1	x
	CO 4	x	3	x
	CO 5	x	2	x

	CO 6	x	3	x
BCOM 201B	**CO 1**	x	x	x
	CO 2	x	2	x
	CO 3	x	1	x
	CO 4	x	3	x
	CO 5	x	2	x
	CO 6	x	3	x
BCOM 202	**CO 1**	x	2	x
	CO 2	x	2	x
	CO 3	x	2	x
	CO 4	x	2	x
	CO 5	x	2	x
	CO 6	x	1	x
BCOM 203	**CO 1**	1	x	1
	CO 2	1	x	1
	CO 3	x	x	2
	CO 4	2	x	x
	CO 5	x	x	x
	CO 6	1	x	1
BCOM 204	**CO 1**	3	x	x
	CO 2	3	2	x
	CO 3	2	x	x
	CO 4	2	x	2
	CO 5	2	x	x

	CO 6	1	1	x
BCOM 205	**CO 1**	3	2	1
	CO 2	3	2	1
	CO 3	3	2	1
	CO 4	3	2	1
	CO 5	3	2	1
	CO 6	3	2	1
BCOM 206	**CO 1**	2	1	3
	CO 2	2	1	3
	CO 3	1	2	3
	CO 4	2	1	3
	CO 5	2	2	3
	CO 6	2	2	3
BCOM 207	**CO 1**	3	1	1
	CO 2	3	1	1
	CO 3	3	3	1
	CO 4	3	1	1
	CO 5	3	1	1
	CO 6	3	1	1
ENV	**CO 1**	x	x	x
	CO 2	x	x	2
	CO 3	x	x	2
	CO 4	x	x	x
	CO 5	x	2	x

	CO 6	x	x	2
Semester III				
BCOM 301	**CO 1**	x	2	1
	CO 2	x	2	1
	CO 3	1	2	1
	CO 4	1	1	2
	CO 5	1	2	2
	CO 6	1	2	2
BCOM 302	**CO 1**	3	2	x
	CO 2	3	2	x
	CO 3	3	2	x
	CO 4	3	2	x
	CO 5	3	2	x
	CO 6	3	2	x
BCOM 303	**CO 1**	3	3	3
	CO 2	3	3	3
	CO 3	3	3	3
	CO 4	3	3	3
	CO 5	3	3	3
	CO 6	3	3	3
BCOM 304	**CO 1**	x	x	x
	CO 2	x	x	x
	CO 3	x	x	x
	CO 4	x	x	x

	CO 5	x	x	x
	CO 6	x	x	x
BCOM 305	**CO 1**	x	3	x
	CO 2	2	3	x
	CO 3	1	2	x
	CO 4	1	2	x
	CO 5	x	3	x
	CO 6	2	3	x
BCOM306	**CO 1**	x	x	3
	CO 2	x	x	3
	CO 3	x	x	3
	CO 4	x	x	3
	CO 5	x	x	3
	CO 6	x	x	3
Semester IV				
BCOM 401	**CO 1**	1	x	2
	CO 2	x	x	x
	CO 3	x	x	x
	CO 4	1	x	x
	CO 5	1	x	x
	CO 6	x	x	x
BCOM 402	**CO 1**	3	2	3
	CO 2	3	2	3
	CO 3	3	2	3

	CO 4	3	2	3
	CO 5	3	2	3
	CO 6	3	2	3
BCOM403	**CO 1**	3	2	x
	CO 2	3	2	x
	CO 3	3	2	x
	CO 4	3	2	x
	CO 5	3	2	x
	CO 6	3	2	x
BCOM 404	**CO 1**	3	x	x
	CO 2	3	x	x
	CO 3	3	x	x
	CO 4	3	x	x
	CO 5	3	x	x
	CO 6	3	x	x
BCOM 405	**CO 1**	2	x	x
	CO 2	1	x	x
	CO 3	1	x	x
	CO 4	2	x	x
	CO 5	2	x	x
	CO 6	1	x	x
BCOM 406	**CO 1**	x	x	x
	CO 2	x	x	x
	CO 3	x	x	x

	CO 4	x	x	x
	CO 5	x	x	x
	CO 6	x	x	x
Semester V				
BCOM 501	**CO 1**	x	1	3
	CO 2	x	x	3
	CO 3	x	x	3
	CO 4	x	x	3
	CO 5	x	x	3
	CO 6	x	3	3
BCOM 502	**CO 1**	3	2	1
	CO 2	3	2	1
	CO 3	3	2	1
	CO 4	3	2	1
	CO 5	3	2	x
	CO 6	3	2	x
BCOM 503	**CO 1**	3	1	x
	CO 2	2	x	x
	CO 3	1	x	x
	CO 4	1	x	x
	CO 5	1	x	x
	CO 6	1	x	x
BCOM 504	**CO 1**	3	2	3
	CO 2	3	2	2

	CO 3	1	1	x
	CO 4	2	x	x
	CO 5	2	x	x
	CO 6	2	x	x
BCOM 505	**CO 1**	1	x	2
	CO 2	x	x	x
	CO 3	x	x	1
	CO 4	x	x	1
	CO 5	x	x	x
	CO 6	1	x	1
BCOM 506	**CO 1**	x	2	1
	CO 2	x	2	x
	CO 3	x	2	x
	CO 4	x	2	x
	CO 5	x	2	x
	CO 6	x	2	x
Semester VI				
BCOM 601	**CO 1**	1	x	3
	CO 2	1	x	3
	CO 3	1	x	3
	CO 4	1	x	3
	CO 5	1	1	3
	CO 6	1	x	3
BCOM 602	**CO 1**	3	2	x

	CO 2	3	2	x
	CO 3	3	2	x
	CO 4	3	2	x
	CO 5	3	2	x
	CO 6	3	2	x
BCOM 603	**CO 1**	2	x	x
	CO 2	x	x	x
	CO 3	x	1	x
	CO 4	1	x	x
	CO 5	x	x	x
	CO 6	2	x	1
BCOM604	**CO 1**	x	1	1
	CO 2	x	x	x
	CO 3	2	x	x
	CO 4	1	x	x
	CO 5	x	3	x
	CO 6	2	x	x
BCOM 605	**CO 1**	3	1	1
	CO 2	3	1	x
	CO 3	3	1	x
	CO 4	3	1	x
	CO 5	3	1	x
	CO 6	3	1	x
BCOM 606	**CO 1**	3	1	x

	CO 2	2	x	x
	CO 3	1	x	x
	CO 4	1	x	x
	CO 5	1	x	x
	CO 6	1	x	x

Master of Commerce (Accounting & Finance)

The aim of two years' M.Com. Programme is to provide the learners a platform for skill enrichment and enhancement to ensure the learners' participation towards the benefits of the society. LOCF approach requires Teacher-Learner's Interactions so that students can easily identify the purpose of each course and can understand their learning need. M.Com. is focused on developing comprehensive understanding of subject matters and to encourage them to apply ethical practices in the field of teaching, Accounting, Finance, Modern business & profession. LOCF approach in M.Com. is adopted with a purpose to prepare results based courses with an object to make the course more flexible & to provide more options for the students to structure learning experiences in a more student's centric way. Here the approach of LOCF is not only to provide employment opportunity to students but also to provide personal and social skills to balance their personal & social needs. Learning outcomes of M.Com. Programme have been aimed at providing diverse learning experience so that the knowledge may be applied in solving real life problems, keeping into consideration, the interests of the nation and the society.

Introduction

The youth must be provided quality education that can contribute towards skill development. M.Com. programme is prepared to encourage these youth to imparting-depth skills and analytical to be applied in every walk of business and entrepreneurship. The Programme has been structured not only for making learners to be competent enough to get employment in their desired field but also to contribute lot towards the society through their entrepreneurial skill. The Programme has been designed to promote entrepreneurship through participation of learners in Start-up India and Stand up India Initiatives. The purpose of quality education is not said to be fulfilled unless it provides social, environmental and ethical values to the learners.

M.Com. programme provides for clear conceptual understanding among learners and to equip them with modern sophisticated tools and techniques to deal businesses with quality leadership style, to have tactful decision making ability and to prepare them to drive and face

challenges in ever changing world scenario.

Learning Outcome based Approach to Curricular Planning

Nature & extent of M.Com. Programme

1. M.Com. Programme is designed to train learners with conceptual and practical knowledge of business, finance, leadership, entrepreneurship quality.
2. The Programme will help the learners to understand systematically about various theories & practices, policy framework & strategies needed to manage the organisation throughout the world by respecting environmental & ethical issues.
3. The optimal linkage of principles with prevailing practices will help them to handle real life problems and decision making ability.
4. M.Com. Programme is designed to classroom learning, group and individual learning, library & field research projects.
5. The Programme is made with an idea to integrate social needs and teaching practices in a manner that is responsive to the need of the community.

Objectives of M.Com. Programme

- M.Com. Programme will help the learners in developing a better understanding of commerce so that they can apply the knowledge in the field of teaching, banking, finance or any other relevant field in future.
- M.Com. Programme will help the learners to gain in-depth and systematic knowledge by enhancing their capability of understanding the challenges faced in the real world.
- It will also develop the ability and competence to have a problem-solving approach towards the issues related to the society and the business world.
- The Programme is helpful to the students in understanding, expansion & application of subject knowledge in their academic progression.
- The Programme aims to instil mind-set and character that will help students evolve into sensitive & technically sound future business leaders rather than managers and aims at enhancing employability options of the students. The curriculum helps

instilling curiosity and thirst for knowledge among students for skill enrichment in practical life.

Programme Outcomes (POs)

On successful completion of M.Com.(Accounting & Finance)Programme, the students will be able to develop following attributes, qualities and skills:

PO 1	**Disciplinary Knowledge**	LOCF based curriculum M.Com. programme helps students to develop in depth knowledge of the areas like accounting, taxation, finance, marketing, human resource management, managerial economics and business laws. The systematic and intensive knowledge will help them to excel in businesses & real life.
PO 2	**Communication Skills**	● Develop Communication skills required for interacting with internal & external stakeholders of the business enterprises. ● Have sufficient knowledge of required communication skills to deal in business affairs and to communicate with organisational staffs in a better way. ● Sharpen the ability of writing skills of various business letters, reports & notes.
PO 3	**Critical Thinking**	The students of M.Com. programme will be able to develop skills and attitudes needed for critical thinking which will help them in a comprehensive problem solving approach. They are exposed to the pedagogy that helps them understand real life situations through class room training and case studies. It aims at building the basic ability to think critically, evaluate dispassionately and solve complex problems creatively. The content is organised in such a way that the students would be able to think from diverse perspectives and suggest solutions according to their own sensibilities.

PO 4	**Problem Solving**	● M.Com. programme is prepared in such a way that it helps students to solve various issues related to business: ● Basics of accounting will help them to solve the problem like making financial statements through recording business transactions. ● Managerial skills will help them to tackle various managerial centric problems like; to plan, to organise, decision- making, ideas formulating, controlling.
PO 5	**Analytical Reasoning**	The M.Com. programme will help the students to develop reasoning based analytical ability which often requires in practical business life.
PO 6	**Research Related Skills**	● M.Com. programme encourages students to gain proper research skills required in economics, business & management. ● Ability to find research problems. ● Statistical Analysis will provide them research tools to identify & solve the research problems. ● M.Com. programme will develop ability to formulate & test hypothesis & research questions to find answers.
PO 7	**Team work & Time Management**	M.Com. programme contains various courses like principles of management, HR management, Industrial Relations which will help to learn managerial & entrepreneurial skills to work & timely manage the affairs of the business. These attitudes are developed through application of concept based practices, participative classroom discussions, problem solving tasks, case studies etc.

PO 8	**Scientific Reasoning**	● Ability to analyse situations, evaluate ideas and apply scientific approach in accomplishment of organizational objectives. ● Ability to formulate logical & persuasive arguments.
PO 9	**Reflective Thinking**	● Ability to understand the influence of local, national and global factors on critical thinking. ● This programme enables the students to analyse the situation objectively and give effective arguments & judgements based on the analysis being done. ● This programme teaches the students how to move sequentially to solve a problem effectively.
PO 10	**Digital Literacy**	● Ability to utilise digital sources for broadening knowledge base of the learners. ● This programme will encourage the learners to use digital resources by adopting latest technologies to survive and excel in ever-changing global scenario. ● The programme contains courses and topics to make the learners acquainted with latest accounting software's, knowledge of latest IT Act, Digital Awareness, E-filing of income tax return & much more. ● Sufficient digital literacy can be ensured through smart classrooms and web based learning resources. Frequent webinars can also be arranged for greater degree of effectiveness.
PO 11	**Self Directing Learning**	● This programme enables the students to have self-directing learning approach.

		• The programme has been formulated in such a way that it will help the learners to postulate questions, eliciting responses from various sources and finding out the most suitable solutions to relevant problems. • This programme encourages them towards the self-direction, experimentation and intrinsically motivated research work.
PO 12	**Multicultural Competence**	M.Com. programme pass graduates possess knowledge of the values and beliefs of multiple cultures and a global perspective; and capability to effectively engage in a multicultural society and interact respectfully with diverse groups.
PO 13	**Moral & Ethical Values**	• M.Com. programme has been designed in such a manner that it inculcates moral & ethical values in the learners. • These values will help them not only to be successful business persons, entrepreneurs and professionals but also to be persons having responsible approach towards environment, nation & society. • The programme also involves training the students to check unethical behaviour, falsification & manipulation of information to avoid debacles which can be seen rising persistently over the period. • It would also help in becoming responsible citizens & facilitate character building.
PO 14	**Leadership Readiness/Qualities:**	M.Com. programme pass graduates has the capability for mapping out the tasks of a team or an organization, and setting direction, formulating an inspiring vision, building a team who can help achieve the vision, motivating and inspiring team

		members to engage with that vision, and using management skills to guide people to the right destination, in a smooth and efficient way.
PO 15	**Lifelong Learning:**	M.Com. programme pass graduates have the ability to acquire knowledge and skills, including 'learning how to learn', that are necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at personal development, meeting economic, social and cultural objectives, and adapting to changing trades and demands of work place through knowledge and skill development.

Qualification Descriptors

The Qualification Descriptors for the M.Com. Programme shall be five learning attributes such as deciphering, understanding, communication, analysis & application of subject knowledge. It involves awareness on the part of the students towards their society, community & nation. The key Qualification Descriptors for M.Com. Programme shall be clarity of conceptual framework as well as critical thinking & rational approach. Each successful student of M.Com. Programme shall be able to:

- Demonstrate a coherent and systematic knowledge and understanding of the field of Business & Management. This would also include the student's ability to identify, speak & write about the forms of business enterprises their respective advantages and limitations, accounting procedures, relevant laws & environmental awareness.
- Demonstrate the ability to understand the role of commerce in the changing world from the ethical perspective through promoting fair business & professional practices. The objective is to encourage the learners to practice peaceful co-existence.
- Demonstrate the ability to think & write critically & clearly about the role of each entrepreneur and commerce professional in causing benefits to the society and the community so far as financed based issues are concerned.
- Communicate ideas, opinions & values—both theoretical values & values of life in all.

- Demonstrate the ability to share the results of academic and disciplinary learning through different forms of communication such as essays, dissertations, reports, finding, notes etc on different platforms of communication such as the classroom, the media & internet.
- Recognize the scope of study of commerce in terms of career opportunities, employment generation & lifelong engagement in teaching, publishing, translation, communication, media, soft skills & other allied fields.
- Apply subject- specific skills in commerce to foster a large sense of ethical & moral responsibility among the learners towards general interest of the society & the nation. The course will encourage the students to develop a rational & scientific approach in solving real life problems based on managerial theories & principles. The best practices are to be encouraged so that the interests of the nation are served in the short & long run.

Programme Specific Outcomes (PSOs)

PSO 1	Gain domain specific knowledge and conceptual clarity of the various courses studied.
PSO 2	Use of various statistical tools for research analysis.
PSO 3	Prepare project in functional areas of commerce.
PSO 4	Practical training experience in the form of internship in varied fields of business & commerce.

Course Outcomes(COs) of M.Com. (Accounting & Finance)

Semester	**Course Title**	**College Code**	**Course Outcomes** **On completion of the course students will be able to**	
Semester-I	**Managerial Economics**	**MCOM101**	**CO1**	Define the concepts of micro–economic theory and their use in business decision making
			CO2	Analyse business problems in a global economic environment
			CO3	Identify the roles of managers in firms
			CO4	Analyze the demand and supply conditions and assess the position of a company
			CO5	Design competition strategies, including costing, pricing, product differentiation, and market environment according

			CO6	Recognise the internal and external decisions to be made by managers
	Quantitative Methods for Business	**MCOM102**	**CO1**	Describe the importance of statistical techniques for managerial decision making
			CO2	Apply statistical techniques to business and economic situations
			CO3	Describe probability and probability distribution and its relation to general statistics
			CO4	Explain and interpret various statistical hypothesis tests
			CO5	Define sampling variables and their analysis
			CO6	Acquaint with statistical quality control and decision making under uncertainties
	Modern Accounting Theory & Reporting Practices	**MCOM103**	**CO1**	Discuss International financial reporting standards & practices and gain conceptual understanding of the IFRS
			CO2	Analyze the structure and role of IASB in international accounting
			CO3	Describe the objectives of financial reporting.
			CO4	Discuss the recognition and measurement of elements of financial statement as per IFRS
			CO5	Explain various types of financial instruments under IFRS
			CO6	Recognize the preparation and presentation of additional disclosures as per IFRS
	Organisation Theory and Behaviour	**MCOM104**	**CO1**	Examine various organization designs and attain the ability to develop the organization and acquire ability to apply different leadership styles in different situations.
			CO2	Identify motivation theories and evaluate

				motivational strategies in a variety of organizational settings.
			CO3	Develop personality and Communication skills.
			CO4	Utilize Group decision making techniques.
			CO5	Identify and learn the process of resolving conflicts and managing stress.
			CO6	Value and nurture team building in the organization and appraise the use of Power.
	Marketing Management	**MCOM105**	**CO1**	Explanation of basic concepts and principles of marketing
			CO2	Development of conceptual and analytical skills to manage marketing operations of a business firm
			CO3	Determine the conceptual framework of marketing and its applications in decision making under various environmental constraints
			CO4	Analyse the marketing opportunities and marketing environment
			CO5	Examine product development, product management, brand strategies and service management
			CO6	Discuss pricing strategies, distribution and logistics and promotion strategies
	Management Information System	**MCOM106**	**CO1**	Explanation of the Management information systems (MIS) and Information & System concepts related to MIS
			CO2	Develop comprehensive knowledge of basic concepts involved in analyzing and designing information systems
			CO3	Determine the Structure of MIS & multiple approaches related to MIS Structure
			CO4	Discuss the Role of Information System in MIS

			CO5	Discuss about the system development & its approaches
			CO6	Explain the Enterprise resource planning system
	Workshop on IT Applications in Commerce	**MCOM107**	**CO1**	Describe the use of IT technologies to solve business problems regarding various functional areas of business
			CO2	Drive IT implementation in practical world
			CO3	Explain spreadsheet usage
			CO4	Create charts and graphs from the data
			CO5	Discuss database usage and its importance
			CO6	Discuss Database management system tools
Semester II	**Business Environment**	**MCOM201**	**CO1**	Examine the concepts of macro economics and the macro environment in which a business organization operates
			CO2	Relate the macro-economic policies of the government and assessing their impact on business.
			CO3	Design the concept of the various constituents of the environment and their impact on businesses.
			CO4	Reconstruct better competitiveness and higher profitability for the business enterprise
			CO5	Determine how the business environment helps in the making policies of the organization.
			CO6	Recall the basic framework within which business is required to operate
	Research Methodology in Commerce	**MCOM202**	**CO1**	State various stages of the research processes and their application in Commerce and Management
			CO2	Explain the art of using different research methods and techniques.
			CO3	Describe the methods to collect primary and secondary data

			CO4	Define the importance of data analysis and learn hypothesis through various parametric and non-parametric test
			CO5	Design the presentation and analyse the information
			CO6	Describe the reporting and modern practices in research through the reference and citation method
	Financial Management and Policy	**MCOM203**	**CO1**	Develop the basic and advanced analytical techniques and methods of financial management of business firms
			CO2	Describe about the challenges and opportunities of Financial Management
			CO3	Explain the basics of investment decisions
			CO4	Acquaint with Capital Structure decisions
			CO5	Discuss Leverage, EBIT & EBT concept
			CO6	Acquaint with various decision making models
	Production and Materials Management	**MCOM204**	**CO1**	Identify the elements of production management and various transformation processes to enhance productivity and competitiveness.
			CO2	Analyse and evaluate various Facility Location alternatives and their capacity decisions.
			CO3	Plan and implement a good layout of the plant.
			CO4	Plan and implement suitable quality control measures of TQM.
			CO5	Forecast demand.
			CO6	Apply PERT and CPM in project management.
	Operations Research	**MCOM205**	**CO1**	Describe the concepts and techniques of Operations Research for business decision making and acquire required skills

			CO2	Examine a problem and find the solution by using simulation techniques and employ the MODI method to minimize the transportation cost
			CO3	Formulate and solve problems by using LPP technique.
			CO4	Learn to use the CPM and PERT techniques, to plan, schedule and control project activities.
			CO5	Propose the best strategy using game theory.
			CO6	Analyze different strategies using decision making methods.
	Business Policy & Strategic Management	**MCOM206**	**CO1**	Discuss the basic inputs in making and implementing corporate strategic decisions
			CO2	Analyse the strategy scanning technique and management model
			CO3	Evaluate the reasons for strategy failure and methods to overcome
			CO4	Assess the options of Porter's Generic Strategies
			CO5	Explain Strategic intent and strategy formulation
			CO6	Determine new business model and strategies for internet economy
	Summer Training Report and Viva - Voce	**MCOM207**	**CO1**	Identify practical environment in various entities.
			CO2	For his / her organization of internship, the student is able to assess its Strengths, Weaknesses, Opportunities and Threats (SWOT).
			CO3	Determine the challenges and future potential for his / her internship organization in particular and the sector in general.
			CO4	Drive skills on how to construct the project work.
			CO5	Apply various soft skills in internship programme

			CO6	Analyze the functioning of internship organization and recommend changes for improvement in processes.
Semester-III	**Business Performance Measurement**	**MCOM301**	**CO1**	Examine various Performance Measurement techniques for business
			CO2	Develop basic understanding of elements of business environment
			CO3	Develop rational thinking & problem solving skills among the students so as to facilitate rational decision making under dynamic situations
			CO4	Explain Quality concepts in context with performance measurement
			CO5	Explain Balance Scorecard and Throughput Accounting concepts under Performance measurement
			CO6	Discuss Management Information System and Responsibility Accounting in context with Business Performance Measurement
	Tax Planning and Management	**MCOM302**	**CO1**	Discuss the structure of direct and indirect taxes in India subsuming the key facts on tax planning, evasion, and avoidance
			CO2	State the tax reliefs, rebates and other benefits in the ambit of direct taxes available to company assessee
			CO3	State the deductions under the aegis of Income Tax Act 1961 to business units
			CO4	Describe the tax implications in crucial management decisions of make/buy; lease/own; export/local sale; shut- down/continue; repair/replace and expand/contract
			CO5	Explain newly implemented GST Act and its pros and cons

			CO6	List and explain critical provisions and schemes in CGST Act 2017
	Integrated Marketing Communication & Brand Equity	**MCOM303**	**CO1**	Discuss the role of promotion techniques with the special emphasis on advertising.
			CO2	Examine the conceptual framework of Brand Equity, Brand identification, creating brand image, brand-customer touch points, AIDA model
			CO3	Analyse Brand Equity, Brand Positioning, Brand Values and Internal branding
			CO4	Explain the Segmenting and Targeting, IMC message strategy
			CO5	Discuss Campaign Planning, Integrated Marketing communication planning process
			CO6	Explain Media Classification, Sales Promotion, Trade Promotion
	Marketing Research	**MCOM304**	**CO1**	Describe the concept, tools and techniques of marketing research
			CO2	Develop the skills for research and make marketing decisions.
			CO3	Generalise the research design and its methods
			CO4	Interpret sample designing techniques
			CO5	Appraise the techniques of data analysis and report presentation
			CO6	Justify ethical issues in marketing research
	International Marketing	**MCOM305**	**CO1**	Demonstrate the role of Strategic Cost management in business.
			CO2	Apply Life Cycle Costing, Target Costing, Kaizen Costing and Kaizen Costing techniques in modern business environment.
			CO3	Appraise JIT techniques and theory of Constraints.

			CO4	Use ABC costing to reduce the cost.
			CO5	Illustrate the use of Balance Score Card for better Strategic Performance Measurement.
			CO6	State the importance and use of Responsibility Centres and prepare budgets and ensure Budgetary Control.
	International Accounting	**MCOM306**	**CO1**	Gain Conceptual knowledge and have knowledge of international accounting issues and tackling issues in prevailing regulatory environments
			CO2	Inculcate the competency to solve problems relating to Special areas in International Accounting
			CO3	Analyze the Foreign currency translations methods and practices.
			CO4	Explain Emerging issues in International Accounting
			CO5	Acquainted with the IFRS
			CO6	Learn about the specific reporting issues
	Workshop on Financial Markets & Instruments	**MCOM307**	**CO1**	Define the financial system in India
			CO2	Discuss the functioning of various segments of the financial markets
			CO3	Develop the Knowledge of financial instruments traded in financial markets
			CO4	Define the Securities Market
			CO5	Develop the knowledge about Functions of Stock Exchanges
			CO6	Describe Innovative Financial Instruments & Financial Services
Semester-IV	**Project Planning and**	**MCOM401**	**CO1**	Associate with skills necessary to create, plan and control a new Enterprise.

	Control		**CO2**	Analyze the project life cycle and attributes of successful project management
			CO3	Analyze the procedure for project identification and formulation
			CO4	Organize the methodology for market and financial appraisal
			CO5	Apply capital budgeting techniques in project viability study
			CO6	Analyse the project organisation and control network
	Knowledge Management	**MCOM402**	**CO1**	Identifying Knowledge Management in the changing scenario and its significance in framing the business strategy
			CO2	Develop skills so as to facilitate greater employability
			CO3	Understanding Knowledge management through Knowledge Intensive Organization
			CO4	Determine Role of Expert Systems under knowledge management
			CO5	Understanding the knowledge creation & types in context with tacit and explicit knowledge
			CO6	Explain Role of knowledge management in designing organisation policies and strategies
	Business Ethics and Corporate Governance	**MCOM403**	**CO1**	Understand Business Ethics, Ethical decision making, complexity of ethical issues, and details of Internal Corporate Governance Mechanism
			CO2	Recognize the role of Corporate Governance practices.
			CO3	Relate Corporate Social Responsibility practices.
			CO4	Analyse and understand various ethical philosophies to explain how they contribute to current management practices.

			CO5	Critically analyse the reasons of systematic failure of Corporate Governance that could spread from individual firms to entire markets or economies.
			CO6	Apply the recommendations of various committees made for suggesting good Corporate Governance practices.
	Advanced Corporate Accounting	**MCOM404**	**CO1**	Describe the terms business acquisitions and conversion of businesses
			CO2	Explain the term investment accounting in the light of relevant accounting standard
			CO3	Define the company mergers and reconstruction methods coupled with their accounting treatment in the financial statements
			CO4	Describe the valuation of firm assets viz. financial assets and other economic resources
			CO5	Define the concepts in accounting for holding and subsidiary companies
			CO6	Discuss the relevance of accounting standards in demonstrating the accounting treatment of the aforesaid transactions
	Security Analysis and Portfolio Management	**MCOM405**	**CO1**	Describe the techniques of investment decisions, portfolio analysis and efficient portfolio management
			CO2	Explain profitable investment decisions.
			CO3	Discuss the security market analysis techniques
			CO4	Analyze risk and return of a portfolio.
			CO5	Acquainted with the risk diversification techniques.
			CO6	Discuss about portfolio performance evaluation methods
	Advanced Auditing	**MCOM406**	**CO1**	Acquire in-depth knowledge of the auditing contemporary issues particularly related to the

				company audit
			CO2	Ability to bridge the gap between theory and practice by learning the auditing of books of accounts.
			CO3	Explain the auditing requirements, powers and duties of auditors
			CO4	Develop an audit report and certificate and also can differentiate report and certificate
			CO5	Investigation in auditing and investigation with respect to business combinations
			CO6	Discuss the relevant provisions of companies act related to management audit, tax audit, cost audit, social audit and environment audit
	Comprehensive Viva-Voce	**MCOM407**	**CO1**	Apply the communication skills and respond to almost every concept of business and commerce.
			CO2	Demonstrate knowledge in the program domain.
			CO3	Summarize his views cogently and precisely.
			CO4	Identify professional etiquette suitable for career progression
			CO5	Assess the overall knowledge of the student in the relevant field of Commerce
			CO6	Examine the knowledge gained in the course work

Mapping of Course Outcomes (COs) with Programme Outcomes(POs)

Course Outcome		**Programme Outcome**														
		PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PO13**	**PO14**	**PO15**
Semester I																
MCOM101	**CO 1**	3	1	2	1	2	1	1	2	1	x	2	2	x	x	2

	CO 2	2	1	2	3	3	2	x	x	1	1	x	x	x	x	1
	CO 3	2	1	1	1	1	x	1	x	1	x	1	1	1	1	1
	CO 4	2	x	2	1	3	2	x	2	2	1	1	1	x	x	2
	CO 5	2	1	2	2	2	1	x	1	1	1	x	1	1	x	2
	CO 6	3	2	2	1	1	x	2	x	1	x	1	x	x	1	1
MCOM 102	**CO 1**	3	2	3	1	2	3	2	3	1	3	3	x	x	3	3
	CO 2	3	x	3	3	3	3	x	3	2	3	2	x	x	x	x
	CO 3	3	x	3	1	2	3	x	3	1	2	x	x	x	x	x
	CO 4	3	x	3	3	3	3	x	3	2	2	2	x	x	x	x
	CO 5	3	x	3	1	1	3	x	1	1	x	2	x	x	x	x
	CO 6	3	2	3	3	3	3	2	3	3	3	3	x	x	3	3
MCOM 103	**CO 1**	3	1	1	1	1	x	x	x	1	2	2	2	x	x	1
	CO 2	3	1	1	x	1	x	x	x	1	2	2	2	x	x	1
	CO 3	3	1	1	1	1	x	x	x	1	2	2	2	1	x	1
	CO 4	3	1	1	1	1	x	x	x	1	2	2	2	x	x	1
	CO 5	3	1	1	1	1	1	x	x	1	2	2	2	x	x	1
	CO 6	3	1	1	1	1	x	x	x	1	2	2	2	1	x	1
MCOM 104	**CO 1**	3	3	1	3	3	3	3	x	2	x	3	3	1	3	3
	CO 2	3	2	3	3	2	3	3	x	2	x	3	1	1	3	3
	CO 3	3	3	3	2	1	3	2	x	3	x	2	3	3	3	3
	CO 4	3	3	3	3	x	1	3	x	2	x	3	3	1	3	2
	CO 5	2	2	3	3	x	x	3	x	3	x	3	2	3	1	3
	CO 6	3	3	3	1	1	x	2	x	2	x	2	2	1	3	3
MCOM 105	**CO 1**	3	x	x	x	1	1	1	1	1	x	1	1	x	x	2

	CO 2	1	x	1	1	3	x	x	x	1	1	x	x	x	x	2
	CO 3	1	x	x	x	1	x	x	x	x	1	x	x	x	x	2
	CO 4	2	x	2	1	x	x	x	1	x	1	x	x	x	2	x
	CO 5	1	x	1	2	2	x	x	1	1	1	1	x	x	1	2
	CO 6	2	x	1	2	2	1	1	1	2	1	x	x	x	x	2
MCOM 106	**CO 1**	3	1	3	2	1	x	x	1	3	3	2	x	x	1	2
	CO 2	3	1	3	2	1	x	x	1	3	3	2	x	x	1	2
	CO 3	3	1	3	2	1	x	x	1	3	3	2	x	x	1	2
	CO 4	3	1	3	2	1	x	x	1	3	3	2	x	x	1	2
	CO 5	3	1	3	2	1	x	x	1	3	3	2	x	x	1	2
	CO 6	3	1	3	2	1	x	x	1	3	3	2	x	x	1	2
MCOM 107	**CO 1**	3	x	2	2	1	x	x	2	2	3	3	2	1	x	3
	CO 2	3	1	2	2	2	x	x	2	2	3	3	2	1	x	3
	CO 3	3	x	2	3	2	2	x	2	2	3	3	2	1	x	3
	CO 4	3	x	2	3	2	2	x	2	2	3	3	2	1	x	3
	CO 5	3	x	2	2	2	2	x	2	2	3	3	2	1	x	3
	CO 6	3	x	2	2	2	2	1	2	2	3	3	2	1	1	3
Semester II																
MCOM 201	**CO 1**	3	x	3	x	3	3	x	1	1	x	3	x	x	x	3
	CO 2	3	x	1	3	x	3	x	1	x	x	3	x	x	x	3
	CO 3	3	2	1	x	x	2	x	x	x	x	2	x	x	x	2
	CO 4	3	x	2	3	3	3	x	1	3	3	3	x	x	x	3
	CO 5	3	1	3	x	x	3	2	x	x	3	3	x	x	x	3
	CO 6	3	3	x	x	x	3	3	x	x	x	3	x	x	x	3

MCOM 202	**CO 1**	3	x	3	x	3	3	x	1	1	x	3	x	x	x	3
	CO 2	3	x	1	3	x	3	x	1	x	x	3	x	x	x	3
	CO 3	3	2	1	x	x	2	x	x	x	x	2	x	x	x	2
	CO 4	3	x	2	3	3	3	x	1	3	3	3	x	x	x	3
	CO 5	3	1	3	x	x	3	2	x	x	3	3	x	x	x	3
	CO 6	3	3	x	x	x	3	3	x	x	x	3	x	x	x	3
MCOM 203	**CO 1**	3	1	2	1	3	2	x	1	2	x	1	1	x	x	2
	CO 2	2	1	1	2	3	1	1	1	2	x	1	x	x	1	x
	CO 3	2	x	1	1	3	1	x	x	1	x	1	x	1	x	1
	CO 4	2	x	1	1	2	x	x	x	1	x	x	x	x	x	2
	CO 5	2	x	x	x	1	1	x	x	1	x	x	x	1	x	2
	CO 6	2	x	x	1	2	x	x	1	2	x	x	x	1	1	1
MCOM 204	**CO 1**	3	1	3	x	3	x	x	x	x	1	2	x	x	x	3
	CO 2	3	x	3	3	3	3	x	3	2	3	2	1	x	2	3
	CO 3	3	x	3	3	1	1	x	3	2	3	2	x	x	2	3
	CO 4	3	x	3	3	1	1	x	3	2	3	2	x	x	2	3
	CO 5	3	x	3	2	1	3	x	3	2	3	2	x	x	2	3
	CO 6	3	x	3	3	3	3	x	3	2	3	2	x	x	3	3
MCOM 205	**CO 1**	3	1	1	1	1	2	1	1	1	1	2	x	x	x	1
	CO 2	3	x	1	1	2	1	1	1	1	1	2	x	x	x	1
	CO 3	3	x	1	2	2	2	1	1	1	x	2	x	x	x	1
	CO 4	3	x	1	2	2	2	2	1	1	x	2	x	x	x	1
	CO 5	3	x	1	1	1	1	2	1	1	x	2	x	x	x	1
	CO 6	3	1	1	1	1	2	2	1	1	x	2	x	1	1	2

MCOM 206	**CO 1**	2	1	2	1	2	1	x	1	2	x	1	x	x	x	1
	CO 2	2	x	2	2	3	1	x	1	x	1	2	1	x	x	1
	CO 3	2	x	2	2	3	2	1	x	2	x	1	x	1	x	2
	CO 4	1	x	2	x	2	x	x	1	x	x	1	x	x	x	x
	CO 5	2	x	3	x	1	x	x	x	2	x	x	x	x	x	x
	CO 6	2	1	3	x	2	1	x	1	1	2	x	2	x	1	1
MCOM 207	**CO 1**	2	2	1	x	1	1	1	x	2	1	1	2	1	x	2
	CO 2	2	2	2	1	2	2	x	1	2	x	2	x	1	2	2
	CO 3	1	1	3	2	2	1	1	x	2	x	1	1	x	x	2
	CO 4	1	2	2	x	x	x	x	x	1	1	2	x	1	1	1
	CO 5	2	2	1	x	x	x	1	x	1	1	2	x	1	2	2
	CO 6	2	2	2	1	3	1	x	1	2	x	1	1	x	x	3
Semester II																
MCOM 301	**CO 1**	3	x	2	x	1	x	x	x	2	x	2	x	1	x	3
	CO 2	3	x	2	x	2	x	x	x	2	x	2	x	1	x	3
	CO 3	3	x	2	x	2	1	x	x	2	x	2	x	1	1	3
	CO 4	3	x	2	x	2	1	1	2	2	x	2	1	1	1	3
	CO 5	3	x	3	2	2	1	x	2	2	x	2	1	1	x	3
	CO 6	3	1	2	2	2	1	x	2	2	3	2	1	1	1	3
MCOM 302	**CO 1**	3	x	2	2	3	1	x	2	3	x	2	x	3	x	x
	CO 2	3	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	CO 3	3	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	CO 4	3	x	2	2	3	1	x	2	1	x	1	x	x	x	x
	CO 5	3	x	2	2	3	x	x	2	1	3	3	x	x	x	x

	CO 6	3	x	x	x	x	x	x	x	x	x	x	x	x	x	x
MCOM 303	**CO 1**	2	2	2	2	2	x	x	x	2	x	x	1	x	x	2
	CO 2	2	1	2	2	2	x	x	x	1	x	x	x	x	x	1
	CO 3	1	2	2	2	2	x	x	1	2	1	1	x	1	1	2
	CO 4	2	2	1	1	1	1	1	x	1	x	1	1	1	1	2
	CO 5	2	2	2	1	1	x	x	1	2	1	1	x	x	1	2
	CO 6	2	3	1	1	1	x	x	2	2	2	1	x	x	1	2
MCOM 304	**CO 1**	3	1	2	1	1	3	1	x	2	1	2	x	x	x	3
	CO 2	2	2	2	2	2	3	2	2	2	2	2	2	1	1	3
	CO 3	2	x	3	2	2	3	1	1	2	3	1	2	x	2	3
	CO 4	3	2	3	1	3	3	2	3	2	3	1	2	x	2	3
	CO 5	2	2	3	2	3	3	2	3	3	3	1	1	2	1	3
	CO 6	1	x	1	2	1	3	x	x	3	x	2	1	2	1	3
MCOM 309	**CO 1**	3	1	1	1	2	3	3	x	3	x	2	3	2	3	3
	CO 2	3	2	1	2	x	2	3	x	3	x	2	2	1	2	1
	CO 3	3	2	1	2	x	2	3	x	3	x	2	2	1	2	1
	CO 4	3	1	1	2	1	2	3	x	3	x	2	1	1	2	3
	CO 5	3	2	1	2	3	3	2	x	3	x	3	1	1	3	3
	CO 6	3	2	3	3	1	1	2	x	3	x	3	1	1	3	3
MCOM 310	**CO 1**	3	1	1	2	2	1	1	1	2	1	1	1	x	1	1
	CO 2	3	1	1	2	2	1	1	1	2	1	1	1	1	x	1
	CO 3	3	1	1	2	2	1	1	1	2	1	1	1	x	x	1
	CO 4	3	1	1	2	2	1	1	1	2	1	1	1	2	x	1
	CO 5	3	1	1	2	2	1	1	1	2	1	1	1	x	1	1

	CO 6	3	1	1	2	2	1	1	1	2	1	1	1	1	1	1
MCOM 315	**CO 1**	3	x	2	3	2	1	x	2	2	1	2	x	x	x	2
	CO 2	3	x	2	3	2	1	x	2	2	1	2	x	x	x	2
	CO 3	3	x	2	3	2	1	x	2	2	1	2	x	x	x	2
	CO 4	3	x	2	3	2	1	x	2	2	1	2	x	x	x	2
	CO 5	3	x	2	3	2	1	x	2	2	1	2	x	x	x	2
	CO 6	3	x	2	3	2	1	x	2	2	1	2	x	x	x	2
Semester IV																
MCOM 401	**CO 1**	3	x	3	3	2	x	x	2	3	1	3	x	x	x	3
	CO 2	3	x	3	3	2	x	x	2	3	1	3	x	x	x	3
	CO 3	3	x	3	3	2	x	x	2	3	1	2	x	x	x	3
	CO 4	3	x	3	3	2	x	x	2	3	1	2	x	x	x	3
	CO 5	3	x	3	3	2	x	x	2	3	1	2	x	x	x	3
	CO 6	3	x	3	3	2	x	x	2	3	1	2	x	x	x	3
MCOM 402	**CO 1**	3	x	3	3	2	x	x	2	3	1	3	x	x	x	3
	CO 2	3	x	3	3	2	x	x	2	3	1	3	x	x	x	3
	CO 3	3	x	3	3	2	x	x	2	3	1	2	x	x	x	3
	CO 4	3	x	3	3	2	x	x	2	3	1	2	x	x	x	3
	CO 5	3	x	3	3	2	x	x	2	3	1	2	x	x	x	3
	CO 6	3	x	3	3	2	x	x	2	3	1	2	x	x	x	3
MCOM 403	**CO 1**	3	1	3	x	x	x	x	x	1	x	3	x	3	2	3
	CO 2	3	1	3	x	3	x	x	x	1	x	3	x	3	3	3
	CO 3	3	x	3	1	1	x	x	x	1	x	1	x	3	1	3
	CO 4	3	1	3	3	3	3	x	x	1	x	3	x	3	3	3

	CO 5	3	x	3	3	3	3	x	x	1	x	3	x	3	3	3
	CO 6	3	x	3	x	1	1	x	x	1	x	3	x	3	3	3
MCOM413	**CO 1**	3	x	2	2	1	x	x	x	x	x	1	x	x	x	1
	CO 2	3	x	x	1	1	x	x	x	x	x	1	x	x	x	1
	CO 3	3	x	1	1	1	x	x	x	x	x	1	x	x	x	1
	CO 4	3	x	2	2	3	2	2	3	3	x	1	x	2	x	1
	CO 5	3	x	2	1	1	x	x	x	x	x	1	x	x	x	1
	CO 6	3	x	2	3	3	x	x	2	3	x	1	x	x	x	1
MCOM 414	**CO 1**	3	1	1	1	2	2	2	1	1	1	2	1	1	1	1
	CO 2	3	x	1	1	2	2	2	1	1	1	2	1	1	x	1
	CO 3	3	x	1	2	2	2	2	1	1	x	2	1	1	x	1
	CO 4	3	x	1	2	2	2	2	1	1	x	2	1	1	x	1
	CO 5	3	1	2	2	2	2	2	1	1	x	2	1	1	x	1
	CO 6	3	1	1	2	2	2	2	1	1	x	2	1	1	1	1
MCOM 415	**CO 1**	3	x	3	3	2	x	x	2	3	x	3	x	x	x	3
	CO 2	3	x	3	3	2	x	x	2	3	x	3	x	x	x	3
	CO 3	3	x	3	3	2	x	x	2	3	x	2	x	x	x	3
	CO 4	3	x	3	3	2	x	x	2	3	x	2	x	x	x	3
	CO 5	3	x	3	3	2	x	x	2	3	x	2	x	x	x	3
	CO 6	3	x	3	3	2	x	x	2	3	x	2	x	x	x	3
MCOM 422	**CO 1**	3	x	2	3	2	1	x	2	2	1	2	x	x	x	2
	CO 2	3	x	2	3	2	1	x	2	2	1	2	x	x	x	2
	CO 3	3	x	2	3	2	1	x	2	2	1	2	x	x	x	2
	CO 4	3	x	2	3	2	1	x	2	2	1	2	x	x	x	2

	CO 5	3	x	2	3	2	1	x	2	2	1	2	x	x	x	2
	CO 6	3	x	2	3	2	1	x	2	2	1	2	x	x	x	2

Mapping of Course Outcomes(COs) with Programme Specific Outcomes(PSOs)

College Code/ Course Outcome		**Program Specific Outcome**			
		PSO1	**PSO2**	**PSO 3**	**PSO 4**
MCOM101	**CO 1**	2	1	x	1
	CO 2	1	x	x	x
	CO 3	x	x	x	x
	CO 4	1	x	x	x
	CO 5	2	x	x	x
	CO 6	x	x	x	x
MCOM 102	**CO 1**	3	3	2	x
	CO 2	3	3	x	x
	CO 3	3	3	x	x
	CO 4	3	3	1	x
	CO 5	3	x	x	x
	CO 6	3	1	2	x
MCOM 103	**CO 1**	3	x	1	1
	CO 2	3	x	x	x
	CO 3	3	x	x	x
	CO 4	3	1	1	x
	CO 5	3	x	x	x
	CO 6	3	x	x	x

MCOM 104	**CO 1**	3	1	x	x
	CO 2	3	1	x	x
	CO 3	3	1	x	x
	CO 4	3	1	x	x
	CO 5	3	1	x	x
	CO 6	3	1	x	x
MCOM 105	**CO 1**	1	x	x	1
	CO 2	2	1	x	1
	CO 3	1	x	x	1
	CO 4	1	x	x	x
	CO 5	2	x	x	1
	CO 6	2	1	x	1
MCOM 106	**CO 1**	3	2	1	1
	CO 2	3	3	1	1
	CO 3	3	3	1	1
	CO 4	3	3	1	1
	CO 5	3	3	1	1
	CO 6	3	3	1	1
MCOM 107	**CO 1**	3	3	3	x
	CO 2	3	3	3	x
	CO 3	3	3	3	x
	CO 4	3	3	3	x
	CO 5	3	3	3	x
	CO 6	3	3	3	x

Semester II					
MCOM 201	**CO 1**	3	1	x	x
	CO 2	3	3	x	x
	CO 3	3	1	x	x
	CO 4	3	3	x	x
	CO 5	3	x	x	x
	CO 6	3	x	x	x
MCOM 202	**CO 1**	3	1	x	x
	CO 2	3	3	x	x
	CO 3	3	1	x	x
	CO 4	3	3	x	x
	CO 5	3	x	x	x
	CO 6	3	x	x	x
MCOM 203	**CO 1**	3	2	1	1
	CO 2	2	2	2	1
	CO 3	2	1	1	1
	CO 4	2	2	1	2
	CO 5	3	2	1	1
	CO 6	2	2	1	2
MCOM 204	**CO 1**	3	2	1	1
	CO 2	3	3	1	1
	CO 3	3	2	1	1
	CO 4	3	2	1	1
	CO 5	3	2	1	1

	CO 6	3	3	1	1
MCOM 205	**CO 1**	3	1	1	1
	CO 2	3	1	1	x
	CO 3	3	1	1	x
	CO 4	3	1	2	x
	CO 5	3	1	1	x
	CO 6	3	1	1	x
MCOM 206	**CO 1**	2	1	x	x
	CO 2	1	x	x	x
	CO 3	x	x	x	x
	CO 4	1	x	x	x
	CO 5	2	x	x	x
	CO 6	1	1	2	x
MCOM 207	**CO 1**	3	x	x	3
	CO 2	1	1	x	3
	CO 3	2	1	x	3
	CO 4	2	x	3	3
	CO 5	1	x	x	3
	CO 6	2	1	1	3
Semester II					
MCOM 301	**CO 1**	3	3	3	x
	CO 2	3	3	3	x
	CO 3	3	3	3	x
	CO 4	3	3	3	x

	CO 5	3	3	3	x
	CO 6	3	3	3	x
MCOM 302	**CO 1**	3	x	x	x
	CO 2	3	x	x	x
	CO 3	3	x	x	x
	CO 4	3	x	x	x
	CO 5	3	x	x	x
	CO 6	3	x	x	x
MCOM 303	**CO 1**	3	1	x	x
	CO 2	2	1	2	1
	CO 3	1	1	x	x
	CO 4	1	1	x	x
	CO 5	2	2	x	1
	CO 6	1	1	1	x
MCOM 304	**CO 1**	3	3	x	x
	CO 2	3	3	x	x
	CO 3	3	3	x	x
	CO 4	3	2	x	x
	CO 5	3	3	x	x
	CO 6	2	x	x	x
MCOM 309	**CO 1**	3	1	x	x
	CO 2	3	1	x	x
	CO 3	3	1	x	x
	CO 4	3	1	x	x

	CO 5	3	1	x	x
	CO 6	3	1	x	x
MCOM 310	**CO 1**	3	x	x	x
	CO 2	3	x	x	x
	CO 3	3	x	x	x
	CO 4	3	x	x	x
	CO 5	3	x	x	x
	CO 6	3	x	x	x
MCOM 315	**CO 1**	3	2	2	1
	CO 2	3	2	2	1
	CO 3	3	3	2	1
	CO 4	3	3	2	1
	CO 5	3	2	2	1
	CO 6	3	3	2	1
Semester IV					
MCOM 401	**CO 1**	3	2	1	1
	CO 2	3	2	1	1
	CO 3	3	2	1	1
	CO 4	3	2	1	1
	CO 5	3	2	1	1
	CO 6	3	2	1	1
MCOM 402	**CO 1**	3	2	x	1
	CO 2	3	2	x	1
	CO 3	3	2	x	1

	CO 4	3	2	x	1
	CO 5	3	2	x	1
	CO 6	3	2	x	1
MCOM 403	**CO 1**	3	x	x	x
	CO 2	3	x	x	x
	CO 3	3	x	x	x
	CO 4	3	x	x	x
	CO 5	3	x	x	x
	CO 6	3	x	x	x
MCOM413	**CO 1**	3	x	x	x
	CO 2	3	x	x	x
	CO 3	3	x	x	x
	CO 4	3	x	x	x
	CO 5	3	x	x	x
	CO 6	3	x	x	x
MCOM 414	**CO 1**	3	1	1	1
	CO 2	3	1	2	x
	CO 3	3	1	1	x
	CO 4	3	1	1	x
	CO 5	3	1	1	x
	CO 6	3	1	1	x
MCOM 415	**CO 1**	3	1	1	1
	CO 2	3	1	1	1
	CO 3	3	1	1	1

	CO 4	3	1	1	1
	CO 5	3	1	1	1
	CO 6	3	1	1	1
MCOM 422	**CO 1**	3	1	3	2
	CO 2	3	2	3	2
	CO 3	3	2	3	2
	CO 4	3	2	3	2
	CO 5	3	2	3	2
	CO 6	3	3	3	2

DEPARTMENT OF COMPUTER SCIENCE AND APPLICATIONS

B.A.M. Khalsa College is the best college in Kandi area of Garhshankar, established in 1969 caters to the growing demand for qualified technical personnel in different streams. Since its inception, the college has always been at the forefront of innovation and has attained a leading position in the field of technical and professional education. It has been recommended by many previously passed students and is considered as the best degree college in Garhshankar. It is poised to grow bigger and better as well as continues to seek solutions on important global problems, educating leaders to make the world a better place.

In view of the increasing importance of the computer science discipline, a separate **Department of Computer Science and Applications** was established in 1999 to offer Bachelor degree in Computer Science and Applications and Post- Graduate diploma in computer applications. It enables you to work in multidisciplinary environments and get responsive to the changing needs of the society. Incorporating a detailed mix of software and hardware engineering, this program can be defined as the application of a systemic, disciplined, and quantifiable approach to development, operation and maintenance of computer-related technicalities.

The Department is well equipped with high end computers, latest software & state-of-the-art IT infrastructure and all these computing resources are inter-connected with high speed intranet. Our students are exposed to up-to-date curriculum, technology and techniques. The Department has well experienced & dedicated faculty members with different specializations

Computer Science and Applications are in great demand in industries across the globe. The program imparts comprehensive knowledge with equal emphasis on theory and practice in the field of computer science. **BCA** and **PGDCA** would be able to demonstrate advanced skills in the effective analysis, design and realization of business systems utilizing contemporary information technology. The broad objective of the program is to provide sound academic base from which an advanced career in Computer Applications can be developed. Conceptual grounding in computer usage as well as its practical business application will be provided making candidates suitable for IT sector entry-level jobs.

VISION

Enabling graduates and post -graduates to be technologically skilled, innovative, self-motivated and responsible citizens, to possess human values and to make a significant contribution to being a center of excellence in providing a globally standardized education through a supportive teaching and research environment that responds quickly to the challenges of the dynamic world.

MISSION

- Have the human, financial, and infrastructure resources needed to achieve our scholarly objectives
- To impart moral and ethical values, and interpersonal skills to the students
- The Department of computer science prepares the students for further study and success in their future career pursuits at the graduate level/or a career in industry
- To provide graduate and post graduates education to prepare students to become thoughtful, productive members of the profession and community of computing

OBJECTIVES

- Modernize and reinforce undergraduate and Post-graduate programs by updating and expanding instructional labs
- Increase the number of working partnerships with other departments and institutes on campus
- Resources and Infrastructure − Maintain a quality workforce and work environment and maximize the use of technology in the delivery of services
- Construct community group associations that upgrade the personal satisfaction for students and the local area
- Significant level and high quality studies, as per national guidelines
- Application-oriented courses, with specific accentuation on lab driven instruction, just as the detailing of a phenomenal logical and designing profile, accomplished through the development of curious and inventive reasoning and the assimilation of essential education standards

Programme run by department:

1. Bachelor of Computer Applications(Programme code: BCA)
2. Post-Graduate Diploma in Computer Applications (Programme code: PGDCA)

Bachelor in Computer Applications (BCA)

Introduction to BCA course

Bachelor of Computer Science Applications (BCA) is an undergraduate degree course in applications. As the IT industry in India is rising rapidly, the demand for computer professionals is increasing day by day. For computer graduates, the growth of the IT industry has created a lot of opportunities.

One of the famous courses amongst students who want to make their career in the field of IT (Information Technology). The course duration is 3 years and is split into 6 semesters. It addresses topics such as databases, networking, data structure, main programming languages such as 'C' and 'Java','C++','PHP'. This course offers a lot of opportunities for students who are interested in the field of computer science & app and want to work as a software, Database developer in the IT industry.

Learning outcome-based approach to curricular planning

Nature & extent of BCA course

- For students wishing to delve into the world of Programming language. Bachelor's in Computer Science Applications (BCA) is a three-year undergraduate course. One of the most popular options for starting a career in Information Technology is the BCA course.
- This degree will help to the students a sound academic base for an advanced career in Computer Science Applications for the BCA aspirant.
- The programming is designed to incorporate social needs and teaching practices into a way that is responsive to the community's needs.
- BCAprogramme is designed for learning in group and individual learning in the classroom.

Objective of BCA course

- The BCA degree prepares students for the IT/Software industry's staffing and human resources requirements. Students entering the college's BCA department come from a number of backgrounds. Orientation classes are conducted to make students feel at ease with the content of the degree program and to build relationships with their classmates in order to allow them to become acquainted with the course.
- This program is useful for learners to understand, extend and implement the program In their academic advancement, subject awareness.
- The primary purpose of this curriculum is to provide a framework for the efficient use/management of information systems and enterprise software for computing concepts and business practices. It lets students evaluate system creation specifications and introduces students to enterprise applications and information systems.
- This course offers students the possibility to specialize in software for legacy applications, system software or mobile applications.

Programme learning outcomes of BCA (POs)

PO 1	**Disciplinary Knowledge**	LOCF based curriculum three years degree B.C.A. course helps students to develop in depth knowledge of the areas like such as networking, web programming, IT, Database Management System, computer Graphics.
PO 2	**Communication Skills**	Communication skills are essential for professional success. It allows people, organizations, and companies to turn a message with a better result with better articulation abilities in Verbal and Non-Verbal Communication
PO 3	**Critical Thinking**	The B.C.A. programme graduates would be able to build the skills and attitudes needed to think critically, which will engage the min a systematic problem-solving technique. Critical thinking skills can aid you greatly throughout the research process, and as an employee in general. Critical thinking refers to your data analysis skills. When you’re in the throes of research, you need to be able to analyze your results and make logical decisions about your findings.

PO 4	**Problem Solving**	Emphasis of this course is to act as an introduction to the thinking world of computers, to help students develop the logic, ability to solve the problems efficiently
PO 5	**Analytical Reasoning**	The programme will help the students to develop analytical ability to solve a problem in logical way to determine a solution
PO 6	**Research Related Skills**	B.C.A. programme encourages students to gain proper skills required in computer science &Applications. Use research findings to advance education theory and practitioners seem likely to be more effective in choosing meaningful problems, forming successful research plans, and in testing hypotheses.
PO 7	**Teamwork & Time Mgt.**	Teamwork based projects challenge the student to apply the technical knowledge they gain in college to solve meaningful and complex problems. Time management in this context includes not just the amount of time required per item, but also the relationship between all items.
PO 8	**Lifelong Learning**	The programme can enhance our understanding, competitiveness and learning new skills of the world around us.
PO 9	**Multicultural Competence**	Relationship building is central to cultural maturity and is focused on the comprehension of each other's values and behaviors and, consequently, on building on the power of each other's awareness, using a diverse range of community members and tools to draw on their understandings
PO 10	**Information/Digital Literacy**	Capacity to use ICT in a variety of learning circumstances, demonstrate the ability to view, analyze and use a range of specific sources of information, And use the necessary data Processing tools.
PO 11	**Environment and Sustainability**	Understand the social, professional, cultural, inequality, diversity and ethical issues involved in the development of software systems
PO 12	**Innovation and Entrepreneurship**	Identify a timely opportunity and using innovation to pursue that opportunity to create value and wealth for the betterment of the individual and society at large

Qualification Descriptors:

The Qualification Descriptors for the BCA pass course program has five learning features such as topic interpreting, comprehension, communication, examination &application of subject information. This includes the students' knowledge of their culture, group & community and nation. The learning outcomes that a student should be able to demonstrate on completion of a BCA programme includes the following:

a. Demonstrate a fundamental and coherent understanding of the field of Computer Science and Applications. This would also include the students ability to Understand the fundamental concepts of Computers, IT Applications in Business and Database concepts.

b. Demonstrate the ability to understanding & evaluating technical data effectively in order to drawactionable conclusions, including technological methods for the company understanding & evaluating technical data effectively in order to draw actionable conclusions, including technological methods for the company.

c. Meet one's own learning needs, drawing on a variety of current work and technical materials in software development.

d. Communicate the academic aspects of the students correctly in a number of different contexts in a computer science field using the key skills, structures and techniques of the subject.

e. Recognize the scope of BCA graduates depending on the skills that learn during course, have a good variety of jobs as a Web Developer, Network Administrator, System Manager, Computer Programmer, Software Developer, Software Tester, etc.

Programme Specific Outcomes (PSOs)

PSO1	Explore technical knowledge in a variety of fields of Computer Applications and learn in an environment that encourages the development of skills for a successful job and further education.
PSO2	Understand, investigate, and develop computer programmes in related areas like as Algorithms, System Software, Multimedia, Web Design, and Data Analytics for the

	efficient design of computer-based systems of varying complexity.
PSO3	An Ability to comprehend software system structure and development processes.
PSO4	Familiarity and practical competence with a broad range of programming language and open-source platforms.
PSO5	Students will be able to understand a variety of challenges as well as current technological developments, allowing them to come up with fresh ideas and solutions to existing problems.

Course Outcomes of BCA(COs)

Sem.	Course Name	College Code	Course Outcome	
Sem.-I	**English Compulsory-A**	**BCA 101**	**CO1**	To familiarize learners with the introductory knowledge of English language.
			CO2	To enable learner's different genres of literature: prose, poetry and stories. After going through some examples of each, students will demonstrate their knowledge by filling out bubble maps.
			CO3	To enable learners to write analytically in a variety of formats, including essay, letters and translation.
			CO4	To write and distinguish different types of paragraph and letters.
			CO5	To use specific format of use of textual words and idioms in sentence.
			CO6	To analysis the skill of translation from Hindi/ Punjabi to English
Sem.-I	**Fundamentals of Mathematical Statistics**	**BCA 102**	**CO1**	Study basics of statistics, collection and organization of data, graphs of grouped frequency distribution, tabulation of data.
			CO2	Students will be able to calculate averages i.e., arithmetic mean, geometric mean and harmonic mean and discuss their applications
			CO3	Calculate positional values, mode, and range of given

				data
			CO4	Estimate mean deviation, standard deviation, variance of given data.
			CO 5	Analyze correlation, techniques for measuring correlation, Karl Pearson's coefficient, rank coefficients.
			CO 6	Analyze the regression model with hypothesis tests and interprets the results.
Sem.-I	**Computer Fundamentals and Computing Software**	**BCA 103**	**CO1**	Define basic computer hardware architecture
			CO2	Discuss software applications
			CO3	Use essential IT support skills including installing, configuring, securing, and troubleshooting operating systems and hardware
			CO4	Understand file management
			CO5	Able to aware of RAM, ROM, COST, SIZE, CACHE'S and virtual memory
			CO6	Accomplish creating basic documents, presentations with their properties
Sem.-I	**Problem Solving Through C**	**BCA 104**	**CO1**	To Define the problem
			CO2	To Extend skill on problem solving by constructing algorithms
			CO3	To Use the fundamentals of C programming in trivial problem solving
			CO4	To Identify solution to a problem and apply control structures and user defined functions for solving the problem.
			CO5	To Demonstrate the use of Strings and string handling functions,structure,union
			CO6	Apply skill of identifying appropriate programming constructs for problem Solving.
Sem.-I	**Lab based on Computer Fundamentals and Computing S/W**	**BCA 105**	**CO1**	Identify categories of programs, system software and applications
			CO2	Describe the usage of computers and why computers are essential components in business and society.
			CO3	Gainhands-on experience of working in Microsoft products such as: MS Word, MS Excel, and MS Power point.
			CO4	Organize and work with files and folders.
			CO5	Utilize the Internet Web resources.
			CO6	Solve common business problems using appropriate

				Information Technology applications and systems.
Sem.-I	**Lab based on Problem Solving Through C**	**BCA 106**	**CO1**	To Acquire logical thinking.
			CO2	To Identify the correct and efficient ways of solving problems
			CO3	To Define the algorithms and analyze their complexity
			CO4	To Write the C code for a given algorithm
			CO5	To Implement Programs with pointers and arrays, structure, and file input output
			CO6	To Apply skill of identifying appropriate programming constructs for problem solving.
Sem.-II	**English Compulsory-B**	**BCA 201**	**CO1**	To familiarize learners with the introductory knowledge of English language.
			CO2	To enable learner's different genres of literature, prose, poetry and stories. After going through some examples of each, students will demonstrate their knowledge by filling out bubble maps.
			CO3	To analysis the skill of translation from Hindi/Punjabi to English.
			CO4	To critically appreciate literary texts.
			CO5	To master the skill of transformation of all types of sentences.
			CO6	To write paragraph.
Sem.-II	**Computer Organization**	**BCA 202**	**CO1**	Describe the fundamental organization and Architecture of computer system.
			CO2	Learn about representation of Information through number systems like Binary, Decimal, Hexadecimal, Octal Conversions.
			CO3	To Get Knowledge about Basic Building Blocks, Micro instructions Microprocessor Assembly Language and System Maintenance.
			CO4	Express their knowledge in various error correction and detection techniques
			CO5	Distinguish the organization of various parts of a system memory hierarchy.
			CO6	To identify the elements of modern instruction sets and their impact on processor design.

Sem.-II	**Fundamentals of Web Programming**	**BCA 203**	**CO1**	Analyze a web page and identify its elements and attributes.
			CO2	Create web pages using HTML and Cascading Styles sheets
			CO3	Build dynamic web pages using JavaScript(client-side programming).
			CO4	Understand basic JavaScript syntax for variable use, and standard language constructs, such as conditionals and loops.
			CO5	Understand the basic of Dreamweaver for creating website, adding links, lists images.
			CO6	To gain knowledge about web hosting: domain names.
Sem.-II	**Object Oriented Programming using C++**	**BCA 204**	**CO1**	To Understand how C++ improves C with Object Oriented features.
			CO2	To Describe the procedural and object-oriented paradigm with concepts of data, objects, classes, functions and streams.
			CO3	To Classify inheritance with the understanding of early and late binding, usage of exception handling, generic programming.
			CO4	To create different data structures and create /manipulate basic data files and developing applications for real world problems.
			CO5	To apply the concepts in object-oriented programming in terms of software reuse and managing complexity to solve real world problems.
			CO6	To be able to program using C++ features such as composition of objects, operator overloading, inheritance, polymorphism etc.
Sem.-II	**Lab based on Fundamentals of Web-Programming**	**BCA 205**	**CO1**	Understand the fundamentals of web.
			CO2	Develop basic Web Pages.
			CO3	Use different styles to the webpage elements
			CO4	Create dynamic, Interactive Web Pages using JavaScript & Dreamweaver.
			CO5	Use JavaScript to validate form entries.
			CO6	Minor Project
Sem.-II	**Lab based on**	**BCA 206**	**CO1**	To learn the fundamental programming concepts and

	Object Oriented Programming Using C++			methodologies which are essential to building good C/C++ programs.
			CO2	To describe and use software tools in the programing process.
			CO3	To code, document, test and implement a well-structured , robust computer program using the C/C++ programming language.
			CO4	To write reusable modules (collection of functions)
			CO5	To practice the fundamental programming methodologies in the lab experience.
			CO6	To apply good programming principles to the design and implementation of C/C++ programs.
Sem.-III	**Punjabi Compulsory -A**	**BCA 301**	**CO1**	Modern Punjabi Poetry: KavAdhayan.
			CO2	Main Objective of Modern Punjabi poetry to increase the knowledge.
			CO3	Introductory Regarding to Punjabi Short-Story
			CO4	To Make interest in Students Read & Write to Punjabi Short Story
			CO5	To Provide knowledge of Punjabi Writer
			CO6	Incorrect to Correct Word-Formation.
Sem.-III	**History & Culture of Punjab -A**	**BCA 302**	**CO1**	Describe extent, town planning and socio - economic life Punjab during Harappan Civilization.
			CO2	Analyze life of people of Punjab in Vedic and Post Vedic Age.
			CO3	Describe Society and Culture of Punjab during Maurya's and Guptas.
			CO4	Explain the origin and features of Bhakti and Sufi movement in Punjab
			CO5	Describe the teachings of Sikh gurus and development of Sikh Religion.
			CO6	Evaluate the changes in society and culture of Punjab and during rule of Maharaja Ranjit Singh.
Sem.-III	**Software Project**	**BCA 303**	**CO1**	To Acquire strong fundamental knowledge in science, mathematics, fundamentals of computer

	Management			science, software engineering and multidisciplinary engineering to begin in practice as a software engineer.
			CO2	To Describe the principles, concepts & practice of System Analyst & design process
			CO3	To Explain the processes of constructing the different types of information Systems.
			CO4	To Design & Develop of Information System in real world business environment.
			CO5	To Apply Object Oriented concept to capture a business requirement.
			CO6	Students can apply the knowledge, techniques, and skills in the development of a software product.
Sem.-III	**Operating System Concepts and Linux**	**BCA 304**	**CO1**	To gain knowledge of common numerical methods and how they are used to obtain approximate solution.
			CO2	To understand various interpolation methods and finite difference concepts.
			CO3	Derive numerical methods for various mathematical operations, such as interpolation, differentiation, integration, the solution of linear and nonlinear equations.
			CO4	To understand various methods of Interpolation & Numerical Integration: Forward, Backward, Divided difference, Simpson's Rule.
			CO5	To study various methods of Differential Equations: Euler's Method, RungaKutta Method.
			CO6	To Implement numerical methods in C-language.
Sem.-III	**Database Management System**	**BCA 305**	**CO1**	To gain knowledge of different concepts of Data Structure.
			CO2	To study the basics concepts of arrays and Stacks.
			CO3	To understand how to represent linked list in memory.
			CO4	To study the representation of Trees and Graphs.
			CO5	To study the basics of Searching.

			CO6	To understand the basics of Sorting.
Sem.-III	**Lab based on Operating System Concepts and Linux**	**BCA 306**	**CO1**	To understand with calculation and interpretation of errors in numerical methods using C language.
			CO2	To study solution of non-linear equations using Iterative methods.
			CO3	To implement simultaneous linear equations using direct & iterative methods.
			CO4	Familiar with numerical Interpolation methods.
			CO5	To understand numerical integration methods.
			CO6	To implement numerical solution of ordinary differential equations.
Sem.-III	**Lab based on Database Management System**	**BCA 307**	**CO1**	To understand how to implement the program in Data Structure.
			CO2	To study the different concepts like array, linked using programming.
			CO3	To understand the different functions of Queue and stack using different loops of C.
			CO4	To understand the concepts of Algorithm.
			CO5	To implement the programs with help of Trees and Graphs.
			CO6	To implement the programs with help of Sorting and Searching.
Sem.-IV	**Punjabi Compulsory -B**	**BCA401**	**CO1**	KavAdhyan of Modern punjabi poetry
			CO2	Main Objective of Modern Punjabi Poetry to increase the knowledge
			CO3	Explanation And Central Ideas of Modern Punjabi Poetry
			CO4	Selected Punjabi Short -Story the Adhayan.
			CO5	To provide knowledge of College Advertisement.
			CO6	Basic knowledge of Punjabi Grammar.
Sem.-IV	**History & Culture of Punjab - B**	**BCA402**	**CO1**	Describe the establishment of colonial rule in Punjab.

			CO2	Analyze the growth of Western Education and Agrarian Policy of Britishers in Punjab.
			CO3	Describe the Social -Religious movement in Punjab.
			CO4	Evaluate the development of Press and literature in Punjab.
			CO5	Analyze the role of people of Punjab in Freedom Struggle.
			CO6	Evaluate the social issues in the post-Independence Punjab.
Sem.-IV	**Software Project Management**	**BCA403**	**CO1**	Learn developing methodology of software project
			CO2	Understand tools and techniques of Software Project Management
			CO3	Assume the roles and responsibilities associated with managerial functions
			CO4	Compare various approaches in management for problem solving
			CO5	Identify the key contributors and their contributions in the development of management thought.
			CO6	Maintain the quality of software project.
Sem.-IV	**Operating System Concepts and Linux**	**BCA404**	**CO1**	To make aware of different types of Operating System and their services.
			CO2	Differentiate between programs, processes, and threads.
			CO3	To learn different process scheduling algorithms and synchronization techniques to achieve better performance of a computer system.
			CO4	Experiment an algorithm to detect and avoid deadlock.
			CO5	To know virtual memory concepts.
			CO6	Compare file naming in Linux and Windows.

Sem.-IV	**Database Management System**	**BCA405**	**CO1**	To Define basic function of DBMS
			CO2	To Understand database models & entity relationship models
			CO3	To Design and implement a database schema for a given problem domain
			CO4	To Apply the concept of normalization to reduce the tables and mapping of E-R diagrams to tables
			CO5	To create algebraic queries by using the topic of relational algebra and calculus
			CO6	To Identify the concurrency problems and learn the techniques to handle it
Sem.-IV	**Lab based on Operating System Concepts and Linux**	**BCA406**	**CO1**	Apply the scheduling algorithms for the given problem
			CO2	Demonstrate the fundamental LINUX commands & system calls.
			CO3	Apply the process synchronous concept using message queue, shared memory, semaphore, and Dekker's algorithm for the given situation.
			CO4	Experiment an algorithm to detect and avoid deadlock
			CO5	Demonstrate the various operations of the file system.
			CO6	Apply the various methods in memory allocation and page replacement algorithms.
Sem.-IV	**Lab based on Database Management System**	**BCA407**	**CO1**	To Describe SQL and summarize its basic operators
			CO2	To Show that SQL, although standard and a high-level language, does have some flaws, and that SQL must evolve to include additional features
			CO3	To Illustrate data definition language (DDL) commands for creating tables and views as well as for modifying and dropping tables
			CO4	To Formulate single table SQL queries

			CO5	To Formulate SQL queries that use functions
			CO6	To Show how to establish referential integrity using SQL
Sem.-V	**Computer Networks**	**BCA501**	**CO1**	To introduce the basic concept of Computer Network
			CO2	To Recognize the different network devices and their functions
			CO3	To Understand and describe the layered protocol model.
			CO4	To Illustrate different link layer terminologies like error detection-correction, Multiple access protocol and Link layer addressing used in network
			CO5	To Design network architecture, assign IP addressing and apply various routing algorithms to find shortest paths for network-layer packet delivery.
			CO6	To Comprehend basic protocols of application layer and how they can be used to assist in network design and implementation
Sem.-V	**Discrete Mathematical Structure**	**BCA502**	**CO1**	Apply mathematical logic to solve problems.
			CO2	Understand Sets, relations, functions, and discrete structures.
			CO3	Apply the concept of transition table on digraph.
			CO4	Understand the recurrence relation, and able to apply in daily life application
			CO5	Knowledge about automation, and able to solve the questions.
			CO6	Identify algorithms with which to solve mathematical problems.
Sem.-V	**Java Programming**	**BCA503**	**CO1**	To understand the basic concept of OOPs and JAVA programming language.
			CO2	To Explain the concept of classes and objects with access control to represent real world problems.
			CO3	To demonstrate the implementation of inheritance by using extend and implement keywords.

			CO4	To describe the concept of interface and abstract classes to define generic classes.
			CO5	To implement the user defined exceptions by exception handling keywords (try, catch ,throw, throws and finally).
			CO6	To knowledge on usage of graphical IDE for design and implementation of real time applications in java.
Sem.-V	**Web Application Development Using PHP**	**BCA504**	**CO1**	Describe the fundamental of Web.
			CO2	Understand basics of the internet.
			CO3	Understand the paradigm for working with form-based data, both from the syntax of HTML forms and access within PHP-based scripts
			CO4	Describe the principles of using MySQL as a backend DBMS with PHP.
			CO5	Analyzing the basic structure of a PHP web application allows you to install and maintain a web server, and compile and run a simple web application.
			CO6	Outline the principles behind using MySQL as a backend DBMS with PHP
Sem.-V	**Lab based on Java Programming**	**BCA505**	**CO1**	To write JAVA applications programs using OOPs principles and program structuring.
			CO2	To developed java program using packages, inheritance, and interfaces.
			CO3	To create multithreaded programs.
			CO4	To implement error handling techniques using exception handling and develop program using class and inputs from keyboard.
			CO5	To develop graphical User interface using AWT.
			CO6	To Demonstrate event handling mechanism.
Sem.-V	**Lab based on Web Application**	**BCA506**	**CO1**	An overview of creating static web pages using HTML.

	Development using PHP		**CO2**	Implement the concepts of built-in functions in programming, control structures in programming.
			CO3	Read, write, and execute PHP programs.
			CO4	Format and validate web pages.
			CO5	Demonstrate the implementation of PHP into current HTML based websites.
			CO6	Develop PHP programs using databases.
Sem.-VI	**E-Commerce**	**BCA601**	**CO1**	Have knowledge of e-commerce, its components, structure of e-banking, rules, and regulations on e-commerce.
			CO2	Acquire a good knowledge of e-commerce, both the technical and business aspects
			CO3	Understand the principles and practices of e-commerce and its related technologies;
			CO4	Discuss the trends in e-Commerce and the use of the Internet
			CO5	Explain the economic consequences of e-Commerce
			CO6	Understand the processes of developing and implementing e-Commerce applications.
Sem.-VI	**Application Development using VB.NET**	**BCA602**	**CO1**	To Get knowledge of programming terminology and how applied using Visual Basic (e.g., variables, selection statements, repetition statements, etc.)
			CO2	To Familiar Visual Basic's Integrated Development Environment (IDE)
			CO3	To Write and apply control structures for determining different operations
			CO4	To Create one- and two-dimensional arrays for sorting, calculating, and displaying of data
			CO5	To Write Visual Basic programs using object-oriented programming techniques including classes, objects, methods, instance variables, composition, and inheritance, and polymorphism
			CO6	To Develop Windows applications using forms, controls, and events

Sem.-VI	**Computer Graphics and Multimedia Applications**	**BCA603**	**CO1**	Define the Computer Graphics and its uses.
			CO2	Explain different types of Monitors.
			CO3	Demonstrate the Graphics images on X-Y Coordinate.
			CO4	Analyze the different commands of Auto-Cad
			CO5	Understand about Multimedia and its uses.
			CO6	Explain different functions of Multimedia like Images, Audio, Video and Photoshop
Sem.-VI	**Lab based on Computer Graphics and Multimedia Applications**	**BCA604**	**CO1**	It makes the student confident in designing a Project
			CO2	Students are trained to meet the requirements of the industry.
			CO3	Improvement in analytical and reasoning ability
			CO4	Exposure to a variety of research projects and activities to enrich their academic experience
			CO5	Apply standard coding practices. Develop skills in presentation and discussion of research topics in a public forum.
			CO6	Be aware of the ethical, social, and security issues of information systems.
Sem.-VI	**Major Project and Seminar**	**BCA605**	**CO1**	Implement various shapes in C Programming.
			CO2	Draw the line, rectangle, and square in it.
			CO3	Understand about computer graphics concepts with help of C Programming.
			CO4	Draw the Hut and other shapes in it.
			CO5	Implement various shapes with help of X-Y coordinate.
			CO6	Implement the Ellipse, Circle with the help of C Programming.

Mapping of Course Outcomes(COs) with Programme Outcomes(POs)

Programme Outcome													
College code	**Course Out-comes**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
Semester I													
BCA101	**CO1**	1	3	1	1	2	1	2	1	1	1	1	1
	CO2	2	3	1	1	1	1	1	2	2	X	X	1
	CO3	1	3	X	1	1	X	1	2	1	X	X	1
	CO4	1	3	1	1	X	1	2	1	1	1	1	X
	CO5	1	3	1	X	1	1	1	1	X	X	1	1
	CO6	1	3	1	1	1	1	X	1	1	1	1	1
BCA102	**CO1**	X	X	2	1	2	X	X	1	X	X	X	X
	CO2	X	X	2	1	1	X	X	1	X	X	X	X
	CO3	X	X	2	1	2	X	X	X	X	X	X	X
	CO4	X	X	2	1	2	X	X	X	X	X	X	X
	CO5	X	X	2	1	2	X	X	1	X	X	X	X
	CO6	X	X	2	1	2	X	X	1	X	X	X	X
BCA103	**CO1**	X	2	X	X	X	X	X	X	X	X	X	X
	CO2	X	3	1	X	X	X	X	X	X	X	X	X
	CO3	X	2	X	X	X	X	X	X	X	X	X	X
	CO4	X	3	X	X	X	X	X	X	X	X	X	X
	CO5	X	X	X	X	X	X	X	X	X	X	3	X
	CO6	X	X	X	X	X	X	X	X	X	X	X	3
BCA104	**CO1**	X	1	X	X	2	X	X	X	X	X	1	X
	CO2	X	X	1	X	X	1	X	X	X	X	X	1
	CO3	X	X	X	1	X	X	X	1	1	X	2	X
	CO4	2	X	X	X	X	X	1	X	X	X	X	1
	CO5	X	X	X	X	X	2	X	X	X	2	X	X
	CO6	X	X	X	X	1	X	X	2	X	X	X	1

BCA105	**CO1**	3	2	X	X	X	X	X	X	X	X	X	X
	CO2	X	3	1	X	X	X	2	X	X	X	X	X
	CO3	X	1	3	X	X	X	X	X	X	X	X	X
	CO4	X	2	X	X	X	X	X	X	X	X	X	X
	CO5	X	X	X	X	X	X	X	X	X	X	3	X
	CO6	X	X	X	X	X	X	3	X	X	X	X	3
BCA106	**CO1**	2	X	X	1	X	1	X	X	X	X	1	X
	CO2	X	X	X	X	X	X	X	X	X	X	X	X
	CO3	1	1	X	X	3	X	1	X	1	X	X	1
	CO4	X	X	X	1	X	X	X	X	X	X	X	X
	CO5	1	1	X	X	X	X	X	X	X	X	X	1
	CO6	X	X	X	1	X	X	1	X	X	X	X	X
Semester II													
BCA201	**CO1**	1	3	1	1	2	1	2	1	1	1	1	1
	CO2	2	3	1	1	1	1	1	2	2	X	X	1
	CO3	1	3	X	1	1	X	1	2	1	X	X	1
	CO4	1	3	1	1	X	1	2	1	1	1	1	X
	CO5	1	3	1	X	1	1	1	1	X	X	1	1
	CO6	1	3	1	1	1	1	X	1	1	1	1	1
BCA202	**CO1**	2	X	X	1	X	1	X	X	X	X	1	X
	CO2	X	X	X	X	X	X	X	X	X	X	X	X
	CO3	1	1	X	X	3	X	1	X	1	X	X	1
	CO4	X	X	X	1	X	X	X	X	X	X	X	X
	CO5	1	1	X	X	X	X	X	X	X	X	X	1
	CO6	X	X	X	1	X	X	1	X	X	X	X	X
BCA203	**CO1**	1	X	X	X	3	X	X	X	X	X	X	X
	CO2	X	1	X	X	X	X	X	X	X	X	X	X
	CO3	X	X	2	X	X	X	X	X	X	X	2	X
	CO4	X	X	X	X	X	2	X	X	X	X	X	2
	CO5	X	X	X	X	1	X	X	X	X	2	X	X

	CO6	X	X	X	X	X	X	2	X	X	X	X	1
BCA204	**CO1**	1	1	1	X	X	1	X	2	X	X	X	X
	CO2	X	1	2	1	1	1	X	X	X	1	1	1
	CO3	1	X	1	1	2	1	X	1	1	X	X	2
	CO4	X	X	1	1	X	1	1	X	X	X	X	1
	CO5	X	1	2	2	1	1	1	1	X	X	2	1
	CO6	2	1	X	2	1	2	1	1	X	1	1	3
BCA205	**CO1**	X	X	2	X	1	X	X	X	X	X	X	X
	CO2	X	X	X	X	X	X	X	X	X	X	X	X
	CO3	X	1	X	X	X	1	X	X	X	X	X	1
	CO4	X	X	X	1	X	X	X	X	1	X	X	X
	CO5	X	X	X	X	X	X	X	X	X	X	X	X
	CO6	X	X	X	X	1	X	X	X	X	2	X	X
BCA206	**CO1**	2	1	X	X	X	1	X	2	X	X	X	X
	CO2	X	1	2	1	1	1	X	X	X	1	1	1
	CO3	1	X	1	1	2	1	X	1	1	X	X	2
	CO4	X	X	1	1	X	X	1	X	X	X	X	1
	CO5	X	1	2	2	1	1	1	1	X	X	2	1
	CO6	2	1	X	2	1	2	1	1	X	1	1	3
SEMESTER-III													
BCA301	**CO1**	X	X	X	X	X	X	X	X	X	X	X	X
	CO2	X	X	X	1	X	X	1	X	X	X	X	X
	CO3	X	2	X	X	X	X	X	X	X	X	2	X
	CO4	X	X	X	2	X	X	X	X	X	1	X	X
	CO5	X	X	X	X	X	X	X	X	X	X	X	X
	CO6	X	X	X	X	X	X	X	X	X	X	X	X
BCA302	**CO1**	X	2	1	X	1	X	X	2	3	X	X	X
	CO2	X	2	1	X	1	X	X	2	3	X	X	X
	CO3	X	2	1	X	1	X	X	2	3	X	X	X

	CO4	X	2	1	X	1	X	X	2	3	X	X	X
	CO5	X	2	1	X	1	X	X	2	3	X	X	X
	CO6	X	2	1	X	1	X	X	2	3	X	X	X
BCA303	**CO1**	3	1	X	X	X	X	X	X	X	X	X	X
	CO2	2	X	X	X	2	X	2	X	X	X	X	1
	CO3	2	2	2	2	X	X	X	X	X	X	X	X
	CO4	2	1	X	X	X	X	X	X	X	X	X	X
	CO5	2	X	X	X	X	X	X	X	X	X	2	X
	CO6	3	X	X	X	X	X	X	X	X	X	X	3
BCA304	**CO1**	X	2	1	X	1	X	X	2	3	X	X	X
	CO2	X	2	1	X	1	X	X	2	3	X	X	X
	CO3	X	2	1	X	1	X	X	2	3	X	X	X
	CO4	X	2	1	X	1	X	X	2	3	X	X	X
	CO5	X	2	1	X	1	X	X	2	3	X	X	X
	CO6	X	2	1	X	1	X	X	2	3	X	X	X
BCA305	**CO1**	X	X	X	X	X	X	X	X	X	X	X	X
	CO2	X	X	1	X	1	X	X	1	X	1	X	X
	CO3	X	X	X	X	X	X	X	X	X	X	X	X
	CO4	X	X	1	X	X	1	1	X	X	X	X	X
	CO5	2	X	1	1	X	X	1	X	X	1	X	X
	CO6	1	X	X	X	X	1	X	X	X	1	1	X
BCA306	**CO1**	2	X	X	X	X	X	X	1	X	X	X	1
	CO2	X	X	X	X	X	X	X	X	X	X	X	X
	CO3	2	X	X	X	X	X	X	X	X	X	X	X
	CO4	X	X	X	X	X	X	X	X	X	X	X	X
	CO5	X	X	X	X	X	X	X	X	X	X	X	X
	CO6	X	X	X	X	X	X	X	X	X	X	X	2
BCA307	**CO1**	X	X	X	X	X	X	X	X	X	X	X	X
	CO2	X	X	1	X	1	X	X	1	X	1	X	X

	CO3	X	X	X	X	X	X	X	X	X	X	X	X
	CO4	X	X	1	X	X	1	1	X	X	X	X	X
	CO5	2	X	1	1	X	X	1	X	X	1	X	X
	CO6	1	X	X	X	X	1	X	X	X	1	1	X
SEMESTER-IV													
BCA401	**CO1**	X	X	X	X	X	X	X	X	X	X	X	X
	CO2	X	X	X	1	X	X	1	X	X	X	X	X
	CO3	X	2	X	X	X	X	X	X	X	X	2	X
	CO4	X	X	X	2	X	X	X	X	X	1	X	X
	CO5	X	X	X	X	X	X	X	X	X	X	X	X
	CO6	X	X	X	X	X	X	X	X	X	X	X	X
BCA402	**CO1**	X	2	1	X	1	X	X	2	3	X	X	X
	CO2	X	2	1	X	1	X	X	2	3	X	X	X
	CO3	X	2	1	X	1	X	X	2	3	X	X	X
	CO4	X	2	1	X	1	X	X	2	3	X	X	X
	CO5	X	2	1	X	1	X	X	2	3	X	X	X
	CO6	X	2	1	X	1	X	X	2	3	X	X	X
BCA403	**CO1**	X	X	2	X	X	X	X	1	X	X	X	X
	CO2	X	X	2	2	2	X	X	X	X	X	X	X
	CO3	X	X	X	X	1	X	X	2	X	X	X	X
	CO4	X	X	2	X	2	X	X	X	X	X	X	X
	CO5	X	X	2	X	2	1	X	X	X	X	X	X
	CO6	3	X	X	X	X	X	X	X	X	2	X	2
BCA404	**CO1**	1	1	X	X	X	X	X	X	X	X	X	X
	CO2	2	X	X	X	2	X	2	X	X	1	X	1
	CO3	2	2	2	2	X	X	X	X	X	X	X	X
	CO4	3	1	X	X	X	X	2	1	X	X	X	1
	CO5	2	X	X	X	X	X	X	X	X	X	2	X
	CO6	2	X	X	X	X	1	X	X	X	X	X	3

BCA405	**CO1**	X	X	2	X	X	X	X	1	X	X	X	X
	CO2	X	X	2	2	2	X	X	X	X	X	X	X
	CO3	X	X	X	X	1	X	X	2	X	X	X	X
	CO4	X	X	2	X	2	X	X	X	X	X	X	X
	CO5	X	X	2	X	2	1	X	X	X	X	X	X
	CO6	3	X	X	X	X	X	X	X	X	2	X	2
BCA406	**CO1**	X	X	2	X	X	X	X	1	X	X	X	X
	CO2	X	X	2	2	2	X	X	X	X	X	X	X
	CO3	X	X	X	X	1	X	X	2	X	X	X	X
	CO4	X	X	2	X	2	X	X	X	X	X	X	X
	CO5	X	X	2	X	2	1	X	X	X	X	X	X
	CO6	3	X	X	X	X	X	X	X	X	2	X	2
BCA407	**CO1**	1	1	X	X	X	X	X	X	X	X	X	X
	CO2	2	X	X	X	2	X	2	X	X	1	X	1
	CO3	2	2	2	2	X	X	X	X	X	X	X	X
	CO4	3	1	X	X	X	X	2	1	X	X	X	1
	CO5	2	X	X	X	X	X	X	X	X	X	2	X
	CO6	2	X	X	X	X	1	X	X	X	X	X	3
SEMESTER-V													
BCA501	**CO1**	1	1	X	X	X	X	X	1	X	X	X	X
	CO2	2	X	X	X	2	X	2	X	X	1	X	1
	CO3	2	X	1	2	X	X	X	X	1	X	X	X
	CO4	1	1	X	X	1	X	2	1	X	X	X	1
	CO5	2	X	X	1	X	X	X	X	X	X	X	X
	CO6	2	X	X	X	X	1	X	X	X	X	X	3
BCA502	**CO1**	1	1	3	3	2	2	1	2	1	1	2	1
	CO2	1	X	2	3	2	3	2	2	3	3	1	X
	CO3	3	2	3	2	3	2	X	2	3	2	1	2
	CO4	2	X	2	2	2	1	X	1	X	1	1	X
	CO5	3	2	3	3	3	3	3	3	3	3	2	2

	CO6	3	X	1	1	2	1	1	X	1	2	1	1
BCA503	**CO1**	1	1	X	X	X	X	X	1	X	X	X	X
	CO2	2	X	X	X	2	X	2	X	X	1	X	1
	CO3	2	X	1	2	X	X	X	X	1	X	X	X
	CO4	1	1	X	X	1	X	2	1	X	X	X	1
	CO5	2	X	X	1	X	X	X	X	X	X	X	X
	CO6	2	X	X	X	X	1	X	X	X	X	X	3
BCA504	**CO1**	1	1	X	X	X	X	X	1	X	X	X	X
	CO2	2	X	X	X	2	X	2	X	X	1	X	1
	CO3	2	X	1	2	X	X	X	X	1	X	X	X
	CO4	1	1	X	X	1	X	2	1	X	X	X	1
	CO5	2	X	X	1	X	X	X	X	X	X	X	X
	CO6	2	X	X	X	X	1	X	X	X	X	X	3
BCA505	**CO1**	1	1	X	X	X	X	X	1	X	X	X	X
	CO2	2	X	X	X	2	X	2	X	X	1	X	1
	CO3	2	X	1	2	X	X	X	X	1	X	X	X
	CO4	1	1	X	X	1	X	2	1	X	X	X	1
	CO5	2	X	X	1	X	X	X	X	X	X	X	X
	CO6	2	X	X	X	X	1	X	X	X	X	X	3
BCA 506	**CO1**	1	1	X	X	X	X	X	1	X	X	X	X
	CO2	2	X	X	X	2	X	2	X	X	1	X	1
	CO3	2	X	1	2	X	X	X	X	1	X	X	X
	CO4	1	1	X	X	1	X	2	1	X	X	X	1
	CO5	2	X	X	1	X	X	X	X	X	X	X	X
	CO6	2	X	X	X	X	1	X	X	X	X	X	3
SEMESTER-VI													
BCA601	**CO1**	3	1	X	X	X	X	X	X	X	X	X	X
	CO2	2	X	X	X	2	X	2	X	X	X	X	1
	CO3	2	2	2	2	X	X	X	X	X	X	X	X
	CO4	2	1	X	X	X	X	X	X	X	X	X	X

	CO5	2	X	X	X	X	X	X	X	X	X	2	X
	CO6	3	X	X	X	X	X	X	X	X	X	X	3
BCA602	**CO1**	1	1	X	X	X	X	X	X	X	X	X	X
	CO2	2	X	X	X	2	X	2	X	X	X	X	X
	CO3	X	X	X	1	X	X	X	X	X	X	X	1
	CO4	1	1	X	X	X	X	X	1	X	X	X	X
	CO5	1	X	X	X	X	X	X	X	X	X	2	X
	CO6	1	X	X	X	X	X	X	X	X	X	X	2
BCA603	**CO1**	3	X	X	1	1	X	X	X	X	1	X	X
	CO2	2	X	X	X	X	1	X	X	1	2	X	X
	CO3	3	X	X	2	1	1	1	X	X	X	X	X
	CO4	1	1	X	X	X	X	X	X	X	2	X	X
	CO5	2	X	X	X	X	X	X	2	X	2	X	X
	CO6	2	X	X	X	X	X	X	2	X	2	X	X
BCA604	**CO1**	3	X	X	1	1	X	X	X	X	1	1	X
	CO2	2	X	X	X	1	1	X	X	1	2	X	X
	CO3	3	X	X	2	1	1	1	X	X	X	X	X
	CO4	1	1	X	X	X	X	X	X	X	2	X	X
	CO5	2	X	X	X	X	1	X	2	X	2	X	X
	CO6	2	X	X	X	X	X	X	2	X	2	X	X
BCA605	**CO1**	2	3	3	X	3	3	2	2	2	2	3	3
	CO2	2	3	3	X	2	X	2	X	X	X	X	1
	CO3	2	2	X	2	X	X	X	X	X	X	X	X
	CO4	3	3	X	X	X	X	X	1	X	X	X	X
	CO5	3	3	3	X	X	X	X	X	X	X	2	X
	CO6	2	3	3	X	X	X	X	X	X	X	X	3

Mapping of Course Outcomes with Programme Specific Outcomes(PSOs)

College Code	Course Outcome	Program Specific Outcome (PSO)				
		PSO 1	**PSO2**	**PSO3**	**PSO4**	**PSO5**

Semester I						
BCA 101	**CO1**	X	X	X	X	2
	CO2	X	X	X	X	2
	CO3	X	X	X	X	2
	CO4	X	X	X	X	2
	CO5	X	X	X	X	2
	CO6	X	X	X	X	2
BCA 102	**CO1**	1	X	X	X	X
	CO2	1	X	X	X	X
	CO3	1	X	X	X	X
	CO4	1	X	X	X	X
	CO5	1	X	X	X	X
	CO6	1	X	X	X	X
BCA 103	**CO1**	X	3	2	X	X
	CO2	1	3	3	X	X
	CO3	2	3	1	X	X
	CO4	2	3	1	X	X
	CO5	X	3	1	2	2
	CO6	1	3	1	3	2
BCA 104	**CO1**	1	X	1	X	X
	CO2	X	1	X	1	1
	CO3	3	X	3	X	X
	CO4	X	X	X	X	1
	CO5	X	2	X	1	X
	CO6	1	X	X	X	1
BCA 105	**CO1**	3	3	X	X	X
	CO2	2	3	X	X	X
	CO3	2	3	X	X	X
	CO4	2	3	X	X	X
	CO5	2	3	X	2	X
	CO6	2	3	3	2	X
BCA106	**CO1**	X	1	X	1	X
	CO2	1	X	2	X	X
	CO3	X	X	1	X	1
	CO4	X	1	X	1	X
	CO5	1	X	X	X	X

	CO6	X	X	1	1	1
Semester II						
BCA201	**CO1**	X	X	X	X	2
	CO2	X	X	X	X	2
	CO3	X	X	X	X	2
	CO4	X	X	X	X	2
	CO5	X	X	X	X	2
	CO6	X	X	X	X	2
BCA202	**CO1**	X	1	X	1	X
	CO2	1	X	2	X	X
	CO3	X	X	1	X	1
	CO4	X	1	X	1	X
	CO5	1	X	X	X	X
	CO6	X	X	1	1	1
BCA203	**CO1**	1	2	X	X	X
	CO2	1	2	X	2	X
	CO3	1	1	X	2	X
	CO4	1	1	X	X	X
	CO5	1	1	X	2	X
	CO6	3	1	X	X	X
BCA204	**CO1**	1	2	X	X	1
	CO2	X	1	X	X	1
	CO3	3	2	1	1	1
	CO4	X	1	1	X	2
	CO5	2	1	1	1	X
	CO6	1	1	1	1	2
BCA205	**CO1**	X	X	2	X	1
	CO2	2	X	X	X	X
	CO3	X	1	X	X	X
	CO4	X	X	X	1	X
	CO5	X	X	X	X	X
	CO6	X	X	1	X	1
BCA206	**CO1**	2	1	1	X	1
	CO2	1	2	X	X	1
	CO3	3	2	1	1	1
	CO4	X	1	1	X	2

	CO5	2	1	1	1	X
	CO6	X	1	1	2	3
Semester III						
BCA301	**CO1**	X	X	X	X	X
	CO2	1	X	X	X	X
	CO3	X	X	X	X	X
	CO4	1	X	1	X	X
	CO5	X	X	X	1	X
	CO6	X	X	X	X	X
BCA302	**CO1**	X	X	X	X	X
	CO2	X	X	X	X	X
	CO3	X	X	X	X	X
	CO4	X	X	X	X	X
	CO5	X	X	X	X	X
	CO6	X	X	X	X	X
BCA303	**CO1**	1	1	X	2	X
	CO2	X	1	X	X	1
	CO3	X	1	X	X	X
	CO4	X	1	X	X	X
	CO5	X	1	X	X	X
	CO6	X	3	1	2	X
BCA304	**CO1**	2	3	2	1	1
	CO2	1	1	X	1	1
	CO3	1	2	1	1	1
	CO4	X	X	1	1	1
	CO5	1	2	X	X	X
	CO6	X	1	X	X	X
BCA305	**CO1**	2	1	X	X	X
	CO2	X	X	X	X	X
	CO3	X	X	1	X	X
	CO4	X	X	X	X	X
	CO5	X	X	X	X	X
	CO6	X	X	X	X	X
BCA306	**CO1**	2	3	2	1	1

	CO2	1	1	X	1	1
	CO3	1	2	1	1	1
	CO4	X	X	1	1	1
	CO5	1	2	X	X	X
	CO6	X	1	X	X	X
Semester IV						
BCA401	**CO1**	X	X	X	X	X
	CO2	1	X	X	X	X
	CO3	X	X	X	X	X
	CO4	1	X	1	X	X
	CO5	X	X	X	1	X
	CO6	X	X	X	X	X
BCA402	**CO1**	X	X	X	X	X
	CO2	X	X	X	X	X
	CO3	X	X	X	X	X
	CO4	X	X	X	X	X
	CO5	X	X	X	X	X
	CO6	X	X	X	X	X
BCA403	**CO1**	1	1	X	2	X
	CO2	X	1	X	X	1
	CO3	X	1	X	X	X
	CO4	X	1	X	X	X
	CO5	X	1	X	X	X
	CO6	X	3	1	2	X
BCA404	**CO1**	2	X	X	2	X
	CO2	1	3	X	2	2
	CO3	3	2	X	X	X
	CO4	1	3	X	X	1
	CO5	3	3	2	2	X
	CO6	2	3	1	2	2
BCA405	**CO1**	1	1	X	2	X
	CO2	X	1	X	X	1
	CO3	X	1	X	X	X
	CO4	X	1	X	X	X

	CO5	X	1	X	X	X
	CO6	X	3	1	2	X
BCA406	**CO1**	1	X	X	2	X
	CO2	1	2	X	2	2
	CO3	2	2	1	X	X
	CO4	X	X	X	X	1
	CO5	3	2	X	1	X
	CO6	X	1	X	2	2
BCA407	**CO1**	2	X	X	2	X
	CO2	1	3	X	2	2
	CO3	3	2	X	X	X
	CO4	1	3	X	X	1
	CO5	3	3	2	2	X
	CO6	2	3	1	2	2
Semester IV						
BCA501	**CO1**	1	X	X	2	X
	CO2	1	2	X	2	2
	CO3	2	2	1	X	X
	CO4	X	X	X	X	1
	CO5	3	2	X	1	X
	CO6	X	1	X	2	2
BCA502	**CO1**	3	3	2	1	2
	CO2	3	2	2	2	3
	CO3	2	2	1	1	1
	CO4	1	X	1	X	1
	CO5	2	3	1	2	2
	CO6	1	1	1	1	1
BCA503	**CO1**	1	X	X	2	X
	CO2	1	2	X	2	2
	CO3	2	2	1	X	X
	CO4	X	X	X	X	1
	CO5	3	2	X	1	X
	CO6	X	1	X	2	2
BCA504	**CO1**	1	X	X	2	X
	CO2	1	2	X	2	2
	CO3	2	2	1	X	X

	CO4	X	X	X	X	1
	CO5	3	2	X	1	X
	CO6	X	1	X	2	2
BCA505	**CO1**	1	X	X	2	X
	CO2	1	2	X	2	2
	CO3	2	2	1	X	X
	CO4	X	X	X	X	1
	CO5	3	2	X	1	X
	CO6	X	1	X	2	2
BCA506	**CO1**	1	X	X	2	X
	CO2	1	2	X	2	2
	CO3	2	2	1	X	X
	CO4	X	X	X	X	1
	CO5	3	2	X	1	X
	CO6	X	1	X	2	2
Semester VI						
BCA601	**CO1**	3	2	X	2	X
	CO2	3	3	X	1	2
	CO3	2	2	X	X	X
	CO4	2	3	1	X	X
	CO5	2	3	2	2	X
	CO6	2	3	3	2	2
BCA602	**CO1**	X	X	X	2	X
	CO2	X	1	X	1	2
	CO3	1	1	X	X	X
	CO4	X	X	1	X	X
	CO5	X	X	X	1	X
	CO6	X	X	1	X	2
BCA603	**CO1**	3	3	2	X	X
	CO2	X	X	X	X	X
	CO3	1	2	X	X	X
	CO4	X	X	X	X	1
	CO5	X	3	1	X	X
	CO6	1	3	1	2	1
BCA604	**CO1**	3	3	2	X	X
	CO2	X	X	X	X	X

	CO3	1	2	X	X	X
	CO4	X	X	X	X	1
	CO5	X	3	1	X	X
	CO6	1	3	1	2	1
BCA605	**CO1**	X	X	X	2	X
	CO2	X	3	2	X	2
	CO3	1	2	X	X	X
	CO4	1	3	X	X	2
	CO5	2	3	X	2	X
	CO6	2	3	3	2	1

Post Graduate Diploma in Computer Application (PGDCA)

Preamble

Postgraduate Diploma in Computer Applications (PGDCA) at B.A.M KhalsaCollege ,Garhshankar is intended primarily to concentrate in the stream of students who want to have a wide range of IT skills and pursue their career in computers.

Introduction to PGDCA course

The PG Diploma is a Post Graduate Diploma course. The duration of the course is 1 year, which includes 2 semesters. Any graduate who appears in any discipline (Science, Commerce, Arts& Engineering) for the final year degree examination is qualified to apply. In-depth and detailed knowledge of computer applications is demonstrated in the PGDCA course.

Learning outcome based approach to curricular planning

Nature & extent of PGDCA Course

Graduates from different disciplines are the essence of the potential target community of learners Such asArts,Science,Commerce,Computer Science and other graduate students. It also includes students who want to learn, Entrepreneurs, such as web designers, developers, etc.

Objective of PGDCA Course

- Training students in the principles of basic computer technology and applications of informationtechnology.
- Growing the learners' knowledge base through various activities that will be in addition to theoretical studies.
- To give students hands-on experience while designing IT applications in real world , such as part of the study
- To introduce students to Open Source Technology so that they are acquainted with it and can pursue relevant trade and business opportunities
- Improving their career prospects in the coding and maintenance of software in the public sector.

Programmeoutcomes of PGDCA (POs)

Postgraduate Attributes:

PO1	**Moral and ethical values**	Ethical decisions that one makes revolves around the individuals. Personal code, code of conduct in the context of a work place and how exposed one is especially on the code of ethics
PO2	**Analytical reasoning**	An analytical reasoning test is a way to assess the understanding skills of a candidate and their ability to recognize key data, apply logic and find patterns
PO3	**Critical thinking**	The P.G.D.C.A. programme encourages students to “thinking about thinking”—identifying, analyzing, and then fixing flaws in the way we think. Making logical and reasoned judgments that are well thought out is at the core of critical thinking
PO4	**Research related Skills**	The P.G.D.C.A. programme encourages students to find an answer to a question or a solution to a problem is research competence.Research skills include the ability to collect data about your subject, evaluate the data, and analyze and interpret the data in a way that takes us to a

		solution.
PO5	**Communication Skills**	Enhance the ability of writing skills of various types of letters, report and notes Communication skills useful to comprehend the distinctions in how to convey through eye to eye associations, written and computerized correspondences like email and web-based media.
PO6	**Problem Solving**	PC Based Problem Solving Process is a work expected to offer a deliberate treatment to the hypothesis and practice of planning, executing, and utilizing programming apparatuses during the critical thinking measure. The students are able understand how a human solves a problem, then understand how to translate this "algorithm" into something a computer can do, and finally how to "write" the specific syntax (required by a computer) to get the job done.
PO7	**Reflective Thinking**	This Programme teach the students higher-order thinking skills and therefore requires deep thinking and the ability to rationalize every decision made.
PO8	**Team work and Time Management**	The importance of teamwork and time management as a learning outcome for students in computer science and applications is by nature a collaborative process and most production system are designed by teams working over long period of time. Those who employ the post – graduates from these program look for those skills.
PO9	**Enhanced Knowledge**	The PG Diploma is aimed at graduates with a computing background and provides a detailed coverage of the key concepts and challenges in

		data and resource protection and computer software security.
PO10	**Learning NewTechnology**	To train graduate students in basic computer technology concepts and information technology applications.
PO11	**Learn Trouble Shooting**	Perform various office activities on computer system such as installation of software, handling of printer and scanner, internet connection along with troubleshooting of system.
PO12	**Developing Minor Project**	Develop minor project application based on C/C++ and HTML based languages.

Qualification Descriptors:

The key Qualification Descriptors for PGDCA pass course shall be clarity of rational thinking & logical method as well as the structure. Each computer application student should have the ability to:

- The academic environment and students have gained tremendous attention from the Post Graduate Diploma Program in the fields of Computing and Information Technology. New nomenclatures and emerging fields have also been developed in recent years by the growth of the computing and information technology sectors.
- Communicate the program at the master's level that address only the basics. These services are specifically aimed at providing applicants with technical education and preparation for better job opportunities and business readiness.
- To promote a great sense of ethical & moral responsibility among learners towards the general interest of society & the country, apply subject-specific skills in IT.
- The course is intended to acquire advanced technical understanding those with a

bachelor's and master's degree and to improve their interdisciplinary/translation .

- Demonstrate a fundamental duty of individuals to create and implement new software and databases and to maintain and upgrade existing software and databases to enhance performance.

- This qualification has a broad range of scope. Employability ranges from self-employment or contractual employment to education. The applicants will be working in the sectors after successful completion of the qualification.

Programme Specific Outcomes (PSOs)

PSO1	Develop the skills of designing and developing applications in information technology.
PSO2	To train the graduates students in field of information technology.
PSO3	Design and develop applications to analyze the problem.
PSO4	Students will able to learn new applications in the field of computer Science.
PSO5	Students will able to learn different programming languages in computer.

COURSE OUTCOMES(COs) OF PGDCA

Semester	**Course Name**	**College/ Course Code**	**Course Outcome**	
Sem.-I	**Computer Fundamentals**	**PGDCA101**	**CO1**	Basic Knowledge of input/output devices & various types of memories.
			CO2	Understand binary, hexadecimal and octal systems and their arithmetic.
			CO3	Become proficient in using the features of MS Office.
			CO4	Determine what operating system you have, Create files and folders, organize files and folders, delete and restore files and folders using the Recycle Bin.
			CO5	Understand the basic set of commands and editors in Linux operating system

			CO6	Each student must be able to configure the basic computer management settings of windows components. Each student must be familiar with MS-DOS command prompt and basic DOS commands.
	Computer Programming Using C	**PGDCA102**	**CO1**	Learn how to build by the algorithms for problems
			CO2	Learn how to apply logic for problems.
			CO3	Enhance their programming skills.
			CO4	Learn about Loops, Conditional statements, Array, Pointers, File Handling, Structure, Unions etc.
			CO5	Learn how to create pictorial representations of the program
			CO6	Understand the dynamics of memory by the use of pointers and Structures
	Database Management System	**PGDCA103**	**CO1**	Understand, appreciate and effectively explain the underlying concepts of database Technologies
			CO2	Design and implement a database schema for a given problem-domain
			CO3	Normalize a database and Populate and query a database using SQL DML/DDL commands
			CO4	Declare and enforce integrity constraints on a database
			CO5	Concept of transaction and concurrency
			CO6	Acquire a good understanding of database systems concepts and to be in a position,to use and design databases for different applications
	Data Communications and Networks	**PGDCA104**	**CO1**	Illustrate reference models with layers, protocols and interfaces. & Summarize functionalities of different Layers.
			CO2	Combine and distinguish functionalities of different Layers
			CO3	Describe and Analysis of basic protocols of computer networks, and how they can be used to assist in network design and implementation

			CO4	Identify and describe development history of routing protocols
			CO5	Describe Sub-netting and Addressing
			CO6	Understand design issues in network security and to understand security threats, security services and mechanisms to counter.
Practicals	**Lab (Based on PGD-1101 &1102**	**PGDCA105**	**CO1**	To learn problem solving techniques.
			CO2	To understand how to write the C code for a given algorithm. Compile and debug programs in Language.
			CO3	Create programs involving decision structures, loops, strings and functions.
			CO4	Demonstrate file handling (text files).
			CO5	Students familiar to work with MS-DOS command prompt and basic DOS commands. Use of various set of commands and editors in Linux operating systems
			CO6	Use systems development, word-processing, spreadsheet, and presentation software to solve basic information systems problems. Create, edit, save, retrieve, working with tables, charts, bullets and print MS Word, Excel, Power-point documents.
	Lab(Based on PGD-1103)	**PGDCA106**	**CO1**	Define the database and its design.
			CO2	Compute the various SQL queries.
			CO3	Compute DDL,DML and TCL queries.
			CO4	Analyze the different constraints like primary key,foreign key,check,not null,null and unique key.
			CO5	Implement queries of Joins,Arithmetic and logical operators.
			CO6	Implement conditions in queries like Where Clause,Having Clause and OrderBy Clause.
Sem.-II	**Object Oriented**	**PGDCA201**	**CO1**	To understand the basic concepts of object oriented programming & Java Programming language .

	Concepts Using JAVA		**CO2**	To Use the syntax and semantics of Java programming language and basic concepts of OOPs.
			CO3	The students will have the competence in the use of Java Programming language.
			CO4	To Explain the concept of classses and objects with access control to represent real world problems.
			CO5	Design and implement an application that demonstrates their competency with Java syntax, structure and programming logic, incorporating basic features of the language as well as some features from the I/O (Input/Output) or GUI libraries.
			CO6	Competence in the use of Java Programming language in the development of small to medium sized application programs
	Web Technologies	**PGDCA202**	**CO1**	Understand, analyze and apply the role of languages like HTML, DHTML,CSS, JavaScript, PHP and protocols in the workings of the web and web applications. Analyze a web project and identify its elements and attributes in comparison to traditional projects.
			CO2	Understand, analyze and build dynamic web pages using JavaScript (client side programming)
			CO3	Understand basic Javascript syntax for variable use, and standard language constructs, such as conditionals and loops.
			CO4	Understand the paradigm for dealing with form-based data, both from the syntax of HTML forms
			CO5	Understand, analyze and build interactive web applications using PHP.
			CO6	Understand, analyze and create XML forms with HTML and PHP.
	Software Engineering	**PGDCA203**	**CO1**	Select and implement different software development process models.
			CO2	Extract and analyze software requirements specifications for different projects.

			CO3	Develop some basic level of software architecture/design.
			CO4	Apply standard coding practices.
			CO5	Define the basic concepts and importance of Software project management concepts like cost estimation, scheduling and reviewing the progress.
			CO6	Apply different testing and debugging techniques and analyzing their effectiveness.
	Computer Based Accounting	**PGDCA204**	**CO1**	Learn about concepts of Accounting.
			CO2	Understand the concepts of loss & profit account .
			CO3	Understand the concepts of Computerized Financial Accounting.
			CO4	Learn about Stock Validation.
			CO5	Understand about the concepts of Reports.
			CO6	Understand about Accounting Package.
Practical	**Lab(Based on PGD-2101)**	**PGDCA205**	**CO1**	To Understand the principles and practice of object oriented analysis and design in the construction of robust, maintainable programs which satisfy their requirements.
			CO2	To Implement, compile, test and run Java programs comprising more than one class, to address a particular software problem.
			CO3	To Demonstrate the principles of object oriented programming.
			CO4	To Make use of members of classes found in the Java API.
			CO5	To Familiar with AWT Controls &JDBC connection.
			CO6	Minor Project.
	Lab(Based on	**PGDCA206**	**CO1**	Understand the fundamentals of web
			CO2	Develop basic Web Pages

	PGD-2102)		**CO3**	Use different styles to the webpage elements
			CO4	Create dynamic., Interactive Webpages using JavaScript
			CO5	Use JavaScript to validate form entries
			CO6	Minor Project
	Project	**PGDCA207**	**CO1**	It makes the student confident in designing an Online Project
			CO2	Students are trained to meet the requirements of the Industry.
			CO3	Improvement in analytical and reasoning ability
			CO4	Exposure to a variety of research projects and activities in order to enrich their academic experience
			CO5	Apply standard coding practices. Develop skills in presentation and discussion of research topics in a public forum.
			CO6	Students can make itself minor project

Mapping of Course Outcomes(COs) with Programme Outcomes(POs)

Programme Outcome													
College Code	**Course Out-comes**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
Semester I													
PGDCA101	**CO1**	3	X	X	X	X	X	X	X	X	2	1	X

	CO2	X	2	X	X	X	1	X	X	X	1	X	X
	CO3	1	X	2	X	X	X	X	1	X	1	X	X
	CO4	X	X	X	X	X	X	2	X	1	X	1	X
	CO5	X	1	X	X	X	1	X	X	1	1	X	X
	CO6	X	X	1	X	X	X	X	X	1	1	X	X
PGDCA102	**CO1**	X	X	1	X	X	3	X	X	X	X	X	X
	CO2	X	2	X	X	X	X	X	X	X	2	X	1
	CO3	X	X	2	2	X	X	X	X	X	2	X	X
	CO4	X	X	X	1	X	X	X	X	X	2	X	1
	CO5	X	1	X	X	X	X	X	X	X	1	X	1
	CO6	X	X	X	2	X	X	X	X	X	1	X	X
PGDCA103	**CO1**	X	2	X	X	X	X	X	X	X	2	1	X
	CO2	X	3	1	X	X	X	X	X	X	1	X	X
	CO3	X	2	X	X	X	X	X	X	2	2	X	X
	CO4	X	3	X	2	X	X	X	X	1	1	X	X
	CO5	X	X	X	X	X	X	X	2	X	1	1	X
	CO6	X	X	X	X	X	X	X	2	2	1	1	X
PGDCA104	**CO1**	X	2	X	X	X	X	X	X	2	X	X	1
	CO2	X	3	1	X	X	X	X	X	1	1	X	X
	CO3	X	2	X	X	X	X	X	X	1	2	2	X
	CO4	X	3	X	X	X	X	X	X	X	X	X	X
	CO5	X	X	X	X	X	X	X	2	1	2	X	X
	CO6	X	X	X	X	X	X	X	2	2	2	X	X
PGDCA105	**CO1**	3	X	X	X	X	X	X	X	X	2	1	X
	CO2	X	2	X	X	X	1	X	X	X	1	X	X
	CO3	1	X	2	X	X	X	X	1	X	1	X	X
	CO4	X	X	X	X	X	X	2	X	1	X	1	X
	CO5	X	1	X	X	X	1	X	X	1	1	X	X
	CO6	X	X	1	X	X	X	X	X	1	1	X	X
PGDCA106	**CO1**	X	2	X	X	X	X	X	X	X	2	1	X

	CO2	X	3	1	X	X	X	X	X	X	1	X	X
	CO3	X	2	X	X	X	X	X	X	2	2	X	X
	CO4	X	3	X	2	X	X	X	X	1	1	X	X
	CO5	X	X	X	X	X	X	X	2	X	1	1	X
	CO6	X	X	X	X	X	X	X	2	2	1	1	X
PGDCA201	**CO1**	X	2	X	X	X	X	X	X	X	1	1	X
	CO2	X	3	1	X	X	X	X	X	1	1	X	X
	CO3	X	2	X	X	X	X	X	X	2	2	X	X
	CO4	X	31	X	2	1	X	X	X	1	1	X	X
	CO5	X	X	X	X	X	X	X	2	X	1	1	X
	CO6	X	X	X	X	X	1	X	2	2	1	1	1
PGDCA202	**CO1**	X	2	3	X	X	X	X	X	X	3	X	1
	CO2	X	X	X	X	X	X	X	X	1	2	X	3
	CO3	X	X	X	X	X	2	X	X	X	X	X	3
	CO4	X	1	X	X	X	X	X	X	X	X	X	X
	CO5	X	X	2	X	X	X	X	1	X	X	X	3
	CO6	X	X	X	X	X	X	X	X	X	X	X	2
PGDCA203	**CO1**	X	1	1	X	X	X	1	1	1	X	X	X
	CO2	X	X	1	1	X	1	X	X	1	1	X	X
	CO3	1	X	X	1	X	X	1	1	X	X	X	X
	CO4	1	1	X	X	1	1	X	X	X	1	1	1
	CO5	1	1	1	X	X	1	1	X	X	X	1	1
	CO6	X	X	1	1	X	X	1	1	X	X	1	1
PGDCA204	**CO1**	X	2	3	X	X	X	X	X	X	3	X	1
	CO2	X	X	X	X	X	X	X	X	1	2	X	3
	CO3	X	X	X	X	X	2	X	X	X	X	X	3
	CO4	X	1	X	X	X	X	X	X	X	X	X	X
	CO5	X	X	2	X	X	X	X	1	X	X	X	3
	CO6	X	X	X	X	X	X	X	X	X	X	X	2
PGDCA205	**CO1**	X	1	1	X	X	X	1	1	1	X	X	X

	CO2	X	X	1	1	X	1	X	X	1	1	X	X
	CO3	1	X	1	1	X	X	1	1	X	X	X	X
	CO4	1	1	X	X	X	X	X	X	X	1	1	1
	CO5	1	1	1	X	X	1	1	X	1	X	1	1
	CO6	X	X	1	1	X	X	1	1	X	X	1	1
PGDCA206	**CO1**	X	2	X	X	X	X	X	X	X	2	X	1
	CO2	X	X	X	X	X	X	X	X	1	2	X	2
	CO3	1	X	X	X	X	2	X	X	X	X	X	X
	CO4	X	1	X	X	X	X	X	X	X	X	X	X
	CO5	X	X	3	X	X	X	X	1	X	X	X	X
	CO6	X	X	X	X	X	2	X	X	X	X	X	2

Mapping of Course Outcomes (COs) with ProgrammeSpecificOutcomes(PSOs)

College Code	**Course Outcome**	**Program Specific Outcome**				
		PSO 1	**PSO2**	**PSO3**	**PSO4**	**PSO5**
Semester I						
		PSO 1	**PSO2**	**PSO3**	**PSO4**	**PSO5**
PGDCA101	**CO1**	2	2	X	X	X
	CO2	X	2	X	X	X
	CO3	3	2	1	X	2
	CO4	3	2	X	1	2
	CO5	X	1	X	2	X
	CO6	X	1	X	2	X
PGDCA102	**CO1**	X	2	3	X	X
	CO2	X	3	X	2	3
	CO3	X	2	X	X	X
	CO4	X	2	X	X	X
	CO5	X	2	2	X	X

	CO6	3	2	3	3	X
PGDCA103	**CO1**	2	X	2	X	X
	CO2	1	X	3	X	X
	CO3	2	X	1	X	X
	CO4	2	X	2	X	X
	CO5	X	X	X	2	2
	CO6	1	X	X	1	2
PGDCA104	**CO1**	X	3	2	X	X
	CO2	1	3	3	X	X
	CO3	2	3	1	X	X
	CO4	2	3	1	X	X
	CO5	X	3	1	2	2
	CO6	1	3	1	3	2
PGDCA105	**CO1**	2	2	X	X	X
	CO2	X	2	X	X	X
	CO3	3	2	1	X	2
	CO4	3	2	X	1	2
	CO5	X	1	X	2	X
	CO6	X	1	X	2	X
PGDCA106	**CO1**	2	X	2	X	X
	CO2	1	X	3	X	X
	CO3	2	X	1	X	X
	CO4	2	X	2	X	X
	CO5	X	X	X	2	2
	CO6	1	X	X	1	2
Semester II						
PGDCA201	**CO1**	2	X	2	X	X
	CO2	1	X	2	1	X
	CO3	2	X	1	X	X
	CO4	2	1	2	X	X

	CO5	X	X	X	2	2
	CO6	1	X	X	1	1
PGDCA202	**CO1**	2	1	1	X	X
	CO2	2	X	X	X	1
	CO3	1	X	X	2	X
	CO4	1	X	X	X	3
	CO5	X	2	2	X	X
	CO6	3	2	X	X	X
PGDCA203	**CO1**	2	1	X	X	1
	CO2	1	X	1	1	X
	CO3	X	X	1	1	X
	CO4	2	1	X	X	1
	CO5	1	1	X	X	1
	CO6	1	1	X	X	1
PGDCA204	**CO1**	2	1	1	X	X
	CO2	2	X	X	X	1
	CO3	1	X	X	2	X
	CO4	1	X	X	X	3
	CO5	X	2	2	X	X
	CO6	3	2	X	X	X
PGDCA205	**CO1**	1	1	1	X	X
	CO2	2	X	X	X	1
	CO3	1	1	X	2	X
	CO4	1	X	X	X	3
	CO5	X	2	X	1	X
	CO6	3	2	X	X	X
PGDCA206	**CO1**	2	1	1	X	X
	CO2	2	X	X	X	1
	CO3	1	2	X	2	X
	CO4	1	X	X	X	3

	CO5	X	2	2	X	X
	CO6	3	2	X	1	X

DEPARTMENT OF LIFE SCIENCES

The college was established in 1969. According to the needs of residents of the local area, there was a dire need of introducing B.Sc medical and B.Sc non-medical. Keeping in view this need, BSc-non-medical and BSc medical were started in the year 1998 and 2000 respectively. Initially, Zoology and Botany were two separate departments. Both BSc medical and B.Sc non-medical were introduced during the tenure of Principal Jaswant Singh Sandhu. Thereafter, permanent faculty members were appointed so that a strong foundation be laid for Basic Science in this economically backward area. The subject of Home Science was started as an elective subject in the year 2008. In the year 2010, a new subject Environment Conservation was introduced under Innovative Scheme of UGC with UGC grant of 36 lacs rupees. The department of Zoology, Botany, Home Science and Environment Conservation are now merged and the department of Life Sciences has been established in the year 2021.

There are individual labs for Zoology, Botany, Environment Conservation and Home Science. It also has a Biodiversity Museum, Root Zone technology unit and Vermi-compost unit. The department organized 3-days UGC sponsored National Conference on 'Climate Change its Impact and Adaptation Practices' in the year 14-16 February 2012 and one day seminar CDC Panjab University Chandigarh sponsored National Seminar on ' Role of Individual and Scientists Towards Conservation of Biodiversity' on February 17, 2017.

VISION

The holistic development of the students and make them able to contribute effectively for their welfare and society in this dynamic era through sound theoretical and practical academic grounding interface

MISSION

To impart intensive and extensive knowledge through the provision of:

- Educate students to become responsible members of society
- Develop scientific temper through varied field exposure
- Inculcate values of scientific enquiry and framing solutions based on local resources

- Reinvent thought processes of young minds through awareness, exposure, and experimentation
- Hands on training through a number of co-curricular activities pertaining to the environment, ecosystem and ecological support mechanisms
- Building fundamental research and technology based spirit of innovation and entrepreneurships
- Promoting an enabling environment

OBJECTIVES

- Ensuring a futuristic educational exchange among students on, Cell biology, Classifications of Flora and Fauna ,Environmental biology, Animal Physiology, Biotechnology, Food and Nutrition etc. This will be ensured through:
- Emphasizing biological literacy through quality education
- Promoting the role of biological solutions through agriculture and allied fields
- Examining the viability of lab and field based studies in the local socio economic environment
- Paving the way for training in skill areas like aquaculture, api-culture, pisci-culture, horticulture, hydroponics, floriculture and other allied sectors
- Promoting industrial and NGO partnerships for student advancement
- Enabling the students to prepare themselves for higher education leading to M.Sc./MB.A degree courses
- Competency to qualify competitive examinations conducted by PPSC/UPSC/SSC

Programme run by department:

1. B.Sc. Medical (General) (Programme code: BSCM)

B.Sc. Medical (General)

PROGRAMME LEARNING OUTCOMES OF B.Sc. (General)

Graduate Attributes

On successful completion of B.Sc. programme the students will be able to develop following attributes, qualities and skills:

PO 1	**Disciplinary Knowledge**	Capable of demonstrating comprehensive knowledge and understanding of major concepts, theoretical principles and experimental findings in science and its different subfields, and other related fields of study, including broader interdisciplinary subfields.
PO 2	**Communicat ion Skills**	Course of English in B.Sc. enables them to communicate clearly and convincingly about science and technology ideas, practice and future contributions to expert and non-expert audiences through seminars, open discussion, language learning.
PO 3	**Critical Thinking**	Ability to employ critical thinking is enhanced by ● Organizing guest lectures, debates and declamation on hot topics/current subjects. ● Presenting logic and reasoning for all forms of topics. ● Question to be paused through studying different courses domestically and international.
PO 4	**Problem Solving**	The practical and theoretical approaches in basic sciences develop the conceptual, analytical, quantitative and technical skills in the students to solve academic and real life problems.
PO 5	**Sense of Inquiry**	Experiment based curriculum builds the capability for asking relevant/appropriate questions relating to issues and problems in the field of Science and planning, executing and reporting the results of an investigation.
PO 6	**Team player/ worker**	Students of B.Sc. are capable of ● Working effectively in diverse teams in both classroom, laboratory and in industry and field-based situations. ● Performing in groups to meet a shared goal with people whose disciplinary and cultural background differs from their own. ● Organize field trips, field surveys and photo documentation projects. ● Consistently hold science exhibitions, poster contests, short trips to help in shaping personality.
PO 7	**Skilled Project**	Undertaking Assignments and projects of various disciplines of Science

	Manager	make them capable of identifying/mobilizing appropriate resources required for a project, and managing a project through to completion, while observing responsible and ethical scientific conduct; and safety-regulations and practices.
PO 8	**Digitally Literate**	Students of B.Sc. Capable of ● Using computers for computation and appropriate software for analysis of data Employing modern library search tools to locate, retrieve and evaluate subject-related information. ● Various class seminars are arranged for the students to make their ppt. by using e-resources/e-books and different search engines
PO 9	**Ethical Awareness**	Course Framework of B.Sc. make students capable of ● Demonstrating ability to think and analyze rationally with modern and scientific outlook and identify ethical issues ● Avoiding unethical behavior such as fabrication, falsification or misrepresentation of data or committing plagiarism, and appreciating environmental and sustainability issues.
PO 10	**National and International Perspective**	The Multidisciplinary Program enables students to evaluate the role of science, technology, and engineering in addressing current issues facing local and global communities. For example climate change, health and disease, food security, sustainable energy use etc.
PO 11	**Lifelong Learners**	Make students Capable of self-paced and self-directed learning aimed at personal development and for improving knowledge/skill development and reskilling in all areas of science. It promotes interactions with corporate, NGOs and government as well as other agencies.
PO 12	**Leadership Readiness/ Qualities**	B.Sc. program enhanced the ● theoretical and experimental skills necessary to analyze and solve a range of advances problems, providing an excellent foundation for leadership ● Through extra and co-curricular activities (NSS, NCC, Youth Festivals). ● To interact with different individuals in society and work for welfare of community.
PO 13	**Multicultural Competence**	● In youth fest and heritage festival encouraging performance in various items. ● Visual and graphic presentation of Indian culture and ethnicities. ● Gurpurab celebrations to showcase rich cultural heritage of Punjab. ● Encouraging the embellishment of various cultures of the state

		through its traditional profile presentation in text, oral and other performance initiatives.
PO 14	**Self -Directing Learning**	Enable them to recognize the need for information, effectively search for, evaluate, manage and apply that information in support of scientific investigation.
PO 15	**Scientific reasoning**	● Introduction of students to labs and lab equipment materials and safe-guard. ● Perform experiments and activities in singles and in groups. ● Compare and coordinate team spirit in discussant mode.

Program Specific Outcomes (PSOs)

PSO1	B.Sc. Medical students are able to acquire knowledge regarding Botany, Zoology, Chemistry, Biotechnology and Entomology.
PSO2	Medical Students will be able to define and explain major concepts in the Biological and chemical sciences.
PSO3	They are able to correctly use different instrumentation and proper laboratory techniques in different subjects.
PSO4	Students will be able to communicate knowledge in oral and written form.
PSO5	Students will be able to recognize the relationship between structure and function at all levels: molecular, cellular and organisms.
PSO6	They can go for Indian Forest Service, IAS and other competitive examinations.
PSO7	They can opt for higher studies in Botany, Zoology, Chemistry, Biotechnology, Biochemistry, Molecular Biology and Forensic Science etc.

Course Outcomes COs) of B.Sc. Medical

Semester	**University Code**	**College Code**	**Course Outcomes** On completion of the course, students will be able to know the scope and importance of the discipline and its objectives	
Sem. I	**PBC**	**PBC101**	**CO1**	Give an introductory knowledge of PBI language.
			CO2	Examine the various forms of modern poetry
			CO3	To understand the definition and nature of easy and make students capable of writing easily.
			CO4	To develop the skill of Percy writing.
			CO5	To make student able to understand the grammar and its importance in sentence language.

			CO6	To get practical knowledge of various
Sem. I	**HCP**	**HCP101**	**CO1**	Describe extent, town planning and socio -economic life Punjab during Harappan Civilization.
			CO2	Analyze life of people of Punjab in Vedic and Post Vedic Age.
			CO3	Describe Society and Culture of Punjab during Maurya's and Guptas.
			CO4	Explain the origin and features of Bhakti and Sufi movement in Punjab
			CO5	Describe the teachings of Sikh gurus and development of Sikh Religion.
			CO6	Evaluate the changes in society and culture of Punjab and during rule of Maharaja Ranjit Singh.
Sem. I	**CHM**	**CHM101A 1**	**CO1**	Understand the essential facts relating inorganic chemistry concepts.
			CO2	Comprehension of Atomic Structure, Periodic properties of elements.
			CO3	Description of Chemistry of Noble Gases.
			CO4	Knowledge about s-Block Elements.
			CO 5	Explanation of Chemical Bonding (V.B.T, VSEPR, hybridization MOT).
			CO 6	To determine the percentage ionic character from dipole moment and electro negativity difference.
Sem. I	**CHM**	**CHM101A 2**	**CO1**	Understand the structure and bonding of organic compounds
			CO2	Comprehension of mechanisms of different organic reactions
			CO3	Description of alkanes and cycloalkanes and including their synthesis and chemical reactions
			CO4	Knowledge about optical isomerism in organic compounds.
			CO5	Explanation of geometrical isomerism and
			CO6	Conformational isomerism in organic compounds.
Sem. I	**CHM**	**CHM101 A3**	**CO1**	Acquire the knowledge of mathematical concepts and its application in evaluation of analytical data.
			CO2	Explanation of gaseous state and deviation in their behavior from ideal gases behavior
			CO3	Knowledge about Maxwell distribution of molecular velocity, collision number and mean free path.
			CO4	Description of reaction, rate of reaction, kinetics and their mechanism
			CO5	Understand the effect of temperature on rate of reaction , collision theory , catalysis and radioactive decay
			CO6	To understand the Michaelis Menten's equation for enzyme catalysis and its mechanism.
Sem. I	**BOT**	**BOT101 A**	**CO1**	To Understand the diversity in lower plants with their structural differentiation and life cycle

			CO2	To learn The diversity in various life forms of the plant kingdom
			CO3	To extend a systematic study of algae and fungi.
			CO4	To infer structural differentiation but also provide an insight about the heterotrophic and autotrophic modes of nutrition in the plant kingdom.
			CO5	To extrapolate the basis of any advance study in Botany.
			CO6	To describe about Lichens.
Sem. I	**BOT**	**BOT101B**	**CO1**	Knowledge about basic structural unit of life i.e. cell and its organelles.
			CO2	To extrapolate the structural and cytological basis of functional differentiation in plants.
			CO3	To extend the study of prokaryotic and eukaryotic diversity of life forms.
			CO4	To demonstrate cellular, molecular and biochemical basis of cytological and functional differentiation.
			CO5	To understand Gene regulation in prokaryotes.
			CO6	To learn DNA structure.
Sem. I	**ZOO**	**ZOO101A**	**CO1**	Understand the lower non chordates with their structure and life cycle.
			CO2	Identify and Classify the different non chordates.
			CO3	Explain the prokaryotic and eukaryotic diversity of life forms.
			CO4	To gain knowledge about basic structural unit of life that is cell and its organelles.
			CO5	Demonstrate the principal and application of microscopy and fixative techniques
			CO6	Culture the microorganism like *Amoeba ,Paramecium.*
Sem. I	**ZOO**	**ZOO101 B**	**CO1**	Descriptive knowledge of medically important non chordates, their life cycle and preventive measures
			CO2	Classify the non-chordates up to orders
			CO3	To understand the working of nucleus this is said to be brain of cell.
			CO4	To gain knowledge about basic structure of cell organelles.
			CO5	Differentiate between normal and cancer cell and its type.
			CO6	Recognize the cellular and humoral immunity
Sem. II	**PBC**	**PBC201**	**CO1**	To get basic information of Punjabi language
			CO2	Provide knowledge of Punjabi short story and make student familiar with it
			CO3	Also make student able to write any kind of notice
			CO4	To make student to understand the Punjabi idioms its importance and benefits
			CO 5	To provide practical knowledge of Punjabi language and vocabulary
			CO 6	Theoretical and Practical knowledge of linguistics

Sem. II	**HCP**	**HCP201**	**CO1**	Describe the establishment of colonial rule in Punjab.
			CO2	Analyze the growth of Western Education and Agrarian Policy of Britishers in Punjab.
			CO3	Describe the Social -Religious movement in Punjab.
			CO4	Evaluate the development of Press and literature in Punjab.
			CO 5	Analyze the role of people of Punjab in Freedom Struggle.
			CO 6	Evaluate the social issues in the post-Independence Punjab.
Sem. II	**CHM**	**CHM201A 1**	**CO1**	Appraisal of p-block elements and chemical bonding.
			CO2	Understanding of close packing in ionic solids and radius ratio rule.
			CO3	Comprehension of lattice energy and Born Haber cycle.
			CO4	Knowledge about polarising power and polarisability using fajan's rule .
			CO5	Descriptions of hydrides ,oxides ,oxyacids of p-block elements.
			CO6	To know about the basic properties of halogens, interhalogens and polyhalides.
Sem. II	**CHM**	**CHM201A 2**	**CO1**	Comprehension of alkenes and cycloalkanes including their synthesis and chemical reactions
			CO2	Knowledge about dienes and alkynes incorporating their methods of formation, structures and chemical reactions
			CO3	Understanding the arenes and aromaticity in organic compounds
			CO4	Descriptions of mechanisms of aromatic electrophilic substitutions reactions
			CO5	Appraisal of methods of formation and chemical reaction of alkyl halides and aryl halides.
			CO6	To understand the substitution at allylic and vinylic position of alkenes.
Sem. II	**CHM**	**CHM201 A3**	**CO1**	Appraisal of thermodynamics , first law of thermodynamics
			CO2	Understanding the expansion of ideal gases under isothermal and adiabatic conditions
			CO3	Descriptions of standard state and enthalpy of formation using hess's law
			CO4	Knowledge of colloidal state, its classifications ,sols ,emulsions and gels
			CO5	Comprehension of ideal and non-ideal solutions and their colligative properties.
			CO6	To learn how to determine various colligative properties.
Sem. II	**BOT**	**BOT201 A**	**CO1**	To Understand how different life forms have evolved from simpler to complex ones.
			CO2	To infer developmental stages from lower to higher plants.
			CO3	To identify and explain the life cycle of Bryophytes (the amphibians of plant kingdom).

			CO4	To recognize Pteridophytes -the first vascular land plants and life stages.
			CO5	To analyze a broad perspective of evolutionary trends in the plant kingdom.
			CO6	To extrapolate the difference between Bryophytes and Pteridophytes.
Sem. II	**BOT**	**BOT201B**	**CO1**	To learn the genetic basis of evolutionary trends in plants.
			CO2	To Understand the role of genetics in plant differentiation.
			CO3	To analyze various aspects of hereditary trends observed in successive generations
			CO4	To extrapolate the genomic basis of evolutionary trends in plants coupled with the study of variations in life forms.
			CO5	To describe chromosomal theory of inheritance.
			CO6	To infer Mutation and its types.
Sem. II	**ZOO**	**ZOO201A**	**CO1**	Classify the Non-Chordates from Platyhelminthes to Annelida.
			CO2	Describe the social insects and their importance.
			CO3	Differentiate between the life cycle of *Anopheles* and *Culex.*
			CO4	Have insight the type specimen i.e. *Periplaneata* and *Palaemon*
			CO5	Gain the conceptual knowledge of ecology ecosystem and ecological factors
			CO6	To analyze the role of environment in morphological, physiological and behavioral adaptation in animals.
Sem. II	**ZOO**	**ZOO201 B**	**CO1**	Understand the basic knowledge of non-Chordates from Phylum Mollusca to Hemichordate
			CO2	Classify the Non Chordates up to Orders
			CO3	To study the external morphology and anatomy of the non-chordates
			CO4	Utilize the Renewable and non-renewable resources
			CO 5	Understand the values of biotic communities, natural resources, environment degradation and its conservation
			CO 6	Summarize the IUCN Red list, conservation projects, Wildlife (Protection) Act, 1972
Sem. III	**ENG**	**ENG301**	**CO1**	To write an effective business document (such as notice, memo, advertisement etc.) which enable them to think analytically.
			CO2	To acquire extensive knowledge of English as a language in its various textual forms and to become thoughtful, imaginative and effective communicators in a diverse and changing society.
			CO3	To enhance their writing skill by building strong vocabulary.
			CO4	To empower an average student in such a way that English learning becomes a Pleasurable endeavor.
			CO5	To acquire knowledge about various literary aspects through the text which capacitates them to enrich their literary and cultural values.

			CO6	To critically appreciate literary texts
Sem. III	**CHM**	**CHM301A 1**	**CO1**	Justification regarding bonding, magnetic as well as spectral properties of transition metal complexes.
			CO2	To understand the Chemistry of Coordination Compounds and their geometries.
			CO3	Structures of Coordination compounds containing central metal atom and ligands.
			CO4	Study of transition series(First, second and third transition series)
			CO5	Demonstration regarding lanthanides and actinide contractions.
			CO6	To understand the use of co-ordination compounds.
Sem. III	**CHM**	**CHM301A 2**	**CO1**	Inculcate the knowledge of alcohols i.e. mono, di, tri hydric alcohols
			CO2	Understand the chemical reactions of vicinal glycols and glycerol
			CO3	Appraisal of phenols and their properties
			CO4	Comprehension of the aldehyde and ketones
			CO5	Discuss the formation of aldehydes and ketones and carboxylic acids.
			CO6	To understand the mechanism of nucleophillic addition to carbonyl compound.
Sem. III	**CHM**	**CHM301 A3**	**CO1**	Understand the intermolecular forces in liquids, liquid crystals and their classifications.
			CO2	Discuss the chemical equilibrium , law of mass action and relationship and types of equilibrium constant
			CO3	Comprehension of the second law of thermodynamics , carnot cycle and its efficency.
			CO4	Appraisal of entropy change in ideal gases and its mixing.
			CO5	Inculcate the knowledge of third law of thermodynamics; Nernst heat theorem.
			CO6	To understand the classification and structure of liquid crystals.
Sem. III	**BOT**	**BOT301 A**	**CO1**	To learn Fossils, their types and formation .
			CO2	To discuss the geological time scale
			CO3	To describe general features of Fossil seed plants.
			CO4	To illustrate the evolved group of plants with naked seed “GYMNOSPERMS”.
			CO5	To explain structure, reproduction and life cycle of non flowering plants.
			CO6	To extrapolate the general characteristics of Gymnosperms.
Sem. III	**BOT**	**BOT301B**	**CO1**	Basic body plan of Flowering plants.
			CO2	To describe modification of different parts of plants.
			CO3	To demonstrate vegetative and reproductive morphology of plants bearing the enclosed seeds.

			CO4	To analyze Diversity in plant form in annuals, biennials and perennials.
			CO 5	To explain shoot, root system, leaf and flowers of seed producing plants.
			CO 6	To understand Tissue system in plants.
Sem. III	**ZOO**	**ZOO301A**	**CO1**	To explain the origin Parental Care and Migration in Chordates.
			CO2	Classify and Identify the chordates From Protochordates to Amphibia.
			CO3	Study the basic structure of different type specimens.
			CO4	To understand how different life forms have evolved from simpler to complex ones
			CO5	Able to know about theories of origin of life and evidences of evolution.
			CO6	To explore the fins and scales in fishes and their importance
Sem. III	**ZOO**	**ZOO301 B**	**CO1**	Gain the knowledge of structure and classification of bio-molecules.
			CO2	Understand the nature, mode of action of enzymes and co-enzymes.
			CO3	To study the regulation of digestive process, absorption, enzymatic and symbiotic digestion.
			CO4	Gain the knowledge of transport of respiratory gases and oxygen dissociation curve of haemoglobin.
			CO5	To analyze the composition, function, and blood grouping including Rh factor of blood.
			CO6	Demonstrate the knowledge of working of heart, ECG, blood pressure and cardiac output
Sem. IV	**CHM**	**CHM401A 1**	**CO1**	Understand the chemistry of Lanthanides and Actinides elements; their properties and separation.
			CO2	Inculcate the concept of acids and bases.
			CO3	Comprehension of theories to understand the classification of acids-bases.
			CO4	Appraisal of oxidation and reduction. to use redox potential data.
			CO5	Describe non-aqueous solvents; their types and properties; principles involved in the extraction of elements.
			CO6	To understand the physical properties of different solvents.
Sem. IV	**CHM**	**CHM401A 2**	**CO1**	Acquire the knowledge of carboxylic acids, halo acids, malic acids ,tartaric acid and citric acids.
			CO2	Classification of the Organic Compounds of Nitrogen.
			CO3	Detection of elements and functional groups in simple organic compounds.
			CO4	Understanding of ethers, epoxides, oils & detergents.
			CO5	To compare the preparation of alkyl and aryl amines
			CO6	To understand the cleavage and auto-oxidation of ethers,

				epoxide.
Sem. IV	**CHM**	**CHM401 A3**	**CO1**	Learn the necessary chemical knowledge about electrochemistry.
			CO2	Appraisal of electrical transport of electrolytes, conductance with dilution.
			CO3	Understanding of Nernst distribution law and thermodynamic derivation.
			CO4	Description of type of reversible electrode, E.M.F. of cell and electrochemical series.
			CO5	Describe non-aqueous solvents; their types and properties; principles involved in the extraction of elements.
			CO6	To know about applications of concentration.
Sem. IV	**BOT**	**BOT401 A**	**CO1**	To Understand the highly advanced and evolved group of plants "ANGIOSPERMS" with their structural differentiation and reproduction.
			CO2	To illustrate gradual transition from seedless plants to seed plants would make students familiar with the origin of structural and functional complexity in the plant kingdom.
			CO3	To recognize the importance of taxonomy and species concepts.
			CO4	To Define terminology pertaining to floral description
			CO5	To describe general account and diagnostic features of different families of flowering plants.
			CO6	To infer General characteristics of Flowering Plants.
Sem. IV	**BOT**	**BOT401B**	**CO1**	To understand structure development and reproduction in flowering plants – the most fascinating group of plants on earth
			CO2	To analyze internal structure of various plant parts, their growth patterns and abnormalities in structural development.
			CO3	To describe the vast range of variation found in flowering plants for the foundation of applied branches like horticulture, floriculture, olericulture and arboriculture.
			CO4	To learn Significance of seed and seed formation.
			CO5	To compute Contrivances for self and cross pollination.
			CO6	To extrapolate types of fruits.
Sem. IV	**ZOO**	**ZOO401A**	**CO1**	Classify the chordates from Reptiles to Mammals.
			CO2	Identify poisonous and nonpoisonous snakes.
			CO3	To explain flight adaptations of birds.
			CO4	To gain knowledge of type specimens
			CO5	Understand the biological species concept and Micro, Macro and human evolution.
			CO6	Determine the fossil and Dating of fossils
Sem. IV	**ZOO**	**ZOO401B**	**CO1**	Analyze the process of Lipid metabolism by B-oxidation of fatty acids and interaction of carbohydrates and lipids etc.
			CO2	Gain the knowledge about metabolism of amino acids and

				ornithine cycle.
			CO3	Study the structure of nephron, osmoregulation and counter current mechanism of urine.
			CO4	Understand the chemical and physiological basis of skeletal muscle contraction.
			CO5	Gain the knowledge of neuron, origin and propagation of impulse along the axon.
			CO6	Analyze the role hormones and its functions of endocrine system.
Sem. V	**CHM**	**CHM501A 1**	**CO1**	Comprehension of crystal field theory and valence bond theory of metal ligand bonding in transition metal complexes.
			CO2	Description of thermodynamic and kinetic aspects of Metal Complexes.
			CO3	Knowledge about synthesis, structure, properties and applications of organometallic compounds of Li,Al,Hg,Sn and Ti.
			CO4	Analysis of metal-ethylenic complexes,homogeneous hydrogenation and mononuclear carbonyls.
			CO5	Explanation of metalloporphyrins, nitrogen fixation and biological role of alkali and alkaline earth metal ions .
			CO6	To appraise the biological importance of alkali and alkaline earth metals.
Sem. V	**CHM**	**CHM501A 2**	**CO1**	Appraisal of the use of spectroscopic techniques to analyze the synthesised organic compounds.
			CO2	Apply the concept of absorption laws to compute molar absorptivity, to differentiate between chromophores and auxochrome.
			CO3	Demonstration of infrared spectroscopy to detect the present functional groups in the given organic compounds.
			CO4	Apply the concept of nuclear magnetic resonance (NMR) spectroscopy to find the structure of the given organic compounds.
			CO5	Count the biological importance of carbohydrates.
			CO6	To interpret the NMR spectrum of simple organic compounds.
Sem. V	**CHM**	**CHM501 A3**	**CO1**	Description of elementary quantum mechanics, black body radiation, Schrodinger wave equation for H-atom.
			CO2	Apply the Schrodinger wave equation to find the wavefunctions of the given system to account for its stability.
			CO3	Demonstrate the use of quantum mechanics to calculate the hybridisation of atomic orbitals.
			CO4	Inculcate the knowledge of photochemical reactions and the laws governing the photochemical reactions.
			CO5	Description of fluorescence, phosphorscence and quantum yield

				of photochemical reactions.
			CO6	To understand the photochemistry of carbonyl compounds and alkenes.
Sem. V	**BOT**	**BOT501 A**	**CO1**	To Understand the concept of function and metabolism of plants
			CO2	To Acquire the knowledge about Structural Diversity of various plant forms with plant differentiation.
			CO3	To learn biological aspects like nitrogen fixation and mineral nutrition
			CO4	To analyze Plant water relationship.
			CO5	To Illustrate structure and classification of proteins and enzymes.
			CO6	To infer Ascent of SAP.
Sem. V	**BOT**	**BOT501B**	**CO1**	To describe Ecology and the role of the Environment in causing structural and functional variation in plants.
			CO2	To understand the present day problems of varied nature like pollution.
			CO3	To illustrate Global Warming and conservation of natural resources
			CO4	To learn Climatic, edaphic, topographic and biotic factors affecting growth and distribution of plants.
			CO5	To Define Ecosystem.
			CO6	To extrapolate adaptations in plants and Ecological Succession
Sem. V	**ZOO**	**ZOO501A**	**CO1**	Gain the knowledge of gametogenesis, vitellogenesis and role of subtesticular cells.
			CO2	Understand the process of fertilization and parthenogenesis
			CO3	To study types of cleavage, blastula and types of blastula.
			CO4	To analyze cell interaction, basic concept of organizers and inducers and their role.
			CO5	Gain conceptual knowledge of development up to three germs layers in *Herdmania*, frog chick etc.
			CO6	Gain knowledge of foetal membranes, mammalian placenta, their formation and functions.
Sem. V	**ZOO**	**ZOO501 B**	**CO1**	To understand the concept of Entomology
			CO2	To acquire the knowledge about different types of development stages in insects.
			CO3	Comprehensive knowledge of Economic Entomology and Pest Management
			CO4	Identify and classify pest the of crops, vegetables Stored grains and medical important insects.
			CO5	Develop skill in Agriculture Practices like pest controls and nature of damage.
Sem. VI	**CHM**	**CHM601A**	**CO1**	Inculcate the knowledge of Silicones and Phosphazenes.

		1	**CO2**	Comprehension of HSAB concept ,symbiosis and theoretical basis of hardness and softness.
			CO3	Knowledge about types and selection rules for electronic transitions.
			CO4	Analysis of Orgel- energy level diagram for d1 and d9 states.
			CO5	Description of magnetic properties of transition metal complexes.
			CO6	To understand symbiosis and its theoretical basis.
Sem. VI	**CHM**	**CHM601A 2**	**CO1**	Familiarized with Amino Acids, Peptides, Proteins and Nucleic Acids.
			CO2	Description of synthetic polymer; their types, synthesis and uses.
			CO3	Inculcate the knowledge of organic synthesis via enolates.
			CO4	Description of organometallic compounds; its types and their synthesis.
			CO5	To understand the doubal helical structure of DNA.
			CO6	To study preparation and reactions of amino acids.
Sem. VI	**CHM**	**CHM601 A3**	**CO1**	Understanding of space lattice, unit cell, miller indices.
			CO2	Appraisal of Bragg's equation and X-ray diffraction.
			CO3	Knowledge about electromagnetic radiation and different spectrometers.
			CO4	Description of rigid rotor and non-rigid rotor.
			CO5	Inculcate the concepts vibrational and electronic spectrum.
			CO6	To interpret different types of physical spectra.
Sem. VI	**BOT**	**BOT601 A**	**CO1**	To Understand plant development, differentiation and regulatory mechanism.
			CO2	To learn basics in tissue culture
			CO3	To recognize Photosynthesis its Significance, historical aspect and action spectra.
			CO4	To illustrate the Respiration process in plants.
			CO5	To explain Growth and Development.
			CO6	To extrapolate Seed Dormancy and photoperiodism.
Sem. VI	**BOT**	**BOT601B**	**CO1**	To recall Plant wealth, economic importance.
			CO2	To Illustrate cultivation practices of plants.
			CO3	To describe forest Conservation.
			CO4	To apply the basis of ecology and economic botany to venture into fields like Environmental Biology.
			CO5	Understanding Wood seasoning.
			CO6	To Learn Economic Importance of medicinal plants
Sem. VI	**ZOO**	**ZOO601A**	**CO1**	Summarize the Mendelian and Non-Mendelian ratios (Non allelic gene interaction).
			CO2	To analyze the study of gene modifications due to incomplete dominance and Pleiotropic genes.
			CO3	Gain the knowledge of inheritance of quantitative traits (skin

				colour in man).
			CO4	Understand the process of linkage, crossing over, gene and genetic code.
			CO5	Analyze the process of mutation and inborn errors of metabolism and regulation of gene expression.
			CO6	Gain the knowledge Population and Applied genetics; gene cloning, DNA fingerprinting
Sem. VI	**ZOO**	**ZOO601 B**	**CO1**	Acquire the knowledge of Sericulture, Apiculture, Lac Culture.
			CO2	Understand Recent methods of Pest Control: chemical and biological Control.
			CO3	Framework of IPM program and perspectives in IPM.
			CO4	Understand the banned pesticides and also their ill effects on flora, fauna and environment.
			CO5	Gain practical knowledge to Design Project Reports.
			CO6	Develop Skill for Entrepreneurship

Mapping of Course Outcomes (COs) with Programme Outcomes(POs)

Programme Outcome																
College code	**Course Out-comes**	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**	**PO 13**	**PO 14**	**PO 15**
Semester I																
PBC101	**CO1**	1	2	3	2	1	3	2	X	3	2	1	2	3	2	2
	CO2	2	X	2	1	2	2	1	1	1	1	X	1	1	1	1
	CO3	X	2	1	1	1	1	X	2	2	3	2	3	2	3	3
	CO4	3	1	X	3	2	2	2	2	X	2	3	X	1	1	1
	CO5	1	1	2	2	X	1	2	3	2	X	1	2	1	1	1
	CO6	1	3	1	1	3	X	1	1	2	1	2	1	2	X	X
HCP101	**CO1**	X	2	1	X	2	X	X	X	X	1	2	1	2	X	1
	CO2	X	2	1	X	2	X	X	X	X	1	2	1	2	X	1
	CO3	X	2	1	1	2	X	X	X	X	1	2	1	2	X	1
	CO4	X	2	1	1	2	X	X	X	3	1	2	1	2	X	2
	CO5	X	2	1	X	2	X	X	X	3	1	2	1	2	X	2

	CO6	X	2	1	X	2	X	X	X	X	1	2	1	2	X	1
CHM101A1	**CO1**	2	2	1	1	1	1	1	1	1	1	1	1	X	1	1
	CO2	2	2	1	1	1	1	1	1	1	1	1	1	X	1	1
	CO3	2	2	1	1	1	1	1	1	1	1	1	1	X	1	1
	CO4	2	2	1	1	1	1	1	1	1	1	1	1	X	1	1
	CO5	2	2	1	1	1	1	1	1	1	1	1	1	X	1	1
	CO6	2	2	1	1	1	1	1	1	1	1	1	1	X	1	1
CHM101A2	**CO1**	2	2	1	1	1	1	1	1	1	1	1	1	X	2	2
	CO2	2	2	1	1	1	1	1	1	1	1	1	1	X	2	2
	CO3	2	2	1	1	1	1	1	1	1	1	1	1	X	2	2
	CO4	2	2	1	1	1	1	1	1	1	1	1	1	X	2	2
	CO5	2	2	1	1	1	1	1	1	1	1	1	1	X	2	2
	CO6	2	2	1	1	1	1	1	1	1	1	1	1	X	2	2
CHM101A3	**CO1**	2	2	X	2	1	1	2	1	2	1	X	X	X	1	1
	CO2	1	2	X	1	1	1	2	1	1	2	X	X	X	2	1
	CO3	2	2	X	1	1	1	2	1	1	1	X	X	X	1	1
	CO4	1	2	X	1	1	1	2	1	1	1	X	X	X	1	1
	CO5	2	2	X	1	1	1	2	1	1	1	X	X	X	1	1
	CO6	2	2	X	1	1	1	2	1	1	1	X	X	X	1	1
BOT101A	**CO1**	3	1	3	3	3	2	3	2	3	1	3	X	X	3	3
	CO2	3	1	2	2	3	3	2	2	2	X	2	X	X	2	3
	CO3	3	1	2	3	2	3	2	2	1	X	2	X	X	2	3
	CO4	3	1	3	2	3	2	2	2	2	X	2	X	X	1	3
	CO5	3	1	2	2	2	2	1	2	2	X	2	X	X	2	3
	CO6	3	1	2	2	2	2	1	2	2	X	2	X	X	2	3
BOT101B	**CO1**	3	1	3	3	3	2	3	2	3	1	3	X	X	2	3
	CO2	3	1	2	2	2	3	2	2	2	X	2	X	X	2	3

	CO3	3	1	3	3	3	3	2	2	1	1	2	X	X	3	3
	CO4	3	1	2	2	3	2	2	2	2	X	2	X	X	1	3
	CO5	3	1	2	2	1	2	1	2	2	X	2	X	X	2	3
	CO6	3	1	2	2	1	2	1	2	2	X	2	X	X	2	3
ZOO101A	**CO1**	2	1	2	1	2	1	2	1	2	1	2	X	X	2	3
	CO2	3	1	3	2	2	2	1	1	2	1	2	X	X	2	3
	CO3	2	1	2	2	2	1	1	1	2	1	2	X	X	2	3
	CO4	2	1	2	3	2	2	1	1	1	1	2	X	X	2	3
	CO5	2	1	2	3	2	2	1	2	2	2	3	2	X	2	3
	CO6	1	1	1	2	2	3	2	2	2	1	2	X	X	2	3
ZOO101B	**CO1**	2	1	2	1	2	1	2	1	2	1	2	X	X	2	3
	CO2	3	1	3	2	2	2	1	1	2	1	2	X	X	2	3
	CO3	2	1	2	2	2	1	1	1	2	1	2	X	X	2	3
	CO4	2	1	2	3	2	2	1	1	1	1	2	X	X	2	3
	CO5	2	1	2	3	2	2	1	2	2	2	3	2	X	2	3
	CO6	1	1	1	2	2	3	2	2	2	1	2	X	X	2	3
Semester-II																
PBC201	**CO1**	1	2	1	3	1	2	1	2	3	1	2	3	1	2	2
	CO2	1	1	3	1	X	1	X	1	1	3	1	2	2	3	3
	CO3	3	X	2	X	2	X	2	1	2	1	3	2	2	1	1
	CO4	2	3	1	1	3	2	2	X	2	2	1	1	X	2	2
	CO5	2	2	X	1	1	3	1	2	X	2	2	X	3	X	1
	CO6	X	1	2	2	1	1	3	2	1	X	2	1	2	1	1
HCP201	**CO1**	X	2	1	X	2	X	X	X	X	1	2	1	2	X	1
	CO2	X	2	1	X	2	X	X	X	X	1	2	1	2	X	1
	CO3	X	2	1	1	2	X	X	X	X	1	2	1	2	X	1
	CO4	X	2	1	1	2	X	X	X	3	1	2	1	2	X	2

	CO5	X	2	1	X	2	X	X	X	3	1	2	1	2	X	2
	CO6	X	2	1	X	2	X	X	X	X	1	2	1	2	X	1
CHM201 A1	**CO1**	3	1	1	2	1	1	2	2	1	1	2	2	X	3	3
	CO2	3	1	1	2	1	1	2	2	1	1	2	2	X	3	3
	CO3	3	1	1	2	1	1	2	2	1	1	2	2	X	3	3
	CO4	3	1	1	2	1	1	2	2	1	1	2	2	X	3	3
	CO5	3	1	1	2	1	1	2	2	1	1	2	2	X	3	3
	CO6	3	1	1	2	1	1	2	2	1	1	2	2	X	3	3
CHM201 A2	**CO1**	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO2	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO3	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO4	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO5	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO6	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
CH 201A3	**CO1**	3	1	1	1	2	1	2	2	1	1	2	2	X	2	3
	CO2	3	1	1	1	2	1	2	2	1	1	2	2	X	2	3
	CO3	3	1	1	1	2	1	2	2	1	1	2	2	X	2	3
	CO4	3	1	1	1	2	1	2	2	1	1	2	2	X	2	3
	CO5	3	1	1	1	2	1	2	2	1	1	2	2	X	2	3
	CO6	3	1	1	1	2	1	2	2	1	1	2	2	X	2	3
BOT20 1A	**CO1**	3	1	2	3	2	2	3	2	2	2	3	X	X	3	2
	CO2	3	1	2	3	2	3	2	3	3	3	2	X	X	2	3
	CO3	3	1	3	3	3	3	2	2	1	1	2	X	X	3	3
	CO4	3	1	2	2	3	2	2	2	2	X	2	X	X	1	3
	CO5	3	1	2	1	1	2	1	2	3	1	2	x	x	2	3
BOT201B	**CO1**	3	1	2	3	2	2	3	2	2	2	3	X	X	2	3
	CO2	3	1	2	2	2	3	2	2	3	1	2	X	X	2	3

	CO3	3	1	3	3	3	3	1	2	1	2	1	X	X	3	3
	CO4	3	1	2	2	3	2	3	2	2	X	2	X	X	1	3
	CO5	3	1	2	2	1	2	2	3	2	X	2	X	X	3	3
	CO6	3	1	2	2	1	2	2	3	2	X	2	X	X	3	3
ZOO201 A	**CO1**	2	1	2	1	2	1	2	1	2	1	2	X	X	2	3
	CO2	3	1	3	2	2	2	1	1	2	1	2	X	X	2	3
	CO3	2	1	2	2	2	1	1	1	2	1	2	X	X	2	3
	CO4	3	1	2	3	2	2	1	1	1	1	2	X	X	2	3
	CO5	2	1	2	3	2	2	1	2	3	3	3	2	X	2	3
	CO6	1	1	1	2	2	3	2	2	3	3	3	X	X	2	3
ZOO201 B	**CO1**	2	1	2	1	2	1	2	1	2	1	2	X	X	2	3
	CO2	3	1	3	2	2	2	1	1	2	1	2	X	X	2	3
	CO3	2	1	2	2	2	1	1	1	2	1	2	X	X	2	3
	CO4	3	1	2	3	2	2	1	1	3	3	3	X	X	2	3
	CO5	2	1	2	3	2	2	1	2	3	3	3	2	X	2	3
	CO6	1	1	1	2	2	3	2	2	3	3	3	X	X	2	3
Semester-III																
ENG301	**CO1**	2	2	2	1	2	1	X	X	X	X	1	1	2	1	X
	CO2	2	3	2	1	1	1	X	X	X	X	1	1	2		X
	CO3	2	2	2	1	1	1	X	X	X	X	1	1	2	1	X
	CO4	2	2	2	1	2	2	X	X	X	X	1	1	2	2	X
	CO5	2	2	2	1	1	1	X	X	X	X	1	1	2	1	X
	CO6	2	2	3	1	1	1	X	X	X	X	1	1	2	1	X
CHM301 A1	**CO1**	2	2	1	1	1	1	1	1	1	1	1	2	X	2	2
	CO2	2	2	1	1	1	1	1	1	1	1	1	2	X	2	2
	CO3	2	2	1	1	1	1	1	1	1	1	1	2	X	2	2
	CO4	2	2	1	1	1	1	1	1	1	1	1	2	X	2	2

	CO5	2	2	1	1	1	1	1	1	1	1	1	2	X	2	2
	CO6	2	2	1	1	1	1	1	1	1	1	1	2	X	2	2
CHM301 A2	**CO1**	2	2	1	1	1	1	1	1	1	1	1	1	X	2	2
	CO2	2	2	1	1	1	1	1	1	1	1	1	1	X	2	2
	CO3	2	2	1	1	1	1	1	1	1	1	1	1	X	2	2
	CO4	2	2	1	1	1	1	1	1	1	1	1	1	X	2	2
	CO5	2	2	1	1	1	1	1	1	1	1	1	1	X	2	2
	CO6	2	2	1	1	1	1	1	1	1	1	1	1	X	2	2
CHM3 01A3	**CO1**	2	1	1	1	1	1	1	1	1	1	1	1	X	X	X
	CO2	2	X	1	2	2	1	X	1	1	2	X	X	X	1	1
	CO3	1	1	1	2	2	1	1	1	2	1	X	X	1	1	1
	CO4	1	X	1	1	1	1	1	1	X	X	X	X	1	2	2
	CO5	2	1	1	2	1	1	1	1	1	X	X	X	2	1	1
	CO6	2	1	1	2	1	1	1	1	1	X	X	X	2	1	1
BOT30 1A	**CO1**	3	1	3	2	3	2	3	2	3	1	3	X	X	2	3
	CO2	3	1	2	3	2	3	2	2	2	1	2	X	X	3	2
	CO3	3	1	3	3	3	3	2	2	2	1	2	X	X	2	3
	CO4	3	1	1	2	3	2	2	2	2	X	2	X	X	1	3
	CO5	3	1	2	2	1	2	1	2	1	X	2	X	X	2	3
	CO6	3	1	2	2	1	2	1	2	1	X	2	X	X	2	3
BOT301B	**CO1**	3	1	2	2	3	3	3	3	2	1	3	X	X	2	3
	CO2	3	1	2	2	2	3	2	2	3	1	2	X	X	3	3
	CO3	3	1	3	3	3	2	2	2	2	X	2	X	X	2	3
	CO4	3	1	3	2	1	2	2	2	1	1	3	X	X	1	2
	CO5	3	1	2	2	3	3	1	2	2	X	2	X	X	2	2
	CO6	3	1	2	2	3	3	1	2	2	X	2	X	X	2	2
ZOO301A	**CO1**	2	2	3	1	1	1	2	1	2	1	2	X	X	2	3

	CO2	3	2	3	2	1	2	1	1	2	1	2	X	X	2	3
	CO3	2	2	2	2	2	1	1	1	2	1	2	X	X	2	3
	CO4	2	2	2	2	2	2	1	1	1	1	2	X	X	2	3
	CO5	2	2	2	2	2	2	1	2	2	2	3	2	X	2	3
	CO6	2	2	3	2	2	3	2	2	2	1	2	X	X	2	3
ZOO301 B	**CO1**	2	1	1	3	3	2	3	2	2	3	X	1	X	3	3
	CO2	3	2	2	3	2	1	1	2	2	3	X	1	X	1	3
	CO3	2	2	3	3	3	2	1	1	2	2	2	X	1	2	3
	CO4	2	1	3	3	2	2	2	1	2	3	1	1	X	2	2
	CO5	3	2	3	3	3	2	2	2	3	2	2	2	2	3	3
	CO6	2	2	2	3	3	2	3	2	3	2	3	2	2	2	3
Semester-IV																
ENG401	**CO1**	2	3	2	1	2	1	X	1	X	1	2	2	2	1	1
	CO2	2	3	2	1	2	1	X	1	X	1	2	2	2	1	1
	CO3	2	3	2	1	2	1	X	1	X	1	2	2	2	1	1
	CO4	2	3	2	1	2	1	X	1	X	1	2	1	2	1	1
	CO5	2	3	2	1	2	1	X	1	X	1	2	2	2	1	1
	CO6	2	3	3	1	3	1	x	1	X	1	2	2	2	1	1
CHM401 A1	**CO1**	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO2	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO3	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO4	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO5	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO6	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
CHM401 A2	**CO1**	2	1	1	1	2	1	1	3	1	1	2	2	X	3	3
	CO2	2	1	1	1	2	1	1	3	1	1	2	2	X	3	3
	CO3	2	1	1	1	2	1	1	3	1	1	2	2	X	3	3

	CO4	2	1	1	1	2	1	1	3	1	1	2	2	X	3	3
	CO5	2	1	1	1	2	1	1	3	1	1	2	2	X	3	3
	CO6	2	1	1	1	2	1	1	3	1	1	2	2	X	3	3
CHM401A3	**CO1**	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO2	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO3	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO4	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO5	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO6	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
BOT401A	**CO1**	3	1	2	3	2	3	3	3	3	2	3	X	X	3	2
	CO2	3	1	2	2	2	3	2	2	2	1	2	X	X	2	3
	CO3	3	1	3	3	3	2	2	2	2	2	2	X	X	3	2
	CO4	3	1	3	2	1	2	2	2	1	X	3	X	X	2	3
	CO5	3	1	2	2	3	3	1	2	2	2	2	X	X	1	2
	CO6	3	1	2	2	3	3	1	2	2	2	2	X	X	1	2
BOT401B	**CO1**	3	1	2	2	3	3	3	3	2	1	3	X	X	2	3
	CO2	3	1	3	2	2	3	2	2	3	1	X	X	X	3	3
	CO3	3	1	2	3	3	2	2	2	2	X	2	X	X	2	3
	CO4	3	1	3	2	1	2	2	2	1	1	3	X	X	1	2
	CO5	3	1	2	2	3	3	1	2	2	X	2	X	X	2	2
	CO6	3	1	2	2	3	3	1	2	2	X	2	X	X	2	2
ZOO401A	**CO1**	2	2	3	1	1	1	2	1	2	1	2	X	X	2	3
	CO2	3	2	3	2	1	2	1	1	2	1	2	X	X	2	3
	CO3	2	2	2	2	2	1	1	1	2	1	2	X	X	2	3
	CO4	2	2	2	2	2	2	1	1	1	1	2	X	X	2	3
	CO5	2	2	2	2	2	2	1	2	2	2	3	2	X	2	3
	CO6	2	2	3	2	2	3	2	2	2	1	2	X	X	2	3

ZOO401B	**CO1**	2	1	2	2	3	2	3	2	1	3	X	1	X	2	3
	CO2	3	2	2	2	2	1	2	2	1	3	X	X	X	1	3
	CO3	2	1	2	3	2	2	2	1	1	2	1	X	X	2	3
	CO4	2	1	1	3	2	2	2	1	2	2	1	1	X	2	2
	CO5	3	1	2	2	2	2	2	2	2	2	1	1	X	2	3
	CO6	2	2	2	2	3	2	3	2	2	2	1	1	X	2	3
Semester-V																
CHM501A1	**CO1**	2	2	1	1	1	1	1	1	1	1	1	1	X	2	2
	CO2	2	2	1	1	1	1	1	1	1	1	1	1	X	2	2
	CO3	2	2	1	1	1	1	1	1	1	1	1	1	X	2	2
	CO4	2	2	1	1	1	1	1	1	1	1	1	1	X	2	2
	CO5	2	2	1	1	1	1	1	1	1	1	1	1	X	2	2
	CO6	2	2	1	1	1	1	1	1	1	1	1	1	X	2	2
CHM501A2	**CO1**	3	2	1	1	1	1	2	1	1	1	1	1	X	1	1
	CO2	3	2	1	1	1	1	2	1	1	1	1	1	X	1	1
	CO3	3	2	1	1	1	1	2	1	1	1	1	1	X	1	1
	CO4	3	2	1	1	1	1	2	1	1	1	1	1	X	1	1
	CO5	3	2	1	1	1	1	2	1	1	1	1	1	X	1	1
	CO6	3	2	1	1	1	1	2	1	1	1	1	1	X	1	1
CHM501A3	**CO1**	2	1	2	2	2	X	1	1	1	X	1	X	X	2	2
	CO2	1	2	1	2	1	X	1	2	X	X	X	X	X	2	2
	CO3	3	1	1	2	1	1	1	1	X	X	X	X	X	1	1
	CO4	1	1	1	1	1	X	X	X	1	X	X	X	X	2	1
	CO5	2	2	2	2	1	1	1	2	X	1	1	X	X	2	2
	CO6	2	2	2	2	1	1	1	2	X	1	1	X	X	2	2
BOT501A	**CO1**	3	1	3	2	3	3	3	3	3	1	3	X	X	2	3
	CO2	3	1	2	2	2	2	2	2	3	X	2	X	X	2	3

	CO3	3	1	3	3	3	3	2	2	2	1	2	X	X	3	2
	CO4	3	1	3	2	3	2	2	2	1	1	3	X	X	1	2
	CO5	3	1	2	2	1	3	1	2	2	X	2	X	X	2	3
	CO6	3	1	2	2	1	3	1	2	2	X	2	X	X	2	3
BOT501B	**CO1**	3	1	2	2	3	3	3	3	2	1	3	X	X	2	3
	CO2	3	1	2	2	2	3	2	2	3	1	2	X	X	3	3
	CO3	3	1	3	3	3	2	2	2	2	X	2	X	X	2	3
	CO4	3	1	3	2	1	2	2	2	1	1	3	X	X	1	2
	CO5	3	1	2	2	3	3	1	2	2	X	2	X	X	2	2
	CO6	3	1	2	2	3	3	1	2	2	X	2	X	X	2	2
ZOO501A	**CO1**	2	2	1	3	3	2	3	2	2	2	2	1	1	3	3
	CO2	3	2	2	3	2	1	1	2	2	3	1	1	X	1	2
	CO3	2	3	3	2	3	2	1	2	2	2	2	X	X	2	3
	CO4	2	1	3	3	2	3	2	1	2	3	1	1	X	2	3
	CO5	3	2	3	3	3	2	2	2	3	2	2	2	X	3	2
	CO6	2	2	2	3	3	2	3	2	3	2	3	2	X	2	2
ZOO501 B	**CO1**	3	1	1	1	2	2	2	3	2	2	3	X	X	2	3
	CO2	3	1	2	2	2	2	2	2	2	2	2	X	X	2	2
	CO3	3	1	2	2	1	2	2	2	2	3	3	1	X	2	3
	CO4	2	1	2	3	2	2	2	2	2	3	3	1	X	2	3
	CO5	2	1	3	3	2	2	3	3	2	3	1	X	X	2	2
	CO6	2	1	3	2	2	2	3	2	2	2	2	X	X	2	2
Semester-VI																
CHM601 A1	**CO1**	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO2	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO3	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO4	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3

	CO5	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO6	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
CHM601 A2	**CO1**	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO2	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO3	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO4	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO5	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO6	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
CHM6 01A3	**CO1**	2	1	1	2	1	1	2	2	1	1	2	2	X	2	3
	CO2	2	1	1	2	1	1	2	2	1	1	2	2	X	2	3
	CO3	2	1	1	2	1	1	2	2	1	1	2	2	X	2	3
	CO4	2	1	1	2	1	1	2	2	1	1	2	2	X	2	3
	CO5	2	1	1	2	1	1	2	2	1	1	2	2	X	2	3
	CO6	2	1	1	2	1	1	2	2	1	1	2	2	X	2	3
BOT601A	**CO1**	3	1	2	2	3	3	3	3	2	1	3	X	X	2	3
	CO2	3	1	2	2	2	3	2	2	3	2	2	X	X	3	2
	CO3	3	1	3	3	3	2	3	2	2	1	2	X	X	2	3
	CO4	3	1	3	2	1	2	2	3	1	x	2	X	X	1	3
	CO5	3	1	2	2	3	3	1	2	2	x	3	X	X	2	2
	CO6	3	1	2	2	3	3	1	2	2	x	3	X	X	2	2
BOT601B	**CO1**	3	1	2	2	3	3	3	3	2	1	3	X	X	2	3
	CO2	3	1	2	2	2	3	2	2	3	X	2	X	X	2	2
	CO3	3	1	3	3	3	2	2	3	2	1	1	X	X	3	2
	CO4	3	1	3	2	1	2	2	2	1	1	3	X	X	2	3
	CO5	3	1	2	2	3	3	1	2	2	X	2	X	X	1	2
	CO6	3	1	2	2	3	3	1	2	2	X	2	X	X	1	2
ZOO601A	**CO1**	3	2	3	3	2	1	1	1	2	2	3	X	X	2	3

	CO2	2	2	3	3	2	1	1	1	2	2	2	X	X	2	3
	CO3	2	2	3	3	2	2	X	1	2	1	3	1	X	2	3
	CO4	3	2	3	3	2	2	X	1	2	2	3	1	X	2	3
	CO5	3	2	3	3	2	1	1	1	2	3	2	X	X	2	3
	CO6	3	2	3	3	2	2	1	1	3	2	2	X	X	2	3
ZOO601 B	**CO1**	3	1	2	1	3	3	3	2	2	3	2	1	X	3	3
	CO2	3	1	3	2	2	1	3	2	2	3	2	1	X	2	3
	CO3	3	1	2	3	2	2	3	2	2	2	2	X	1	2	3
	CO4	3	2	1	2	1	2	3	2	2	3	1	1	X	2	3
	CO5	3	2	1	X	1	1	3	2	3	2	2	2	X	3	3
	CO6	3	2	2	1	1	2	3	2	3	2	3	2	X	2	3

Mapping of Course Outcomes(COs) with programme Specific outcomes(PSOs)

College code	Course Out-comes	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
PBC101	**CO1**	1	2	3	2	1		
	CO2	2	1	1	1	3		
	CO3	2	1	1	1	2		
	CO4	1	3	2	2	2		
	CO5	3	2	2	3	1		
	CO6	1	1	1	2	1		
HCP101	**CO1**	X	X	X	X	X	X	2
	CO2	X	X	X	X	X	X	2
	CO3	X	X	X	X	X	X	2
	CO4	X	X	X	X	X	X	2
	CO5	X	X	X	X	X	X	2
	CO6	X	X	X	X	X	X	2

CHM101A1	**CO1**	3	3	2	2	1	3	3
	CO2	3	3	2	2	1	3	3
	CO3	3	3	2	2	1	3	3
	CO4	3	3	2	2	1	3	3
	CO5	3	3	2	2	1	3	3
	CO6	3	3	2	2	1	3	3
CHM101A2	**CO1**	3	3	2	2	2	3	3
	CO2	3	3	2	2	2	3	3
	CO3	3	3	2	2	2	3	3
	CO4	3	3	2	2	2	3	3
	CO5	3	3	2	2	2	3	3
	CO6	3	3	2	2	2	3	3
CHM101 A3	**CO1**	3	3	3	2	1	3	3
	CO2	3	3	3	2	1	3	3
	CO3	3	3	3	2	1	3	3
	CO4	3	3	3	2	1	3	3
	CO5	3	3	3	2	1	3	3
	CO6	3	3	3	2	1	3	3
BOT101A	**CO1**	3	2	3	3	3	2	3
	CO2	3	2	3	2	2	3	3
	CO3	2	2	2	3	2	3	2
	CO4	1	3	1	1	2	2	1
	CO5	3	2	1	2	1	1	3
	CO6	3	2	1	2	1	1	3
BOT101B	**CO1**	3	3	3	3	3	3	3
	CO2	3	2	3	2	2	2	2
	CO3	1	2	2	3	3	3	1

	CO4	2	3	1	1	2	2	2
	CO5	3	1	1	2	1	1	3
	CO6	3	1	1	2	1	1	3
ZOO101A	**CO1**	3	2	3	2	2	2	2
	CO2	3	2	3	2	2	2	2
	CO3	3	2	3	2	3	2	2
	CO4	2	2	3	2	3	2	2
	CO5	3	2	3	2	2	2	1
	CO6	3	2	3	2	2	2	1
ZOO101B	**CO1**	3	2	3	2	2	2	2
	CO2	3	2	3	2	2	2	2
	CO3	3	2	3	2	3	2	2
	CO4	2	2	3	2	3	2	2
	CO5	3	2	3	2	2	2	1
	CO6	3	2	3	2	2	2	1
PBC201	**CO1**	2	1	3	2	2	2	3
	CO2	3	1	2	3	1	3	2
	CO3	2	2	1	1	2	1	1
	CO4	2	2	1	1	2	1	1
	CO5	1	1	2	2	1	2	2
	CO6	1	3	2	1	3	1	2
HCP201	**CO1**	X	X	X	X	X	X	2
	CO2	X	X	X	X	X	X	2
	CO3	X	X	X	X	X	X	2
	CO4	X	X	X	X	X	X	2
	CO5	X	X	X	X	X	X	2
	CO6	X	X	X	X	X	X	2
CHM201A1	**CO1**	3	3	2	2	2	3	3

	CO2	3	3	2	2	2	3	3
	CO3	3	3	2	2	2	3	3
	CO4	3	3	2	2	2	3	3
	CO5	3	3	2	2	2	3	3
	CO6	3	3	2	2	2	3	3
CHM201A2	**CO1**	3	3	2	2	2	3	3
	CO2	3	3	2	2	2	3	3
	CO3	3	3	2	2	2	3	3
	CO4	3	3	2	2	2	3	3
	CO5	3	3	2	2	2	3	3
	CO6	3	3	2	2	2	3	3
CH 201A3	**CO1**	3	3	2	2	2	3	3
	CO2	3	3	2	2	2	3	3
	CO3	3	3	2	2	2	3	3
	CO4	3	3	2	2	2	3	3
	CO5	3	3	2	2	2	3	3
	CO6	3	3	2	2	2	3	3
BOT201A	**CO1**	3	3	3	3	3	2	3
	CO2	3	2	3	2	2	3	2
	CO3	2	2	2	3	2	3	3
	CO4	2	3	1	1	2	2	2
	CO5	3	2	2	1	1	2	3
	CO6	3	2	2	1	1	2	3
BOT201B	**CO1**	3	3	3	2	3	2	3
	CO2	3	2	3	3	2	3	3
	CO3	2	3	2	3	2	3	3
	CO4	2	3	1	2	2	2	1
	CO5	3	2	2	2	1	1	3
	CO6	3	2	2	2	1	1	3

ZOO201A	**CO1**	3	2	3	2	2	2	2
	CO2	3	2	3	2	2	2	2
	CO3	3	2	3	2	3	2	2
	CO4	2	2	3	2	3	2	2
	CO5	3	2	3	2	2	2	1
	CO6	3	2	3	2	2	2	1
ZOO201B	**CO1**	3	2	3	2	2	2	2
	CO2	3	2	3	2	2	2	2
	CO3	3	2	3	2	3	2	2
	CO4	2	2	3	2	3	2	2
	CO5	3	2	3	2	2	2	1
	CO6	3	2	3	2	2	2	1
ENG301	**CO1**	X	X	X	3	X	2	X
	CO2	X	X	X	3	X	2	X
	CO3	X	X	X	3	X	2	X
	CO4	X	X	X	3	X	2	X
	CO5	X	X	X	3	X	2	X
	CO6	X	X	X	3	X	2	X
CHM301A1	**CO1**	3	3	2	2	2	3	3
	CO2	3	3	2	2	2	3	3
	CO3	3	3	2	2	2	3	3
	CO4	3	3	2	2	2	3	3
	CO5	3	3	2	2	2	3	3
	CO6	3	3	2	2	2	3	3
CHM301A2	**CO1**	3	3	2	2	2	3	3
	CO2	3	3	2	2	2	3	3
	CO3	3	3	2	2	2	3	3

	CO4	3	3	2	2	2	3	3
	CO5	3	3	2	2	2	3	3
	CO6	3	3	2	2	2	3	3
CHM301 A3	**CO1**	3	3	2	2	2	3	3
	CO2	3	3	2	2	2	3	3
	CO3	3	3	2	2	2	3	3
	CO4	3	3	2	2	2	3	3
	CO5	3	3	2	2	2	3	3
	CO6	3	3	2	2	2	3	3
BOT301A	**CO1**	2	3	3	3	3	3	2
	CO2	3	2	3	2	2	3	3
	CO3	2	2	2	3	2	1	1
	CO4	1	3	1	1	2	2	2
	CO5	3	2	1	2	1	3	3
	CO6	3	2	1	2	1	3	3
BOT301B	**CO1**	3	2	3	2	3	2	3
	CO2	3	3	3	3	2	2	3
	CO3	1	2	1	3	3	3	2
	CO4	2	3	2	1	2	2	2
	CO5	3	2	1	2	1	1	3
	CO6	3	2	1	2	1	1	3
ZOO301A	**CO1**	3	2	3	2	2	2	2
	CO2	3	2	3	2	2	2	2
	CO3	3	2	3	2	3	2	2
	CO4	2	2	3	2	3	2	2
	CO5	3	2	3	2	2	2	1
	CO6	3	2	3	2	2	2	1
ZOO301B	**CO1**	2	3	3	3	2	3	3

	CO2	2	3	2	3	2	3	3
	CO3	3	3	2	3	3	2	3
	CO4	2	2	3	3	3	2	3
	CO5	3	3	3	3	3	3	3
	CO6	3	3	3	3	3	3	3
ENG401	**CO1**	X	X	X	3	X	2	X
	CO2	X	X	X	3	X	2	X
	CO3	X	X	X	3	X	2	X
	CO4	X	X	X	3	X	2	X
	CO5	X	X	X	3	X	2	X
	CO6	X	X	X	3	X	2	X
CHM401A1	**CO1**	3	3	2	2	2	3	3
	CO2	3	3	2	2	2	3	3
	CO3	3	3	2	2	2	3	3
	CO4	3	3	2	2	2	3	3
	CO5	3	3	2	2	2	3	3
	CO6	3	3	2	2	2	3	3
CHM401A2	**CO1**	3	3	2	2	2	3	3
	CO2	3	3	2	2	2	3	3
	CO3	3	3	2	2	2	3	3
	CO4	3	3	2	2	2	3	3
	CO5	3	3	2	2	2	3	3
	CO6	3	3	2	2	2	3	3
CHM401 A3	**CO1**	3	3	2	2	2	3	3
	CO2	3	3	2	2	2	3	3
	CO3	3	3	2	2	2	3	3
	CO4	3	3	2	2	2	3	3

	CO5	3	3	2	2	2	3	3
	CO6	3	3	2	2	2	3	3
BOT401A	**CO1**	3	2	3	2	3	2	3
	CO2	3	3	3	3	2	2	3
	CO3	1	2	1	3	3	3	2
	CO4	2	3	2	1	2	2	3
	CO5	3	2	1	2	1	2	2
	CO6	3	2	1	2	1	2	2
BOT401B	**CO1**	3	3	2	2	3	3	2
	CO2	3	3	3	3	2	2	3
	CO3	2	2	1	3	3	3	2
	CO4	2	2	1	1	2	1	2
	CO5	3	3	2	2	1	2	3
	CO6	3	3	2	2	1	2	3
ZOO401A	**CO1**	3	2	3	2	2	2	2
	CO2	3	2	3	2	2	2	2
	CO3	3	2	3	2	3	2	2
	CO4	2	2	3	2	3	2	2
	CO5	3	2	3	2	2	2	1
	CO6	3	2	3	2	2	2	1
ZOO401B	**CO1**	2	3	3	3	2	3	3
	CO2	2	3	2	3	2	3	3
	CO3	3	3	2	3	3	2	3
	CO4	2	2	3	3	3	2	3
	CO5	3	3	3	3	3	3	3
	CO6	3	3	3	3	3	3	3
CHM501A1	**CO1**	3	3	2	2	2	3	3
	CO2	3	3	2	2	2	3	3
	CO3	3	3	2	2	2	3	3

	CO4	3	3	2	2	2	3	3
	CO5	3	3	2	2	2	3	3
	CO6	3	3	2	2	2	3	3
CHM501A2	**CO1**	3	3	2	2	2	3	3
	CO2	3	3	2	2	2	3	3
	CO3	3	3	2	2	2	3	3
	CO4	3	3	2	2	2	3	3
	CO5	3	3	2	2	2	3	3
	CO6	3	3	2	2	2	3	3
CHM501 A3	**CO1**	3	3	2	2	2	3	3
	CO2	3	3	2	2	2	3	3
	CO3	3	3	2	2	2	3	3
	CO4	3	3	2	2	2	3	3
	CO5	3	3	2	2	2	3	3
	CO6	3	3	2	2	2	3	3
BOT501A	**CO1**	3	2	3	2	3	2	3
	CO2	3	3	3	3	3	2	3
	CO3	2	2	2	3	3	3	1
	CO4	2	3	1	2	2	2	3
	CO5	3	2	1	2	1	2	2
	CO6	3	2	1	2	1	2	2
BOT501B	**CO1**	3	2	3	2	3	2	3
	CO2	3	3	3	3	2	2	3
	CO3	1	2	1	3	3	3	2
	CO4	2	3	2	1	2	2	2
	CO5	3	2	1	2	1	1	3
	CO6	3	2	1	2	1	1	3

ZOO501A	**CO1**	2	3	3	3	2	3	3
	CO2	2	3	2	3	2	3	3
	CO3	3	3	2	3	3	2	3
	CO4	2	2	3	3	3	2	3
	CO5	3	3	3	3	3	3	3
	CO6	3	3	3	3	3	3	3
ZOO501B	**CO1**	2	3	3	3	2	3	3
	CO2	2	3	2	3	2	3	3
	CO3	3	3	2	3	3	2	3
	CO4	2	2	3	3	3	2	3
	CO5	3	3	3	3	3	3	3
	CO6	3	3	3	3	3	3	3
CHM601A1	**CO1**	3	3	2	2	2	3	3
	CO2	3	3	2	2	2	3	3
	CO3	3	3	2	2	2	3	3
	CO4	3	3	2	2	2	3	3
	CO5	3	3	2	2	2	3	3
	CO6	3	3	2	2	2	3	3
CHM601A2	**CO1**	3	3	2	2	2	3	3
	CO2	3	3	2	2	2	3	3
	CO3	3	3	2	2	2	3	3
	CO4	3	3	2	2	2	3	3
	CO5	3	3	2	2	2	3	3
	CO6	3	3	2	2	2	3	3
CHM601 A3	**CO1**	3	3	2	2	2	3	3
	CO2	3	3	2	2	2	3	3
	CO3	3	3	2	2	2	3	3

	CO4	3	3	2	2	2	3	3
	CO5	3	3	2	2	2	3	3
	CO6	3	3	2	2	2	3	3
BOT601A	**CO1**	3	2	3	2	3	3	2
	CO2	3	3	3	3	2	2	3
	CO3	1	2	2	3	3	3	2
	CO4	3	3	1	1	2	1	3
	CO5	2	2	1	2	1	2	2
	CO6	2	2	1	2	1	2	2
BOT601B	**CO1**	3	2	3	2	3	2	3
	CO2	3	3	1	3	3	2	3
	CO3	2	2	2	2	2	1	2
	CO4	2	3	2	2	1	2	2
	CO5	3	2	1	1	2	3	3
	CO6	3	2	1	1	2	3	3
ZOO601A	**CO1**	2	3	3	3	2	3	3
	CO2	2	3	2	3	2	3	3
	CO3	3	3	2	3	3	2	3
	CO4	2	2	3	3	3	2	3
	CO5	3	3	3	3	3	3	3
	CO6	3	3	3	3	3	3	3
ZOO601B	**CO1**	2	3	3	3	2	3	3
	CO2	2	3	2	3	2	3	3
	CO3	3	3	2	3	3	2	3
	CO4	2	2	3	3	3	2	3
	CO5	3	3	3	3	3	3	3
	CO6	3	3	3	3	3	3	3

DEPARTMENT OF MATHEMATICS

The mathematics department at B.A.M. Khalsa College traces its history back to 1975, when mathematics was introduced as an elective subject in humanity discipline.Since its Inception, the department has made constant efforts to grow along with the Institution in order to cater the need of the dynamically developing world. The subject made a progression by becoming the core subject with the initiation of Basic Sciences in 1998. The department has been constantly upgrading itself, an example of which is the introduction of MSc (Mathematics) in 2016. At present, the competent mentoring team of the department offers both graduate and post graduate courses in mathematics. Besides the rigorous analytical subjects of pure mathematics, a number of laboratory-based practical courses are also incorporated in our post graduate curriculum. We believe in providing abundant opportunities to students which improve their organizational and leadership skills for handling various academic and co-curricular activities.

VISION

To create a benchmark in students centric learning environments and interdisciplinary research opportunities in order to foster a rich heritage of valuable alumni

MISSION

- To popularise the subject, several mathematics fairs, quizzes, fun games and exhibitions are to be featured in our annual academic calendar
- To organize off-campus educational tours and collaborating with Research centres for a first-hand experience in applied mathematics
- The faculty looks forward to achieving excellence by the means of pioneering technologies, Quality literature and state-of-the-art laboratories
- Introducing more statistical and computational programs to balance practical and theoretical aspects of the subject
- We anticipate launching new online courses to expand out of the conventional teaching practice

OBJECTIVES

With the intention to fulfill the vision and mission of the department, we are dedicated to:

- Build and sustain an environment that inculcates appropriate mathematical skills required for solving problems in real life context
- Developing deep understanding of core subjects like pure mathematics, enabling learners to effortlessly apply those apparently complex mathematical techniques
- Provide superlative education facilities to yield the potential of students by imparting optimum knowledge of the subject and encouraging questioning spirit
- Provide proper mentoring and counselling to students regarding higher education opportunities and emerging career prospects
- To bestow opportunities of participating in workshops, conferences and orientations to equip students with interpersonal skills and industry standard hands-on expertise
- To promote and popularise the 'Queen of Sciences' through interdisciplinary programmes and application based curriculum

Programme run by department:

1. B.Sc. Non- Medical (General) (Programme code: BSCM)
2. M.Sc. Mathematics (Programme code: MSCMATH)

B.Sc. Non-Medical (General)

Programme Learning Outcomes of B.Sc. Non-Medical (General)

Graduate Attributes

On successful completion of B.Sc. programme the students will be able to develop following attributes, qualities and skills:

PO 1	**Disciplinary Knowledge**	Capable of demonstrating comprehensive knowledge and understanding of major concepts, theoretical principles and experimental findings in science and its different subfields, and other related fields of study, including broader interdisciplinary subfields.

PO 2	**Communication Skills**	Course of English in B.Sc. enables them to communicate clearly and convincingly about science and technology ideas, practice and future contributions to expert and non-expert audiences through seminars, open discussion, language learning.
PO 3	**Critical Thinking**	Ability to employ critical thinking is enhanced by ● Organizing guest lectures, debates and declamation on hot topics/current subjects. ● Presenting logic and reasoning for all forms of topics. ● Question to be paused through studying different courses domestically and international.
PO 4	**Problem Solving**	The practical and theoretical approaches in basic sciences develop the conceptual, analytical, quantitative and technical skills in the students to solve academic and real life problems.
PO 5	**Sense of Inquiry**	Experiment based curriculum builds the capability for asking relevant/appropriate questions relating to issues and problems in the field of Science and planning, executing and reporting the results of an investigation.
PO 6	**Team player/ worker**	Students of B.Sc. are capable of ● Working effectively in diverse teams in both classroom, laboratory and in industry and field-based situations. ● Performing in groups to meet a shared goal with people whose disciplinary and cultural background differs from their own. ● Organize field trips, field surveys and photo documentation projects. ● Consistently hold science exhibitions, poster contests, short trips to help in shaping personality.
PO 7	**Skilled Project Manager**	Undertaking Assignments and projects of various disciplines of Science make them capable of identifying/mobilizing appropriate resources required for a project, and managing a project through to completion, while observing responsible and ethical scientific conduct; and safety-regulations and practices.
PO 8	**Digitally Literate**	Students of B.Sc. Capable of ● Using computers for computation and appropriate software for analysis of data Employing modern library search tools to locate, retrieve and evaluate subject-related information. ● Various class seminars are arranged for the students to make their ppt. by using e-resources/e-books and different search engines
PO 9	**Ethical Awareness**	Course Framework of B.Sc. make students capable of ● Demonstrating ability to think and analyze rationally with modern and scientific outlook and identify ethical issues

		• Avoiding unethical behavior such as fabrication, falsification or misrepresentation of data or committing plagiarism, and appreciating environmental and sustainability issues.
PO 10	**National and International Perspective**	The Multidisciplinary Program enables students to evaluate the role of science, technology, and engineering in addressing current issues facing local and global communities. For example climate change, health and disease, food security, sustainable energy use etc.
PO 11	**Lifelong Learners**	Make students Capable of self-paced and self-directed learning aimed at personal development and for improving knowledge/skill development and reskilling in all areas of science. It promotes interactions with corporate, NGOs and government as well as other agencies.
PO 12	**Leadership Readiness/ Qualities**	B.Sc. program enhanced the • theoretical and experimental skills necessary to analyze and solve a range of advances problems, providing an excellent foundation for leadership • Through extra and co-curricular activities (NSS, NCC, Youth Festivals). • To interact with different individuals in society and work for welfare of community.
PO 13	**Multicultural Competence**	• In youth fest and heritage festival encouraging performance in various items. • Visual and graphic presentation of Indian culture and ethnicities. • Gurpurab celebrations to showcase rich cultural heritage of Punjab. • Encouraging the embellishment of various cultures of the state through its traditional profile presentation in text, oral and other performance initiatives.
PO 14	**Self -Directing Learning**	Enable them to recognize the need for information, effectively search for, evaluate, manage and apply that information in support of scientific investigation.
PO 15	**Scientific reasoning**	• Introduction of students to labs and lab equipment materials and safe-guard. • Perform experiments and activities in singles and in groups. • Compare and coordinate team spirit in discussant mode.

Program Specific Outcomes (PSOs)

PSO1	Understand the conceptual development of the subject and its application in emerging areas of Physics, Chemistry/C.S./Env. and Mathematics.

PSO2	A non-medical student will demonstrate a scientific knowledge of the core physics principles in Mechanics, Electromagnetism, Modern Physics, and Optics.
PSO3	Students are able to demonstrate basic manipulative skills in algebra, analysis, probability, geometry, trigonometry, and beginning calculus.
PSO4	Students will acquire knowledge of Chemical Thermodynamics, Kinetics, Electrochemistry, Atomic Structure, Organic Chemistry, Spectroscopy and Skill in Industrial Chemistry.
PSO5	Students will determine the appropriate level of technology for use in experimental design and implementation, analysis of experimental data, and numerical and mathematical methods in problem solutions.
PSO6	Students will be able to apply the underlying unifying structures of mathematics (i.e. sets, relations and functions, logical structure) and the relationships among them.
PSO7	A non-medical student can join Indian Air Force, Indian Navy, Indian Civil Services like IAS, IPS, IFS etc.
PSO 8	Students can join as a scientist in research institutes of immense knowledge having a great scope for growth and development.

Course Outcomes (COs) of B.Sc. Non- Medical

Semester	**Course Title**	**College Code**	**Course Outcomes** On completion of the course, students will be able to know the scope and importance of the discipline and its objectives	
Sem. I	**Punjabi Compulsory**	**PBC101**	**CO1**	Give an introductory knowledge of PBI language.
			CO2	Examine the various forms of modern poetry
			CO3	To understand the definition and nature of easy and make students capable of writing easily.
			CO4	To develop the skill of Percy writing.
			CO5	To make student able to understand the grammar and its importance in sentence language.
			CO6	To get practical knowledge of various
Sem. I	**History & Culture of Punjab**	**HCP101**	**CO1**	Develop the knowledge of history of the Punjab region
			CO2	Identify the culture of Punjab region
			CO3	Analyze Harappan Civilization & Life in Vedic Age, Growth of Jainism and Buddhism
			CO4	Develop the knowledge of Society and Culture under Maurayas & Gupta, Cultural Reorientation:

			CO5	Discuss Evolution of Sikhism
			CO6	Develop the knowledge of Changes in Society in 18th century
Sem. I	**Inorganic Chemistry-I**	**CHM101A1**	**CO1**	Understand the essential facts relating inorganic chemistry concepts.
			CO2	Comprehension of Atomic Structure, Periodic properties of elements.
			CO3	Description of Chemistry of Noble Gases.
			CO4	Knowledge about s-Block Elements.
			CO 5	Explanation of Chemical Bonding (V.B.T, VSEPR, hybridization MOT).
			CO 6	To determine the percentage ionic character from dipole moment and electro negativity difference.
Sem. I	**Organic Chemistry-I**	**CHM101A2**	**CO1**	Understand the structure and bonding of organic compounds
			CO2	Comprehension of mechanisms of different organic reactions
			CO3	Description of alkanes and cycloalkanes and including their synthesis and chemical reactions
			CO4	Knowledge about optical isomerism in organic compounds.
			CO5	Explanation of geometrical isomerism and
			CO6	Conformational isomerism in organic compounds.
Sem. I	**Physical Chemistry-I**	**CHM101A3**	**CO1**	Acquire the knowledge of mathematical concepts and its application in evaluation of analytical data.
			CO2	Explanation of gaseous state and deviation in their behavior from ideal gases behavior
			CO3	Knowledge about Maxwell distribution of molecular velocity, collision number and mean free path.
			CO4	Description of reaction, rate of reaction, kinetics and their mechanism
			CO5	Understand the effect of temperature on rate of reaction , collision theory , catalysis and radioactive decay
			CO6	To understand the Michaelis Menten's equation for enzyme catalysis and its mechanism.
Sem. I	**Mechanics I (Physics)**	**PHY101A**	**CO1**	Knowledge about spherical and coordinate systems.
			CO2	Understand the concept of center of mass ,angular momentum and various relationships of momentum
			CO3	Knowledge about motion under force obeying inverse square law.
			CO4	Understand the important connections between theory and experiment.
			CO5	Completely understand Newton's law of motion and conservation principles.
			CO6	Complete knowledge about application of vector theorems

				of mechanics and interpretation of their results.
Sem. I	**Vibration, Waves & EM TheoryI (Physics)**	**PHY101B**	**CO1**	Understand the decay of free vibrations due to damping, types of damping and electromagnetic Damping.
			CO2	To acquire the knowledge of transient and steady state behavior and power supply to an oscillator and its vibration with frequency.
			CO3	Knowledge about simple harmonic motions, Torsional Pendulum, and transverse vibrations.
			CO4	Understand the significance of transverse wave, and wave equation.
			CO5	Understand the concept of simple harmonic vibrations of same frequency and different frequency.
			CO6	Use Lissajous figures to understand simple harmonic vibrations of same frequency and different frequencies.
Sem. I	**Electricity and Magnetism I (Physics)**	**PHY101C**	**CO1**	Know the vocabulary and concepts of physics as it applies to: Principles of Electric Fields, Gauss's Law, Electric
			CO2	Understand the relationship between electrical charge, electrical field, electrical potential
			CO3	Be able to use electromagnetic theory and principles in a wide range of Applications and Learn a variety of advanced mathematical methods and computer technique
			CO4	Learn a variety of advanced mathematical methods and computer techniques.
			CO5	To know what the electric field and electric potential in, and around, a conductor look like.
			CO6	To study the concept of electrical images with the help of Poisson and Laplace equation
Sem. I	**Practical (Physics)**		**CO1**	Expose the students of B.Sc. to the experimental techniques in general Physics, Mechanics, waves and vibration, electricity and magnetism.
			CO2	They can co-relate the theoretical concepts with the experimental ones and develop confidence to handle sophisticated equipment wherever necessary.
			CO3	Solving Problems on Transformation of lines joining origin to the intersection of a line and a curve.
			CO4	Solving Problems on Transformation of axes, Joint equation of pair of straight lines and angle between them, Joint equation of lines joining origin to the intersection of a line and a curve.
			CO5	Learn about General equation of circle, tangents, normals, chord of contact, pole and polar, pair of tangents from a point and length of tangent
			CO6	Knowledge of equation of chord in terms of midpoint,

				radical axis, co-axial family of circles, limiting points.
Sem. I	**Plane Geometry (Mathematics)**	**MAT101A**	**CO1**	Understanding of General equation of a conic, tangents, normals, chord of contact, pole and polar, pair of tangents, diameter, Conjugate diameters of ellipse and hyperbola.
			CO2	Exposure on special properties of parabola, ellipse and hyperbola, conjugate hyperbola, asymptotes of hyperbola, rectangular hyperbola.
			CO3	Understanding the concepts of real numbers, Limits and continuity.
			CO4	Solve Algebraic equations and inequalities involving the square root and Modulus function.
			CO5	Analyze functions and their graphs and learn to produce rigorous proofs of results that arise in the context of calculus, Geometric value theorems.
			CO6	Determine continuity at a point or an interval. and distinguish between the types of discontinuities at a point.
Sem. I	**Calculus I (Mathematics)**	**MAT101B**	**CO1**	Identify and Apply the intermediate value theorem, Mean value theorem and L'Hospital Rule.
			CO2	Knowledge about Hyperbolic functions, their differentiation. learn Successive differentiation and Leibnitz's theorem.
			CO3	Understand De Moivre theorem and apply it to find roots and powers of complex numbers
			CO4	Analyze functions of complex variables and calculate summation of trigonometric series
			CO5	Differentiate Hermitian and Skew Hermitian Matrices and compute rank of matrix.
			CO6	Discuss Linear dependence and linear independence of vectors and solve linear equations using matrices
Sem. I	**Trigonometry & Matrices (Mathematics)**	**MAT101C**	**CO1**	Calculate Eigenvalues of matrix and apply Cayley - Hamilton theorem to find inverse of matrix
			CO2	Define basic computer hardware architecture
			CO3	Discuss software applications
			CO4	Use essential IT support skills including installing, configuring, securing and troubleshooting operating systems and hardware
			CO5	Understand file management
			CO6	Accomplish creating basic documents, presentations with their properties
Sem. I	**Computer Fundamentals (Theory) (Computer**	**CS101A**	**CO1**	Acquire the knowledge of types of software Operating Systems
			CO2	To introduce students with the basic concepts of the operating system, its functions and services.

	Science)		**CO3**	Use essential IT support skills including installing, configuring, securing and troubleshooting operating systems and hardware.
			CO4	Discuss such Microsoft office applications like MS-Word , MS-Excel , MS-PowerPoint etc.
			CO5	Use file management techniques for file and directory/folder organization.
			CO6	Able to aware of RAM, ROM, COST, SIZE, CACHE and virtual memory
Sem. I	**PC Software (Theory) (Computer Science)**	**CS101B**	**CO1**	Accomplish creating basic documents, presentations with their properties
			CO2	Basic Knowledge of input/output devices & various types of memories.
			CO3	Become proficient in using the features of MS Office.
			CO4	Determine what operating system you have, Create files and folders, organize files and folders, delete and restore files and folders using the Recycle Bin.
			CO5	Understand the basic set of commands and editors in the Linux operating system.
			CO6	Each student must be able to configure the basic computer management settings of windows components. Each student must familiar to work with MS-DOS command prompt and basic DOS commands
Sem. I	**Practical (Computer Science)**	**CS101L**	**CO1**	Understand the scope and importance of the environment.
			CO2	To acquire knowledge about the ecosystem and its various components. Introduction to various biogeochemical cycles of the environment
			CO3	Learn about different types of natural resources and their uses to mankind, Various policies of their conservation.
			CO4	Acquire knowledge about various alternative sources of energy like solar energy , wind power , geothermal energy, dung energy and wood energy
			CO5	Detailed understanding of forest types in India and the World. Learn about different forestry systems like farm forestry, community forestry , social forestry and agroforestry systems
			CO6	To know about the various adulterants of food and various tests performed to find out the type of adulteration and understand about various indoor pollutants exist in our workplaces, homes, college, bus stands .
Sem. II	**Punjabi Compulsory**	**PBC201**	**CO1**	To get basic information of Punjabi language
			CO2	Provide knowledge of Punjabi short story and make student familiar with it

			CO3	Also make student able to write any kind of notice
			CO4	To make student to understand the Punjabi idioms its importance and benefits
			CO 5	To provide practical knowledge of Punjabi language and vocabulary
			CO 6	Theoretical and Practical knowledge of linguistics
Sem. II	**History & Culture of Punjab**	**HCP201**	**CO1**	Discuss the history of the Punjab region
			CO2	Discuss the culture of Punjab region
			CO3	Explain the Colonial Rule in Punjab, western education, agrarian development
			CO4	Develop the knowledge of Early socio religious reform, Socio Religious Reform Movements
			CO 5	Discuss Gurudwara Reform Movement, Emergence Of Political Consciousness & struggle for freedom
			CO 6	Discuss the major historical places in Punjab
Sem. II	**Inorganic Chemistry-I**	**CHM201A1**	**CO1**	Appraisal of p-block elements and chemical bonding.
			CO2	Understanding of close packing in ionic solids and radius ratio rule.
			CO3	Comprehension of lattice energy and Born Haber cycle.
			CO4	Knowledge about polarising power and polarisability using fajan's rule .
			CO5	Descriptions of hydrides ,oxides ,oxyacids of p-block elements.
			CO6	To know about the basic properties of halogens, interhalogens and polyhalides.
Sem. II	**Organic Chemistry-I**	**CHM201A2**	**CO1**	Comprehension of alkenes and cycloalkanes including their synthesis and chemical reactions
			CO2	Knowledge about dienes and alkynes incorporating their methods of formation, structures and chemical reactions
			CO3	Understanding the arenes and aromaticity in organic compounds
			CO4	Descriptions of mechanisms of aromatic electrophilic substitutions reactions
			CO5	Appraisal of methods of formation and chemical reaction of alkyl halides and aryl halides.
			CO6	To understand the substitution at allylic and vinylic position of alkenes.
Sem. II	**Physical Chemistry-I**	**CHM201A3**	**CO1**	Appraisal of thermodynamics, first law of thermodynamics
			CO2	Understanding the expansion of ideal gases under isothermal and adiabatic conditions
			CO3	Descriptions of standard state and enthalpy of formation using hess's law
			CO4	Knowledge of colloidal state, its classifications ,sols

				,emulsions and gels
			CO5	Comprehension of ideal and non-ideal solutions and their colligative properties.
			CO6	To learn how to determine various colligative properties.
Sem. II	**Mechanics II (Physics)**	**PHY201A**	**CO1**	Understand the terminology used in Classical Mechanics
			CO2	Employ conceptual understanding to make predictions, and then approach the problem mathematically.
			CO3	To study different types of motion, transformations and moments including Euler's equation and elementary gyroscope.
			CO4	To understand the concept of inertial and non-inertial frames, fictitious forces, centrifugal force due to rotation of earth.
			CO5	To get the knowledge of postulates of special theory of relativity, length contraction, time-dilation, twin paradox and relativistic Doppler effect.
			CO6	To get the exposure of variation of mass with velocity in an in-elastic collision and concepts of Minkowski space, 4-vector formulation.
Sem. II	**Vibrations, Waves & EM Theory II (Physics)**	**PHY201B**	**CO1**	Ability to recognize and use mathematical oscillator equation and wave equation
			CO2	Able to solve wave equation and understand significance of transverse waves
			CO3	Understand and be able to calculate the reflection and transmission coefficient of travelling waves
			CO4	To calculate what happen when wave move from one medium to another and explain dispersion and group and phase velocity
			CO5	To gain knowledge of pointing vector and impedance of di-electric to EM waves
			CO6	To understand refraction and be able to derive and apply Snell's law.
Sem. II	**Electricity and Magnetism II (Physics)**	**PHY201C**	**CO1**	Know the Principles of Magnetic Fields, Sources of Magnetic Fields, Faraday's Law, Inductance, Alternating Current Circuits, and Electromagnetic Waves
			CO2	Solve mathematical problems involving magnetic forces, fields, and various electro-magnetic Circuits.
			CO3	Gain confidence in their ability to apply mathematical methods to understand electromagnetic problems to real life situations
			CO4	Ability to use Maxwell's equations in calculations featuring : both free and stationary EM waves.
			CO5	Gain knowledge on electromagnetic induction and its

				applications.
			CO6	To study Faraday's Law of EM induction.
Sem. II	**Practical (Physics)**		**CO1**	Expose the students of B.Sc. to the experimental techniques in general Physics, Mechanics, waves and vibration, electricity and magnetism.
			CO2	They can co-relate the theoretical concepts with the experimental ones and develop confidence to handle sophisticated equipment wherever necessary
Sem. II	**Solid Geometry (Mathematics)**	**MAT201A**	**CO1**	Learn about Section of a sphere and a plane, spheres through a given circle, intersection of a line and a sphere, and a tangent line.
			CO2	Understanding of tangent plane, angle of intersection of two spheres, power of a point w.r.t.sphere, radical axis, co-axial family of spheres.
			CO3	Knowledge of Cylinders as a surface, different kinds of cylinders such as right circular, elliptic, parabolic and hyperbolic cylinders in standard forms.
			CO4	Solving exercises on Cone, cone as a surface, reciprocal cones, right circular and elliptic cones, right circular cone, enveloping cones.
			CO 5	Exposure on Equations of ellipsoid, hyperboloid and paraboloid in standard form. Reduction of second degree equation in three variables in standard form.
Sem. II	**Calculus II (Mathematics)**	**MAT201B**	**CO1**	Acquire knowledge about concavity, convexity and points of inflection, multiple points, asymptote and Tracing of curves (cartesian and parametric coordinates only)
			CO2	Derive Reduction formulae for some complex integrations and hence integrate functions of a much higher degree which are applicable in real life situations.
			CO3	Learn to find curvature, evolute and involute, chord of curvature.
			CO4	Demonstrate understanding of common numerical methods of integration.
			CO 5	Apply Integral calculus to find arc length of a curve, arc length of a parametric curves, area under a curve ,surface area and volume of surface of revolution.
Sem. II	**Theory of Equations (Mathematics)**	**MAT201C**	**CO1**	Describe Euclid's algorithm and apply synthetic division to find the roots of polynomial
			CO2	State the relation between roots and coefficients
			CO3	Implement transformation of the equations to solve roots
			CO4	Explain and apply using Descartes rule of signs
			CO 5	Solve cubic using Cardon's method and bi-quadratic using Descartes method & Ferrari's Method

			CO 6	Apply Newton's method of divisors to solve equations.
Sem. II	**Computer Science-A (Operating System Concepts)**	**CS201A**	**CO1**	Apply the scheduling algorithm for the given problem
			CO2	Demonstrate the fundamental Linux commands and system calls.
			CO3	Apply the process synchronous concept using message queue, shared memory, semaphore and Dekker's algorithm for the given situation.
			CO4	Experiment and algorithm to detect and avoid deadlock.
			CO 5	Demonstrate the various operations of the file system.
			CO 6	Apply the various methods in memory allocation and page replacement algorithms.
Sem. II	**Computer Science-B (C - Programming)**	**CS201B**	**CO1**	To Define the problem.
			CO2	To Extend skill on problem solving by constructing algorithms.
			CO3	To Use the fundamentals of C programming in trivial problem solving
			CO4	To Identify solution to a problem and apply control structures and user defined functions for solving the problem
			CO 5	To Demonstrate the use of Strings and string handling functions, structure, union
			CO 6	Apply skill of identifying appropriate programming constructs for problem solving
Sem. II	**Computer Science Lab**	**CS201L**	**CO1**	To acquire logical thinking
			CO2	To identify the correct and efficient ways of solving problems
			CO3	To define the algorithms and analyze their complexity
			CO4	To write the c-code for a given problem
			CO 5	To implement programs with pointers and arrays, structure and file input output.
Sem. II	**Soil and Water Pollution (Environment Conservation)**	**ENC201**	**CO1**	To acquire knowledge about the physical and chemical properties of soil, meaning of soil profile and its components.
			CO2	Learn about various techniques of testing soil samples, various methods to increase soil fertility and role of soil microorganisms in increasing soil fertility.
			CO3	Learn about various factors causing soil erosion, different types of soil pollutants and various control measures to control pollution.
			CO4	Understand about various chemicals, pesticides, fertilizers and manure acting as soil pollutants.
			CO 5	Learn about global and biological water cycle, overutilization of surface and groundwater.

			CO 6	Learn about various methods to treat wastewater like green method, Root – zone technology etc.
Sem. III	**English Compulsory**	**ENG301**	**CO1**	To write an effective business document (such as notice, memo, advertisement etc.) which enable them to think analytically.
			CO2	To acquire extensive knowledge of English as a language in its various textual forms and to become thoughtful, imaginative and effective communicators in a diverse and changing society.
			CO3	To enhance their writing skill by building strong vocabulary.
			CO4	To empower an average student in such a way that English learning becomes a Pleasurable endeavor.
			CO5	To acquire knowledge about various literary aspects through the text which capacitates them to enrich their literary and cultural values.
			CO6	To critically appreciate literary texts
Sem. III	**Inorganic Chemistry-I**	**CHM301A 1**	**CO1**	Justification regarding bonding, magnetic as well as spectral properties of transition metal complexes.
			CO2	To understand the Chemistry of Coordination Compounds and their geometries.
			CO3	Structures of Coordination compounds containing central metal atom and ligands.
			CO4	Study of transition series(First, second and third transition series)
			CO5	Demonstration regarding lanthanides and actinide contractions.
			CO6	To understand the use of co-ordination compounds.
Sem. III	**Organic Chemistry-I**	**CHM301A 2**	**CO1**	Inculcate the knowledge of alcohols i.e. mono, di, tri hydric alcohols
			CO2	Understand the chemical reactions of vicinal glycols and glycerol
			CO3	Appraisal of phenols and their properties
			CO4	Comprehension of the aldehyde and ketones
			CO5	Discuss the formation of aldehydes and ketones and carboxylic acids.
			CO6	To understand the mechanism of nucleophillic addition to carbonyl compound.
Sem. III	**Physical Chemistry-I**	**CHM30 1A3**	**CO1**	Understand the intermolecular forces in liquids , liquid crystals and their classifications.
			CO2	Discuss the chemical equilibrium , law of mass action and relationship and types of equilibrium constant
			CO3	Comprehension of the second law of thermodynamics,

				carnot cycle and its efficency.
			CO4	Appraisal of entropy change in ideal gases and its mixing.
			CO5	Inculcate the knowledge of third law of thermodynamics; Nernst heat theorem.
			CO6	To understand the classification and structure of liquid crystals.
Sem. III	**Statistical Physics & Thermodynamics I (Physics)**	**PHY301A**	**CO1**	Understand how statistics of the microscopic world can be used to explain the thermal features of the macroscopic world.
			CO2	Be able to use statistical principles in a wide range of applications and learn a variety of mathematical techniques
			CO3	Understand different classical and quantum mechanical distribution functions.
			CO4	Can explain phase transitions and magnetization in magnetic system.
			CO5	Familiarize with procedures for deriving the relation between thermodynamics parameters such as pressure, temperature, entropy and heat capacity from the distribution functions.
			CO6	Learn a variety of mathematical techniques.
Sem. III	**Optics and Laser I (Physics)**	**PHY301B**	**CO1**	Develop an understanding of principles of optics. And able to build connections between mathematical development and conceptual understanding.
			CO2	To build connections between mathematical development and conceptual understanding.
			CO3	Distinguish the methods of polarization by reflection, refraction and scattering.
			CO4	Learn different types of fiber and lasers along with principle, properties of laser beams.
			CO 5	Be able to understand the phenomenon of interference and diffraction.
			CO 6	Apply skill to find the wavelength of spectral lines using plane diffraction grating.
Sem. III	**Quantum Physics I (Physics)**	**PHY301C**	**CO1**	Learn the mathematical tools needed to solve quantum mechanics problems.
			CO2	Complete knowledge about wave-particle duality and uncertainty principle.
			CO3	Fully understand the differences between classical quantum mechanics.
			CO4	Learn how to solve Schrodinger equation for simple potentials.
			CO5	Spot, identify and relate the Eigenvalue problems for energy, momentum and central potentials.

			CO6	Able to solve wave equations, fundamental postulates of quantum physics.
Sem. III	**Practical (Physics)**		**CO1**	Expose the students of B.Sc. to the experimental techniques in general Physics, Mechanics, waves and vibration, electricity and magnetism.
			CO2	They can co-relate the theoretical concepts with the experimental ones and develop confidence to handle sophisticated equipment wherever necessary.
Sem. III	**Advanced Calculus I (Mathematics)**	**MAT301A**	**CO1**	Knowledge about Limit and continuity, Partial differentiation, implicit functions theorem.
			CO2	Understanding the Vector differentiation - gradient, divergence, curl and their applications.
			CO3	Learn Euler's theorem on homogeneous function, Taylor's theorem, Jacobian. Finding maxima, minima and saddle point of a function, Lagrange's multiplier method.
			CO4	To provide the students with the skills of vector calculus operations which are needed for further study in Mathematics.
			CO5	Students will be able to apply the concept of envelope and evolutes on real life applications.
Sem. III	**Differential Equations I (Mathematics)**	**MAT301B**	**CO1**	Verify Exact differential equation, define the geometrical meaning of differential equation
			CO2	Derive Orthogonal Trajectory and envelope of the differential equations
			CO3	Solve Linear differential equation with constant and variable coefficients
			CO4	Learn to find solution of Cauchy's and Legendre's equations
			CO5	Use method of variation of parameter and reduction of order to solve differential equations
			CO6	Solve simultaneous Differential equations
Sem. III	**Statics (Mathematics)**	**MAT301C**	**CO1**	Knowledge about Composition and resolution of concurrent forces
			CO2	Learn about parallelogram Law of forces , Equilibrium of three forces acting at a point , triangular Law of Forces Lami's theorem
			CO3	Acquire knowledge about Moments, couples and Friction
			CO4	Develop equilibrium relationships for non-accelerating two or three dimensional rigid bodies acted on by external forces and moments.
			CO5	Understand and compute equilibrium of three coplanar forces acting on rigid body.
Sem. III	**Computer**	**CS301A**	**CO1**	Describe the fundamental organization and Architecture of

	Organization (Theory) (Computer Science)			computer system
			CO2	Learn about representation of Information through number systems like Binary, Decimal, Hexadecimal, Octal. Conversions.
			CO3	Knowledge about Basic Building Blocks, Microinstructions Microprocessor Assembly Language and System Maintenance.
			CO4	Express their knowledge in various error correction and detection techniques.
			CO5	Understand concepts of register transfer logic and arithmetic operations.
			CO6	Distinguish the organization of various parts of a system memory hierarchy.
Sem. III	**Object Oriented Programing (using C++)(Theory-A) (Computer Science)**	**CS301B**	**CO1**	To Understand how C++ improves C with Object Oriented features.
			CO2	To Understand the difference between the top down and bottom up .
			CO3	To Describe the Object Oriented programming approach in connection with C++.
			CO4	To apply the concept of Object Oriented programming.
			CO5	Explain the difference between the call by Value and call by address.
			CO6	Use different data structures and create /manipulate basic data files and developing applications for real world problems.
Sem. III	**Practical -C (Computer Science)**	**CS301L**	**CO1**	To learn the fundamental programming concepts and methodologies which are essential to building good c/c++ programs.
			CO2	To describe and use software tools in the programming process.
			CO3	To code, document ,test and implement a well-structured , robust computer program using the c/c++ programming language.
			CO4	To write reusable modules (collection of functions)
			CO5	To practice the fundamental programming methodologies in the lab experience.
			CO6	To apply good programming principles to the design and implementation of c/c++ programs.
Sem. III	**Air pollution and Climate change (Environment Conservation)**	**ENC301**	**CO1**	Learn about atmosphere ,its structure and learn about stratospheric ozone
			CO2	Understand about Air pollution, its sources and methods to control air pollution and about the Air (prevention and control of pollution) Act, 1981.

			CO3	In this unit students will learn about greenhouse effect and global warming and its causes and various gases cause greenhouse effect.
			CO4	Understand and learn about stratospheric ozone depletion and Role of paddy burning , livestock and biomass burning in causing greenhouse effect.
			CO5	To acquire knowledge about radioactive pollution and noise pollution, its sources and methods to reduce this pollution, learn about various mineral resources and its mining and environmental effects of mining.
			CO6	Learn about the green building concept, carbon sequestration, CDM(Clean development mechanism).
Sem. IV	**Inorganic Chemistry-I**	**CHM401A1**	**CO1**	Understand the chemistry of Lanthanides and Actinides elements; their properties and separation.
			CO2	Inculcate the concept of acids and bases.
			CO3	Comprehension of theories to understand the classification of acids-bases.
			CO4	Appraisal of oxidation and reduction. to use redox potential data.
			CO5	Describe non-aqueous solvents; their types and properties; principles involved in the extraction of elements.
			CO6	To understand the physical properties of different solvents.
Sem. IV	**Organic Chemistry-I**	**CHM401A2**	**CO1**	Acquire the knowledge of carboxylic acids, halo acids, malic acids ,tartaric acid and citric acids.
			CO2	Classification of the Organic Compounds of Nitrogen.
			CO3	Detection of elements and functional groups in simple organic compounds.
			CO4	Understanding of ethers,epoxides, oils & detergents.
			CO5	To compare the preparation of alkyl and aryl amines
			CO6	To understand the cleavage and auto-oxidation of ethers, epoxide.
Sem. IV	**Physical Chemistry-I**	**CHM401A3**	**CO1**	Learn the necessary chemical knowledge about electrochemistry.
			CO2	Appraisal of electrical transport of electrolytes, conductance with dilution.
			CO3	Understanding of Nernst distribution law and thermodynamic derivation.
			CO4	Description of type of reversible electrode, E.M.F. of cell and electrochemical series.
			CO5	Describe non-aqueous solvents; their types and properties; principles involved in the extraction of elements.
			CO6	To know about applications of concentration.
Sem. IV	**Statistical**	**PHY401A**	**CO1**	Understand the statistical relation with various terms and

	Physics and Thermodynamics II (Physics)			cycles of thermodynamics.
			CO2	Understand the application of thermodynamics to thermoelectric Effect and various Maxwell's thermodynamic relations and applications.
			CO3	Understand the efficiency of carnot's engine and significance of first law and second law of thermodynamics.
			CO4	Ability to evaluate entropy changes in a wide range of processes and determine the reversibility and irreversibility of a process from such calculations.
			CO5	Understand the interrelationship between thermodynamic functions and ability to use such relationships to solve practical problems.
			CO6	To know the Clay Peron equation and thermo dynamical treatment of Joule-Thomson effect.
Sem. IV	**Optics and lasers-II (Physics)**	**PHY401B**	**CO1**	To know the concept of interaction of light with matter
			CO2	To study the uses of Einstein's coefficients and their relations
			CO3	To discuss the theory of broadening in laser and its types.
			CO4	To learn about the different types of lasers, its principles, properties of laser beam.
			CO5	To get acquainted with applications of lasers in holography and reconstruction of image.
			CO6	To study the concept of fibre optics and its applications.
Sem. IV	**Quantum Physics-II (Physics)**	**PHY401C**	**CO1**	To study the excitation of atoms with radiation by transition probability, spontaneous transition and selection rules.
			CO2	To understand the spectrum of hydrogen atom, Frank-Hertz experiment, line structure and Zeeman effect.
			CO3	To get the knowledge of spin orbit coupling including electron magnetic moment and total angular momentum.
			CO4	To learn about the exchange symmetry of wave functions, shells and subshells in atoms and in atomic spectra.
			CO5	To recognize regularities in atomic spectra, x-ray spectra, absorption spectra and interaction energy.
			CO6	To get the exposure of molecular bonding, symmetric structures, rotational, vibrational and electronic level and spectra of molecules.
Sem. IV	**Practical (Physics)**		**CO1**	Expose the students of B.Sc. to the experimental techniques in general Physics, Statistical Physics and Optics.
			CO2	Able to co-relate the theoretical concepts with the experimental ones and develop confidence to handle sophisticated equipment wherever necessary.
Sem. IV	**Advance Calculus II**	**MAT401A**	**CO1**	Knowledge about Sequence- bound of a sequence, convergent, divergent and oscillatory sequence.

	(Mathematics)		**CO2**	Learn about Series of non negative term- P- test ,comparison test, Cauchy's integral test ,Cauchy's root test, ratio test, Raabe's test, logarithmic test ,Gauss Test. Alternating series
			CO3	Define ,differentiate and integrate functions represented as a power series expansion, including Taylor series and solve related problems.
			CO4	Apply Leibnitz's test, Reimann's rearrangement theorem.
			CO5	Distinguish between concept of sequence and series and determine the limit of sequence and convergence and approximate sum of series.
Sem. IV	**Differential Equations II (Mathematics)**	**MAT401B**	**CO1**	Define Laplace transform, Inverse Laplace transform and apply these to problems.
			CO2	Learn to find Series solution of differential equations power series method
			CO3	Derive the solutions of Bessel equations ,their recurrence relations and orthogonal properties
			CO4	Derive the solutions of Legendre's equations ,their recurrence relations and orthogonal properties
			CO5	Form and solve Partial differential equations
Sem. IV	**Dynamics (Mathematics)**	**MAT401C**	**CO1**	Knowledge about Motion of a particle, Newton's Laws of Motion, motion of a body along the smooth inclined plane.
			CO2	Understanding Simple harmonic motion, elastic string, curvilinear motion of a particle.
			CO3	Learn about Work, power and conservative field. Relative motion, linear momentum, angular momentum, impulsive forces.
			CO4	Determine the dynamic response of the system to applied loadings, using Newton's law.
			CO5	Apply the Principle of Work and Energy and the principle of impulse and momentum to mechanical systems.
Sem. IV	**Database Concepts (Computer science)**	**CS401A**	**CO1**	Learn about the concepts of database system Relational Data Model and Relational Algebra and Calculus
			CO2	Knowledge about Advance concepts- Client-Server Architecture
			CO3	Learn about Hierarchical Data Models
			CO4	Learn about Client-server Architecture.
			CO5	Understand about Normalization and Concurrency Recovery.
			CO6	Understand about storage organization of Relations.
Sem. IV	**Data Structure (Computer science)**	**CS401B**	**CO1**	Understanding data structures and operations performed on them using algorithms.
			CO2	Enable the students to implement these operations using any

				programming language.
			CO3	To understand how to represent linked list in memory.
			CO4	To study the representation of Trees and Graphs.
			CO5	To study the basics of Searching.
			CO6	To understand the basics of Sorting.
Sem. IV	**Practical – C (Computer science)**	**CS401L**	**CO1**	To understand how to implement the program in Data Structure.
			CO2	To study the different concepts like array, linked using programming.
			CO3	To understand the different functions of Queue and stack using different loops of C.
			CO4	To understand the concepts of Algorithm.
			CO5	To implement the programs with help of Trees and Graphs.
			CO6	To implement the programs with help of Sorting and Searching.
Sem. IV	**Solid Waste and Disaster Management (Environment Conservation)**	**ENC401**	**CO1**	Learn about the sources and categories of solid waste , plastic nuisance , incineration and refuse derived fuels and fly ash utilization.
			CO2	Understand about the MSW Handlin rules, 2000; learn about composting and optimum conditions for composting.
			CO3	Understand about Disaster management: Pre- disaster phase, actual disaster phase, and post-disaster phase.
			CO4	To acquire knowledge about management of various natural disasters like floods, earthquakes, tsunami, landslides, drought, and tropical cyclones.
			CO5	Learn about the construction and working of biogas plants, its advantages and disadvantages. To get knowledge about verm- culture and vermicomposting and Waste water treatment.
			CO6	To get knowledge about organic farming, methods, soil management , weed management and control of pests, advantages of organic farming. Learn about different ways of reclamation of waste land.
Sem. V	**Inorganic Chemistry-I**	**CHM501A 1**	**CO1**	Comprehension of crystal field theory and valence bond theory of metal ligand bonding in transition metal complexes.
			CO2	Description of thermodynamic and kinetic aspects of Metal Complexes.
			CO3	Knowledge about synthesis, structure, properties and applications of organometallic compounds of Li,Al,Hg,Sn and Ti.
			CO4	Analysis of metal-ethylenic complexes, homogeneous hydrogenation and mononuclear carbonyls.

			CO5	Explanation of metalloporphyrins, nitrogen fixation and biological role of alkali and alkaline earth metal ions.
			CO6	To appraise the biological importance of alkali and alkaline earth metals.
Sem. V	**Organic Chemistry-I**	**CHM501A2**	**CO1**	Appraisal of the use of spectroscopic techniques to analyze the synthesised organic compounds.
			CO2	Apply the concept of absorption laws to compute molar absorptivity, to differentiate between chromophores and auxochrome.
			CO3	Demonstration of infrared spectroscopy to detect the present functional groups in the given organic compounds.
			CO4	Apply the concept of nuclear magnetic resonance (NMR) spectroscopy to find the structure of the given organic compounds.
			CO5	Count the biological importance of carbohydrates.
			CO6	To interpret the NMR spectrum of simple organic compounds.
Sem. V	**Physical Chemistry-I**	**CHM501A3**	**CO1**	Description of elementary quantum mechanics, black body radiation, Schrodinger wave equation for H-atom.
			CO2	Apply the Schrodinger wave equation to find the wavefunctions of the given system to account for its stability.
			CO3	Demonstrate the use of quantum mechanics to calculate the hybridisation of atomic orbitals.
			CO4	Inculcate the knowledge of photochemical reactions and the laws governing the photochemical reactions.
			CO5	Description of fluorescence, phosphorscence and quantum yield of photochemical reactions.
			CO6	To understand the photochemistry of carbonyl compounds and alkenes.
Sem. V	**Condensed Matter Physics I (Physics)**	**PHY501A**	**CO1**	Understand basic concepts and mathematical methods of solid state physics
			CO2	Explore important connections between theory, experiment, and current applications.
			CO3	Explore important connections between theory, experiment and current applications.
			CO4	Acquire knowledge about various crystal structures
			CO5	Introducing basic concepts via diffraction method, lattice vibrations and free electrons.
			CO6	Understand about various Semiconductors, their band structures and energy-gap.
Sem. V	**Electronics and Solid**	**PHY501B**	**CO1**	Analyze the electric circuit using network theorems
			CO2	Understand about semiconductors and their various devices.

	State Devices I (Physics)		**CO3**	Acquire knowledge about the transistors, amplifiers and their applications.
			CO4	Familiarize with the concept of Biased, Unbiased junction diodes.
			CO5	Understanding about the filters, rectifiers and smooth use of CRO.
			CO6	Reproduce the I-V characteristics of Bipolar Junction Transistors.
Sem. V	**Nuclear & Particle Physics I (Physics)**	**PHY501C**	**CO1**	Acquire knowledge about nuclear and particle physics
			CO2	Develop and communicate analytical skills in subatomic physics and develop familiarity with the vast areas of nuclear and particle physics as well as develop an interest in these subjects
			CO3	Have deep knowledge about nuclear fission and nuclear fusion
			CO4	Fully Understand the concept of alpha, beta gamma radiations and their properties.
			CO5	How to use reactor. And know the concept of neutrons.
			CO6	To get the exposure of conservation laws and kinematics, Q-value equation, Coulomb (Rutherford) scattering cross section and distance of nearest approach.
Sem. V	**Practical (Physics)**		**CO1**	Expose the students to the experimental techniques in general Physics, Electronics and particle physics.
			CO2	Enable to co-relate the theoretical concepts with the experimental ones and develop confidence to handle sophisticated equipment wherever necessary
Sem. V	**Analysis 1 (Mathematics)**	**MAT501A**	**CO1**	Determine Convergence of improper integrals with discontinuities in their domain or infinite limits of integration.
			CO2	Knowledge about Countable and uncountable sets.
			CO3	Solving integral as a function of parameter.
			CO4	Acquire the information about the Beta, Gamma function and evaluate it in various problems.
			CO5	Learn the theory of Riemann integral, mean value theorems and use theory in solving definite integrals arising in different fields of science and engineering.
			CO6	Apply the fundamental theorem of calculus to evaluate definite integrals.
Sem. V	**Modern Algebra (Mathematics)**	**MAT501B**	**CO1**	Understanding of Groups, Subgroups, Lagrange's Theorem.
			CO2	Learn about Normal subgroups and Quotient Groups, Homomorphism, Isomorphism Theorems.
			CO3	Knowledge of Conjugate elements, Class equation,

				Permutation Groups, Alternating groups and its simplicity.
			CO4	Exposure on Rings, Integral domains, Subrings and Ideals, Quotient Rings, Prime and Maximal Ideals.
			CO5	Brief discussion on Homomorphism, Isomorphism Theorems, Polynomial rings.
Sem. V	**Probability (Mathematics)**	**MAT501C**	**CO1**	Describe the concept Probability, conditional probability, Bayes Theorem
			CO2	Demonstrate the concept of random variables, density function, cumulative distribution function, moments and moment generating function.
			CO3	Develop the knowledge about distributions based on discrete random variables and apply them in real world problems.
			CO4	Develop the knowledge about distributions based on continuous random variables and apply them in real world problems.
			CO5	Explain concepts used in Bivariate Random Variable
Sem. V	**Project Management (Computer Science)**	**CS501A**	**CO1**	Learn about how a project needs to be established, organized, coordinated, controlled and evaluated.
			CO2	Know the fundamentals of report writing
Sem. V	**Relational Database Management System (Computer Science)**	**CS501B**	**CO1**	Define database and its design.
			CO2	Compute DDL, DML and TCL queries.
			CO3	Analyze the different constraints like primary key, foreign key, check, not-null, null and unique key.
			CO4	Create views and manipulate the base table.
			CO5	Implement various queries of sequences.
			CO6	Implement the program through PL/SQL
Sem. V	**Biodiversity and Conservation (Environment Conservation)**	**ENC501**	**CO1**	Understand about the various levels of biodiversity, various threats to biodiversity; learn about various hotspots of biodiversity.
			CO2	Various acts to protect biodiversity Environment protection act 1986, Forest conservation act, 1980, Water prevention and control of pollution act, 1974.
			CO3	Learn about in-situ and ex- situ conservation strategies and various causes of extinction of biodiversity.
			CO4	To acquire knowledge about various acts to conserve biodiversity (Wildlife protection act), 1972, Joint forest management .
			CO5	Learn about the role of religion in environment protection, different possible measures to make localities aware about environmental hazards and its remedies.
			CO6	Learn about the cultivation methods of Aloe vera,

				Calotropis, Acacia nilotica, Mentha ,Ricinus etc.
Sem. VI	**Inorganic Chemistry-I**	**CHM601A 1**	**CO1**	Inculcate the knowledge of Silicones and Phosphazenes.
			CO2	Comprehension of HSAB concept, symbiosis and theoretical basis of hardness and softness.
			CO3	Knowledge about types and selection rules for electronic transitions.
			CO4	Analysis of Orgel- energy level diagram for d1 and d9 states.
			CO5	Description of magnetic properties of transition metal complexes .
			CO6	To understand symbiosis and its theoretical basis.
Sem. VI	**Organic Chemistry-I**	**CHM601A 2**	**CO1**	Familiarized with Amino Acids, Peptides, Proteins and Nucleic Acids.
			CO2	Description of synthetic polymer; their types, synthesis and uses.
			CO3	Inculcate the knowledge of organic synthesis via enolates.
			CO4	Description of organometallic compounds; its types and their synthesis.
			CO5	To understand the doubal helical structure of DNA.
			CO6	To study preparation and reactions of amino acids.
Sem. VI	**Physical Chemistry-I**	**CHM60 1A3**	**CO1**	Understanding of space lattice, unit cell, miller indices.
			CO2	Appraisal of Bragg's equation and X-ray diffraction.
			CO3	Knowledge about electromagnetic radiation and different spectrometers.
			CO4	Description of rigid rotor and non-rigid rotor.
			CO5	Inculcate the concepts vibrational and electronic spectrum.
			CO6	To interpret different types of physical spectra.
Sem. V	**Condensed Matter Physics II (Physics)**	**PHY601A**	**CO1**	Understand the concepts of Lattice dynamics, scattering of photons by phonons and in- depth
			CO2	To study Einstein and Debye theory of Specific heat of solids.
			CO3	Knowledge about magnetic materials, their classifications and dielectric properties of solids.
			CO4	Familiarize with the concept of superconductivity and formation of cooper pairs.
			CO5	Acquire knowledge about electric susceptibility, Clausius Mossotti equation ideas of material and nanoscale.
			CO6	Acquire knowledge about nanoparticles, their structure, fabrication and application of nanotechnology in various fields.
Sem. V	**Electronics and Solid State Devices**	**PHY601B**	**CO1**	Understand about semiconductors and their various devices.
			CO2	Acquire knowledge about the transistors. Amplifiers and their applications.

	II (Physics)		**CO3**	Understand the basis of feedback amplifiers and advantages of negative voltage devices.
			CO4	Acquire knowledge about logic gates and their uses in digital electronics.
			CO5	Classify different types of FETs and demonstrate feedback amplifiers, OP-AMPs and oscillator circuits.
			CO6	To get the exposure of analog and digital communication and develop familiarities with the vast area of electronics in brief account of satellite communication.
Sem. V	**Nuclear & Particle Physics II (Physics)**	**PHY601C**	**CO1**	Acquire knowledge in the content areas of nuclear and particle physics, focusing on concepts that are commonly used in this area.
			CO2	Develop familiarity with the vast areas of nuclear and particle physics as well as develop an interest in these subjects
			CO3	Understand the basic knowledge about standard model of elementary particles and interactions
			CO4	Understand the role of nuclear particle physics in energy production, medicine, astrophysics - for example how to search for dark matter and how to understand the origin of the elements in the universe.
			CO5	Understand basic knowledge of the quark- gluons plasma.
			CO6	A basic understanding of nuclear properties and models that describe the quantum structures, decay and reactions of nuclei.
Sem. V	**Practical (Physics)**		**CO1**	Expose the students to the experimental techniques in general Physics, Electronics and particle physics.
			CO2	They can co-relate the theoretical concepts with the experimental ones and develop confidence to handle sophisticated equipment wherever necessary.
Sem. V	**Analysis II (Mathematics)**	**MAT601A**	**CO1**	Learn to use Double and triple integrals to find area and volume.
			CO2	Change to polar coordinates, change of variable to cylindrical and spherical coordinates.
			CO3	Distinguish between the concepts of sequence and series and determine limits of sequence and convergence and approximate sum of series.
			CO4	Define, differentiate and integrate functions represented as power series expansion and Fourier series expansion including Taylor series and solve related problems.
			CO5	Knowledge about vector integration - line, surface and volume integrals
Sem. V	**Linear**	**MAT601B**	**CO1**	To learn definition and examples of Vector Spaces,

	Algebra (Mathematics)			Subspaces, Algebra of subspaces, Linear span.
			CO2	Knowledge of Linear dependence and independence of vectors, Basis and dimension of a vector space.
			CO3	Understanding of linear transformations, Rank and Nullity of a linear transformation, Vector space of linear transformations.
			CO4	Solving exercises on linear transformations and matrices Change of basis, eigenvalues and eigenvectors.
			CO5	Exposure on Cayley-Hamilton theorem, Diagonalizable operators and matrices. Minimal polynomial of a linear operator.
Sem. V	**Numerical Analysis (Mathematics)**	**MAT601C**	**CO1**	Explain methods to find solutions to linear and nonlinear equations using numerical methods.
			CO2	Knowledge about Interpolation and numerical differentiation.
			CO3	Solving algebraic eigenvalue problems.
			CO4	Able to solve Ordinary differential equations.
			CO5	Develop the knowledge about methods for solving integration of functions.
Sem. V	**E- Commerce (Computer Science)**	**CS601A**	**CO1**	Have knowledge of e commerce, its components, structure of e-banking, rules and regulations on e-commerce.
			CO2	Good knowledge of e-commerce, both technical and business.
			CO3	Understand the principles and practices of e-commerce and its related technologies
			CO4	Discuss the trends in e-Commerce and the use of the Internet
			CO5	Explain the economic consequences of e-Commerce
			CO6	Understand the processes of developing and implementing e-Commerce applications.
Sem. V	**Web Programming (Computer Science)**	**CS601B**	**CO1**	An overview of creating static web pages using HTML.
			CO2	Implement the concepts of built in functions in programming, control structures in programming.
			CO3	Read, write and execute PHP programs.
			CO4	Format and validate web pages.
			CO5	Demonstrate the implementation of PHP into current HTML based websites.
			CO6	Develop PHP programs using databases.
Sem. V	**Public Awareness And Environment**	**ENC601**	**CO1**	To acquire knowledge about current environmental issues like climate change, global warming, population explosion, rain water harvesting and methods to resolve these issues.

	Issues (Environment Conservation)		**CO2**	Green revolution and its impacts on environment with special reference to Punjab, Tehri dam, Narmada project, Bhopal gas tragedy, River cleaning project of Sant B.S. Seechewal.
			CO3	Get knowledge about the role of Non- Governmental organizations in environmental protection.
			CO4	Chipko movement , For a living ganga by WWF, Transformation DTC fleet to CNG driven transport, Earth hour, Green peace, Nitrate pollution in Punjab.
			CO5	Learn about the role of various international and national agencies UNEP, UNDP, WWF, MOEF, CPCB in environment conservation and management. Learn about CITES, UNFCC, Montreal protocol, Kyoto protocol, and Copenhagen summit.
			CO6	Application of RS and GIS in Environment, study about biostatistics: To find mean, mode , median , standard deviation, correlation and regression.

Mapping of Course Outcomes (COs) with Programme Outcomes(POs)

Programme Outcome																
College code	**Course Out-comes**	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**	**PO 13**	**PO 14**	**PO 15**
Semester I																
PBC101	**CO1**	1	2	3	2	1	3	2	x	3	2	1	2	3	2	x
	CO2	2	x	2	1	2	2	1	1	1	1	x	1	1	1	2
	CO3	3	1	X	3	2	2	2	2	x	2	3	x	1	1	3
	CO4	1	1	2	2	x	1	2	3	2	x	1	2	1	1	x
	CO5	3	1	X	3	2	2	2	2	x	2	3	x	1	1	3
	CO6	1	3	1	1	3	x	1	1	2	1	2	1	2	1	2
HCP101	**CO1**	1	2	3	2	1	3	2	x	3	2	1	2	3	2	x
	CO2	2	x	2	1	2	2	1	1	1	1	x	1	1	1	2
	CO3	3	1	X	3	2	2	2	2	x	2	3	x	1	1	3
	CO4	1	1	2	2	x	1	2	3	2	x	1	2	1	1	x

	CO5	3	1	X	3	2	2	2	2	x	2	3	x	1	1	3
	CO6	1	3	1	1	3	x	1	1	2	1	2	1	2	1	2
CHM101 A1	**CO1**	2	2	1	1	1	1	1	1	1	1	1	1	X	1	1
	CO2	2	2	1	1	1	1	1	1	1	1	1	1	X	1	1
	CO3	2	2	1	1	1	1	1	1	1	1	1	1	X	1	1
	CO4	2	2	1	1	1	1	1	1	1	1	1	1	X	1	1
	CO5	2	2	1	1	1	1	1	1	1	1	1	1	x	1	1
	CO6	2	2	1	1	1	1	1	1	1	1	1	1	X	1	1
CHM101 A2	**CO1**	2	2	1	1	1	1	1	1	1	1	1	1	X	2	2
	CO2	2	2	1	1	1	1	1	1	1	1	1	1	X	2	2
	CO3	2	2	1	1	1	1	1	1	1	1	1	1	X	2	2
	CO4	2	2	1	1	1	1	1	1	1	1	1	1	X	2	2
	CO5	2	2	1	1	1	1	1	1	1	1	1	1	X	2	2
	CO6	2	2	1	1	1	1	1	1	1	1	1	1	X	2	2
CHM1 01A3	**CO1**	2	2	X	2	1	1	2	1	2	1	X	X	X	1	1
	CO2	1	2	X	1	1	1	2	1	1	2	X	X	X	2	1
	CO3	2	2	X	1	1	1	2	1	1	1	X	X	X	1	1
	CO4	1	2	X	1	1	1	2	1	1	1	X	X	X	1	1
	CO5	2	2	X	1	1	1	2	1	1	1	x	x	x	1	1
	CO6	2	2	X	1	1	1	2	1	1	1	X	X	X	1	1
PHY101A	**CO1**	2	X	X	2	1	X	X	X	X	X	X	1	1	1	X
	CO2	3	1	X	3	2	1	1	X	X	X	1	3	X	1	1
	CO3	2	X	X	1	X	X	X	1	1	X	X	2	1	X	X
	CO4	2	X	X	1	2	1	X	X	2	X	X	1	X	1	2
	CO5	3	1	2	1	X	X	X	1	X	2	2	1	1	1	2
	CO6	2	1	2	1	2	X	1	2	3	X	1	2	1	2	1
PHY101B	**CO1**	2	1	3	2	1	1	1	1	1	1	2	3	2	2	X

	CO2	1	1	3	3	2	X	2	X	X	X	2	3	2	3	1
	CO3	2	1	2	3	2	1	1	X	1	X	1	2	2	3	X
	CO4	1	1	2	3	3	X	2	X	1	X	1	3	2	3	2
	CO5	1	1	2	2	2	X	1	1	1	X	2	2	2	3	2
	CO6	3	1	3	2	2	X	1	1	1	X	1	3	2	2	1
PHY101C	**CO1**	2	2	2	2	3	3	2	2	1	X	2	2	2	3	2
	CO2	2	1	3	3	3	3	2	2	1	X	1	3	2	2	1
LAB	**CO1**	3	2	2	3	1	X	2	1	2	1	3	X	2	2	2
	CO2	2	1	3	3	2	2	2	X	1	1	2	X	2	1	2
	CO3	3	X	2	3	1	X	1	1	X	X	3	1	2	1	2
	CO4	3	X	3	2	2	1	2	1	2	3	3	X	2	2	3
	CO5	3	1	2	2	X	1	3	1	2	X	1	1	2	1	1
MAT101A	**CO1**	3	1	2	3	1	X	1	X	1	X	2	1	2	2	2
	CO2	2	2	2	3	2	2	1	X	1	1	2	2	2	2	2
	CO3	3	3	3	3	2	3	2	2	2	3	3	2	2	3	1
	CO4	3	X	1	3	X	X	1	1	X	2	2	1	X	1	2
	CO5	3	X	2	3	1	1	2	1	1	1	3	1	2	2	3
MAT101B	**CO1**	3	1	2	3	1	X	1	X	1	X	2	1	2	2	2
	CO2	2	2	2	3	2	2	1	X	1	1	2	2	2	2	2
	CO3	3	3	3	3	2	3	2	2	2	3	3	2	2	3	1
	CO4	3	X	1	3	X	X	1	1	X	2	2	1	X	1	2
	CO5	3	X	2	3	1	1	2	1	1	1	3	1	2	2	3
MAT101C	**CO1**	1	X	2	3	X	X	3	3	X	X	X	X	X	X	X
	CO2	1	X	X	3	X	X	3	3	X	X	3	X	X	X	X
	CO3	1	X	X	3	X	X	3	3	X	X	2	X	X	2	3
	CO4	1	X	X	3	X	X	3	3	X	X	3	X	X	2	3
	CO5	1	X	X	3	X	X	3	3	X	X	3	X	X	2	3

CS101A	**CO1**	1	1	2	2	1	X	2	2	X	1	X	X	X	1	1
	CO2	1	1	2	1	2	1	2	2	X	1	3	X	X	1	1
	CO3	1	X	2	1	1	X	2	2	X	1	2	X	X	2	2
	CO4	1	X	2	2	1	X	2	2	X	X	3	X	X	2	2
	CO5	1	1	2	2	1	1	2	2	X	X	3	X	X	2	2
CS101B	**CO1**	1	1	2	2	1	X	2	2	X	1	X	X	X	1	1
	CO2	1	1	2	1	2	1	2	2	X	1	3	X	X	1	1
	CO3	1	X	2	1	1	X	2	2	X	1	2	X	X	2	2
	CO4	1	X	2	2	1	X	2	2	X	X	3	X	X	2	2
	CO5	1	1	2	2	1	1	2	2	X	X	3	X	X	2	2
CS101L	**CO1**	1	1	2	2	1	X	2	2	X	1	X	X	X	1	1
	CO2	1	1	2	1	2	1	2	2	X	1	3	X	X	1	1
	CO3	1	X	2	1	1	X	2	2	X	1	2	X	X	2	2
	CO4	1	X	2	2	1	X	2	2	X	X	3	X	X	2	2
	CO5	1	1	2	2	1	1	2	2	X	X	3	X	X	2	2
ENC101	**CO1**	3	3	3	3	2	2	1	2	2	2	3	1	1	3	2
	CO2	3	2	3	3	3	2	2	2	2	2	1	2	2	3	2
	CO3	1	3	3	2	2	3	1	2	2	2	1	1	2	2	2
	CO4	2	1	2	2	3	2	3	2	2	1	1	1	1	2	3
	CO5	3	1	3	2	2	2	2	2	2	2	1	2	X	2	3
	CO6	2	1	2	2	3	2	3	2	2	1	1	1	1	2	3
Semester II																
PBC201	**CO1**	1	2	3	2	1	3	2	x	3	2	1	2	3	2	X
	CO2	2	x	2	1	2	2	1	1	1	1	x	1	1	1	2
	CO3	x	2	1	1	1	1	x	2	2	3	2	3	2	3	1
	CO4	3	1	x	3	2	2	2	2	x	2	3	x	1	1	3
	CO5	1	1	2	2	x	1	2	3	2	x	1	2	1	1	X

	CO6	1	3	1	1	3	x	1	1	2	1	2	1	2	1	2
HCP201	**CO1**	1	2	3	2	1	3	2	x	3	2	1	2	3	2	x
	CO2	2	x	2	1	2	2	1	1	1	1	x	1	1	1	2
	CO3	x	2	1	1	1	1	x	2	2	3	2	3	2	3	1
	CO4	3	1	x	3	2	2	2	2	x	2	3	x	1	1	3
	CO5	1	1	2	2	x	1	2	3	2	x	1	2	1	1	x
	CO6	1	3	1	1	3	x	1	1	2	1	2	1	2	1	2
CHM201 A1	**CO1**	3	1	1	2	1	1	2	2	1	1	2	2	X	3	3
	CO2	3	1	1	2	1	1	2	2	1	1	2	2	X	3	3
	CO3	3	1	1	2	1	1	2	2	1	1	2	2	X	3	3
	CO4	3	1	1	2	1	1	2	2	1	1	2	2	X	3	3
	CO5	3	1	1	2	1	1	2	2	1	1	2	2	X	3	3
	CO6	3	1	1	2	1	1	2	2	1	1	2	2	X	3	3
CHM201 A2	**CO1**	3	1	1	1	1	1	2	2	1	1	2	2	x	3	3
	CO2	3	1	1	1	1	1	2	2	1	1	2	2	x	3	3
	CO3	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO4	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO5	3	1	1	1	1	1	2	2	1	1	2	2	x	3	3
	CO6	3	1	1	1	1	1	2	2	1	1	2	2	x	3	3
CHM2 01A3	**CO1**	3	1	1	1	2	1	2	2	1	1	2	2	X	2	3
	CO2	3	1	1	1	2	1	2	2	1	1	2	2	X	2	3
	CO3	3	1	1	1	2	1	2	2	1	1	2	2	X	2	3
	CO4	3	1	1	1	2	1	2	2	1	1	2	2	X	2	3
	CO5	3	1	1	1	2	1	2	2	1	1	2	2	X	2	3
	CO6	3	1	1	1	2	1	2	2	1	1	2	2	X	2	3
PHY201A	**CO1**	3	1	1	3	2	2	2	1	1	1	1	1	X	X	X
	CO2	3	1	X	2	1	2	2	2	2	1	3	X	X	X	1

	CO3	3	2	1	1	1	1	2	1	1	1	1	2	1	1	1
	CO4	3	1	1	1	1	1	1	X	X	1	1	1	X	X	1
	CO5	3	2	2	1	X	1	X	X	1	1	2	1	X	X	1
	CO6	3	2	X	X	X	1	X	X	2	X	1	1	X	X	X
PHY201B	**CO1**	3	1	2	1	2	2	2	1	1	1	1	1	X	X	X
	CO2	3	2	X	2	1	2	2	2	2	1	3	X	X	X	1
	CO3	3	2	1	1	1	1	2	1	1	1	1	2	1	1	X
	CO4	3	1	1	1	X	1	1	X	X	2	1	2	X	X	1
	CO5	3	2	2	1	X	2	X	X	1	1	2	1	3	1	1
	CO6	3	2	X	X	X	1	X	X	2	X	1	1	X	X	X
PHY201C	**CO1**	3	1	1	2	2	1	2	1	1	1	X	1	X	X	1
	CO2	1	1	2	2	1	2	X	X	X	2	1	2	1	1	2
	CO3	1	X	1	1	X	3	X	1	2	1	X	3	X	1	1
	CO4	2	2	2	2	2	1	X	X	1	X	1	1	1	X	1
	CO5	2	2	1	1	1	1	1	1	1	1	1	2	X	1	2
	CO6	3	1	1	2	2	2	X	1	1	1	1	2	1	1	1
LAB	**CO1**	2	2	2	2	3	3	2	2	1	X	2	2	2	3	2
	CO2	2	1	3	3	3	3	2	2	1	X	1	3	2	2	1
MAT201A	**CO1**	2	1	2	2	2	1	3	X	X	X	2	1	1	2	3
	CO2	3	2	2	2	X	X	1	X	X	X	3	2	1	2	2
	CO3	3	1	2	3	1	X	X	1	X	X	2	X	3	1	2
	CO4	3	X	3	3	2	1	2	3	2	X	2	2	X	1	3
	CO5	3	1	3	3	1	X	2	1	1	1	2	2	3	3	3
MAT201B	**CO1**	3	1	3	3	1	1	1	1	1	1	2	2	1	2	1
	CO2	2	X	2	3	2	1	1	1	2	1	3	2	2	2	3
	CO3	1	X	3	3	1	X	2	X	1	2	2	X	2	2	2
	CO4	3	1	3	3	1	1	1	1	1	1	2	2	1	2	1

	CO5	3	X	2	3	2	X	1	1	X	X	2	1	2	2	2
MAT201C	**CO1**	1	1	2	2	1	X	2	2	X	1	X	X	X	1	1
	CO2	1	1	2	1	2	1	2	2	X	1	3	X	X	1	1
	CO3	1	X	2	1	1	X	2	2	X	1	2	X	X	2	2
	CO4	1	X	2	2	1	X	2	2	X	X	3	X	X	2	2
	CO5	1	1	2	2	1	1	2	2	X	X	3	X	X	2	2
	CO6	1	1	2	1	1	1	2	2	1	1	1	1	1	1	1
CS201A	**CO1**	1	1	2	2	1	X	2	2	X	1	X	X	X	1	1
	CO2	1	1	2	1	2	1	2	2	X	1	3	X	X	1	1
	CO3	1	X	2	1	1	X	2	2	X	1	2	X	X	2	2
	CO4	1	X	2	2	1	X	2	2	X	X	3	X	X	2	2
	CO5	1	1	2	2	1	1	2	2	X	X	3	X	X	2	2
	CO6	1	1	2	1	1	1	2	2	1	1	1	1	1	1	1
CS201B	**CO1**	1	1	2	2	1	X	2	2	X	1	X	X	X	1	1
	CO2	1	1	2	1	2	1	2	2	X	1	3	X	X	1	1
	CO3	1	X	2	1	1	X	2	2	X	1	2	X	X	2	2
	CO4	1	X	2	2	1	X	2	2	X	X	3	X	X	2	2
	CO5	1	1	2	2	1	1	2	2	X	X	3	X	X	2	2
CS201L	**CO1**	1	1	2	2	1	X	2	2	X	1	X	X	X	1	1
	CO2	1	1	2	1	2	1	2	2	X	1	3	X	X	1	1
	CO3	1	X	2	1	1	X	2	2	X	1	2	X	X	2	2
	CO4	1	X	2	2	1	X	2	2	X	X	3	X	X	2	2
	CO5	1	1	2	2	1	1	2	2	X	X	3	X	X	2	2
	CO6	1	1	2	1	1	1	2	2	1	1	1	1	1	1	1
ENC201	**CO1**	2	2	3	3	2	2	2	3	3	2	3	3	1	3	2
	CO2	3	2	2	3	3	2	2	2	2	2	1	2	2	2	1
	CO3	2	3	3	2	2	3	1	2	2	2	1	1	2	2	3

	CO4	2	1	2	1	2	2	3	3	2	1	1	1	1	2	3
	CO5	3	1	3	2	1	2	2	2	2	2	1	2	1	2	3
	CO6	1	2	1	2	1	2	1	3	2	2	1	1	2	3	2
Semester III																
ENG301	**CO1**	3	3	1	1	1	1	2	1	1	2	2	1	3	2	X
	CO2	3	3	1	1	1	1	1	1	1	2	2	1	3	2	X
	CO3	3	3	1	1	1	1	1	1	1	2	2	1	2	2	X
	CO4	3	3	1	1	1	2	1	1	1	2	2	1	2	2	X
	CO5	3	3	1	1	1	1	1	1	1	3	2	1	2	2	X
	CO6	3	3	1	1	3	1	1	1	1	2	2	1	2	2	X
CHM301 A1	**CO1**	2	2	1	1	1	1	1	1	1	1	1	2	X	2	2
	CO2	2	2	1	1	1	1	1	1	1	1	1	2	X	2	2
	CO3	2	2	1	1	1	1	1	1	1	1	1	2	X	2	2
	CO4	2	2	1	1	1	1	1	1	1	1	1	2	X	2	2
	CO5	2	2	1	1	1	1	1	1	1	1	1	2	X	2	2
	CO6	2	2	1	1	1	1	1	1	1	1	1	2	X	2	2
CHM301 A2	**CO1**	2	2	1	1	1	1	1	1	1	1	1	1	X	2	2
	CO2	2	2	1	1	1	1	1	1	1	1	1	1	X	2	2
	CO3	2	2	1	1	1	1	1	1	1	1	1	1	X	2	2
	CO4	2	2	1	1	1	1	1	1	1	1	1	1	X	2	2
	CO5	2	2	1	1	1	1	1	1	1	1	1	1	X	2	2
	CO6	2	2	1	1	1	1	1	1	1	1	1	1	X	2	2
CHM3 01A3	**CO1**	2	1	1	1	1	1	1	1	1	1	1	1	X	X	X
	CO2	2	X	1	2	2	1	X	1	1	2	X	X	X	1	1
	CO3	1	1	1	2	2	1	1	1	2	1	X	X	1	1	1
	CO4	1	X	1	1	1	1	1	1	X	X	X	X	1	2	2
	CO5	2	1	1	2	1	1	1	1	1	x	x	x	2	1	1

	CO6	2	1	1	2	1	1	1	1	1	x	x	x	2	1	1
PHY301A	**CO1**	3	1	2	3	3	1	2	X	1	1	X	1	X	X	2
	CO2	3	1	1	1	1	2	3	1	2	1	1	2	1	1	3
	CO3	2	1	1	1	2	2	2	X	1	2	1	2	X	X	3
	CO4	1	1	2	1	1	2	1	X	1	2	1	2	1	1	3
	CO5	2	1	1	2	1	1	2	2	2	2	X	2	X	X	3
	CO6	1	1	2	1	X	1	1	2	1	1	1	2	X	X	3
PHY301B	**CO1**	2	X	X	2	1	X	X	X	X	X	X	1	1	1	1
	CO2	3	1	X	3	2	1	1	1	X	X	1	2	X	2	1
	CO3	2	X	X	2	X	X	X	X	X	X	X	2	2	X	1
	CO4	2	X	1	1	1	1	X	X	X	X	X	2	1	1	2
	CO5	3	1	2	3	X	X	X	1	X	X	2	1	2	1	2
	CO6	2	1	2	2	1	X	1	2	2	2	X	2	1	1	2
PHY301C	**CO1**	3	2	1	2	3	1	1	X	1	1	X	1	1	1	1
	CO2	3	2	2	2	2	1	X	X	1	2	1	2	1	1	1
	CO3	3	2	2	2	1	1	X	1	1	3	1	1	2	1	2
	CO4	3	2	1	1	3	X	X	2	X	1	1	1	2	1	2
	CO5	3	2	1	X	2	X	1	1	X	1	2	2	X	X	X
	CO6	3	2	1	X	1	X	2	X	1	X	2	2	X	X	X
LAB	**CO1**	3	1	2	2	3	2	2	X	1	1	X	1	X	X	2
	CO2	3	1	1	1	1	1	X	1	X	1	1	2	1	1	2
MAT301 A	**CO1**	3	1	2	3	1	X	X	1	X	X	2	X	3	1	2
	CO2	3	X	3	3	2	1	2	3	2	X	2	2	X	1	3
	CO3	2	1	2	2	2	1	3	X	X	X	2	1	1	2	3
	CO4	3	1	3	3	1	X	2	1	1	1	2	2	3	3	3
	CO5	3	2	2	2	X	X	1	X	X	X	3	2	1	2	2
MAT301B	**CO1**	3	1	2	3	1	X	X	1	X	X	2	X	3	1	2

	CO2	3	X	3	3	2	1	2	3	2	X	2	2	X	1	3
	CO3	2	1	2	2	2	1	3	X	X	X	2	1	1	2	3
	CO4	3	1	3	3	1	X	2	1	1	1	2	2	3	3	3
	CO5	3	2	2	2	X	X	1	X	X	X	3	2	1	2	2
	CO6															
MAT301C	**CO1**	3	X	2	3	1	X	1	1	X	X	3	1	2	1	2
	CO2	3	2	2	3	1	X	2	1	2	1	3	X	2	2	2
	CO3	3	X	3	2	2	1	2	1	2	3	3	X	2	2	3
	CO4	2	1	3	3	2	2	2	X	1	1	2	X	2	1	2
	CO5	3	1	2	2	X	1	3	1	2	X	1	1	2	1	1
CS301A	**CO1**	3	X	1	2	X	X	X	3	X	X	X	X	X	X	X
	CO2	X	X	X	X	X	X	X	2	X	X	X	X	X	X	X
	CO3	X	X	X	2	X	X	X	X	X	X	X	X	X	2	2
	CO4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	CO5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	CO6	1	1	1	1	1	1	X	X	X	X	X	X	X	X	X
CS301B	**CO1**	1	1	2	2	1	X	2	2	X	1	X	X	X	1	1
	CO2	1	1	2	1	2	1	2	2	X	1	3	X	X	1	1
	CO3	1	X	2	1	1	X	2	2	X	1	2	X	X	2	2
	CO4	1	X	2	2	1	X	2	2	X	X	3	X	X	2	2
	CO5	1	1	2	2	1	1	2	2	X	X	3	X	X	2	2
	CO6	1	1	2	1	1	1	2	2	1	1	1	1	1	1	1
ENC301	**CO1**	1	1	2	2	1	X	2	2	X	1	X	X	X	1	1
	CO2	1	1	2	1	2	1	2	2	X	1	3	X	X	1	1
	CO3	1	X	2	1	1	X	2	2	X	1	2	X	X	2	2
	CO4	1	X	2	2	1	X	2	2	X	X	3	X	X	2	2
	CO5	1	1	2	2	1	1	2	2	X	X	3	X	X	2	2

	CO6	1	1	2	1	1	1	2	2	1	1	1	1	1	1	1
Semester IV																
ENG401	**CO1**	3	3	1	1	1	1	2	1	1	2	2	1	3	2	X
	CO2	3	3	1	1	1	1	1	1	1	2	2	1	3	2	X
	CO3	3	3	1	1	1	1	1	1	1	2	2	1	2	2	X
	CO4	3	3	1	1	1	2	1	1	1	2	2	1	2	2	X
	CO5	3	3	1	1	1	1	1	1	1	3	2	1	2	2	X
	CO6	3	3	1	1	3	1	1	1	1	2	2	1	2	2	X
CHM401 A1	**CO1**	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO2	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO3	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO4	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO5	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO6	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
CHM401 A2	**CO1**	2	1	1	1	2	1	1	3	1	1	2	2	X	3	3
	CO2	2	1	1	1	2	1	1	3	1	1	2	2	X	3	3
	CO3	2	1	1	1	2	1	1	3	1	1	2	2	X	3	3
	CO4	2	1	1	1	2	1	1	3	1	1	2	2	X	3	3
	CO5	2	1	1	1	2	1	1	3	1	1	2	2	X	3	3
	CO6	2	1	1	1	2	1	1	3	1	1	2	2	X	3	3
CHM4 01A3	**CO1**	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO2	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO3	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO4	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO5	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO6	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
PHY401A	**CO1**	3	2	1	2	3	1	1	1	1	1	X	1	2	X	1

	CO2	3	2	X	1	2	2	X	X	X	2	1	2	1	1	1
	CO3	2	3	2	2	1	1	X	1	X	2	1	1	2	X	2
	CO4	2	2	1	1	3	X	X	2	X	1	1	1	2	1	2
	CO5	3	2	1	2	2	X	1	1	X	1	2	1	X	X	X
	CO6	2	2	1	X	1	X	2	X	1	X	2	2	X	1	1
PHY401B	**CO1**	3	2	1	2	3	1	1	X	X	1	X	1	1	1	1
	CO2	3	2	2	2	2	1	X	X	X	2	1	2	1	1	1
	CO3	3	2	2	2	1	1	X	1	X	2	1	1	2	X	2
	CO4	2	2	1	1	3	X	X	2	X	1	1	1	2	X	2
	CO5	3	2	1	2	2	X	1	1	X	1	2	1	X	X	X
	CO6	3	2	1	X	1	X	2	X	1	X	2	2	X	X	X
PHY401C	**CO1**	3	2	1	2	3	1	1	X	X	1	X	1	1	1	1
	CO2	3	2	2	2	2	1	X	X	X	2	1	2	1	1	1
	CO3	3	2	2	2	1	1	X	1	X	2	1	1	2	X	2
	CO4	3	2	1	1	3	X	X	2	X	1	1	1	2	X	2
	CO5	3	2	1	X	2	X	1	1	X	1	2	2	X	X	X
	CO6	3	2	1	X	1	X	2	X	1	X	2	2	X	X	X
LAB	**CO1**	3	1	2	2	3	2	2	X	1	1	X	1	X	X	2
	CO2	3	1	1	1	1	1	X	1	X	1	1	2	1	1	2
MAT401 A	**CO1**	3	X	1	2	1	X	2	X	2	x	3	2	2	1	1
	CO2	3	X	2	3	2	X	2	1	1	X	2	2	1	2	1
	CO3	3	X	1	2	1	X	2	X	2	X	3	2	2	1	1
	CO4	2	X	1	2	1	1	3	X	2	X	2	2	2	X	2
	CO5	3	1	X	3	X	1	2	1	2	X	3	1	2	1	2
	CO6	3	X	1	2	1	X	2	X	2	x	3	2	2	1	1
MAT401B	**CO1**	3	X	1	2	1	X	2	X	2	x	3	2	2	1	1
	CO2	3	X	2	3	2	X	2	1	1	X	2	2	1	2	1

	CO3	3	X	1	2	1	X	2	X	2	X	3	2	2	1	1
	CO4	2	X	1	2	1	1	3	X	2	X	2	2	2	X	2
	CO5	3	1	X	3	X	1	2	1	2	X	3	1	2	1	2
	CO6	3	X	1	2	1	X	2	X	2	x	3	2	2	1	1
MAT401C	**CO1**	3	X	2	3	1	X	1	1	X	X	3	1	2	1	2
	CO2	3	2	2	3	1	X	2	1	2	1	3	X	2	2	2
	CO3	3	X	3	2	2	1	2	1	2	3	3	X	2	2	3
	CO4	2	1	3	3	2	2	2	X	1	1	2	X	2	1	2
	CO5	3	1	2	2	X	1	3	1	2	X	1	1	2	1	1
	CO6	3	X	2	3	1	X	1	1	X	X	3	1	2	1	2
CS401A	**CO1**	1	X	X	X	X	1	X	X	1	1	X	1	1	1	X
	CO2	X	2	1	X	X	X	X	X	1	1	X	X	X	X	X
	CO3	X	1	1	X	X	X	X	X	1	1	X	1	1	1	X
	CO4	X	X	1	1	X	X	1	X	X	1	1	X	X	1	X
	CO5	X	X	X	X	1	1	X	X	1	1	X	X	1	X	X
	CO6	1	X	X	X	X	1	X	X	1	1	X	1	1	1	X
CS401B	**CO1**	1	X	X	X	1	1	X	X	1	1	X	1	1	1	X
	CO2	X	1	1	X	X	X	X	X	1	1	X	X	X	X	X
	CO3	X	1	1	X	X	X	X	X	1	X	X	1	1	1	X
	CO4	X	X	1	1	X	X	1	X	X	1	1	X	X	X	X
	CO5	X	X	X	X	1	1	X	X	1	1	X	X	1	X	X
	CO6	1	X	X	X	1	1	X	X	1	1	X	1	1	1	X
CS401L	**CO1**	1	X	X	X	1	1	X	X	1	1	X	1	1	1	X
	CO2	X	2	1	X	X	X	X	X	1	1	X	X	X	X	X
	CO3	X	1	1	X	X	X	X	X	1	X	X	1	1	1	X
	CO4	X	X	1	1	X	X	1	X	X	1	1	X	X	1	X
	CO5	X	X	X	X	1	1	X	X	1	1	X	X	1	X	X

	CO6	1	X	X	X	1	1	X	X	1	1	X	1	1	1	X
ENC401	**CO1**	1	2	2	2	1	3	1	3	3	3	3	2	2	1	3
	CO2	1	2	2	3	3	2	2	2	2	2	3	2	2	3	1
	CO3	1	2	3	2	2	2	1	1	2	2	1	3	2	3	2
	CO4	3	2	1	2	2	2	3	3	2	2	3	1	1	2	1
	CO5	3	2	3	2	2	3	2	2	2	2	1	2	X	2	3
	CO6	2	1	2	2	1	2	1	3	3	2	1	2	2	3	2
Semester V																
CHM501 A1	**CO1**	2	2	1	1	1	1	1	1	1	1	1	1	X	2	2
	CO2	2	2	1	1	1	1	1	1	1	1	1	1	X	2	2
	CO3	2	2	1	1	1	1	1	1	1	1	1	1	X	2	2
	CO4	2	2	1	1	1	1	1	1	1	1	1	1	X	2	2
	CO5	2	2	1	1	1	1	1	1	1	1	1	1	X	2	2
	CO6	2	2	1	1	1	1	1	1	1	1	1	1	X	2	2
CHM501 A2	**CO1**	3	2	1	1	1	1	2	1	1	1	1	1	X	1	1
	CO2	3	2	1	1	1	1	2	1	1	1	1	1	X	1	1
	CO3	3	2	1	1	1	1	2	1	1	1	1	1	X	1	1
	CO4	3	2	1	1	1	1	2	1	1	1	1	1	X	1	1
	CO5	3	2	1	1	1	1	2	1	1	1	1	1	X	1	1
	CO6	3	2	1	1	1	1	2	1	1	1	1	1	X	1	1
CHM5 01A3	**CO1**	2	1	2	2	2	x	1	1	1	x	1	x	x	2	2
	CO2	1	2	1	2	1	X	1	2	X	X	X	X	X	2	2
	CO3	3	1	1	2	1	1	1	1	X	X	X	X	X	1	1
	CO4	1	1	1	1	1	X	X	X	1	X	X	X	X	2	1
	CO5	2	2	2	2	1	1	1	2	x	1	1	x	x	2	2
	CO6	2	2	2	2	1	1	1	2	x	1	1	x	x	2	2
PHY501A	**CO1**	3	1	1	2	X	X	X	X	1	X	1	1	1	X	1

	CO2	2	1	2	2	X	1	X	X	1	X	X	1	1	1	1
	CO3	3	1	2	1	3	2	2	1	1	2	1	3	2	2	3
	CO4	1	1	X	X	X	1	X	X	X	X	X	1	2	X	1
	CO5	1	1	1	X	1	1	X	X	X	1	X	1	1	1	2
	CO6	2	1	X	1	2	X	1	1	X	1	1	2	1	2	3
PHY501B	**CO1**	3	1	2	3	3	1	1	X	1	1	X	1	X	X	1
	CO2	3	1	1	1	1	2	3	1	2	1	1	2	1	1	2
	CO3	2	1	1	1	2	2	2	1	1	2	1	2	X	X	3
	CO4	1	1	2	1	1	2	1	X	1	2	1	2	1	1	2
	CO5	2	1	1	2	1	1	2	2	2	2	X	2	X	X	3
	CO6	1	1	2	1	X	2	1	2	1	1	1	1	X	X	2
PHY501C	**CO1**	3	X	1	3	2	1	2	1	X	X	3	X	X	X	1
	CO2	2	X	1	3	1	2	1	1	1	X	X	1	X	X	2
	CO3	1	1	X	1	X	X	2	1	2	X	X	X	X	2	2
	CO4	3	2	X	1	X	X	2	X	X	X	3	X	1	X	1
	CO5	X	1	1	3	2	1	X	X	X	1	X	2	X	X	X
	CO6	1	X	2	1	3	1	X	2	X	1	X	2	X	2	4
LAB	**CO1**	3	1	2	2	3	2	2	X	1	1	X	1	X	X	2
	CO2	3	2	1	1	1	1	X	1	X	1	1	2	1	1	2
MAT501 A	**CO1**	3	X	3	3	3	1	1	X	1	3	3	X	3	2	2
	CO2	2	X	2	3	3	1	1	X	1	2	3	X	3	2	2
	CO3	3	1	3	3	2	X	1	1	2	3	2	1	1	2	2
	CO4	3	1	3	3	2	X	1	X	1	1	2	2	2	3	2
	CO5	3	1	2	3	1	1	2	2	1	1	2	3	3	3	3
	CO6	3	X	3	3	3	1	1	X	1	3	3	X	3	2	2
MAT501B	**CO1**	3	1	3	3	2	X	1	X	1	1	2	2	2	3	2
	CO2	3	1	3	3	2	X	1	1	2	3	2	1	1	2	2

	CO3	2	X	2	3	3	1	1	X	1	2	3	X	3	2	2
	CO4	3	X	3	3	3	1	1	X	1	3	3	X	3	2	2
	CO5	3	1	2	3	1	1	2	2	1	1	2	3	3	3	3
	CO6	3	1	3	3	2	X	1	X	1	1	2	2	2	3	2
MAT501C	**CO1**	1	X	X	X	1	1	X	X	1	1	X	1	1	1	X
	CO2	X	2	1	X	X	X	X	X	1	1	X	X	X	X	X
	CO3	X	1	1	X	X	X	X	X	1	X	X	1	1	1	X
	CO4	X	X	1	1	X	X	1	X	X	1	1	X	X	1	X
	CO5	X	X	X	X	1	1	X	X	1	1	X	X	1	X	X
	CO6	1	X	X	X	1	1	X	X	1	1	X	1	1	1	X
CS501A	**CO1**	1	X	X	X	1	1	X	X	1	1	X	1	1	1	X
	CO2	X	2	1	X	X	X	X	X	1	1	X	X	X	X	X
	CO3	X	1	1	X	X	X	X	X	1	X	X	1	1	1	X
	CO4	X	X	1	1	X	X	1	X	X	1	1	X	X	1	X
	CO5	X	X	X	X	1	1	X	X	1	1	X	X	1	X	X
	CO6	1	X	X	X	1	1	X	X	1	1	X	1	1	1	X
CS501B	**CO1**	1	X	X	X	1	1	X	X	1	1	X	1	1	1	X
	CO2	X	2	1	X	X	X	X	X	1	1	X	X	X	X	X
	CO3	X	1	1	X	X	X	X	X	1	X	X	1	1	1	X
	CO4	X	X	1	1	X	X	1	X	X	1	1	X	X	1	X
	CO5	X	X	X	X	1	1	X	X	1	1	X	X	1	X	X
	CO6	1	X	X	X	1	1	X	X	1	1	X	1	1	1	X
ENC501	**CO1**	2	2	1	3	3	3	2	3	1	3	1	2	3	1	2
	CO2	3	2	2	2	1	3	3	2	2	2	2	2	2	3	3
	CO3	2	3	3	2	X	3	1	1	2	2	2	1	2	2	3
	CO4	2	2	1	2	2	2	3	2	2	2	2	1	1	2	2
	CO5	3	3	3	3	2	2	X	2	2	2	3	2	3	2	1

	CO6	3	X	2	2	3	2	2	2	3	3	2	3	1	3	1
Semester VI																
CHM601 A1	**CO1**	3	1	1	1	1	1	2	2	1	1	2	2	x	3	3
	CO2	3	1	1	1	1	1	2	2	1	1	2	2	x	3	3
	CO3	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO4	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO5	3	1	1	1	1	1	2	2	1	1	2	2	x	3	3
	CO6	3	1	1	1	1	1	2	2	1	1	2	2	x	3	3
CHM601 A2	**CO1**	3	1	1	1	1	1	2	2	1	1	2	2	x	3	3
	CO2	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO3	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO4	3	1	1	1	1	1	2	2	1	1	2	2	x	3	3
	CO5	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
	CO6	3	1	1	1	1	1	2	2	1	1	2	2	X	3	3
CHM601A3	**CO1**	2	1	1	2	1	1	2	2	1	1	2	2	x	2	3
	CO2	2	1	1	2	1	1	2	2	1	1	2	2	x	2	3
	CO3	2	1	1	2	1	1	2	2	1	1	2	2	X	2	3
	CO4	2	1	1	2	1	1	2	2	1	1	2	2	X	2	3
	CO5	2	1	1	2	1	1	2	2	1	1	2	2	x	2	3
	CO6	2	1	1	2	1	1	2	2	1	1	2	2	x	2	3
PHY601A	**CO1**	3	2	2	1	1	1	X	1	1	1	X	X	X	1	1
	CO2	3	2	2	1	1	1	1	1	2	2	X	X	X	1	X
	CO3	3	2	3	2	1	1	1	1	1	2	X	1	X	2	1
	CO4	3	2	2	1	2	1	X	1	1	1	X	X	X	1	1
	CO5	3	2	2	2	3	2	2	2	2	3	X	1	X	2	3
	CO6	3	2	1	2	1	2	2	2	2	2	1	2	X	2	3
PHY601B	**CO1**	3	2	1	2	2	2	2	1	2	2	X	1	X	2	2

	CO2	3	2	2	3	2	1	2	1	2	2	X	1	X	2	2
	CO3	3	2	1	2	2	1	1	1	1	2	X	1	X	2	2
	CO4	3	2	2	2	2	X	2	2	2	2	X	1	X	2	2
	CO5	3	2	1	2	2	1	2	1	2	2	X	1	X	2	2
	CO6	3	2	1	2	2	X	1	2	2	2	X	1	X	2	2
PHY601C	**CO1**	3	2	1	2	2	2	2	1	2	2	X	1	X	2	2
	CO2	3	2	2	3	2	1	2	1	2	2	X	1	X	2	2
	CO3	3	2	1	2	2	1	1	1	1	2	X	1	X	2	2
	CO4	3	2	2	3	2	X	2	2	2	2	X	1	X	2	2
	CO5	3	2	1	2	2	1	2	1	2	2	X	1	X	2	2
	CO6	3	2	1	2	2	X	1	2	2	2	X	1	X	2	2
LAB	**CO1**	3	1	2	2	3	2	2	X	1	1	X	1	X	X	2
	CO2	3	1	1	1	1	1	X	1	X	1	1	2	1	1	2
MAT601 A	**CO1**	3	1	2	2	3	1	1	2	X	3	2	X	X	3	2
	CO2	3	1	2	3	3	2	2	2	X	3	2	X	X	2	2
	CO3	3	1	2	3	3	1	2	2	X	3	2	X	X	3	2
	CO4	3	1	2	3	3	1	2	2	X	3	2	X	X	3	2
	CO5	3	1	2	3	3	2	2	2	X	3	2	X	X	2	2
	CO6	3	1	2	2	3	1	1	2	X	3	2	X	X	3	2
MAT601B	**CO1**	3	1	2	2	X	1	3	1	2	X	1	1	2	1	1
	CO2	3	X	2	3	1	X	1	1	X	X	3	1	2	1	2
	CO3	3	2	2	3	1	X	2	1	2	1	3	X	2	2	2
	CO4	2	1	3	3	2	2	2	X	1	1	2	X	2	1	2
	CO5	3	X	3	2	2	1	2	1	2	3	3	X	2	2	3
	CO6	3	1	2	2	X	1	3	1	2	X	1	1	2	1	1
MAT601 C	**CO1**	3	1	2	2	X	1	3	1	2	X	1	1	2	1	1
	CO2	3	X	2	3	1	X	1	1	X	X	3	1	2	1	2

	CO3	3	2	2	3	1	X	2	1	2	1	3	X	2	2	2
	CO4	2	1	3	3	2	2	2	X	1	1	2	X	2	1	2
	CO5	3	X	3	2	2	1	2	1	2	3	3	X	2	2	3
	CO6	3	1	2	2	X	1	3	1	2	X	1	1	2	1	1
CS601A	**CO1**	1	X	X	X	1	1	X	X	1	1	X	1	1	1	X
	CO2	X	2	1	X	X	X	X	X	1	1	X	X	X	X	X
	CO3	X	1	1	X	X	X	X	X	1	X	X	1	1	1	X
	CO4	X	X	1	1	X	X	1	X	X	1	1	X	X	1	X
	CO5	X	X	X	X	1	1	X	X	1	1	X	X	1	X	X
	CO6	1	X	X	X	1	1	X	X	1	1	X	1	1	1	X
CS601B	**CO1**	1	X	X	X	1	1	X	X	1	1	X	1	1	1	X
	CO2	X	2	1	X	X	X	X	X	1	1	X	X	X	X	X
	CO3	X	1	1	X	X	X	X	X	1	X	X	1	1	1	X
	CO4	X	X	1	1	X	X	1	X	X	1	1	X	X	1	X
	CO5	X	X	X	X	1	1	X	X	1	1	X	X	1	X	X
	CO6	1	X	X	X	1	1	X	X	1	1	X	1	1	1	X
CS601L	**CO1**	1	X	X	X	1	1	X	X	1	1	X	1	1	1	X
	CO2	X	2	1	X	X	X	X	X	1	1	X	X	X	X	X
	CO3	X	1	1	X	X	X	X	X	1	X	X	1	1	1	X
	CO4	X	X	1	1	X	X	1	X	X	1	1	X	X	1	X
	CO5	X	X	X	X	1	1	X	X	1	1	X	X	1	X	X
	CO6	1	X	X	X	1	1	X	X	1	1	X	1	1	1	X
ENC601	**CO1**	3	2	1	3	2	3	2	1	1	3	1	2	3	1	2
	CO2	1	2	2	2	1	3	3	2	2	2	2	3	2	3	3
	CO3	2	3	3	2	2	3	1	1	2	2	2	1	2	2	3
	CO4	1	2	1	2	2	2	3	3	2	2	2	1	1	2	2
	CO5	3	3	3	3	2	2	3	2	2	2	3	2	3	2	1

	CO6	3	2	2	2	3	2	2	2	3	3	2	3	2	3	2

Mapping of Course Outcomes (COs) with Programme Specific Outcomes(PSOs)

College code	Course Out-comes	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
PBC101	**CO1**	1	2	3	2	1	2	1	x
	CO2	2	1	1	2	x	1	2	1
	CO3	x	1	2	3	2	1	1	2
	CO4	1	2	1	3	1	1	2	x
	CO5	2	X	1	2	1	1	3	2
	CO6	1	2	1	3	1	1	2	x
HCP101	**CO1**	1	2	3	2	1	2	1	x
	CO2	2	1	1	2	x	1	2	1
	CO3	x	1	2	3	2	1	1	2
	CO4	1	2	1	3	1	1	2	x
	CO5	2	X	1	2	1	1	3	2
	CO6	1	2	1	3	1	1	2	x
CHM101A1	**CO1**	3	X	X	3	2	X	3	3
	CO2	3	X	X	3	2	X	3	3
	CO3	3	X	X	3	2	X	3	3
	CO4	3	X	X	3	2	X	3	3
	CO5	3	X	X	3	2	X	3	3
	CO6	3	X	X	3	2	X	3	3
CHM101A2	**CO1**	3	X	X	3	2	X	3	3
	CO2	3	X	X	3	2	X	3	3
	CO3	3	X	X	3	2	X	3	3
	CO4	3	X	X	3	2	X	3	3

	CO5	3	X	X	3	2	X	3	3
	CO6	3	X	X	3	2	X	3	3
CHM101A3	**CO1**	3	3	X	X	1	1	X	1
	CO2	3	2	X	X	2	1	X	2
	CO3	3	2	X	X	2	1	X	3
	CO4	3	2	X	X	2	X	X	2
	CO5	3	2	1	X	2	X	X	2
	CO6	3	1	X	X	1	X	X	1
PHY101A	**CO1**	3	3	X	X	1	1	X	1
	CO2	3	2	X	X	2	1	X	2
	CO3	3	2	X	X	2	1	X	3
	CO4	3	2	X	X	2	X	X	2
	CO5	3	2	1	X	2	X	X	2
	CO6	3	1	X	X	1	X	X	1
PHY101B	**CO1**	3	3	X	X	1	1	X	1
	CO2	3	2	X	X	2	1	X	2
	CO3	3	2	X	X	2	1	X	3
	CO4	3	2	X	X	2	X	X	2
	CO5	3	2	1	X	2	X	X	2
	CO6	3	1	X	X	1	X	X	1
PHY101C	**CO1**	3	3	X	X	1	1	X	1
	CO2	3	2	X	X	2	1	X	2
	CO3	3	2	X	X	2	1	X	3
	CO4	3	2	X	X	2	X	X	2
	CO5	3	2	1	X	2	X	X	2
	CO6	3	1	X	X	1	X	X	1
LAB	**CO1**	3	2	1	X	3	X	X	2

	CO2	3	1	X	X	2	X	X	1
MAT101A	**CO1**	3	3	2	3	2	1	2	X
	CO2	3	2	2	2	1	3	X	1
	CO3	3	2	3	1	2	2	2	2
	CO4	2	1	2	1	3	X	2	2
	CO5	1	2	1	X	2	X	2	2
MAT101B	**CO1**	2	1	2	X	2	1	1	2
	CO2	1	2	2	1	2	1	2	1
	CO3	1	2	1	X	2	X	X	1
	CO4	3	3	2	2	2	2	2	2
	CO5	3	2	2	1	1	X	1	1
MAT101C	**CO1**	2	1	2	X	2	1	1	2
	CO2	1	2	2	1	2	1	2	1
	CO3	1	2	1	X	2	X	X	1
	CO4	3	3	2	2	2	2	2	2
	CO5	3	2	2	1	1	X	1	1
CS101A	**CO1**	X	X	X	X	3	X	X	X
	CO2	X	X	X	X	3	X	X	X
	CO3	X	X	X	X	3	X	X	X
	CO4	X	X	X	X	3	X	X	X
	CO5	X	X	X	X	3	X	X	X
CS101B	**CO1**	1	1	X	X	1	X	1	1
	CO2	1	1	X	X	2	1	1	1
	CO3	1	1	X	X	1	1	1	1
	CO4	1	X	X	X	1	1	1	1
	CO5	1	X	X	X	1	X	1	1
CS101L	**CO1**	1	1	X	X	1	X	1	1

	CO2	1	1	X	X	2	1	1	1
	CO3	1	1	X	X	1	1	1	1
	CO4	1	X	X	X	1	1	1	1
	CO5	1	X	X	X	1	X	1	1
ENC101	**CO1**	3	X	1	2	3	X	3	3
	CO2	2	X	2	1	3	X	3	3
	CO3	1	1	2	1	1	X	3	3
	CO4	1	1	3	1	1	X	3	3
	CO5	2	X	2	1	3	X	3	3
	CO6	1	1	2	1	1	X	3	3
PBC201	**CO1**	1	2	3	2	1	2	1	x
	CO2	2	1	1	2	x	1	2	1
	CO3	x	1	2	3	2	1	1	2
	CO4	1	2	1	3	1	1	2	x
	CO5	2	X	1	2	1	1	3	2
	CO6	1	2	1	3	1	1	2	x
HCP201	**CO1**	3	X	1	2	3	X	3	3
	CO2	2	X	2	1	3	X	3	3
	CO3	1	1	2	1	1	X	3	3
	CO4	1	1	3	1	1	X	3	3
	CO5	2	X	2	1	3	X	3	3
	CO6	1	1	2	1	1	X	3	3
CHM201A1	**CO1**	3	X	X	3	2	X	3	3
	CO2	3	X	X	3	2	X	3	3
	CO3	3	X	X	3	2	X	3	3
	CO4	3	X	X	3	2	X	3	3
	CO5	3	X	X	3	2	X	3	3

	CO6	3	X	X	3	2	X	3	3
CHM201A2	**CO1**	3	X	X	3	2	X	3	3
	CO2	3	X	X	3	2	X	3	3
	CO3	3	X	X	3	2	X	3	3
	CO4	3	X	X	3	2	X	3	3
	CO5	3	X	X	3	2	X	3	3
	CO6	3	X	X	3	2	X	3	3
CHM201A3	**CO1**	3	X	X	3	2	x	3	3
	CO2	3	X	X	3	2	X	3	3
	CO3	3	X	X	3	2	X	3	3
	CO4	3	X	X	3	2	X	3	3
	CO5	3	X	X	3	2	X	3	3
	CO6	3	X	X	3	2	X	3	3
PHY201A	**CO1**	3	2	1	2	1	1	2	1
	CO2	3	2	1	2	1	2	1	X
	CO3	3	2	2	2	1	X	1	X
	CO4	3	2	2	2	1	X	1	X
	CO5	3	2	1	2	1	X	1	X
	CO6	3	2	1	2	1	X	X	X
PHY201B	**CO1**	3	2	1	2	1	1	2	1
	CO2	3	2	1	2	1	2	1	X
	CO3	3	2	2	1	1	1	X	1
	CO4	3	2	2	2	1	X	1	X
	CO5	3	2	1	2	1	X	1	X
	CO6	3	2	2	2	1	X	X	X
PHY201C	**CO1**	2	2	1	X	1	X	1	1
	CO2	3	2	1	X	2	X	X	1

	CO3	2	1	X	X	X	X	X	1
	CO4	3	2	1	1	2	X	2	2
	CO5	2	1	2	1	1	X	X	1
	CO6	2	2	1	1	2	X	X	1
LAB	**CO1**	3	2	1	X	3	X	X	2
	CO2	3	1	X	X	2	X	X	1
MAT201A	**CO1**	2	1	2	1	3	X	2	2
	CO2	1	2	1	X	2	X	2	2
	CO3	3	2	3	1	2	2	2	2
	CO4	3	3	2	3	2	1	2	X
	CO5	3	2	2	2	1	3	X	1
MAT201B	**CO1**	2	1	2	X	2	1	1	2
	CO2	1	2	2	1	2	1	2	1
	CO3	1	2	1	X	2	X	X	1
	CO4	3	3	2	2	2	2	2	2
	CO5	3	2	2	1	1	X	1	1
MAT201C	**CO1**	1	1	X	X	1	X	1	1
	CO2	1	1	X	X	2	1	1	1
	CO3	1	1	X	X	1	1	1	1
	CO4	1	X	X	X	1	1	1	1
	CO5	1	X	X	X	1	X	1	1
	CO6	1	1	X	X	1	X	1	1
CS201A	**CO1**	1	1	X	X	1	X	1	1
	CO2	1	1	X	X	2	1	1	1
	CO3	1	1	X	X	1	1	1	1
	CO4	1	X	X	X	1	1	1	1
	CO5	1	X	X	X	1	X	1	1

	CO6	1	1	X	X	1	X	1	1
CS201B	**CO1**	1	1	X	X	1	X	1	1
	CO2	1	1	X	X	2	1	1	1
	CO3	1	1	X	X	1	1	1	1
	CO4	1	X	X	X	1	1	1	1
	CO5	1	X	X	X	1	X	1	1
ENC201	**CO1**	2	2	1	2	3	2	3	3
	CO2	2	2	2	1	3	X	3	1
	CO3	1	1	2	1	1	2	1	3
	CO4	3	1	3	1	1	X	3	3
	CO5	3	1	2	1	1	3	3	1
	CO6	1	1	2	1	2	X	3	3
ENG301	**CO1**	X	X	X	X	X	X	2	X
	CO2	X	X	X	X	X	X	2	X
	CO3	X	X	X	X	X	X	2	1
	CO4	X	X	X	X	X	X	2	1
	CO5	X	X	X	X	X	X	3	1
	CO6	X	X	X	X	X	X	2	1
CHM301A1	**CO1**	3	X	X	3	2	X	3	3
	CO2	3	X	X	3	2	X	3	3
	CO3	3	X	X	3	2	X	3	3
	CO4	3	X	X	3	2	X	3	3
	CO5	3	X	X	3	2	X	3	3
	CO6	3	X	X	3	2	X	3	3
CHM301A2	**CO1**	3	X	X	3	2	X	3	3
	CO2	3	X	X	3	2	X	3	3
	CO3	3	X	X	3	2	X	3	3

	CO4	3	X	X	3	2	X	3	3
	CO5	3	X	X	3	2	X	3	3
	CO6	3	X	X	3	2	X	3	3
CHM301A3	**CO1**	3	X	X	3	2	X	3	3
	CO2	3	X	X	3	2	X	3	3
	CO3	3	X	X	3	2	X	3	3
	CO4	3	X	X	3	2	X	3	3
	CO5	3	x	x	3	2	x	3	3
	CO6	3	x	x	3	2	x	3	3
PHY301A	**CO1**	3	3	X	X	1	1	X	1
	CO2	3	2	X	X	2	X	X	2
	CO3	3	2	X	X	2	X	X	3
	CO4	3	2	X	X	2	X	X	2
	CO5	3	2	1	X	2	X	X	2
	CO6	3	1	X	X	1	X	X	1
PHY301B	**CO1**	3	2	2	X	1	X	2	3
	CO2	2	2	3	1	2	X	X	2
	CO3	3	2	2	X	2	X	2	3
	CO4	2	2	2	1	X	X	X	2
	CO5	3	3	2	X	1	X	1	2
	CO6	2	1	1	2	2	X	X	1
PHY301C	**CO1**	3	2	1	1	1	1	1	1
	CO2	3	2	1	1	1	1	1	1
	CO3	3	2	1	1	1	X	X	1
	CO4	3	2	X	1	2	X	X	X
	CO5	3	2	2	2	2	X	X	X
	CO6	3	2	2	2	1	X	X	X

LAB	**CO1**	3	2	1	X	1	X	X	2
	CO2	2	1	1	X	2	X	X	1
MAT301A	**CO1**	3	2	3	1	2	2	2	2
	CO2	3	3	2	3	2	1	2	X
	CO3	2	1	2	1	3	X	2	2
	CO4	3	2	2	2	1	3	X	1
	CO5	1	2	1	X	2	X	2	2
MAT301B	**CO1**	3	2	3	1	2	2	2	2
	CO2	3	3	2	3	2	1	2	X
	CO3	2	1	2	1	3	X	2	2
	CO4	3	2	2	2	1	3	X	1
	CO5	1	2	1	X	2	X	2	2
MAT301C	**CO1**	3	3	3	1	3	2	1	2
	CO2	3	2	2	1	2	X	2	2
	CO3	3	2	3	2	1	2	3	3
	CO4	2	3	3	3	3	X	3	2
	CO5	2	2	2	3	2	1	1	1
CS301A	**CO1**	X	X	X	X	3	X	X	X
	CO2	X	X	X	X	3	X	X	X
	CO3	X	X	X	X	3	X	X	X
	CO4	X	X	X	X	3	X	X	X
	CO5	X	X	X	X	3	X	X	X
	CO6	X	X	X	X	3	X	X	X
CS301B	**CO1**	1	1	X	X	1	X	1	1
	CO2	1	1	X	X	2	1	1	1
	CO3	1	1	X	X	1	1	1	1
	CO4	1	X	X	X	1	1	1	1

	CO5	1	X	X	X	1	X	1	1
	CO6	1	1	X	X	1	X	1	1
ENC301	**CO1**	1	1	X	X	1	X	1	1
	CO2	1	1	X	X	2	1	1	1
	CO3	1	1	X	X	1	1	1	1
	CO4	1	X	X	X	1	1	1	1
	CO5	1	X	X	X	1	X	1	1
	CO6	1	1	X	X	1	X	1	1
ENG401	**CO1**	X	X	X	X	X	X	2	X
	CO2	X	X	X	X	X	X	2	X
	CO3	X	X	X	X	X	X	2	1
	CO4	X	X	X	X	X	X	2	1
	CO5	X	X	X	X	X	X	3	1
	CO6	X	X	X	X	X	X	2	1
CHM401A1	**CO1**	3	X	X	3	2	X	3	3
	CO2	3	X	X	3	2	X	3	3
	CO3	3	X	X	3	2	X	3	3
	CO4	3	X	X	3	2	X	3	3
	CO5	3	X	X	3	2	X	3	3
	CO6	3	X	X	3	2	X	3	3
CHM1401A2	**CO1**	3	X	X	3	2	X	3	3
	CO2	3	X	X	3	2	X	3	3
	CO3	3	X	X	3	2	X	3	3
	CO4	3	X	X	3	2	X	3	3
	CO5	3	X	X	3	2	X	3	3
	CO6	3	X	X	3	2	X	3	3
CHM401A3	**CO1**	3	X	x	3	2	X	3	3

	CO2	3	X	X	3	2	X	3	3
	CO3	3	X	X	3	2	X	3	3
	CO4	3	X	X	3	2	X	3	3
	CO5	3	X	X	3	2	X	3	3
	CO6	3	X	X	3	2	X	3	3
PHY401A	**CO1**	3	2	1	1	1	1	1	1
	CO2	3	2	2	2	2	1	1	1
	CO3	3	2	1	1	1	X	X	1
	CO4	3	1	X	1	2	1	1	X
	CO5	3	2	2	2	2	X	X	X
	CO6	3	2	2	2	1	X	X	1
PHY401B	**CO1**	3	2	1	1	1	1	1	1
	CO2	3	2	1	1	1	1	2	1
	CO3	3	2	1	1	1	X	X	1
	CO4	3	2	X	1	2	X	X	X
	CO5	3	2	2	2	2	X	X	X
	CO6	3	2	2	2	1	X	X	X
PHY401C	**CO1**	3	2	1	1	1	1	1	1
	CO2	3	2	1	1	1	1	1	1
	CO3	3	2	1	1	1	X	X	1
	CO4	3	2	X	1	2	X	X	X
	CO5	3	2	2	2	2	X	X	X
	CO6	3	2	2	2	1	X	X	X
LAB	**CO1**	3	2	1	X	1	X	X	2
	CO2	2	1	1	X	2	X	X	1
MAT401A	**CO1**	3	2	2	X	2	1	1	3
	CO2	2	2	3	1	2	1	3	2

	CO3	3	2	2	X	2	1	1	3
	CO4	2	2	2	1	3	2	2	2
	CO5	3	3	2	2	1	X	X	2
	CO6	3	2	2	X	2	1	1	3
MAT401B	**CO1**	3	2	2	X	2	1	1	3
	CO2	2	2	3	1	2	1	3	2
	CO3	3	2	2	X	2	1	1	3
	CO4	2	2	2	1	3	2	2	2
	CO5	3	3	2	2	1	X	X	2
	CO6	3	2	2	X	2	1	1	3
MAT401C	**CO1**	3	3	3	1	3	2	1	2
	CO2	3	2	2	1	2	X	2	2
	CO3	3	2	3	2	1	2	3	3
	CO4	2	3	3	3	3	X	3	2
	CO5	2	2	2	3	2	1	1	1
	CO6	3	3	3	1	3	2	1	2
CS401A	**CO1**	X	X	X	X	X	X	X	X
	CO2	X	X	X	X	X	1	X	X
	CO3	X	X	X	X	1	1	X	X
	CO4	X	X	X	X	1	1	X	X
	CO5	X	X	X	X	1	1	X	X
	CO6	X	X	X	X	X	X	X	X
CS401B	**CO1**	X	X	X	X	X	X	X	X
	CO2	X	X	X	X	1	1	X	X
	CO3	X	X	X	X	1	1	X	X
	CO4	X	X	X	X	1	1	X	X
	CO5	X	X	X	X	1	1	X	X

	CO6	X	X	X	X	X	X	X	X
CS401L	**CO1**	X	X	X	X	X	X	X	X
	CO2	X	X	X	X	1	1	X	X
	CO3	X	X	X	X	1	1	X	X
	CO4	X	X	X	X	1	1	X	X
	CO5	X	X	X	X	1	1	X	X
	CO6	X	X	X	X	X	X	X	X
ENC401	**CO1**	2	3	1	2	3	1	3	3
	CO2	2	2	2	1	3	1	3	1
	CO3	3	3	2	2	1	2	3	2
	CO4	2	1	2	1	1	2	3	3
	CO5	3	3	2	3	1	1	3	3
	CO6	3	1	2	1	2	2	3	2
CHM501A1	**CO1**	3	X	X	3	2	2	3	3
	CO2	3	X	X	3	2	2	3	3
	CO3	3	X	X	3	2	2	3	3
	CO4	3	X	X	3	2	2	3	3
	CO5	3	X	X	3	2	2	3	3
	CO6	3	X	X	3	2	2	3	3
CHM501A2	**CO1**	3	X	X	3	2	X	3	3
	CO2	3	X	X	3	2	X	3	3
	CO3	3	X	X	3	2	X	3	3
	CO4	3	X	X	3	2	X	3	3
	CO5	3	X	X	3	2	X	3	3
	CO6	3	X	X	3	2	X	3	3
CHM501A3	**CO1**	3	X	X	3	2	X	X	3
	CO2	3	X	X	3	2	X	3	3

	CO3	3	X	X	3	2	X	3	3
	CO4	3	X	X	3	2	X	X	3
	CO5	3	X	X	3	2	X	3	3
	CO6	3	X	X	3	2	X	3	3
PHY501A	**CO1**	3	2	1	X	1	X	X	2
	CO2	2	1	1	X	2	X	X	1
	CO3	3	2	X	X	3	X	X	3
	CO4	3	1	1	1	X	X	X	1
	CO5	3	2	X	X	1	X	X	1
	CO6	3	1	X	X	2	X	X	2
PHY501B	**CO1**	3	3	X	X	1	1	X	1
	CO2	3	2	X	X	2	X	X	2
	CO3	3	2	X	X	2	X	X	3
	CO4	3	2	X	X	2	X	X	2
	CO5	3	2	1	X	2	X	X	2
	CO6	3	1	X	X	1	X	X	1
PHY501C	**CO1**	2	1	2	X	2	1	1	2
	CO2	1	2	2	1	2	1	2	1
	CO3	1	2	1	X	2	X	X	1
	CO4	3	3	2	2	2	2	2	2
	CO5	3	2	2	1	1	X	1	1
	CO6	3	2	X	1	1	X	1	1
LAB	**CO1**	3	2	1	X	1	X	X	2
	CO2	2	1	1	X	2	X	X	1
MAT501A	**CO1**	3	X	3	3	3	1	1	X
	CO2	2	X	2	3	3	1	1	X
	CO3	3	1	3	3	2	X	1	1

	CO4	3	1	3	3	2	X	1	X
	CO5	3	1	2	3	1	1	2	2
	CO6	3	X	3	3	3	1	1	X
MAT501B	**CO1**	2	3	2	2	2	2	2	2
	CO2	2	2	3	1	2	2	2	2
	CO3	3	2	3	2	3	1	3	2
	CO4	3	3	3	2	3	1	3	3
	CO5	2	2	2	2	2	2	2	2
	CO6	2	3	2	2	2	2	2	2
MAT501C	**CO1**	X	X	X	X	X	X	X	X
	CO2	X	X	X	X	1	1	X	X
	CO3	X	X	X	X	1	1	X	X
	CO4	X	X	X	X	1	1	X	X
	CO5	X	X	X	X	1	1	X	X
	CO6	X	X	X	X	X	X	X	X
CS501A	**CO1**	X	X	X	X	X	X	X	X
	CO2	X	X	X	X	1	1	X	X
	CO3	X	X	X	X	1	1	X	X
	CO4	X	X	X	X	1	1	X	X
	CO5	X	X	X	X	1	1	X	X
	CO6	X	X	X	X	X	X	X	X
CS501B	**CO1**	X	X	X	X	X	X	X	X
	CO2	X	X	X	X	1	1	X	X
	CO3	X	X	X	X	1	1	X	X
	CO4	X	X	X	X	1	1	X	X
	CO5	X	X	X	X	1	1	X	X
	CO6	X	X	X	X	X	X	X	X

ENC501	**CO1**	1	2	3	2	3	1	3	2
	CO2	2	2	2	1	3	1	3	2
	CO3	3	2	3	2	2	3	3	2
	CO4	2	2	2	2	1	3	3	2
	CO5	2	2	2	3	2	1	3	2
	CO6	1	1	2	1	2	2	3	2
CHM601A1	**CO1**	3	X	X	3	2	X	3	3
	CO2	3	X	X	3	2	x	3	3
	CO3	3	X	X	3	2	X	3	3
	CO4	3	X	X	3	2	X	3	3
	CO5	3	X	X	3	2	X	3	3
	CO6	3	X	X	3	2	X	3	3
CHM601A2	**CO1**	3	X	x	3	2	X	3	3
	CO2	3	X	X	3	2	X	3	3
	CO3	3	X	X	3	2	X	3	3
	CO4	3	X	X	3	2	X	3	3
	CO5	3	X	X	3	2	X	3	3
	CO6	3	X	X	3	2	X	3	3
CHM601A3	**CO1**	3	X	X	3	2	X	3	3
	CO2	3	X	X	3	2	X	3	3
	CO3	3	X	X	3	2	X	3	3
	CO4	3	X	X	3	2	X	3	3
	CO5	3	X	X	3	2	X	3	3
	CO6	3	X	X	3	2	X	3	3
PHY601A	**CO1**	3	2	X	1	X	1	X	2
	CO2	3	2	X	X	1	X	X	2
	CO3	3	2	1	X	1	1	X	2

	CO4	3	2	X	X	X	X	X	2
	CO5	3	2	X	1	2	X	X	3
	CO6	3	2	X	1	2	X	X	3
PHY601B	**CO1**	3	2	X	X	3	X	X	3
	CO2	3	2	X	X	3	X	X	3
	CO3	3	2	X	X	3	X	X	2
	CO4	3	2	X	X	3	2	X	2
	CO5	3	2	X	X	3	X	X	3
	CO6	2	2	X	X	3	X	X	2
PHY601C	**CO1**	3	2	X	X	3	X	X	3
	CO2	3	2	X	X	3	X	X	3
	CO3	3	2	X	X	3	X	X	2
	CO4	3	2	X	X	3	2	X	2
	CO5	3	2	X	X	3	X	X	3
	CO6	2	2	X	X	3	X	X	2
LAB	**CO1**	3	2	1	X	1	X	X	2
	CO2	2	1	1	X	2	X	X	1
MAT601A	**CO1**	3	X	3	X	2	3	2	3
	CO2	3	X	3	X	2	2	3	3
	CO3	3	X	3	X	2	3	2	3
	CO4	3	X	3	X	2	3	2	3
	CO5	3	X	3	X	2	2	3	3
	CO6	3	X	3	X	2	3	2	3
MAT601B	**CO1**	2	2	2	3	2	1	1	1
	CO2	3	3	3	1	3	2	1	2
	CO3	3	2	2	1	2	X	2	2
	CO4	2	3	3	3	3	X	3	2

	CO5	3	2	3	2	1	2	3	3
	CO6	2	2	2	3	2	1	1	1
MAT601C	**CO1**	2	2	2	3	2	1	1	1
	CO2	3	3	3	1	3	2	1	2
	CO3	3	2	2	1	2	X	2	2
	CO4	2	3	3	3	3	X	3	2
	CO5	3	2	3	2	1	2	3	3
	CO6	2	2	2	3	2	1	1	1
CS601A	**CO1**	X	X	X	X	X	X	X	X
	CO2	X	X	X	X	1	1	X	X
	CO3	X	X	X	X	1	1	X	X
	CO4	X	X	X	X	1	1	X	X
	CO5	X	X	X	X	1	1	X	X
	CO6	X	X	X	X	X	X	X	X
CS601B	**CO1**	X	X	X	X	X	X	X	X
	CO2	X	X	X	X	1	1	X	X
	CO3	X	X	X	X	1	1	X	X
	CO4	X	X	X	X	1	1	X	X
	CO5	X	X	X	X	1	1	X	X
	CO6	X	X	X	X	X	X	X	X
CS601L	**CO1**	X	X	X	X	X	X	X	X
	CO2	X	X	X	X	1	1	X	X
	CO3	X	X	X	X	1	1	X	X
	CO4	X	X	X	X	1	1	X	X
	CO5	X	X	X	X	1	1	X	X
	CO6	X	X	X	X	X	X	X	X
ENC601	**CO1**	2	2	3	2	3	1	2	2

	CO2	2	2	3	3	3	1	3	3
	CO3	2	2	3	2	2	3	3	2
	CO4	2	2	1	2	2	2	3	2
	CO5	2	2	2	3	2	2	3	3
	CO6	1	1	2	1	2	2	3	2

M.Sc. Mathematics

Programme Outcomes

PO 1	**Disciplinary Knowledge**	Various branches of Mathematics are selected and designed for M.Sc. Mathematics courses aiming at mathematical reasoning, sophistication in things and acquaintance with subjects including application.
PO 2	**Communication skills**	Assimilate effective scientific and technical communication in both oral and writing about Mathematics and allied fields.
PO 3	**Critical thinking**	Theoretical approaches enhance ability to employ critical thinking in understanding the concepts in the every area of mathematics
PO 4	**Problem solving**	M.Sc. programme also offers training in problem solving skills .
PO 5	**Analytical Reasoning**	The student will be able to develop logical reasoning techniques and ability to analyze the results and apply them in various problems appearing in different branches of mathematics
PO 6	**Leadership Readiness/Qualities**	Strategic & Critical Thinking enhanced by the Master programme help them to become strong leaders in the chosen field.
PO 7	**Collaboration/Cooperation/Teamwork**	The students shall be capable of learning autonomously and producing outstanding results by collaborating with others who have a similar mindset but different skills or experience.
PO 8	**Scientific Reasoning**	The students will be able to learn the formulation of problems, on the analytical and numerical techniques for a solution and the computation of useful results.

PO 9	**Ethical awareness/reasoning**	●To acquire relevant knowledge and skills appropriate to professional activities and demonstrate highest standards of ethical issues in mathematical sciences. ● Avoiding unethical behaviour such as fabrication, falsification or misrepresentation of data or committing plagiarism, and appreciate environmental and sustainability issues.
PO 10	**Reflective Thinking**	Programme enables the students sensitive to real experiences with respect to self, society and nation
PO 11	**Lifelong learners**	Capable of self-paced and self-directed learning aimed at personal development and for improving knowledge/skill development and reskilling in areas mathematics.
PO 12	**Information/Digital Literacy**	Capability to use appropriate software to solve system of equations and differential equations. Capability to understand and apply the programming concepts of C to mathematical investigations and problem solving
PO 13	**Self-Directed Learning**	Ability to work independently and do in-depth study of various notions of Mathematics. The student shall acquire capability to evaluate hypothesis, methods and evidence within their proper contexts in any situation.
PO 14	**Multicultural Competence**	The student shall be able to apply the knowledge acquired in Mathematics in Science, technology as well as research and its extensions.
PO 15	**Research-related Skills**	Capability for inquiring about appropriate questions relating to the concepts in various fields of Mathematics. To know about the advances in various branches of mathematics.

Program Specific Outcomes (PSOs)

PSO1	Nurture problem solving skills, thinking, creativity through assignments, project work and learn to apply them independently to problems in pure and applied mathematics.
PSO2	A research oriented learning that develops analytical and integrative problem solving approaches. Create, select and apply appropriate techniques, resources and modern technology in a multi-disciplinary environment.
PSO3	Knowledge and capability in formulating and analysis of mathematical models of real life applications.

PSO4	Advanced mathematical and computational skills that prepare them to pursue higher studies and conduct research in advanced areas of analysis, linear algebra and statistics.
PSO5	Assimilate complex mathematical ideas and arguments and build a strong foundation on algebra, complex analysis, topology and number theory.
PSO6	Appreciate the necessity of various Algebraic structures with binary operations such as Group, Ring, Non-commutative ring that lead to new ideas in algebra for their future research in advanced topics of algebra.

Course Outcomes of M.Sc. (Mathematics)

Sem.	Course title	College Code	Course outcomes On completion of the course students will be able to	
Sem.-1	**Real Analysis I**	**MSMA TH101**	**CO 1**	Know about Countable and Uncountable sets.
			CO 2	Classify and explain open and closed sets , limit point , isolated points, boundary points, subspace ,product metric spaces and apply them to study the nature of the sets.
			CO 3	Learn the theorems on completeness, compactness ,connectedness and use them to solve the problems .Identify the continuity of a function which is defined on metric space ,at a given point and identify the set of points on which a function is continuous by using different theorems.
			CO 4	Distinguish between the concept of sequence and series and determine limits of sequence .
			CO 5	Use theory of Riemann-stieltjes integral in solving definite integrals arising in different fields of science and engineering.
			CO 6	Convergence and approximate sum of series.
	Algebra I	**MSMA TH102**	**CO 1**	Review groups and learn Permutation groups, Even and odd permutations, Conjugacy classes of permutations
			CO 2	Knowledge of Cayley's Theorem, Direct products, Fundamental Theorem for finite abelian groups, Sylow theorems and their applications, Finite Simple group.
			CO 3	Understanding of Groups of order p2, pq (p and q primes). Solvable groups, Normal and subnormal series, composition series
			CO 4	Review basic concepts of rings with emphasis on exercises.
			CO 5	Learn about Polynomial rings, formal power series rings, matrix rings.

			CO 6	The ring of Gaussian Integers
	Differential Equations	**MSMA TH103**	**CO 1**	Discuss existence and uniqueness of solution of first order differential equations
			CO 2	Knowledge of boundary value problems and Sturm - Liouville theory
			CO 3	Solve ordinary differential equations in more than two variables
			CO 4	Compute solution of linear and non-linear partial differential equations of first order
			CO 5	Study partial differential equations of second and higher order
			CO 6	Identify the surface
	Complex Analysis I	**MSMA TH104**	**CO 1**	Express Algebraic and Geometric properties of Complex Numbers.
			CO 2	Define the topological and analytic preliminaries in the complex plane
			CO 3	Develop the knowledge about Analytic Functions, Harmonic functions, Cauchy- Riemann Equations
			CO 4	Define elementary functions like exponential, trigonometric, logarithmic etc. and power series
			CO 5	Learning about zeros, singularities. Cauchy's theorem
			CO 6	Cauchy's integral formula
	Number Theory I	**MSMA TH105**	**CO 1**	Understanding definitions of divisibility and related algorithms, Basic congruence results
			CO 2	Knowledge about Quadratic reciprocity
			CO 3	Understand Fermat's Theorem and Wilson's Theorem
			CO 4	Apply the concept of primitive roots and indices.
			CO 5	Applies the greatest common divisor of two integers using Euclid's Algorithm.
			CO 6	Solving Diophantine equations
Sem.-2	**Real Analysis II**	**MSMA TH201**	**CO 1**	Knowledge about differentiation of vector valued functions
			CO 2	Learn about Lebesgue measure, Lebesgue integral
			CO 3	Understand the relation between differentiation and lebesgue integration.
			CO 4	Know the basic convergence theorems for the lebesgue integral
			CO 5	Understanding of absolute continuity
			CO 6	Conceptual understanding of convex functions
	Algebra II	**MSMA TH 202**	**CO 1**	Understanding of Factorization Theory in Integral Domains, Divisibility, UFD, PID, ED and their relationships.
			CO 2	Knowledge of Noetherian and Artinian Rings, Hilbert Basis Theorem.
			CO 3	Learn about Modules, Difference between Modules and Vector Spaces.
			CO 4	Understanding of Module Homomorphisms, Quotient Module, Semi-simple Modules, Free Modules.

			CO 5	Able to solve exercises on Smith normal Form, Finitely generated modules
			CO 6	Rational Canonical Form
	Mechanics	**MSMA TH203**	**CO 1**	Understand concept of vector differentitaion and integration
			CO 2	State and prove Green's,Gauss's and Stoke's theorems
			CO 3	Compute Gradient, Divergence and curl of vectors
			CO 4	Discuss Variational principles, Langrange's equations and Hamilton's equations of motion
			CO 5	Study motion under a central force
			CO 6	Understanding rigid body equations of motion
	Complex Analysis II	**MSMA TH204**	**CO 1**	Find Taylor Series and Laurent Series of functions.
			CO 2	Knowledge about maximum modulus principle, singularities, Calculus of residues.
			CO3	Classify Singularities of Complex Functions and understand calculus of residue.
			CO 4	Understanding Bilinear transformations and Conformal mapping .
			CO 5	Define Gamma Function
			CO 6	Reimann Zeta functions.
	Number Theory II	**MSMA TH205**	**CO 1**	Understanding Farey sequence, continued fractions .
			CO 2	Apply the concept of Geometry of number and applications .
			CO 3	Students will be a able to apply Partitions, arithmetic functions Euler summation formula
			CO 4	Students will be able to solve the questions by using Euler Summation formula.
			CO 5	Knowledge about approximations of real by Rationals.
			CO 6	Using continued fractions for solving problems
Sem.-3	**Field Theory (Compulsory)**	**MSMA TH301**	**CO 1**	Discuss fields , field extension, prime fields, splitting fields, primitive elements
			CO 2	Differentiate separable extension and normal extension.
			CO 3	State and prove fundamental theorem of galois theory, fundamental theorem of algebra and related results
			CO 4	Understand cyclotomic polynomials, cyclic extension, radical field extension
			CO 5	Apply the concept of field extension to mathematical problems
			CO 6	Apply Geometric constructions of perfect division of a circle into n parts
	Topology (Compulsory)	**MSMA TH302**	**CO 1**	Learning of Topological Spaces, the order topology, the product topology on $X \times Y$, the subspace topology, Bases for a topology.
			CO 2	Understanding of continuous functions on topological spaces, the

				product topology, the metric topology, the quotient topology.
			CO 3	Knowledge of Connected spaces, connected subspaces of the real line, components and local connectedness.
			CO 4	Understanding of Compact spaces, compact space of the real line, local compactness, nets.
			CO 5	Learn about separation axioms, Urysohn Lemma, Tietze Extension Theorem, Tychonoff Theorem.
			CO 6	Understanding Tychon off Theorem.
	Probability and Mathematical statistics I (Elective)	**MSMA TH303**	**CO 1**	Calculate and interpret the correlation between two variables. Calculate the simple linear regression equation for a set of data.
			CO 2	Analyze statistical data using measures of central tendency,dispersion and location.Analyze statistical data graphically using frequency distributions and cumulative distribution.
			CO 3	Describe the concept of probability, conditional probability and Bayes theorem.
			CO 4	Demonstrate the concept of Random variables ,density function and cumulative distribution function,moments and moment generating function.
			CO 5	Use discrete and continuous probability distributions including requirements,mean and variance and making decisions.
			CO 6	Knowledge about the association between the attributes.
	Computational Techniques I (Elective)	**MSMA TH304**	**CO 1**	General awareness of Computer hardware, software and MS WORD.
			CO 2	Solve linear and nonlinear equations by using numerical methods.
			CO3	Understand the concept of interpolation and methods used.
			CO4	Develop the knowledge about the concepts used in FORTRAN 77.
			CO 5	Construct programs in FORTRAN for the problems based on the methods studied in theory paper and to run the program on PC.
			CO 6	Apply the concept of Differentiation and methods used.
	Special Functions (Elective)	**MSMA TH307**	**CO 1**	Define and derive Hypergeometric functions, its Recurrence relations, orthogonality property, ,generating formulas and applications
			CO 2	Define and derive Legendre functions, its Recurrence relations, orthogonality property, ,generating formulas and applications
			CO 3	Define and derive Bessel functions, its Recurrence relations, orthogonality property, ,generating formulas and applications

			CO 4	Define and derive Hermite functions, its Recurrence relations, orthogonality property, ,generating formulas and applications
			CO 5	Define and derive Laguerre Functions, its Recurrence relations, orthogonality property, ,generating formulas and applications
			CO 6	Series solutions of the second order differential Equations
Sem.-4	**Linear Algebra (Compulsory)**	**MAMA TH401**	**CO 1**	Understand the concepts of Linear Independence , basis, Dual space
			CO 2	Discuss Algebra of Linear Transformation and Characteristics roots
			CO 3	Compute Eigen vectors and Eigen values of a matrix
			CO 4	Analyse rational canonical form , Jordan canonical form, diagonalization triangularization of a matrix
			CO 5	Understand and derive Bilinear Form
			CO 6	Learn about Quadratic and Hermitian form
	Functional Analysis (Compulsory)	**MSMA TH401**	**CO 1**	Learn about Banach Spaces with examples, Hahn Banach theorem,
			CO 2	Solving problems on Boundedness and continuity of linear transformation, Dual Spaces.
			CO 3	Understand the fundamentals like open mapping theorem, closed graph theorem, Baire Category theorem, Uniform Boundedness Principle.
			CO 4	Learn about Hilbert space, orthonormal basis, Parseval's identity
			CO 5	Knowledge of projections, adjoint operators, self adjoint , normal, unitary and isometric operators.
			CO 6	Understand bounded Linear functional
	Probability and Mathematical Statistics II (Elective)	**MSMA TH403**	**CO 1**	Understand the details of important sampling distributions, namely chi-square, Student-t
			CO 2	Calculate and interpret confidence intervals for estimating a population mean and a population proportion.
			CO 3	Differentiate between Type I and Type II Errors.
			CO 4	Conduct and interpret hypothesis tests for two population means, population standard deviations known.
			CO 5	Knowledge about One way and two way analysis of variance(ANOVA) Non-parametric tests
			CO 6	Understanding Snedecor's F-distributions and use them to make conclusion about problems that arise in applied statistics.
	Computational Techniques II (Elective)	**MSMA TH404**	**CO 1**	Knowledge about MS EXCEL.
			CO 2	Develop the understanding of Concept used in C Programming.
			CO 3	Understand the methods used in numerical differentiation and integration.

			CO 4	Solve ordinary differential equations.
			CO 5	Writing programs in C for the problems based on the methods studied in theory paper and to run the program of PC.
			CO 6	To Find Eigenvalues using numerical methods
	Integral Transforms and Their Applications (Elective)	**MSMA TH407**	**CO 1**	Describe Laplace transform and inverse Laplace transform
			CO 2	Apply Laplace transform to solve ordinary and partial differential equations, integral equations, Initial and boundary value problems
			CO 3	Knowledge about Finite Laplace transform and Hankel transform
			CO 4	Understand Fourier transforms and inverse Fourier transform
			CO 5	Apply Fourier transforms to solve ordinary and partial differential equations, integral equations, Initial and boundary value problems
			CO 6	Define Finite Fourier transforms and Mellin Transform

Mapping of Course Outcomes (COs) with Programme Outcomes (POs)

College Code/ Course Outcomes		**Programme Outcomes**														
		PO 1	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**	**PO 13**	**PO 14**	**PO 15**
MSMATH101	**CO 1**	3	X	3	3	3	1	X	1	X	2	2	X	1	2	2
	CO 2	3	X	3	3	2	X	1	2	X	2	3	1	2	2	3
	CO 3	3	1	3	3	2	1	1	3	1	2	2	2	2	2	3
	CO 4	3	1	3	3	3	X	X	2	2	2	3	1	2	3	3
	CO 5	3	1	3	3	3	X	X	2	2	2	3	1	2	3	3
	CO 6	3	X	3	3	3	1	X	1	X	2	2	X	1	2	2
MSMATH102	**CO 1**	3	2	3	2	2	X	X	2	2	1	2	1	2	2	3
	CO 2	3	1	2	3	3	1	1	1	1	2	3	1	X	2	3

	CO 3	3	2	3	2	2	X	X	2	2	1	2	1	2	2	3
	CO 4	3	2	3	2	2	X	X	2	2	1	2	1	2	2	3
	CO 5	3	1	2	3	3	1	1	2	1	2	3	1	X	2	3
	CO 6	3	2	3	2	2	X	X	2	2	1	2	1	2	2	3
MSMATH103	**CO 1**	3	X	3	3	3	1	X	1	X	2	2	X	1	2	2
	CO 2	3	X	3	3	2	X	1	2	X	2	3	1	2	2	3
	CO 3	3	1	3	3	2	1	1	3	1	2	2	2	2	2	3
	CO 4	3	1	3	3	3	X	X	2	2	2	3	1	2	3	3
	CO 5	3	1	3	3	3	X	X	2	2	2	3	1	2	3	3
	CO 6	3	X	3	3	3	1	X	1	X	2	2	X	1	2	2
MSMATH104	**CO 1**	3	X	1	2	2	X	X	2	X	1	2	X	2	1	2
	CO 2	3	1	2	2	2	X	1	2	X	1	3	X	2	2	3
	CO 3	3	2	2	3	3	1	1	3	X	1	3	X	3	3	3
	CO 4	3	2	1	3	3	X	X	3	X	1	3	X	3	3	2
	CO 5	3	2	2	3	3	1	1	3	X	1	3	X	3	2	3
	CO 6	3	X	1	2	2	X	X	2	X	1	2	X	2	1	2
MSMATH105	**CO 1**	1	X	3	2	2	X	X	3	X	X	2	3	X	X	X
	CO 2	3	2	2	3	2	X	1	3	2	X	X	1	2	3	1
	CO 3	1	X	2	1	2	1	X	2	1	X	1	3	1	2	2
	CO 4	2	X	3	2	3	1	X	2	1	2	2	X	2	3	2
	CO 5	2	X	2	2	3	X	X	2	X	2	2	X	2	2	1
	CO 6	1	X	3	2	2	X	X	3	X	X	2	3	X	X	X
MSMATH201	**CO 1**	3	X	3	3	1	X	X	1	X	2	2	X	2	1	2
	CO 2	3	1	3	3	1	X	X	2	X	2	2	X	2	1	3

	CO 3	2	1	3	3	X	1	X	2	X	2	2	X	1	1	2
	CO 4	2	1	3	3	1	x	X	2	X	2	2	X	2	1	2
	CO 5	2	X	X	2	2	1	X	1	X	1	2	X	2	1	2
	CO 6	3	X	3	3	1	x	X	1	X	2	2	X	2	1	2
MSMATH 202	**CO 1**	3	1	2	3	3	1	1	1	1	2	3	1	X	2	3
	CO 2	3	2	3	2	2	X	X	2	2	1	2	1	2	2	3
	CO 3	3	2	3	2	2	X	X	2	2	1	2	1	2	2	3
	CO 4	3	2	3	2	2	X	X	2	2	1	2	1	2	2	3
	CO 5	3	1	2	3	3	1	1	2	1	2	3	1	X	2	3
	CO 6	3	1	2	3	3	1	1	1	1	2	3	1	X	2	3
MSMATH203	**CO 1**	3	1	2	3	3	1	1	1	1	2	3	1	X	2	3
	CO 2	3	2	3	2	2	X	X	2	2	1	2	1	2	2	3
	CO 3	3	2	3	2	2	X	X	2	2	1	2	1	2	2	3
	CO 4	3	2	3	2	2	X	X	2	2	1	2	1	2	2	3
	CO 5	3	1	2	3	3	1	1	2	1	2	3	1	X	2	3
	CO 6	3	1	2	3	3	1	1	1	1	2	3	1	X	2	3
MSMATH204	**CO 1**	3	1	3	3	3	X	X	2	X	1	2	X	3	2	2
	CO 2	3	1	3	3	2	1	1	2	X	1	3	X	3	2	2
	CO 3	3	1	3	3	3	1	1	3	X	1	3	X	3	3	3
	CO 4	3	1	3	3	3	1	1	3	X	1	3	X	3	3	3
	CO 5	3	1	3	3	2	X	1	2	X	1	3	X	3	3	3
	CO 6	3	1	3	3	3	X	X	2	X	1	2	X	3	2	2
MSMATH205	**CO 1**	2	X	2	3	1	x	X	1	1	2	2	x	2	3	2
	CO 2	3	1	2	3	3	x	1	2	2	1	3	1	2	3	3

	CO 3	2	2	3	3	2	1	2	3	1	2	3	2	2	3	2
	CO 4	1	1	1	2	1	X	1	1	X	1	1	X	1	1	X
	CO 5	2	1	2	3	2	1	2	3	1	2	3	3	2	1	2
	CO 6	2	X	2	3	1	X	X	1	1	2	2	X	2	3	2
MSMATH301	**CO 1**	1	X	1	1	2	X	X	1	X	1	1	X	1	2	2
	CO 2	1	X	1	3	2	X	X	1	X	1	1	X	1	2	2
	CO 3	1	X	1	3	2	X	X	1	X	1	1	X	1	2	2
	CO 4	1	X	1	3	2	X	X	1	X	1	1	X	1	2	2
	CO 5	2	X	2	1	2	X	X	1	X	1	1	X	1	1	1
	CO 6	1	X	1	1	2	X	X	1	X	1	1	X	1	2	2
MSMATH302	**CO 1**	3	2	3	2	2	X	X	2	2	1	2	1	2	2	3
	CO 2	3	1	2	3	3	1	1	1	1	2	3	1	X	2	3
	CO 3	3	1	2	3	3	1	1	2	1	2	3	1	X	2	3
	CO 4	3	1	2	3	3	1	1	2	1	2	3	1	X	2	3
	CO 5	3	2	3	2	2	X	X	2	2	1	2	1	2	2	3
	CO 6	3	2	3	2	2	X	X	2	2	1	2	1	2	2	3
MSMATH303	**CO 1**	3	1	3	3	2	1	1	1	1	2	2	2	2	2	2
	CO 2	3	X	2	3	2	1	X	1	X	3	3	1	2	1	2
	CO 3	3	X	2	3	2	1	X	1	X	3	3	1	2	1	2
	CO 4	3	1	3	3	2	X	X	2	X	1	2	2	1	3	3
	CO 5	3	1	2	3	3	1	1	1	2	1	2	2	1	3	3
	CO 6	2	X	2	2	1	X	X	X	X	2	X	1	1	1	1
MSMATH304	**CO 1**	3	2	1	1	1	2	2	1	2	1	2	3	1	2	1
	CO 2	3	1	3	3	2	1	1	3	X	1	3	3	2	2	2

	CO 3	3	2	3	3	2	1	1	3	X	1	3	3	3	2	2
	CO 4	3	2	2	2	2	2	2	3	X	1	3	3	2	2	2
	CO 5	3	2	3	3	3	3	3	3	1	2	3	3	3	3	3
	CO 6	3	2	1	1	1	2	2	1	2	1	2	3	1	2	1
MSMATH307	**CO 1**	3	2	3	2	2	X	X	2	2	1	2	1	2	2	3
	CO 2	3	1	2	3	3	1	1	1	1	2	3	1	X	2	3
	CO 3	3	1	2	3	3	1	1	2	1	2	3	1	X	2	3
	CO 4	3	1	2	3	3	1	1	2	1	2	3	1	X	2	3
	CO 5	3	2	3	2	2	X	X	2	2	1	2	1	2	2	3
	CO 6	3	2	3	2	2	X	X	2	2	1	2	1	2	2	3
MAMATH401	**CO 1**	1	X	2	1	X	X	1	2	1	1	2	1	1	2	2
	CO 2	1	X	1	X	2	X	1	2	1	1	2	1	1	2	2
	CO 3	1	X	2	2	X	X	1	X	1	1	2	1	1	2	2
	CO 4	1	X	2	1	2	X	1	X	1	1	2	1	1	2	2
	CO 5	1	X	2	X	X	X	1	X	1	1	2	1	1	2	2
	CO 6	1	X	2	1	X	X	1	2	1	1	2	1	1	2	2
MSMATH401	**CO 1**	1	X	2	1	X	X	1	2	1	1	2	1	1	2	2
	CO 2	1	X	1	X	2	X	1	2	1	1	2	1	1	2	2
	CO 3	1	X	2	2	X	X	1	x	1	1	2	1	1	2	2
	CO 4	1	X	2	1	2	X	1	x	1	1	2	1	1	2	2
	CO 5	1	X	2	X	X	X	1	x	1	1	2	1	1	2	2
	CO 6	1	X	2	1	X	X	1	2	1	1	2	1	1	2	2
MSMATH403	**CO 1**	3	1	3	3	2	1	1	2	X	1	2	1	1	2	3
	CO 2	3	X	2	2	1	X	X	1	X	2	2	2	1	3	3

	CO 3	2	X	2	2	X	X	X	1	X	2	2	2	1	1	1
	CO 4	3	1	3	3	1	X	1	2	1	3	3	3	2	3	3
	CO 5	2	1	2	2	X	1	X	2	1	2	2	2	2	2	2
	CO 6	3	1	3	3	2	1	1	2	X	1	2	1	1	2	3
MSMATH404	**CO 1**	3	1	1	1	1	2	2	1	1	1	2	3	1	2	1
	CO 2	3	1	3	3	2	2	2	3	X	1	3	3	2	2	2
	CO 3	3	1	3	3	2	1	1	3	X	1	3	3	3	2	2
	CO 4	3	2	3	3	2	1	1	3	X	1	3	3	3	2	2
	CO 5	3	2	3	3	3	3	3	3	1	2	3	3	3	2	2
	CO 6	3	1	1	1	1	2	2	1	1	1	2	3	1	2	1
MSMATH407	**CO 1**	3	1	1	1	1	2	2	1	1	1	2	3	1	2	3
	CO 2	3	1	3	3	2	2	2	3	X	1	3	3	2	2	3
	CO 3	3	1	3	3	2	1	1	3	X	1	3	3	3	2	3
	CO 4	3	2	3	3	2	1	1	3	X	1	3	3	3	2	3
	CO 5	3	2	3	3	3	3	3	3	1	2	3	3	3	2	3
	CO 6	3	1	1	1	1	2	2	1	1	1	2	3	1	2	3

Mapping of Course Outcomes (COs) with Programme Specific Outcomes (PSOs)

COLLEGE CODE/ COURSE OUTCOMES		**SEMESTER 1**					
		PSO1	**PSO2**	**PSO3**	**PSO4**	**PSO5**	**PSO6**
MSMATH101	**CO 1**	3	2	3	2	2	2
	CO 2	2	2	3	2	2	1
	CO 3	2	2	3	3	3	1
	CO 4	2	2	2	1	1	1
	CO 5	2	2	2	2	2	2

	CO 6	3	2	3	2	2	2
MSMATH102	**CO 1**	3	2	X	X	3	2
	CO 2	3	3	1	X	2	3
	CO 3	3	3	1	X	2	3
	CO 4	3	2	X	X	3	2
	CO 5	3	3	1	X	2	3
	CO 6	3	2	X	X	3	2
MSMATH103	**CO 1**	3	2	3	2	2	2
	CO 2	2	2	3	2	2	1
	CO 3	2	2	3	3	3	1
	CO 4	2	2	2	1	1	1
	CO 5	2	2	2	2	2	2
	CO 6	3	2	3	2	2	2
MSMATH104	**CO 1**	1	1	1	X	3	X
	CO 2	1	2	1	X	3	X
	CO 3	3	2	1	X	3	X
	CO 4	2	2	1	X	3	X
	CO 5	3	2	1	X	3	X
	CO 6	1	1	1	X	3	X
MSMATH105	**CO 1**	3	2	3	3	2	1
	CO 2	2	2	3	3	3	X
	CO 3	1	2	2	X	x	1
	CO 4	3	3	3	2	1	2
	CO 5	2	1	2	3	1	X
	CO 6	3	2	3	3	2	1
SEMESTER 2							

MSMATH201	**CO 1**	2	2	3	2	1	1
	CO 2	2	2	2	2	x	x
	CO 3	2	2	2	2	1	2
	CO 4	2	2	2	2	1	2
	CO 5	3	2	2	1	2	1
	CO 6	2	2	3	2	1	1
MSMATH202	**CO 1**	3	3	1	X	2	3
	CO 2	3	2	X	X	3	2
	CO 3	3	3	1	X	2	3
	CO 4	3	2	X	X	3	2
	CO 5	3	3	1	X	2	3
	CO 6	3	3	1	X	2	3
MSMATH203	**CO 1**	3	3	1	X	2	3
	CO 2	3	2	X	X	3	2
	CO 3	3	3	1	X	2	3
	CO 4	3	2	X	X	3	2
	CO 5	3	3	1	X	2	3
	CO 6	3	3	1	X	2	3
MSMATH204	**CO 1**	2	2	1	X	3	X
	CO 2	2	3	1	X	3	X
	CO 3	3	3	1	X	3	X
	CO 4	3	3	2	X	3	X
	CO 5	2	3	3	X	3	X
	CO 6	2	2	1	X	3	X
MSMATH205	**CO 1**	3	x	3	2	1	X
	CO 2	3	3	3	3	2	1

	CO 3	3	3	3	3	2	2
	CO 4	2	2	1	1	1	X
	CO 5	2	1	1	x	x	1
	CO 6	3	x	3	2	1	X
SEMESTER 3							
MSMATH301	**CO 1**	2	1	1	X	2	2
	CO 2	1	1	1	X	2	1
	CO 3	1	1	2	X	2	2
	CO 4	1	1	1	X	1	1
	CO 5	1	1	1	X	1	1
	CO 6	2	1	1	X	2	2
MSMATH302	**CO 1**	3	2	X	X	3	2
	CO 2	3	3	1	X	2	3
	CO 3	3	3	1	X	2	3
	CO 4	3	2	X	X	3	2
	CO 5	3	3	1	X	2	3
	CO 6	3	2	X	X	3	2
MSMATH303	**CO 1**	3	2	3	2	X	1
	CO 2	3	2	3	3	X	X
	CO 3	3	2	1	3	2	1
	CO 4	3	2	3	3	X	X
	CO 5	3	2	2	2	1	1
	CO 6	3	3	2	2	X	X
MSMATH304	**CO 1**	1	2	1	1	X	X
	CO 2	3	3	3	3	X	X

	CO 3	3	3	3	3	X	X
	CO 4	2	2	2	3	X	X
	CO 5	2	2	2	3	X	X
	CO 6	1	2	1	1	X	X
MSMATH307	**CO 1**	3	2	X	X	3	X
	CO 2	3	3	1	X	2	1
	CO 3	3	2	X	X	3	X
	CO 4	3	2	X	X	3	1
	CO 5	3	3	1	X	2	X
	CO 6	3	2	X	X	3	X
SEMESTER 4							
MSMATH401	**CO 1**	1	2	X	1	1	2
	CO 2	1	1	X	1	1	2
	CO 3	1	2	X	1	1	2
	CO 4	1	1	X	1	1	2
	CO 5	Q	1	X	1	1	2
	CO 6	1	2	X	1	1	2
MSMATH402	**CO 1**	3	2	X	X	3	2
	CO 2	3	3	1	X	2	3
	CO 3	3	3	1	X	2	3
	CO 4	3	2	X	X	3	2
	CO 5	3	3	1	X	2	3
	CO 6	3	2	X	X	3	2
MSMATH403	**CO 1**	1	2	X	1	1	2
	CO 2	1	1	X	1	1	2
	CO 3	1	2	X	1	1	2

	CO 4	1	1	X	1	1	2
	CO 5	X	1	X	1	1	2
	CO 6	1	2	X	1	1	2
MSMATH404	**CO 1**	1	2	1	1	X	X
	CO 2	2	2	2	3	X	X
	CO 3	3	3	3	3	X	X
	CO 4	3	3	3	3	X	X
	CO 5	2	2	2	3	X	X
	CO 6	1	2	1	1	X	X
MSMATH407	**CO 1**	3	2	X	X	3	2
	CO 2	3	3	1	X	2	3
	CO 3	3	3	1	X	2	3
	CO 4	3	2	X	X	3	2
	CO 5	3	3	1	X	2	3
	CO 6	3	2	X	X	3	2

DEPARTMENT OF EDUCATION

The department of education was started in the year 2017 with four year integrated courses B.A. B. Ed/B.Sc. B.Ed. in regular mode under semester system. The faculty of department is actively engaged in application of educational technology in teaching with aim to make the prospective teachers technology oriented to face the challenges of modern scenario.

VISION:

To prepare prospective teachers to face the new challenges of educational field in context to teaching at elementary and secondary school stage through sound knowledge base, human values and enhanced professional skills, there by being one of the centers of excellence in teacher education.

MISSION:

- To prepare dedicated, efficient and competent teachers.
- To equip student teachers with the use of advanced educational technology.
- To inculcate human values among would be teachers.
- To collaborate with stakeholders of teacher education to bring quality and excellence.
- To unfold the hidden talent of the students and enhance their competitive skills.

OBJECTIVES:

- To provide strong theoretical knowledge base along with practical skills and competencies.
- To enhance the overall personality of the prospective teachers.
- To inculcate the values among would be teachers and help them in their character building.
- To nurture the professional traits and enhance skills of student teachers within a strong interdisciplinary framework.
- To enable student teachers to use latest technological advances in the field of education and be an agent of modernization and social change.

Programme run by department:

1. B.A. B.Ed. (Programme Code: BABED)
2. B.Sc. B.Ed. (Programme Code: BSCBED)

B.A. B.Ed.

Programme Outcomes (POs) of B.A. B.Ed.

On successful completion of B.A. B.Ed. programme, the students will be able to develop following attributes, qualities and skills:

PO1	**Disciplinary Knowledge**	Four year Integrated Course B.A. B.Ed. helps students to develop knowledge and understanding of areas like Social sciences, Languages, Educational Philosophy, Educational Psychology, Educational Technology, School Management, Educational Research & Statistics, School Community Participation, Curriculum Development, life skills training.
PO2	**Communication Skills**	Students will be able to make use of global and regional language in written and oral mode for classroom interaction and in real life.
PO3	**Critical Thinking**	Students will be exposed to critical thinking by adopting different teaching strategies and by studying the relationship of education with social issues.
PO4	**Problem Solving**	Students will be able to solve various classroom problems and make use of action research in teaching learning situations.
PO5	**Analytical Reasoning**	Students will be able to develop analytical reasoning in context to classroom situations such as identifying individual differences and catering to the needs accordingly.
PO6	**Research Related Skills**	Students will be able to gain a sense of inquiry by conducting survey and using statistical techniques for its analysis. They will be able to formulate hypothesis and develop research tool.
PO7	**Team Work and Time Management**	Students will be able to work in groups and develop skill of cooperation and Time Management by applying Team Teaching, Micro Teaching and Simulated Teaching.

PO8	**Scientific Reasoning**	Students will be able to develop scientific temperament by analyzing the situation and applying logical arguments.
PO9	**Reflective Thinking**	Reflective thinking of the students will be developed with the help of teaching at different levels and phases.
PO10	**Information/Digital Literacy**	Students will be able use to technology in teaching and learning by creating ICT based lesson plans in their respective pedagogy subjects.
PO11	**Self-Directing Learning**	Self-directing learning will be developed in students with the help of sessional work, assignments and projects.
PO12	**Multicultural Competence**	Students will be able to possess knowledge values and beliefs of multiple cultures by participating in cultural activities at college and university level.
PO13	**Moral & Ethical Values**	Students will be able to demonstrate commitment towards teaching profession and adhere to norms of ethical behaviour such as avoid committing plagiarism, falsification, misinterpretation of data, unbiased actions in all aspects of work.
PO14	**Leadership Qualities**	Leadership qualities of the students will be developed by preparing group assignments, performing various group activities at college level such as organizing teacher's day function, celebration of national days etc.
PO15	**Lifelong Learning**	With the self-paced learning and self-directed learning, students will be able to acquire knowledge and skills including 'learning how to learn' that are necessary for participating in learning activities throughout life.

Qualification Descriptors

A qualification descriptor indicates the generic outcomes and attributes expected for an award of a particular type of qualification. It also describes the academic standard for a specific qualification in terms of knowledge and understanding, skill and competencies and attitudes and values that the holders of qualification are expected to attain and demonstrate. The main qualification descriptors for B.A. B.Ed. may include following:

- Procedural knowledge that creates competent professionals in the field of Education including teaching skills, research and development, critical understanding, environmental awareness.
- Comprehensive knowledge of professional literature and material including instructional aids and equipment relating to advanced learning in the field of education.
- Demonstrate skills in identifying educational needs of the students, collection of qualitative and quantitative data, their analysis and interpretation using appropriate methodologies and formulating solutions and arguments.
- Use knowledge, understanding and skills for critical assessment of a wide range of ideas and complex problems and issues relating to the education.
- Demonstrate subject related teaching skills that are relevant to job and employment in the field of education.
- Apply their knowledge in the field of teaching and learning to new and unfamiliar contexts and seek solution to real life problems.

Programme Specific Outcomes (PSOs)

PSO1	Demonstrate a thorough conceptual understanding in core area of Social sciences and Education (Philosophy, Psychology, Educational Technology, School Management, Educational Research & Statistics, School Community Participation, Curriculum Development).
PSO2	Understand and demonstrate the knowledge of enlisting objectives in behavioural terms, applying teaching strategies, organising content, and evaluating the achievement.
PSO3	Demonstrate commitment towards teaching profession and adhere to norms of ethical behaviour such as avoid committing plagiarism, falsification, misinterpretation of data, unbiased actions in all aspects of work.
PSO4	Make effective use of ICT in teaching learning process including, designing of lesson plans, accessing relevant information sources and facing the challenges of technological world.

Course Outcomes (COs) of B.A. B.Ed.

Sem.	Course Name	Course Code	Course Outcome	
Sem.-I	**Education in Emerging Indian Society**	**BAEDU101**	**CO1**	Understand and compare evolution of Education in India during Vedic, Buddhist, Medieval and British period.
			CO2	Analyse recommendations of various Education commissions since Independence
			CO3	Summarise educational provision in Indian constitution with special reference to Right to Education
			CO4	Explain the role of education for social and cultural change
			CO5	Assess the relationship of education with various economic issues such as poverty, inequality and poverty.
Sem.-I	**School Organization and Administration**	**BAEDU102**	**CO1**	Describe the Concept and Principles of school management
			CO2	Maintain Various Components of School Plant
			CO3	Prepare plans at institution level
			CO4	Maintain school records and conduct co-curricular activities
			CO 5	Develop Qualities of a good Teacher
			CO 6	Construct Time Table using its Principles
Sem.-I	**English Compulsory**	**ENG101**	**CO1**	Critically analyse the poetry and prose text and comprehend the passage from prose text
			CO2	Apply communication skills in a diverse society and learn at self-pace.
			CO3	Compose paragraphs of descriptive and narrative nature
			CO4	Translate from vernacular to English
			CO5	Modify sentences from active to passive and vice versa
			CO6	Use modals and determiners in sentences
Sem.-I	**Punjabi Compulsory**	**PBC101**	**CO1**	AnalyseAdhunik Punjabi Kavita (modern Punjabi poetry)
			CO2	Understand Punjabi grammar, essay writing and composition
			CO3	Summarise the given paragraph in their own words
			CO4	Compose essays in Punjabi writing

Sem.-I	**History & Culture of Punjab**	**HCP101**	**CO1**	Understand ancient Punjab and historical sources with special reference to Harappan Culture
			CO2	Explain political, social, economic and religious life of people of Rig Vedic and Later Vedic Age
			CO3	Analyse the origin and evolution of caste system
			CO4	Illustrate historical importance of the epics Ramayana and Mahabharata
			CO5	Describe impact of Alexander's Invasion
			CO6	Know about important historical places of Punjab
Sem.-I	**Economics**	**ECO101**	**CO1**	Analyze the decisions taking by firms and households due to scarcity of resources.
			CO2	Describe the theory of demand and consumer behavior.
			CO3	Explain the laws and various concepts of production and costs.
			CO4	Illustrate the functioning of each market structure.
			CO5	Understand the price and output determination of different market structure.
			CO6	Explain the various theories of rent, interest and profit.
Sem.-I	**Elective English**	**ENO101**	**CO1**	Explain general literary terms as prescribed in syllabus
			CO2	Analyse poetry and prose text of the book 'Fluency in English' and comprehend the given prose passage
			CO3	Compose personal social and official letters
			CO4	Transform one kind of sentences to another
			CO5	Modify active sentences to passive, direct to indirect and vice versa
			CO6	Apply appropriate articles, prepositions and conjunctions in sentences
Sem.-I	**History**	**HIS101**	**CO1**	Identify and define various kinds of sources and understand how various evidences are notified.
			CO2	Describe various stages of progress from Indus valley civilization to Vedic age and analyze Jain, Buddhist and Vedic faith.
			CO3	Analyze the transition from territorial states to emergence of empires.
			CO4	Describe the emergence of the Mauryan and Gupta empire in North India and also examine the administrative features of Southern states.
			CO5	Examine the nature of monarchical rule and develop a comprehensive understanding of cultural evolution during ancient period.

			CO6	Visualize where places are in relation to one another through map pointing and explain their historical importance.
Sem.-I	**Mathematics**	**MAT101**	**CO1**	Comprehend special properties of circles, parabola, ellipse and hyperbola, conjugate hyperbola, asymptote of hyperbola, rectangular hyperbola.
			CO2	Solve problems on Transformation of axes, joint equation of pair of straight lines and angle between them, joint equation of lines joining origin to the intersection of a line and a curve.
			CO3	Know about Hyperbolic functions, their differentiation .learn successive differentiation and Leibnitz's theorem.
			CO4	Determine Limits and continuity at a point or an interval. Also distinguishes between types of discontinuity at a point.
			CO5	Analyze functions and their graphs and learn to produce rigorous proofs of results that arise in the context of calculus, Geometric value theorems.
			CO6	Apply the concepts of real numbers, geometrical interpretation, and De Moivre theorem, functions of complex variables and rank of matrix.
Sem.-I	**Political Science**	**POL101**	**CO1**	Understand basic concepts like scope of political science and its relationship with other disciples (sociology, economics and history)
			CO2	Describe theories regarding state and its origin, like social contract theories, evolutionary and historical theory
			CO3	Explain different ideologies like liberal, Marxian and Gandhian views.
			CO4	Analyze the function of welfare state and various types of sovereignty.
			CO5	Illustrate theories, approaches, concepts and principles of political theory
			CO6	Understand the various traditional and modern theories of political science
Sem.-I	**Elective Punjabi**	**PBI101**	**CO1**	AnalyseAdhunik Punjabi Kavita from 1901 to 2000
			CO2	Explain the ikangi 'CheDarshan'
			CO3	Comprehend the principles of language and Punjabi language
			CO4	Describe forms of literature such as geet, gazal, ikangi,

				novel and story
			CO5	Understand the history of Punjabi literature from 1901 to 2000
Sem.-I	**School Related Practicum**	**BAEDU103**	Students are taken for various field visits as prescribed in syllabus.	
Sem.-I	**Life Skill Training**	**BAEDU104**	Students are given training for skill of communication and skill of creative thinking through activities.	
Sem.-II	**Philosophical & Sociological Foundations of Education**	**BAEDU201**	**CO1**	Define the concept and types of education
			CO2	Understand the philosophy of educational thinkers of India with special reference to Guru Nanak Dev Ji, Mahatma Gandhi, Rabindra Nath Tagore and Swami Vivekananda.
			CO3	Identify relationship between philosophy and education, Sociology and education
			CO4	Compare education with training, instruction and indoctrination
			CO5	Describe the relationship of education with socio cultural change, modernization and social mobility.
Sem.-II	**Psychological Foundations of Education**	**BAEDU202**	**CO1**	Associate psychology and education
			CO2	Apply the theories of intelligence for its measurement
			CO3	Understand the causes of individual differences with special reference to aptitude, attitude and interest.
			CO4	Administer the recent trends in education of exceptional children.
Sem.-II	**English Compulsory**	**ENG201**	**CO1**	Critically analyse the poetry and prose text and comprehend the unseen passage from prose text
			CO2	Apply communication skills in a diverse society and learn at self-pace.
			CO3	Design personal and official letters
			CO4	Translate from vernacular to English
			CO5	Modify direct speech to indirect speech
			CO6	Use prepositions and conjunctions in sentences
Sem.-II	**Punjabi Compulsory**	**PBC201**	**CO1**	Study Punjabi story writers and their writings.
			CO2	Develop skill of writing advertisement for daily life
			CO3	Illustrate idioms in sentences
			CO4	Apply principles of grammar in language
Sem.-II	**History & Culture of Punjab**	**HCP201**	**CO1**	Describe social, economic and religious life of people during the Mauryan Empire
			CO2	Explain the impact of Buddhism and Jainism on Punjab

				with special reference to 4th Buddhist council
			CO3	Analyse the impact of Kanishka's rule on Punjab
			CO4	Illustrate salient features of Gandhara school of art and cultural and scientific developments during the rule of Guptas
			CO5	Understand developments in literature and education and depiction of Punjab in accounts of Chinese travellers Fahien and Hwen Tsang
			CO6	Know society and culture of Punjab on the eve of the Turkish Invasion
Sem.-II	**Economics**	**ECO201**	**CO1**	Explain the concept of macroeconomics and interrelation with micro economics.
			CO2	Describe the theories of consumption function and investment function.
			CO3	Distinguish between Say's law of market, classical theory of output and employment and explain Keynes objection to the classical theory.
			CO4	Understand the concept of money and banking and process of credit creation.
			CO5	Evaluate the role of fiscal and monetary policies in bringing about economic stability.
			CO6	Illustrate the concept and determination of inflation.
Sem.-II	**Elective English**	**ENO201**	**CO1**	Describe the literary terms related to Essay, Stories and Plays
			CO2	Analyse essays, short-stories and One-Act plays and solve questions related to that
			CO3	Compose paragraphs on their own
			CO4	Develop sentences using the given words as different parts of speech
			CO5	Translate sentences from vernacular to English
			CO6	Modify the given sentences after identifying errors
Sem.-II	**History**	**HIS201**	**CO1**	Describe the advent of Islam in India and examine the political and cultural expansion of Turks, Afghans and Mughals.
			CO2	Understand the social, economic and cultural developments of Medieval India.
			CO3	Explain the administration, art and architecture of Vijaynagar and Mughal rulers.
			CO4	Analyze the rise of the Marathas under the leadership of Shivaji.

			CO5	Describe the various features of Bhakti movement.
			CO6	Visualize the extent of empire under AlauddinKhilji and Aurangzeb and places of historical importance of medieval period through map pointing.
Sem.-II	**Mathematics**	**MAT201**	**CO1**	Apply Integral Calculus to find arc length of a curve, arc length of a parametric curves area under a curve, surface area, and volume of revolution, curvature, volute and involute and chord of curvature.
			CO2	Derive reduction formulae for complex integrations and hence integrate functions of much higher degree which are applicable in real life situations.
			CO3	Explain and apply Euclid's algorithm on synthetic division to find roots of polynomials.
			CO4	Implement transformation of the equations to solve roots. Also solve cubic using Cardon's method and biquadratic using Descartes method & Ferrari's method.
			CO5	Acquire knowledge about sphere, cylinders as a surface, and different kinds of cylinders such as right circular, elliptic, hyperbolic and parabolic cylinders in standard form.
			CO6	Comprehend equation of cone, ellipsoid, hyperboloid, paraboloid in standard form.
Sem.-II	**Political Science**	**POL201**	**CO1**	Explain the concept of democracy, its types and concept of development & various views relating to it, sustainable development and human rights
			CO2	Discuss the origin of the concepts such as Law, power, authority, and legitimacy
			CO3	Understand the concept of justice, distributive justice, multiculturalism and social justice.
			CO4	Analyse the meaning of organs of government and theory of separation of power
			CO5	Examine the procedure of various social institutions and government institutions
			CO6	Explore the working of political system and their structure and infra-structure and various input-output function according Almond and Powell
Sem.-II	**Elective Punjabi**	**PBI201**	**CO1**	Analyse Adhunik Punjabi Kavita from 1901 to 2000
			CO2	Describe Punjabi culture by reading novel 'Doaba'.
			CO3	Understand history of Punjabi literature (1901-2000)

			CO4	Comprehend Punjabi kaavshastar such as DhuniSampardaye and AlankarSampardaye
			CO5	Define literature along with its nature, components and functions
Sem.-II	**School Related Practicum**	**BAEDU203**	Students are taken for various field visits as prescribed in syllabus.	
Sem.-II	**Life Skill Training**	**BAEDU204**	Students are given training for skill of decision making and skill of problem solving through activities.	
Sem.-II	**Env. & Road Safety Edu. & Violence against Women & Children**	**ENV**	**CO1**	Understand the value of environment
			CO2	Drive the knowledge of road safety provisions
			CO3	Discuss various laws regarding violence against women and children
			CO4	Develop basic knowledge about the environment and its allied problems
			CO5	Analyze the roles of organisms as part of interconnected food webs, populations, communities, and ecosystems
			CO6	Discuss about the environment and the resources to act at our own level to protect them.
Sem.-III	**Human Development**	**BAEDU301**	**CO1**	Recognize the role of education in human development
			CO2	Analyse various aspects of human development
			CO3	Differentiate various stages of human development
			CO4	Generalize different theories of human development
Sem.-III	**School Community Participation**	**BAEDU302**	**CO1**	Describe the concept of Universalization of Elementary Education and its significance
			CO2	Discuss concept of Sarva Shiksha Abiyan and its implementation
			CO3	Define the meaning and concept of Life Long Education
			CO4	Analyse techniques and causes of slow progress
			CO 5	Identify concept and implementation of vocationalization of Education
			CO 6	Assess the role of NCERT, SCERT, SIE, DIET, Village Education Committees, NGO's and Parent- Teacher Associations.
Sem.-III	**English Compulsory**	**ENG301**	**CO1**	Critically analyse the poetry and prose text of book English for Empowerment.
			CO2	Apply communication skills in a diverse society and learn at self-pace.

			CO3	Compose paragraphs from the post reading activities suggested in the prescribed text
			CO4	Design notes from paragraphs
			CO5	Reconstruct a paragraph using appropriate punctuation marks
			CO6	Transform sentences from one kind to another
Sem.-III	**Punjabi Compulsory**	**PBC301**	**CO1**	Have knowledge of Punjabi nibandh writers and develop understanding of punjabi culture by reading Punjabi nibandh (essay) thoroughly.
			CO2	Understand Punjabi language and develop letter writing skill
			CO3	Know origin and development of Punjabi language
			CO4	Define and classify bhavansh.
Sem.-III	**History & Culture of Punjab**	**HCP301**	**CO1**	Describe the Culture in Punjab during Turko-Afghan and Mughal rule
			CO2	Imbibe the teachings of Guru Nanak
			CO3	Analyse the features of Bhakti Movement and Sufism
			CO4	Understand the contribution of Guru Angad Dev, Guru Amar Das and Guru Ramdas for development of Sikhism
			CO5	Illustrate the transformation of Sikhism with special reference to martyrdom of Guru Arjun Dev, Guru Teg Bahadur and New Policy of Guru Hargobind
			CO6	Know the post Khalsa activities of Guru Gobind Singh
Sem.-III	**Economics**	**ECO301**	**CO1**	Appraise the effect of public expenditure on economy.
			CO2	Explain tax and non-tax revenue; differentiate between direct and indirect tax and shifting of taxation and effects of taxation.
			CO3	Explain the types of public debt and how debt is repaid.
			CO4	Describe the various International trade theories, terms of trade and commercial policy.
			CO5	Explain the concept of BOP and exchange rate.
			CO6	Explain the objective and working of IMF and IBRD.
Sem.-III	**Elective English**	**ENO301**	**CO1**	Critically appreciate literary texts and introduce students to the thematic concerns, genres and trends of Indian writing in English.
			CO2	Comprehend extensive knowledge of English as a language in its various textual forms and construct them to be creative, thoughtful, imaginative and effective communicators in a diverse and changing society

			CO3	Students will be able to Classify different types of dialogue writing in English.
			CO4	Provide an overview of the various phases of the evolution of Indian writing in English. To work effectively and respectfully with diverse teams, facilitate them in such a way that English learning becomes a pleasurable endeavour and they learn at self-pace
			CO5	To become acquainted with various literary aspects through the text which capacitates them to enrich their literary, research and cultural values and also make them aware of self and society.
			CO6	Encourage students to make a detailed study of a few literary terms related to Drama and make enable them to enjoy life through literature.
Sem.-III	**History**	**HIS301**	**CO1**	Describe the foundation of British Rule with special reference to Battle of Plassey and Buxar. Explain the reforms made by British Governor Generals.
			CO2	Analyze the cause and effects of Revolt of 1857.
			CO3	Understand the socio-religious movements and also the role played by Mahatma Gandhi, JotibaPhule and Dr. Ambedkar for the upliftment of depressed class.
			CO4	Analyze the Economic policy of Britishers in India and their effect.
			CO5	Explain the communal politics and various events related to National movement till 1947.
			CO6	Describe the formation of Constitution of India and developments that took place after independence till 1964.
Sem.-III	**Mathematics**	**MAT301**	**CO1**	Know about limit and continuity, Partial differentiation, implicit function, Euler's theorem on homogeneous function, Taylor's theorem, parallelogram, and law of forces, Equilibrium of three forces acting at a point, triangle law of forces, Lami's theorem, Moments, couples and friction.
			CO2	Verify Exact differential equation; define the geometrical meaning of differential equation.
			CO3	Derive orthogonal Trajectory and envelope of the differential equation.
			CO4	Develop equilibrium relationships for non-accelerating two or three dimensional rigid bodies acting on by

				external forces and moments.
			CO5	Understand and compute equilibrium of three coplanar forces acting on a rigid body and solve simultaneous differential equations.
Sem.-III	**Political Science**	**POL301**	**CO1**	Students understand the philosophy of Indian constitution.
			CO2	Examine the fundamental rights and duties of Indian citizen with the study of the significance of directive principles of states
			CO3	Critical analysis of important institutions of the Indian union The executive, president, prime minister, council of ministers, governor, chief minister, legislature, raj Sabah, lok Sabah speaker of India.
			CO4	To identify how electoral rules and procedure in India effect election outcomes
			CO5	Students are able to understand various election procedure in India and various factors which influence Indian political system.
			CO6	This paper defines the composition power and role of Indian Supreme Court and high court.
Sem.-III	**Elective Punjabi**	**PBI301**	**CO1**	Analyse the poems of Madhkaali Punjabi
			CO2	Develop interest in reading safarnaama (travelogue)
			CO3	Comprehend history of Punjabi literature from 1701 to 1900.
			CO4	Understand Indian KaavShastar
			CO5	Apply the knowledge of various types of languages (Taksali Bhasha, Viaktibhasha, register, pigeon, carole)
Sem.-III	**School Related Practicum**	**BAEDU303**	Students are taken for various field visits as prescribed in syllabus.	
Sem.-III	**Life Skill Training**	**BAEDU304**	Students are given training for skill of social relations and skill of cooperative and team work through activities.	
Sem.-IV	**Curriculum Development & Evaluation**	**BAEDU401**	**CO1**	Describe the nature and Characteristics of curriculum
			CO2	Explain the various foundations and components of curriculum
			CO3	Differentiate among goals, aims and objectives, general objectives, course objectives and lesson objectives
			CO4	State levels of course content
			CO5	Discuss the need and guiding principles of curriculum development

			CO6	Analyse different methods and media used in transactional processes and different types of evaluation
Sem.-IV	**Guidance and Counseling**	**BAEDU402**	**CO1**	Classify different types of guidance
			CO2	Describe the concept of counselling and differentiate between guidance and counselling
			CO3	Analyse different tools and techniques of guidance and Counselling
			CO4	Organize guidance Program at school Level
Sem.-IV	**English Compulsory**	**ENG401**	**CO1**	Critically analyse the poetry and prose text of book English for Empowerment.
			CO2	Apply communication skills in a diverse society and learn at self-pace.
			CO3	Compose paragraphs from the post reading activities suggested in the prescribed text
			CO4	Prepare newspaper, official and research reports
			CO5	Illustrate idioms and phrases in sentences
			CO6	Reconstruct sentences by combining pairs of sentences and develop sentences using the given words as different parts of speech
Sem.-IV	**Punjabi Compulsory**	**PBC401**	**CO1**	Develop interest in reading Punjabi ikangi (one act play)
			CO2	Know contribution of Punjabi ikangikaar
			CO3	Know shabadshrenian in Punjabi grammar
			CO4	Identify dialects (upbhasha) of Punjabi
Sem.-IV	**History & Culture of Punjab**	**HCP401**	**CO1**	Describe the Sikh struggle for soverignity from 1716-1765
			CO2	Explain the role of Dal Khalsa, Rakhi, Gurmat, Misls and Banda Bahadur
			CO3	Analyse the Ranjit Singh's rise to power along with civil and military administration
			CO4	Understand the political development from 1839-1845
			CO5	Illustrate new developments in Literature, art and architecture in Punjab
			CO6	Visualise social life with special reference to position of women, festivals, dance and games in Punjab
Sem.-IV	**Economics**	**ECO401**	**CO1**	Explain the various mathematical and statistical tools in decision making.
			CO2	Outline the applications of matrices and derivatives.
			CO3	Analyze the univariate data.
			CO4	Define interpolation and its methods.

			CO5	Describe correlation, its types and measurement.
			CO6	Illustrate the fitting of trend line and construction of price and quantity indices
Sem.-IV	**Elective English**	**ENO401**	**CO1**	Understand the richness of literature and critically appreciate literary texts
			CO2	Acquire extensive knowledge of English as a language in its various textual forms and transform to be creative, thoughtful, imaginative and effective communicators in a diverse and changing society.
			CO3	Understand the principles of grammar and one word substitution and various forms of figure of speech and classify a detailed study of literary devices.
			CO4	Integrate effectively and respectfully with diverse teams, facilitate them in such a way that English learning becomes a pleasurable endeavour and they learn at self-pace.
			CO5	Relate various literary aspects through the text which capacitates them to enrich their literary, research and cultural values and also make them aware of self and society.
			CO6	Compile and analyse the different ways in which the grammar has been described like précis writing and comprehension.
Sem.-IV	**History**	**HIS401**	**CO1**	Understand teachings Sikh Gurus and development of Sikh religion.
			CO2	Analyze Mughal Sikh relationship and establishment of Sikh raj by Banda Singh Bahadur
			CO3	Describe various features of Maharaja Ranjit Singh's administration and evaluate Anglo-Sikh relations.
			CO4	Understand new administrative structure and policies adopted by Britishers in Punjab.
			CO5	Describe Social-Religious movements in Punjab .Also evaluate various events ofFreedom Movement andpartition of Punjab.
			CO6	Describe various developments from 1947 to1966 in Punjab.
Sem.-IV	**Mathematics**	**MAT401**	**CO1**	Distinguish between concept of sequence and series and determine the limit of a sequence and convergence and approximate sum of series.
			CO2	Derive the solution of Bessel's equations, Legendre's

				equation, their recurrence relations and orthogonal properties.
			CO3	Define, differentiate and integrate functions represented as a power series expansion, including Taylor's series and solve related problems.
			CO4	Know about Laplace transform, inverse Laplace transform and inverse Laplace trabsform and apply these to solve problems.
			CO5	Determine the dynamic response of the system to applied loadings, using Newton's law and understand the concept of simple Harmonic motion elastic string, curvilinear motion of a particle.
			CO6	Apply the principle of work and energy and the principle of impulse and momentum to mechanical system.
Sem.-IV	**Political Science**	**POL401**	**CO1**	This paper enrich the understanding of students of the working of the Indian political parties, the party system with reference to various state & national political parties, , election and voting behaviour.
			CO2	This paper also examines certain key issue and debates in contemporary India.
			CO3	To identify how electoral rules and procedure in India effect election outcome.
			CO4	Explore the various emerging trends in Indian politics
			CO5	Describe the role of caste, religion, and regionalism in Indian political system
			CO6	Explore the basic features of Indian foreign policy and describe the non-alignment moment and its relevance in contemporary scenario
Sem.-IV	**Elective Punjabi**	**PBI401**	**CO1**	Analyse the poetry of the text Madhkalikaavsugandhia.
			CO2	Comprehend stories and its characters of text kathaparvah.
			CO3	Understand the history of Punjabi literature from 1701-1900 with special reference to jangnama and kiss sahit.
			CO4	Describe literacy criticism.
			CO5	Know different dialects of Punjabi language.
Sem.-IV	**School Related Practicum**	**BAEDU403**	Students are taken for various field visits as prescribed in syllabus.	

Sem.-IV	**Life Skill Training**	**BAEDU404**	Students are given training for skill of social relations and skill of cooperative and team work through activities.	
Sem.-V	**Technological Bases of education and Pedagogy**	**BAEDU501**	**CO1**	Discuss the concept and types of educational technology
			CO2	Discriminate Various phases and levels of Teaching
			CO3	Prepare test items as per bloom's taxonomy
			CO4	Apply various models of teaching
Sem.-V	**Health and Yoga Education**	**BAEDU502**	**CO1**	Understand the importance, concept, aims and objectives of Health Education
			CO2	Enlighten about balanced diet, infectious diseases and their control
			CO3	Impart and apply knowledge to use good postures for various purposes and first Aid
			CO4	Learn the different type of Yoga and understand their implications
			CO 5	Insight into practical aspect of Yoga in contemporary times
			CO 6	Assess concept of holistic health and contribution of yoga in promoting holistic health.
Sem.-V	**English Compulsory**	**ENG501**	**CO1**	Critically analyse the poetry and prose text and comprehend the passage from prose text
			CO2	Apply communication skills in a diverse society and learn at self-pace.
			CO3	Explain the prescribed play 'Driving Miss Daisy' by Alfred Ubry in their own words
			CO4	Compose essays on social and current topics in their own words
			CO5	Modify the given sentences after identifying errors
			CO6	Write antonyms of given words
Sem.-V	**Punjabi Compulsory**	**PBC501**	**CO1**	Madhkali Punjabi KavAdhayan.
			CO2	Main Objective of Madhkali Punjabi Adhayan.
			CO3	Explaination and Central Ideas of MadhkalipunjabiKavita.
			CO4	Introduction and Importance to punjabi Lippi.
			CO5	To Provide knowledge of Grammar.
			CO6	Introduction and importance of Sentence Formation.
Sem.-	**History & Culture**	**HCP501**	**CO1**	Explain the concept of colonialism in the context of history and culture

V	**of Punjab**		**CO2**	Explain the concept of nationalism in the context of history and culture
			CO3	Understand the social religious reform movements with special reference to Namdharis and AryaSamaj.
			CO4	Describe the various movement of national importance such as Ghadar movement, JallianwalaBagh and Gurdwara reform movement.
Sem.-V	**Economics**	**ECO501**	**CO1**	Categorize the essential tools and concepts of development economics.
			CO2	Explain what makes underdevelopment persist and what helps development succeed.
			CO3	Discuss the diverse dimension and measures of development, as well as the application of microeconomic analysis to issues of development in poor countries.
			CO4	Define the household decisions and the analysis of institutions and norms influencing development.
			CO5	Demonstrate the understanding between growth & development.
			CO6	Analyze empirical evidence on the patterns of Economic development.
Sem.-V	**Elective English**	**ENO501**	**CO1**	Develop intellectual, personal and professional abilities through the effective study of literature.
			CO2	Add extensive knowledge of English as a language in its various textual forms and to become creative, thoughtful, imaginative and effective communicators through poetry and fiction in a diverse and changing society.
			CO3	Familiarize students with Modern Literature in Translation through different representative samples of poetry and able to recognize the rhythm, meter and other musical aspects of poetry.
			CO4	Work effectively and respectfully with diverse teams, facilitate them in such a way that English learning becomes a pleasurable endeavour and they learn at self-pace.
			CO5	Determine with various literary aspects through the text which capacitates them to enrich their literary, research and cultural values and also make them aware of self and society.

			CO6	Lead to a greater understanding of the human communicative action through an objective study of applied grammar and are able to recognize the literary terms related to Indian Literature.
Sem.-V	**History**	**HIS501**	**CO1**	Discuss the impact of the colonial period on the region, formation of British administration and movements of national importance
			CO2	Trace historical development of Arya Samaj academic institutions
			CO3	To describe the participation of Punjabis in different movements for freedom struggle
			CO4	To recall partition of Punjab and problems of rehabilitation.
			CO5	To develop understanding about establishment of Punjabi suba and development of agriculture due to green revolution.
Sem.-V	**Mathematics**	**MAT501**	**CO1**	Determine convergence of improper integrals with discontinuities in their domain or infinite limits of integration.
			CO2	Learn the theory of Riemann integral, mean value theorems and use theory in solving definite integrals in different fields of science and engineering.
			CO3	Exposure on Rings, integral domains, subrings and ideals, Quotient Rings, Primes and Maximal ideals.
			CO4	Brief discussion on groups, subgroups, Lagrange's theorem, homeomorphisms, Isomorphism, Polynomial Rings.
			CO5	Demonstrate the concept of Probability, Random variables, density function, moments and moment generating functions .
			CO6	Develop the knowledge about distribution based on discrete and continuous Random variables and apply them in real world problems.
Sem.-V	**Political Science**	**POL501**	**CO1**	Students go through the comparative study of different countries and government.
			CO2	Examine the constitutional system of U.K and USA. Also make a difference of the political and executive institution of both countries
			CO3	Students also learn about the current political system, judiciary system, political parties, and pressure groups

				of both countries.
			CO4	To identify various issues and challenges towards international relations
			CO5	To understand the comparative method of international government and politics.
			CO6	Students gain the knowledge about the judiciary system of UK and USA.
Sem.-V	**Elective Punjabi**	**PBI501**	**CO1**	AnalysePuratan Punjabi Kavita
			CO2	Develop interest in reading Punjabi drama (moyansaarnakai)
			CO3	Know history of Punjabi literature from early period to 1700
			CO4	Understand bhartikaavshastar and forms of literature
Sem.-V	**School Related Practicum**	**BAEDU503**	Students are taken for various field visits as prescribed in syllabus.	
Sem.-V	**Life Skill Training**	**BAEDU504**	Students are given training for skill of social relations and skill of cooperative and team work through activities.	
Sem.-VI	**Educational research and statistics**	**BAEDU601**	**CO1**	Explain the concept of educational research
			CO2	Differentiate various methods of educational research
			CO3	Use different tools of educational research
			CO4	Apply various statistical techniques in educational research
Sem.-VI	**Value Education**	**BAEDU602**	**CO1**	Describe the concept of value and value system.
			CO2	Understand and explain various intervention strategies for value inculcation in students.
			CO3	Identify and apply various tools of value inculcation.
			CO4	Explain philosophical, sociological and psychological bases of value education.
			CO 5	Analyse the concept and factors affecting value preferences.
			CO 6	Assess concept and process of assessment of values.
Sem.-VI	**English Compulsory**	**ENG601**	**CO1**	Critically analyse the poetry and prose text and comprehend the passage from prose text
			CO2	Apply communication skills in a diverse society and learn at self-pace.
			CO3	Summarise the given paragraph in their own words
			CO4	Illustrate idioms and phrases in sentences

			CO5	Substitute the given sentence with one appropriate word
Sem.-VI	**Punjabi Compulsory**	**PBC601**	**CO1**	To provide knowledge of Punjabi novel.
			CO2	To understand various aspects of Punjabi novel.
			CO3	To make students capable to write precise.
			CO4	To motivate students to write an essay for newspaper on various topics like Cultural, Academics, Sports and Literary.
			CO5	To Provide knowledge of various aspects of Gurmukhi Lippi.
			CO6	Provide knowledge of various types of sentence.
Sem.-VI	**History & Culture of Punjab**	**HCP601**	**CO1**	Discuss the history of the Punjab in the post 1947 period
			CO2	Describe the new trends in social and economic life of Punjab after independence
			CO3	Analyse green revolution and its impacts
			CO4	Explain new social issues such as gender discrimination, drug menace, farmer sluiced
Sem.-VI	**Economics**	**ECO601**	**CO1**	Develop ideas of the basic characteristics of Indian economy, its potential on natural resources.
			CO2	Discuss the importance, causes and impact of population growth and its distribution, translate and relate them with economic development.
			CO3	Graph the importance of planning undertaken by the government of India.
			CO4	Summarize the basic features of Punjab's Economy, sources of revenue, how the state government finance its programmes and projects.
			CO5	Develop the knowledge on the various objectives, failures and achievements as the foundation of the on-going planning and economic reforms taken by the government.
			CO6	Point out Economic reforms in India & Problems of Indian Economy
Sem.-VI	**Elective English**	**ENO601**	**CO1**	Enhance students' awareness in the aesthetics of literature while critically appreciating literary texts.
			CO2	Acquire extensive knowledge of English as a language in its various textual forms and to become creative, thoughtful, imaginative and effective communicators in a diverse and changing society.
			CO3	Develops the deeper knowledge of English literature

				and explore the ability to appreciate ideas and think critically
			CO4	Read and write analytically in a variety of formats, including essays, report writing and translation.
			CO5	Differentiate critical and theoretical approaches to the reading and analysis of literary texts in multiple genres as well as acquainted with various literary aspects through the text which capacitates them to enrich their literary, research and cultural values and also make them aware of self and society
			CO6	Form an idea about the various stages in the development of English language.
Sem.-VI	**History**	**HIS601**	**CO1**	Acquaintance with modern period in world history
			CO2	Understand selected revolutions, unification, causes and consequences of world war-I and II in world history
			CO3	To discuss the unification of Italy and Germany
			CO4	To illustrate the Mejie restoration and modernisation in japan
			CO5	To analyse the division of Europe in two blocks and world war first and second
Sem.-VI	**Mathematics**	**MAT601**	**CO1**	Distinguish between the concepts of sequence and series and determine limits of sequence and convergence and approximate sum of series
			CO2	Define, differentiate and integrate functions represented as a power series expansion and Fourier series expansion including Taylor's series solve related problems.
			CO3	Explain methods to find solution to linear ,non-linear equations, ordinary differential equations using numerical methods
			CO4	Develop the knowledge about interpolation, numerical differentiation, numerical integration, and methods of solving integrations of functions.
			CO5	To understand the concept of Linear transformations, Rank and Nullity of a linear transformations, vector space of linear transformations.
			CO6	Knowledge about Vector spaces, subspaces, Algebra of subspace, Linearspan, Linear Independence and dependence of vectors, Basis and dimensions of a vector space.

Sem.-VI	**Political Science**	**POL601**	**CO1**	This paper provides knowledge for the international relations, theories, and the values implicit in each of these in different ways and an overview of the broad theories and concept use to understand international politics.
			CO2	Analysis of the Second World War, cold war, various international organizations. Explore various principles of world politics like balance of power, collective security.
			CO3	To appreciate the post war developments through the emergence of third world.
			CO4	To understand the emerging area in international relations.
			CO5	To identify various issues and challenges towards international relations.
			CO6	To analyses the international security Arms Race. Arms control and Disarmament.
Sem.-VI	**Elective Punjabi**	**PBI601**	**CO1**	Analyse the poetry of ancient Punjabi poets mentioned in a book 'ShbadSvera
			CO2	Critically examines essays of book 'NibandhParkash'
			CO3	Know history of Punjabi literature.
			CO4	Understand Pachami Kaav Shastar and develop interest in reading and writing essay
			CO5	Acquire the wide knowledge about BhashaVigyaan(linguistics)
Sem.-VI	**School Related Practicum**	**BAEDU603**	Students are taken for various field visits as prescribed in syllabus.	
Sem.-VI	**Life Skill Training**	**BAEDU604**	Students are given training for skill of social relations and skill of cooperative and team work through activities.	
Sem.-VII	**Philosophical, Sociological and Political perspective**	**BAEDU701**	**CO1**	Explain the discipline of education in philosophical, sociological and Political perspective.
			CO2	Discuss the contribution of eminent thinkers to education.
			CO3	Understand goals and values of emerging Indian society.
			CO4	Aware of current political issues in education special reference to human rights.
			CO5	Analyse implication of Article 21A,RTE act 2009.
			CO6	Assess the Education in 21stcentury,role and functions

				of UNESCO & UNICEF.
Sem.-VII	**The Learner Nature and Development**	**BAEDU702**	**CO1**	Generalize various theories of personality along with its assessment
			CO2	Distinguish various theories of Learning and transfer of Learning
			CO3	Describe the concept of creativity and motivation
			CO4	Realize the importance of mental health and Develop mental hygiene
Sem.-VII	**Theory of Instructional Technology**	**BAEDU703**	**CO1**	Describe the objectives and their formulation of Instructional design.
			CO2	Explain the principles of instructional design and apply them to develop design of instruction.
			CO3	Understand concept, process, and barriers of communication and apply optimizing communication skill for oral performance.
			CO4	Compare different media and their application.
			CO5	Analyse the concept, process and application of Flanders's Interaction Categories Systems, team teaching, group interaction, Simulation teaching.
			CO6	Discuss the need, concept, principles, rational, types of programmed Instruction and apply it to development of program.
Sem.-VII	**School Management**	**BAEDU704**	**CO1**	Appraise various elements of school management and classroom management.
			CO2	Develop leadership and decision making abilities in themselves
			CO3	Apply TQM in Education
			CO4	Analyse the working of SMC at school level
			CO5	Use ICT in various components of educational management
			CO6	Assess various aspects of supervision
Sem.-VII	**Information & Communication Technology (ICT) in Education**	**BAEDU705**	**CO1**	Define basic computer hardware architecture.
			CO2	Recognize input and output devices of Computers and how it works.
			CO3	To read various characteristics of computer languages.
			CO4	To define about the operating system and types.
			CO5	Accomplish creating basic documents, presentations with their properties.
			CO6	To understand about internet, working with E-mails.

Sem.-VII	**Teaching of Social Studies**	**TSST706**	**CO1**	Explain the aims and objectives of teaching social studies
			CO2	Explain different methods, devices and techniques of teaching social studies.
			CO3	Analyse modern concepts and tools of evaluation
			CO4	Prepare and make effective use of teaching aids
			CO5	Develop various skills in questioning, explaining, map reading, set introduction, stimulus variation
			CO6	Explain challenging situations in the society
Sem.-VII	**Teaching of Mathematics**	**TMAT707**	**CO1**	Understand and appreciate the uses and significance of Mathematics in daily life, learn various approaches of teaching Mathematics and to use them judiciously.
			CO2	Learn the methods of providing instruction for the classroom, organize curricular activities, appreciate activities to develop aesthetics of Mathematics and update their knowledge of content in mathematics.
			CO3	Develop an ability to understand various methods of evaluation of students' performance in mathematics.
			CO4	State the aim and objectives of teaching mathematics. And also understand various techniques of teaching of mathematics.
			CO5	Develop skill making teaching learning process experimental and joyful.
Sem.-VII	**Teaching of English**	**TENG708**	**CO1**	Understand the place of English language teaching in India
			CO2	Apply different principles of teaching and learning
			CO3	Identify different methods, approaches, techniques of teaching English
			CO4	Utilize the four skills of language that is listening, speaking, reading and writing in teaching
			CO5	Prepare lesson plans and test items for testing various language activities
Sem.-VII	**Teaching of Punjabi**	**TPBI709**	**CO1**	Understand the origin of Punjabi language
			CO2	Acquire the skill of listening, speaking, reading and writing language
			CO3	Learn methods of teaching prose, poetry and grammar
			CO4	Use of audio-visual aids and evaluation techniques
			CO5	Learn development of lesson plan

Sem.-VIII	**Document Analysis**	**BAEDU800**	Students will visit nearby Govt. and Private schools for 16 weeks and perform various tasks. After the completion of this Internship Programme students will be able to: ❖ Develop a comprehensive understanding of existing classroom practices. ❖ Develop a critical understanding of textbook lessons of individual subjects and their suitability for learning. ❖ Draw linkages between various pedagogy courses and classroom practices. ❖ Critically review policy and state documents on education and seek to effect ideas into classroom practices. ❖ Develop and design alternative teaching – learning materials. ❖ Assess factors that contribute to a classroom culture, its creation and maintenance. ❖ Explore possibilities of innovation and create space for alternative practices. ❖ Design, choose, organize, and conduct individual and group activities. ❖ Reflect on personal experiences of classroom management. ❖ Learn to set realistic goals in terms of children's learning, classroom culture and management, curricular form and content and pedagogic practices. ❖ Develop the ability to innovate within existing frameworks by alternative practices. ❖ Purposefully use the skills of systematic observations, record keeping and for reflection on teaching-learning process.
Sem.-VIII	**SWOT Analysis**		
Sem.-VIII	**Identification Problem Children**		
Sem.-VIII	**Organization of School Function**		
Sem.-VIII	**Record Keeping**		
Sem.-VIII	**Organization of Co-curricular/Cultural Activities in School**		
Sem.-VIII	**Organization of Morning Assembly in School**		
Sem.-VIII	**Organization of Awareness Programs in School**		
Sem.-VIII	**Cleanliness and Beautification of School**		
Sem.-VIII	**Conducting Carrere Counseling Sessions in School**		
Sem.-VIII	**Training of Two Life Skills to School Children**		
Sem.-VIII	**Preparation of Various School Records**		

Mapping of Course Outcomes (COs) with Programme Outcomes(POs)

Programme Outcome																
College code	**Course Out-comes**	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**	**PO 13**	**PO 14**	**PO 15**
Semester I																
BAEDU 101	**CO1**	3	2	1	2	1	2	1	X	1	1	2	X	X	X	2
	CO2	3	2	3	1	2	2	3	2	1	3	1	X	X	3	1
	CO3	3	2	2	1	2	2	3	1	2	3	1	X	X	3	2
	CO4	3	2	2	3	1	2	1	2	2	1	2	3	2	2	2
	CO5	3	2	3	3	1	2	3	2	3	1	3	2	2	3	2
BAEDU 102	**CO1**	3	1	X	X	2	X	1	2	1	X	X	X	X	1	2
	CO2	3	1	3	2	3	1	2	2	3	1	3	X	X	1	1
	CO3	3	1	3	3	3	1	2	3	2	1	1	X	X	2	2
	CO4	3	1	1	3	3	1	3	3	2	1	3	3	3	3	2
	CO5	3	1	X	X	2	X	1	2	1	X	1	X	3	1	2
	CO6	3	1	2	3	3	1	3	3	2	1	2	X	X	2	2
ENG101	**CO1**	3	3	3	X	3	2	2	1	3	1	2	1	1	1	1
	CO2	3	3	2	X	1	X	2	X	2	1	3	X	X	1	1
	CO3	2	3	2	3	2	1	X	1	2	1	X	1	2	X	1
	CO4	2	3	2	3	2	1	X	X	2	1	X	X	2	X	1
	CO5	2	3	2	3	2	X	X	X	2	1	X	X	X	X	1
	CO6	2	3	2	3	2	X	X	X	2	1	X	X	X	X	1
PBC101	**CO1**	3	3	3	3	3	1	1	2	3	1	3	1	3	3	3
	CO2	3	3	X	3	X	X	X	X	X	1	3	X	X	X	3
	CO3	3	3	1	2	1	1	X	1	1	1	3	1	2	3	3
	CO4	3	3	3	3	3	1	X	3	3	1	3	2	3	3	3
HCP10	**CO1**	3	3	2	2	2	1	1	2	2	1	2	3	1	2	2

1	**CO2**	3	3	2	2	2	1	1	2	2	1	2	3	1	2	2
	CO3	3	3	2	2	2	1	1	2	2	1	2	3	1	2	2
	CO4	3	3	2	2	3	1	1	2	2	1	2	3	1	2	2
	CO5	3	3	2	2	2	1	1	2	2	1	2	X	3	2	2
	CO6	3	X	2	2	X	1	1	2	2	1	2	X	1	X	X
ECO101	**CO1**	3	X	3	1	1	2	X	3	2	X	X	X	X	X	3
	CO2	3	X	2	1	1	2	X	3	2	X	X	X	X	X	3
	CO3	3	X	1	2	1	2	X	3	3	X	X	X	X	X	2
	CO4	3	X	1	1	2	2	X	3	3	X	X	X	X	X	3
	CO5	3	X	1	1	1	2	X	3	2	X	X	X	X	X	1
	CO6	3	X	1	1	1	2	X	3	2	X	X	X	X	X	2
ENO101	**CO1**	3	3	3	1	3	1	2	1	3	1	1	2	1	1	1
	CO2	3	3	X	X	1	X	1	X	X	1	2	1	1	1	1
	CO3	3	3	2	2	2	1	X	1	2	1	1	1	1	1	1
	CO4	3	3	X	3	1	X	X	X	X	1	1	X	1	1	1
	CO5	3	3	X	3	1	X	X	X	X	1	1	X	1	1	1
	CO6	3	3	X	3	X	X	X	X	X	1	1	X	1	1	1
HIS101	**CO1**	3	2	3	2	2	1	1	2	2	1	2	2	3	2	2
	CO2	3	2	3	2	3	1	1	3	2	1	2	2	3	2	2
	CO3	3	2	3	2	3	1	1	2	2	1	2	2	2	2	2
	CO4	3	2	3	2	2	1	1	2	2	1	2	2	X	2	2
	CO5	3	2	3	2	2	1	1	3	2	1	2	2	X	2	2
	CO6	3	2	3	2	2	1	1	2	2	1	2	2	X	2	2
MAT101	**CO1**	2	1	3	3	2	2	2	X	1	1	2	X	2	1	2
	CO2	3	X	2	3	1	X	1	1	X	X	3	1	2	1	2
	CO3	2	2	2	3	2	2	1	X	1	1	2	2	2	2	2
	CO4	3	3	3	3	2	3	2	2	2	3	3	2	2	3	1
	CO5	3	X	1	3	X	X	1	1	X	2	2	1	X	1	2
	CO6	3	2	2	2	X	X	1	X	X	X	3	2	1	2	2
POL101	**CO1**	3	3	3	2	2	1	2	2	1	X	2	2	2	X	X

	CO2	3	3	2	1	1	1	2	1	1	X	2	2	2	1	X
	CO3	3	3	3	1	1	X	1	1	2	X	2	X	3	X	2
	CO4	3	3	3	2	1	2	2	1	1	X	1	X	1	1	2
	CO5	3	3	3	1	X	X	1	X	3	X	1	2	3	2	1
	CO6	2	3	3	1	X	1	1	1	2	X	2	1	1	2	X
PBI101	**CO1**	2	2	2	2	2	2	2	1	2	1	2	2	2	1	2
	CO2	2	2	1	2	2	X	1	X	1	2	2	2	2	2	2
	CO3	2	2	1	1	1	X	1	X	1	1	2	X	1	1	2
	CO4	2	3	1	2	1	1	1	1	2	2	2	1	1	X	2
	CO5	2	3	1	2	1	1	1	1	2	2	2	1	1	X	2
Semester II																
BAEDU 201	**CO1**	3	1	1	X	2	X	1	2	1	X	X	X	1	1	2
	CO2	3	1	2	2	3	1	2	2	3	1	3	X	1	1	1
	CO3	3	1	3	3	3	1	2	2	2	1	1	X	1	1	2
	CO4	3	1	2	2	2	1	2	2	2	1	2	2	3	3	2
	CO5	3	1	3	3	3	3	3	1	3	2	3	3	2	2	3
BAEDU 202	**CO1**	3	1	X	X	2	X	1	2	1	X	X	X	X	1	2
	CO2	3	1	3	2	3	1	2	2	3	1	3	X	X	1	1
	CO3	3	1	3	3	3	1	2	3	2	1	1	X	X	2	2
	CO4	3	1	1	3	3	1	3	3	2	1	3	3	3	3	2
ENG201	**CO1**	3	3	3	X	3	2	2	1	3	1	2	1	1	1	1
	CO2	3	3	2	X	1	X	2	X	2	1	3	X	X	1	1
	CO3	2	3	2	3	2	1	X	1	2	1	X	1	2	X	1
	CO4	2	3	2	3	2	1	X	X	2	1	X	X	2	X	1
	CO5	2	3	2	3	2	X	X	X	2	1	X	X	X	X	1
	CO6	2	3	2	3	2	X	X	X	2	1	X	X	X	X	1
PBC201	**CO1**	3	3	3	3	2	1	2	3	1	1	3	1	3	3	3
	CO2	3	3	3	3	2	1	2	3	1	1	3	1	3	3	3
	CO3	3	3	2	3	2	1	2	1	1	1	3	1	3	3	3
	CO4	3	3	2	3	2	X	X	3	1	1	3	X	3	3	3

HCP201	**CO1**	3	3	2	2	2	1	1	2	2	1	2	3	1	2	2
	CO2	3	3	2	2	2	1	1	2	2	1	2	3	1	2	2
	CO3	3	3	2	2	2	1	1	2	2	1	2	3	1	2	2
	CO4	3	3	2	2	3	1	1	2	2	1	2	3	1	2	2
	CO5	3	3	2	2	2	1	1	2	2	1	2	X	3	2	2
	CO6	3	X	2	2	X	1	1	2	2	1	2	X	1	X	X
ECO201	**CO1**	3	X	1	1	1	2	X	3	2	X	X	X	X	X	1
	CO2	3	X	1	1	1	2	X	3	2	X	X	X	X	X	1
	CO3	3	X	1	1	1	2	X	3	3	X	X	X	X	X	2
	CO4	3	X	1	1	1	2	X	3	3	X	X	X	X	X	3
	CO5	3	X	1	1	1	2	X	3	2	X	X	X	X	X	1
	CO6	3	X	1	1	1	2	X	3	2	X	X	X	X	X	2
ENO201	**CO1**	3	3	3	1	3	1	2	1	3	1	1	2	1	1	1
	CO2	3	3	X	X	1	X	1	X	X	1	2	1	1	1	1
	CO3	3	3	2	2	2	1	X	1	2	1	1	1	1	1	1
	CO4	3	3	X	3	1	X	X	X	X	1	1	X	1	1	1
	CO5	3	3	X	3	1	X	X	X	X	1	1	X	1	1	1
	CO6	3	3	X	3	X	X	X	X	X	1	1	X	1	1	1
HIS201	**CO1**	3	3	2	2	2	1	1	2	2	1	2	3	1	2	2
	CO2	3	3	2	2	2	1	1	2	2	1	2	3	1	2	2
	CO3	3	3	2	2	2	1	1	2	2	1	2	3	1	2	2
	CO4	3	3	2	2	3	1	1	2	2	1	2	3	1	2	2
	CO5	3	3	2	2	2	1	1	2	2	1	2	X	3	2	2
	CO6	3	X	2	2	X	1	1	2	2	1	2	X	1	X	X
MAT201	**CO1**	2	1	2	2	1	X	X	1	1	1	2	2	2	2	2
	CO2	1	X	3	3	1	X	2	X	1	2	2	X	2	2	2
	CO3	3	2	2	2	X	X	1	X	X	X	3	2	1	2	2
	CO4	3	1	2	3	1	X	X	1	X	X	2	X	3	1	2
	CO5	3	X	3	3	2	1	2	3	2	X	2	2	X	1	3
	CO6	2	X	1	2	1	1	3	X	2	X	2	2	2	X	2

POL201	**CO1**	3	2	2	3	2	2	2	2	2	X	1	2	X	2	2
	CO2	1	X	3	2	2	2	2	1	1	X	2	2	1	1	1
	CO3	2	3	2	2	2	1	1	1	3	X	2	1	1	1	1
	CO4	3	3	3	2	1	2	3	1	2	X	1	2	2	2	1
	CO5	3	3	3	2	2	1	1	2	1	X	1	1	1	1	2
	CO6	2	3	3	2	1	1	2	1	2	X	2	1	X	2	1
PBI201	**CO1**	2	2	2	2	2	2	2	1	2	1	2	2	2	1	2
	CO2	2	2	1	2	2	X	1	X	1	2	2	2	2	2	2
	CO3	2	2	1	1	1	X	1	X	1	1	2	X	1	1	2
	CO4	2	3	1	2	1	1	1	1	2	2	2	1	1	X	2
	CO5	2	3	1	2	1	1	1	1	2	2	2	1	1	X	2
ENV	**CO1**	1	2	1	2	2	1	X	X	1	1	2	1	2	1	2
	CO2	2	1	1	X	1	X	2	X	1	X	1	1	1	2	1
	CO3	3	1	1	1	2	X	1	X	1	1	2	1	2	1	2
	CO4	2	X	1	2	1	X	1	X	2	1	X	1	2	X	2
	CO5	2	X	1	1	2	1	X	1	2	1	1	2	2	X	1
	CO6	1	X	2	2	1	1	2	2	1	X	1	2	2	X	2
Semester III																
BAEDU 301	**CO1**	3	1	2	2	2	X	1	2	1	X	2	X	1	1	1
	CO2	3	1	2	2	3	1	1	2	1	X	1	X	1	2	1
	CO3	3	1	3	2	3	1	1	2	1	X	1	X	1	1	1
	CO4	3	1	2	2	2	2	2	2	1	1	X	1	1	1	1
BAEDU 302	**CO1**	3	1	2	2	2	X	1	2	1	X	2	X	1	1	1
	CO2	3	1	2	2	3	1	1	2	1	X	1	X	1	2	1
	CO3	3	1	3	2	3	1	1	2	1	X	1	X	1	1	1
	CO4	3	1	2	2	2	2	2	2	1	1	X	1	1	1	1
	CO5	3	2	1	X	3	2	3	2	1	3	2	1	3	3	X
	CO6	2	3	X	2	1	2	3	2	1	2	3	3	X	3	2
ENG301	**CO1**	3	3	2	X	3	1	2	1	2	1	2	1	1	1	1
	CO2	3	3	1	X	1	X	2	X	1	1	2	X	X	1	1

	CO3	2	3	3	3	3	1	X	1	3	1	3	1	2	X	1
	CO4	2	3	3	3	3	X	X	1	3	1	3	X	2	X	1
	CO5	2	3	2	3	3	X	X	1	2	1	3	X	X	X	1
	CO6	2	3	3	3	X	X	X	X	3	1	3	X	X	X	1
PBC301	**CO1**	3	3	3	3	2	1	2	3	1	1	3	1	3	3	3
	CO2	3	3	3	3	2	1	2	3	1	3	3	1	3	3	3
	CO3	3	3	2	3	X	1	1	X	1	X	3	1	2	3	3
	CO4	3	3	X	3	X	X	X	X	X	X	3	X	2	3	3
HCP301	**CO1**	3	3	2	2	2	1	1	2	2	1	2	3	1	2	2
	CO2	3	3	2	2	2	1	1	2	2	1	2	3	1	2	2
	CO3	3	3	2	2	2	1	1	2	2	1	2	3	1	2	2
	CO4	3	3	2	2	3	1	1	2	2	1	2	3	1	2	2
	CO5	3	3	2	2	2	1	1	2	2	1	2	X	3	2	2
	CO6	3	X	2	2	X	1	1	2	2	1	2	X	1	X	X
ECO301	**CO1**	3	X	3	1	1	1	X	1	1	X	X	X	X	X	3
	CO2	3	X	2	1	1	1	X	1	1	X	X	X	X	X	3
	CO3	3	X	1	2	1	1	X	1	1	X	X	X	X	X	2
	CO4	3	X	1	1	2	1	X	1	1	X	X	X	X	X	3
	CO5	3	X	1	1	1	1	X	1	2	X	X	X	X	X	1
	CO6	3	X	1	1	1	1	X	1	2	X	X	X	X	X	2
ENO301	**CO1**	3	3	3	1	2	2	2	2	2	X	1	3	2	1	2
	CO2	3	3	2	2	1	3	3	2	2	1	1	3	2	2	2
	CO3	3	3	2	3	2	2	2	1	2	x	x	2	2	2	2
	CO4	3	3	3	3	3	2	3	1	2	1	1	3	2	3	3
	CO5	3	3	3	3	2	2	2	1	2	1	1	3	2	2	2
	CO6	3	3	2	2		1	1	x	1	2	x	2	2	1	1
HIS301	**CO1**	3	2	2	2	2	1	1	2	2	1	2	2	1	2	2
	CO2	3	2	3	2	3	1	1	2	2	1	2	2	1	2	2
	CO3	3	2	3	2	2	1	1	2	2	1	2	2	3	2	2
	CO4	3	2	3	2	3	1	1	2	2	1	2	2	1	2	2

	CO5	3	2	2	2	2	1	1	2	2	1	2	2	1	2	2
	CO6	3	2	2	2	2	1	1	2	2	1	2	2	2	2	2
MAT301	**CO1**	3	X	2	3	1	X	1	1	X	X	3	1	2	1	2
	CO2	3	2	2	3	1	X	2	1	2	1	3	X	2	2	2
	CO3	3	X	3	2	2	1	2	1	2	3	3	X	2	2	3
	CO4	2	1	3	3	2	2	2	X	1	1	2	X	2	1	2
	CO5	3	1	2	2	X	1	3	1	2	X	1	1	2	1	1
POL301	**CO1**	3	X	2	3	1	X	1	1	X	X	3	1	2	1	2
	CO2	3	2	2	3	1	X	2	1	2	1	3	X	2	2	2
	CO3	3	X	3	2	2	1	2	1	2	3	3	X	2	2	3
	CO4	2	1	3	3	2	2	2	X	1	1	2	X	2	1	2
	CO5	3	1	2	2	X	1	3	1	2	X	1	1	2	1	1
PBI301	**CO1**	2	2	2	2	2	2	2	1	2	1	2	2	2	1	2
	CO2	2	2	1	2	2	X	1	X	1	2	2	2	2	2	2
	CO3	2	2	1	1	1	X	1	X	1	1	2	X	1	1	2
	CO4	2	3	1	2	1	1	1	1	2	2	2	1	1	X	2
	CO5	2	3	1	2	1	1	1	1	2	2	2	1	1	X	2
Semester IV																
BAEDU401	**CO1**	3	2	2	2	3	1	2	1	1	1	1	X	1	2	1
	CO2	3	2	3	2	3	2	1	2	1	1	2	X	1	2	1
	CO3	3	2	3	3	3	1	2	2	1	2	1	X	1	3	1
	CO4	3	3	2	3	3	2	X	2	2	X	3	1	3	3	2
	CO5	3	2	X	2	3	2	2	1	3	1	X	3	3	2	1
	CO6	2	3	X	1	2	2	3	1	2	3	1	X	3	3	2
BAEDU402	**CO1**	3	2	2	2	3	1	2	1	1	1	1	X	1	2	1
	CO2	3	2	3	2	3	1	1	1	1	1	2	X	1	2	1
	CO3	3	2	3	3	3	1	2	2	1	2	1	X	1	2	1
	CO4	3	3	2	3	3	2	2	2	2	2	3	1	3	3	2
ENG401	**CO1**	3	3	2	X	3	1	2	1	2	1	2	1	1	1	1
	CO2	3	3	1	X	1	X	2	X	1	1	2	X	X	1	1

	CO3	2	3	3	3	3	1	X	1	3	1	3	1	2	X	1
	CO4	2	3	3	3	3	X	X	1	3	1	3	X	2	X	1
	CO5	2	3	2	3	3	X	X	X	2	1	3	X	X	X	1
	CO6	2	3	3	3	1	X	X	X	3	1	3	X	X	X	1
PBC401	**CO1**	3	3	3	3	2	1	2	3	1	1	3	2	3	3	3
	CO2	3	3	3	3	2	1	2	3	1	1	3	2	3	3	3
	CO3	3	3	X	3	X	X	X	X	X	X	3	X	2	3	3
	CO4	3	3	2	3	X	1	2	X	1	1	3	1	2	3	3
HCP401	**CO1**	3	3	2	2	2	1	1	2	2	1	2	3	1	2	2
	CO2	3	3	2	2	2	1	1	2	2	1	2	3	1	2	2
	CO3	3	3	2	2	2	1	1	2	2	1	2	3	1	2	2
	CO4	3	3	2	2	3	1	1	2	2	1	2	3	1	2	2
	CO5	3	3	2	2	2	1	1	2	2	1	2	X	3	2	2
	CO6	3	X	2	2	X	1	1	2	2	1	2	X	1	X	X
ECO401	**CO1**	3	X	1	1	1	2	X	3	2	X	X	X	X	X	1
	CO2	3	X	1	1	1	2	X	3	2	X	X	X	X	X	1
	CO3	3	X	1	1	1	2	X	3	3	X	X	X	X	X	2
	CO4	3	X	1	1	1	2	X	3	3	X	X	X	X	X	3
	CO5	3	X	1	1	1	2	X	3	2	X	X	X	X	X	1
	CO6	3	X	1	1	1	2	X	3	2	X	X	X	X	X	2
ENO401	**CO1**	3	3	3	1	2	2	2	2	2	X	1	3	2	1	2
	CO2	3	3	2	2	1	3	3	2	2	1	1	3	2	2	2
	CO3	3	3	2	3	2	2	2	1	2	1	x	2	2	2	2
	CO4	3	3	3	3	3	2	3	1	2	1	1	3	2	3	3
	CO5	3	3	3	3	2	2	2	1	2	1	1	3	2	2	2
	CO6	3	3	1	2	1	1	2	x	2	x	1	2	2	2	2
HIS401	**CO1**	3	3	2	2	2	1	1	2	2	1	2	2	3	3	2
	CO2	3	3	3	2	3	1	1	2	2	1	2	2	1	3	2
	CO3	3	3	2	2	2	1	1	2	2	1	2	2	1	3	2
	CO4	3	3	2	2	2	1	1	2	2	1	2	2	1	2	2

	CO5	3	3	2	2	2	1	1	2	2	1	2	2	1	2	2
	CO6	3	3	2	2	2	1	1	2	2	1	2	2	1	3	2
MAT401	**CO1**	3	X	1	2	1	X	2	X	2	x	3	2	2	1	1
	CO2	3	X	2	3	2	X	2	1	1	X	2	2	1	2	1
	CO3	3	X	1	2	1	X	2	X	2	X	3	2	2	1	1
	CO4	2	X	1	2	1	1	3	X	2	X	2	2	2	X	2
	CO5	3	1	X	3	X	1	2	1	2	X	3	1	2	1	2
	CO6	3	2	3	1	2	X	1	2	1	1	1	1	2	1	1
POL401	**CO1**	3	3	3	2	2	1	2	2	1	X	2	2	2	X	X
	CO2	3	3	3	1	2	1	2	1	1	X	2	2	2	1	X
	CO3	3	3	3	1	1	X	1	1	2	X	2	X	3	X	2
	CO4	3	3	3	2	1	2	2	1	2	X	1	X	1	1	2
	CO5	3	3	3	1	X	X	1	X	2	X	1	2	2	2	1
	CO6	2	3	2	1	X	1	1	1	2	X	2	2	1	2	X
PBI401	**CO1**	2	2	2	2	2	2	2	1	2	1	2	2	2	1	2
	CO2	2	2	1	2	2	X	1	X	1	2	2	2	2	2	2
	CO3	2	2	1	1	1	X	1	X	1	1	2	X	1	1	2
	CO4	2	3	1	2	1	1	1	1	2	2	2	1	1	X	2
	CO5	2	3	1	2	1	1	1	1	2	2	2	1	1	X	2
Semester V																
BAEDU501	**CO1**	3	2	2	1	2	2	2	1	1	2	1	X	1	2	1
	CO2	3	2	2	1	3	1	1	2	1	2	1	X	1	1	1
	CO3	3	2	2	2	2	2	3	2	2	2	1	X	1	2	2
	CO4	3	2	2	2	2	2	3	2	2	2	2	X	2	3	2
BAEDU502	**CO1**	3	2	2	1	2	2	2	1	1	2	1	X	1	2	1
	CO2	3	2	2	1	3	1	1	2	1	2	1	X	1	1	1
	CO3	3	2	3	2	2	X	3	1	2	2	1	X	1	2	2
	CO4	3	2	2	2	2	2	3	2	3	2	2	X	2	3	2
	CO5	3	2	3	X	2	3	3	1	1	3	1	3	X	2	2
	CO6	3	1	1	2	X	3	2	1	3	X	2	2	1	3	2

ENG501	**CO1**	3	3	3	1	3	1	1	1	3	1	2	1	1	1	1
	CO2	3	3	2	1	X	X	X	X	2	1	2	1	X	1	1
	CO3	3	3	3	1	3	1	1	1	3	1	2	1	X	1	1
	CO4	3	3	2	3	3	1	X	1	2	1	1	1	1	1	1
	CO5	3	3	X	3	X	X	X	X	X	1	1	X	X	1	1
	CO6	3	3	X	3	X	X	X	X	X	1	1	X	X	1	1
PBC501	**CO1**	1	2	1	3	1	2	1	2	3	1	2	3	1	2	2
	CO2	1	1	3	1	X	1	X	1	1	3	1	2	2	3	3
	CO3	3	X	2	X	2	X	2	1	2	1	3	2	2	1	1
	CO4	2	3	1	1	3	2	2	X	2	2	1	1	X	2	2
	CO5	2	2	X	1	1	3	1	2	X	2	2	X	3	X	X
	CO6	X	1	2	2	1	1	3	2	1	X	2	1	2	1	1
HCP501	**CO1**	3	2	2	1	2	1	2	1	1	1	1	X	1	2	1
	CO2	3	2	2	2	3	1	1	1	1	1	1	X	1	2	1
	CO3	3	3	2	2	3	1	1	1	1	1	1	X	1	2	1
	CO4	3	3	2	2	3	1	1	1	1	1	2	1	2	2	1
ECO501	**CO1**	2	X	X	X	X	X	X	X	2	X	1	X	X	X	X
	CO2	2	X	1	X	2	X	X	X	2	X	X	X	X	X	2
	CO3	2	1	1	1	3	1	X	1	2	X	X	X	X	X	1
	CO4	1	1	2	2	1	1	X	2	1	X	X	X	X	X	2
	CO5	3	X	1	1	1	1	X	1	2	X	1	X	X	X	2
	CO6	2	X	1	2	1	1	X	X	X	X	X	X	X	X	1
ENG501	**CO1**	3	3	3	1	2	2	2	2	2	X	1	3	2	1	2
	CO2	3	3	2	2	1	3	3	2	2	1	1	3	2	2	2
	CO3	3	3	2	3	2	2	2	1	2	x	1	2	2	2	2
	CO4	3	3	3	3	3	2	3	1	2	1	1	3	2	3	3
	CO5	3	3	3	3	2	2	2	1	2	1	1	3	2	2	2
	CO6	3	3	2	2	1	2	2	1	2	x	1	2	2	2	2
HIS501	**CO1**	3	1	3	3	2	2	2	X	1	1	2	X	2	1	2
	CO2	3	X	2	3	1	X	1	1	X	X	2	1	2	1	2

	CO3	2	2	2	3	2	2	1	X	1	1	2	2	2	2	2
	CO4	3	3	3	3	2	3	2	2	2	3	3	2	2	3	1
	CO5	3	X	1	2	X	X	1	1	X	2	2	1	X	1	2
MAT501	**CO1**	3	X	3	3	2	X	1	X	1	1	2	2	2	3	2
	CO2	3	X	3	3	2	X	1	X	1	1	2	2	2	3	2
	CO3	2	1	3	3	1	1	1	1	2	2	3	1	3	3	3
	CO4	3	2	2	2	1	1	2	1	3	3	2	1	2	3	2
	CO5	3	1	3	3	2	1	3	X	2	1	3	X	3	2	1
	CO6	3	1	2	3	1	X	2	X	1	X	2	X	X	2	3
POL501	**CO1**	3	3	3	3	2	2	1	2	1	X	2	2	2	2	2
	CO2	3	3	3	2	2	1	1	1	2	X	2	2	2	2	2
	CO3	3	3	2	2	3	1	2	1	2	X	2	1	2	2	1
	CO4	3	3	3	2	1	1	2	2	1	X	1	X	2	2	2
	CO5	3	2	3	1	2	2	1	2	2	X	2	1	1	2	1
	CO6	2	3	3	1	2	1	2	X	1	X	2	X	1	2	1
PBI501	**CO1**	3	3	3	3	3	1	1	2	3	1	3	1	3	3	3
	CO2	3	3	X	3	X	X	X	X	X	1	3	X	X	X	3
	CO3	3	3	1	2	1	1	X	1	1	1	3	1	2	3	3
	CO4	3	3	3	3	3	1	X	3	3	1	3	2	3	3	3
Semester VI																
BAEDU601	**CO1**	3	2	1	1	1	2	1	2	1	1	1	X	1	1	1
	CO2	3	2	2	2	3	2	2	2	2	1	2	X	1	2	1
	CO3	3	3	2	2	3	2	3	2	2	2	2	X	2	3	2
	CO4	3	1	3	2	3	3	3	2	2	2	2	X	1	2	1
BAEDU602	**CO1**	3	2	1	1	1	2	1	2	1	1	1	X	1	1	1
	CO2	3	2	2	2	3	2	2	2	2	1	2	X	1	2	1
	CO3	3	3	2	2	3	2	3	2	2	2	2	X	2	3	2
	CO4	3	1	3	2	3	3	3	2	2	2	2	X	1	2	1
	CO5	3	2	1	1	2	3	1	2	3	X	2	3	1	2	3
	CO6	2	3	1	2	1	3	2	3	3	2	2	1	X	1	2

ENG601	**CO1**	3	3	3	1	3	1	1	1	3	1	1	1	1	1	1
	CO2	3	3	X	X	X	X	1	X	X	1	1	X	X	1	1
	CO3	3	3	2	3	2	1	1	1	2	1	2	1	X	1	1
	CO4	3	3	2	3	2	X	X	X	2	1	1	X	1	1	1
	CO5	3	3	X	3	2	X	X	X	X	1	1	X	X	1	1
PBC601	**CO1**	1	2	3	2	1	3	2	X	3	2	1	2	3	2	1
	CO2	2	X	2	1	2	2	1	1	1	1	X	1	1	1	2
	CO3	X	2	1	1	1	1	X	2	2	3	2	3	2	3	X
	CO4	3	1	X	3	2	2	2	2	X	2	3	X	1	1	3
	CO5	1	1	2	2	X	1	2	3	2	X	1	2	1	1	1
	CO6	1	3	1	1	3	X	1	1	2	1	2	1	2	X	1
HCP601	**CO1**	3	2	2	1	2	1	2	1	1	1	1	X	1	2	1
	CO2	3	2	2	2	3	1	1	1	1	1	1	X	1	2	1
	CO3	3	3	2	2	3	1	1	1	1	1	1	X	1	2	1
	CO4	3	3	2	2	3	1	1	1	1	1	2	1	2	2	1
ECO601	**CO1**	3	X	2	1	1	X	X	X	X	X	1	1	2	2	1
	CO2	2	1	1	1	1	1	1	X	X	1	2	1	1	X	1
	CO3	2	1	X	X	1	X	1	1	X	X	X	X	1	2	1
	CO4	2	X	2	X	1	1	X	1	X	X	X	1	1	2	2
	CO5	3	X	2	2	1	1	X	X	X	X	X	X	X	2	1
	CO6	2	1	2	2	X	X	X	X	1	X	1	1	X	2	1
ENO601	**CO1**	3	3	3	1	2	2	2	2	2	X	1	3	2	1	2
	CO2	3	3	2	2	1	3	3	2	2	1	1	3	2	2	2
	CO3	3	3	3	3	2	2	2	2	2	x	1	2	3	2	2
	CO4	3	3	3	3	3	2	3	1	2	1	1	3	2	3	3
	CO5	3	3	3	3	2	2	2	1	2	1	1	3	2	2	2
	CO6	3	3	3	2	2	2	1	1	1	x	1	2	2	2	2
HIS601	**CO1**	3	1	2	1	2	X	X	X	X	X	1	1	2	2	1
	CO2	3	1	2	1	2	1	1	X	X	2	2	2	1	X	1
	CO3	3	1	1	X	1	X	1	1	X	X	X	X	1	2	1

	CO4	3	1	2	X	2	1	X	1	X	X	X	1	2	2	2
	CO5	3	1	2	2	1	1	X	X	X	X	X	X	X	2	1
MAT601	**CO1**	3	X	3	3	3	1	1	X	1	3	3	X	3	2	2
	CO2	2	X	2	3	3	1	1	X	1	2	3	X	3	2	2
	CO3	3	1	3	3	2	X	1	1	2	3	2	1	1	2	2
	CO4	3	1	3	3	2	X	1	X	1	1	2	2	2	3	2
	CO5	3	1	2	3	1	1	2	2	1	1	2	3	3	3	3
	CO6	2	X	2	3	3	1	1	X	1	2	3	X	3	2	2
POL601	**CO1**	3	3	3	2	1	1	1	2	X	X	1	2	2	1	2
	CO2	3	3	3	2	2	2	3	2	X	X	1	3	2	1	2
	CO3	3	3	3	2	2	2	1	1	1	X	2	3	2	1	2
	CO4	3	3	3	2	3	2	2	1	X	X	1	2	1	1	2
	CO5	3	3	2	1	2	1	2	2	X	X	1	3	1	1	2
	CO6	2	3	2	1	2	1	2	2	1	X	X	1	2	1	1
PBI601	**CO1**	3	X	1	1	1	X	X	X	X	X	1	1	2	2	1
	CO2	3	X	1	1	1	1	1	X	X	1	1	1	1	X	1
	CO3	3	1	X	X	1	X	1	1	X	X	X	X	1	1	1
	CO4	3	X	1	X	1	1	X	1	X	X	X	1	1	1	1
	CO5	3	X	1	1	1	1	X	X	X	X	X	X	X	1	1
Semester VII																
BAEDU701	**CO1**	3	2	2	3	2	2	3	2	3	X	1	3	1	2	1
	CO2	3	2	3	2	2	3	2	2	1	1	1	2	1	2	1
	CO3	3	3	1	3	1	1	3	2	1	1	2	2	1	2	1
	CO4	3	1	2	2	2	1	1	1	1	X	1	1	2	2	1
	CO5	3	2	3	3	2	1	3	X	2	3	3	2	3	3	2
	CO6	3	3	1	X	3	2	1	2	1	2	2	3	3	1	3
BAEDU702	**CO1**	3	2	2	2	2	2	3	2	1	X	1	1	1	2	1
	CO2	3	2	2	2	2	2	2	2	1	X	1	1	1	2	1
	CO3	3	3	1	1	1	1	2	2	1	X	2	2	1	2	1
	CO4	3	1	2	2	2	1	1	1	1	X	1	1	2	2	1

BAEDU 703	**CO1**	3	3	2	3	2	1	2	3	1	2	1	3	2	1	2
	CO2	3	2	3	3	2	1	3	1	2	1	2	3	2	3	1
	CO3	3	1	3	X	2	2	2	2	2	2	1	3	2	2	2
	CO4	3	2	3	2	2	2	1	1	X	3	1	3	2	3	1
	CO5	3	2	2	2	2	1	2	1	2	3	2	1	2	3	2
	CO6	3	1	3	2	2	2	3	1	1	X	1	2	1	3	1
BAEDU 704	**CO1**	3	3	2	2	2	1	2	1	1	1	1	1	2	3	1
	CO2	3	2	3	3	3	X	3	1	1	1	2	X	2	3	1
	CO3	3	1	3	3	3	2	2	2	2	2	1	1	2	2	1
	CO4	3	2	3	3	2	2	1	1	1	X	1	1	2	3	1
	CO5	3	1	2	2	2	1	2	1	1	3	1	1	2	3	1
	CO6	3	1	2	2	2	X	3	1	1	X	1	1	1	3	1
BAEDU 705	**CO1**	X	X	X	2	1	X	X	1	2	3	1	X	X	X	2
	CO2	X	1	3	2	2	X	X	1	2	3	1	X	X	X	2
	CO3	X	X	X	X	2	1	X	2	X	3	1	X	X	X	2
	CO4	X	X	X	2	1	1	X	1	1	3	X	X	X	X	2
	CO5	2	X	3	3	3	2	2	1	3	3	3	X	X	1	2
	CO6	2	2	2	3	2	X	X	1	3	3	3	1	2	1	2
TSST706	**CO1**	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	CO2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	CO3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	CO4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	CO5	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	CO6	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
TMAT707	**CO1**	3	X	1	3	2	1	2	1	X	X	3	X	X	X	1
	CO2	2	X	1	3	1	2	1	1	1	X	X	X	X	X	2
	CO3	1	1	X	1	X	X	2	1	X	X	X	X	X	X	2
	CO4	3	2	X	1	X	X	2	X	X	X	3	X	1	X	1
	CO5	X	1	1	3	2	1	X	X	X	1	X	2	X	X	X
TENG7	**CO1**	3	3	3	X	3	X	X	X	3	X	X	X	X	X	X

08	**CO2**	3	3	3	X	3	X	X	1	3	X	X	X	X	X	1
	CO3	3	3	2	2	3	1	2	1	2	X	3	X	X	2	1
	CO4	3	3	2	X	3	X	2	1	2	X	2	X	X	2	2
	CO5	3	3	2	3	2	2	2	X	2	3	3	X	2	2	1
TPBI709	**CO1**	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	CO2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	CO3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	CO4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	CO5	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3

Mapping of Course Outcomes (COs) with Programme Specific Outcomes(PSOs)

College code	Course Out-comes	PSO1	PSO2	PSO3	PSO4
BAEDU101	**CO1**	3	1	2	1
	CO2	3	3	2	1
	CO3	3	2	2	1
	CO4	3	3	1	1
	CO5	3	2	2	1
BAEDU102	**CO1**	3	2	X	X
	CO2	2	X	X	1
	CO3	3	2	X	1
	CO4	2	3	3	1
	CO5	2	X	3	X
	CO6	2	1	X	1
ENG101	**CO1**	2	1	X	X
	CO2	2	X	X	X
	CO3	X	X	3	X
	CO4	X	X	3	X
	CO5	X	X	X	X

	CO6	X	X	X	X
PBC101	**CO1**	3	1	3	1
	CO2	3	1	3	1
	CO3	3	1	3	1
	CO4	3	1	3	1
HCP101	**CO1**	2	1	X	X
	CO2	2	X	X	X
	CO3	X	X	3	X
	CO4	X	X	3	X
	CO5	X	X	X	X
	CO6	X	X	X	X
ECO101	**CO1**	3	3	3	2
	CO2	3	3	2	1
	CO3	3	3	3	2
	CO4	3	3	3	3
	CO5	3	2	2	3
	CO6	3	2	2	2
ENO101	**CO1**	2	X	1	X
	CO2	1	X	1	X
	CO3	2	X	2	X
	CO4	1	X	2	X
	CO5	1	X	2	X
	CO6	1	X	2	X
HIS101	**CO1**	3	3	3	3
	CO2	3	3	3	3
	CO3	3	3	3	1
	CO4	3	3	3	1
	CO5	3	3	3	2
	CO6	3	3	3	2
MAT101	**CO1**	3	2	2	2

	CO2	3	2	3	1
	CO3	2	1	2	1
	CO4	1	2	2	1
	CO5	1	2	1	X
	CO6	1	2	1	X
POL101	**CO1**	1	1	3	2
	CO2	3	2	2	1
	CO3	2	1	3	2
	CO4	2	2	2	X
	CO5	2	2	3	1
	CO6	2	1	2	3
PBI101	**CO1**	2	3	3	2
	CO2	2	3	1	2
	CO3	1	1	1	1
	CO4	1	2	2	X
	CO5	2	3	1	2
BAEDU201	**CO1**	3	2	2	1
	CO2	2	X	2	2
	CO3	3	2	2	1
	CO4	2	3	3	3
	CO5	3	2	2	3
BAEDU202	**CO1**	3	2	X	X
	CO2	2	X	X	1
	CO3	3	2	X	1
	CO4	2	3	3	1
ENG201	**CO1**	2	1	X	X
	CO2	2	X	X	X
	CO3	X	X	3	X
	CO4	X	X	3	X
	CO5	X	X	X	X

	CO6	X	X	X	X
PBC201	**CO1**	3	1	3	1
	CO2	3	1	3	1
	CO3	3	1	3	1
	CO4	3	1	3	1
HCP201	**CO1**	2	1	X	X
	CO2	2	X	X	X
	CO3	X	X	3	X
	CO4	X	X	3	X
	CO5	X	X	X	X
	CO6	X	X	X	X
ECO201	**CO1**	3	1	2	1
	CO2	3	1	2	1
	CO3	3	1	2	1
	CO4	3	1	2	1
	CO5	3	1	2	1
	CO6	3	1	2	1
ENO201	**CO1**	2	X	1	X
	CO2	1	X	1	X
	CO3	2	X	2	X
	CO4	1	X	2	X
	CO5	1	X	2	X
	CO6	1	X	2	X
HIS201	**CO1**	3	3	3	2
	CO2	3	3	3	2
	CO3	3	3	3	2
	CO4	3	3	3	1
	CO5	3	3	3	3
	CO6	3	3	3	X
MAT201	**CO1**	1	2	2	1

	CO2	1	2	1	X
	CO3	1	2	1	X
	CO4	3	2	3	1
	CO5	3	3	2	3
	CO6	2	2	2	1
POL201	**CO1**	2	2	2	1
	CO2	3	3	2	2
	CO3	2	2	3	X
	CO4	2	3	2	1
	CO5	3	3	3	X
	CO6	2	2	2	1
PBI201	**CO1**	2	3	3	2
	CO2	2	3	1	2
	CO3	1	1	1	1
	CO4	1	2	2	X
	CO5	2	3	1	2
ENV	**CO1**	3	X	X	3
	CO2	1	1	X	3
	CO3	2	1	X	3
	CO4	2	X	3	3
	CO5	1	X	X	3
	CO6	2	1	1	3
BAEDU301	**CO1**	3	X	1	X
	CO2	3	X	1	X
	CO3	3	X	1	X
	CO4	3	X	1	X
BAEDU302	**CO1**	3	1	1	1
	CO2	3	X	1	X
	CO3	3	2	1	2
	CO4	3	X	1	X

	CO5	3	2	X	3
	CO6	2	3	1	X
ENG301	**CO1**	2	1	X	X
	CO2	2	X	X	X
	CO3	X	X	3	X
	CO4	X	X	3	X
	CO5	X	X	X	X
	CO6	X	X	X	X
PBC301	**CO1**	3	2	3	1
	CO2	3	1	2	1
	CO3	3	2	3	1
	CO4	3	1	3	1
HCP301	**CO1**	2	1	X	X
	CO2	2	X	X	X
	CO3	X	X	3	X
	CO4	X	X	3	X
	CO5	X	X	X	X
	CO6	X	X	X	X
ECO301	**CO1**	3	3	3	2
	CO2	2	2	2	1
	CO3	2	2	3	2
	CO4	1	3	3	3
	CO5	3	2	2	3
	CO6	1	1	1	1
ENO301	**CO1**	3	3	3	3
	CO2	3	3	3	3
	CO3	3	3	2	3
	CO4	3	3	3	3
	CO5	3	3	3	x
	CO6	3	3	3	3

HIS301	**CO1**	3	3	3	1
	CO2	3	3	3	1
	CO3	3	3	3	3
	CO4	3	3	3	1
	CO5	3	3	3	1
	CO6	3	3	3	2
MAT301	**CO1**	3	3	3	1
	CO2	3	2	2	1
	CO3	3	2	3	2
	CO4	2	3	3	3
	CO5	2	2	2	3
POL301	**CO1**	2	2	2	1
	CO2	3	3	2	2
	CO3	2	2	3	X
	CO4	2	3	2	1
	CO5	3	3	3	X
	CO6	2	2	2	1
PBI301	**CO1**	2	3	3	2
	CO2	2	3	1	2
	CO3	1	1	1	1
	CO4	1	2	2	X
	CO5	2	3	1	2
BAEDU401	**CO1**	3	1	2	2
	CO2	3	1	2	2
	CO3	3	1	2	2
	CO4	3	1	2	3
	CO5	2	2	3	1
	CO6	3	3	2	1
BAEDU402	**CO1**	3	1	2	2
	CO2	3	1	2	2

	CO3	3	1	2	2
	CO4	3	1	2	3
ENG401	**CO1**	2	1	X	X
	CO2	2	X	X	X
	CO3	X	X	3	X
	CO4	X	X	3	X
	CO5	X	X	X	X
	CO6	X	X	X	X
PBC401	**CO1**	3	2	1	1
	CO2	3	3	3	3
	CO3	3	1	3	1
	CO4	3	1	1	1
HCP401	**CO1**	2	1	X	X
	CO2	2	X	X	X
	CO3	X	X	3	X
	CO4	X	X	3	X
	CO5	X	X	X	X
	CO6	X	X	X	X
ECO401	**CO1**	3	1	2	1
	CO2	3	1	2	1
	CO3	3	1	2	1
	CO4	3	1	2	1
	CO5	3	1	2	1
	CO6	3	1	2	1
ENO401	**CO1**	3	3	3	3
	CO2	3	3	3	3
	CO3	3	3	2	3
	CO4	3	3	3	3
	CO5	3	3	3	x
	CO6	3	3	3	3

HIS401	**CO1**	3	3	3	3
	CO2	3	3	3	2
	CO3	3	3	3	1
	CO4	3	3	3	1
	CO5	3	3	3	1
	CO6	3	3	3	1
MAT401	**CO1**	3	2	2	X
	CO2	2	2	3	1
	CO3	3	2	2	X
	CO4	2	2	2	1
	CO5	3	3	2	2
	CO6	3	2	1	2
POL401	**CO1**	1	2	3	2
	CO2	3	3	2	X
	CO3	1	2	3	2
	CO4	1	2	2	1
	CO5	2	X	3	2
	CO6	2	3	2	X
PBI401	**CO1**	2	3	3	2
	CO2	2	3	1	2
	CO3	1	1	1	1
	CO4	1	2	2	X
	CO5	2	3	1	2
BAEDU501	**CO1**	3	3	X	2
	CO2	3	2	2	3
	CO3	3	3	2	3
	CO4	3	3	2	3
BAEDU502	**CO1**	3	3	X	2
	CO2	3	2	2	3
	CO3	3	3	2	3

	CO4	3	3	2	3
	CO5	2	3	2	1
	CO6	3	2	3	2
ENG501	**CO1**	2	X	X	X
	CO2	1	X	X	X
	CO3	2	X	X	X
	CO4	1	X	2	X
	CO5	X	X	2	X
	CO6	X	X	2	X
PBC501	**CO1**	2	1	3	2
	CO2	3	1	2	3
	CO3	2	2	1	1
	CO4	2	2	1	1
	CO5	1	1	2	2
	CO6	1	3	2	1
HCP501	**CO1**	2	1	2	2
	CO2	2	1	2	2
	CO3	2	1	1	1
	CO4	2	2	1	1
ECO501	**CO1**	1	X	X	1
	CO2	1	X	X	X
	CO3	1	X	X	X
	CO4	1	X	1	X
	CO5	1	X	X	1
	CO6	1	1	X	1
ENG501	**CO1**	3	3	3	3
	CO2	3	3	3	3
	CO3	3	3	2	3
	CO4	3	3	3	3
	CO5	3	3	3	x

	CO6	3	3	3	3
HIS501	**CO1**	3	1	2	2
	CO2	3	2	2	1
	CO3	1	1	2	1
	CO4	1	2	1	1
	CO5	1	2	1	X
MAT501	**CO1**	3	3	2	X
	CO2	3	1	2	2
	CO3	2	2	1	1
	CO4	3	2	1	1
	CO5	2	2	2	2
	CO6	3	3	2	1
POL501	**CO1**	1	1	2	2
	CO2	3	2	2	X
	CO3	2	X	1	2
	CO4	2	2	2	X
	CO5	1	2	2	1
	CO6	3	2	2	2
PBI501	**CO1**	3	1	2	1
	CO2	3	1	2	1
	CO3	3	1	2	1
	CO4	3	1	2	1
BAEDU601	**CO1**	3	X	1	2
	CO2	3	X	2	3
	CO3	3	X	1	3
	CO4	3	X	2	3
BAEDU602	**CO1**	3	X	1	2
	CO2	3	X	2	3
	CO3	3	X	1	3
	CO4	3	X	2	3

	CO5	2	3	3	1
	CO6	2	1	3	1
ENG601	**CO1**	2	X	X	X
	CO2	X	X	X	X
	CO3	2	X	2	X
	CO4	X	X	2	X
	CO5	X	X	2	X
PBC601	**CO1**	1	2	3	2
	CO2	2	1	1	1
	CO3	2	1	1	1
	CO4	1	3	2	2
	CO5	3	2	2	3
	CO6	1	1	1	2
HCP601	**CO1**	2	2	3	2
	CO2	2	2	1	2
	CO3	2	1	1	1
	CO4	2	3	2	2
ECO601	**CO1**	1	X	X	X
	CO2	1	X	1	X
	CO3	X	X	X	X
	CO4	1	X	X	X
	CO5	X	X	X	X
	CO6	X	X	X	X
ENO601	**CO1**	3	3	3	3
	CO2	3	3	3	3
	CO3	3	3	2	3
	CO4	3	3	3	3
	CO5	3	3	3	x
	CO6	3	3	3	3
HIS601	**CO1**	2	2	1	2

	CO2	2	2	2	1
	CO3	1	1	1	1
	CO4	2	1	X	1
	CO5	1	1	X	1
	CO6	1	1	X	X
MAT601	**CO1**	3	3	3	2
	CO2	3	2	3	2
	CO3	2	2	3	1
	CO4	2	3	2	2
	CO5	2	2	2	2
	CO6	2	2	3	1
POL601	**CO1**	2	2	2	1
	CO2	1	2	1	2
	CO3	2	2	1	2
	CO4	2	1	2	1
	CO5	2	2	2	X
	CO6	2	X	2	X
PBI601	**CO1**	1	1	X	X
	CO2	1	X	1	X
	CO3	X	X	X	X
	CO4	1	X	X	X
	CO5	X	X	X	X
BAEDU701	**CO1**	3	3	1	1
	CO2	3	2	1	1
	CO3	2	1	1	X
	CO4	2	3	1	2
	CO5	3	2	1	3
	CO6	2	3	1	2
BAEDU702	**CO1**	3	X	1	1
	CO2	3	X	1	1

	CO3	2	1	1	X
	CO4	2	X	1	X
BAEDU703	**CO1**	3	1	3	2
	CO2	3	2	2	X
	CO3	3	3	2	2
	CO4	3	X	1	3
	CO5	3	2	2	3
	CO6	3	1	1	1
BAEDU704	**CO1**	3	1	3	2
	CO2	3	2	1	X
	CO3	3	1	2	1
	CO4	3	X	X	X
	CO5	3	1	2	3
	CO6	3	X	1	1
BAEDU705	**CO1**	2	1	X	X
	CO2	2	1	X	X
	CO3	2	1	X	X
	CO4	2	1	X	X
	CO5	2	1	X	3
	CO6	2	3	X	3
TSST706	**CO1**	3	3	3	3
	CO2	3	3	3	3
	CO3	3	3	3	3
	CO4	3	3	3	3
	CO5	3	3	3	3
	CO6	3	3	3	3
TMAT707	**CO1**	2	3	X	1
	CO2	2	2	1	1
	CO3	3	1	X	X
	CO4	2	2	1	2

	CO5	1	X	1	X
TENG708	**CO1**	3	3	3	X
	CO2	3	3	3	X
	CO3	3	3	2	2

Course Outcomes (COs) of B.Sc. B.Ed.

	CO4	3	3	2	X
	CO5	3	3	2	3
TPBI709	**CO1**	3	3	3	3
	CO2	3	3	3	3
	CO3	3	3	3	3
	CO4	3	3	3	3
	CO5	3	3	3	3

Sem.	Course Name	Course Code	Course Outcome	
Sem.-I	**Education in Emerging Indian Society**	**BSCEDU101**	**CO1**	Understand and compare evolution of Education in India during Vedic, Buddhist, Medieval and British period.
			CO2	Analyse recommendations of various Education commissions since Independence
			CO3	Summarise educational provision in Indian constitution with special reference to Right to Education
			CO4	Explain the role of education for social and cultural change
			CO5	Assess the relationship of education with various economic issues such as poverty, inequality and poverty.
Sem.-I	**School Organization and Administration**	**BSCEDU102**	**CO1**	Describe the Concept and Principles of school management
			CO2	Maintain Various Components of School Plant
			CO3	Prepare plans at institution level
			CO4	Maintain school records and conduct co-curricular activities
			CO 5	Develop Qualities Of a good Teacher
			CO 6	Construct Time Table using its Principles
Sem.-I	**English Compulsory**	**ENG101**	**CO1**	Critically analyse the poetry and prose text and comprehend the passage from prose text
			CO2	Apply communication skills in a diverse society and learn at self-pace.
			CO3	Compose paragraphs of descriptive and narrative nature
			CO4	Translate from vernacular to English
			CO 5	Modify sentences from active to passive and vice versa
			CO 6	Use modals and determiners in sentences
Sem.-I	**Punjabi**	**PBC101**	**CO1**	Analyse Adhunik Punjabi Kavita (modern Punjabi poetry)

	Compulsory		**CO2**	Understand Punjabi grammar, essay writing and composition
			CO3	Summarise the given paragraph in their own words
			CO4	Compose essays in Punjabi writing
Sem.-I	**History & Culture of Punjab**	**HCP101**	**CO1**	Understand ancient Punjab and historical sources with special reference to Harappan Culture
			CO2	Explain political, social, economic and religious life of people of Rig Vedic and Later Vedic Age
			CO3	Analyse the origin and evolution of caste system
			CO4	Illustrate historical importance of the epics Ramayana and Mahabharata
			CO 5	Describe impact of Alexander's Invasion
			CO 6	Know about important historical places of Punjab
Sem.-I	**Mathematics**	**MAT101**	**CO1**	Comprehend special properties of circles, parabola, ellipse and hyperbola, conjugate hyperbola, asymptote of hyperbola, rectangular hyperbola.
			CO2	Solve problems on Transformation of axes, joint equation of pair of straight lines and angle between them, joint equation of lines joining origin to the intersection of a line and a curve.
			CO3	Know about Hyperbolic functions, their differentiation .learn successive differentiation and Leibnitz's theorem.
			CO4	Determine Limits and continuity at a point or an interval. Also distinguishes between types of discontinuity at a point.
			CO5	Analyze functions and their graphs and learn to produce rigorous proofs of results that arise in the context of calculus, Geometric value theorems.
			CO6	Apply the concepts of real numbers, geometrical interpretation, and De Moivre theorem, functions of complex variables and rank of matrix.
Sem.-I	**Paper I (Inorganic Chemistry-A)**	**CHM101A1**	**CO1**	Understand the essential facts relating inorganic chemistry concepts.
			CO2	Comprehend Atomic Structure, Periodic properties of elements.
			CO3	Describe Chemistry of Noble Gases.

			CO4	Know about *s*-Block Elements.
			CO5	Explain Chemical Bonding(V.B.T, VSEPR , hybridization MOT)
			CO6	Determine the percentage ionic character from dipole moment and electronegative difference.
Sem.-I	**Paper II (Organic Chemistry-A)**	**CHM101A2**	**CO1**	Understand the structure and bonding of organic compounds
			CO2	Comprehend mechanisms of different organic reactions
			CO3	Describe alkanes and cycloalkanes and including their synthesis and chemical reactions
			CO4	Know about optical isomerism in organic compounds
			CO5	Explain geometrical isomerism and conformational isomerism in organic compounds
			CO6	Understand mechanism of free radical halogenations of alkanes
Sem.-I	**Paper III (Physical Chemistry-A)**	**CHM101A3**	**CO1**	Acquire the knowledge of mathematical concepts and its application in evaluation of analytical data
			CO2	Explain gaseous state and deviation in their behaviour from ideal gases behaviour
			CO3	Know about Maxwell distribution of molecular velocity, collision number and mean free path.
			CO4	Describe of reaction, rate of reaction ,kinetics and their mechanism
			CO5	Understand the effect of temperature on rate of reaction , collision theory , catalysis and radioactive decay
			CO6	To understand the Michaelismenten equation foe enzyme catalysis and its mechanism
Sem.-I	**Physics Paper A (Mechanics-I)**	**PHY101A**	**CO1**	Know about spherical and coordinate system
			CO2	Understand the concept of centre of mass ,angular momentum and various relationships of momentum
			CO3	Explain motion under force obeying inverse square law.
			CO4	Comprehend the important connections between theory and experiment.
			CO5	Analyse Newton's law of motion and conservation principles.
			CO6	Apply vector theorems of mechanics and interpret the results.

Sem.-I	**Physics - Paper B (Vibrations, Waves & E.M. Theory-I)**	**PHY101B**	**CO1**	Understand the decay of free vibrations due to damping, types of damping and electromagnetic Damping.
			CO2	Explain transient and steady state behaviour and power supply to an oscillator and its vibration with frequency.
			CO3	Know about simple harmonic motions, Torsional Pendulum, and transverse vibrations
			CO4	Analyse the significance of transverse wave and wave equation.
			CO5	Comprehend the concept of simple harmonic vibrations of same frequency and different frequency
			CO6	Use Lissajous figures to understand simple harmonic vibrations of same frequency and different frequencies
Sem.-I	**Physics- Paper C (Electricity & Magnetism-I)**	**PHY101C**	**CO1**	Know the vocabulary and concepts of physics as it applies to: Principles of Electric Fields and Gauss's Law.
			CO2	Understand the relationship between electrical charge, electrical field, electrical potential
			CO3	Use electromagnetic theory and principles in a wide range of Applications and Learn a variety of advanced mathematical methods and computer technique
			CO4	Apply a variety of advanced mathematical methods and computer techniques.
			CO5	Analyse what the electric field and electric potential in, and around, a conductor look like
Sem.-I	**Botany**	**BOT101**	**CO1**	Understand the diversity in lower plants with their structural differentiation and life cycle.
			CO2	Learn the diversity in various life forms of the plant kingdom.
			CO3	Extend a systematic study of algae and fungi.
			CO4	Know about basic structural unit of life i.e. cell and its organelles.
			CO5	Extrapolate the structural and cytological basis of functional differentiation in plants.
			CO6	Extend the study of prokaryotic and eukaryotic diversity of life forms.
Sem.-I	**Zoology**	**ZOO101**	**CO1**	Know lower and medically important non chordates, their life cycle and preventive measures.

			CO2	Identify and Classify thenon-chordatesup to orders.
			CO3	Explain the prokaryotic and eukaryotic diversity of life forms.
			CO4	Gain knowledge about basic structural unit of life that is cell and its organelles
			CO5	Demonstrate the principal and application of microscopy, fixative techniques and culture the microorganism like amoeba, paramecium.
			CO6	Differentiate between normal and cancer cell and its type.
Sem.-I	**School Related Practicum**	**BSCEDU103**	Students are taken for various field visits as prescribed in syllabus.	
Sem.-I	**Life Skill Training**	**BSCEDU104**	Students are given training for skill of communication and skill of creative thinking through activities.	
Sem.-II	**Philosophical & Sociological Foundations of Education**	**BSCEDU201**	**CO1**	Define the concept and types of education
			CO2	Understand the philosophy of educational thinkers of India with special reference to Guru Nanak Dev Ji, Mahatma Gandhi, Rabindra Nath Tagore and Swami Vivekananda.
			CO3	Identify relationship between philosophy and education, Sociology and education
			CO4	Compare education with training, instruction and indoctrination
			CO5	Describe the relationship of education with socio cultural change, modernization and social mobility.
Sem.-II	**Psychological Foundations of Education**	**BSCEDU202**	**CO1**	Associate psychology and education
			CO2	Apply the theories of intelligence for its measurement
			CO3	Understand the causes of individual differences with special reference to aptitude, attitude and interest.
			CO4	Administer the recent trends in education of exceptional children.
Sem.-I	**English Compulsory**	**ENG201**	**CO1**	Critically analyse the poetry and prose text and comprehend the unseen passage from prose text
			CO2	Apply communication skills in a diverse society and learn at self-pace.
			CO3	Design personal and official letters

			CO4	Translate from vernacular to English
			CO 5	Modify direct speech to indirect speech
			CO 6	Use prepositions and conjunctions in sentences
Sem.-I	**Punjabi Compulsory**	**PBC201**	**CO1**	Study Punjabi story writers and their writings.
			CO2	Develop skill of writing advertisement for daily life
			CO3	Illustrate idioms in sentences
			CO4	Apply principles of grammar in language
Sem.-I	**History & Culture of Punjab**	**HCP201**	**CO1**	Describe social, economic and religious life of people during the Mauryan Empire
			CO2	Explain the impact of Buddhism and Jainism on Punjab with special reference to 4th Buddhist council
			CO3	Analyse the impact of Kanishka's rule on Punjab
			CO4	Illustrate salient features of Gandhara school of art and cultural and scientific developments during the rule of Guptas
			CO 5	Understand developments in literature and education and depiction of Punjab in accounts of Chinese travellers Fahien and Hwen Tsang
			CO 6	Know society and culture of Punjab on the eve of the Turkish Invasion
Sem.-II	**Mathematics**	**MAT201**	**CO1**	Apply Integral Calculus to find arc length of a curve, arc length of a parametric curves area under a curve, surface area, and volume of revolution, curvature, volute and involute and chord of curvature.
			CO2	Derive reduction formulae for complex integrations and hence integrate functions of much higher degree which are applicable in real life situations.
			CO3	Explain and apply Euclid's algorithm on synthetic division to find roots of polynomials.
			CO4	Implement transformation of the equations to solve roots. Also solve cubic using Cardon's method and biquadratic using Descartes method & Ferrari's method.
			CO5	Acquire knowledge about sphere, cylinders as a surface, and different kinds of cylinders such as right

				circular, elliptic, hyperbolic and parabolic cylinders in standard form.
			CO6	Comprehend equation of cone, ellipsoid, hyperboloid, paraboloid in standard form.
Sem.-II	**Paper V (Inorganic Chemistry-B)**	**CHM201A1**	**CO1**	Appraise p-block elements and chemical bonding.
			CO2	Understand close packing in ionic solids and radius ratio rule.
			CO3	Comprehend lattice energy and Born Haber cycle.
			CO4	Know about polarising power and polarisability using fajan's rule.
			CO5	Describe hydrides, oxides, oxyacids of p-block elements.
			CO6	Know about the basics properties of halogens, interhalogens and polyhalides.
Sem.-II	**Paper VI (Organic Chemistry-B)**	**CHM201A2**	**CO1**	Comprehend alkenes and cycloalkenes including their synthesis and chemical reactions
			CO2	Know about dienes and alkynes incorporating their methods of formation ,structures and chemical reactions
			CO3	Understand the arenes and aromaticity in organic compounds
			CO4	Describe mechanisms of aromatic electrophilic substitutions reactions
			CO5	Appraise methods of formation and chemical reaction of alkyl halides and aryl halides
			CO6	Understand the substitution at allylic and vinylic position of alkenes.
Sem.-II	**Paper VII (Physical Chemistry-B)**	**CHM201A3**	**CO1**	Appraise thermodynamics, first law of thermodynamics.
			CO2	Understand the expansion of ideal gases under isothermal and adiabatic conditions
			CO3	Describe standard state and enthalpy of formation using Hess's law
			CO4	Know colloidal state, its classifications ,sols ,emulsions and gels
			CO5	Comprehend ideal and non-ideal solutions and their colligative properties.
			CO6	Learn how to determine colligative properties.
Sem.-II	**Paper A**	**PHY201A**	**CO1**	Know about rigid body motion, Euler's equation.

	(Mechanics-II)		**CO2**	Understand various transformations, inertial and non-inertial frames and Foucault's pendulum.
			CO3	Explain the concept of stationary universal frame of reference and Michelson Morley experiment.
			CO4	Comprehend special theory of relativity, Lorentz transformations and relativistic effect.
			CO5	Analyse mass energy equivalence, relativistic momentum and energy and concept of Murkowski space.
Sem.-II	**Paper B (Vibrations, Waves & E.M. Theory-II)**	**PHY201B**	**CO1**	Understand the decay of free vibrations due to damping, types of damping and Electromagnetic damping.
			CO2	Explain transient and steady state behaviour and power supply an oscillator and its vibration with frequency
			CO3	Calculate what happens when waves move from one medium to another and be able to explain dispersion, group and phase velocity
			CO4	Comprehend applications of transverse and longitudinal waves
			CO5	Solve wave equation and understand significance of transverse waves
Sem.-II	**Paper C(Electricity & Magnetism II)**	**PHY201C**	**CO1**	Know the Principles of Magnetic Fields, sources of Magnetic Fields, Faraday's Law, Inductance, Alternating Current Circuits, and Electromagnetic Waves
			CO2	Solve mathematical problems involving magnetic forces, fields, and various electro-magnetic Circuits.
			CO3	Apply mathematical methods to understand electromagnetic problems to real life situations
			CO4	Use Maxwell's equations in calculations featuring: both free and stationary EM waves.
			CO5	Understand electromagnetic induction and its applications.
Sem.-II	**Botany**	**BOT201**	**CO1**	Understand how different life forms have evolved from simpler to complex ones.
			CO2	Infer developmental stages from lower to higher plants.
			CO3	Identify and explain the life cycle of Bryophytes (the amphibians of plant kingdom).
			CO4	Learn the genetic basis of evolutionary trends in plants.

			CO5	Understand the role of genetics in plant differentiation.
			CO6	Analyse various aspects of hereditary trends observed in successive generations.
Sem.-II	**Zoology**	**ZOO201**	**CO1**	Classify the Non-Chordates from Platyhelminthes to Hemichordate
			CO2	Describe the social and medically important insects.
			CO3	Study the external morphology and anatomy of the non-chordates.
			CO4	Gain the conceptual knowledge of ecology, ecosystem, ecological factors and Renewable and non-renewable resources
			CO5	Understand the values of biotic communities, natural resources, environment degradation and its conservation
			CO6	Summarize the IUCN Red list, conservation projects, Wildlife (Protection) Act, 1972
Sem.-II	**School Related Practicum**	**BSCEDU203**	Students are taken for various field visits as prescribed in syllabus.	
Sem.-II	**Life Skill Training**	**BSCEDU204**	Students are given training for skill of communication and skill of creative thinking through activities.	
Sem.-II	**Env. & Road Safety Edu. & Violence against Women & Children**	**ENV**	**CO1**	Understand the value of environment
			CO2	Drive the knowledge of road safety provisions
			CO3	Discuss various laws regarding violence against women and children
			CO4	Develop basic knowledge about the environment and its allied problems
			CO5	Analyse the roles of organisms as part of interconnected food webs, populations, communities, and ecosystems
			CO6	Discuss about the environment and the resources to act at our own level to protect them.
Sem.-III	**Human Development**	**BSCEDU301**	**CO1**	Recognize the role of education in human development
			CO2	Analyse various aspects of human development
			CO3	Differentiate various stages of human development
			CO4	Generalize different theories of human development

Sem.-III	**School Community Participation**	**BSCEDU302**	**CO1**	Describe the concept of Universalization of Elementary Education and its significance
			CO2	Discuss concept of Sarva Shiksha Abiyan and its implementation
			CO3	Define the meaning and concept of Life Long Education
			CO4	Analyse techniques and causes of slow progress
			CO 5	Identify concept and implementation of vocationalization of Education
			CO 6	Assess the role of NCERT, SCERT, SIE, DIET, Village Education Committees, NGO's and Parent-Teacher Associations.
Sem.-III	**English Compulsory**	**ENG301**	**CO1**	Critically analyse the poetry and prose text of book English for Empowerment.
			CO2	Apply communication skills in a diverse society and learn at self-pace.
			CO3	Compose paragraphs from the post reading activities suggested in the prescribed text
			CO4	Design notes from paragraphs
			CO5	Reconstruct a paragraph using appropriate punctuation marks
			CO6	Transform sentences from one kind to another
Sem.-III	**Punjabi Compulsory**	**PBC301**	**CO1**	Have knowledge of Punjabi nibandh writers and develop understanding of punjabi culture by reading Punjabi nibandh (essay) thoroughly.
			CO2	Understand Punjabi language and develop letter writing skill
			CO3	Know origin and development of Punjabi language
			CO4	Define and classify bhavansh.
Sem.-III	**History & Culture of Punjab**	**HCP301**	**CO1**	Describe the Culture in Punjab during Turko-Afghan and Mughal rule
			CO2	Imbibe the teachings of Guru Nanak
			CO3	Analyse the features of Bhakti Movement and Sufism
			CO4	Understand the contribution of Guru Angad Dev, Guru Amar Das and Guru Ramdas for development of Sikhism
			CO5	Illustrate the transformation of Sikhism with special reference to martyrdom of Guru Arjun Dev, Guru

				Teg Bahadur and New Policy of Guru Hargobind
			CO6	Know the post Khalsa activities of Guru Gobind Singh
Sem.-III	**Mathematics**	**MAT301**	**CO1**	Know about limit and continuity, Partial differentiation, implicit function, Euler's theorem on homogeneous function, Taylor's theorem, parallelogram, and law of forces, Equilibrium of three forces acting at a point, triangle law of forces, Lami's theorem, Moments, couples and friction.
			CO2	Verify Exact differential equation; define the geometrical meaning of differential equation.
			CO3	Derive orthogonal Trajectory and envelope of the differential equation.
			CO4	Develop equilibrium relationships for non-accelerating two or three dimensional rigid bodies acting on by external forces and moments.
			CO5	Understand and compute equilibrium of three coplanar forces acting on a rigid body and solve simultaneous differential equations.
Sem.-III	**Paper IX (Inorganic Chemistry-A)**	**CHM301A1**	**CO1**	Explain the bonding, magnetic as well as spectral properties of transition metal complexes
			CO2	Understand the Chemistry of Coordination Compounds
			CO3	Demonstration of color and spectral properties of co-ordination compounds.
			CO4	Elaboration of magnetic behaviour related to transition and inner transition metals.
			CO5	Inculcate the concepts of lanthanide and actinide contraction.
			CO6	To understand the use of coordination compounds.
Sem.-III	**Paper X (Organic Chemistry-A)**	**CHM301A2**	**CO1**	Inculcate the knowledge of alcohols i.emono,di,tri hydric alcohols
			CO2	Understand the chemical reactions of vicinal glycols and glycerol.
			CO3	Describe phenols and their properties
			CO4	Understand the aldehyde and ketones
			CO5	Discuss the formation of aldehydes and ketones
			CO6	To understand the mechanism of nucleophilic addition to carbonyl compounds.

Sem.-III	**Paper XI (Physical Chemistry-A)**	**CHM301A3**	**CO1**	Understand the intermolecular forces in liquids, liquid crystals and their classifications.
			CO2	Discuss the chemical equilibrium , law of mass action and relationship and types of equilibrium constant
			CO3	Comprehension of the second law of thermodynamics, carnot cycle and its efficiency.
			CO4	Appraisal of entropy change in ideal gases and its mixing.
			CO5	Inculcate the concepts of third law of thermodynamics
			CO6	To understand the classification and structures of liquid crystals
Sem.-III	**Paper A** **(Statistical Physics & Thermodynamics-I)**	**PHY301A**	**CO1**	Understand how statistics of the microscopic world can be used to explain the thermal features of macroscopic world.
			CO2	Be able to use statistical principles in a wide range of applications and learn a variety of mathematical techniques
			CO3	Understand different classical and quantum mechanical distribution functions
			CO4	Can explain phase transitions and magnetization in magnetic system
			CO5	Familiarize with procedures for deriving the relation between thermodynamics parameters such as pressure, temperature, entropy and heat capacity from the distribution functions.
			CO6	Learn a variety of mathematical techniques.
Sem.-III	**Paper B (Optics & Lasers-I)**	**PHY301B**	**CO1**	Develop an understanding of principles of optics. And able to build connections between mathematical development and conceptual understanding.
			CO2	To build connections between mathematical development and conceptual understanding.
			CO3	Distinguish the methods of polarization by reflection, refraction and scattering.
			CO4	Learn different types of fibre and lasers along with principle, properties of laser beam.
			CO5	Understand the phenomenon of interference and diffraction.
			CO6	Apply skill to find the wavelength of spectral lines using plane diffraction grating.

Sem.-III	**Paper C (Quantum Physics-I)**	**PHY301C**	**CO1**	Learn the mathematical tools needed to solve quantum mechanics problems.
			CO2	Complete knowledge about wave-particle duality and uncertainty principle.
			CO3	Fully understand the differences between classical quantum mechanics.
			CO4	Learn how to solve Schrodinger equation for simple potentials.
			CO5	Spot, identify and relate the Eigen value problems for energy, momentum and central potentials.
			CO6	Able to solve wave equations, fundamental postulates of quantum physics.
Sem.-III	**Botany**	**BOT301**	**CO1**	To learn Fossils, their type and formation.
			CO2	To discuss the geological time scale.
			CO3	To describe general features of Fossil seed plants.
			CO4	Basic body plan of Flowering plants.
			CO5	To describe modification of different parts of plants.
			CO6	To demonstrate vegetative and reproductive morphology of plants bearing the enclosed seeds.
Sem.-III	**Zoology**	**ZOO301**	**CO1**	Classify and Identify the chordates From Protochordates to Amphibia.
			CO2	Study the basic structure of different type specimens.
			CO3	To understand how different life forms have evolved from simpler to complex ones and know about theories of origin of life and evidences of evolution.
			CO4	Gain the knowledge of structure and classification of bio-molecules, enzymes and co-enzymes.
			CO5	To analyze the composition, function, and blood grouping including Rh factor of blood.
			CO6	Demonstrate the knowledge of working of heart, ECG, blood pressure and cardiac output
Sem.-III	**School Related Practicum**	**BSCEDU303**	Students are taken for various field visits as prescribed in syllabus.	
Sem.-III	**Life Skills Training**	**BSCEDU304**	Students are given training for skill of communication and skill of creative thinking through activities.	
Sem.-IV	**Curriculum**	**BSCEDU401**	**CO1**	Describe the nature and Characteristics of curriculum

	Development & Evaluation		**CO2**	Explain the various foundations and components of curriculum
			CO3	Differentiate among goals, aims and objectives, general objectives, course objectives and lesson objectives
			CO4	State levels of course content
			CO5	Discuss the need and guiding principles of curriculum development
			CO6	Analyse different methods and media used in transactional processes and different types of evaluation
Sem.-IV	**Guidance And Counseling**	**BSCEDU402**	**CO1**	Classify different types of guidance
			CO2	Describe the concept of counselling and differentiate between guidance and counselling
			CO3	Analyse different tools and techniques of guidance and Counselling
			CO4	Organize guidance Program at school Level
Sem.-IV	**English Compulsory**	**ENG401**	**CO1**	Critically analyse the poetry and prose text of book English for Empowerment.
			CO2	Apply communication skills in a diverse society and learn at self-pace.
			CO3	Compose paragraphs from the post reading activities suggested in the prescribed text
			CO4	Prepare newspaper, official and research reports
			CO5	Illustrate idioms and phrases in sentences
			CO6	Reconstruct sentences by combining pairs of sentences and develop sentences using the given words as different parts of speech
Sem.-IV	**Punjabi Compulsory**	**PBC401**	**CO1**	Develop interest in reading Punjabi ikangi (one act play)
			CO2	Know contribution of Punjabi ikangikaar
			CO3	Know shabadshrenian in Punjabi grammar
			CO4	Identify dialects (upbhasha) of Punjabi
Sem.-IV	**History & Culture of Punjab**	**HCP401**	**CO1**	Describe the Sikh struggle for soverignity from 1716-1765
			CO2	Explain the role of Dal Khalsa, Rakhi, Gurmat, Misls and Banda Bahadur

			CO3	Analyse the Ranjit Singh's rise to power along with civil and military administration
			CO4	Understand the political development from 1839-1845
			CO5	Illustrate new developments in Literature, art and architecture in Punjab
			CO6	Visualise social life with special reference to position of women, festivals, dance and games in Punjab
Sem.-IV	**Mathematics**	**MAT401**	**CO1**	Distinguish between concept of sequence and series and determine the limit of a sequence and convergence and approximate sum of series.
			CO2	Derive the solution of Bessel's equations, Legendre's equation, their recurrence relations and orthogonal properties.
			CO3	Define, differentiate and integrate functions represented as a power series expansion, including Taylor's series and solve related problems.
			CO4	Know about Laplace transform, inverse Laplace transform and inverse Laplace trabsform and apply these to solve problems.
			CO5	Determine the dynamic response of the system to applied loadings, using Newton's law and understand the concept of simple Harmonic motion elastic string, curvilinear motion of a particle.
			CO6	Apply the principle of work and energy and the principle of impulse and momentum to mechanical system.
Sem.-IV	**Paper XIII (Inorganic Chemistry-B)**	**CHM401A1**	**CO1**	Understand the chemistry of Lanthanides and Actinides elements; their properties and separation.
			CO2	Inculcate the concept of acids and bases.
			CO3	Comprehension of theories to understand the classification of acids-bases.
			CO4	Appraisal of oxidation and reduction. to use redox potential data.
			CO5	Describe non-aqueous solvents; their types and properties; principles involved in the extraction of elements.
			CO6	To understand the physical properties of different solvents.
Sem.-IV	**Paper XIV (Organic**	**CHM401A2**	**CO1**	Acquire the knowledge of carboxylic acids, halo acids, malic acids, tartaric acid and citric acids.

	Chemistry-B)		**CO2**	Classification of the Organic Compounds of Nitrogen.
			CO3	Detection of elements and functional groups in simple organic compounds.
			CO4	Understanding of ethers, epoxides, oils & detergents.
			CO5	To compare the preparation of alkyl and aryl amines.
			CO6	To understand the cleavage and auto oxidation of ethers and epoxide.
Sem.-IV	**Paper XV (Physical Chemistry-B)**	**CHM401A3**	**CO1**	Learn the necessary chemical knowledge about electrochemistry.
			CO2	Appraisal of electrical transport of electrolytes, conductance with dilution.
			CO3	Understanding of Nernst distribution law and thermodynamic derivation.
			CO4	Description of type of reversible electrode, E.M.F. of cell and electrochemical series.
			CO5	Comprehension of electrolytic and galvanic cell, computation of E.M.F., thermodynamic quantities of cell reactions.
			CO6	To know about the applications of concentration cell.
Sem.-IV	**Paper A (Statistical Physics & Thermodynamics-II)**	**PHY401A**	**CO1**	Understand the statistical relation with, various terms and cycles of thermodynamics.
			CO2	Understand the application of thermodynamics to thermoelectric Effect and various Maxwell's thermodynamic relations and applications.
			CO3	Understand the efficiency of Carnot's engine and significance of first law and second law of thermodynamics.
			CO4	Ability to evaluate entropy changes in wide range of processes and determine the reversibility and irreversibility of a process from such calculations.
			CO5	Understand the interrelationship between thermodynamic functions and ability to use such relationships to solve practical problems.
			CO6	To know the Clayperon equation and thermo dynamical treatment of Joule-Thomson effect.
Sem.-IV	**Paper B (Optics &Lasers-II)**	**PHY401B**	**CO1**	To know the concept of interaction of light with matter.
			CO2	To study the uses of Einstein's coefficients and their relations.

			CO3	To discuss the theory of broadening in laser and its type.
			CO4	To learn about the different types of lasers, its principles, properties of laser beam.
			CO5	To get acquainted with applications of lasers in holography and reconstruction of image.
			CO6	To study the concept of fibre optics and its applications.
Sem.-IV	**Paper C (Quantum Physics-II)**	**PHY401C**	**CO1**	To study the excitation of atoms with radiation by transition probability, spontaneous transition and selection rules.
			CO2	To understand the spectrum of hydrogen atom, Frank-Hertz experiment, line structure and Zeeman effect.
			CO3	To get the knowledge of spin orbit coupling including electron magnetic moment and total angular momentum.
			CO4	To learn about the exchange symmetry of wave functions, shells and subshells in atoms and in atomic spectra.
			CO5	To recognize regularities in atomic spectra, x-ray spectra, absorption spectra and interaction energy.
			CO6	To get the exposure of molecular bonding, symmetric structures, rotational, vibrational and electronic level and spectra of molecules.
Sem.-IV	**Botany**	**BOT401**	**CO1**	To Understand the highly advanced and evolved group of plants "ANGIOSPERMS" with their structural differentiation and reproduction.
			CO2	To illustrate gradual transition from seedless plants to seed plants and the origin of structural and functional complexity in the plant kingdom.
			CO3	To recognize the importance of taxonomy and species concepts.
			CO4	To understand structure development and reproduction in flowering plants – the most fascinating group of plants on earth.
			CO5	To analyze internal structure of various plant parts, their growth patterns and abnormalities in structural development.
			CO6	To describe the vast range of variation found in flowering plants for the foundation of applied branches like horticulture, floriculture, floriculture and arboriculture.

Sem.-IV	**ZOOLOGY**	**ZOO401**	**CO1**	Classify the chordates from Reptiles to Mammals and gain knowledge of type specimens..
			CO2	Identify poisonous and non-poisonous snakes and flight adaptations of birds.
			CO3	Understand the biological species concept, Micro, Macro, human evolution and fossil Dating.
			CO4	Analyze the process of Lipid metabolism by B-oxidation of fatty acids and interaction of carbohydrates and lipids etc.
			CO5	Study the structure of nephron, osmoregulation, counter current mechanism and chemical and physiological basis of skeletal muscle contraction..
			CO6	Gain the knowledge of neuron, origin and propagation of impulse along the axon and endocrinology.
Sem.-IV	**School Related Practicum**	**BSCEDU403**	Students are taken for various field visits as prescribed in syllabus.	
Sem.-IV	**Life Skill Training**	**BSCEDU404**	Students are given training for skill of communication and skill of creative thinking through activities.	
Sem.-V	**Technological Bases of education and Pedagogy**	**BSCEDU501**	**CO1**	Discuss the concept and types of educational technology
			CO2	Discriminate Various phases and levels of Teaching
			CO3	Prepare test items as per bloom's taxonomy
			CO4	Apply various models of teaching
Sem.-V	**Health and Yoga Education**	**BSCEDU502**	**CO1**	Understand the importance, concept, aims and objectives of Health Education
			CO2	Enlighten about balanced diet, infectious diseases and their control
			CO3	Impart and apply knowledge to use good postures for various purposes and first Aid
			CO4	Learn the different type of Yoga and understand their implications
			CO 5	Insight into practical aspect of Yoga in

				contemporary times
			CO 6	Assess concept of holistic health and contribution of yoga in promoting holistic health.
Sem.-V	**English Compulsory**	**ENG501**	**CO1**	Critically analyse the poetry and prose text and comprehend the passage from prose text
			CO2	Apply communication skills in a diverse society and learn at self-pace.
			CO3	Explain the prescribed play 'Driving Miss Daisy' by Alfred Ubry in their own words
			CO4	Compose essays on social and current topics in their own words
			CO 5	Modify the given sentences after identifying errors
			CO 6	Write antonyms of given words
Sem.-V	**Punjabi Compulsory**	**PBC501**	**CO1**	Madhkali Punjabi KavAdhayan.
			CO2	Main Objective of Madhkali Punjabi Adhayan.
			CO3	Explaination and Central Ideas of MadhkalipunjabiKavita.
			CO4	Introduction and Importance to punjabi Lippi.
			CO 5	To Provide knowledge of Grammar.
			CO 6	Introduction and importance of Sentence Formation.
Sem.-V	**History & Culture of Punjab**	**HCP501**	**CO1**	Explain the concept of colonialism in the context of history and culture
			CO2	Explain the concept of nationalism in the context of history and culture
			CO3	Understand the social religious reform movements with special reference to Namdharis and AryaSamaj.
			CO4	Describe the various movement of national importance such as Ghadar movement, JallianwalaBagh and Gurdwara reform movement
Sem.-V	**Mathematics**	**MAT501**	**CO1**	Determine convergence of improper integrals with

				discontinuities in their domain or infinite limits of integration.
			CO2	Learn the theory of Riemann integral, mean value theorems and use theory in solving definite integrals in different fields of science and engineering.
			CO3	Exposure on Rings, integral domains, subrings and ideals, Quotient Rings, Primes and Maximal ideals.
			CO4	Brief discussion on groups, subgroups, Lagrange's theorem, homeomorphisms, Isomorphism, Polynomial Rings.
			CO5	Demonstrate the concept of Probability, Random variables, density function, moments and moment generating functions.
			CO6	Develop the knowledge about distribution based on discrete and continuous Random variables and apply them in real world problems.
Sem.-V	**Paper XVII (Inorganic Chemistry-A)**	**CHM501A1**	**CO1**	Comprehension of crystal field theory and valence bond theory of metal ligand bonding in transition metal complexes.
			CO2	Description of thermodynamic and kinetic aspects of Metal Complexes.
			CO3	Knowledge about synthesis, structure, properties and applications of organometallic compounds of Li,Al,Hg,Sn and Ti.
			CO4	Analysis of metal-ethylenic complexes, homogeneous hydrogenation and mononuclear carbonyls
			CO5	Explanation of metalloporphyrins, nitrogen fixation and biological role of alkali and alkaline earth metal ions.
			CO6	To appraise the biological importance of Alkali and Alkaline earth metals
Sem.-V	**Paper XVIII (Organic Chemistry-A)**	**CHM501A2**	**CO1**	Appraisal of the use of spectroscopic techniques to analyze the synthesised organic compounds.
			CO2	Demonstration of infrared spectroscopy to detect the present functional groups in the given organic compounds.
			CO3	Apply the concept of nuclear magnetic resonance (NMR) spectroscopy to find the structure of the given organic compounds.
			CO4	Count the biological importance of carbohydrates.

			CO5	Understanding of aromatic character of pyrole, furan, thioophene and pyridine; comparison of their basicity.
			CO6	To interpret the NMR spectra of simple organic compounds.
Sem.-V	**Paper XIX (Physical Chemistry-A)**	**CHM501A3**	**CO1**	Description of elementary quantum mechanics, black body radiation, Schrodinger wave equation for H-atom.
			CO2	Apply the Schrodinger wave equation to find the wavefunctions of the given system to account for its stability.
			CO3	Demonstrate the use of quantum mechanics to calculate the hybridisation of atomic orbitals.
			CO4	Inculcate the knowledge of photochemical reactions and the laws governing the photochemical reactions.
			CO5	Description of fluorescence, phosphorscence and quantum yield of photochemical reactions.
			CO6	To understand the photochemistry of carbonyl compounds and alkenes
Sem.-V	**Paper A (Condensed Matter Physics-I)**	**PHY501A**	**CO1**	Understand basic concepts and mathematical methods of solid state physics.
			CO2	Explore important connections between theory, experiment, and current applications.
			CO3	Explore important connections between theory, experiment and current applications.
			CO4	Acquire knowledge about various crystal structures.
			CO5	Introducing basic concepts via diffraction method, lattice vibrations and free electrons.
			CO6	Understand about various Semiconductors, their band structures and energy-gap.
Sem.-V	**Paper B (Electronics & Solid State Devices-I)**	**PHY501B**	**CO1**	Analyse the electric circuit using network theorems.
			CO2	Understand about semiconductors and their various devices.
			CO3	Acquire knowledge about the transistors, amplifiers and their applications.
			CO4	Familiarize with the concept of Biased, Unbiased junction diodes.
			CO5	Understanding about the filters, rectifiers and smooth use of CRO.
			CO6	Reproduce the I-V characteristics of Bipolar Junction Transistors.

Sem.-V	**Paper C (Nuclear & Particle Physics-I)**	**PHY501C**	**CO1**	Acquire knowledge about nuclear and particle physics.
			CO2	Develop and communicate analytical skills in subatomic physics and develop familiarity with the vast areas of nuclear and particle physics as well as develop an interest in these subjects.
			CO3	Have deep knowledge about nuclear fission and nuclear fusion.
			CO4	Fully Understand the concept of alpha, beta gamma radiations and their properties.
			CO5	How to use reactor and know the concept of neutrons.
			CO6	To get the exposure of conservation laws and kinematics, Q-value equation, Coulomb (Rutherford) scattering cross section and distance of nearest approach
Sem.-V	**Botany**	**BOT501**	**CO1**	Understand the concept of function and metabolism of plants.
			CO2	Acquire the knowledge about Structural Diversity of various plant forms with plant differentiation.
			CO3	Learn biological aspects like nitrogen fixation and mineral nutrition.
			CO4	Describe Ecology and the role of the Environment in causing structural and functional variation in plants.
			CO5	Understand the present day problems of varied nature like pollution
			CO6	Illustrate Global Warming and conservation of natural resources
Sem.-V	**Zoology**	**ZOO501**	**CO1**	Understand the process of gametogenesis, vitellogenesis, fertilization and parthenogenesis
			CO2	Conceptual knowledge of development up to three germs layers in *Herdmania*, frog, chick etc.
			CO3	Gain knowledge of fetal membranes, mammalian placenta, their formation and functions.
			CO4	To understand the concept of Entomology, Economic Entomology and Pest Management
			CO5	Identify and classify the pest of crops, vegetables, Stored grains and medical important insects.
			CO6	Develop skill in Agriculture Practices like pest controls and nature of damage.
Sem.-V	**School Related Practicum**	**BSCEDU503**	Students are taken for various field visits as prescribed in syllabus.	

Sem.-V	**Life Skill Training**	**BSCEDU504**	Students are given training for skill of communication and skill of creative thinking through activities.	
Sem.-VI	**Educational research and statistics**	**BSCEDU601**	**CO1**	Explain the concept of educational research
			CO2	Differentiate various methods of educational research
			CO3	Use different tools of educational research
			CO4	Apply various statistical techniques in educational research
Sem.-VI	**Value Education**	**BSCEDU602**	**CO1**	Describe the concept of value and value system.
			CO2	Understand and explain various intervention strategies for value inculcation in students.
			CO3	Identify and apply various tools of value inculcation.
			CO4	Explain philosophical, sociological and psychological bases of value education.
			CO 5	Analyse the concept and factors affecting value preferences.
			CO 6	Assess concept and process of assessment of values.
Sem.-VI	**English Compulsory**	**ENG601**	**CO1**	Critically analyse the poetry and prose text and comprehend the passage from prose text
			CO2	Apply communication skills in a diverse society and learn at self-pace.
			CO3	Summarise the given paragraph in their own words
			CO4	Illustrate idioms and phrases in sentences
			CO5	Substitute the given sentence with one appropriate word
Sem.-VI	**Punjabi Compulsory**	**PBC601**	**CO1**	To provide knowledge of Punjabi novel.
			CO2	To understand various aspects of Punjabi novel.
			CO3	To make students capable to write precise.
			CO4	To motivate students to write an essay for newspaper on various topics like Cultural, Academics, Sports and Literary.
			CO5	To Provide knowledge of various aspects of

				Gurumukhi Lippi.
			CO6	Provide knowledge of various types of sentence.
Sem.-VI	**History & Culture of Punjab**	**HCP601**	**CO1**	Discuss the history of the Punjab in the post 1947 period
			CO2	Describe the new trends in social and economic life of Punjab after independence
			CO3	Analyse green revolution and its impacts
			CO4	Explain new social issues such as gender discrimination, drug menace, farmer sluiced
Sem.-VI	**Mathematics**	**MAT601**	**CO1**	Distinguish between the concepts of sequence and series and determine limits of sequence and convergence and approximate sum of series.
			CO2	Define , differentiate and integrate functions represented as a power series expansion and fourier series expansion including Taylor's series solve related problems
			CO3	Explain methods to find solution to linear, non-linear equations, ordinary differential equations using numerical methods.
			CO4	Develop the knowledge about interpolation, numerical differentiation, numerical integration, and methods of solving integrations of functions.
			CO5	To understand the concept of Linear transformations, Rank and Nullity of a linear transformations, vector space of linear transformations.
			CO6	Knowledge about Vector spaces, subspaces, Algebra of subspace, Linear span, Linear Independence and dependence of vectors, Basis and dimensions of a vector space.
Sem.-VI	**Paper XXI (Inorganic Chemistry-B)**	**CHM601A1**	**CO1**	Inculcate the knowledge of Silicones and Phosphazenes.
			CO2	Comprehension of HSAB concept, symbiosis and theoretical basis of hardness and softness.
			CO3	Knowledge about types and selection rules for electronic transitions.
			CO4	Analysis of Orgel- energy level diagram for d1 and d9 states.
			CO5	Description of magnetic properties of transition metal complexes.

			CO6	To understand symbiosis and its theoretical basis
Sem.-VI	**Paper XXII (Organic Chemistry-B)**	**CHM601A2**	**CO1**	Familiarized with Amino Acids, Peptides, Proteins and Nucleic Acids.
			CO2	Description of synthetic polymer; their types, synthesis and uses.
			CO3	Inculcate the knowledge of organic synthesis via enolates.
			CO4	Description of organometallic compounds; its types and their synthesis.
			CO5	To understand the doubal helical structure of DNA.
			CO6	To understand the preparation and reactions of amino acids.
Sem.-VI	**Paper XXIII (Physical Chemistry-B)**	**CHM601A3**	**CO1**	Learn the necessary chemical knowledge about electrochemistry.
			CO2	Appraisal of electrical transport of electrolytes, conductance with dilution.
			CO3	Understanding of Nernst distribution law and thermodynamic derivation.
			CO4	Description of type of reversible electrode, E.M.F. of cell and electrochemical series.
			CO5	Comprehension of electrolytic and galvanic cell, computation of E.M.F., thermodynamic quantities of cell reactions.
			CO6	To know about the applications of concentration cell.
Sem.-VI	**Paper A (Condensed Matter Physics-II)**	**PHY601A1**	**CO1**	Understand the concepts of Lattice dynamics, scattering of photons by phonons and in- depth
			CO2	To study Einstein and Debye theory of Specific heat of solids.
			CO3	Knowledge about magnetic materials, their classifications and dielectric properties of solids.
			CO4	Familiarize with the concept of superconductivity and formation of cooper pairs.
			CO5	Acquire knowledge about electric susceptibility, ClausiusMossotti equation ideas of material and nanoscale.
			CO6	Acquire knowledge about nanoparticles, their structure, fabrication and application of nanotechnology in various fields.
Sem.-VI	**Paper B (Electronics &**	**PHY601A2**	**CO1**	Understand about semiconductors and their various devices.

	Solid State Devices-II)		**CO2**	Acquire knowledge about the transistors. Amplifiers and their applications.
			CO3	Understand the basis of feedback amplifiers and advantages of negative voltage devices.
			CO4	Acquire knowledge about logic gates and their uses in digital electronics.
			CO5	Classify different types of FETs and demonstrate feedback amplifiers, OP-AMPs and oscillator circuits .
			CO6	To get the exposure of analog and digital communication and develop familiarities with the vast area of electronics in brief account of satellite communication.
Sem.-VI	**Paper C (Nuclear & Particle Physics-II)**	**PHY601A3**	**CO1**	Acquire knowledge in the content areas of nuclear and particle physics, focusing on concepts that are commonly used in this area.
			CO2	Develop familiarity with the vast areas of nuclear and particle physics as well as develop an interest in these subjects
			CO3	Understand the basic knowledge about standard model of elementary particles and interactions
			CO4	Understand the role of nuclear particle physics in energy production, medicine, astrophysics - for example how to search for dark matter and how to understand the origin of the elements in the universe.
			CO5	Understand basic knowledge the quark- gluons plasma.
			CO6	A basic understanding of nuclear properties and models that describe the quantum structures, decay and reactions of nuclei.
Sem.-VI	**Botany**	**BOT601**	**CO1**	Understand plant development, differentiation and regulatory mechanism,
			CO2	To learn basics in tissue culture.
			CO3	To recognize Photosynthesis its Significance, historical aspect and action spectra.
			CO4	Recall Plant wealth, economic importance.
			CO5	Illustrate cultivation practices of plants.
			CO6	Describe forest Conservation

Sem.-VI	**Zoology**	**ZOO601**	**CO1**	Summarize the Mendelian and Non-Mendelian ratios (Non allelic gene interaction), gene modifications due to incomplete dominance and Pleiotropic genes.
			CO2	Analyse the process of linkage, crossing over, gene, genetic code, mutation and inborn errors of metabolism and regulation of gene expression.
			CO3	Gain the knowledge Population and Applied genetics; gene cloning, DNA fingerprinting
			CO4	Acquire the knowledge of Sericulture, Apiculture, Lac Culture, IPM program and perspectives in IPM
			CO5	Understand the banned pesticides and also their ill effects on environment and on flora and fauna.
			CO6	Develop Skill for Entrepreneurship
Sem.-VI	**School Related Practicum**	**BSCEDU603**	Students are taken for various field visits as prescribed in syllabus.	
Sem.-VI	**Life Skill Training**	**BSCEDU604**	Students are given training for skill of communication and skill of creative thinking through activities.	
Sem.-VII	**Philosophical, Sociological and Political perspective**	**BSCEDU701**	**CO1**	Explain the discipline of education in philosophical, sociological and Political perspective.
			CO2	Discuss the contribution of eminent thinkers to education.
			CO3	Understand goals and values of emerging Indian society.
			CO4	Aware of current political issues in education special reference to human rights.
			CO5	Analyse implication of Article 21A,RTE act 2009.
			CO6	Assess the Education in 21st century, role and functions of UNESCO & UNICEF.
Sem.-VII	**The Learner Nature and Development**	**BSCEDU702**	**CO1**	Generalize various theories of personality along with its assessment
			CO2	Distinguish various theories of Learning and transfer of Learning
			CO3	Describe the concept of creativity and motivation
			CO4	Realize the importance of mental health and Develop mental hygiene
Sem.-VII	**Theory of Instructional Technology**	**BSCEDU703**	**CO1**	Describe the objectives and their formulation of Instructional design.
			CO2	Explain the principles of instructional design and apply them to develop design of instruction.

			CO3	Understand concept, process, and barriers of communication and apply optimizing communication skill for oral performance.
			CO4	Compare different media and their application.
			CO5	Analyse the concept, process and application of Flanders's Interaction Categories Systems, team teaching, group interaction, Simulation teaching.
			CO6	Discuss the need, concept, principles, rational, types of programmed Instruction and apply it to development of program.
Sem.-VII	**School Management**	**BSCEDU704**	**CO1**	Appraise various elements of school management and classroom management.
			CO2	Develop leadership and decision making abilities in themselves
			CO3	Apply TQM in Education
			CO4	Analyse the working of SMC at school level
			CO5	Use ICT in various components of educational management
			CO6	Assess various aspects of supervision
Sem.-VII	**Information & Communication Technology (ICT) in Education**	**BSCEDU705**	**CO1**	Define basic computer hardware architecture.
			CO2	Recognize input and output devices of Computers and how it works.
			CO3	To read various characteristics of computer languages.
			CO4	To define about the operating system and types.
			CO5	Accomplish creating basic documents, presentations with their properties.
			CO6	To understand about internet, working with E-mails.
Sem.-VII	**Teaching of Science**	**TSCI706**	**CO1**	Understand the nature, scope values and objectives of teaching Science.
			CO2	Develop competence in teaching different topics of Science effectively, develop scientific temper & provide teaching in scientific method to their student,
			CO3	Use various methods with appropriateness of content, level and classroom situations to make

				pupil‘s learning meaningful, utilize the instructional materials effectively in the Teaching of Science and organize co- curricular activities & practical work in Science.
			CO4	Enhance activity and creativity in relation to the immediate surroundings and also show some responsibility of their own health and hygiene.
			CO5	Understand science is an interdisciplinary area of learning.
Sem.-VII	**Teaching of Mathematics**	**TMAT707**	**CO1**	Understand and appreciate the uses and significance of Mathematics in daily life, learn various approaches of teaching Mathematics and to use them judiciously.
			CO2	Learn the methods of providing instruction for the classroom organize curricular activities, appreciate activities to develop aesthetics of Mathematics and update their knowledge of content in mathematics.
			CO3	Develop an ability to understand various methods of evaluation of students’ performance in mathematics.
			CO4	State the aim and objectives of teaching mathematics. And also understand various techniques of teaching of mathematics.
			CO5	Develop skill making teaching learning process experimental and joyful.
Sem.-VII	**Teaching of English**	**TENG708**	**CO1**	Understand the place of English language teaching in India
			CO2	Apply different principles of teaching and learning
			CO3	Identify different methods, approaches, techniques of teaching English
			CO4	Utilize the four skills of language that is listening, speaking, reading and writing in teaching
			CO5	Prepare lesson plans and test items for testing various language activities
Sem.-VIII	**Document Analysis**	**BSCEDU800**	Students will visit nearby Govt. and Private schools for 16 weeks and perform various tasks. After the completion of this Internship Programme students will be able to: ❖ Develop a comprehensive understanding of existing classroom practices. ❖ Develop a critical understanding of textbook lessons of individual subjects and their suitability for learning. ❖ Draw linkages between various pedagogy courses	
Sem.-VIII	**SWOT Analysis**			
Sem.-VIII	**Identification Problem Children**			
Sem.-	**Organization of**			

VIII	**School Function**		and classroom practices. ❖ Critically review policy and state documents on education and seek to effect ideas into classroom practices. ❖ Develop and design alternative teaching – learning materials. ❖ Assess factors that contribute to a classroom culture, its creation and maintenance. ❖ Explore possibilities of innovation and create space for alternative practices. ❖ Design, choose, organize, and conduct individual and group activities. ❖ Reflect on personal experiences of classroom management. ❖ Learn to set realistic goals in terms of children's learning, classroom culture and management, curricular form and content and pedagogic practices. ❖ Develop the ability to innovate within existing frameworks by alternative practices. ❖ Purposefully use the skills of systematic observations, record keeping and for reflection on teaching-learning process
Sem.-VIII	**Record Keeping**		
Sem.-VIII	**Organization of Co-curricular/Cultural Activities in School**		
Sem.-VIII	**Organization of Morning Assembly in School**		
Sem.-VIII	**Organization of Awareness Programs in School**		
Sem.-VIII	**Cleanliness and Beautification of School**		
Sem.-VIII	**Conducting Carrere Counseling Sessions in School**		
Sem.-VIII	**Training of Two Life Skills to School Children**		
Sem.-VIII	**Preparation of Various School Records**		

Mapping of Course Outcomes(COs) with Programme Outcomes(POs)

Programme Outcome																
College code	**Course Out-comes**	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**	**PO 13**	**PO 14**	**PO 15**
Semester I																
BSCED U101	**CO1**	3	2	1	2	1	2	1	X	1	1	2	X	X	X	2
	CO2	3	2	3	1	2	2	3	2	1	3	1	X	X	3	1

	CO3	3	2	2	1	2	2	3	1	2	3	1	X	X	3	2
	CO4	3	2	2	3	1	2	1	2	2	1	2	3	2	2	2
	CO5	3	2	3	3	1	2	3	2	3	1	3	2	2	3	2
BSCED U102	**CO1**	3	1	X	X	2	X	1	2	1	X	X	X	X	1	2
	CO2	3	1	3	2	3	1	2	2	3	1	3	X	X	1	1
	CO3	3	1	3	3	3	1	2	3	2	1	1	X	X	2	2
	CO4	3	1	1	3	3	1	3	3	2	1	3	3	3	3	2
	CO5	3	1	X	X	2	X	1	2	1	X	1	X	3	1	2
	CO6	3	1	2	3	3	1	3	3	2	1	2	X	X	2	2
ENG101	**CO1**	3	3	3	X	3	2	2	1	3	1	2	1	1	1	1
	CO2	3	3	2	X	1	X	2	X	2	1	3	X	X	1	1
	CO3	2	3	2	3	2	1	X	1	2	1	X	1	2	X	1
	CO4	2	3	2	3	2	1	X	X	2	1	X	X	2	X	1
	CO5	2	3	2	3	2	X	X	X	2	1	X	X	X	X	1
	CO6	2	3	2	3	2	X	X	X	2	1	X	X	X	X	1
PBC101	**CO1**	3	3	3	3	3	1	1	2	3	1	3	1	3	3	3
	CO2	3	3	X	3	X	X	X	X	X	1	3	X	X	X	3
	CO3	3	3	1	2	1	1	X	1	1	1	3	1	2	3	3
	CO4	3	3	3	3	3	1	X	3	3	1	3	2	3	3	3
HCP101	**CO1**	3	3	2	2	2	1	1	2	2	1	2	3	1	2	2
	CO2	3	3	2	2	2	1	1	2	2	1	2	3	1	2	2
	CO3	3	3	2	2	2	1	1	2	2	1	2	3	1	2	2
	CO4	3	3	2	2	3	1	1	2	2	1	2	3	1	2	2
	CO5	3	3	2	2	2	1	1	2	2	1	2	X	3	2	2
	CO6	3	X	2	2	X	1	1	2	2	1	2	X	1	X	X
MAT101	**CO1**	2	1	3	3	2	2	2	X	1	1	2	X	2	1	2
	CO2	3	X	2	3	1	X	1	1	X	X	3	1	2	1	2
	CO3	2	2	2	3	2	2	1	X	1	1	2	2	2	2	2
	CO4	3	3	3	3	2	3	2	2	2	3	3	2	2	3	1
	CO5	3	X	1	3	X	X	1	1	X	2	2	1	X	1	2

	CO6	3	2	2	2	X	X	1	X	X	X	3	2	1	2	2
CHM101A1	**CO1**	2	2	1	1	1	1	1	1	1	1	2	X	1	2	1
	CO2	2	2	1	1	1	1	1	1	1	1	2	X	1	2	1
	CO3	2	2	1	1	1	1	1	1	1	1	2	X	1	2	1
	CO4	2	2	1	1	1	1	1	1	1	1	2	X	1	2	1
	CO5	2	2	1	1	1	1	1	1	1	1	2	X	1	2	1
	CO6	2	2	1	1	1	1	1	1	1	1	2	X	1	2	1
CHM101A2	**CO1**	2	2	1	1	1	1	1	2	1	1	2	X	1	1	1
	CO2	2	2	1	1	1	1	1	2	1	1	2	X	1	1	1
	CO3	2	2	1	1	1	1	1	2	1	1	2	X	1	1	1
	CO4	2	2	1	1	1	1	1	2	1	1	2	X	1	1	1
	CO5	2	2	1	1	1	1	1	2	1	1	2	X	1	1	1
	CO6	2	2	1	1	1	1	1	2	1	1	2	X	1	1	1
CHM101A3	**CO1**	2	2	X	1	1	1	1	1	1	1	X	X	2	2	X
	CO2	1	2	X	1	1	1	1	1	1	1	X	X	1	2	X
	CO3	2	2	X	1	1	1	1	1	1	1	X	X	1	2	X
	CO4	1	2	X	1	1	1	1	1	1	1	X	X	1	2	X
	CO5	2	2	X	1	1	1	1	1	1	1	X	X	1	2	X
	CO6	2	2	X	1	1	1	1	1	1	1	X	X	1	2	X
PHY101A	**CO1**	2	X	X	2	1	X	X	X	X	X	X	1	1	1	1
	CO2	3	1	X	3	2	1	1	X	X	X	1	3	X	1	2
	CO3	2	X	X	1	X	X	X	1	X	X	X	2	1	X	1
	CO4	2	X	X	1	2	1	X	X	X	X	X	1	X	1	2
	CO5	3	1	2	1	X	X	X	1	X	2	X	1	1	1	1
	CO6	2	1	2	1	2	X	1	2	3	X	2	2	1	X	X
PHY101B	**CO1**	3	2	1	1	1	2	X	1	X	2	1	X	1	X	1
	CO2	3	3	1	1	2	2	X	2	1	3	1	1	X	X	1
	CO3	2	2	2	1	2	2	1	1	1	2	1	X	X	X	1
	CO4	3	1	1	1	1	2	X	2	X	2	1	X	X	X	X
	CO5	3	1	2	1	2	2	2	1	1	3	1	1	X	X	1

	CO6	3	2	1	1	1	2	X	2	1	2	1	X	1	1	1
PHY101C	**CO1**	3	2	2	2	1	2	1	1	2	X	1	X	2	2	1
	CO2	2	1	2	2	2	1	1	1	X	X	2	X	1	1	2
	CO3	3	2	1	2	1	1	2	1	1	X	1	X	2	2	1
	CO4	3	2	2	2	2	2	1	2	X	X	2	X	1	1	1
	CO5	2	2	2	2	1	1	2	2	X	X	2	X	2	2	1
	CO6	3	1	1	3	1	2	1	2	1	X	1	X	2	1	2
BOO101	**CO1**	3	1	3	3	3	2	3	2	3	1	3	X	X	3	3
	CO2	3	1	2	2	3	3	2	2	2	X	2	X	X	2	3
	CO3	3	1	2	3	2	3	2	2	1	X	2	X	X	2	3
	CO4	3	1	3	2	3	2	2	2	2	X	2	X	X	1	3
	CO5	3	1	2	2	2	2	1	2	2	X	2	X	X	2	3
	CO6	3	1	2	2	2	2	1	2	2	X	2	X	X	2	3
ZOO101	**CO1**	2	1	1	1	1	3	1	2	2	1	2	X	X	1	3
	CO2	3	2	2	2	2	1	1	2	2	1	2	1	1	1	3
	CO3	2	2	3	2	2	2	1	1	2	2	2	X	1	2	3
	CO4	2	1	3	3	2	2	2	1	2	3	1	X	1	2	2
	CO5	3	2	3	3	3	2	2	2	3	2	2	X	2	1	3
	CO6	2	2	2	3	3	2	3	2	3	2	3	X	2	2	3
Semester II																
BSCEDU201	**CO1**	3	1	1	X	2	X	1	2	1	X	X	X	1	1	2
	CO2	3	1	2	2	3	1	2	2	3	1	3	X	1	1	1
	CO3	3	1	3	3	3	1	2	2	2	1	1	X	1	1	2
	CO4	3	1	2	2	2	1	2	2	2	1	2	2	3	3	2
	CO5	3	1	3	3	3	3	3	1	3	2	3	3	2	2	3
BSCEDU202	**CO1**	3	1	X	X	2	X	1	2	1	X	X	X	X	1	2
	CO2	3	1	3	2	3	1	2	2	3	1	3	X	X	1	1
	CO3	3	1	3	3	3	1	2	3	2	1	1	X	X	2	2
	CO4	3	1	1	3	3	1	3	3	2	1	3	3	3	3	2
ENG20	**CO1**	3	3	3	X	3	2	2	1	3	1	2	1	1	1	1

1	**CO2**	3	3	2	X	1	X	2	X	2	1	3	X	X	1	1
	CO3	2	3	2	3	2	1	X	1	2	1	X	1	2	X	1
	CO4	2	3	2	3	2	1	X	X	2	1	X	X	2	X	1
	CO5	2	3	2	3	2	X	X	X	2	1	X	X	X	X	1
	CO6	2	3	2	3	2	X	X	X	2	1	X	X	X	X	1
PBC201	**CO1**	3	3	3	3	2	1	2	3	1	1	3	1	3	3	3
	CO2	3	3	3	3	2	1	2	3	1	1	3	1	3	3	3
	CO3	3	3	2	3	2	1	2	1	1	1	3	1	3	3	3
	CO4	3	3	2	3	2	X	X	3	1	1	3	X	3	3	3
HCP201	**CO1**	3	3	2	2	2	1	1	2	2	1	2	3	1	2	2
	CO2	3	3	2	2	2	1	1	2	2	1	2	3	1	2	2
	CO3	3	3	2	2	2	1	1	2	2	1	2	3	1	2	2
	CO4	3	3	2	2	3	1	1	2	2	1	2	3	1	2	2
	CO5	3	3	2	2	2	1	1	2	2	1	2	X	3	2	2
	CO6	3	X	2	2	X	1	1	2	2	1	2	X	1	X	X
MAT201	**CO1**	2	1	2	2	1	X	X	1	1	1	2	2	2	2	2
	CO2	1	X	3	3	1	X	2	X	1	2	2	X	2	2	2
	CO3	3	2	2	2	X	X	1	X	X	X	3	2	1	2	2
	CO4	3	1	2	3	1	X	X	1	X	X	2	X	3	1	2
	CO5	3	X	3	3	2	1	2	3	2	X	2	2	X	1	3
	CO6	2	X	1	2	1	1	3	X	2	X	2	2	2	X	2
CHM201A1	**CO1**	2	X	1	1	1	1	2	2	1	1	2	X	1	2	2
	CO2	2	X	1	1	1	1	2	2	1	1	2	X	1	2	2
	CO3	2	X	1	1	1	1	2	2	1	1	2	X	1	2	2
	CO4	2	X	1	1	1	1	2	2	1	1	2	X	1	2	2
	CO5	2	X	1	1	1	1	2	2	1	1	2	X	1	2	2
	CO6	2	X	1	1	1	1	2	2	1	1	2	X	1	2	2
CHM201A2	**CO1**	2	x	1	1	1	1	2	2	1	1	2	x	1	2	2
	CO2	2	x	1	1	1	1	2	2	1	1	2	x	1	2	2
	CO3	2	X	1	1	1	1	2	2	1	1	2	X	1	2	2

	CO4	2	X	1	1	1	1	2	2	1	1	2	X	1	2	2
	CO5	2	x	1	1	1	1	2	2	1	1	2	X	1	2	2
	CO6	2	x	1	1	1	1	2	2	1	1	2	X	1	2	2
CHM201A3	**CO1**	2	X	1	1	1	1	2	2	1	1	2	x	1	1	2
	CO2	2	X	1	1	1	1	2	2	1	1	2	x	1	1	2
	CO3	2	X	1	1	1	1	2	2	1	1	2	x	1	1	2
	CO4	2	X	1	1	1	1	2	2	1	1	2	x	1	1	2
	CO5	2	X	1	1	1	1	2	2	1	1	2	x	1	1	2
	CO6	2	X	1	1	1	1	2	2	1	1	2	x	1	1	2
PHY201A	**CO1**	2	X	X	2	1	X	X	X	X	X	X	1	1	1	1
	CO2	3	1	X	3	2	1	1	X	X	X	1	3	X	1	2
	CO3	2	X	X	1	X	X	X	1	X	X	X	2	1	X	1
	CO4	2	X	X	1	2	1	X	X	X	X	X	1	X	1	2
	CO5	3	1	2	1	X	X	X	1	X	2	X	1	1	1	1
PHY201B	**CO1**	3	1	2	3	3	1	2	X	1	1	X	1	X	X	2
	CO2	3	1	1	1	1	2	3	1	2	1	1	2	1	1	3
	CO3	2	1	1	1	2	2	2	1	1	2	1	2	X	X	3
	CO4	1	1	2	1	1	2	1	X	1	2	1	2	1	1	3
	CO5	2	1	1	2	1	1	2	2	2	2	X	2	X	X	3
PHY201C	**CO1**	2	X	X	2	1	X	X	X	X	X	X	1	1	1	1
	CO2	3	1	X	3	2	1	1	X	X	X	1	3	X	1	2
	CO3	2	X	X	1	X	X	X	1	X	X	X	2	1	X	3
	CO4	2	X	X	1	2	1	X	X	X	X	X	1	X	1	1
	CO5	3	1	2	1	X	X	X	1	X	2	X	1	1	1	2
BOO201	**CO1**	3	1	2	3	2	2	3	2	2	2	3	X	X	3	2
	CO2	3	1	2	3	2	3	2	3	3	3	2	X	X	2	3
	CO3	3	1	3	3	3	3	2	2	1	1	2	X	X	3	3
	CO4	3	1	2	2	3	2	2	2	2	X	2	X	X	1	3
	CO5	3	1	2	1	1	2	1	2	3	1	2	x	x	2	3
	CO6	3	1	2	1	1	2	1	2	3	1	2	x	x	2	3

ZOO201	**CO1**	2	1	2	1	1	3	2	1	2	1	2	X	1	1	3
	CO2	3	2	2	2	2	2	1	2	2	1	2	X	1	1	3
	CO3	2	2	3	1	2	2	1	1	2	2	2	X	1	2	3
	CO4	3	2	3	3	2	2	2	2	3	3	1	X	2	3	2
	CO5	3	2	3	3	3	2	2	2	3	2	2	X	2	2	3
	CO6	2	2	2	2	3	2	3	2	3	2	3	X	2	2	3
Semester III																
BSCEDU301	**CO1**	3	1	2	2	2	X	1	2	1	X	2	X	1	1	1
	CO2	3	1	2	2	3	1	1	2	1	X	1	X	1	2	1
	CO3	3	1	3	2	3	1	1	2	1	X	1	X	1	1	1
	CO4	3	1	2	2	2	2	2	2	1	1	X	1	1	1	1
BSCEDU302	**CO1**	3	1	2	2	2	X	1	2	1	X	2	X	1	1	1
	CO2	3	1	2	2	3	1	1	2	1	X	1	X	1	2	1
	CO3	3	1	3	2	3	1	1	2	1	X	1	X	1	1	1
	CO4	3	1	2	2	2	2	2	2	1	1	X	1	1	1	1
	CO5	3	2	1	X	3	2	3	2	1	3	2	1	3	3	X
	CO6	2	3	X	2	1	2	3	2	1	2	3	3	X	3	2
ENG301	**CO1**	3	3	2	X	3	1	2	1	2	1	2	1	1	1	1
	CO2	3	3	1	X	1	X	2	X	1	1	2	X	X	1	1
	CO3	2	3	3	3	3	1	X	1	3	1	3	1	2	X	1
	CO4	2	3	3	3	3	X	X	1	3	1	3	X	2	X	1
	CO5	2	3	2	3	3	X	X	1	2	1	3	X	X	X	1
	CO6	2	3	3	3	X	X	X	X	3	1	3	X	X	X	1
PBC301	**CO1**	3	3	3	3	2	1	2	3	1	1	3	1	3	3	3
	CO2	3	3	3	3	2	1	2	3	1	3	3	1	3	3	3
	CO3	3	3	2	3	X	1	1	X	1	X	3	1	2	3	3
	CO4	3	3	X	3	X	X	X	X	X	X	3	X	2	3	3
HCP301	**CO1**	3	3	2	2	2	1	1	2	2	1	2	3	1	2	2
	CO2	3	3	2	2	2	1	1	2	2	1	2	3	1	2	2
	CO3	3	3	2	2	2	1	1	2	2	1	2	3	1	2	2

	CO4	3	3	2	2	3	1	1	2	2	1	2	3	1	2	2
	CO5	3	3	2	2	2	1	1	2	2	1	2	X	3	2	2
	CO6	3	X	2	2	X	1	1	2	2	1	2	X	1	X	X
MAT301	**CO1**	3	X	2	3	1	X	1	1	X	X	3	1	2	1	2
	CO2	3	2	2	3	1	X	2	1	2	1	3	X	2	2	2
	CO3	3	X	3	2	2	1	2	1	2	3	3	X	2	2	3
	CO4	2	1	3	3	2	2	2	X	1	1	2	X	2	1	2
	CO5	3	1	2	2	X	1	3	1	2	X	1	1	2	1	1
CHM301A1	**CO1**	2	2	1	1	1	1	1	2	1	1	1	X	1	1	3
	CO2	2	2	1	1	1	1	1	2	1	1	1	X	1	1	3
	CO3	2	2	1	1	1	1	1	2	1	1	1	X	1	1	3
	CO4	2	2	1	1	1	1	1	2	1	1	1	X	1	1	3
	CO5	2	2	1	1	1	1	1	2	1	1	1	X	1	1	3
	CO6	2	2	1	1	1	1	1	2	1	1	1	X	1	1	3
CHM301A2	**CO1**	2	2	1	1	1	1	1	2	1	1	2	X	1	1	1
	CO2	2	2	1	1	1	1	1	2	1	1	2	X	1	1	1
	CO3	2	2	1	1	1	1	1	2	1	1	2	X	1	1	1
	CO4	2	2	1	1	1	1	1	2	1	1	2	X	1	1	1
	CO5	2	2	1	1	1	1	1	2	1	1	2	X	1	1	1
	CO6	2	2	1	1	1	1	1	2	1	1	2	X	1	1	1
CHM301A3	**CO1**	2	2	1	1	1	1	1	1	1	1	2	x	2	2	1
	CO2	2	2	1	1	1	1	1	1	1	1	2	X	2	2	1
	CO3	2	2	1	1	1	1	1	1	1	1	2	X	2	2	1
	CO4	2	2	1	1	1	1	1	1	1	1	2	X	2	2	1
	CO5	2	2	1	1	1	1	1	1	1	1	2	x	2	2	1
	CO6	2	2	1	1	1	1	1	1	1	1	2	x	2	2	1
PHY301A	**CO1**	1	2	1	1	1	2	X	1	X	2	1	X	1	X	1
	CO2	3	1	3	2	2	2	X	2	1	3	1	X	1	X	1
	CO3	2	2	1	1	2	2	X	1	1	2	2	1	X	1	2
	CO4	3	1	1	1	1	2	X	2	X	2	1	X	2	X	X

	CO5	1	1	2	X	2	2	1	2	1	3	2	1	1	X	1
	CO6	1	1	2	X	2	2	1	2	1	3	2	1	1	X	1
PHY301B	**CO1**	2	X	X	2	1	X	X	X	X	X	X	1	1	1	1
	CO2	3	1	X	3	2	1	1	X	X	X	1	3	X	1	2
	CO3	2	X	X	1	X	X	X	1	X	X	X	2	1	X	1
	CO4	2	X	X	1	2	1	X	X	X	X	X	1	X	1	1
	CO5	3	1	2	1	X	X	X	1	X	2	X	1	1	1	2
	CO6	3	1	2	1	X	X	X	1	X	2	X	1	1	1	2
PHY301C	**CO1**	2	X	X	2	1	X	X	X	X	X	X	1	1	1	1
	CO2	3	1	X	3	2	1	1	X	X	X	1	3	X	1	2
	CO3	2	X	X	1	X	X	X	1	X	X	X	2	1	X	1
	CO4	2	X	X	1	2	1	X	X	X	X	X	1	X	1	1
	CO5	3	1	2	1	X	X	X	1	X	2	X	1	1	1	1
	CO6	3	1	2	1	X	X	X	1	X	2	X	1	1	1	1
BOO301	**CO1**	3	1	3	2	3	2	3	2	3	1	3	X	X	2	3
	CO2	3	1	2	3	2	3	2	2	2	1	2	X	X	3	2
	CO3	3	1	3	3	3	3	2	2	2	1	2	X	X	2	3
	CO4	3	1	1	2	3	2	2	2	2	X	2	X	X	1	3
	CO5	3	1	2	2	1	2	1	2	1	x	2	x	x	2	3
	CO6	3	1	2	2	1	2	1	2	1	x	2	x	x	2	3
ZOO301	**CO1**	2	1	2	1	1	3	2	1	2	1	2	X	1	1	3
	CO2	3	2	2	2	2	2	1	2	2	1	2	X	1	1	3
	CO3	2	2	3	1	2	2	1	1	2	2	2	X	1	2	3
	CO4	3	2	3	3	2	2	2	2	3	3	1	X	2	3	2
	CO5	3	2	3	3	3	2	2	2	3	2	2	X	2	2	3
	CO6	2	2	2	2	3	2	3	2	3	2	3	X	2	2	3
Semester IV																
BSCEDU401	**CO1**	3	2	2	2	3	1	2	1	1	1	1	X	1	2	1
	CO2	3	2	3	2	3	2	1	2	1	1	2	X	1	2	1
	CO3	3	2	3	3	3	1	2	2	1	2	1	X	1	3	1

	CO4	3	3	2	3	3	2	X	2	2	X	3	1	3	3	2
	CO5	3	2	X	2	3	2	2	1	3	1	X	3	3	2	1
	CO6	2	3	X	1	2	2	3	1	2	3	1	X	3	3	2
BSCEDU402	**CO1**	3	2	2	2	3	1	2	1	1	1	1	X	1	2	1
	CO2	3	2	3	2	3	1	1	1	1	1	2	X	1	2	1
	CO3	3	2	3	3	3	1	2	2	1	2	1	X	1	2	1
	CO4	3	3	2	3	3	2	2	2	2	2	3	1	3	3	2
ENG401	**CO1**	3	3	2	X	3	1	2	1	2	1	2	1	1	1	1
	CO2	3	3	1	X	1	X	2	X	1	1	2	X	X	1	1
	CO3	2	3	3	3	3	1	X	1	3	1	3	1	2	X	1
	CO4	2	3	3	3	3	X	X	1	3	1	3	X	2	X	1
	CO5	2	3	2	3	3	X	X	X	2	1	3	X	X	X	1
	CO6	2	3	3	3	1	X	X	X	3	1	3	X	X	X	1
PBC401	**CO1**	3	3	3	3	2	1	2	3	1	1	3	2	3	3	3
	CO2	3	3	3	3	2	1	2	3	1	1	3	2	3	3	3
	CO3	3	3	X	3	X	X	X	X	X	X	3	X	2	3	3
	CO4	3	3	2	3	X	1	2	X	1	1	3	1	2	3	3
HCP401	**CO1**	3	3	2	2	2	1	1	2	2	1	2	3	1	2	2
	CO2	3	3	2	2	2	1	1	2	2	1	2	3	1	2	2
	CO3	3	3	2	2	2	1	1	2	2	1	2	3	1	2	2
	CO4	3	3	2	2	3	1	1	2	2	1	2	3	1	2	2
	CO5	3	3	2	2	2	1	1	2	2	1	2	X	3	2	2
	CO6	3	X	2	2	X	1	1	2	2	1	2	X	1	X	X
MAT401	**CO1**	3	X	1	2	1	X	2	X	2	x	3	2	2	1	1
	CO2	3	X	2	3	2	X	2	1	1	X	2	2	1	2	1
	CO3	3	X	1	2	1	X	2	X	2	X	3	2	2	1	1
	CO4	2	X	1	2	1	1	3	X	2	X	2	2	2	X	2
	CO5	3	1	X	3	X	1	2	1	2	X	3	1	2	1	2
CHM401A1	**CO1**	2	X	1	1	1	1	2	2	1	2	2	x	1	2	2
	CO2	2	X	1	1	1	1	2	2	1	2	2	x	1	2	2

	CO3	2	X	1	1	1	1	2	2	1	2	2	x	1	2	2
	CO4	2	X	1	1	1	1	2	2	1	2	2	x	1	2	2
	CO5	2	X	1	1	1	1	2	2	1	2	2	x	1	2	2
	CO6	2	X	1	1	1	1	2	2	1	2	2	x	1	2	2
CHM401A2	**CO1**	2	X	1	1	1	1	2	3	1	1	1	X	1	2	2
	CO2	2	X	1	1	1	1	2	3	1	1	1	X	1	2	2
	CO3	2	X	1	1	1	1	2	3	1	1	1	X	1	2	2
	CO4	2	X	1	1	1	1	2	3	1	1	1	X	1	2	2
	CO5	2	X	1	1	1	1	2	3	1	1	1	X	1	2	2
	CO6	2	X	1	1	1	1	2	3	1	1	1	X	1	2	2
CHM401A3	**CO1**	2	X	1	1	1	1	2	2	1	2	2	X	1	2	2
	CO2	2	X	1	1	1	1	2	2	1	2	2	X	1	2	2
	CO3	2	X	1	1	1	1	2	2	1	2	2	X	1	2	2
	CO4	2	X	1	1	1	1	2	2	1	2	2	X	1	2	2
	CO5	2	X	1	1	1	1	2	2	1	2	2	X	1	2	2
	CO6	2	X	1	1	1	1	2	2	1	2	2	X	1	2	2
PHY401A	**CO1**	1	2	1	1	1	2	X	1	X	2	1	X	1	X	1
	CO2	3	1	3	2	2	2	X	2	1	3	1	X	1	X	1
	CO3	2	2	1	1	2	2	X	1	1	2	2	1	X	1	2
	CO4	3	1	1	1	1	2	X	2	X	2	1	X	2	X	X
	CO5	1	1	2	X	2	2	1	2	1	3	2	1	1	X	1
	CO6	2	2	1	X	1	X	2	X	1	X	2	2	X	1	1
PHY401B	**CO1**	2	X	X	2	1	X	X	X	X	X	X	1	1	1	1
	CO2	3	1	X	3	2	1	1	X	X	X	1	3	X	1	2
	CO3	2	X	X	1	X	X	X	1	X	X	X	2	1	X	1
	CO4	2	2	1	1	3	X	X	2	X	1	1	1	2	X	2
	CO5	3	2	1	2	2	X	1	1	X	1	2	1	X	X	X
	CO6	3	2	1	X	1	X	2	1	1	X	2	2	X	X	X
PHY401C	**CO1**	3	2	1	2	3	1	1	X	X	1	X	1	1	1	1
	CO2	3	2	2	2	2	1	X	X	X	2	1	2	1	1	1

	CO3	3	2	2	2	1	1	X	1	X	2	1	1	2	X	2
	CO4	3	2	1	1	3	X	X	2	X	1	1	1	2	X	2
	CO5	3	2	1	X	2	X	1	1	X	1	2	2	X	X	X
	CO6	3	2	1	X	1	X	2	X	1	X	2	2	X	X	X
BOO401	**CO1**	3	1	2	3	2	3	3	3	3	2	3	X	X	3	2
	CO2	3	1	2	2	2	3	2	2	2	1	2	X	X	2	3
	CO3	3	1	3	3	3	2	2	2	2	2	2	X	X	3	2
	CO4	3	1	3	2	1	2	2	2	1	X	3	X	X	2	3
	CO5	3	1	2	2	3	3	1	2	2	2	2	x	x	1	2
	CO6	3	1	2	2	3	3	1	2	2	2	2	x	x	1	2
ZOO401	**CO1**	2	1	1	1	1	3	1	2	2	1	2	X	1	1	3
	CO2	3	2	2	2	2	1	1	2	2	1	2	X	1	1	3
	CO3	2	2	3	2	2	2	1	1	2	2	2	X	1	2	3
	CO4	2	1	3	3	2	2	2	1	2	3	1	X	1	2	2
	CO5	3	2	3	3	3	2	2	2	2	2	2	X	2	1	3
	CO6	2	2	2	3	3	2	3	2	2	2	2	X	2	2	3
Semester V																
BSCEDU501	**CO1**	3	2	2	1	2	2	2	1	1	2	1	X	1	2	1
	CO2	3	2	2	1	3	1	1	2	1	2	1	X	1	1	1
	CO3	3	2	2	2	2	2	3	2	2	2	1	X	1	2	2
	CO4	3	2	2	2	2	2	3	2	2	2	2	X	2	3	2
BSCEDU502	**CO1**	3	2	2	1	2	2	2	1	1	2	1	X	1	2	1
	CO2	3	2	2	1	3	1	1	2	1	2	1	X	1	1	1
	CO3	3	2	3	2	2	X	3	1	2	2	1	X	1	2	2
	CO4	3	2	2	2	2	2	3	2	3	2	2	X	2	3	2
	CO5	3	2	3	X	2	3	3	1	1	3	1	3	X	2	2
	CO6	3	1	1	2	X	3	2	1	3	X	2	2	1	3	2
ENG501	**CO1**	3	3	3	1	3	1	1	1	3	1	2	1	1	1	1
	CO2	3	3	2	1	X	X	X	X	2	1	2	1	X	1	1
	CO3	3	3	3	1	3	1	1	1	3	1	2	1	X	1	1

	CO4	3	3	2	3	3	1	X	1	2	1	1	1	1	1	1
	CO5	3	3	X	3	X	X	X	X	X	1	1	X	X	1	1
	CO6	3	3	X	3	X	X	X	X	X	1	1	X	X	1	1
PBC501	**CO1**	1	2	1	3	1	2	1	2	3	1	2	3	1	2	2
	CO2	1	1	3	1	X	1	X	1	1	3	1	2	2	3	3
	CO3	3	X	2	X	2	X	2	1	2	1	3	2	2	1	1
	CO4	2	3	1	1	3	2	2	X	2	2	1	1	X	2	2
	CO5	2	2	X	1	1	3	1	2	X	2	2	X	3	X	X
	CO6	X	1	2	2	1	1	3	2	1	X	2	1	2	1	1
HCP501	**CO1**	3	2	2	1	2	1	2	1	1	1	1	X	1	2	1
	CO2	3	2	2	2	3	1	1	1	1	1	1	X	1	2	1
	CO3	3	3	2	2	3	1	1	1	1	1	1	X	1	2	1
	CO4	3	3	2	2	3	1	1	1	1	1	2	1	2	2	1
MAT501	**CO1**	3	X	3	3	2	X	1	X	1	1	2	2	2	3	2
	CO2	3	X	3	3	2	X	1	X	1	1	2	2	2	3	2
	CO3	2	1	3	3	1	1	1	1	2	2	3	1	3	3	3
	CO4	3	2	2	2	1	1	2	1	3	3	2	1	2	3	2
	CO5	3	1	3	3	2	1	3	X	2	1	3	X	3	2	1
	CO6	3	1	2	3	1	X	2	X	1	X	2	X	X	2	3
CHM501A1	**CO1**	2	2	1	1	1	1	1	2	1	1	2	X	1	1	1
	CO2	2	2	1	1	1	1	1	2	1	1	2	X	1	1	1
	CO3	2	2	1	1	1	1	1	2	1	1	2	X	1	1	1
	CO4	2	2	1	1	1	1	1	2	1	1	2	X	1	1	1
	CO5	2	2	1	1	1	1	1	2	1	1	2	X	1	1	1
	CO6	2	2	1	1	1	1	1	2	1	1	2	X	1	1	1
CHM501A2	**CO1**	3	2	1	1	1	1	1	1	1	1	1	x	1	2	1
	CO2	3	2	1	1	1	1	1	1	1	1	1	X	1	2	1
	CO3	3	2	1	1	1	1	1	1	1	1	1	X	1	2	1
	CO4	3	2	1	1	1	1	1	1	1	1	1	X	1	2	1
	CO5	3	2	1	1	1	1	1	1	1	1	1	x	1	2	1

	CO6	3	2	1	1	1	1	1	1	1	1	1	x	1	2	1
CHM501A3	**CO1**	3	2	1	1	1	1	1	1	1	1	2	x	1	1	1
	CO2	3	2	1	1	1	1	1	1	1	1	2	X	1	1	1
	CO3	3	2	1	1	1	1	1	1	1	1	2	X	1	1	1
	CO4	3	2	1	1	1	1	1	1	1	1	2	X	1	1	1
	CO5	3	2	1	1	1	1	1	1	1	1	2	x	1	1	1
	CO6	3	2	1	1	1	1	1	1	1	1	2	x	1	1	1
PHY501A	**CO1**	3	1	1	2	X	X	X	X	1	X	1	1	1	X	1
	CO2	2	1	2	2	X	1	X	X	1	X	X	1	1	1	1
	CO3	3	1	2	1	3	2	2	1	1	2	1	3	2	2	3
	CO4	1	1	X	X	X	1	X	X	X	X	X	1	2	X	1
	CO5	1	1	1	X	1	1	X	X	X	1	X	1	1	1	2
	CO6	2	1	X	1	2	X	1	1	X	1	1	2	1	2	3
PHY501B	**CO1**	3	1	2	3	3	1	1	X	1	1	X	1	X	X	1
	CO2	3	1	1	1	1	2	3	1	2	1	1	2	1	1	2
	CO3	2	1	1	1	2	2	2	1	1	2	1	2	X	X	3
	CO4	1	1	2	1	1	2	1	X	1	2	1	2	1	1	2
	CO5	2	1	1	2	1	1	2	2	2	2	X	2	X	X	3
	CO6	1	1	2	1	X	2	1	2	1	1	1	1	X	X	2
PHY501C	**CO1**	3	X	1	3	2	1	2	1	X	X	3	X	X	X	1
	CO2	2	X	1	3	1	2	1	1	1	X	X	1	X	X	2
	CO3	1	1	X	1	X	X	2	1	2	X	X	X	X	2	2
	CO4	3	2	X	1	X	X	2	X	X	X	3	X	1	X	1
	CO5	X	1	1	3	2	1	X	X	X	1	X	2	X	X	X
	CO6	2	1	1	2	2	1	1	X	X	1	X	1	X	X	X
BOO501	**CO1**	3	1	3	2	3	3	3	3	3	1	3	X	X	2	3
	CO2	3	1	2	2	2	2	2	2	3	X	2	X	X	2	3
	CO3	3	1	3	3	3	3	2	2	2	1	2	X	X	3	2
	CO4	3	1	3	2	3	2	2	2	1	1	3	X	X	1	2
	CO5	3	1	2	2	1	3	1	2	2	x	2	x	x	2	3

	CO6	3	1	3	3	3	3	2	2	2	1	2	X	X	3	2
ZOO501	**CO1**	2	1	1	1	1	3	1	2	2	1	2	X	1	1	3
	CO2	3	2	2	2	2	1	1	2	2	1	2	X	1	1	3
	CO3	2	2	2	2	2	2	1	1	2	2	2	X	1	1	3
	CO4	2	1	2	3	2	2	2	1	2	3	1	X	1	2	2
	CO5	3	2	2	2	2	2	2	2	3	2	2	X	1	1	3
	CO6	2	2	2	3	2	2	3	2	2	2	2	X	2	2	3
Semester-VI																
BSCEDU601	**CO1**	3	2	1	1	1	2	1	2	1	1	1	X	1	1	1
	CO2	3	2	2	2	3	2	2	2	2	1	2	X	1	2	1
	CO3	3	3	2	2	3	2	3	2	2	2	2	X	2	3	2
	CO4	3	1	3	2	3	3	3	2	2	2	2	X	1	2	1
BSCEDU602	**CO1**	3	2	1	1	1	2	1	2	1	1	1	X	1	1	1
	CO2	3	2	2	2	3	2	2	2	2	1	2	X	1	2	1
	CO3	3	3	2	2	3	2	3	2	2	2	2	X	2	3	2
	CO4	3	1	3	2	3	3	3	2	2	2	2	X	1	2	1
	CO5	3	2	1	1	2	3	1	2	3	X	2	3	1	2	3
	CO6	2	3	1	2	1	3	2	3	3	2	2	1	X	1	2
ENG601	**CO1**	3	3	3	1	3	1	1	1	3	1	1	1	1	1	1
	CO2	3	3	X	X	X	X	1	X	X	1	1	X	X	1	1
	CO3	3	3	2	3	2	1	1	1	2	1	2	1	X	1	1
	CO4	3	3	2	3	2	X	X	X	2	1	1	X	1	1	1
	CO5	3	3	X	3	2	X	X	X	X	1	1	X	X	1	1
PBC601	**CO1**	1	2	3	2	1	3	2	X	3	2	1	2	3	2	1
	CO2	2	X	2	1	2	2	1	1	1	1	X	1	1	1	2
	CO3	X	2	1	1	1	1	X	2	2	3	2	3	2	3	X
	CO4	3	1	X	3	2	2	2	2	X	2	3	X	1	1	3
	CO5	1	1	2	2	X	1	2	3	2	X	1	2	1	1	1
	CO6	1	3	1	1	3	X	1	1	2	1	2	1	2	X	1
HCP60	**CO1**	3	2	2	1	2	1	2	1	1	1	1	X	1	2	1

1	**CO2**	3	2	2	2	3	1	1	1	1	1	1	X	1	2	1
	CO3	3	3	2	2	3	1	1	1	1	1	1	X	1	2	1
	CO4	3	3	2	2	3	1	1	1	1	1	2	1	2	2	1
MAT601	**CO1**	3	X	3	3	3	1	1	X	1	3	3	X	3	2	2
	CO2	2	X	2	3	3	1	1	X	1	2	3	X	3	2	2
	CO3	3	1	3	3	2	X	1	1	2	3	2	1	1	2	2
	CO4	3	1	3	3	2	X	1	X	1	1	2	2	2	3	2
	CO5	3	1	2	3	1	1	2	2	1	1	2	3	3	3	3
	CO6	3	1	2	3	1	1	2	2	1	1	2	3	3	3	3
CHM601A1	**CO1**	2	X	1	1	1	1	2	2	1	2	2	X	2	1	2
	CO2	2	X	1	1	1	1	2	2	1	2	2	X	2	1	2
	CO3	2	X	1	1	1	1	2	2	1	2	2	X	2	1	2
	CO4	2	X	1	1	1	1	2	2	1	2	2	X	2	1	2
	CO5	2	X	1	1	1	1	2	2	1	2	2	X	2	1	2
	CO6	2	X	1	1	1	1	2	2	1	2	2	X	2	1	2
CHM601A2	**CO1**	2	X	1	1	1	1	2	2	1	2	2	x	1	2	2
	CO2	2	X	1	1	1	1	2	2	1	2	2	x	1	2	2
	CO3	2	X	1	1	1	1	2	2	1	2	2	X	1	2	2
	CO4	2	X	1	1	1	1	2	2	1	2	2	X	1	2	2
	CO5	2	X	1	1	1	1	2	2	1	2	2	x	1	2	2
	CO6	2	X	1	1	1	1	2	2	1	2	2	x	1	2	2
CHM601A3	**CO1**	2	X	1	1	1	1	2	3	1	1	1	x	1	2	2
	CO2	2	X	1	1	1	1	2	3	1	1	1	X	1	2	2
	CO3	2	X	1	1	1	1	2	3	1	1	1	X	1	2	2
	CO4	2	X	1	1	1	1	2	3	1	1	1	X	1	2	2
	CO5	2	X	1	1	1	1	2	3	1	1	1	X	1	2	2
	CO6	2	X	1	1	1	1	2	3	1	1	1	X	1	2	2
PHY601A	**CO1**	3	1	2	X	X	2	X	2	X	X	1	X	X	X	2
	CO2	3	1	2	X	X	2	X	1	X	1	X	X	X	X	2
	CO3	3	1	2	2	1	2	X	2	1	1	1	X	X	X	1

	CO4	3	1	1	1	1	2	X	2	X	X	X	X	X	X	X
	CO5	3	1	2	2	1	3	1	2	1	2	1	X	X	2	1
	CO6	3	1	1	2	1	1	1	2	1	1	2	X	X	1	1
PHY601B	**CO1**	3	1	2	1	X	2	X	2	X	2	1	X	X	X	2
	CO2	3	2	2	2	1	3	1	2	1	2	1	X	X	X	2
	CO3	3	1	2	2	1	2	X	2	X	1	2	X	X	X	1
	CO4	3	2	2	2	1	2	X	2	X	2	2	X	X	X	1
	CO5	3	1	3	2	1	2	X	2	X	2	X	X	X	2	1
	CO6	2	1	1	2	1	1	X	1	X	2	X	1	1	2	1
PHY601C	**CO1**	3	X	1	3	2	1	2	1	X	X	3	X	X	X	1
	CO2	2	X	1	3	1	2	1	1	1	X	X	1	X	X	2
	CO3	1	1	X	1	X	X	2	1	2	X	X	X	X	2	2
	CO4	3	2	X	1	X	X	2	X	X	X	3	X	1	X	1
	CO5	X	1	1	3	2	1	X	X	X	1	X	2	X	X	X
	CO6	1	1	2	1	1	2	X	X	2	X	1	1	X	1	1
BOO601	**CO1**	3	1	2	2	3	3	3	3	2	1	3	X	X	2	3
	CO2	3	1	2	2	2	3	2	2	3	2	2	X	X	3	2
	CO3	3	1	3	3	3	2	3	2	2	1	2	X	X	2	3
	CO4	3	1	3	2	1	2	2	3	1	X	2	X	X	1	3
	CO5	3	1	2	2	3	3	1	2	2	X	3	X	X	2	2
	CO6	3	1	2	2	3	3	3	3	2	1	3	X	X	2	3
ZOO601	**CO1**	2	1	2	1	1	2	1	2	2	1	2	X	1	1	3
	CO2	3	2	2	2	2	1	1	2	2	1	2	X	1	1	3
	CO3	3	2	2	2	2	2	1	1	2	2	2	X	1	2	3
	CO4	3	2	3	2	2	2	2	1	2	2	1	X	1	2	2
	CO5	3	2	2	2	2	2	2	2	3	2	2	X	2	1	3
	CO6	3	3	3	3	3	2	3	2	3	2	3	X	2	3	3
Semester VII																
BAEDU701	**CO1**	3	2	2	3	2	2	3	2	3	X	1	3	1	2	1
	CO2	3	2	3	2	2	3	2	2	1	1	1	2	1	2	1

	CO3	3	3	1	3	1	1	3	2	1	1	2	2	1	2	1
	CO4	3	1	2	2	2	1	1	1	1	X	1	1	2	2	1
	CO5	3	2	3	3	2	1	3	X	2	3	3	2	3	3	2
	CO6	3	3	1	X	3	2	1	2	1	2	2	3	3	1	3
BSCED U702	**CO1**	3	2	2	2	2	2	3	2	1	X	1	1	1	2	1
	CO2	3	2	2	2	2	2	2	2	1	X	1	1	1	2	1
	CO3	3	3	1	1	1	1	2	2	1	X	2	2	1	2	1
	CO4	3	1	2	2	2	1	1	1	1	X	1	1	2	2	1
BSCED U703	**CO1**	3	3	2	3	2	1	2	3	1	2	1	3	2	1	2
	CO2	3	2	3	3	2	1	3	1	2	1	2	3	2	3	1
	CO3	3	1	3	X	2	2	2	2	2	2	1	3	2	2	2
	CO4	3	2	3	2	2	2	1	1	X	3	1	3	2	3	1
	CO5	3	2	2	2	2	1	2	1	2	3	2	1	2	3	2
	CO6	3	1	3	2	2	2	3	1	1	X	1	2	1	3	1
BSCED U704	**CO1**	3	3	2	2	2	1	2	1	1	1	1	1	2	3	1
	CO2	3	2	3	3	3	X	3	1	1	1	2	X	2	3	1
	CO3	3	1	3	3	3	2	2	2	2	2	1	1	2	2	1
	CO4	3	2	3	3	2	2	1	1	1	X	1	1	2	3	1
	CO5	3	1	2	2	2	1	2	1	1	3	1	1	2	3	1
	CO6	3	1	2	2	2	X	3	1	1	X	1	1	1	3	1
BSCED U705	**CO1**	X	X	X	2	1	X	X	1	2	3	1	X	X	X	2
	CO2	X	1	3	2	2	X	X	1	2	3	1	X	X	X	2
	CO3	X	X	X	X	2	1	X	2	X	3	1	X	X	X	2
	CO4	X	X	X	2	1	1	X	1	1	3	X	X	X	X	2
	CO5	2	X	3	3	3	2	2	1	3	3	3	X	X	1	2
	CO6	2	2	2	3	2	X	X	1	3	3	3	1	2	1	2
TSCI706	**CO1**	2	X	1	3	2	1	2	1	X	X	3	X	X	1	1
	CO2	3	X	1	3	1	2	1	1	1	1	X	3	X	X	2
	CO3	1	2	X	1	X	X	2	1	1	2	X	X	X	1	2
	CO4	2	2	X	1	X	X	2	X	X	X	3	X	1	X	1

	CO5	X	1	1	3	2	1	X	X	2	1	X	2	X	X	X
TMAT707	**CO1**	3	X	1	3	2	1	2	1	X	X	3	X	X	X	1
	CO2	2	X	1	3	1	2	1	1	1	X	X	X	X	X	2
	CO3	1	1	X	1	X	X	2	1	X	X	X	X	X	X	2
	CO4	3	2	X	1	X	X	2	X	X	X	3	X	1	X	1
	CO5	X	1	1	3	2	1	X	X	X	1	X	2	X	X	X
TENG708	**CO1**	3	3	3	X	3	X	X	X	3	X	X	X	X	X	X
	CO2	3	3	3	X	3	X	X	1	3	X	X	X	X	X	1
	CO3	3	3	2	2	3	1	2	1	2	X	3	X	X	2	1
	CO4	3	3	2	X	3	X	2	1	2	X	2	X	X	2	2
	CO5	3	3	2	3	2	2	2	X	2	3	3	X	2	2	1

Mapping of Course Outcomes (COs) with Programme Specific Outcomes (PSOs)

College code	Course Outcomes	PSO 1	PSO 2	PSO 3	PSO 4
BSCEDU101	**CO1**	3	1	2	1
	CO2	3	3	2	1
	CO3	3	2	2	1
	CO4	3	3	1	1
	CO5	3	2	2	1
BSCEDU102	**CO1**	3	2	X	X
	CO2	2	X	X	1
	CO3	3	2	X	1
	CO4	2	3	3	1
	CO5	2	X	3	X
	CO6	2	1	X	1
ENG101	**CO1**	2	1	X	X
	CO2	2	X	X	X
	CO3	X	X	3	X

	CO4	X	X	3	X
	CO5	X	X	X	X
	CO6	X	X	X	X
PBC101	**CO1**	3	1	3	1
	CO2	3	1	3	1
	CO3	3	1	3	1
	CO4	3	1	3	1
HCP101	**CO1**	2	1	X	X
	CO2	2	X	X	X
	CO3	X	X	3	X
	CO4	X	X	3	X
	CO5	X	X	X	X
	CO6	X	X	X	X
MAT101	**CO1**	1	2	2	1
	CO2	1	2	1	X
	CO3	1	2	1	X
	CO4	3	2	3	1
	CO5	3	3	2	3
	CO6	2	2	2	1
CHM101A1	**CO1**	3	2	1	1
	CO2	3	2	1	1
	CO3	3	2	1	1
	CO4	3	2	1	1
	CO5	3	2	1	1
	CO6	3	2	1	1
CHM101A2	**CO1**	3	2	1	1
	CO2	3	2	1	1
	CO3	3	2	1	1
	CO4	3	2	1	1
	CO5	3	2	1	1

	CO6	3	2	1	1
CHM101A3	**CO1**	3	2	1	1
	CO2	3	2	1	1
	CO3	3	2	1	1
	CO4	3	2	1	1
	CO5	3	2	1	1
	CO6	3	2	1	1
PHY101A	**CO1**	3	3	X	X
	CO2	3	2	X	X
	CO3	3	2	X	X
	CO4	3	2	X	X
	CO5	2	1	X	X
PHY101B	**CO1**	3	3	1	2
	CO2	2	2	X	1
	CO3	1	1	1	2
	CO4	2	1	X	2
	CO5	3	2	X	3
PHY101C	**CO1**	3	3	X	X
	CO2	3	2	X	X
	CO3	3	2	X	X
	CO4	3	2	X	X
	CO5	3	2	1	X
BOO101	**CO1**	3	3	3	3
	CO2	3	2	3	2
	CO3	2	2	2	3
	CO4	2	3	1	1
	CO5	3	2	2	1
	CO6	3	2	2	1
ZOO101	**CO1**	2	2	2	3
	CO2	2	3	2	3

	CO3	3	2	2	3
	CO4	3	2	2	3
	CO5	3	2	2	3
	CO6	3	3	2	3
BSCEDU201	**CO1**	3	2	2	1
	CO2	2	X	2	2
	CO3	3	2	2	1
	CO4	2	3	3	3
	CO5	3	2	2	3
BSCEDU202	**CO1**	3	2	X	X
	CO2	2	X	X	1
	CO3	3	2	X	1
	CO4	2	3	3	1
ENG201	**CO1**	2	1	X	X
	CO2	2	X	X	X
	CO3	X	X	3	X
	CO4	X	X	3	X
	CO5	X	X	X	X
	CO6	X	X	X	X
PBC201	**CO1**	3	1	3	1
	CO2	3	1	3	1
	CO3	3	1	3	1
	CO4	3	1	3	1
HCP201	**CO1**	2	1	X	X
	CO2	2	X	X	X
	CO3	X	X	3	X
	CO4	X	X	3	X
	CO5	X	X	X	X
	CO6	X	X	X	X
MAT201	**CO1**	1	2	2	1

	CO2	1	2	1	X
	CO3	1	2	1	X
	CO4	3	2	3	1
	CO5	3	3	2	3
	CO6	2	2	2	1
CHM201A1	**CO1**	3	2	1	1
	CO2	3	2	1	1
	CO3	3	2	1	1
	CO4	3	2	1	1
	CO5	3	2	1	1
	CO6	3	2	1	1
CHM201A2	**CO1**	3	2	1	1
	CO2	3	2	1	1
	CO3	3	2	1	1
	CO4	3	2	1	1
	CO5	3	2	1	1
	CO6	3	2	1	1
CHM201A3	**CO1**	3	2	1	1
	CO2	3	2	1	1
	CO3	3	2	1	1
	CO4	3	2	1	1
	CO5	3	2	1	1
	CO6	3	2	1	1
PHY201A	**CO1**	3	3	X	X
	CO2	3	2	X	X
	CO3	3	2	X	X
	CO4	3	2	X	X
	CO5	2	1	X	X
PHY201B	**CO1**	3	3	1	2
	CO2	2	2	X	1

	CO3	1	1	1	2
	CO4	2	1	X	2
	CO5	3	2	X	3
PHY201C	**CO1**	3	3	X	X
	CO2	3	2	X	X
	CO3	3	2	X	X
	CO4	3	2	X	X
	CO5	3	2	1	X
BOO201	**CO1**	3	3	3	3
	CO2	3	2	3	2
	CO3	2	2	2	3
	CO4	2	3	1	1
	CO5	3	2	2	1
	CO6	3	2	2	1
ZOO201	**CO1**	2	2	2	3
	CO2	2	3	2	3
	CO3	3	2	2	3
	CO4	3	2	2	3
	CO5	3	2	2	3
	CO6	3	3	2	3
BSCEDU301	**CO1**	3	X	1	X
	CO2	3	X	1	X
	CO3	3	X	1	X
	CO4	3	X	1	X
BSCEDU302	**CO1**	3	1	1	1
	CO2	3	X	1	X
	CO3	3	2	1	2
	CO4	3	X	1	X
	CO5	3	2	X	3
	CO6	2	3	1	X

ENG301	**CO1**	2	1	X	X
	CO2	2	X	X	X
	CO3	X	X	3	X
	CO4	X	X	3	X
	CO5	X	X	X	X
	CO6	X	X	X	X
PBC301	**CO1**	3	2	3	1
	CO2	3	1	2	1
	CO3	3	2	3	1
	CO4	3	1	3	1
HCP301	**CO1**	2	1	X	X
	CO2	2	X	X	X
	CO3	X	X	3	X
	CO4	X	X	3	X
	CO5	X	X	X	X
	CO6	X	X	X	X
MAT301	**CO1**	3	3	3	1
	CO2	3	2	2	1
	CO3	3	2	3	2
	CO4	2	3	3	3
	CO5	2	2	2	3
CHM301A1	**CO1**	3	1	1	1
	CO2	3	1	1	1
	CO3	3	1	1	1
	CO4	3	1	1	1
	CO5	3	1	1	1
	CO6	3	1	1	1
CHM301A2	**CO1**	3	1	1	1
	CO2	3	1	1	1
	CO3	3	1	1	1

	CO4	3	1	1	1
	CO5	3	1	1	1
	CO6	3	1	1	1
CHM301A3	**CO1**	3	1	1	1
	CO2	3	1	1	1
	CO3	3	1	1	1
	CO4	3	1	1	1
	CO5	3	1	1	1
	CO6	3	1	1	1
PHY301A	**CO1**	2	3	1	1
	CO2	2	1	X	2
	CO3	3	2	X	2
	CO4	1	1	X	3
	CO5	3	2	X	2
	CO6	3	2	X	2
PHY301B	**CO1**	3	3	X	X
	CO2	3	2	X	X
	CO3	3	2	X	X
	CO4	3	2	X	X
	CO5	3	2	1	X
	CO6	3	2	1	X
PHY301C	**CO1**	2	X	X	2
	CO2	3	1	X	3
	CO3	2	X	X	1
	CO4	2	X	X	1
	CO5	3	1	2	1
	CO6	3	1	2	1
BOO301	**CO1**	2	3	3	3
	CO2	3	2	3	2
	CO3	2	2	2	3

	CO4	1	3	1	1
	CO5	3	2	1	2
	CO6	3	2	1	2
ZOO301	**CO1**	2	2	2	3
	CO2	2	2	2	3
	CO3	3	2	2	3
	CO4	2	2	2	3
	CO5	3	2	2	3
	CO6	3	3	2	3
BSCEDU401	**CO1**	3	1	2	2
	CO2	3	1	2	2
	CO3	3	1	2	2
	CO4	3	1	2	3
	CO5	2	2	3	1
	CO6	3	3	2	1
BSCEDU402	**CO1**	3	1	2	2
	CO2	3	1	2	2
	CO3	3	1	2	2
	CO4	3	1	2	3
ENG401	**CO1**	2	1	X	X
	CO2	2	X	X	X
	CO3	X	X	3	X
	CO4	X	X	3	X
	CO5	X	X	X	X
	CO6	X	X	X	X
PBC401	**CO1**	3	2	1	1
	CO2	3	3	3	3
	CO3	3	1	3	1
	CO4	3	1	1	1
HCP401	**CO1**	2	1	X	X

	CO2	2	X	X	X
	CO3	X	X	3	X
	CO4	X	X	3	X
	CO5	X	X	X	X
	CO6	X	X	X	X
MAT401	**CO1**	3	2	2	X
	CO2	2	2	3	1
	CO3	3	2	2	X
	CO4	2	2	2	1
	CO5	3	3	2	2
CHM401A1	**CO1**	3	2	1	1
	CO2	3	2	1	1
	CO3	3	2	1	1
	CO4	3	2	1	1
	CO5	3	2	1	1
	CO6	3	2	1	1
CHM401A2	**CO1**	3	2	1	1
	CO2	3	2	1	1
	CO3	3	2	1	1
	CO4	3	2	1	1
	CO5	3	2	1	1
	CO6	3	2	1	1
CHM401A3	**CO1**	3	2	1	1
	CO2	3	2	1	1
	CO3	3	2	1	1
	CO4	3	2	1	1
	CO5	3	2	1	1
	CO6	3	2	1	1
PHY401A	**CO1**	2	3	1	1
	CO2	2	1	X	2

	CO3	3	2	X	2
	CO4	1	1	X	3
	CO5	3	2	X	2
	CO6	3	2	1	1
PHY401B	**CO1**	3	3	X	X
	CO2	1	2	X	X
	CO3	2	2	X	X
	CO4	X	1	2	1
	CO5	2	1	X	X
	CO6	3	2	2	2
PHY401C	**CO1**	3	3	X	X
	CO2	3	2	X	X
	CO3	3	2	X	1
	CO4	2	X	1	X
	CO5	2	3	2	X
	CO6	1	2	X	X
BOO401	**CO1**	3	2	3	2
	CO2	3	3	3	3
	CO3	1	2	1	3
	CO4	2	3	2	1
	CO5	3	2	1	2
	CO6	3	2	3	2
ZOO401	**CO1**	2	2	2	3
	CO2	2	2	2	3
	CO3	3	2	2	3
	CO4	2	2	2	3
	CO5	3	2	2	3
	CO6	3	2	2	3
BSCEDU501	**CO1**	3	3	X	2
	CO2	3	2	2	3

	CO3	3	3	2	3
	CO4	3	3	2	3
BSCEDU502	**CO1**	3	3	X	2
	CO2	3	2	2	3
	CO3	3	3	2	3
	CO4	3	3	2	3
	CO5	2	3	2	1
	CO6	3	2	3	2
ENG501	**CO1**	2	X	X	X
	CO2	1	X	X	X
	CO3	2	X	X	X
	CO4	1	X	2	X
	CO5	X	X	2	X
	CO6	X	X	2	X
PBC501	**CO1**	2	1	3	2
	CO2	3	1	2	3
	CO3	2	2	1	1
	CO4	2	2	1	1
	CO5	1	1	2	2
	CO6	1	3	2	1
HCP501	**CO1**	2	1	2	2
	CO2	2	1	2	2
	CO3	2	1	1	1
	CO4	2	2	1	1
MAT501	**CO1**	3	3	2	X
	CO2	3	1	2	2
	CO3	2	2	1	1
	CO4	3	2	1	1
	CO5	2	2	2	2
	CO6	3	3	2	1

CHM501A1	**CO1**	3	1	1	1
	CO2	3	1	1	1
	CO3	3	1	1	1
	CO4	3	1	1	1
	CO5	3	1	1	1
	CO6	3	1	1	1
CHM501A2	**CO1**	3	1	1	1
	CO2	3	1	1	1
	CO3	3	1	1	1
	CO4	3	1	1	1
	CO5	3	1	1	1
	CO6	3	1	1	1
CHM501A3	**CO1**	3	1	1	1
	CO2	3	1	1	1
	CO3	3	1	1	1
	CO4	3	1	1	1
	CO5	3	1	1	1
	CO6	3	1	1	1
PHY501A	**CO1**	2	3	1	1
	CO2	2	1	X	2
	CO3	1	2	X	2
	CO4	1	1	X	3
	CO5	2	2	X	2
	CO6	3	2	1	1
PHY501B	**CO1**	3	3	X	X
	CO2	1	2	X	X
	CO3	2	2	X	X
	CO4	X	1	2	1
	CO5	2	1	X	X
	CO6	3	2	2	2

PHY501C	**CO1**	2	1	2	X
	CO2	1	2	2	1
	CO3	1	2	1	X
	CO4	3	3	2	2
	CO5	3	2	2	1
	CO6	2	1	1	2
BOO501	**CO1**	3	2	3	2
	CO2	3	3	3	3
	CO3	2	2	2	3
	CO4	2	3	1	2
	CO5	3	2	1	2
ZOO501	**CO1**	2	2	2	3
	CO2	3	2	2	3
	CO3	2	3	2	3
	CO4	2	2	2	3
	CO5	3	3	2	3
	CO6	3	3	2	3
BSCEDU601	**CO1**	3	X	1	2
	CO2	3	X	2	3
	CO3	3	X	1	3
	CO4	3	X	2	3
BSCEDU602	**CO1**	3	X	1	2
	CO2	3	X	2	3
	CO3	3	X	1	3
	CO4	3	X	2	3
	CO5	2	3	3	1
	CO6	2	1	3	1
ENG601	**CO1**	2	X	X	X
	CO2	X	X	X	X
	CO3	2	X	2	X

	CO4	X	X	2	X
	CO5	X	X	2	X
PBC601	**CO1**	1	2	3	2
	CO2	2	1	1	1
	CO3	2	1	1	1
	CO4	1	3	2	2
	CO5	3	2	2	3
	CO6	1	1	1	2
HCP601	**CO1**	2	2	3	2
	CO2	2	2	1	2
	CO3	2	1	1	1
	CO4	2	3	2	2
MAT601	**CO1**	3	3	3	2
	CO2	3	2	3	2
	CO3	2	2	3	1
	CO4	2	3	2	2
	CO5	2	2	2	2
	CO6	2	2	2	2
CHM601A1	**CO1**	3	2	1	1
	CO2	3	2	1	1
	CO3	3	2	1	1
	CO4	3	2	1	1
	CO5	3	2	1	1
	CO6	3	2	1	1
CHM601A2	**CO1**	3	2	1	1
	CO2	3	2	1	1
	CO3	3	2	1	1
	CO4	3	2	1	1
	CO5	3	2	1	1
	CO6	3	2	1	1

CHM601A3	**CO1**	2	X	1	1
	CO2	2	X	1	1
	CO3	2	X	1	1
	CO4	2	X	1	1
	CO5	2	X	1	1
	CO6	2	X	1	1
PHY601A	**CO1**	3	3	X	1
	CO2	3	2	X	1
	CO3	3	2	X	1
	CO4	3	1	X	2
	CO5	3	2	1	2
	CO6	2	2	1	1
PHY601B	**CO1**	3	2	X	2
	CO2	3	2	X	2
	CO3	3	1	X	2
	CO4	3	2	X	2
	CO5	3	3	X	2
	CO6	3	2	X	2
PHY601C	**CO1**	2	1	2	X
	CO2	1	2	2	1
	CO3	1	X	1	X
	CO4	2	3	2	2
	CO5	3	2	2	1
	CO6	2	1	2	1
BOO601	**CO1**	3	2	3	2
	CO2	3	3	3	3
	CO3	1	2	2	3
	CO4	3	3	1	1
	CO5	2	2	1	2
	CO6	3	2	3	2

ZOO601	**CO1**	2	2	2	3
	CO2	2	3	2	3
	CO3	3	2	2	3
	CO4	2	2	2	3
	CO5	3	2	2	3
	CO6	3	3	3	3
BAEDU701	**CO1**	3	3	1	1
	CO2	3	2	1	1
	CO3	2	1	1	X
	CO4	2	3	1	2
	CO5	3	2	1	3
	CO6	2	3	1	2
BSCEDU702	**CO1**	3	X	1	1
	CO2	3	X	1	1
	CO3	2	1	1	X
	CO4	2	X	1	X
BSCEDU703	**CO1**	3	1	3	2
	CO2	3	2	2	X
	CO3	3	3	2	2
	CO4	3	X	1	3
	CO5	3	2	2	3
	CO6	3	1	1	1
BSCEDU704	**CO1**	3	1	3	2
	CO2	3	2	1	X
	CO3	3	1	2	1
	CO4	3	X	X	X
	CO5	3	1	2	3
	CO6	3	X	1	1
BSCEDU705	**CO1**	2	1	X	X
	CO2	2	1	X	X

	CO3	2	1	X	X
	CO4	2	1	X	X
	CO5	2	1	X	3
	CO6	2	3	X	3
TSCI706	**CO1**	3	2	1	1
	CO2	2	3	1	1
	CO3	1	1	X	X
	CO4	2	1	1	2
	CO5	1	X	X	X
TMAT707	**CO1**	2	3	X	1
	CO2	2	2	1	1
	CO3	3	1	X	X
	CO4	2	2	1	2
	CO5	1	X	1	X
TENG708	**CO1**	3	3	3	X
	CO2	3	3	3	X
	CO3	3	3	2	2
	CO4	3	3	2	X
	CO5	3	3	2	3

DEPARTMENT OF SOCIAL SCIENCES

The Department of History, Political Science and Physical Education was established in 1969 in the College. These departments offered Undergraduate B.A Programme. In 2014, the Post-Graduation in History was started and in 2017 Music department came into being. These were independent departments till 2020, but in January 2021 these departments were collaborated in one department and the name of the department changed to Department of Social Sciences. Thus, now the Department of Social Sciences offers B.A. course in History, Political Science, Physical Education, and Music and Post-Graduation in History. Our courses and programmes of study inquire into the human condition and are designed to foster analytical and theoretical skills necessary to evaluate diverse social relations. The faculty of the department enjoys working with students in enhancing their academic potential through various activities like visiting various historical sites, organizing quizzes, seminars, historical plays, debates and inspire them to participate in social activities. Apart from this, they were given assignments on different topics of history. The department is committed to instill ethical and social values in the students to make them good citizens and to inculcate feeling of patriotism in them.

VISION

The Vision of Social Science department is to develop in students the skills that promote Inter-disciplinary of human society and human world through teaching, research and social activities.

MISSION

The mission of Social Science department is to produce and disseminate knowledge, to research, study and educate the students in Social Sciences, Social Activities and related fields to inculcate ethical values and principles like human dignity, respect for human rights and social responsibility through quality education.

OBJECTIVES

- To develop skills in critical thinking and reading and to develop the ability to construct reasonable historical argument

- To understand the wide range of historical information and eXplain historical continuity and change
- To increase knowledge of diverse political system around the world, including political system, institutions and processes and the changing domestic and global conteXts within which they operate
- To increase recognition of the major problems the leading policies and the legal issues
- Develop health related fitness habits which can be practical lifelong so as to prevent degenerative diseases

Programme run by department:

1. M.A. (History) (Programme code: MAHIS)

M.A. (History)

Programme Outcomes of M.A. (History)

On successful completion of M.A Programme, the students will be able to develop following attributes, qualities and skills:

PO1	**Disciplinary Knowledge**	• Understanding of historical concepts and findings in History and capacity to explain how and why important events happened. • Through completion of course students become familiar with political process, political ideas and institutions, structure of society and culture, historical method and historiography, economy and society in Punjab, India and World.
PO2	**Communication Skills**	Good verbal and written communication skills are essential in order to deliver and understand information quickly and accurately so it is develop through seminars, debates and discussions in class.
PO3	**Critical Thinking**	Critical thinking develops in learner while differentiating between historical facts and historical interpretation and assessing the credibility of primary and secondary sources.
PO4	**Problem Solving**	The learner develops the ability to solve the problem by analyzing

		cause and effect relationships of historical events.
PO5	**Analytical Reasoning**	The analytical skill develops in students while recognizing a range of viewpoints and comparing historical narratives.
PO6	**Research Related Skills**	Research skill develops in learner while formulating historical questions and assessing the credibility of primary and secondary sources.
PO7	**Team Work and Time Management**	Various activities are organized by the department like historical tours, plays, seminars, webinar to make the learners effective in team work and time bound assignment are given to the students to develop time management skills.
PO8	**Scientific Reasoning**	While studying the historical methodology the learners develop scientific approach by which they can differentiate between historical facts & historical interpretation.
PO9	**Reflective Thinking**	• By studying history the thinking of learner broadens which help him to understand the contemporary issues. • History gives us the opportunity to learn from past mistakes. It helps us to understand why people behave the way they do.
PO10	**Self-Directing Learning**	The programmer enables the students to have self-directing learning approach through the study of historiography and historical method. Students are encouraged to formulate questions and search out the answers. They are given assignment to create the ability of research.
PO11	**Multicultural Competence**	Cultural competence is the ability of professionals to function successfully with the people from different cultural background. The programme contains the content related to culture of various regions, which makes the learner able to work with people from different cultural background.
PO12	**Moral and Ethical Values**	Moral values and ethics are strongly attached to society, spirituality and culture. As the programme contains in its contents the study of society, religion and culture, it instill moral and ethical value in the learners which they can apply in their life.
PO13	**Leadership Readiness/Qualities**	As the programme has the contents related to the life of various leaders of historical events which inspires them to take the social issues and instill in them the quality of leadership.

PO14	**Lifelong Learning**	• The subject history directly affects in every day, with today's society shaped by historic periods of industrialization colonialism, disease, epidemic etc. • History spans all cultures, eras and environments as it is an immovable factor that can be called upon for knowledge and insight how the world got to the point its now and how it will continue to develop in future.

Programme Specific Outcomes (PSOs) of M.A. (History)

PSO 1	An ability to apply the acquired knowledge in the relevant field will develop.
PSO 2	Solve the problem and also think independently and draw a logical conclusion.
PSO 3	Critical and analytical sense develops in the students.
PSO 4	Clarity of concepts related to various periods of history.
PSO 5	Mental horizon and better self-confidence widen.

Course Outcomes of M.A. (History)

Semester	Course Name	College Code	Course Outcome	
Sem.-I	**The Punjab (Mid 15th to 17th Centuries)**	**MAHIS101**	**CO1**	Understand the teaching of Sikh Gurus.
			CO2	Analyze Guru Nanak Dev ji's response towards contemporary polity, society and religion.
			CO3	Illustrate the development of the Sikh religion.
			CO4	Analyze Mughal relation with Sikh Gurus.
			CO5	Discuss the administrative structure of the Punjab under the Mughals.
	Ancient India -	**MAHIS102**	**CO1**	Understand the transition from hunting to civilization.

	An Overview		**CO2**	To analyze religious and literary sources of ancient India.
			CO3	To evaluate the polity and economy from Mauryan to Gupta period.
			CO4	To illustrate the administrative structure of ancient rulers.
			CO5	To analyze multiple cultures of ancient India.
	Medieval India - Political Processes	**MAHIS103**	**CO1**	Describe the establishment of empire by Turks, Afghans and Mughals in India.
			CO2	Explain the major developments in the polity, economy and society in medieval India.
			CO3	To evaluate the administrative policies of Mughals.
			CO4	To describe administrative structure under the rule of Turks and Mughals.
			CO5	To analyze causes responsible for the decline of Mughal empire.
	Modern India – Political Processes	**MAHIS104**	**CO1**	To analyze different schools of thought about modern Indian history.
			CO2	To describe the establishment of British empire in India.
			CO3	To illustrate economic policies of Britishers in India.
			CO4	Describe the emergence of socialist and communist movement in India.
			CO5	Discuss various movements for the freedom of India during British period.
Sem.-II	**Punjab in 18th Century (Compulsory)**	**MAHIS201**	**CO1**	Evaluate the political condition of Punjab in early 18th century
			CO2	To illustrate struggle of Sikhs against Mughals and Afghans.
			CO3	Explain the origin of Sikh Misls and understand the

				importance Dal Khalsa and Gurmata.
			CO4	Evaluate the social and economic condition of Punjab in18th century.
			CO5	Describe the origin of Sikh raj in Punjab.
	Opt.iii: Agrarian Economy of Modern India	**MAHIS202**	**CO1**	Analyze agrarian policies of Britishers in India.
			CO2	Examine the commercial policy of Britishers in India.
			CO3	Evaluate the impact of agrarian policy of Britishers on peasants.
			CO4	Describe the agrarian relations and changes in different zones of modern India.
			CO5	Examine the development of canals and agrarian colonies during British period.
	Opt.i: U.S.A (1820-1973)	**MAHIS203**	**CO1**	Explain the rise of USA as world power.
			CO2	Evaluate the major events in the 18th century imperial America.
			CO3	Illustrate institutions of American society and their impact on different groups of society.
			CO4	Analyze the relations of America with other countries.
			CO5	Describe the social, economic and political structure of America.
	Opt.ii: China And Japan (1840-1950)	**MAHIS204**	**CO1**	Explain the emergence of nationalism in china.
			CO2	Critically analyze causes and events of civil war in China.
			CO3	Illustrate causes and events of revolution of 1849 and establishment of communism in China.
			CO4	Describe the Meji restoration and modernization of Japan.
			CO5	Evaluate the imperial design and its role in the fall of Japan.

Sem.-I	**Punjab in 19th Century** **(Compulsory)**	**MAHIS301**	**CO1**	Evaluate the political condition of Punjab in19th century.
			CO2	Describe the social structure of Punjab in early 19th century.
			CO3	Illustrate formation of Sikh Raj by Maharaja Ranjit Singh.
			CO4	Critically analyze the Anglo- Sikh relations and annexation of Punjab by Britishers.
			CO5	Evaluate various Socio-Religious movements.
	Opt.iv : Rise and growth of Colonialism in India	**MAHIS302**	**CO1**	Describe the growth of colonialism in India
			CO2	Analyze the major events in colonial India.
			CO3	Critically describe the economic condition of India in colonial period.
			CO4	Evaluate the subaltern school of historiography.
			CO5	Analyze the industrial growth of India in colonial period.
	Opt.iv : Gender Relation in Modern India	**MAHIS303**	**CO1**	Evaluate the position of women from Ancient to Modern period
			CO2	Analyze struggle of women for their rights.
			CO3	Explain the role of women in freedom struggle.
			CO4	Explain the role of women in Peasant and Dalit movement.
			CO5	Analyze the status of women in social, economic and educational scenario after independence.
	Opt.I : Constitutional Development in	**MAHIS304**	**CO1**	Understand various concepts related to constitutional development in India
			CO2	Evaluate constitutional development during East India company's rule.

	Modern India		**CO3**	Analyze provisions and defects in the acts passed by British parliament.
			CO4	Illustrate political movements and reform proposals for the formation of constitution.
			CO5	Describe formation of Indian Republic.
Sem.-II	**Punjab in the 20th Century (Compulsory)**	**MAHIS401**	**CO1**	Evaluate the causes responsible for the agrarian unrest in Punjab.
			CO2	Describe the various movements for freedom in Punjab during British Period.
			CO3	Evaluate the communal politics and partition of India.
			CO4	Explain the establishment of Punjab province in 1966.
			CO5	Analyze the growth and impact of Green Revolution in Punjab.
	Opt.ii : History and Historical Method	**MAHIS402**	**CO1**	Understand the historical methodology.
			CO2	Know how to differentiate between historical facts and interpretation.
			CO3	Evaluate primary and secondary sources of history.
			CO4	Develop the spirit of enquiry.
			CO5	Know how to read and write history.
	Opt. iii : Religious Development in Medieval India	**MAHIS403**	**CO1**	Describe the origin and features of Sufi Movement during medieval period in India.
			CO2	Evaluate the development of various devotional cults in India.
			CO3	Analyze rise and growth of Bhakti movement in India.
			CO4	Describe origin of various sects in Islam religion.

			CO5	Evaluate the continuity and change within Shaiva, Shakti and Vaishanav sect during medieval movement
	Opt.vii : Peasant movement in Modern India	**MAHIS404**	**CO1**	Critically analyze the causes and events of peasant revolt in 20th C
			CO2	Describe role of peasants in freedom movement during medieval period.
			CO3	Evaluate relations between peasants and agricultural laborers.
			CO4	Explain the impact of colonial rule on peasantry class.
			CO5	Discuss about various issues of peasantry.

Mapping of Course outcomes (COs) with programme outcomes (POs)

Programme Outcome															
College Code	**Course Out-comes**	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**	**PO 13**	**PO 14**
Semester I															
MAHIS101	**CO1**	3	2	2	2	2	2	3	2	2	2	2	2	1	1
	CO2	3	2	1	3	3	1	2	3	3	2	2	1	1	1
	CO3	2	2	2	2	2	1	2	1	2	2	1	2	X	1
	CO4	2	3	2	1	1	2	3	2	3	1	2	2	2	1
	CO5	3	1	2	2	1	2	2	2	2	1	2	2	1	1
MAHIS102	**CO1**	2	2	3	1	1	1	2	3	2	1	3	2	2	1
	CO2	3	3	3	2	2	1	2	2	1	2	2	1	1	1
	CO3	3	2	1	2	3	1	X	3	2	2	3	1	1	X
	CO4	3	1	2	2	3	2	1	2	2	3	2	1	2	1
	CO5	3	3	2	3	2	2	2	3	2	2	3	1	2	1

MAHIS103	**CO1**	3	2	3	2	1	1	2	3	2	1	3	2	2	1
	CO2	3	3	3	2	2	1	2	2	1	2	2	1	1	1
	CO3	3	2	1	2	3	1	X	3	2	2	3	1	1	X
	CO4	3	1	2	2	3	2	1	2	2	3	2	2	2	2
	CO5	3	3	2	3	2	2	2	3	2	2	3	1	2	1
MAHIS104	**CO1**	3	1	3	X	3	1	1	3	3	1	3	1	1	1
	CO2	3	1	3	1	2	X	X	3	1	1	2	1	3	3
	CO3	2	1	3	1	2	1	2	2	1	X	2	1	2	X
	CO4	3	1	2	X	3	1	2	2	2	1	3	2	1	1
	CO5	3	2	3	1	2	2	2	3	2	1	3	1	1	2
Semester II															
MAHIS201	**CO1**	3	2	2	1	2	1	2	3	2	X	3	1	3	1
	CO2	3	1	3	X	2	1	X	2	3	1	2	2	2	X
	CO3	2	2	2	2	1	2	1	3	2	2	3	1	3	1
	CO4	3	2	3	2	3	1	X	3	2	2	3	1	1	3
	CO5	3	2	3	3	2	2	1	3	1	1	2	2	2	1
MAHIS202	**CO1**	3	1	3	3	3	1	X	2	1	1	3	1	1	1
	CO2	3	2	3	X	3	1	1	3	2	2	3	1	X	1
	CO3	3	2	3	2	2	2	X	2	2	1	2	2	X	X
	CO4	2	X	2	1	3	1	2	2	1	2	3	1	1	1
	CO5	3	1	3	1	3	2	2	3	3	2	3	2	1	1
MAHIS203	**CO1**	2	1	3	X	3	1	X	3	2	X	3	1	1	X
	CO2	3	2	3	1	3	1	2	2	3	1	2	2	1	1
	CO3	3	1	2	2	2	X	1	3	1	2	3	1	X	2
	CO4	2	2	1	X	1	1	2	X	2	1	3	1	2	1
	CO5	1	2	3	1	2	2	1	3	1	2	3	X	1	1
MAHIS204	**CO1**	3	1	3	X	2	1	X	3	1	X	3	1	X	1

	CO2	3	2	3	1	1	2	1	2	1	1	2	X	1	1
	CO3	2	1	3	1	2	1	2	3	2	X	3	2	X	1
	CO4	3	2	1	2	X	2	X	2	1	2	1	2	1	2
	CO5	3	2	3	1	3	1	X	2	1	2	2	3	3	2
Semester III															
MAHIS301	**CO1**	3	1	3	2	3	1	X	3	2	1	3	2	1	X
	CO2	2	2	3	1	3	X	1	2	1	2	2	1	X	1
	CO3	2	2	2	X	2	1	3	3	1	X	3	1	1	1
	CO4	2	1	3	2	3	X	2	2	3	1	2	2	X	1
	CO5	3	2	3	1	3	1	1	3	2	1	1	2	1	1
MAHIS302	**CO1**	3	2	3	1	X	1	1	3	3	X	3	1	1	2
	CO2	3	1	3	1	2	1	X	2	2	1	3	2	X	2
	CO3	3	2	3	2	X	X	1	1	2	X	2	2	1	2
	CO4	2	1	3	1	2	1	2	3	2	2	2	2	2	1
	CO5	3	X	3	2	X	2	2	2	3	2	3	1	X	1
MAHIS303	**CO1**	2	1	2	2	3	1	2	2	3	1	2	X	X	1
	CO2	3	1	3	1	2	X	1	1	2	2	1	1	2	2
	CO3	3	2	3	1	3	1	2	3	1	X	3	1	1	2
	CO4	3	1	3	2	2	1	1	2	2	1	2	X	1	X
	CO5	3	2	3	1	3	1	2	3	2	1	3	2	2	1
MAHIS304	**CO1**	3	3	3	1	2	1	1	3	2	1	3	1	2	3
	CO2	2	1	3	2	2	3	2	3	2	2	3	2	2	2
	CO3	3	1	3	3	3	3	2	3	3	2	2	2	2	2
	CO4	3	2	3	2	3	3	3	2	3	3	2	2	2	2
	CO5	2	2	2	1	2	2	2	3	1	2	3	2	1	1
Semester IV															
MAHIS401	**CO1**	3	1	3	2	3	1	2	3	X	2	3	1	1	2

	CO2	3	2	3	1	3	2	2	3	1	2	3	2	1	1
	CO3	2	2	3	2	2	3	2	3	2	1	2	2	2	1
	CO4	3	2	3	2	2	1	2	2	2	1	3	1	1	1
	CO5	2	1	2	1	3	1	3	2	2	1	2	2	2	2
MAHIS402	**CO1**	3	3	3	1	2	1	1	3	2	1	3	1	2	3
	CO2	2	1	3	2	2	3	2	3	2	2	3	2	2	2
	CO3	3	1	3	3	3	3	2	3	3	2	2	2	2	2
	CO4	3	2	3	2	3	3	3	2	3	3	2	2	2	2
	CO5	2	2	2	1	2	2	2	3	1	2	3	2	1	1
MAHIS403	**CO1**	3	2	3	2	1	1	1	3	2	1	3	1	2	1
	CO2	3	3	3	2	2	1	2	2	1	2	2	1	1	1
	CO3	3	2	1	2	3	1	X	3	1	2	3	1	1	X
	CO4	3	1	2	2	3	2	1	2	2	3	2	2	2	2
	CO5	3	3	2	3	2	2	2	3	2	2	3	1	2	2
MAHIS404	**CO1**	2	3	2	3	1	2	2	3	2	1	2	1	X	1
	CO2	3	3	2	2	2	3	1	2	1	2	2	1	1	1
	CO3	2	2	3	1	2	3	2	1	2	1	1	1	X	1
	CO4	2	3	2	3	2	2	2	2	3	2	2	2	1	1
	CO5	3	3	3	2	1	2	1	1	2	2	1	1	X	1

Mapping of Course Outcomes(COs) with Programme Specific Outcomes (PSOs)

College Code	**Course Outcome**	**Program Specific Outcome**				
		PSO 1	**PSO2**	**PSO3**	**PSO4**	**PSO5**
Semester I						
MAHIS101	**CO1**	2	2	3	2	1
	CO2	3	3	2	2	2

	CO3	2	3	2	2	2
	CO4	2	2	2	2	2
	CO5	2	2	3	3	2
MAHIS102	**CO1**	3	2	3	2	2
	CO2	3	2	3	2	1
	CO3	2	1	2	3	2
	CO4	3	2	3	2	2
	CO5	3	2	2	2	2
MAHIS103	**CO1**	3	2	3	2	2
	CO2	3	2	3	2	1
	CO3	2	1	2	3	2
	CO4	3	2	3	2	2
	CO5	3	2	2	2	2
MAHIS104	**CO1**	3	2	3	1	2
	CO2	2	3	2	1	2
	CO3	3	2	1	2	3
	CO4	3	3	2	1	2
	CO5	3	2	3	3	1
Semester II						
MAHIS201	**CO1**	3	1	3	2	1
	CO2	2	2	1	2	2
	CO3	3	X	2	1	2
	CO4	3	2	2	3	1
	CO5	3	3	1	2	2
MAHIS202	**CO1**	2	1	3	2	1
	CO2	3	2	2	1	2
	CO3	3	2	3	2	X
	CO4	2	3	1	2	2
	CO5	2	2	X	X	X
MAHIS203	**CO1**	2	3	3	2	3

	CO2	3	2	2	2	2
	CO3	2	3	3	1	2
	CO4	1	2	1	2	1
	CO5	1	2	1	2	2
MAHIS204	**CO1**	1	2	3	3	1
	CO2	2	1	3	3	X
	CO3	3	2	3	2	2
	CO4	2	2	1	3	X
	CO5	2	1	2	1	1
Semester III						
MAHIS301	**CO1**	3	2	1	2	X
	CO2	2	3	X	2	2
	CO3	2	1	2	3	1
	CO4	1	1	3	2	X
	CO5	3	2	X	1	2
MAHIS302	**CO1**	2	1	2	3	1
	CO2	1	2	2	2	2
	CO3	2	X	2	3	1
	CO4	2	2	2	3	2
	CO5	1	2	1	2	1
MAHIS303	**CO1**	2	3	2	2	X
	CO2	1	2	2	3	1
	CO3	2	3	2	1	2
	CO4	3	2	2	X	1
	CO5	3	2	3	2	X
MAHIS304	**CO1**	3	2	3	2	2
	CO2	3	3	2	1	2
	CO3	3	2	3	2	1
	CO4	2	1	2	2	2
	CO5	2	3	2	2	1

Semester IV						
MAHIS401	**CO1**	2	2	1	2	1
	CO2	3	2	2	2	2
	CO3	2	2	3	2	1
	CO4	2	3	3	3	2
	CO5	3	2	2	2	1
MAHIS402	**CO1**	3	2	3	2	2
	CO2	3	3	2	1	2
	CO3	3	2	3	2	1
	CO4	2	1	2	2	2
	CO5	2	3	3	2	1
MAHIS403	**CO1**	3	2	2	2	2
	CO2	3	2	2	2	1
	CO3	2	1	3	3	2
	CO4	3	2	3	2	2
	CO5	3	2	2	2	2
MAHIS404	**CO1**	3	2	2	1	1
	CO2	2	3	2	2	2
	CO3	2	3	2	2	2
	CO4	3	2	2	2	2
	CO5	2	3	3	2	1

DEPARTMENT OF PHYSICS

The Physics Department of the college was established in 1998. The department started M.Sc. Physics from the session 2016. The department provides a very vibrant and dynamic academic ambience with effective tutorial work, discussions and seminars. The department facilitates opportunities for higher studies and placements**.**

VISION

- Provide the highest quality education to students, nurture their talent, promote intellectual growth and shape their personal development
- Remain dedicated and steadfast in the pursuit of truth
- To build a foundation for excellence and encourage the development of the institution as a premier institution by igniting enthusiasm, interest and passion

MISSION

- To create transformative educational experience for students
- Focus on deep disciplinary knowledge, problem solving, leadership, communication and interpersonal skills
- To promote exchange of innovative ideas across the disciplines through effective use of teaching learning methods, tools and techniques
- Our mission is to towards enhancing the employability of students of the college through continuous personality programs, workshops etc.
- To organize and sustain efficient operating systems in the Department for realization of our objectives as Institution of eminence and International standards

OBJECTIVES

- To make students confident and versatile problem solver who use physical intuition together with analytical and quantitative skills
- To develop a solid grasp of over concepts and application of core subjects
- To teach students how physics and other disciplines have impacted and continue to impact each other and society

- To engage students vigorously in further studies and variety of other lifelong learning opportunities

Programme run by department:

1. M.Sc. (PHYSICS) (Programme code: MSCPHY)

M.Sc. (PHYSICS)

Program Outcomes

On successful completion of M.Sc. (PHYSICS) programme, the students will be able to develop following attributes, qualities and skills:

PO 1	**Disciplinary knowledge**	Capable of demonstrating good knowledge and understanding of major concepts, theoretical principles experimental findings in Physics and its different subfields.
PO 2	**Communication skills**	Ability to transmit complex technical information relating all areas in Physics in a clear and concise manner and technical concepts in a simple language for better understanding.
PO 3	**Critical thinking**	Critical thinker and problem solver: Ability to employ critical thinking and efficient problem solving skills in all the basic areas of Physics
PO 4	**Problem solving**	Capability for asking appropriate questions relating to the issues and problems in the field of Physics, and planning, executing and reporting the results of a theoretical or experimental investigation.
PO 5	**Analytical Reasoning**	Demonstrate the ability to evaluate the reliability and relevance of evidence, identify logical flaws and holes in the arguments of others, analyse and synthesise data from a variety of sources, draw valid conclusions.
PO 6	**Research-related Skills**	Demonstrate a sense of inquiry and capability for asking relevant questions, problematizing, synthesising and articulating, demonstrate the ability to recognise cause-and-effect relationships, define problems, formulate and test hypotheses, analyse, interpret and draw conclusions from data.
PO 7	**Collaboration/Cooperation/Team work**	Demonstrate ability to work effectively and respectfully with diverse teams, facilitate coordinated effort on the part of a group, and act together as a group in the interests of a common cause and work efficiently as a member of a team.

PO 8	**Scientific Reasoning using Quantitative/Qualitative Data**	Demonstrate the ability to understand cause-and-effect relationships, define problems, apply scientific principles, analyse, interpret and draw conclusions from quantitative/qualitative data.
PO 9	**Reflective Thinking**	Demonstrate critical sensibility to lived experiences, with self-awareness and reflexivity of both self and society.
PO 10	**Information/Digital Literacy**	Capable of using computers for simulation studies in Physics and computation and appropriate software for numerical and statistical analysis of data.
PO 11	**Self-Directed Learning**	Demonstrate ability to work independently, identify appropriate resources required for a project, and manage a project through to completion.
PO 12	**Multicultural Competence**	Demonstrate knowledge of the values and beliefs of multiple cultures and a global perspective, effectively engage in a multicultural society.
PO 13	**Moral and Ethical Awareness/Reasoning**	The graduate should be capable of demonstrating ability to think and analyse rationally with modern and scientific outlook and identify ethical issues related to one's work.
PO 14	**Leadership Readiness/Qualities**	Demonstrate capability for mapping out where one needs to go to "win" as a team or an organization, and set direction, formulate an inspiring vision.
PO 15	**Lifelong Learning**	Demonstrate the ability to acquire knowledge and skills, including 'learning how to learn' that are necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at personal development.

Program Specific Outcomes (PSOs)

PSO1	Students are expected to acquire core knowledge in physics, including the major premises of classical mechanics, quantum mechanics, electromagnetic theory, electronics, nuclear and particle physics, special theory of relativity and modern physics.
PSO2	Students are also expected to develop a written and oral communication skill in communicating physics-related topics.
PSO3	Students should learn how to design and conduct an experiment (or series of experiments) demonstrating their understanding of the scientific method and processes. Not only that they are expected to have understanding of the analytical methods required to interpret and analyze results and draw conclusions as supported by their data.
PSO4	Students will develop the proficiency in the acquisition of data using a variety of laboratory

	instruments and in in the analysis and interpretation of such data.
PSO5	Develop the following experiment tools: Numerically model simple physical systems for which analytical methods are inappropriate or of limited utility.

Course Outcomes (COs) of M.Sc. Physics

Semester	Course Title	College Code	COURSE OUTCOMES On completion of course student will be able to:	
Semester 1st	**Mathematical Physics I**	**MSPHY 101**	**CO1**	Learn the way to solve differential equations like Legendre, Bessel and Hermite that are common in physical sciences.
			CO2	Gain the complete knowledge about different partial differential equations encountered in physical problems and draw inferences from solutions.
			CO3	Fully understand transfer functions in instrumentation using Laplace transforms.
			CO4	Learn the method to apply Fourier transforms in Holography.
			CO5	Understand the way to use complex numbers and variables.
			CO6	Apply the knowledge of Tensors to understand phenomenon like stress and strain.
	Classical Mechanics	**MSPHY 102**	**CO1**	Understand the concept of Lagrangian and Hamiltonian approaches in classical mechanics.
			CO2	Solve the classical background of Quantum mechanics and get familiarized with Poisson brackets and Hamilton -Jacobi equation
			CO3	To know how to impose constrains on a system in order to simplify the method to be used in solving physics problems,
			CO4	To establish the Kepler's law are just consequences of Newton's law of gravitation and that of motion.
			CO5	To find the linear approximation to dynamical system near equilibrium and also know how to derive and solve the wave equation for small oscillations.
			CO6	To distinguish between 'inertial frame of reference' and 'non-inertial frame of reference.
	Quantum Mechanics-I	**MSPHY 103**	**CO1**	Develop knowledge and understanding the concept that quantum states live in vector space.
			CO2	Elate this abstract formulation to wave and matrix mechanics.
			CO3	Familiarize with the concept of Linear vector space, Hilbert space, concepts of basis, operators and bra ket notation.
			CO4	Analyze angular momentum, spin matrices and Clebsh-

				Gorden coefficient.
			CO5	Develop knowledge and understanding of perturbation theory, level splitting.
			CO6	Learn about various approximation methods utilized in Quantum Mechanics.
	Electronics I	**MSPHY 104**	**CO1**	Learn the way to use OP Amps as summation, subtractor, sine wave generator , square wave generator and triangular wave generator .
			CO2	Have deep theoretical knowledge of wave guides, transmission lines, microwave components, microwave tubes and devices.
			CO3	Fully understand the working of transistor at high frequency, working of transistorized and IC based multivibrator circuits .
			CO4	Understand the construction, operation and characteristics of JFET and MOSFET , which can be used in design of amplifiers .
			CO5	Understand the concept of feedback and design feedback amplifier.
			CO6	Analyze the concepts of SCR and observe its characteristics.
	Physics Practical I	**MSPHY 105**	**CO1**	Learn various experimental techniques and various apparatus.
			CO2	Co-relate the theoretical concepts with experimental one and develop confidence to handle sophisticated equipment wherever necessary.
			CO3	Adopt the skills related to research, education, and industry-academia.
	Computational Physics I	**MSPHY 106**	**CO1**	Learn about various numerical methods and their interpretation.
			CO2	Learn C++, Programming Language Algorithm, Structure programming.
			CO3	Analyze numerical problems.
	Mathematical Physics II	**MSPHY 201**	**CO1**	To know the method of contour integration to evaluate definite integrals of varying complexity.
			CO2	Have gained ability to apply group theory to physics problems, which is pre-requisite for deeper understanding of crystallography, particle physics quantum mechanics and energy bands in solids.
			CO3	Be able to apply calculus of variations to diverse problems in physics including isoperimetric problems. Another interesting aspect is the use of Lagrange multipliers in solving physics problems.
			CO4	To become familiar with the method of Green's function to solve linear differential equations with inhomogeneous term.
			CO5	To find solutions to integral equations using different

Semester 2nd				methods.
			CO6	Apply the knowledge of tensors to understand phenomenon like stress and strain.
	Statistical Mechanics	**MSPHY 202**	**CO1**	Explain statistical physics and thermodynamics as logical consequences of postulates of statistical mechanics.
			CO2	Apply the principles of statistical mechanics to selected problems.
			CO3	Grasp the basis of ensemble approach in statistical mechanics to range of situations.
			CO4	Analyze important examples of ideal Bose systems and Fermi systems.
			CO5	Discuss various phenomena in solids using statistical mechanics.
			CO6	Develop and apply Ising model and mean field theory for first and second order phase transitions.
	Classical Electrodynamics- I	**MSPHY 203**	**CO1**	Understand the concept of Coulomb's law, Gauss law, Laplace and Poisson's equation in the electrostatic field.
			CO2	Be able to understand the concept of multipole expansion of the scaler potential and energy of a charge distribution.
			CO3	Knowledge on the electrostatics of dielectrics.
			CO4	To explain and solve the Maxwell's equation and Boundary value problems.
			CO5	Students will be able to grasped the idea of electromagnetic wave propagation through wave guides and transmission line.
			CO6	Gain of Knowledge to analyse the radiation systems in which the electric dipole, magnetic dipole or electric quadrupole dominate.
	Electronics – II	**MSPHY 204**	**CO1**	Understand different type of codes and number systems used in digital communication and computer systems.
			CO2	Describe and explain the operation of fundamental digital gates.
			CO3	Design combinational and sequential circuits.
			CO4	Analyze the operation of a flip - flop and examine relevant timing diagrams.
			CO5	Analyze the operation of counters and shift registers.
			CO6	Understand the architecture and use of microprocessors and microcontrollers for the basic operations.
	Physics Practical- II	**MSPHY 205**	**CO1**	Learn various experimental techniques and various apparatus.
			CO2	Co-relate the theoretical concepts with experimental one and develop confidence to handle sophisticated equipment wherever necessary.
			CO3	Adopt the skills related to research, education, and industry-

				academia.
	Computational Physics- II	**MSPHY 206**	**CO1**	To describe and use software tools in the programming process.
			CO2	Acquire skills in C++ programming language.
			CO3	Analyze Physics problems using numerical methods and programing.
Semester 3rd	**Nuclear Physics I**	**MSPHY 301**	**CO1**	Demonstrate knowledge of fundamental aspects of the structure of nucleus, nuclear forces, radioactivity and nuclear reactions.
			CO2	Familiarize with wave mechanical properties of nuclei, electric and magnetic moments.
			CO3	Acquire knowledge about nuclear decay processes and their outcomes.
			CO4	Understanding the theory behind nuclear experimental technologies.
			CO5	Grasp knowledge about Nuclear reactions, Fission and Fusion and their characteristics.
			CO6	Understanding the applications of nuclear techniques in various field.
	Particle Physics – I	**MSPHY 302**	**CO1**	Understand the basic forces in nature and classification of particles and study in detail conservation laws and quark models in detail.
			CO2	Fully understand the C, P, T invariance and relativistic kinematics.
			CO3	Familiar with the spin parity concept.
			CO4	Learn about interaction among elementary particles and understand their behaviour.
			CO5	Learn about the decay phenomenon and the process how they will occur.
			CO6	Understand the experimental techniques related to high energy physics.
	Condensed Matter Physics –I	**MSPHY 303**	**CO1**	Knowledge on Elementary Crystallography, basis, crystal class and Ewald construction.
			CO2	The subject treats functional materials from an experimental viewpoint, solid state theory and properties.
			CO3	Knowledge on lattice vibrations and thermal properties and quantization of lattice vibration, phonon momentum.
			CO4	Dielectric properties of insulators and Ferro electricity.
			CO5	Magnetic properties of solids, Diamagnetism, paramagnetic susceptibility and ferromagnetism is discussed and a quantum picture of Heisenberg exchange energy is covered.
			CO6	Semiconductors and their properties include motion of hole – electron pair-carrier transport equation.

	Classical Electrodynamics-II	**MSPHY 304**	**CO1**	Master the technique of deriving and evaluating formulae for the electromagnetic fields from general charge and current distribution.
			CO2	Fully understand the electro dynamic problems in relativistically covariant form in 4 dimensional space-time.
			CO3	Be familiar with elementary phenomenon and concepts in quantum electrodynamics.
			CO4	Interpret the deeper meaning of field equations and account for the frames of referenc .
			CO5	Learn the way to solve transformations in the form of Lorentz along with length contraction and time dilation.
			CO6	Understand the method to illustrate scatterings in the order of Reyleigh and Thomson to understand the concept of bound or free electron.
	Quantum Mechanics-II	**MSPHY 305**	**CO1**	Understand the concept of scattering theory and validity of Born approximation and partial wave analysis.
			CO2	Have deep knowledge about relativistic Quantum mechanics using Dirac equation and K.G equations.
			CO3	Have basic knowledge about advanced technique like approximation method for time independent problem like the WKB approximation.
			CO4	Understand the exposure of quantum field theory and universal interactions.
			CO5	Know about Various tools to understand field quantization and related concepts.
	Physics Practical III	**MSPHY 306**	**CO1**	Understand experimental techniques in various fields of physics such as nuclear physics, Practical physics, Electronics.
			CO2	Adopt the skills related to research, education, and industry-academia.
			CO3	Co-relate the theoretical concepts with experimental one and develop confidence to handle sophisticated equipment wherever necessary.
Semester 4th	**Experimental Techniques in physics**	**MSPHY 401**	**CO1**	Have gained a clear understanding of different vacuum pumps and the production and maintenance of vacuum systems and its uses and needs in Physics.
			CO2	Understands in depth about thin film preparation and production controlling techniques and the applications of thin films in the field of Science and technology.
			CO3	Extend their understanding of various particle accelerators and its industrial uses.
			CO4	Understand about different material analysis techniques and applications.

			CO5	Understand about electronics and experimental methods.
			CO6	Basic knowledge about interaction of gamma rays, electrons, heavy charge particles, neutrons, neutrinos and other particles with matter.
	Atomic and Molecular Physics	**MSPHY 402**	**CO1**	Acquire basic knowledge about fine structure of atom, spin orbit interaction, LS and JJ coupling.
			CO2	Learn about Zeeman effect, Paschen-Back effect, Stark effect, Lande's factor.
			CO3	Understand the concept of spontaneous and stimulated emission and study various types of lasers like He-Ne laser, Ruby laser, CO_2 laser.
			CO4	Knowledge about Molecular spectra like rotational and vibrational and their interaction.
			CO5	Familiarize with Frank-Condon principle, Born-Oppenheimer approximation.
			CO6	Knowledge about various spectrometers, instrumentation, ESR and NMR.
	Physics Practical IV	**MSPHY 403**	**CO1**	Understand experimental techniques in various fields of physics such as nuclear physics, Practical physics, Electronics.
			CO2	Adopt the skills related to research, education, and industry-academia.
			CO3	Co-relate the theoretical concepts with experimental one and develop confidence to handle sophisticated equipment wherever necessary.
	(Special Subjects) Nuclear Physics	**MSPHY 404**	**CO1**	Grasp knowledge about various nuclear models and potential associated.
			CO2	Familiarize with C.G. coefficient, Racah Coefficients, L-S and jj coupling.
			CO3	Deep knowledge about collective model of nucleus, rotational spectra for even-even and odd A nuclei, electric and quardrupole moments.
			CO4	Learn about nuclear reactions and their properties, Breit-Wigner Dispersion Formula, Compound nucleus and its cross section.
			CO5	Understand about kinematics of stripping and pickup reactions.
			CO6	Knowledge about harmonic anisotropic oscillator, Backbending phenomenon, nuclear halos, proton rich nuclei and production of super-heavy nuclei.
	Condensed Matter Physics–II	**MSPHY 406**	**CO1**	Knowledge of the concept of optical properties.
			CO2	Magnetic properties of solids, Diamagnetism, paramagnetic susceptibility and ferromagnetism, anti-ferromagnetism,

				ferrimagnetism and ferrites are discussed.
			CO3	Knowledge on superconductivity and their effects.
			CO4	To study the BCS theory and Josephson effect.
			CO5	Detail study in Defects and their types in the solids.
			CO6	Learn about Liquid crystals and their types.

Mapping of Course Outcomes (COs) with Programme Outcomes(POs)

Programme Outcome																
College code	**Course Out-comes**	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**	**PO 13**	**PO 14**	**PO 15**
Semester I																
MSPHY101	**CO1**	2	1	X	X	X	X	1	2	1	X	X	X	1	X	1
	CO2	1	X	1	X	1	X	X	X	1	2	1	3	2	1	X
	CO3	2	3	1	2	2	1	1	2	1	2	1	1	2	X	X
	CO4	1	2	X	X	X	X	1	2	3	1	2	1	1	X	X
	CO5	1	1	X	1	2	X	X	1	1	X	1	2	X	X	1
	CO6	2	2	1	2	1	X	2	2	2	1	2	1	2	X	1
MSPHY102	**CO1**	3	2	X	1	2	1	X	3	X	1	X	1	X	X	X
	CO2	1	1	2	1	X	X	X	2	1	X	X	X	X	X	X
	CO3	X	1	2	3	2	3	1	3	X	X	X	X	X	X	X
	CO4	X	2	1	1	2	1	X	1	X	X	X	X	X	X	1
	CO5	X	2	1	1	X	2	1	X	1	X	X	X	X	X	1
	CO6	2	2	1	X	2	1	1	X	X	X	X	X	X	X	1
MSPHY103	**CO1**	3	2	2	1	X	1	X	1	X	X	X	X	X	X	X
	CO2	1	X	2	2	X	1	X	1	X	X	X	X	X	1	X
	CO3	2	3	3	2	X	X	X	1	X	X	X	X	1	X	X
	CO4	2	1	2	3	X	1	X	2	X	X	X	X	1	X	X
	CO5	3	X	1	2	X	X	X	1	X	X	X	X	X	X	X

	CO6	2	1	2	2	X	1	X	2	X	X	X	X	1	X	X
MSPHY104	**CO1**	2	1	1	1	X	2	1	2	2	2	X	X	1	3	2
	CO2	1	X	1	1	1	2	X	2	2	2	1	1	2	3	2
	CO3	2	3	1	2	2	3	1	2	2	2	1	1	2	2	2
	CO4	1	2	2	1	X	2	1	2	2	1	1	1	1	2	3
	CO5	1	1	2	1	2	2	X	2	2	2	1	2	X	2	3
	CO6	2	2	1	2	1	2	1	3	2	2	1	1	2	3	3
MSPHY105	**CO1**	3	2	X	1	X	X	X	1	X	2	X	X	X	X	X
	CO2	3	1	1	X	1	X	X	1	X	1	X	X	X	X	X
	CO3	3	2	X	1	X	X	X	1	X	2	X	X	X	X	X
MSPHY106	**CO1**	3	X	1	2	X	X	X	X	X	2	1	X	X	X	2
	CO2	2	1	2	2	1	X	X	2	X	2	1	X	X	X	2
	CO3	3	X	1	3	X	X	X	X	X	2	1	X	X	X	2
Semester-II																
MSPHY201	**CO1**	2	1	X	X	X	X	1	2	1	X	X	X	1	X	1
	CO2	1	X	1	X	1	X	X	X	1	2	1	3	2	1	X
	CO3	2	3	1	2	2	1	1	2	1	2	1	1	2	X	X
	CO4	1	2	X	X	X	X	1	2	3	1	2	1	1	X	X
	CO5	1	1	X	1	2	X	X	1	1	X	1	2	X	X	1
	CO6	2	2	1	2	1	X	2	2	2	1	2	1	2	X	1
MSPHY202	**CO1**	2	1	1	1	X	2	1	2	2	2	X	X	1	3	1
	CO2	1	X	1	1	1	2	X	2	2	2	1	1	2	3	2
	CO3	1	X	1	2	2	3	1	2	2	X	1	X	2	1	2
	CO4	1	2	X	1	X	2	1	2	2	1	X	1	1	2	2
	CO5	1	1	2	1	2	2	X	2	2	2	1	2	X	2	1
	CO6	2	2	1	2	1	2	1	3	1	2	1	1	2	3	1
MSPH	**CO1**	3	2	2	2	1	2	X	1	X	X	X	X	X	X	X

Y203	**CO2**	3	1	2	2	X	1	X	1	X	X	X	X	X	X	X
	CO3	3	2	2	2	2	1	1	1	1	X	1	X	X	X	1
	CO4	3	2	2	2	X	X	1	2	X	X	X	X	X	X	X
	CO5	2	1	1	1	X	X	X	2	X	X	X	X	X	X	X
	CO6	2	2	2	2	X	X	1	2	X	X	X	X	X	X	X
MSPHY204	**CO1**	1	1	2	1	X	2	1	2	1	1	X	X	1	3	2
	CO2	1	X	1	1	1	2	X	2	2	2	1	1	2	3	2
	CO3	2	3	1	2	2	3	1	2	2	2	1	1	2	2	2
	CO4	1	2	2	1	X	2	1	2	2	2	3	1	1	3	3
	CO5	X	1	2	1	2	2	X	2	2	2	1	2	X	2	1
	CO6	2	X	1	2	3	X	1	3	X	2	1	3	2	1	3
MSPHY205	**CO1**	3	2	X	1	X	X	X	1	X	2	X	X	X	X	X
	CO2	3	1	1	X	1	X	X	1	X	1	X	X	X	X	X
	CO3	3	2	X	1	X	X	X	1	X	2	X	X	X	X	X
MSPHY206	**CO1**	1	1	1	X	2	X	X	X	X	1	1	X	X	X	2
	CO2	2	2	1	2	2	1	X	X	X	2	1	X	X	X	2
	CO3	3	2	X	1	3	X	X	X	X	2	1	X	X	X	2
Semester-III																
MSPHY301	**CO1**	3	1	2	X	X	2	X	1	X	X	X	X	1	X	X
	CO2	1	1	2	2	X	1	X	1	X	X	X	X	1	X	X
	CO3	2	1	1	2	1	2	X	1	X	X	X	X	2	X	X
	CO4	2	3	2	1	1	3	1	2	X	2	X	X	2	1	X
	CO5	1	2	2	2	X	3	1	2	X	X	X	X	2	X	1
	Practical	3	1	2	3	2	3	1	2	X	1	2	1	3	1	1
MSPHY302	**CO1**	2	1	1	1	X	2	1	2	1	X	X	2	1	X	1
	CO2	1	X	1	1	1	2	1	1	2	1	X	3	X	1	X

	CO3	2	2	1	2	2	2	2	2	1	1	X	2	2	X	1
	CO4	1	2	X	X	X	2	1	2	2	1	X	2	1	X	X
	CO5	1	1	1	1	2	2	X	1	1	X	X	2	X	1	1
	CO6	2	2	1	X	1	2	1	2	2	X	X	1	2	X	1
MSPHY303	**CO1**	3	2	2	X	1	2	X	1	X	X	X	X	1	X	X
	CO2	3	1	2	2	X	1	X	1	X	X	X	X	1	1	X
	CO3	3	2	1	2	1	1	X	1	X	X	X	X	2	X	X
	CO4	3	2	2	1	1	2	1	2	X	X	X	X	2	1	X
	CO5	2	2	2	2	1	3	1	2	X	X	X	1	2	X	1
	CO6	2	2	2	3	1	2	1	2	X	X	2	1	2	1	X
MSPHY304	**CO1**	2	1	X	X	X	X	1	2	1	X	X	X	1	X	1
	CO2	1	X	1	X	1	X	X	X	1	2	1	3	2	1	X
	CO3	2	3	1	2	2	1	1	2	1	2	1	1	2	X	X
	CO4	1	2	X	X	X	X	1	2	3	1	2	1	1	X	X
	CO5	1	1	X	1	2	X	X	1	1	X	1	2	X	3	1
	CO6	2	2	1	2	1	X	2	2	2	1	2	1	2	X	1
MSPHY305	**CO1**	3	2	X	1	2	1	X	3	X	1	X	1	X	X	X
	CO2	1	1	2	1	X	X	X	2	1	X	X	X	X	X	X
	CO3	X	1	2	3	2	3	1	3	X	X	X	X	X	X	X
	CO4	X	2	1	1	2	1	X	1	X	X	X	X	X	X	1
	CO5	X	2	1	1	X	2	1	X	1	X	X	X	X	X	1
MSPHY306	**CO1**	3	2	X	1	X	X	X	1	X	2	X	X	X	X	X
	CO2	3	2	X	1	X	X	X	1	X	2	X	X	X	X	X
	CO3	3	2	X	1	X	X	X	1	X	1	X	X	X	X	X
Semester-IV																
MSPHY401	**CO1**	2	1	X	X	X	X	1	2	1	X	X	X	1	X	1
	CO2	1	X	1	X	1	X	X	X	1	2	1	3	2	1	X

	CO3	2	3	1	2	2	1	1	2	1	2	1	1	2	X	X
	CO4	1	2	X	X	X	X	1	2	3	1	2	1	1	X	X
	CO5	1	1	X	1	2	X	X	1	1	X	1	2	X	3	1
	CO6	2	2	1	2	1	X	2	2	2	1	2	1	2	X	1
MSPHY402	**CO1**	3	2	3	2	1	1	1	2	X	X	1	X	X	X	X
	CO2	3	2	2	2	1	2	X	2	X	X	X	X	X	X	X
	CO3	3	2	2	1	1	2	X	1	X	1	1	X	X	X	1
	CO4	3	2	2	1	1	2	1	2	X	X	X	X	X	X	X
	CO5	3	2	2	2	1	1	1	2	X	X	1	X	X	X	X
	CO6	2	2	2	1	1	3	1	2	X	1	2	X	X	1	1
MSPHY403	**CO1**	3	2	X	1	X	X	X	1	X	2	X	X	X	X	X
	CO2	3	2	X	1	X	X	X	1	X	2	X	X	X	X	X
	CO3	3	2	X	1	X	X	X	1	X	1	X	X	X	X	X
MSPHY404	**CO1**	3	2	2	1	X	1	X	2	X	X	X	X	1	X	X
	CO2	3	2	3	3	X	1	X	1	1	X	X	X	1	X	X
	CO3	3	2	2	1	X	2	X	2	X	1	X	X	1	X	X
	CO4	3	2	2	2	1	2	1	2	X	1	X	X	2	X	1
	CO5	3	2	2	2	X	2	1	2	X	1	X	X	2	X	1
	CO6	3	2	1	1	X	1	X	1	X	X	X	X	X	X	X
MSPHY406	**CO1**	3	2	2	1	1	2	1	2	X	X	1	X	X	1	1
	CO2	3	2	2	2	2	1	X	1	X	X	X	X	X	X	X
	CO3	3	2	2	2	1	1	X	1	X	X	1	X	X	X	X
	CO4	3	2	2	1	1	2	1	2	X	X	X	X	X	X	1
	CO5	3	2	2	2	1	3	1	2	X	X	1	X	X	X	X
	CO6	2	2	2	1	1	1	1	1	X	X	2	X	X	X	X

Mapping of Course Outcomes (COs) with Programme Specific Outcomes(PSOs)

College code	Course Outcomes	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
MSPHY101	**CO1**	3	1	1	X	X
	CO2	3	2	1	X	X
	CO3	3	1	X	1	X
	CO4	3	1	1	X	X
	CO5	3	2	X	X	X
	CO6	3	1	X	1	X
MSPHY102	**CO1**	1	2	3	X	X
	CO2	1	2	1	X	X
	CO3	2	1	X	1	X
	CO4	X	2	X	X	1
	CO5	1	X	1	1	X
	CO6	1	1	X	X	1
MSPHY103	**CO1**	3	2	X	X	X
	CO2	3	3	1	1	1
	CO3	3	3	1	X	1
	CO4	3	2	2	1	1
	CO5	3	2	1	X	X
	CO6	3	2	X	2	1
MSPHY104	**CO1**	2	3	1	2	3
	CO2	2	2	2	1	3
	CO3	2	2	2	1	2
	CO4	1	1	3	3	1
	CO5	X	2	2	2	1
	CO6	1	X	2	2	2

MSPHY105	**CO1**	2	2	2	1	1
	CO2	2	1	1	1	2
	CO3	2	2	1	1	1
MSPHY106	**CO1**	2	X	X	2	1
	CO2	2	1	1	2	1
	CO3	2	1	1	2	1
MSPHY201	**CO1**	3	1	1	X	X
	CO2	3	2	1	X	X
	CO3	3	1	X	1	X
	CO4	3	1	1	X	X
	CO5	3	2	X	X	X
	CO6	3	1	X	1	X
MSPHY202	**CO1**	2	1	1	3	1
	CO2	2	2	2	1	2
	CO3	2	2	1	1	2
	CO4	1	1	3	3	1
	CO5	X	2	2	1	1
	CO6	1	X	2	2	X
MSPHY203	**CO1**	3	3	X	X	X
	CO2	2	2	X	X	X
	CO3	3	3	1	X	X
	CO4	3	2	X	X	X
	CO5	3	3	X	X	X
	CO6	2	2	X	X	X
MSPHY204	**CO1**	2	1	2	2	X
	CO2	2	2	2	1	3
	CO3	1	2	1	1	2

	CO4	2	1	3	X	X
	CO5	1	2	2	2	1
	CO6	2	X	1	3	2
MSPHY205	**CO1**	2	2	2	1	1
	CO2	2	1	1	1	2
	CO3	2	2	1	1	1
MSPHY206	**CO1**	1	X	1	1	1
	CO2	2	1	1	1	2
	CO3	2	2	1	1	1
MSPHY301	**CO1**	3	3	3	2	2
	CO2	3	3	1	X	1
	CO3	3	2	2	1	X
	CO4	3	2	3	2	X
	CO5	3	3	2	2	2
	CO6	3	2	3	2	X
MSPHY302	**CO1**	2	2	2	2	1
	CO2	1	1	2	1	X
	CO3	1	1	X	1	X
	CO4	X	2	1	1	X
	CO5	X	1	2	1	X
	CO6	1	1	1	1	X
MSPHY303	**CO1**	2	2	2	2	X
	CO2	2	2	2	2	X
	CO3	2	2	X	1	X
	CO4	3	2	2	2	X
	CO5	3	3	2	3	X
	CO6	2	2	2	X	X

MSPHY304	**CO1**	3	1	1	X	X
	CO2	3	2	1	X	X
	CO3	3	1	X	1	X
	CO4	3	1	1	X	X
	CO5	3	2	X	X	X
	CO6	3	1	X	1	X
MSPHY305	**CO1**	2	3	1	1	X
	CO2	1	1	2	X	1
	CO3	2	1	X	1	1
	CO4	2	2	1	X	X
	CO5	2	2	X	X	1
MSPHY306	**CO1**	2	2	2	1	1
	CO2	2	2	1	1	1
	CO3	2	1	1	1	2
MSPHY401	**CO1**	3	1	1	X	X
	CO2	3	2	1	X	X
	CO3	3	1	X	1	X
	CO4	3	1	1	X	X
	CO5	3	2	X	X	X
	CO6	3	1	X	1	X
MSPHY402	**CO1**	3	3	X	1	1
	CO2	2	2	2	2	1
	CO3	3	3	2	2	1
	CO4	3	2	X	1	1
	CO5	3	3	1	1	1
	CO6	2	2	3	3	1
MSPHY403	**CO1**	2	2	2	1	1

	CO2	2	2	1	1	1
	CO3	2	1	1	1	2
MSPHY404	**CO1**	3	2	1	1	3
	CO2	3	2	1	X	2
	CO3	3	2	1	1	3
	CO4	3	2	2	2	1
	CO5	3	2	2	2	1
	CO6	3	2	X	X	X
MSPHY406	**CO1**	3	3	1	1	1
	CO2	2	2	2	X	X
	CO3	3	3	1	1	X
	CO4	3	2	X	X	X
	CO5	3	3	X	X	X
	CO6	2	2	X	X	X

DEPARTMENT OF LANGUAGES

The Department of Languages at BAMKC, Garhshankar unveils its students the world of English, Punjabi and Hindi languages. It is one of the finest and vibrant Departments in the college. Earlier these three languages

Departments were working separately but in January 2021 Principal Dr. Baljit Singh Khehra amalgamated these Departments and united into one as he believes on Johan Wolfgang Von Goethe who once said:

"You can never understand one language until you understand at least two."

VISION

The Department of Languages at B.A.M Khalsa College helps students to build knowledge of the content and method of literary studies. Department of languages will impart academic excellence and empower the students of the college through the best level of education. It also inculcates ethical and moral values in students. The Department of Languages develops strong bonding between students and their mother tongue. All the teachers who are associated with the department work efficiently to achieve excellence in their respective area of study.

MISSION

- The department of languages aims at transforming the students into the rational human beings with an inquisitive bent of mind through literary, theoretical and linguistic teaching.
- Promotion of human rights and responsibilities.
- To unfold hidden talents of the students and enhance their competitive skills.
- Efforts are made to raise the intellectual level of the students through seminars, webinars, debate, poetry recitation competitions.
- The all-around development of students in languages including Punjabi, English, Hindi.
- Introduce the students to languages through culture and connect them with heritage.

OBJECTIVES

- The students get to know and understand about languages in a better way.
- The languages course program helps students to understand society.

- All round development of various aspects of students like physical, intellectual, mental, ethical, moral, social, aesthetic etc.
- To impart knowledge to the students about different forms of Punjabi, Hindi and English Literature.
- Develop knowledge and realization about the changing realities of life.

Programme run by department:

1. B.A. (Programme Code: BA)

Bachelor of Arts

Programme Outcomes (POs) of B.A.

On successful completion of B.A. programme, the students will be able to develop following attributes, qualities and skills:

PO1	Capable of demonstrating comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate program of study.
PO2	Ability to express thoughts and ideas effectively in writing and orally, Communicate with others using appropriate media, confidently share one's views and express herself/himself, demonstrate the ability to listen carefully, read and write analytically, and present complex information clearly and concisely to different groups.
PO3	Capability to apply analytic thought to a body of knowledge, analyze and evaluate evidence, arguments, claims, beliefs based on empirical evidence, identify relevant assumptions or implications; formulate coherent arguments, critically evaluate practices, policies, and theories by following a scientific approach to knowledge development.
PO4	Capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge, and apply one's learning to real-life situations.
PO5	Ability to evaluate the reliability and relevance of evidence; identify logical flaws and holes in the arguments of others, analyze and synthesize data from a variety of sources, draw valid conclusions and support them with evidence and examples, and address opposing viewpoints.

PO6	A sense of inquiry and capability for asking relevant/appropriate questions, problematizing, synthesizing, and articulating; Ability to recognize cause-and-effect relationships, define problems, formulate hypotheses, test hypotheses, analyze, interpret and draw conclusions from data, establish hypotheses, predict cause-and-effect relationships; ability to plan, execute and report the results of an experiment or investigation.
PO7	Ability to work effectively and respectfully with diverse teams, facilitate cooperative or coordinated effort on the part of a group, and act together as a group or a team in the interests of a common cause and work efficiently as a member of a team, spend more time working towards high-value goals and gain a balance between professional goals and personal time.
PO8	Ability to analyze interprets and draws conclusions from quantitative/qualitative data, and critically evaluate ideas, evidence, and experiences.
PO9	Critical sensibility to lived experiences, with self-awareness and reflexivity of both self and society
PO10	Capability to use ICT in a variety of learning situations, demonstrate an ability to access, evaluate, and use a variety of relevant information sources, and use appropriate software for analysis of data.
PO11	Ability to work independently, identify appropriate resources required for a project, and manage a project through to completion.
PO12	Possess knowledge of the values and beliefs of multiple cultures and a global perspective, capability to effectively engage in a multicultural society and interact respectfully with diverse groups.
PO13	Ability to embrace moral/ethical values in conducting one's life, formulate a position/argument about an ethical issue from multiple perspectives, and use ethical practices in all work. Capable of demonstrating the ability to identify ethical issues related to one's work, avoid unethical behaviour such as fabrication, falsification, or misrepresentation of data or committing plagiarism, not adhering to intellectual property rights, appreciating environmental and sustainability issues, and adopting an objective, unbiased and truthful actions in all aspects of work.
PO14	Capability for mapping out the tasks of a team or an organization, and setting direction, formulating an inspiring vision, building a team who can help achieve the vision, motivating and inspiring team members to engage with that vision, and using management skills to guide people

	to the right destination, smoothly and efficiently.
PO15	Ability to acquire knowledge and skills, including "learning how to learn", that is necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at personal development, meeting economic, social, and cultural objectives, and adapting to changing trades and demands of the workplace through knowledge/skill development/ reskilling.

Programme Specific Outcomes (PSOs)

PSO 1	The students will be able to acquire knowledge in the field of Social Sciences, Literatures and Humanities which make them sensitive and sensible enough to solve the problems related with mankind.
PSO 2	BA graduates will be acquainted with the social, economic, historical, geographical, political, ideological and philosophical tradition and thinking.
PSO 3	The program also empowers the graduates to appear for various competitive examinations or choose the Post Graduate Program of their choice.
PSO 4	BA program empowers the students to acquire the knowledge with human values framing the base to deal with various problems in the life with courage and humanity and also this program provides the base to be the responsible citizen.
PSO 5	This program enables the students (with limited range) to translate texts/scripts in three major languages (Punjabi, Hindi, English) and they will be ignited enough to act over for the solution of various issues prevailed in human life to make this world a better place than ever.

Course Outcomes (COs) of B.A.

Sem.	Course Name	Course Code	Course Outcome	
Sem.-I	**English Compulsory**	**ENG101**	**CO1**	Give an introductory knowledge of English language and critically appreciate literary texts.
			CO2	Acquire extensive knowledge of English as a language in its various textual forms which transform them to be creative, thoughtful, imaginative and effective communicators in a diverse and changing society
			CO3	Identify the grammatical structures by understanding Voice, Antonyms and translation

			CO4	Work effectively and respectfully with diverse teams, facilitate them in such a way that English learning becomes a pleasurable endeavor and they learn at self-pace.
			CO5	Examine the various literary aspects through the text which capacitates them to enrich their literary, research and cultural values and also make them aware of self and society
			CO6	Compose paragraph writingwhich improves their writing skills.
Sem.-I	**Punjabi Compulsory**	**PBC101**	**CO1**	Give an introductory Knowledge of Punjabi Language.
			CO2	Examine the various forms of modern poetry.
			CO3	To understand the definition and nature of Essay and make student capable how to write Essay.
			CO4	To develop Skill of précis writing.
			CO5	To make Student able to understand the grammar and its importance and identifying the types of sentences.
			CO6	To get practical knowledge of various aspects of Punjabi grammar.
Sem.-I	**History & Culture of Punjab**	**HCP101**	**CO1**	Describe the physical features of Punjab and its impact on History of Punjab.
			CO2	Evaluate various sources of Punjab History.
			CO3	Describe the extent, town planning, social economic and religious life of Harappan Civilization.
			CO4	Describe the Political, Social, Economic and Religious life of Vedic Age.
			CO5	Analyze the historical importance of Ramayana and Mahabharat.
			CO6	Evaluate the political condition on the eve of Alexander's invasion and impact of invasion on Social and Cultural life.
Sem.-I	**Elective English**	**ENO101**	**CO1**	Explain general literary terms as prescribed in syllabus
			CO2	Analyse poetry and prose text of the book 'Fluency in English' and comprehend the given prose passage
			CO3	Compose personal social and official letters
			CO4	Transform one kind of sentences to another
			CO5	Modify active sentences to passive, direct to indirect and vice versa
			CO6	Apply appropriate articles, prepositions and conjunctions in sentences
Sem.-I	**Elective Hindi**	**HIN101**	**CO1**	Develop a bonding with the National Language of the Student.
			CO2	Knowledge of Hindi language helps them to think critically while studying hindi literature. They are able to relate pleasure of literature and real life.
			CO3	Understanding the role played by the poets of bhakti cult in literature and society. Use the literature to develop their social and moral sense in life.

			CO4	Understand the communication process and method.
			CO5	Inculcate moral and human qualities inside themselves.
			CO6	Develop knowledge of hindi linguistic and grammar.
Sem.-I	**Elective Punjabi**	**PBI101**	**CO1**	AnalyseAdhunik Punjabi Kavita from 1901-2000
			CO2	Explain the ekangiChedarshan.'
			CO3	Comprehend the principles of language and Punjabi language.
			CO4	Describe forms of literature such as geet, gazal ,ikangi ,novel and story.
			CO5	Understand the history of Punjabi literature from 1901-2000.
Sem.-I	**History**	**HIS101**	**CO1**	Identify and define various kinds of sources and understand how various evidences are notified.
			CO2	Describe various stages of progress from Indus valley civilization to Vedic age and analyze Jain, Buddhist and Vedic faith.
			CO3	Analyze the transition from territorial states to emergence of empires.
			CO4	Describe the emergence of the Mauryan and Gupta empire in North India and also examine the administrative features of Southern states.
			CO5	Examine the nature of monarchical rule and develop a comprehensive understanding of cultural evolution during ancient period.
			CO6	Visualize where places are in relation to one another through map pointing and explain their historical importance.
Sem.-I	**Economics**	**ECO101**	**CO1**	Analyze the decisions taking by firms and households due to scarcity of resources.
			CO2	Describe the theory of demand and consumer behavior.
			CO3	Explain the laws and various concepts of production and costs.
			CO4	Illustrate the functioning of each market structure.
			CO5	Understand the price and output determination of different market structure.
			CO6	Explain the various theories of rent, interest and profit.
Sem.-I	**Political Science**	**POL101**	**CO1**	This paper is to introduce first semester undergraduate students to some of the basic aspects like scope of political science, its relationship with other Disciplines like sociology, economics and history.
			CO2	Students also familiar with various theories regarding state and its origin, like social contract theories, evolutionary and historical theory.
			CO3	Students also gain knowledge about different ideologies like liberal, Marxian and Gandhi an views.
			CO4	This paper also analyses the function of welfare state and various types of sovereignty.
			CO5	To acquaint with the theories, approaches, concepts and principles of political theory.

			CO6	To understand the various traditional and modern theories of political science
Sem.-I	**Environment Conservation**	**ENC101**	**CO1**	Understand about the scope and importance of Environment .
			CO2	To acquire knowledge about the ecosystem its various components . Introduction to various biogeochemical cycles of the environment.
			CO3	Learn about different types of natural resources and their uses to mankind, Various polices of their conservation .
			CO4	Acquire knowledge about various alternative sources of energy like solar energy , wind power , geothermal energy, dung energy and wood energy.
			CO5	Detailed understanding of forests types in India and the World. Learn about different forestry systems like farm forestry, community forestry , social forestry and agroforestry systems.
			CO6	To know about the various adulterants of food and various tests performed to find out the type of adulteration and understand about various indoor pollutants exist in our workplaces, homes, college , bus stand .
Sem.-I	**Physical Education**	**PED101**	**CO1**	Develops in the students awareness of physical, mental and emotional health and its importance.
			CO2	Enhances the interest of the students in sports.
			CO3	Enables the students become better enlightened and fit citizens of the country.
			CO4	Get to know of the various intricacies and insight knowledge of various sports.
			CO5	Enhances the qualities of leadership and promotes the concept of national integration.
			CO6	Makes individuals and society more fit and a better place to live in.
Sem.-I	**Home Science**	**HMS101**	**CO1**	To Define the meaning and importance of home science, functions of home.
			CO2	To Understand Elements and principles of Art in interior decoration.
			CO3	To Infer meaning of health, hygiene, immunity and causes of spread of disease.
			CO4	To Enhance knowledge and apply Food hygiene in real scenario.
			CO5	To Apply Water purification at domestic level
			Practical	Students learn Floor decoration, Knowledge of color scheme.
Sem.-I	**Functional English**	**FNC101**	**CO1**	To familiarize them with the functioning of English - English sounds through listening in the Language Lab, enhancing communication skills and making them aware with IT tools.
			CO2	To achieve accuracy in oral production by encouraging the use of pronunciation dictionaries.
			CO3	To achieve an optimum level of intelligibility and fluency

				inspeech in group communication.
			CO4	To enhance their ability of communication in the spoken mode with accuracy and fluency for various functions
			CO 5	To mark stress and will become well versed with word stress and sentence stress.
			CO 6	To understand Intonation and its various patterns.
Sem.-I	**Mathematics: Paper A(Plane Geometry)**	**MAT101 A**	**CO1**	Solving Problems on Transformation of axes, Joint equation of pair of straight lines and angle between them, Joint equation of lines joining origin to the intersection of a line and a curve.
			CO2	Learn about General equation of circle, tangents, normals, chord of contact, pole and polar, pair of tangents from a point and length of tangent
			CO3	Knowledge of equation of chord in terms of midpoint, radical axis, co-axial family of circles, limiting points.
			CO4	Understanding of General equation of a conic, tangents, normals, chord of contact, pole and polar, pair of tangents, diameter, Conjugate diameters of ellipse and hyperbola.
			CO 5	Exposure on special properties of parabola, ellipse and hyperbola, conjugate hyperbola, asymptotes of hyperbola, rectangular hyperbola.
Sem.-I	**Mathematics: Paper B (Calculus-I)**	**MAT101 B**	**CO1**	Understanding the concepts of real numbers, Limits and continuity.
			CO2	Solve Algebraic equations and inequalities involving the square root and Modulus function.
			CO3	Analyze functions and their graphs and learn to produce rigorous proofs of results that arise in the context of calculus, Geometric value theorems.
			CO4	Determine continuity at a point or an interval. and distinguish between the types of discontinuities at a point
			CO 5	Identify and Apply the intermediate value theorem, Mean value theorem and L' Hospital Rule.
			CO 6	Knowledge about Hyperbolic functions their differentiation .learn Successive differentiation and Leibnitz's theorem.
Sem.-I	**Mathematics: Paper C (Trigonometry and Matrices)**	**MAT101 C**	**CO1**	Understanding De Moivre theorem and apply it to find roots and powers of complex numbers
			CO2	Analyze function of complex variable and calculate summation of trigonometric series
			CO3	Differentiate hermitian and skew – hermitian matrices and compute rank of matix
			CO4	Discuss linear dependence and linear independence of vectors and solve linear equations using matrices
			CO 5	Calculate Eigen values of matrix and apply Cayley – Hamilton theorem to find inverse of matrix
Sem.-I	**Computer Science-A**	**CS101A**	**CO1**	Define basic computer hardware architecture.
			CO2	Discuss software applications.

	(Computer Fundamentals)		**CO3**	Use essential IT support skills including installing, configuring, securing and troubleshooting operating systems and hardware
			CO4	Understand file management.
			CO 5	Able to aware of RAM, ROM, COST, SIZE, CACHE and virtual memory.
			CO 6	Accomplish creating basic documents, presentations with their properties.
Sem.-I	**Computer Science-B (PC Software)**	**CS101B**	**CO1**	To introduce students with the basic concepts of the operating system, its functions and services.
			CO2	Use essential IT support skills including installing, configuring, securing and troubleshooting operating systems and hardware.
			CO3	Discuss such as Microsoft office applications like MS-Word, MS-Excel, MS-PowerPoint etc.
			CO4	Use file management techniques for file and directory/folder organization.
			CO 5	Able to aware of RAM, ROM, COST, SIZE, CACHE and virtual memory.
			CO 6	Accomplish creating basic documents, presentations with their properties.
Sem.-I	**Music**	**MUV101**	**CO1**	To identify the contributions of important musicians, composers of various time period.
			CO2	To understand core musicological concepts described in treatises of various time periods.
			CO3	To understand different Ragas, Jaties.
			CO4	To understand various musical terms.
			CO 5	To acquire knowledge about Khayal.
			CO 6	To play Taals on Hands and Tabla
Sem.-II	**English Compulsory**	**ENG201**	**CO1**	Illustrate introductory knowledge of English language and critically recognise literary texts
			CO2	Understand the process of creativity and asses extensive knowledge of English as a language in its various textual forms and to become thoughtful, imaginative and effective communicators in a diverse and changing society
			CO3	Know of the different types of sentences and its structure and become acquainted with narration and representation
			CO4	To work effectively and respectfully with diverse teams, facilitate them in such a way that English learning becomes a pleasurable endeavour and they learn at self-pace
			CO5	To become acquainted with various literary aspects through the text which capacitates them to enrich their literary,

				research and cultural values and also make them aware of self and society.
			CO6	To enable them to write and appreciate different types of prose.
Sem.-II	**Punjabi Compulsory**	**PBC201**	**CO1**	To get information of Punjabi language.
			CO2	Provide Knowledge of Punjabi short story and make student familiar with it.
			CO3	Also make student able to write any kind of notice.
			CO4	To make students able to understand the Punjabi idioms its importance and benefits.
			CO5	To provide practical knowledge of Punjabi language and vocabulary.
Sem.-II	**History & Culture of Punjab**	**HCP201**	**CO1**	Describe the social, economic and religious life under the Mauryan Empire.
			CO2	Evaluate the impact of Jainism and Buddhism on Punjab.
			CO3	Analyze impact of Kanishka's rule on Punjab and salient features of Gandhara school of Art.
			CO4	Describe the various cultural and scientific developments under Guptas and position of women under Mauryas, the Guptas and the Vardhan.
			CO5	Depiction of Punjab in various historical sources.
			CO6	Describe the Society and Culture on the eve of the Turkish invasion.
Sem.-II	**Elective English**	**ENO201**	**CO1**	Describe the literary terms related to Essay, Stories and Plays
			CO2	Analyse essays, short-stories and One-Act plays and solve questions related to that
			CO3	Compose paragraphs on their own
			CO4	Develop sentences using the given words as different parts of speech
			CO5	Translate sentences from vernacular to English
			CO6	Modify the given sentences after identifying errors
Sem.-II	**Elective Hindi**	**HIN201**	**CO1**	Develop a bonding with the National Language of the Student.
			CO2	Knowledge of Hindi language helps them to think critically while studying hindi literature. They are able to relate pleasure of literature and real life.
			CO3	Understanding the role played by the poets of bhakti cult in literature and society. Use the literature to develop their social and moral sense in life.
			CO4	Understand the communication process and method.

			CO5	Inculcate moral and human qualities inside themselves.
			CO6	Develop knowledge of hindi linguistic and grammar.
Sem.-II	**Elective Punjabi**	**PBI201**	**CO1**	AnalyseAdhunik Punjabi Kavita from 1901-2000.
			CO2	Descibe Punjabi culture by reading novel Doaba.
			CO3	Understand history of Punjabi literature from 1901-2000.
			CO4	Comprehend Punjabi kaavshastar such as dhunisampardae and alankarsampardae.
			CO5	Define literature along with its nature, components and functions.
Sem.-II	**History**	**HIS201**	**CO1**	Describe the advent of Islam in India and examine the political and cultural expansion of Turks, Afghans and Mughals.
			CO2	Understand the social, economic and cultural developments of Medieval India.
			CO3	Explain the administration, art and architecture of Vijaynagar and Mughal rulers.
			CO4	Analyze the rise of the Marathas under the leadership of Shivaji.
			CO5	Describe the various features of Bhakti movement.
			CO6	Visualize the extent of empire under Alauddinkhilji and Aurangzeb and places of historical importance of medieval period through map pointing.
Sem.-II	**Economics**	**ECO201**	**CO1**	Analyze the decisions taking by firms and households due to scarcity of resources.
			CO2	Describe the theory of demand and consumer behaviour.
			CO3	Describe the laws and various concepts of production and costs.
			CO4	Describe the functioning of each market structure.
			CO5	Analyze the price and output determination of different market structure.
			CO6	Explain the various theories of rent, interest and profit.
Sem.-II	**Political Science**	**POL201**	**CO1**	Explain the concept of democracy, its types and theories to understand the concept of development & various views relating to it, sustainable development and human rights.
			CO2	To learn the origin of the concepts such as Law, power, authority, and legitimacy
			CO3	Understand the concept of justice, distributive justice, multiculturalism and social justice.
			CO4	To analyse the meaning of organs of government and theory of separation of power.
			CO5	Explore the working of political system and their structure and infra-structure and various input-output function according almond and Powell.
			CO6	To learn the procedure of various social institutions and government institutions
Sem.-II	**Environment**	**ENC201**	**CO1**	To acquire knowledge about the physical and chemical

	Conservation			properties of soil , meaning of soil profile and its components.
			CO2	Learn about various techniques of testing soil sample , various methods to increase soil fertility and role of soil microorganisms in increasing soil fertility.
			CO3	Learn about various factors causing soil erosion, different types of soil pollutants and various control measures to control pollution .
			CO4	Understand about various chemicals, pesticides, fertilizers and manure acting as soil pollutants.
			CO5	Learn about global and biological water cycle ,overutilization of surface and ground water.
			CO6	Learn about various methods to treat waste water like green method, Root – zone technology etc.
Sem.-II	**Physical Education**	**PED201**	**CO1**	Develops in the students awareness of physical, mental and emotional health and its importance.
			CO2	Enhances the interest of the students in sports.
			CO3	Enables the students become better enlightened and fit citizens of the country.
			CO4	Get to know of the various intricacies and insight knowledge of various sports.
			CO5	Enhances the qualities of leadership and promotes the concept of national integration.
			CO6	Makes individuals and society more fit and a better place to live in.
Sem.-II	**Home Science**	**HMS201**	**CO1**	To Define the meaning and importance of home science, functions of home.
			CO2	To Understand Elements and principles of Art in interior decoration.
			CO3	To Infer meaning of health, hygiene, immunity and causes of spread of disease.
			CO4	To Enhance knowledge and apply Food hygiene in real scenario.
			CO5	To Apply Water purification at domestic level
			Practical	Students learn Floor decoration, Knowledge of color scheme.
Sem.-II	**Functional English**	**FNC201**	**CO1**	To write and distinguish different types of paragraphs.
			CO2	To use specific formats of written discourse.
			CO3	To achieve an optimum level of intelligibility and fluency in written discourse.
			CO4	To write different kinds of letters.
			CO 5	To interpret information in any scheme, such as Dialogue to paragraphs, and vice versa
			CO 6	To develop analytical skill to write precis and Note Making.
Sem.-II	**Mathematics:**	**MAT201**	**CO1**	Acquire knowledge about concavity, convexity and points of inflection, multiple points, asymptote and Tracing of curves

	Paper A	**A**		(cartesian and parametric coordinates only)
			CO2	Derive Reduction formulae for some complex integrations and hence integrate functions of much higher degree which are applicable in real life situations.
			CO3	Learn to find curvature, evolute and involute, chord of curvature.
			CO4	Demonstrate understanding of common numerical methods of integration.
			CO 5	Apply Integral calculus to find arc length of a curve, arc length of a parametric curves, area under a curve, surface area and volume of surface of revolution.
Sem.-II	**Mathematics: Paper B**	**MAT201 B**	**CO1**	Describe Euclid's algorithm and apply synthetic division to find the roots of polynomial
			CO2	State the relation between roots and coefficients
			CO3	Implement transformation of the equations to solve roots
			CO4	Explain and apply Descartes rule of signs
			CO 5	Solve cubic using Cardon's method and bi-quadratic using Descartes method & Ferrari's Method
			CO 6	Apply Newton's method of divisors to solve equations.
Sem.-II	**Mathematics: Paper C**	**MAT201 C**	**CO1**	Describe Euclid's algorithm and apply synthetic division to find the roots of polynomial
			CO2	State the relation between roots and coefficients
			CO3	Implement transformation of the equations to solve roots
			CO4	Explain and apply Descartes rule of signs
			CO 5	Solve cubic using Cardon's method and bi-quadratic using Descartes method & Ferrari's Method
			CO 6	Apply Newton's method of divisors to solve equations.
Sem.-II	**Computer Science-A**	**CS201A**	**CO1**	Apply the scheduling algorithms for the given problem
			CO2	Demonstrate the fundamental LINUX commands & system calls.
			CO3	Apply the process synchronous concept using message queue, shared memory, semaphore and Dekker's algorithm for the given situation.
			CO4	Experiment an algorithm to detect and avoid deadlock
			CO 5	Demonstrate the various operations of the file system.
			CO 6	Apply the various methods in memory allocation and page replacement algorithms.
Sem.-II	**Computer Science-B**	**CS201B**	**CO1**	To Define the problem.
			CO2	To Extend skill on problem solving by constructing algorithms.
			CO3	To Use the fundamentals of C programming in trivial problem

				solving.
			CO4	To Identify solution to a problem and apply control structures and user defined functions for solving the problem
			CO 5	To Demonstrate the use of Strings and string handling functions, structures, union.
			CO 6	Apply skill of identifying appropriate programming constructs for problem solving
Sem.-II	**Music**	**MUV201**	**CO1**	To identify the contributions of important musicians, composers of various time period.
			CO2	To understand core musicological concepts described in treatises of various time periods.
			CO3	To understand about Bhatkhande and ThaatPadati.
			CO4	To understand various musical terms.
			CO 5	To acquire knowledge about VilambitKhayal
			CO 6	To play TaalsonTabla
Sem.-III	**English Compulsory**	**ENG301**	**CO1**	To critically appreciate literary texts.
			CO2	To acquire extensive knowledge of English as a language in its various textual forms and to become creative, thoughtful, imaginative and effective communicators in a diverse and changing society.
			CO3	To master the skill of transformation of sentences and ability to use non-finiteverbs.
			CO4	To work effectively and respectfully with diverse teams, facilitate them in such a way that English learning becomes a pleasurable endeavour and they learn at self-pace.
			CO5	To become acquainted with various literary aspects through the text which capacitates them to enrich their literary, research and cultural values and also make them aware of self and society.
			CO6	To describe and mark punctuation, and expertise in Making Notes and enable them ICT tools.
Sem.-III	**Punjabi Compulsory**	**PBC301**	**CO1**	To provide knowledge of essay writing and analysis.
			CO2	To make understand the cultural identity of Punjabi literature.
			CO3	To make student capable to write a letters with every aspects of human life.
			CO4	To provide knowledge about the origin and development of Punjabi script.
			CO5	Examine the linguistic and make Students familiar with roots of Punjabi literature.
Sem.-III	**History & Culture of**	**HCP301**	**CO1**	Analyze the Society and Culture in Punjab during Turko-Afghan and Mughal Rule.

	Punjab		**CO2**	Describe the teachings of Sikh Gurus and development of Sikh institutions.
			CO3	Analyze the salient features of Bhakti and Sufi Movement.
			CO4	Evaluate the martyrdom of Guru ArjanDevji and Guru TeghBahadurji.
			CO5	Describe the New Policy of Guru HarGobindji.
			CO6	Describe foundation of KhalsaPanth and Post Khalsa activities of Guru Gobind Singh.
Sem.-III	**Elective English**	**ENO301**	**CO1**	Critically appreciate literary texts and introduce students to the thematic concerns, genres and trends of Indian writing in English.
			CO2	Comprehend extensive knowledge of English as a language in its various textual forms and construct them to be creative, thoughtful, imaginative and effective communicators in a diverse and changing society
			CO3	Students will be able to Classify different types of dialogue writing in English.
			CO4	Provide an overview of the various phases of the evolution of Indian writing in English. To work effectively and respectfully with diverse teams, facilitate them in such a way that English learning becomes a pleasurable endeavour and they learn at self-pace
			CO5	To become acquainted with various literary aspects through the text which capacitates them to enrich their literary, research and cultural values and also make them aware of self and society.
			CO6	Encourage students to make a detailed study of a few literary terms related to Drama and make enable them to enjoy life through literature.
Sem.-III	**Elective Hindi**	**HIN301**	**CO1**	Knowledge of Hindi language helps them to think critically while studying hindi literature. They are able to relate pleasure of literature and real life.
			CO2	Understanding the importance of Environment culture and social life. Understanding the relation between society and literature by hindi literature in past and present.
			CO3	Study the socio-culture and political background of adikal to ritikal.
			CO4	Use the literature to develop their social and moral sense in life.
			CO5	Evaluating the concept of hindi from past to present and

				making the society more closely through literature.
			CO6	Develop knowledge of hindi linguistic and grammar.
Sem.-III	**Elective Punjabi**	**PBI301**	**CO1**	Madhkali Punjabi KavAdhayan.
			CO2	Main Objective of Madhkali Punjabi Adhayan.
			CO3	Introduction to Punjabi Travelog and to provide knowledge for Travelog importance to students.
			CO4	Introduction to punjabiSahit da Ithas and to provide knowledge to GurmitKav and Bhagtikav
			CO5	To Provide knowledge of BhartiKavSashtar
			CO6	Introduction and importance of BhashaVigyan
Sem.-III	**History**	**HIS301**	**CO1**	Describe the foundation of British Rule with special reference to Battle of Plassey and Buxar. Explain the reforms made by British Governor Generals.
			CO2	Analyze the cause and effects of Revolt of 1857.
			CO3	Understand the socio-religious movements and also the role played by Mahatma Gandhi,JotibaPhule and Dr.Ambedkar for the upliftment of depressed class.
			CO4	Analyze the Economic policy of Britishers in India and their effect.
			CO5	Explain the communal politics and various events related to National movement till 1947.
			CO6	Describe the formation of Constitution of India and developments that took place after independence till 1964.
Sem.-III	**Economics**	**ECO301**	**CO1**	Appraise the effect of public expenditure on economy.
			CO2	Explain tax and non taxrevenue, differentiate between direct and indirect tax and shifting of taxation and effects of taxation.
			CO3	Explain the types of public debt and how debt is repaid?
			CO4	Describe the various International trade theories, terms of trade and commercial policy.
			CO5	Explain the concept of BOP and exchange rate.
			CO6	Explain the objective and working of IMF and IBRD.
Sem.-III	**Political Science**	**POL301**	**CO1**	Students understand the philosophy of Indian constitution.
			CO2	Examine the fundamental rights and duties of Indian citizen with the study of the significance of directive principles of states
			CO3	Critical analysis of important institutions of the Indian union! The executive, president, prime minister, council of ministers, governor, chief minister, legislature, raj Sabah, lok Sabah speaker of India.
			CO4	To identify how electoral rules and procedure in India effect election outcomes

			CO5	Students are able to understand various election procedure in India and various factors which influence Indian political system.
			CO6	This paper defines the composition power and role of Indian Supreme Court and high court
Sem.-III	**Environment Conservation**	**ENC301**	**CO1**	Learn about atmosphere ,its structure and learn about stratospheric ozone
			CO2	Understand about Air pollution, its sources and methods to control air pollution and about Air (prevention and control of pollution) Act, 1981.
			CO3	In this unit students will learn about green house effect and global warming and its causes and various gases causesgreen house effect.
			CO4	Understand and learn about stratospheric ozone depletion and Role of paddy burning, livestock and biomass burning in causing green house effect.
			CO5	To acquire knowledge about radioactive pollution and noise pollution its sources and methods to reduce this pollution, learn about various mineral resources and its mining and environmental effects of mining.
			CO6	Learn about green building concept, carbon sequestration, CDM(Clean development mechanism).
Sem.-III	**Physical Education**	**PED301**	**CO1**	Develops in the students awareness of physical, mental and emotional health and its importance.
			CO2	Enhances the interest of the students in sports.
			CO3	Enables the students become better enlightened and fit citizens of the country.
			CO4	Get to know of the various intricacies and insight knowledge of various sports.
			CO5	Enhances the qualities of leadership and promotes the concept of national integration.
			CO6	Makes individuals and society more fit and a better place to live in.
Sem.-III	**Home Science**	**HMS301**	**CO1**	To Read the use and care of sewing machines.
			CO2	To Define Anthropometry and methods of developing a design.
			CO3	To Learn Textile fibers in terms of their manufacturing and properties.
			CO4	To Understand various dyeing.
			CO5	To Use Printing and finishing techniques.
			practical	Understand basic seams, stitches, embroidery and drafting
Sem.-III	**Functional English**	**FNC301**	**CO1**	To acquaint learners with the different mechanisms of radio broadcast.
			CO2	To train learners in Script writing for different genres of Radio

				broadcast
			CO3	To help learners build their best voice by acquainting them with the elements of voice and providing training in it.
			CO4	To help learners to identify their speech problems and overcome them.
			CO 5	To sensitize learners to body movements, demeanour and gestures involved in TV presentation.
			CO 6	To make learners good communicator.
Sem.-III	**Mathematics: Paper A** **(Advance Calculus-I)**	**MAT301 A**	**CO1**	Knowledge about Limit and continuity, Partial differentiation, implicit functions theorem.
			CO2	Understanding the Vector differentiation - gradient, divergence, curl and their applications.
			CO3	Learn Euler's theorem on homogeneous function, Taylor's theorem, Jacobian. Finding maxima, minima and saddle point of a function, Lagrange's multiplier method.
			CO4	To provide the student with the skills of vector calculus operations which are needed for further study in mathematics
			CO 5	Students will be able to apply the concept of Envelope and Evolutes on real life applications
Sem.-III	**Mathematics: Paper B** **(Differential Equations -I)**	**MAT301 B**	**CO1**	Verify Exact differential equation, define the geometrical meaning of differential equation
			CO2	Derive Orthogonal Trajectory and envelope of the differential equations
			CO3	Solve Linear differential equation with constant and variable coefficients
			CO4	Learn to find solution of Cauchy's and Legendre's equations
			CO 5	Use method of variation of parameter and reduction of order to solve differential equations
			CO 6	Solve simultaneous Differential equations
Sem.-III	**Mathematics: Paper C** **(Statics)**	**MAT301 C**	**CO1**	Knowledge about Motion of a particle, Newton's Laws of Motion, motion of a body along the smooth inclined plane.
			CO2	Understanding Simple harmonic motion, elastic string, curvilinear motion of a particle.
			CO3	Learn about Work, power and conservative field. Relative motion, linear momentum ,angular momentum, impulsive forces.
			CO4	Determine the dynamic response of the system to applied loadings, using Newton's law.
			CO 5	Apply the Principle of Work and Energy and the principle of impulse and momentum to mechanical systems.
Sem.-III	**Computer Science-A** **(Computer Organisation-**	**CS301A**	**CO1**	Describe the fundamental organization and Architecture of computer system.
			CO2	Learn about representation of Information through number systems like Binary, Decimal, Hexadecimal, Octal. Conversions.
			CO3	Knowledge about Basic Building Blocks, Microinstructions

	CS05)			Microprocessor Assembly Language and System Maintenance.
			CO4	Express their knowledge in various error correction and detection techniques
			CO 5	Distinguish the organization of various parts of a system memory hierarchy.
			CO 6	To identify the elements of modern instruction sets and their impact on processor design.
Sem.-III	**Computer Science-B** **(Object Oriented Programming using- C++)**	**CS301B**	**CO1**	To Understand how C++ improves C with Object Oriented features.
			CO2	To Describe the procedural and object oriented paradigm with concepts of data, objects, classes, functions and streams.
			CO3	To Classify inheritance with the understanding of early and late binding ,usage of exception handling , generic programming .
			CO4	To be able to program using C++ features such as composition of objects, operator overloading, inheritance ,polymorphism etc.
			CO 5	To apply the concepts in object oriented programming in terms of software reuse and managing complexity to solve real world problems.
			CO 6	To create different data structures and create /manipulate basic data files and developing applications for real world problems.
Sem.-III	**Music**	**MUV301**	**CO1**	To identify the contributions of important musicians, composers of various time period.
			CO2	To understand core musicological concepts described in treatises of various time periods.
			CO3	To understand and practice KanthSadhna.
			CO4	To understand various musical terms.
			CO 5	To acquire knowledge about description and notation of Ragas and Taal(Jhaptala, Char Tala, etc.)
			CO 6	To acquire the ability to play Kehrva on Tabla
Sem.-IV	**English Compulsory**	**ENG401**	**CO1**	To critically appreciate literary texts.
			CO2	To acquire extensive knowledge of English as a language in its various textual forms and to become thoughtful, imaginative and effective communicators in a diverse and changing society.
			CO3	To learn the uses of various aspects of Grammar (using noun as verb and vice versa, etc.)
			CO4	To write reports on any given situation.
			CO5	To work effectively and respectfully with diverse teams, facilitate them in such a way that English learning becomes a pleasurable endeavour and they learn at self-pace.
			CO6	To write effective paragraphs.
Sem.-IV	**Punjabi Compulsory**	**PBC401**	**CO1**	Familiar with Punjabi drama and prose and make its critical analysis.
			CO2	Make students capable to translate English to Punjabi.

			CO3	To provide knowledge of the Punjabi language and various dialects like Majhi, Malvai, Doabi and puadi.
			CO4	To give knowledge of grammar and dictionary words.
			CO5	To make student capable to identify the grammatical concepts and words of grammar.
Sem.-IV	**History & Culture of Punjab**	**HCP401**	**CO1**	To introduce the students to the history of the medieval in the later medieval period.
			CO2	Describe achievements of Banda Singh Bahadur and Sikh struggle for sovereignty from 1760 to 1765
			CO3	Evaluate Sikh polity in 18th century
			CO4	Describe expansion of Maharaja Ranjit Singh's empire and salient features of his civil and military administration and Anglo-Sikh Relations.
			CO5	Analyze political development from 1839-1845
			CO6	Evaluate developments in literature, art and architecture and social life with special reference to position of women in the Punjab region.
Sem.-IV	**Elective English**	**ENO401**	**CO1**	Understand the richness of literature and critically appreciate literary texts
			CO2	Acquire extensive knowledge of English as a language in its various textual forms and transform to be creative, thoughtful, imaginative and effective communicators in a diverse and changing society.
			CO3	Understand the principles of grammar and one word substitution and various forms of figure of speech and classify a detailed study of literary devices.
			CO4	Integrate effectively and respectfully with diverse teams, facilitate them in such a way that English learning becomes a pleasurable endeavour and they learn at self-pace.
			CO5	Relate various literary aspects through the text which capacitates them to enrich their literary, research and cultural values and also make them aware of self and society.
			CO6	Compile and analyse the different ways in which the grammar has been described like précis writing and comprehension.
Sem.-IV	**Elective Hindi**	**HIN401**	**CO1**	Knowledge of Hindi language helps them to think critically while studying Hindi literature. They are able to relate pleasure of literature and real life.
			CO2	Understanding the importance of Environment culture and social life. Understanding the relation between society and literature by

				Hindi literature in past and present.
			CO3	Study the socio-culture and political background of Adi-kaal toRiti-kaal.
			CO4	Use the literature to develop their social and moral sense in life.
			CO5	Evaluating the concept of Hindi from past to present and making the society more closely through literature.
			CO6	Develop knowledge of Hindi linguistic and grammar.
Sem.-IV	**Elective Punjabi**	**PBI401**	**CO1**	Introduction and importance of Madhkali Punjabi Kavita
			CO2	Main Objective of Madhkali Punjabi Poetry to increase the knowledge
			CO3	Introduction and importance of punjabi short story
			CO4	Introduction to punjabiSahit da Ithas and to provide knowledge to Sufi Kav and KissaKav
			CO5	To Provide knowledge of SahitAlochna
			CO6	Introduction and importance of UpbashaVigayan
Sem.-IV	**History**	**HIS401**	**CO1**	Understand teachings Sikh Gurus and development of Sikh religion.
			CO2	Analyze Mughal Sikh relationship and establishment of Sikh raj by Banda Singh Bahadur
			CO3	Describe various features of Maharaja Ranjit Singh's administration and evaluate Anglo-Sikh relations.
			CO4	Understand new administrative structure and policies adopted by Britishers in Punjab.
			CO5	Describe Social-Religious movements in Punjab .Also evaluate various events of Freedom Movement andpartition of Punjab.
			CO6	Describe various developments from 1947 to1966 in Punjab.
Sem.-IV	**Economics**	**ECO401**	**CO1**	Explain the various mathematical and statistical tools in decision making.
			CO2	Outline the applications of matrices and derivatives.
			CO3	Analyze the univariate data.
			CO4	Define interpolation and its methods.
			CO5	Describe correlation, its types and measurement.
			CO6	Illustrate the fitting of trend line and construction of price and quantity indices
Sem.-IV	**Political Science**	**POL401**	**CO1**	This paper enrich the understanding of students of the working of the Indian political parties, the party system with reference to various state & national political parties, election and voting behaviour.
			CO2	This paper also examines certain key issue and debates in

				contemporary India.
			CO3	To identify how electoral rules and procedure in India effect election outcome.
			CO4	Explore the various emerging trends in Indian politics
			CO5	Describe the role of caste, religion, and regionalism in Indian political system
			CO6	Explore the basic features of Indian foreign policy and describe the non-alignment moment and its relevance in contemporary scenario
Sem.-IV	**Environment Conservation**	**ENC401**	**CO1**	Learn about the sources and catergories of solid waste , plastic nuisance , incineration and refuse derived fuels and fly ash utilization.
			CO2	Understand about the MSW Handlin rules 2000, learn about composting and optimum conditions for composting.
			CO3	Understand about Disaster management : Pre- disaster phase, actual disaster phase, and post-disaster phase.
			CO4	To acquire knowledge about management of various natural disasters like floods, earthquakes, tsunami, landslides, drought , and tropical cyclones.
			CO5	Learn about the construction and working of biogas plants, its advantages and disadvantages. To get knowledge about verm-culture and vermicomposting and Waste water treatment.
			CO6	To get knowledge about organic farming, methods, soil management, weed management and control of pests, advantages of organic farming. Learn about different ways of reclamation of waste land.
Sem.-IV	**Physical Education**	**PED401**	**CO1**	Develops in the students awareness of physical, mental and emotional health and its importance.
			CO2	Enhances the interest of the students in sports.
			CO3	Enables the students become better enlightened and fit citizens of the country.
			CO4	Get to know of the various intricacies and insight knowledge of various sports.
			CO5	Enhances the qualities of leadership and promotes the concept of national integration.
			CO6	Makes individuals and society more fit and a better place to live in.
Sem.-IV	**Home Science**	**HMS401**	**CO1**	Understand Elements and Principles of Design.
			CO2	Develop the knowledge about Care and Storage of garments.
			CO3	Study of fabric construction
			CO4	Understand different types of Yarns.
			CO5	Understand Bleaches and stain removing.
			practical	Students learn Tie and dye ,block printing and construction of garments

Sem.-IV	**Functional English**	**FNC401**	**CO1**	To acquaint learners with the lay-out, equipment and functioning of a T.V. station.
			CO2	To train learners in scriptwriting for different genres of T.V. Broadcast.
			CO3	To sensitize learners to body movements, demeanor and gestures involved in T.V. presentation.
			CO4	To provide further practice in previously covered features of broadcast presentation.
			CO 5	To familiarize learners with different genres of T.V. production with specific training imparted in script writing
			CO 6	To continue with all other features of Broadcast presentation.
Sem.-IV	**Mathematics: Paper A (Advance Calculus-II)**	**MAT401 A**	**CO1**	Knowledge about Sequence- bound of a sequence, convergent, divergent and oscillatory sequence.
			CO2	Learn about Series of non negative term- P- test , comparison test, Cauchy's integral test ,Cauchy's root test, ratio test, Raabe's test, logarithmic test ,Gauss Test. Alternating series
			CO3	Knowledge about Leibnitz's test, Reimann's rearrangement theorem
			CO4	Define, differentiate, and integrate functions represented as power series expansions, including Taylor series, and solve related problems.
			CO 5	Distinguish between the concepts of sequence and series, and determine limits of sequences and convergence and approximate sums of series.
Sem.-IV	**Mathematics: Paper B (Differential Equations-II)**	**MAT401 B**	**CO1**	Define Laplace transform ,Inverse Laplace transform and apply these to problems.
			CO2	Learn to find Series solution of differential equations power series method
			CO3	Derive the solutions of Bessel equations ,their recurrence relations and orthogonal properties
			CO4	Derive the solutions of Legendre's equations ,their recurrence relations and orthogonal properties
			CO 5	Form and solve Partial differential equations
Sem.-IV	**Mathematics: Paper C (Dynamics)**	**MAT401 C**	**CO1**	Knowledge about Motion of a particle, Newton's Laws of Motion, motion of a body along the smooth inclined plane.
			CO2	Understanding Simple harmonic motion, elastic string, curvilinear motion of a particle.
			CO3	Learn about Work, power and conservative field. Relative motion, linear momentum ,angular momentum, impulsive forces.
			CO4	Determine the dynamic response of the system to applied loadings,using Newton's law.
			CO 5	Apply the Principle of Work and Energy and the principle of impulse and momentum to mechanical systems.
Sem.-	**Computer**	**CS401A**	**CO1**	To Define basic function of DBMS.

IV	**Science-A** **(Database Concepts)**		**CO2**	To Understand database models & entity relationship models
			CO3	To Design and implement a database schema for a given problem domain
			CO4	To Apply the concept of normalization to reduce the tables and mapping of E-R diagrams to tables
			CO 5	To create algebraic queries by using the topic of relational algebra and calculus
			CO 6	To Identify the concurrency problems and learn the techniques to handle it
Sem.-IV	**Computer Science-B** **(Data Structures)**	**CS401B**	**CO1**	To gain knowledge of different concepts of Data Structure.
			CO2	To study the basics concepts of arrays and Stacks.
			CO3	To understand how to represent linked list in memory.
			CO4	To study the representation of Trees and Graphs.
			CO 5	To study the basics of Searching.
			CO 6	To understand the basics of Sorting.
Sem.-IV	**Music**	**MUV401**	**CO1**	To identify the contributions of important musicians, composers of various time period.
			CO2	To understand core musicological concepts described in treatises of various time periods.
			CO3	To understand verities of Gamak.
			CO4	To understand various musical terms.
			CO 5	To acquire knowledge about description and notation of Ragas and Taal(Roopak, Tilwada etc.)
			CO 6	To acquire the ability to playEkTaal on Tabla, and also ability to play Harmonium with few Alankars.
Sem.-V	**English Compulsory**	**ENG501**	**CO1**	Critically analysis literary texts and appreciate prose and its structure in shaping it's meaning.
			CO2	Acquire extensive knowledge of English as a language in its various textual forms and become creative, thoughtful, imaginative and effective communicators in a diverse and changing society.
			CO3	Analyse structure, forms, rhyming schemes etc. and able to speak and write grammatically correct sentences.
			CO4	Work effectively and respectfully with diverse teams, facilitate them in such a way that English learning becomes a pleasurable endeavour and they learn at self-pace and also obtain a value orientation by means of poetry.
			CO5	Apply comprehend human actions and their consequences in life through various literary aspects of the text which capacitates them to enrich their literary, research and cultural values and also make them aware of self and society
			CO6	Think and communicate effectively in the current information intensive society and enable them to learn ICT tools.
Sem.-V	**Punjabi**	**PBC501**	**CO1**	To analysis the medieval poetry and provide knowledge to various aspects of it.

	Compulsory		**CO2**	To make student capable to write a essay on current affairs.
			CO3	Provide knowledge of the origin of script and their development.
			CO4	Define phrase management and discuss its types.
			CO5	Provide practical knowledge of linguistics.
Sem.-V	**History & Culture of Punjab**	**HCP501**	**CO1**	Evaluate the British administration after the annexation of Punjab from 1849-1858.Also describe agriculture, trade, and industry in Punjab during British Period.
			CO2	Describe the spread of Modern Education in Punjab.
			CO3	Describe the various Socio- Religious movements and causes responsible for Uprising of 1907.
			CO4	Describe the origin and activities of Gadar Movement.
			CO5	Analyze the circumstances leading to Gurdwara Reform Movement.
			CO6	Analyze response of Punjabis to national movement and circumstances leading to partition of India.
Sem.-V	**Elective English**	**ENO501**	**CO1**	Develop intellectual, personal and professional abilities through the effective study of literature.
			CO2	Add extensive knowledge of English as a language in its various textual forms and to become creative, thoughtful, imaginative and effective communicators through poetry and fiction in a diverse and changing society.
			CO3	Familiarize students with Modern Literature in Translation through different representative samples of poetry and able to recognize the rhythm, meter and other musical aspects of poetry.
			CO4	Work effectively and respectfully with diverse teams, facilitate them in such a way that English learning becomes a pleasurable endeavour and they learn at self-pace.
			CO5	Determine with various literary aspects through the text which capacitates them to enrich their literary, research and cultural values and also make them aware of self and society.
			CO6	Lead to a greater understanding of the human communicative action through an objective study of applied grammarand are able to recognize the literary terms related to Indian Literature.
Sem.-V	**Elective Hindi**	**HIN501**	**CO1**	Knowledge of Hindi language helps them to think critically while studying hindi literature. They are able to relate pleasure of literature and real life.
			CO2	Understanding the relation between society and literature by hindi literature in past and present.
			CO3	Inculcate moral and human values within themselves.
			CO4	Develop reading, writing and communication skills.
			CO5	The verbal and non-verbal skills of communication are developed.
			CO6	Get information about Alankar, Chhand in hindi literature.
Sem.-V	**Elective**	**PBI501**	**CO1**	Understanding and investigation of different types of medieval

	Punjabi			Punjabi poetry.
			CO2	To give abstract analysis and data about Punjabi drama.
			CO3	Information on the literary History of Punjabi KissaKav.
			CO4	Information on the literary History of vaarkav.
			CO5	Information on Indian poetics particularly about "riti and auchitya".
			CO6	Provide information on medieval and ancient poetry and literary forms of prose.
Sem.-V	**History**	**HIS501**	**CO1**	Understand the word Feudalism,its origin and decline in Europe.
			CO2	Analyze the causes and effects of Renaissance and Reformation in Europe.
			CO3	Describe the growth of Parliamentary Institution in England and Formation of USA.
			CO4	Evaluate the emergence of industrial revolution and rise of capitalism and mercantilism.
			CO5	Analyze the causes and results of French revolution and reforms of Napoleon.
			CO6	Describe the unification of Germany and Italy.
Sem.-V	**Economics**	**ECO501**	**CO1**	Categorize the essential tools and concepts of development economics.
			CO2	Explain what makes underdevelopment persist and what helps development succeed.
			CO3	Discuss the diverse dimension and measures of development, as well as the application of microeconomic analysis to issues of development in poor countries.
			CO4	Define the household decisions and the analysis of institutions and norms influencing development.
			CO5	Demonstrate the understanding between growth & development.
			CO6	Analyze empirical evidence on the patterns of Economic development.
Sem.-V	**Political Science**	**POL501**	**CO1**	Students go through the comparative study of different countries and government.
			CO2	Examine the constitutional system of U.K and USA. Also make a difference of the political and executive institution of both countries
			CO3	Students also learn about the current political system, judiciary system, political parties, and pressure groups of both countries.
			CO4	To identify various issues and challenges towards international relations
			CO5	To understand the comparative method of international government and politics.
			CO6	Students gain the knowledge about the judiciary system of UK and USA.

Sem.-V	**Environment Conservation**	**ENC501**	**CO1**	Understand about the various levels of biodiversity , various threat to biodiversity, learn about various hot spots of biodiversity .
			CO2	Various acts to protect biodiversity Environment protection act 1986, Forest conservation act, 1980, Water prevention and control of pollution act, 1974.
			CO3	Learn about in-situ and ex- situ conservation strategies and various causes of extinction of biodiversity.
			CO4	To acquire knowledge about various acts to conserve biodiversity (Wildlife protection act), 1972, Joint forest management .
			CO5	Learn about role of religion in environment protection, different possible measures to make aware localities about environmental hazards and its remedies.
			CO6	Learn about the cultivation methods of *Aloe vera, Calotropis, Acacia nilotica, Mentha ,Ricnus etc.*
Sem.-V	**Physical Education**	**PED501**	**CO1**	Develops in the students awareness of physical, mental and emotional health and its importance.
			CO2	Enhances the interest of the students in sports.
			CO3	Enables the students become better enlightened and fit citizens of the country.
			CO4	Get to know of the various intricacies and insight knowledge of various sports.
			CO5	Enhances the qualities of leadership and promotes the concept of national integration.
			CO6	Makes individuals and society more fit and a better place to live in.
Sem.-V	**Home Science**	**HMS501**	**CO1**	To Outline the importance and principles of Food Preservation
			CO2	To Enhance Knowledge about concept and Principles of Meal planning
			CO3	To Discuss Therapeutic Diets
			CO4	To Explain Common childhood emotions, common behavioral problems and solve their remedies
			CO5	To Demonstrate Language Development Types of Play.
			Practical	To Do Planning and preparation of diet
				To Practice Preservation of pickles, jam , squash
Sem.-V	**Functional English**	**FNC501**	**CO1**	To generate awareness among learners of issues deserving reporting in print and to stimulate them to rebond environment in print.
			CO2	To familiarize learners with different aspects of print journalism, its formats, its avenues.
			CO3	To enable learners to write news stories from the stage of news gathering to editing to their final presentation.
			CO4	To familiarize learner with the lay-out, equipment and

				functioning of a newspaper/magazine production centre
			CO5	To enable leaner to acquire the art and skills of feature writing to encourage freelancing among them.
			CO6	To generate awareness among learner of the aspects of graphic arts in Print Journalism.
Sem.-V	**Mathematics: Paper A** **(Analysis-I)**	**MAT501 A**	**CO1**	Determine Convergence of improper integrals with discontinuities in their domain or infinite limits of integration.
			CO2	Knowledge about Countable and uncountable sets.
			CO3	Solving integral as a function of parameter.
			CO4	Acquire the information about the Beta, Gamma function and evaluate it in various problems.
			CO 5	Learn the theory of Riemann integral, mean value theorems and use theory in solving definite integrals arising in different fields of science and engineering.
			CO 6	Apply the fundamental theorem of calculus to evaluate definite integrals.
Sem.-V	**Mathematics: Paper B** **(Modern Algebra)**	**MAT501 B**	**CO1**	Understanding of Groups, Subgroups, Lagrange's Theorem.
			CO2	Learn about Normal subgroups and Quotient Groups, Homomorphisms, Isomorphism Theorems.
			CO3	Knowledge of Conjugate elements, Class equation, Permutation Groups, Alternating groups and its simplicity.
			CO4	Exposure on Rings, Integral domains, Subrings and Ideals, Quotient Rings, Prime and Maximal Ideals.
			CO 5	Brief discussion on Homomorphisms, Isomorphism Theorems, Polynomial rings.
Sem.-V	**Mathematics: Paper C** **(Probability Theory)**	**MAT501 C**	**CO1**	Describe the concept Probability, conditional probability, Bayes Theorem
			CO2	Demonstrate the concept of random variables, density function, cumulative distribution function, moments and moment generating function.
			CO3	Develop the knowledge about distributions based on discrete random variables and apply them in real world problems.
			CO4	Develop the knowledge about distributions based on continuous random variables and apply them in real world problems.
			CO 5	Explain concepts used in Bivariate Random Variable
Sem.-V	**Computer Science-A** **(Project Management)**	**CS501A**	**CO1**	Learn about how a project needs to be established, organized, coordinated ,controlled and evaluated.
			CO2	Know the fundamentals of report writing
			CO3	Students are trained to meet the requirements of the Industry.
			CO4	Exposure to a variety of research projects and activities in order to enrich their academic experience
			CO 5	Develop skills in presentation and discussion of research topics in a public forum.
			CO 6	Be aware of the ethical, social, and security issues of information systems.

Sem.-V	**Computer Science-B** **(Relational Database Management System)**	**CS501B**	**CO1**	To Define basic function of DBMS
			CO2	To Understand database models & entity relationship models
			CO3	To Design and implement a database schema for a given problem domain
			CO4	To Apply the concept of normalization to reduce the tables and mapping of E-R diagrams to tables
			CO 5	To create algebraic queries by using the topic of relational algebra and calculus
			CO 6	To Identify the concurrency problems and learn the techniques to handle it
Sem.-V	**Music**	**MUV501**	**CO1**	To identify the contributions of important musicians, composers of various time period.
			CO2	To understand core musicological concepts described in treatises of various time periods.
			CO3	To understand about time theory of ragas of Indian classical music and Ragangpadhati.
			CO4	To understand various musical terms.
			CO 5	To acquire knowledge about description and notation of Ragas and Taal(JhumaraTaal, SulTala, etc.)
			CO 6	To acquire the ability to play Teevra and sing one Dharupad.
Sem.-VI	**English Compulsory**	**ENG601**	**CO1**	Empower the students to read and analyse prose and critically appreciate literary texts.
			CO2	Gain extensive knowledge of English as a language in its various textual forms like prose and poetry from a variety of cultures, languages and historic periods and become creative, thoughtful, imaginative and effective communicators in a diverse and changing society.
			CO3	Enhance students' ability to use grammatical conventions and polish their writing skills.
			CO4	Work effectively and respectfully with diverse teams, facilitate them in such a way that English learning becomes a pleasurable endeavour and they learn at self-pace.
			CO5	Know of various literary aspects through the text which capacitates them to enrich their literary, research and cultural values and also make them aware of self and society.
			CO6	Know the beauty of the coherence of Language and literature.
Sem.-VI	**Punjabi Compulsory**	**PBC601**	**CO1**	Study and analysis of Novel.
			CO2	To motivate students to write an essay on various topics like cultural, academic, sports and literary.
			CO3	Provide knowledge of various aspects of Gurmukhi Lippi.
			CO4	Provide knowledge on the basis of word formation and types about the semantic.
			CO5	Define sentences.
			CO6	Provide practical knowledge of various types of sentences.
Sem.-	**History &**	**HCP601**	**CO1**	Understand various diplomatic developments in Europe.

VI	**Culture of Punjab**		**CO2**	Evaluate the causes of First World War and Second World War.Also analyze the peace settlement after the wars.
			CO3	Analyze modernization of Japan.
			CO4	Describe how Russia's traditional monarchy was replaced with world's first communist state and explain rise of communism in China.
			CO5	Explain causes of economic depression and Roosevelt's New deal policy.
			CO6	Describe decline of U.S.S.R. and rise of Unipolar world.
Sem.-VI	**Elective English**	**ENO601**	**CO1**	Enhance students' awareness in the aesthetics of literature while critically appreciating literary texts.
			CO2	Acquire extensive knowledge of English as a language in its various textual forms and to become creative, thoughtful, imaginative and effective communicators in a diverse and changing society.
			CO3	Develops the deeper knowledge of English literature and explore the ability to appreciate ideas and think critically
			CO4	Read and write analytically in a variety of formats, including essays, report writing and translation.
			CO5	Differentiate critical and theoretical approaches to the reading and analysis of literary texts in multiple genres as well as acquainted with various literary aspects through the text which capacitates them to enrich their literary, research and cultural values and also make them aware of self and society
			CO6	Form an idea about the various stages in the development of English language.
Sem.-VI	**Elective Hindi**	**HIN601**	**CO1**	Knowledge of Hindi language helps them to think critically while studying hindi literature. They are able to relate pleasure of literature and real life.
			CO2	Understanding the relation between society and literature by hindi literature in past and present.
			CO3	Understanding the relation between society and literature by hindi literature in past and present.
			CO4	Develop reading, writing and communication skills .
			CO5	The verbal and non-verbal skills of communication are developed .
			CO6	Get information about Alankar, Chhand in hindi literature.
Sem.-VI	**Elective Punjabi**	**PBI601**	**CO1**	Study of Punjabi poetry of medieval and colonial period.
			CO2	Study of Essay in modern Punjabi prose.
			CO3	Literary History of Punjabi Sufi poetry.
			CO4	Fundamental Knowledge of western poetic theory.
			CO5	Aristotle`s theory of imitation , the method of imitation , the method of psychoanalysis and the study of Marxism.
			CO6	To provide knowledge on definition of Linguistic and its relationship with other Systems as Science, psychology, social science and anthropology.

Sem.-VI	**History**	**HIS601**	**CO1**	Analyze impact of migration, rehabilitation and resettlement after 1947.
			CO2	Evaluate demand for Punjabi Suba and Reorganization Act of 1966.
			CO3	Describe Political, economic and educational development in post 1966 period.
			CO4	Describe Bluestar operation and its impact on Punjab society.
			CO5	Evaluate Socio-Economic development in 1980's and social and political issues of Punjab region.
			CO6	Describe development of Punjabi literature by BhaiVir Singh, Shiv Kumar Batalvi, AmritaPritam.
Sem.-VI	**Economics**	**ECO601**	**CO1**	Explain the features and characteristics of the Indian Economy.
			CO2	Describe the performance and problems of Industrial development.
			CO3	Explain the Indian tax structure, external trade and balance of payments.
			CO4	Describe the objectives, strategy and performance of Indian planning.
Sem.-VI	**Political Science**	**POL601**	**CO1**	This paper provides knowledge for the international relations, theories, and the values implicit in each of these in different ways and an overview of the broad theories and concept use to understand international politics.
			CO2	Analysis of the Second World War, cold war, various international organizations. Explore various principles of world politics like balance of power, collective security.
			CO3	To appreciate the post war developments through the emergence of third world.
			CO4	To understand the emerging area in international relations.
			CO5	To identify various issues and challenges towards international relations.
			CO6	To analyses the international security Arms Race. Arms control and Disarmament.
Sem.-VI	**Environment Conservation**	**ENC601**	**CO1**	To acquire knowledge about current environmental issues like climate , change global warming , population explosion , rain water harvesting and methods to resolve these issues.
			CO2	Green revolution and its impacts on environment with special reference to Punjab, Tehri dam, Narmada project, Bhopal gas tragedy, River cleaning project of Sant B.S. Seechewal (Punjab).
			CO3	Get knowledge about the role of Non- Governmental organizations in environmental protection.
			CO4	Chipko movement , For a living ganga by WWF, Transformation DTC fleet to CNG driven transport, Earth hour, Green peace ,Nitrate pollution in Punjab
			CO5	Learn about role of various international and national agencies

				:UNEP,UNDP,WWF,MOEF,CPCBin environment conservation and management. Learn about CITES, UNFCC, Montreal protocol, Kyoto protocol, and Copenhagen summit.
			CO6	Application of RS and GIS in Environment, study about biostatistics : To find mean, mode , median , standard deviation , correlation and regression.
Sem.-VI	**Physical Education**	**PED601**	**CO1**	Develops in the students awareness of physical, mental and emotional health and its importance.
			CO2	Enhances the interest of the students in sports.
			CO3	Enables the students become better enlightened and fit citizens of the country.
			CO4	Get to know of the various intricacies and insight knowledge of various sports.
			CO5	Enhances the qualities of leadership and promotes the concept of national integration.
			CO6	Makes individuals and society more fit and a better place to live in.
Sem.-VI	**Home Science**	**HMS601**	**CO1**	To Outline the importance and principles of Food Preservation
			CO2	To Enhance Knowledge about concept and Principles of Meal planning
			CO3	To Discuss Therapeutic Diets
			CO4	To Explain Common childhood emotions, common behavioral problems and solve their remedies
			CO5	To Demonstrate Language Development Types of Play.
			CO6	To Do Planning and preparation of diet
Sem.-VI	**Functional English**	**FNC601**	**CO1**	To equip learners with language proficiency in Business/work situations particularly in spoken interaction.
			CO2	To make learners aware of the special features of format and style of informal communication through various modes.
			CO3	To equip learners with techniques of written communication in business situations.
			CO4	To expand vocabulary and develop reading comprehension of material related to business.
			CO 5	To boost communication skills.
			CO 6	To instill skills of public speaking.
Sem.-VI	**Mathematics: Paper A (Analysis-II)**	**MAT601 A**	**CO1**	Learn to using Double and triple integrals to find area and volume.
			CO2	Change to polar coordinates, change of variable to cylindrical and spherical coordinates.
			CO3	Distinguish between the concepts of sequence and series and determine limits of sequence and convergence and approximate sum of series.
			CO4	Define, differentiate and integrate functions represented as power series expansion and fourier series expansion including Taylor series and solve related problems.

			CO 5	Knowledge about vector integration - line, surface and volume integrals
Sem.-VI	**Mathematics: Paper B (Linear Algebra)**	**MAT601 B**	**CO1**	To learn definition and examples of Vector Spaces, Subspaces, Algebra of subspaces, Linear span.
			CO2	Knowledge of Linear dependence and independence of vectors, Basis and dimension of a vector space.
			CO3	Understanding of linear transformations, Rank and Nullity of a linear transformation, Vector space of linear transformations.
			CO4	Solving exercises on linear transformations and matrices, Change of basis, eigenvalues and eigenvectors.
			CO 5	Exposure on Cayley-Hamilton theorem, Diagonalizable operators and matrices. Minimal polynomial of a linear operator.
Sem.-VI	**Mathematics: Paper C (Numerical Analysis)**	**MAT601 C**	**CO1**	Explain methods to find solutions to linear and nonlinear equations using numerical methods.
			CO2	Knowledge about Interpolation and numerical differentiation.
			CO3	Solving algebraic eigenvalue problems.
			CO4	Understand the methods to solve Ordinary differential equations.
			CO 5	Develop the knowledge about methods for solving integration of functions.
Sem.-VI	**Computer Science-A (E-Commerce)**	**CS601A**	**CO1**	Have knowledge of e-commerce, its components, structure of e-commerce
			CO2	Acquire a good knowledge of e-commerce
			CO3	Understand the principles and practices of e-commerce
			CO4	Discuss the trends in e-commerce
			CO 5	Explain the economic consequences of e-commerce
			CO 6	Understand the processes of developing and implementing e-commerce
Sem.-VI	**Computer Science-B (Web Programming)**	**CS601B**	**CO1**	An overview of creating static web pages using HTML.
			CO2	Implement the concepts of built in functions in programming, control structures in programming.
			CO3	Read, write and execute PHP programs.
			CO4	Format and validate web pages.
			CO 5	Demonstrate the implementation of PHP into current HTML based websites.
			CO 6	Develop PHP programs using databases.
Sem.-VI	**Music**	**MUV601**	**CO1**	To identify the contributions of important musicians, composers of various time period.
			CO2	To understand the role of Akashvani/Doordarshan, Electronic medium towards the popularization of Indian Classic Music.
			CO3	To understand verities of Tana.
			CO4	To understand various musical terms.
			CO 5	To acquire knowledge about description and notation of Ragas and Taal (Deep Chandi, Dhanmar and Ada Char Taal)
			CO 6	To acquire the ability to play Adachartaal and ability to sing one Dhamar.

Mapping of Course outcomes (COs) with programme outcomes (POs)

Programme Outcome																
College code	**Course Out-comes**	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**	**PO 13**	**PO 14**	**PO 15**
Semester I																
ENG101	**CO1**	3	3	2	3	3	2	2	2	3	X	1	3	2	2	2
	CO2	3	3	3	3	3	2	2	2	2	1	1	3	2	2	2
	CO3	3	3	3	3	3	2	2	2	3	X	2	2	2	2	3
	CO4	3	3	3	3	3	3	3	2	2	1	1	3	2	3	2
	CO5	3	3	3	3	2	2	2	2	2	1	2	3	2	2	2
	CO6	3	3	2	3	2	2	2	1	2	2	1	1	2	2	2
PBC101	**CO1**	3	3	2	2	1	X	1	1	2	1	1	2	2	2	1
	CO2	2	2	3	3	2	1	1	1	2	2	2	2	2	2	3
	CO3	2	2	2	2	2	2	2	1	2	1	2	2	2	1	2
	CO4	2	2	2	2	2	1	2	1	2	1	2	1	2	2	2
	CO5	3	3	2	1	2	1	X	X	1	2	1	2	1	2	3
	CO6	3	3	2	2	1	1	X	X	2	1	1	2	2	1	3
HCP101	**CO1**	2	1	1	X	1	X	X	X	2	X	2	2	X	1	1
	CO2	2	1	3	X	1	X	X	X	2	X	2	2	X	1	1
	CO3	2	1	1	X	1	X	X	X	2	X	2	2	X	1	1
	CO4	2	1	1	X	1	X	X	X	2	X	2	2	X	1	1
	CO5	2	1	1	X	2	X	X	X	2	X	2	2	3	1	1
	CO6	2	1	3	X	1	X	X	X	2	X	2	2	X	1	1

ENO101	**CO1**	3	3	3	1	3	1	2	1	3	1	1	2	1	1	1
	CO2	3	3	X	X	1	X	1	X	X	1	2	1	1	1	1
	CO3	3	3	2	2	2	1	X	1	2	1	1	1	1	1	1
	CO4	3	3	X	3	1	X	X	X	X	1	1	X	1	1	1
	CO5	3	3	X	3	1	X	X	X	X	1	1	X	1	1	1
	CO6	3	3	X	3	X	X	X	X	X	1	1	X	1	1	1
HIN101	**CO1**	2	3	2	1	2	1	X	1	2	2	2	2	1	2	2
	CO2	3	2	3	1	2	1	2	1	2	3	2	3	3	2	2
	CO3	3	2	2	1	1	X	1	X	1	2	2	3	3	2	3
	CO4	2	3	1	2	1	X	1	X	1	2	2	1	1	2	2
	CO5	1	2	2	1	1	1	X	X	1	2	2	1	1	2	2
	CO6	3	3	1	1	2	2	1	1	1	2	2	2	1	2	2
PBI101	**CO1**	2	2	2	1	2	X	X	1	1	2	2	1	2	1	2
	CO2	2	2	1	2	2	1	X	X	1	2	2	2	1	2	1
	CO3	3	3	2	X	1	1	X	1	1	2	2	1	1	2	2
	CO4	2	2	1	1	2	2	X	X	1	2	2	2	2	2	2
	CO5	2	2	2	X	2	1	1	X	1	2	2	2	2	1	2
HIS101	**CO1**	3	2	3	2	2	1	1	2	2	1	2	2	3	2	2
	CO2	3	2	3	2	3	1	1	3	2	1	2	2	3	2	2
	CO3	3	2	3	2	3	1	1	2	2	1	2	2	2	2	2
	CO4	3	2	3	2	2	1	1	2	2	1	2	2	X	2	2
	CO5	3	2	3	2	2	1	1	3	2	1	2	2	X	2	2
	CO6	3	2	3	2	2	1	1	2	2	1	2	2	X	2	2
ECO101	**CO1**	3	X	3	1	1	2	X	3	2	X	X	X	X	X	3

	CO2	3	X	2	1	1	2	X	3	2	X	X	X	X	X	3
	CO3	3	X	1	2	1	2	X	3	3	X	X	X	X	X	2
	CO4	3	X	1	1	2	2	X	3	3	X	X	X	X	X	3
	CO5	3	X	1	1	1	2	X	3	2	X	X	X	X	X	1
	CO6	3	X	1	1	1	2	X	3	2	X	X	X	X	X	2
POL101	**CO1**	3	3	3	3	3	3	1	2	3	1	2	3	2	1	1
	CO2	3	3	2	2	1	2	X	1	1`	1	2	3	3	1	1
	CO3	3	3	3	2	2	3	2	1	2	1	2	3	2	1	1
	CO4	3	3	3	3	3	2	2	1	2	1	2	2	2	2	1
	CO5	3	3	3	2	1	2	1	2	1	X	2	1	2	1	1
	CO6	3	3	2	1	1	1	2	3	X	2	1	2	1	1	X
ENC101	**CO1**	3	3	3	3	2	2	1	2	2	2	3	1	1	3	2
	CO2	3	2	3	3	3	2	2	2	2	2	1	2	2	3	2
	CO3	1	3	3	2	2	3	1	2	2	2	1	1	2	2	2
	CO4	2	1	2	2	3	2	3	2	2	1	1	1	1	2	3
	CO5	3	1	3	2	2	2	2	2	2	2	1	2	X	2	3
	CO6	X	2	2	2	1	2	1	3	2	2	1	1	2	3	3
PED101	**CO1**	3	X	2	X	X	X	3	X	X	X	3	3	3	X	3
	CO2	3	X	2	X	X	X	3	X	X	X	3	3	3	X	3
	CO3	3	X	2	X	X	X	3	X	X	X	3	3	3	X	3
	CO4	3	X	2	X	X	X	3	X	X	X	3	3	3	X	3
	CO5	3	X	2	X	X	X	3	X	X	X	3	3	3	X	3
	CO6	3	X	2	X	X	X	3	X	X	X	3	3	3	X	3
HMS10	**CO1**	1	1	1	2	X	1	2	1	1	2	1	2	2	1	2

1	**CO2**	1	2	1	2	1	1	2	1	1	3	1	2	1	1	2
	CO3	1	2	1	2	X	1	2	1	1	3	2	2	2	1	2
	CO4	1	2	1	2	X	1	2	1	1	3	1	1	1	1	2
	CO5	1	1	1	2	X	1	2	1	1	2	2	2	2	1	2
	Practical	1	1	1	2	1	1	2	1	1	3	2	3	1	1	2
FNC101	**CO1**	2	3	1	1	1	1	1	X	1	3	3	3	X	2	2
	CO2	2	3	1	1	1	1	1	X	1	2	2	2	X	1	2
	CO3	2	3	1	1	1	1	3	X	1	2	2	2	X	2	2
	CO4	2	3	1	1	1	1	1	X	1	2	2	2	X	1	2
	CO5	2	3	2	2	1	2	1	X	1	2	2	2	X	1	2
	CO6	2	3	2	2	1	2	1	X	1	2	2	2	X	1	2
MAT101A	**CO1**	1	3	2	2	1	2	3	3	X	1	2	X	2	2	2
	CO2	X	2	1	1	1	3	2	3	X	2	2	2	1	2	2
	CO3	1	3	X	X	X	2	3	3	1	1	2	X	1	1	2
	CO4	1	3	2	X	3	3	3	2	X	2	2	1	2	2	3
	CO5	1	3	2	1	X	2	1	2	1	X	2	1	1	3	1
MAT101B	**CO1**	3	1	2	3	1	X	1	X	1	X	2	1	2	2	2
	CO2	2	2	2	3	2	2	1	X	1	1	2	2	2	2	2
	CO3	3	3	3	3	2	3	2	2	2	3	3	2	2	3	1
	CO4	3	X	1	3	X	X	1	1	X	2	2	1	X	1	2
	CO5	3	X	2	3	1	1	2	1	1	1	3	1	2	2	3
MAT101C	**CO1**	2	X	3	2	2	1	X	X	X	X	2	1	2	X	X
	CO2	2	X	3	2	3	1	X	X	X	X	2	1	2	X	X

	CO3	2	X	3	2	3	1	X	X	X	X	2	1	2	X	X
	CO4	2	X	3	2	2	1	X	X	X	X	2	1	2	X	X
	CO5	2	X	2	2	2	1	X	X	X	X	2	1	2	X	X
CS101A	**CO1**	1	1	1	1	1	X	1	X	1	1	2	3	1	X	2
	CO2	1	X	1	2	1	1	1	X	1	1	2	3	2	X	2
	CO3	1	1	1	1	1	1	1	1	1	1	2	3	1	X	2
	CO4	1	1	1	X	1	1	1	1	1	1	2	2	2	X	2
	CO5	1	X	1	1	1	X	1	X	1	1	2	2	X	X	2
	CO6	1	X	1	1	1	X	1	X	1	1	2	2	2	X	2
CS101B	**CO1**	1	1	1	1	1	X	1	X	1	1	2	3	1	X	2
	CO2	1	X	1	2	1	1	1	X	1	1	2	3	2	X	2
	CO3	1	1	1	1	1	1	1	1	1	1	2	3	1	X	2
	CO4	1	1	1	X	1	1	1	1	1	1	2	2	2	X	2
	CO5	1	X	1	1	1	X	1	X	1	1	2	2	X	X	2
	CO6	1	X	1	1	1	X	1	X	1	1	2	2	2	X	2
MUV101	**CO1**	3	1	1	X	X	1	1	X	2	1	2	2	1	1	2
	CO2	3	1	1	X	X	1	1	X	2	1	2	2	1	1	2
	CO3	3	1	1	X	X	1	1	X	2	1	2	2	1	1	2
	CO4	3	1	1	X	X	1	1	X	2	1	2	2	1	1	2
	CO5	3	1	X	X	X	1	1	X	2	1	2	2	1	1	2
	CO6	3	1	2	X	2	2	2	1	3	1	2	2	1	1	2
Semester II																
ENG201	**CO1**	3	3	3	1	2	2	2	2	2	X	1	3	2	1	2
	CO2	3	3	2	2	1	3	3	2	2	1	1	3	2	2	2

	CO3	3	3	2	3	1	1	X	1	2	X	1	2	2	2	2
	CO4	3	3	3	3	3	2	3	1	2	1	1	3	2	3	3
	CO5	3	3	3	3	2	2	2	1	2	1	1	3	2	2	2
	CO6	3	3	2	3	1	1	1	X	1	2	X	2	2	1	1
PBC201	**CO1**	3	3	1	1	1	1	1	1	2	2	2	2	2	2	3
	CO2	3	2	2	2	2	2	X	X	1	2	2	2	2	1	2
	CO3	2	2	1	1	1	X	1	X	1	2	2	1	X	X	2
	CO4	2	3	2	1	1	X	1	X	1	2	2	1	2	2	2
	CO5	2	3	1	1	1	2	1	1	1	2	2	2	2	1	2
HCP201	**CO1**	2	1	2	X	2	1	X	X	2	X	2	2	2	1	1
	CO2	2	1	2	X	2	1	X	X	2	X	2	2	2	1	1
	CO3	2	1	2	X	2	1	X	X	2	X	2	2	2	1	1
	CO4	2	1	2	X	2	1	X	X	2	X	2	2	2	1	1
	CO5	2	1	2	X	2	1	X	X	2	X	2	2	2	1	1
	CO6	2	1	2	X	2	1	X	X	2	X	2	2	2	1	1
ENO201	**CO1**	3	3	3	1	3	1	2	1	3	1	1	2	1	1	1
	CO2	3	3	X	X	1	X	1	X	X	1	2	1	1	1	1
	CO3	3	3	2	2	2	1	X	1	2	1	1	1	1	1	1
	CO4	3	3	X	3	1	X	X	X	X	1	1	X	1	1	1
	CO5	3	3	X	3	1	X	X	X	X	1	1	X	1	1	1
	CO6	3	3	X	3	X	X	X	X	X	1	1	X	1	1	1
HIN201	**CO1**	2	3	2	1	2	1	X	1	2	2	2	2	1	2	2
	CO2	3	2	3	1	2	1	2	1	2	3	2	3	3	2	2
	CO3	3	2	2	1	1	X	1	X	1	2	2	3	3	2	3

	CO4	2	3	1	2	1	X	1	X	1	2	2	1	1	2	2
	CO5	1	2	2	1	1	1	X	X	1	2	2	1	1	2	2
	CO6	3	3	1	1	2	2	1	1	1	2	2	2	1	2	2
PBI201	**CO1**	2	2	2	1	2	X	X	1	1	2	2	1	2	1	2
	CO2	2	2	1	2	2	1	X	X	1	2	2	2	1	2	1
	CO3	2	2	2	X	2	1	1	X	1	2	2	2	2	1	2
	CO4	2	1	2	1	2	2	X	X	1	2	2	2	2	2	2
	CO5	3	3	2	X	1	1	X	1	1	2	2	1	1	2	2
HIS201	**CO1**	3	3	2	2	2	1	1	2	2	1	2	3	1	2	2
	CO2	3	3	2	2	2	1	1	2	2	1	2	3	1	2	2
	CO3	3	3	2	2	2	1	1	2	2	1	2	3	1	2	2
	CO4	3	3	2	2	3	1	1	2	2	1	2	3	1	2	2
	CO5	3	3	2	2	2	1	1	2	2	1	2	X	3	2	2
	CO6	3	X	2	2	X	1	1	2	2	1	2	X	1	X	X
ECO201	**CO1**	3	X	1	1	1	2	X	3	2	X	X	X	X	X	1
	CO2	3	X	1	1	1	2	X	3	2	X	X	X	X	X	1
	CO3	3	X	1	1	1	2	X	3	3	X	X	X	X	X	2
	CO4	3	X	1	1	1	2	X	3	3	X	X	X	X	X	3
	CO5	3	X	1	1	1	2	X	3	2	X	X	X	X	X	1
	CO6	3	X	1	1	1	2	X	3	2	X	X	X	X	X	2
POL201	**CO1**	3	2	2	3	2	2	2	2	2	X	1	2	X	2	2
	CO2	1	X	1	2	2	2	2	1	1	X	2	2	1	1	1
	CO3	2	3	3	2	2	1	1	1	2	X	2	1	1	1	1
	CO4	3	3	3	2	2	2	2	1	2	X	1	2	2	2	1

	CO5	3	3	3	2	2	1	1	2	1	X	1	1	1	1	2
	CO6	2	3	3	2	1	1	2	1	2	X	2	1	X	2	1
ENC201	**CO1**	2	2	3	3	2	2	2	3	3	2	3	3	1	3	2
	CO2	3	2	2	3	3	2	2	2	2	2	1	2	2	2	1
	CO3	2	3	3	2	2	3	1	2	2	2	1	1	2	2	3
	CO4	2	1	2	1	2	2	3	3	2	1	1	1	1	2	3
	CO5	3	1	3	2	1	2	2	2	2	2	1	2	1	2	3
	CO6	1	2	1	2	1	2	1	3	2	2	1	1	2	3	2
PED201	**CO1**	3	X	2	X	X	X	3	X	X	X	3	3	3	X	3
	CO2	3	X	2	X	X	X	3	X	X	X	3	3	3	X	3
	CO3	3	X	2	X	X	X	3	X	X	X	3	3	3	X	3
	CO4	3	X	2	X	X	X	3	X	X	X	3	3	3	X	3
	CO5	3	X	2	X	X	X	3	X	X	X	3	3	3	X	3
	CO6	3	X	2	X	X	X	3	X	X	X	3	3	3	X	3
HMS201	**CO1**	1	2	1	2	1	1	2	1	2	2	1	2	2	1	2
	CO2	1	2	1	2	1	2	2	1	2	2	1	2	1	1	2
	CO3	1	3	1	2	1	1	2	1	2	2	2	2	1	1	2
	CO4	1	2	1	2	1	1	2	1	2	2	1	2	1	1	2
	CO5	1	1	1	2	1	1	2	1	2	2	2	2	2	1	2
	Practical	1	2	1	2	1	1	1	1	1	2	2	1	2	1	2
		1	2	1	2	1	2	2	2	1	2	2	1	2	1	2
FNC201	**CO1**	2	3	2	1	2	1	1	X	2	2	2	1	1	1	2
	CO2	2	3	2	1	2	1	1	X	2	2	2	2	1	1	2
	CO3	2	3	2	1	2	1	1	X	2	2	2	2	1	1	2

	CO4	2	3	2	1	2	1	1	X	2	2	2	2	1	1	2
	CO5	2	3	3	1	2	1	1	X	2	2	2	2	1	1	2
	CO6	2	3	2	1	2	1	1	X	2	2	2	2	1	1	2
MAT201A	**CO1**	3	X	2	3	2	X	1	1	X	X	2	1	2	2	2
	CO2	2	1	2	2	1	X	X	1	1	1	2	2	2	2	2
	CO3	1	X	3	3	1	X	2	X	1	2	2	X	2	2	2
	CO4	3	1	3	3	1	1	1	1	1	1	2	2	1	2	1
	CO5	2	X	2	3	2	1	1	1	2	1	3	2	2	2	3
MAT201B	**CO1**	3	X	1	2	2	1	X	X	X	X	1	1	1	1	X
	CO2	3	X	2	1	1	1	X	X	X	X	1	1	1	1	X
	CO3	3	X	2	1	1	1	X	X	X	X	1	2	1	1	X
	CO4	3	X	1	1	1	1	X	X	X	X	1	1	1	1	X
	CO5	3	X	2	2	2	1	X	X	X	X	1	2	1	1	X
	CO6	3	X	1	2	1	1	X	X	X	X	1	1	1	1	X
MAT201C	**CO1**	3	x	1	2	2	1	x	x	x	x	1	1	1	1	x
	CO2	3	x	2	1	1	1	x	x	x	x	1	1	1	1	x
	CO3	3	x	2	1	1	1	x	x	x	x	1	2	1	1	x
	CO4	3	x	1	1	1	1	x	x	x	x	1	1	1	1	x
	CO5	3	x	2	2	2	1	x	x	x	x	1	2	1	1	x
	CO6	3	x	1	2	1	1	x	x	x	x	1	1	1	1	x
CS201A	**CO1**	1	1	1	1	1	X	1	X	1	1	2	3	1	X	2
	CO2	1	X	1	2	1	1	1	X	1	1	2	3	2	X	2
	CO3	1	1	1	1	1	1	1	1	1	1	2	3	1	X	2
	CO4	1	1	1	X	1	1	1	1	1	1	2	2	2	X	2

	CO5	1	X	1	1	1	X	1	X	1	1	2	2	X	X	2
	CO6	1	X	1	1	1	X	1	X	1	1	2	2	2	X	2
CS201B	**CO1**	1	1	1	1	1	X	1	X	1	1	2	3	1	X	2
	CO2	1	X	1	2	1	1	1	X	1	1	2	3	2	X	2
	CO3	1	1	1	1	1	1	1	1	1	1	2	3	1	X	2
	CO4	1	1	1	X	1	1	1	1	1	1	2	2	2	X	2
	CO5	1	X	1	1	1	X	1	X	1	1	2	2	X	X	2
	CO6	1	X	1	1	1	X	1	X	1	1	2	2	2	X	2
MUV201	**CO1**	3	1	1	X	X	1	1	X	2	1	2	2	1	1	2
	CO2	3	1	1	X	X	1	1	X	2	1	2	2	1	1	2
	CO3	3	1	1	X	X	1	1	X	2	1	2	2	1	1	2
	CO4	3	1	1	X	X	1	1	X	2	1	2	2	1	1	2
	CO5	3	1	X	X	X	1	1	X	2	1	2	2	1	1	2
	CO6	3	1	2	X	2	2	2	1	3	1	2	2	1	1	2
Semester III																
ENG301	**CO1**	3	3	3	1	2	2	X	X	2	X	X	3	2	X	2
	CO2	3	3	2	2	1	X	X	X	2	X	X	3	2	X	2
	CO3	3	3	X	3	X	X	X	X	X	2	X	X	X	X	X
	CO4	3	3	1	X	1	X	3	X	X	X	1	3	2	3	2
	CO5	3	3	3	X	2	2	X	X	2	X	X	3	2	X	2
	CO6	3	3	X	3	X	2	X	X	2	2	X	X	X	X	X
PBC301	**CO1**	1	2	1	3	1	X	2	X	3	2	3	2	3	1	1
	CO2	3	1	3	X	3	2	3	3	1	1	1	X	2	2	2
	CO3	2	3	X	2	1	1	X	1	2	3	2	3	1	X	X

	CO4	1	X	2	1	2	3	3	2	X	1	X	2	1	3	3
	CO5	X	2	3	2	X	2	1	3	2	X	3	1	X	2	2
	CO6	2	1	1	3	3	1	2	1	1	2	2	3	2	1	1
HCP301	**CO1**	2	1	3	X	2	X	X	X	2	X	2	2	X	1	1
	CO2	2	1	2	X	2	X	X	X	2	X	2	2	3	1	1
	CO3	2	1	3	X	2	X	X	X	2	X	2	2	3	1	1
	CO4	2	1	2	X	2	X	X	X	2	X	2	2	3	1	1
	CO5	2	1	2	X	2	X	X	X	2	X	2	2	3	1	1
	CO6	2	1	2	X	2	X	X	X	2	X	2	2	3	1	1
ENO301	**CO1**	3	3	3	1	2	2	2	2	2	X	1	3	2	1	2
	CO2	3	3	2	2	1	3	3	2	2	1	1	3	2	2	2
	CO3	3	3	2	3	2	2	2	1	2	X	X	2	2	2	2
	CO4	3	3	3	3	3	2	3	1	2	1	1	3	2	3	3
	CO5	3	3	3	3	2	2	2	1	2	1	1	3	2	2	2
	CO6	3	3	2	2		1	1	X	1	2	X	2	2	1	1
HIN301	**CO1**	2	2	2	2	2	1	1	X	1	2	2	2	3	2	3
	CO2	2	2	1	2	2	1	1	1	1	2	2	2	2	1	2
	CO3	2	2	1	1	2	2	1	X	1	2	2	3	2	2	3
	CO4	2	2	1	1	1	1	1	1	2	2	1	2	2	3	3
	CO5	3	3	2	2	2	1	1	X	1	2	2	2	3	2	3
	CO6	3	2	2	1	2	2	1	2	2	2	1	1	X	2	3
PBI301	**CO1**	2	2	2	2	2	2	2	1	2	1	2	2	2	1	2
	CO2	2	2	1	2	2	X	1	X	1	2	2	2	2	2	2
	CO3	2	2	1	1	1	X	1	X	1	1	2	X	1	1	2

	CO4	2	3	1	2	1	1	1	1	2	2	2	1	1	X	2
	CO5	2	3	1	2	1	1	1	1	2	2	2	1	1	X	2
HIS301	**CO1**	3	2	2	2	2	1	1	2	2	1	2	2	1	2	2
	CO2	3	2	3	2	3	1	1	2	2	1	2	2	1	2	2
	CO3	3	2	3	2	2	1	1	2	2	1	2	2	3	2	2
	CO4	3	2	3	2	3	1	1	2	2	1	2	2	1	2	2
	CO5	3	2	2	2	2	1	1	2	2	1	2	2	1	2	2
	CO6	3	2	2	2	2	1	1	2	2	1	2	2	2	2	2
ECO301	**CO1**	3	X	3	1	1	1	X	1	1	X	X	X	X	X	3
	CO2	3	X	2	1	1	1	X	1	1	X	X	X	X	X	3
	CO3	3	X	1	2	1	1	X	1	1	X	X	X	X	X	2
	CO4	3	X	1	1	2	1	X	1	1	X	X	X	X	X	3
	CO5	3	X	1	1	1	1	X	1	2	X	X	X	X	X	1
	CO6	3	X	1	1	1	1	X	1	2	X	X	X	X	X	2
POL301	**CO1**	3	3	3	2	2	1	2	2	1	X	2	2	2	X	X
	CO2	3	3	3	1	2	1	2	1	1	X	2	2	2	1	X
	CO3	3	3	3	1	1	X	1	1	2	X	2	X	3	X	2
	CO4	3	3	3	2	1	2	2	1	2	X	1	X	1	1	2
	CO5	3	3	3	1	X	X	1	X	2	X	1	2	3	2	1
	CO6	2	3	3	1	X	1	1	1	2	X	2	1	1	2	X
ENC301	**CO1**	3	2	2	2	1	3	1	2	1	3	1	2	2	1	3
	CO2	1	2	X	3	3	2	2	2	2	2	1	2	2	3	1
	CO3	2	2	3	2	2	X	1	1	2	2	1	1	2	2	2
	CO4	3	2	1	2	2	2	3	2	2	2	1	1	1	2	1

	CO5	3	2	3	2	2	2	2	2	2	2	1	2	X	2	3
	CO6	2	1	X	2	1	2	1	3	3	2	1	2	2	3	2
PED301	**CO1**	3	X	2	X	X	X	3	X	X	X	3	3	3	X	3
	CO2	3	X	2	X	X	X	3	X	X	X	3	3	3	X	3
	CO3	3	X	2	X	X	X	3	X	X	X	3	3	3	X	3
	CO4	3	X	2	X	X	X	3	X	X	X	3	3	3	X	3
	CO5	3	X	2	X	X	X	3	X	X	X	3	3	3	X	3
	CO6	3	X	2	X	X	X	3	X	X	X	3	3	3	X	3
HMS301	**CO1**	2	1	2	2	1	1	1	1	2	1	2	3	X	1	1
	CO2	1	X	1	1	2	1	1	1	1	1	3	1	1	1	1
	CO3	1	1	1	X	1	X	X	X	X	2	1	1	X	X	1
	CO4	1	1	2	1	X	X	1	1	X	1	2	X	1	1	2
	CO5	X	2	1	X	1	1	2	2	1	1	2	X	X	X	1
	practical	1	1	1	X	1	1	1	1	1	2	2	1	2	2	3
FNC301	**CO1**	2	3	1	1	1	1	2	X	2	3	3	2	1	2	2
	CO2	2	3	1	1	1	1	2	X	2	3	2	2	1	2	2
	CO3	2	3	1	1	1	1	2	X	2	3	2	2	1	2	2
	CO4	2	3	1	1	1	1	2	X	2	3	2	2	1	1	2
	CO5	2	3	2	2	1	1	2	X	2	2	2	2	1	1	2
	CO6	2	3	2	2	1	1	2	X	2	3	2	2	1	1	2
MAT301A	**CO1**	3	1	2	3	1	X	X	1	X	X	2	X	3	1	2
	CO2	3	X	3	3	2	1	2	3	2	X	2	2	X	1	3
	CO3	2	1	2	2	2	1	3	X	X	X	2	1	1	2	3

	CO4	3	1	3	3	1	X	2	1	1	1	2	2	3	3	3
	CO5	3	2	2	2	X	X	1	X	X	X	3	2	1	2	2
MAT301B	**CO1**	3	X	2	3	1	X	1	1	X	X	3	1	2	1	2
	CO2	3	2	2	3	1	X	2	1	2	1	3	X	2	2	2
	CO3	3	X	3	2	2	1	2	1	2	3	3	X	2	2	3
	CO4	2	1	3	3	2	2	2	X	1	1	2	X	2	1	2
	CO5	3	1	2	2	X	1	3	1	2	X	1	1	2	1	1
MAT301C	**CO1**	3	X	2	3	1	X	1	1	X	X	3	1	2	1	2
	CO2	3	2	2	3	1	X	2	1	2	1	3	X	2	2	2
	CO3	3	X	3	2	2	1	2	1	2	3	3	X	2	2	3
	CO4	2	1	3	3	2	2	2	X	1	1	2	X	2	1	2
	CO5	3	1	2	2	X	1	3	1	2	X	1	1	2	1	1
CS301A	**CO1**	X	X	X	X	X	X	X	X	X	3	X	X	X	X	X
	CO2	X	X	X	X	X	X	X	X	X	2	X	X	X	X	X
	CO3	X	X	X	X	X	X	X	X	X	2	X	X	X	X	X
	CO4	X	X	X	X	X	X	X	X	X	2	X	X	X	X	X
	CO5	X	X	X	X	X	X	X	X	X	2	X	X	X	X	X
	CO6	X	X	X	X	X	X	X	X	X	1	X	X	X	X	X
CS301B	**CO1**	X	X	X	X	X	X	X	X	X	3	X	X	X	X	X
	CO2	X	X	X	X	X	X	X	X	X	2	X	X	X	X	X
	CO3	X	X	X	X	X	2	X	X	X	2	X	X	X	X	X
	CO4	X	X	X	X	X	X	X	X	X	2	X	X	X	X	X
	CO5	X	X	X	X	X	X	X	X	X	2	X	X	X	1	X
MUV30	**CO1**	X	X	X	X	X	X	X	X	X	1	X	X	X	X	X

1	**CO2**	3	1	1	X	X	1	1	X	2	1	2	2	1	1	2
	CO3	3	1	1	X	X	1	1	X	2	1	2	2	1	1	2
	CO4	3	1	1	X	X	1	1	X	2	1	2	2	1	1	2
	CO5	3	1	X	X	X	1	1	X	2	1	2	2	1	1	2
	CO6	3	1	2	X	2	2	2	1	3	1	2	2	1	1	2
Semester IV																
ENG401	**CO1**	3	3	3	2	2	2	1	1	2	2	1	2	1	X	2
	CO2	3	3	2	2	1	1	1	1	2	2	1	2	1	1	2
	CO3	3	3	3	2	2	1	1	1	2	2	1	2	1	X	2
	CO4	3	3	2	2	1	1	1	1	2	2	1	2	1	X	2
	CO5	3	3	1	2	2	X	3	1	2	2	3	2	1	3	2
	CO6	3	3	3	2	2	1	1	1	2	2	1	2	1	X	2
PBC401	**CO1**	1	1	2	3	2	3	1	2	1	3	2	1	2	3	3
	CO2	2	3	1	X	1	X	2	3	2	X	3	X	3	1	1
	CO3	3	X	3	1	3	2	1	1	3	2	X	3	X	2	2
	CO4	X	2	1	2	2	1	3	X	2	1	2	1	1	X	X
	CO5	2	1	X	2	1	3	X	2	1	3	1	2	3	1	1
	CO6	1	3	2	3	X	1	3	1	X	1	3	1	2	3	3
HCP401	**CO1**	2	1	1	X	1	X	X	X	2	X	2	2	X	1	1
	CO2	2	1	1	X	1	X	X	X	2	X	2	2	1	1	1
	CO3	2	1	2	X	1	X	X	X	2	X	2	2	1	1	1
	CO4	2	1	1	X	1	X	X	X	2	X	2	2	1	1	1
	CO5	2	1	2	X	2	X	X	X	2	X	2	2	1	1	1
	CO6	2	1	1	X	1	X	X	X	2	X	2	2	1	1	1

ENO401	**CO1**	3	3	3	1	2	2	2	2	2	X	1	3	2	1	2
	CO2	3	3	2	2	1	3	3	2	2	1	1	3	2	2	2
	CO3	3	3	2	3	2	2	2	1	2	1	X	2	2	2	2
	CO4	3	3	3	3	3	2	3	1	2	1	1	3	2	3	3
	CO5	3	3	3	3	2	2	2	1	2	1	1	3	2	2	2
	CO6	3	3	1	2	1	1	2	X	2	X	1	2	2	2	2
HIN401	**CO1**	2	2	2	2	2	1	1	X	1	2	2	2	3	2	3
	CO2	2	2	1	2	2	1	1	1	1	2	2	2	2	1	2
	CO3	2	2	1	1	2	2	1	X	1	2	2	3	2	2	3
	CO4	2	2	1	1	1	1	1	1	2	2	1	2	2	3	3
	CO5	3	3	2	2	2	1	1	X	1	2	2	2	3	2	3
	CO6	3	2	2	1	2	2	1	2	2	2	1	1	X	2	3
PBI401	**CO1**	3	2	3	2	2	1	X	X	1	2	2	2	2	2	3
	CO2	1	2	X	X	1	X	X	X	2	2	2	1	1	1	2
	CO3	3	3	2	1	2	1	1	1	1	2	2	2	2	2	3
	CO4	3	3	2	1	1	1	X	1	1	3	2	2	X	1	2
	CO5	2	2	2	X	1	1	X	1	1	2	2	2	1	2	2
HIS401	**CO1**	3	3	2	2	2	1	1	2	2	1	2	2	3	3	2
	CO2	3	3	3	2	3	1	1	2	2	1	2	2	1	3	2
	CO3	3	3	2	2	2	1	1	2	2	1	2	2	1	3	2
	CO4	3	3	2	2	2	1	1	2	2	1	2	2	1	2	2
	CO5	3	3	2	2	2	1	1	2	2	1	2	2	1	2	2
	CO6	3	3	2	2	2	1	1	2	2	1	2	2	1	3	2
ECO401	**CO1**	3	X	1	1	1	2	X	3	2	X	X	X	X	X	1

	CO2	3	X	1	1	1	2	X	3	2	X	X	X	X	X	1
	CO3	3	X	1	1	1	2	X	3	3	X	X	X	X	X	2
	CO4	3	X	1	1	1	2	X	3	3	X	X	X	X	X	3
	CO5	3	X	1	1	1	2	X	3	2	X	X	X	X	X	1
	CO6	3	X	1	1	1	2	X	3	2	X	X	X	X	X	2
POL401	**CO1**	3	3	3	2	1	1	X	2	1	X	2	2	2	X	1
	CO2	3	3	3	2	1	2	1	1	X	X	1	1	2	1	X
	CO3	3	3	3	1	1	2	1	X	X	X	1	1	2	2	1
	CO4	3	3	3	2	1	1	X	1	2	X	1	2	X	2	X
	CO5	3	3	3	1	1	2	1	1	1	X	X	1	2	2	1
	CO6	2	3	3	2	1	2	1	1	1	X	1	1	2	3	X
ENC401	**CO1**	1	2	2	2	1	3	1	3	3	3	3	2	2	1	3
	CO2	1	2	2	3	3	2	2	2	2	2	3	2	2	3	1
	CO3	1	2	3	2	2	2	1	1	2	2	1	3	2	3	2
	CO4	3	2	1	2	2	2	3	3	2	2	3	1	1	2	1
	CO5	3	2	3	2	2	3	2	2	2	2	1	2	X	2	3
	CO6	2	1	2	2	1	2	1	3	3	2	1	2	2	3	2
PED401	**CO1**	3	X	2	X	X	X	3	X	X	X	3	3	3	X	3
	CO2	3	X	2	X	X	X	3	X	X	X	3	3	3	X	3
	CO3	3	X	2	X	X	X	3	X	X	X	3	3	3	X	3
	CO4	3	X	2	X	X	X	3	X	X	X	3	3	3	X	3
	CO5	3	X	2	X	X	X	3	X	X	X	3	3	3	X	3
	CO6	3	X	2	X	X	X	3	X	X	X	3	3	3	X	3
HMS40	**CO1**	2	1	1	2	1	1	2	1	1	2	1	2	2	2	2

1	**CO2**	2	X	1	1	1	1	1	2	X	1	1	2	1	1	2
	CO3	X	1	1	2	1	1	2	X	X	3	2	2	2	2	2
	CO4	1	1	1	1	X	1	2	X	X	2	1	1	1	1	2
	CO5	X	X	1	2	1	1	2	1	1	2	2	2	2	1	2
FNC401	**CO1**	2	3	2	1	2	X	1	X	2	2	2	x	1	1	2
	CO2	2	3	2	1	2	X	1	X	2	2	2	2	1	1	2
	CO3	2	3	2	1	2	X	1	X	2	2	2	2	1	1	2
	CO4	2	3	2	1	2	X	1	X	2	2	2	2	1	1	2
	CO5	2	3	3	1	2	X	1	X	2	2	2	2	1	1	2
	CO6	2	3	2	1	2	X	1	X	2	2	2	2	1	1	2
MAT401A	**CO1**	3	1	2	3	1	X	X	1	X	X	2	X	3	1	2
	CO2	3	X	3	3	2	1	2	3	2	X	2	2	X	1	3
	CO3	2	1	2	2	2	1	3	X	X	X	2	1	1	2	3
	CO4	3	1	3	3	1	X	2	1	1	1	2	2	3	3	3
	CO5	3	2	2	2	X	X	1	X	X	X	3	2	1	2	2
MAT401B	**CO1**	3	X	1	2	1	X	2	X	2	X	3	2	2	1	1
	CO2	3	X	2	3	2	X	2	1	1	X	2	2	1	2	1
	CO3	3	X	1	2	1	X	2	X	2	X	3	2	2	1	1
	CO4	2	X	1	2	1	1	3	X	2	X	2	2	2	X	2
	CO5	3	1	X	3	X	1	2	1	2	X	3	1	2	1	2
MAT401C	**CO1**	3	1	2	3	1	X	X	1	X	X	2	X	3	1	2
	CO2	3	X	3	3	2	1	2	3	2	X	2	2	X	1	3
	CO3	2	1	2	2	2	1	3	X	X	X	2	1	1	2	3
	CO4	3	1	3	3	1	X	2	1	1	1	2	2	3	3	3

	CO5	3	2	2	2	X	X	1	X	X	X	3	2	1	2	2
CS401A	**CO1**	X	X	X	X	X	X	X	X	X	3	X	X	X	X	X
	CO2	X	X	X	X	X	X	X	X	X	2	X	X	X	X	X
	CO3	X	X	X	X	X	2	X	X	X	2	X	X	X	X	X
	CO4	X	X	X	X	X	X	X	X	X	2	X	X	X	X	X
	CO5	X	X	X	X	X	X	X	X	X	2	X	X	X	1	X
	CO6	X	X	X	X	X	X	X	X	X	1	X	X	X	X	X
CS401B	**CO1**	X	X	X	X	X	X	X	X	X	3	X	X	X	X	X
	CO2	X	X	X	X	X	X	X	X	X	2	X	X	X	X	X
	CO3	X	X	X	X	X	2	X	X	X	2	X	X	X	X	X
	CO4	X	X	X	X	X	X	X	X	X	2	X	X	X	X	X
	CO5	X	X	X	X	X	X	X	X	X	2	X	X	X	1	X
	CO6	X	X	X	X	X	X	X	X	X	1	X	X	X	X	X
MUV401	**CO1**	3	1	1	X	X	1	1	X	2	1	2	2	1	1	2
	CO2	3	1	1	X	X	1	1	X	2	1	2	2	1	1	2
	CO3	3	1	1	X	X	1	1	X	2	1	2	2	1	1	2
	CO4	3	1	1	X	X	1	1	X	2	1	2	2	1	1	2
	CO5	3	1	X	X	X	1	1	X	2	1	2	2	1	1	2
	CO6	3	1	2	X	2	2	2	1	3	1	2	2	1	1	2
Semester V																
ENG501	**CO1**	3	3	3	1	2	2	2	2	2	X	1	3	2	1	2
	CO2	3	3	2	2	1	3	3	2	2	1	1	3	2	2	2
	CO3	3	3	2	3	1	2	2	1	2	X	1	2	2	2	2
	CO4	3	3	3	3	3	2	3	1	2	1	1	3	2	3	3

	CO5	3	3	3	3	2	2	2	1	2	1	1	3	2	2	2
	CO6	3	3	2	2	1	1	1	1	1	X	1	2	2	2	12
PBC501	**CO1**	2	3	2	2	2	2	1	X	2	2	2	3	3	2	2
	CO2	2	2	2	2	2	2	2	1	2	1	2	2	2	1	2
	CO3	3	2	2	1	1	1	1	1	1	2	2	1	1	1	2
	CO4	2	3	3	1	1	1	1	1	1	2	2	2	1	1	2
	CO5	3	2	2	1	1	1	1	1	1	2	2	1	1	1	2
HCP501	**CO1**	2	1	1	X	1	X	X	X	2	X	2	2	X	1	1
	CO2	2	1	1	X	1	X	X	X	2	X	2	2	1	1	1
	CO3	2	1	1	X	1	X	X	X	2	X	2	2	1	1	1
	CO4	2	1	1	X	1	X	X	X	2	X	2	2	1	1	1
	CO5	2	1	1	X	1	X	X	X	2	X	2	2	1	1	1
	CO6	2	1	1	X	1	X	X	X	2	X	2	2	1	1	1
ENO501	**CO1**	3	3	3	1	2	2	2	2	2	X	1	3	2	1	2
	CO2	3	3	2	2	1	3	3	2	2	1	1	3	2	2	2
	CO3	3	3	2	3	2	2	2	1	2	X	1	2	2	2	2
	CO4	3	3	3	3	3	2	3	1	2	1	1	3	2	3	3
	CO5	3	3	3	3	2	2	2	1	2	1	1	3	2	2	2
	CO6	3	3	2	2	1	2	2	1	2	X	1	2	2	2	2
HIN501	**CO1**	2	2	2	2	2	1	1	X	1	2	2	2	3	2	3
	CO2	2	2	1	1	2	2	1	X	1	2	2	3	2	2	3
	CO3	2	2	1	1	1	1	1	1	2	2	1	2	2	3	3
	CO4	1	3	1	1	1	X	X	X	1	2	2	2	2	2	2
	CO5	2	2	1	X	X	X	1	X	1	2	2	1	2	2	2

	CO6	3	2	2	1	1	1	X	X	1	2	2	2	1	1	2
PBI501	**CO1**	3	2	2	1	2	1	1	X	2	2	2	2	3	2	2
	CO2	2	1	2	2	2	2	2	X	1	1	1	2	2	2	2
	CO3	2	2	2	2	2	2	1	1	2	1	2	2	2	1	2
	CO4	2	2	2	2	2	2	1	X	2	2	2	1	1	1	2
	CO5	2	2	2	1	1	1	1	X	2	1	2	2	2	2	2
HIS501	**CO1**	3	2	2	2	2	1	1	2	2	1	2	2	1	2	2
	CO2	3	2	3	2	3	1	1	3	2	1	2	2	2	2	2
	CO3	3	2	2	2	2	1	1	2	2	1	2	2	1	2	2
	CO4	3	2	2	2	2	1	1	2	2	1	2	2	1	2	2
	CO5	3	2	3	2	3	1	1	3	2	1	2	2	1	2	2
	CO6	3	2	2	2	2	1	1	2	2	1	2	2	1	2	2
ECO501	**CO1**	1	X	1	1	X	X	X	X	X	X	1	X	X	X	2
	CO2	1	X	2	3	2	X	X	1	1	X	1	1	X	X	1
	CO3	2	X	1	X	1	X	X	X	2	1	2	1	X	X	2
	CO4	2	1	3	2	1	X	X	1	1	X	1	X	X	X	2
	CO5	1	X	1	1	X	X	X	X	X	X	1	X	X	X	2
	CO6	1	X	2	3	2	X	X	1	1	X	1	1	X	X	1
POL501	**CO1**	3	3	3	3	2	2	1	2	1	X	2	2	2	2	2
	CO2	3	3	3	2	2	1	1	1	2	X	2	2	2	2	2
	CO3	3	3	3	2	2	1	2	1	2	X	2	1	2	2	1
	CO4	3	3	3	2	2	1	2	2	1	X	1	X	2	2	2
	CO5	3	3	3	1	2	2	1	2	2	X	2	1	1	2	1

	CO6	2	3	3	1	2	1	2	X	1	X	2	X	1	2	1
ENC501	**CO1**	2	2	1	3	3	3	2	3	1	3	1	2	3	1	2
	CO2	3	2	2	2	1	3	3	2	2	2	2	2	2	3	3
	CO3	2	3	3	2	X	3	1	1	2	2	2	1	2	2	3
	CO4	2	2	1	2	2	2	3	2	2	2	2	1	1	2	2
	CO5	3	3	3	3	2	2	X	2	2	2	3	2	3	2	1
	CO6	3	X	2	2	3	2	2	2	3	3	2	3	1	3	1
PED501	**CO1**	3	X	2	X	X	X	3	X	X	X	3	3	3	X	3
	CO2	3	X	2	X	X	X	3	X	X	X	3	3	3	X	3
	CO3	3	X	2	X	X	X	3	X	X	X	3	3	3	X	3
	CO4	3	X	2	X	X	X	3	X	X	X	3	3	3	X	3
	CO5	3	X	2	X	X	X	3	X	X	X	3	3	3	X	3
	CO6	3	X	2	X	X	X	3	X	X	X	3	3	3	X	3
HMS501	**CO1**	3	2	2	2	2	1	1	2	2	1	2	2	1	2	2
	CO2	3	2	3	2	3	1	1	3	2	1	2	2	2	2	2
	CO3	3	2	2	2	2	1	1	2	2	1	2	2	1	2	2
	CO4	3	2	2	2	2	1	1	2	2	1	2	2	1	2	2
	CO5	3	2	3	2	3	1	1	3	2	1	2	2	1	2	2
	CO6	3	2	2	2	2	1	1	2	2	1	2	2	1	2	2
FNC501	**CO1**	2	1	1	1	1	1	2	X	2	3	3	2	1	1	2
	CO2	2	1	1	1	1	1	2	X	2	3	2	2	1	1	2
	CO3	2	1	1	1	1	1	2	X	2	3	2	2	1	1	2
	CO4	2	1	1	1	1	1	2	X	2	3	2	2	1	1	2
	CO5	2	1	1	2	1	1	2	X	2	3	2	2	1	1	2

	CO6	2	1	1	2	1	1	2	X	2	3	2	2	1	1	2
MAT501A	**CO1**	3	X	3	3	2	X	1	X	1	1	2	2	2	3	2
	CO2	3	X	3	3	2	X	1	X	1	1	2	2	2	3	2
	CO3	2	1	3	3	1	1	1	1	2	2	3	1	3	3	3
	CO4	3	2	2	2	1	1	2	1	3	3	2	1	2	3	2
	CO5	3	1	3	3	2	1	3	X	2	1	3	X	3	2	1
	CO6	3	1	2	3	1	X	2	X	1	X	2	X	X	2	3
MAT501B	**CO1**	3	1	3	3	2	X	1	X	1	1	2	2	2	2	3
	CO2	3	1	3	3	2	X	1	1	2	3	2	1	1	2	3
	CO3	2	X	2	3	3	1	1	X	1	2	3	X	3	2	2
	CO4	3	X	3	3	3	1	1	X	1	3	3	X	3	2	3
	CO5	3	1	2	3	1	1	2	2	1	1	2	3	3	3	3
	CO6	3	1	3	3	2	X	1	X	1	1	2	2	2	2	3
MAT501C	**CO1**	3	1	2	3	2	1	2	1	3	X	2	1	X	2	2
	CO2	3	1	2	3	2	2	1	2	2	X	1	1	X	1	2
	CO3	3	1	2	3	3	3	1	2	2	X	2	1	X	1	2
	CO4	3	1	2	3	3	3	1	2	2	X	2	1	X	1	2
	CO5	3	1	1	3	2	2	1	2	1	X	1	1	X	1	2
CS501A	**CO1**	2	2	1	X	1	X	1	X	X	2	1	1	1	X	X
	CO2	X	2	1	X	X	X	X	X	X	1	1	X	X	X	X
	CO3	X	2	X	X	X	X	X	X	2	2	X	X	1	X	X
	CO4	X	2	X	2	X	X	X	X	1	1	1	X	X	1	X
	CO5	X	X	X	X	X	X	X	2	X	1	1	X	X	X	X
	CO6	X	X	X	X	X	X	X	2	2	1	1	X	X	1	X

CS501B	**CO1**	1	X	X	X	1	X	1	X	X	X	X	X	X	X	X
	CO2	1	X	1	X	X	X	X	X	X	X	X	X	X	X	X
	CO3	1	X	1	X	X	X	X	X	1	X	X	X	X	X	X
	CO4	1	X	1	2	X	X	X	X	1	1	1	X	X	1	X
	CO5	1	X	1	X	X	X	X	X	X	1	1	X	X	X	X
	CO6	1	X	1	X	X	X	X	X	X	X	X	X	X	1	X
MUV501	**CO1**	3	1	1	X	X	1	1	X	2	1	2	2	1	1	2
	CO2	3	1	1	X	X	1	1	X	2	1	2	2	1	1	2
	CO3	3	1	1	X	X	1	1	X	2	1	2	2	1	1	2
	CO4	3	1	1	X	X	1	1	X	2	1	2	2	1	1	2
	CO5	3	1	X	X	X	1	1	X	2	1	2	2	1	1	2
	CO6	3	1	2	X	2	2	2	1	3	1	2	2	1	1	2
Semester VI																
ENG601	**CO1**	3	3	3	1	2	2	2	2	2	X	1	3	2	1	2
	CO2	3	3	2	2	1	3	3	2	2	1	1	3	2	2	2
	CO3	3	3	2	3	2	2	2	1	2	X	X	2	2	2	2
	CO4	3	3	3	3	3	2	3	1	2	1	1	3	2	3	3
	CO5	3	3	3	3	2	2	2	1	2	1	1	3	2	2	2
	CO6	3	3	2	2	1	1	1	1	1	X	1	2	2	1	1
PBC601	**CO1**	2	2	2	1	2	1	X	1	1	1	2	2	2	1	2
	CO2	2	2	2	2	2	2	2	1	2	1	2	2	2	1	2
	CO3	2	2	1	X	2	X	X	1	1	2	1	2	1	2	2
	CO4	1	1	2	X	2	X	X	2	2	1	1	1	2	1	1
	CO5	2	1	2	1	1	1	X	1	2	X	1	1	2	1	1

	CO6	2	2	1	X	2	X	X	1	1	2	1	2	1	2	2
HCP601	**CO1**	2	1	1	X	2	X	X	X	2	X	2	2	X	1	1
	CO2	2	1	1	X	1	X	X	X	2	X	2	2	1	1	1
	CO3	2	1	1	X	1	X	X	X	2	X	2	2	1	1	1
	CO4	2	1	1	X	1	X	X	X	2	X	2	2	1	1	1
	CO5	2	1	1	X	1	X	X	X	2	X	2	2	1	1	1
	CO6	2	1	1	X	1	X	X	X	2	X	2	2	1	1	1
ENO601	**CO1**	3	3	3	1	2	2	2	2	2	X	1	3	2	1	2
	CO2	3	3	2	2	1	3	3	2	2	1	1	3	2	2	2
	CO3	3	3	3	3	2	2	2	2	2	X	1	2	3	2	2
	CO4	3	3	3	3	3	2	3	1	2	1	1	3	2	3	3
	CO5	3	3	3	3	2	2	2	1	2	1	1	3	2	2	2
	CO6	3	3	3	2	2	2	1	1	1	X	1	2	2	2	2
HIN601	**CO1**	2	2	2	2	2	1	1	X	1	2	2	2	3	2	3
	CO2	2	2	1	1	2	2	1	X	1	2	2	3	2	2	3
	CO3	2	2	1	1	1	1	1	1	2	2	1	2	2	3	3
	CO4	1	3	1	1	1	X	X	X	1	2	2	2	2	2	2
	CO5	2	2	1	X	X	X	1	X	1	2	2	1	2	2	2
	CO6	3	2	2	1	1	1	X	X	1	2	2	2	1	1	2
PBI601	**CO1**	2	2	1	1	1	1	1	X	1	1	2	2	2	1	2
	CO2	2	2	2	1	1	1	1	1	2	2	2	1	2	2	2
	CO3	2	1	2	1	1	1	2	X	1	1	2	2	2	2	2
	CO4	3	1	2	1	1	1	1	X	1	1	1	2	2	1	2
	CO5	3	1	2	1	1	1	1	X	1	1	1	2	2	1	2

	CO6	2	1	2	1	2	2	1	1	1	2	2	2	2	2	3
HIS601	**CO1**	3	2	3	2	2	1	1	2	2	1	2	2	X	2	2
	CO2	3	2	3	2	3	1	1	3	2	1	2	2	X	2	2
	CO3	3	2	3	2	3	1	1	2	2	1	2	2	X	2	2
	CO4	3	2	3	2	2	1	1	2	2	1	2	2	X	2	2
	CO5	3	2	3	2	2	1	1	3	2	1	2	2	X	2	2
	CO6	3	2	3	2	2	1	1	2	2	1	2	2	X	2	2
ECO601	**CO1**	1	X	1	1	X	X	X	X	X	X	1	X	X	X	2
	CO2	1	X	2	3	2	X	X	1	1	X	1	1	X	X	1
	CO3	2	X	1	X	1	X	X	X	2	1	2	1	X	X	2
	CO4	2	1	3	2	1	X	X	1	1	X	1	X	X	X	2
POL601	**CO1**	3	3	3	2	1	1	1	2	X	X	1	2	2	1	2
	CO2	3	3	3	2	2	2	3	2	X	X	1	3	2	1	2
	CO3	3	3	3	2	2	2	1	1	1	X	2	3	2	1	2
	CO4	3	3	3	2	2	2	2	1	X	X	1	2	1	1	2
	CO5	3	3	3	1	2	1	2	2	X	X	1	2	1	1	2
	CO6	2	3	3	1	2	1	2	2	1	X	X	1	2	1	1
ENC601	**CO1**	3	2	1	3	2	3	2	1	1	3	1	2	3	1	2
	CO2	1	2	2	2	1	3	3	2	2	2	2	3	2	3	3
	CO3	2	3	3	2	2	3	1	1	2	2	2	1	2	2	3
	CO4	1	2	1	2	2	2	3	3	2	2	2	1	1	2	2
	CO5	3	3	3	3	2	2	3	2	2	2	3	2	3	2	1
	CO6	3	2	2	2	3	2	2	2	3	3	2	3	2	3	2
PED601	**CO1**	3	X	2	X	X	X	3	X	X	X	3	3	3	X	3

	CO2	3	X	2	X	X	X	3	X	X	X	3	3	3	X	3
	CO3	3	X	2	X	X	X	3	X	X	X	3	3	3	X	3
	CO4	3	X	2	X	X	X	3	X	X	X	3	3	3	X	3
	CO5	3	X	2	X	X	X	3	X	X	X	3	3	3	X	3
	CO6	3	X	2	X	X	X	3	X	X	X	3	3	3	X	3
HMS601	**CO1**	2	2	1	2	1	1	2	1	2	2	1	2	2	1	2
	CO2	2	2	2	2	1	2	2	1	2	1	1	1	1	1	2
	CO3	2	3	2	2	1	1	1	1	1	2	2	1	1	1	2
	CO4	2	2	1	2	1	1	2	1	2	1	1	2	1	1	2
	CO5	2	1	1	2	1	1	2	1	2	2	2	2	2	1	2
FNC601	**CO1**	2	3	2	1	2	X	1	X	2	2	2	x	1	1	2
	CO2	2	3	2	1	2	X	1	X	2	2	2	2	1	1	2
	CO3	2	3	2	1	2	X	1	X	2	2	2	2	1	1	2
	CO4	2	3	2	1	2	X	1	X	2	2	2	2	1	1	2
	CO5	2	3	3	1	2	X	1	X	2	2	2	2	1	1	2
	CO6	2	3	2	1	2	X	1	X	2	2	2	2	1	1	2
MAT601A	**CO1**	3	X	3	3	3	1	1	X	1	3	3	X	3	2	2
	CO2	2	X	2	3	3	1	1	X	1	2	3	X	3	2	2
	CO3	3	1	3	3	2	X	1	1	2	3	2	1	1	2	2
	CO4	3	1	3	3	2	X	1	X	1	1	2	2	2	3	2
	CO5	3	1	2	3	1	1	2	2	1	1	2	3	3	3	3
MAT601B	**CO1**	3	1	2	2	X	1	3	1	2	X	1	1	2	1	1
	CO2	3	X	2	3	1	X	1	1	X	X	3	1	2	1	2
	CO3	3	2	2	3	1	X	2	1	2	1	3	X	2	2	2

	CO4	2	1	3	3	2	2	2	X	1	1	2	X	2	1	2
	CO5	3	X	3	2	2	1	2	1	2	3	3	X	2	2	3
MAT601C	**CO1**	3	1	2	2	1	2	1	3	1	2	X	X	X	1	3
	CO2	3	1	2	2	2	3	1	3	1	2	X	1	X	1	3
	CO3	3	1	2	1	X	2	1	3	1	2	X	X	X	X	3
	CO4	3	1	2	2	1	1	1	3	1	2	X	X	X	X	3
	CO5	3	1	2	3	2	3	1	3	1	2	X	1	X	1	3
CS601A	**CO1**	1	X	X	1	X	X	1	X	X	1	X	X	X	X	X
	CO2	1	X	X	1	X	X	X	X	X	1	X	X	X	X	X
	CO3	1	X	X	1	X	X	X	X	1	1	X	X	X	X	X
	CO4	1	X	X	1	X	X	X	X	1	1	X	X	X	X	X
	CO5	1	X	X	1	X	X	X	X	X	1	X	X	X	X	X
	CO6	1	X	X	1	X	X	X	X	X	1	X	X	X	X	X
CS601B	**CO1**	1	X	X	1	X	X	1	X	X	1	X	X	X	X	X
	CO2	1	X	X	1	X	X	X	X	X	1	X	X	X	X	X
	CO3	1	X	X	1	X	X	X	X	1	1	X	X	X	X	X
	CO4	1	X	X	1	X	X	X	X	1	1	X	X	X	X	X
	CO5	1	X	X	1	X	X	X	X	X	1	X	X	X	X	X
	CO6	1	X	X	1	X	X	X	X	X	1	X	X	X	X	X
MUV601	**CO1**	3	1	1	X	X	1	1	X	2	1	2	2	1	1	2
	CO2	3	3	1	X	X	1	1	X	2	1	2	2	1	1	2
	CO3	3	1	1	X	X	1	1	X	2	1	2	2	1	1	2
	CO4	3	1	1	X	X	1	1	X	2	1	2	2	1	1	2
	CO5	3	1	X	X	X	1	1	X	2	1	2	2	1	1	2

	CO6	3	1	2	X	2	2	2	1	3	1	2	2	1	1	2

Mapping of Course Outcomes (CO) with Programme Specific Outcomes (PSO)

College code	Course Out-comes	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
ENG101	**CO1**	3	3	3	3	3
	CO2	3	3	3	3	3
	CO3	3	3	2	3	3
	CO4	3	3	3	3	3
	CO5	3	3	3	X	2
	CO6	3	3	3	3	3
PBC101	**CO1**	3	3	3	2	2
	CO2	3	3	2	3	2
	CO3	2	3	3	2	2
	CO4	1	1	3	1	2
	CO5	1	1	2	1	X
HCP101	**CO1**	3	3	3	1	2
	CO2	3	3	3	1	2
	CO3	3	3	3	1	2
	CO4	3	3	3	1	2
	CO5	3	3	3	1	2
	CO6	3	3	3	1	2
ENO101	**CO1**	2	1	1	1	1
	CO2	1	1	1	X	1
	CO3	1	X	2	1	1

	CO4	1	X	2	X	X
	CO5	1	X	2	X	X
	CO6	1	X	2	X	X
HIN101	**CO1**	2	2	2	1	1
	CO2	2	3	2	2	2
	CO3	2	3	2	2	2
	CO4	1	1	2	X	1
	CO5	2	2	2	2	2
	CO6	2	2	2	2	2
PBI101	**CO1**	2	2	1	2	2
	CO2	2	2	1	2	2
	CO3	1	1	X	1	1
	CO4	2	2	1	2	2
	CO5	2	2	1	2	2
HIS101	**CO1**	3	3	3	3	2
	CO2	3	3	3	3	2
	CO3	3	3	3	1	2
	CO4	3	3	3	1	2
	CO5	3	3	3	2	2
	CO6	3	3	3	2	2
ECO101	**CO1**	3	3	3	2	X
	CO2	3	3	2	1	X
	CO3	3	3	3	2	X
	CO4	3	3	3	3	X
	CO5	3	2	2	3	X
	CO6	3	2	2	2	X
POL101	**CO1**	3	3	2	3	2

	CO2	3	3	2	3	2
	CO3	3	3	3	3	2
	CO4	3	3	2	3	2
	CO5	3	2	2	2	2
	CO6	3	2	3	3	2
ENC101	**CO1**	3	X	1	2	3
	CO2	2	X	2	1	3
	CO3	1	1	2	1	1
	CO4	1	1	3	1	1
	CO5	3	1	2	1	1
	CO6	1	1	2	1	2
PED101	**CO1**	3	2	X	3	X
	CO2	3	2	X	3	X
	CO3	3	2	X	3	X
	CO4	3	2	X	3	X
	CO5	3	2	X	3	X
	CO6	3	2	X	3	X
HMS101	**CO1**	1	X	2	3	X
	CO2	X	X	2	2	X
	CO3	X	X	1	1	X
	CO4	X	X	1	1	X
	CO5	X	X	X	1	X
FNC101	**CO1**	3	X	2	2	1
	CO2	2	X	2	2	1
	CO3	2	X	2	2	1
	CO4	2	X	2	2	1
	CO5	2	X	2	2	1

	CO6	2	X	2	2	1
MAT101A	**CO1**	3	2	3	2	1
	CO2	2	2	2	1	3
	CO3	2	3	1	2	2
	CO4	1	2	1	3	X
	CO5	2	1	X	2	X
MAT101B	**CO1**	2	1	2	X	2
	CO2	1	2	2	1	2
	CO3	1	2	1	X	2
	CO4	3	3	2	2	2
	CO5	3	2	2	1	1
MAT101C	**CO1**	3	2	2	X	2
	CO2	3	3	2	1	X
	CO3	3	2	2	1	X
	CO4	3	3	2	1	1
	CO5	3	3	2	2	X
CS101A	**CO1**	1	X	2	X	1
	CO2	1	X	2	X	1
	CO3	1	X	2	X	1
	CO4	1	X	1	X	1
	CO5	1	X	X	X	1
	CO6	1	X	2	X	1
CS101B	**CO1**	1	X	2	X	1
	CO2	1	X	2	X	1
	CO3	1	X	2	X	1
	CO4	1	X	1	X	1
	CO5	1	X	X	X	1
	CO6	1	X	2	X	1
MUV101	**CO1**	1	1	1	1	X

	CO2	1	1	1	1	X
	CO3	3	1	1	1	X
	CO4	1	1	1	1	X
	CO5	1	1	1	1	X
	CO6	3	1	3	1	2
ENG201	**CO1**	3	3	3	3	3
	CO2	3	3	3	3	3
	CO3	3	3	2	3	3
	CO4	3	3	3	3	3
	CO5	3	3	3	X	2
	CO6	3	3	3	3	3
PBC201	**CO1**	3	3	3	3	2
	CO2	2	3	2	3	1
	CO3	X	1	2	X	X
	CO4	2	3	3	2	2
	CO5	2	3	2	2	2
HCP201	**CO1**	3	3	3	1	2
	CO2	3	3	3	1	2
	CO3	3	3	3	1	2
	CO4	3	3	3	1	2
	CO5	3	3	3	1	2
	CO6	3	3	3	1	2
ENO201	**CO1**	2	1	1	1	1
	CO2	1	1	1	X	1
	CO3	1	X	2	1	1
	CO4	1	X	2	X	X
	CO5	1	X	2	X	X

	CO6	1	X	2	X	X
HIN201	**CO1**	2	3	3	2	2
	CO2	2	3	1	2	2
	CO3	1	1	1	1	2
	CO4	1	2	2	X	X
	CO5	2	3	1	2	2
	CO6	2	3	1	2	2
PBI201	**CO1**	2	2	1	2	2
	CO2	2	2	1	2	2
	CO3	2	2	1	2	2
	CO4	2	2	1	2	2
	CO5	2	2	1	2	2
HIS201	**CO1**	3	3	3	2	2
	CO2	3	3	3	2	2
	CO3	3	3	3	2	2
	CO4	3	3	3	1	2
	CO5	3	3	3	3	2
	CO6	3	3	3	X	X
ECO201	**CO1**	3	1	2	1	X
	CO2	3	1	2	1	X
	CO3	3	1	2	1	X
	CO4	3	1	2	1	X
	CO5	3	1	2	1	X
	CO6	3	1	2	1	X
POL201	**CO1**	2	2	3	3	2
	CO2	3	3	2	2	2
	CO3	2	2	3	3	3

	CO4	2	3	2	2	3
	CO5	3	3	3	2	3
	CO6	2	2	2	2	2
ENC201	**CO1**	2	2	1	2	3
	CO2	2	2	2	1	3
	CO3	1	1	2	1	1
	CO4	3	1	3	1	1
	CO5	3	1	2	1	1
	CO6	1	1	2	1	2
PED201	**CO1**	3	2	X	3	X
	CO2	3	2	X	3	X
	CO3	3	2	X	3	X
	CO4	3	2	X	3	X
	CO5	3	2	X	3	X
	CO6	3	2	X	3	X
HMS201	**CO1**	1	X	2	2	X
	CO2	1	X	2	3	X
	CO3	1	X	2	2	X
	CO4	1	X	3	1	X
	CO5	1	X	2	2	X
FNC201	**CO1**	2	X	2	1	1
	CO2	2	X	2	1	1
	CO3	2	X	2	1	1
	CO4	2	X	2	1	1
	CO5	2	X	2	1	1
	CO6	2	X	2	1	1
MAT201A	**CO1**	2	1	2	X	2

	CO2	1	2	2	1	2
	CO3	1	2	1	X	2
	CO4	3	3	2	2	2
	CO5	3	2	2	1	1
MAT201B	**CO1**	3	1	2	X	X
	CO2	3	1	2	1	X
	CO3	3	1	2	1	X
	CO4	3	1	2	X	X
	CO5	3	1	2	1	X
	CO6	3	X	2	X	X
MAT201C	**CO1**	3	1	2	x	x
	CO2	3	1	2	1	x
	CO3	3	1	2	1	x
	CO4	3	1	2	x	x
	CO5	3	1	2	1	x
	CO6	3	x	2	x	x
CS201A	**CO1**	1	X	2	X	1
	CO2	1	X	2	X	1
	CO3	1	X	2	X	1
	CO4	1	X	1	X	1
	CO5	1	X	X	X	1
	CO6	1	X	2	X	1
CS201B	**CO1**	1	X	2	X	1
	CO2	1	X	2	X	1
	CO3	1	X	2	X	1
	CO4	1	X	1	X	1
	CO5	1	X	X	X	1
	CO6	1	X	2	X	1

MUV201	**CO1**	1	1	1	1	X
	CO2	1	1	1	1	X
	CO3	3	1	1	1	X
	CO4	1	1	1	1	X
	CO5	1	1	1	1	X
	CO6	3	1	3	1	2
ENG301	**CO1**	2	1	2	2	3
	CO2	2	1	2	2	3
	CO3	2	X	2	1	2
	CO4	2	2	2	1	2
	CO5	2	1	2	1	2
	CO6	2	X	2	1	1
PBC301	**CO1**	2	3	3	2	2
	CO2	2	3	1	2	2
	CO3	1	1	1	1	2
	CO4	1	2	2	X	X
	CO5	2	3	1	2	2
HCP301	**CO1**	3	3	3	1	2
	CO2	3	3	3	1	2
	CO3	3	3	3	1	2
	CO4	3	3	3	1	2
	CO5	3	3	3	1	2
	CO6	3	3	3	1	2
ENO301	**CO1**	3	3	3	3	3
	CO2	3	3	3	3	3
	CO3	3	3	2	3	3
	CO4	3	3	3	3	3
	CO5	3	3	3	X	2
	CO6	3	3	3	3	3

HIN301	**CO1**	3	3	2	2	2
	CO2	3	3	1	2	2
	CO3	2	2	2	2	2
	CO4	2	2	1	2	2
	CO5	2	2	2	3	2
	CO6	1	1	2	1	1
PBI301	**CO1**	1	3	2	1	3
	CO2	2	1	1	3	1
	CO3	3	2	3	2	2
	CO4	2	3	2	3	3
	CO5	3	1	1	2	1
	CO 6	1	2	3	1	2
HIS301	**CO1**	3	3	3	1	2
	CO2	3	3	3	1	2
	CO3	3	3	3	3	2
	CO4	3	3	3	1	2
	CO5	3	3	3	1	2
	CO6	3	3	3	2	2
ECO301	**CO1**	3	3	3	2	X
	CO2	2	2	2	1	X
	CO3	2	2	3	2	X
	CO4	1	3	3	3	X
	CO5	3	2	2	3	X
	CO6	1	1	1	1	X
POL301	**CO1**	1	2	3	2	3
	CO2	3	3	2	3	2
	CO3	3	2	3	2	3
	CO4	3	2	2	3	2
	CO5	2	3	3	2	3
	CO6	2	3	2	3	3

ENC301	**CO1**	3	3	1	2	3
	CO2	2	2	2	1	3
	CO3	2	3	2	2	1
	CO4	2	3	2	1	1
	CO5	3	3	2	3	1
	CO6	3	3	2	1	2
PED301	**CO1**	3	2	X	3	X
	CO2	3	2	X	3	X
	CO3	3	2	X	3	X
	CO4	3	2	X	3	X
	CO5	3	2	X	3	X
	CO6	3	2	X	3	X
HMS301	**CO1**	X	X	2	1	X
	CO2	1	X	3	2	X
	CO3	1	X	2	2	X
	CO4	1	X	2	1	X
	CO5	1	X	2	2	X
FNC301	**CO1**	3	X	2	2	1
	CO2	2	X	2	2	1
	CO3	2	X	2	2	1
	CO4	2	X	2	2	1
	CO5	2	X	2	2	1
	CO6	2	X	2	2	1
MAT301A	**CO1**	3	2	3	1	2
	CO2	3	3	2	3	2
	CO3	2	1	2	1	3
	CO4	3	2	2	2	1
	CO5	1	2	1	X	2
MAT301B	**CO1**	3	3	3	1	3

	CO2	3	2	2	1	2
	CO3	3	2	3	2	1
	CO4	2	3	3	3	3
	CO5	2	2	2	3	2
MAT301C	**CO1**	3	3	3	1	3
	CO2	3	2	2	1	2
	CO3	3	2	3	2	1
	CO4	2	3	3	3	3
	CO5	2	2	2	3	2
CS301A	**CO1**	X	X	X	X	X
	CO2	X	X	X	X	X
	CO3	X	X	X	X	X
	CO4	X	X	X	X	X
	CO5	X	X	X	X	X
	CO6	X	X	X	X	X
CS301B	**CO1**	X	X	X	X	X
	CO2	X	X	X	X	X
	CO3	X	X	X	1	X
	CO4	X	X	X	2	X
	CO5	X	X	X	X	X
	CO6	X	X	X	X	X
MUV301	**CO1**	1	1	1	1	X
	CO2	1	1	1	1	X
	CO3	3	1	1	1	X
	CO4	1	1	1	1	X
	CO5	1	1	1	1	X
	CO6	3	1	3	1	2
ENG401	**CO1**	2	1	2	2	3
	CO2	2	1	2	2	3

	CO3	2	X	2	1	2
	CO4	2	X	2	1	2
	CO5	2	1	2	1	2
	CO6	2	X	2	1	2
PBC401	**CO1**	3	3	2	2	2
	CO2	X	1	1	1	1
	CO3	2	2	2	1	2
	CO4	X	1	1	X	X
	CO5	2	1	1	X	1
HCP401	**CO1**	3	3	3	1	2
	CO2	3	3	3	1	2
	CO3	3	3	3	1	2
	CO4	3	3	3	1	2
	CO5	3	3	3	1	2
	CO6	3	3	3	1	2
ENO401	**CO1**	3	3	3	3	3
	CO2	3	3	3	3	3
	CO3	3	3	2	3	3
	CO4	3	3	3	3	3
	CO5	3	3	3	X	2
	CO6	3	3	3	3	3
HIN401	**CO1**	3	3	2	2	2
	CO2	3	3	1	2	2
	CO3	2	2	2	2	2
	CO4	2	2	1	2	2
	CO5	2	2	2	3	2
	CO6	1	1	2	1	1
PBI401	**CO1**	3	2	1	3	2
	CO2	1	1	3	2	1

	CO3	2	3	2	1	3
	CO4	3	1	3	2	1
	CO5	1	2	1	3	2
	CO6	2	3	2	1	3
HIS401	**CO1**	3	3	3	3	2
	CO2	3	3	3	2	2
	CO3	3	3	3	1	2
	CO4	3	3	3	1	2
	CO5	3	3	3	1	2
	CO6	3	3	3	1	2
ECO401	**CO1**	3	1	2	1	X
	CO2	3	1	2	1	X
	CO3	3	1	2	1	X
	CO4	3	1	2	1	X
	CO5	3	1	2	1	X
	CO6	3	1	2	1	X
POL401	**CO1**	3	2	2	2	3
	CO2	3	2	2	3	2
	CO3	3	2	2	2	3
	CO4	2	3	3	3	2
	CO5	2	3	3	2	2
	CO6	3	3	3	2	2
ENC401	**CO1**	2	3	1	2	3
	CO2	2	2	2	1	3
	CO3	3	3	2	2	1
	CO4	2	1	2	1	1
	CO5	3	3	2	3	1
	CO6	3	1	2	1	2
PED401	**CO1**	3	2	X	3	X
	CO2	3	2	X	3	X

	CO3	3	2	X	3	X
	CO4	3	2	X	3	X
	CO5	3	2	X	3	X
	CO6	3	2	X	3	X
HMS401	**CO1**	1	X	1	1	X
	CO2	1	X	2	1	X
	CO3	1	X	1	2	X
	CO4	X	X	2	1	X
	CO5	X	X	1	1	X
FNC401	**CO1**	2	X	2	2	1
	CO2	2	X	2	2	2
	CO3	2	X	2	2	1
	CO4	2	X	2	2	1
	CO5	2	X	2	2	1
	CO6	2	X	2	2	1
MAT401A	**CO1**	3	2	2	X	2
	CO2	2	2	3	1	2
	CO3	3	2	2	X	2
	CO4	2	2	2	1	3
	CO5	3	3	2	2	1
MAT401B	**CO1**	3	2	2	X	2
	CO2	2	2	3	1	2
	CO3	3	2	2	X	2
	CO4	2	2	2	1	3
	CO5	3	3	2	2	1
MAT401C	**CO1**	3	2	2	X	2
	CO2	2	2	3	1	2
	CO3	3	2	2	X	2

	CO4	2	2	2	1	3
	CO5	3	3	2	2	1
CS401A	**CO1**	X	X	X	X	X
	CO2	X	X	X	X	X
	CO3	X	X	X	1	X
	CO4	X	X	X	2	X
	CO5	X	X	X	X	X
	CO6	X	X	X	X	X
CS401B	**CO1**	X	X	X	X	X
	CO2	X	X	X	X	X
	CO3	X	X	X	1	X
	CO4	X	X	X	2	X
	CO5	X	X	X	X	X
	CO6	X	X	X	X	X
MUV401	**CO1**	1	1	1	1	X
	CO2	1	1	1	1	X
	CO3	3	1	1	1	X
	CO4	1	1	1	1	X
	CO5	1	1	1	1	X
	CO6	3	1	3	1	2
ENG501	**CO1**	3	3	3	3	3
	CO2	3	3	3	3	3
	CO3	3	3	2	3	3
	CO4	3	3	3	3	3
	CO5	3	3	3	X	2
	CO6	3	3	3	3	3
PBC501	**CO1**	3	3	1	2	2
	CO2	1	1	2	1	1
	CO3	X	2	2	1	1
	CO4	1	1	1	2	1

	CO5	X	2	2	1	1
HCP501	**CO1**	3	3	3	1	2
	CO2	3	3	3	1	2
	CO3	3	3	3	1	2
	CO4	3	3	3	1	2
	CO5	3	3	3	1	2
	CO6	3	3	3	1	2
ENO501	**CO1**	3	3	3	3	3
	CO2	3	3	3	3	3
	CO3	3	3	2	3	3
	CO4	3	3	3	3	3
	CO5	3	3	3	x	2
	CO6	3	3	3	3	3
HIN501	**CO1**	3	3	2	2	2
	CO2	2	2	2	2	2
	CO3	2	2	1	2	2
	CO4	1	1	2	1	1
	CO5	1	1	2	1	1
	CO6	X	X	1	X	X
PBI501	**CO1**	2	2	1	2	2
	CO2	2	2	1	2	2
	CO3	1	1	1	2	2
	CO4	1	1	X	1	1
	CO5	2	2	1	2	2
	CO6	2	2	1	2	2
HIS501	**CO1**	3	3	3	1	2
	CO2	3	3	3	1	2
	CO3	3	3	3	1	2
	CO4	3	3	3	1	2

	CO5	3	3	3	1	2
	CO6	3	3	3	1	2
ECO501	**CO1**	1	1	X	X	X
	CO2	1	1	2	3	2
	CO3	1	2	1	X	X
	CO4	X	1	1	1	2
	CO5	1	1	X	X	X
	CO6	1	1	2	3	X
POL501	**CO1**	3	3	2	2	2
	CO2	3	2	2	3	2
	CO3	3	3	3	2	3
	CO4	2	2	3	3	2
	CO5	3	3	2	3	3
	CO6	3	2	2	2	3
ENC501	**CO1**	1	2	3	2	3
	CO2	2	2	2	1	3
	CO3	3	2	3	2	2
	CO4	2	2	2	2	1
	CO5	2	2	2	3	2
	CO6	1	1	2	1	2
PED501	**CO1**	3	2	X	3	X
	CO2	3	2	X	3	X
	CO3	3	2	X	3	X
	CO4	3	2	X	3	X
	CO5	3	2	X	3	X
	CO6	3	2	X	3	X
HMS501	**CO1**	1	X	1	1	X
	CO2	1	X	2	2	X
	CO3	1	1	1	1	X
	CO4	1	X	1	1	X

	CO5	1	X	1	1	X
FNC501	**CO1**	3	X	2	2	1
	CO2	2	X	2	2	1
	CO3	2	X	2	2	1
	CO4	2	X	2	2	1
	CO5	2	X	2	2	1
	CO6	2	X	2	2	1
MAT501A	**CO1**	3	3	2	X	3
	CO2	3	1	2	2	1
	CO3	2	2	1	1	2
	CO4	3	2	1	1	2
	CO5	2	2	2	2	2
	CO 6	3	3	2	1	1
MAT501B	**CO1**	2	3	2	2	2
	CO2	2	2	3	1	2
	CO3	3	2	3	2	3
	CO4	3	3	3	2	3
	CO5	2	2	2	2	2
MAT501C	**CO1**	3	2	2	2	X
	CO2	3	2	3	1	X
	CO3	3	2	3	1	X
	CO4	3	2	3	1	X
	CO5	2	1	2	X	X
CS501A	**CO1**	X	X	X	X	X
	CO2	X	X	X	X	1
	CO3	X	X	X	X	1

	CO4	1	1	1	1	1
	CO5	X	X	X	2	X
	CO6	1	1	X	X	X
CS501B	**CO1**	X	X	X	X	X
	CO2	X	X	X	X	1
	CO3	X	X	X	X	1
	CO4	1	1	1	1	1
	CO5	X	X	X	2	X
	CO6	1	1	X	X	X
MUV501	**CO1**	1	1	1	1	X
	CO2	1	1	1	1	X
	CO3	3	1	1	1	X
	CO4	1	1	1	1	X
	CO5	1	1	1	1	X
	CO6	3	1	3	1	2
ENG601	**CO1**	3	3	3	3	3
	CO2	3	3	3	3	3
	CO3	3	3	2	3	3
	CO4	3	3	3	3	3
	CO5	3	3	3	X	2
	CO6	3	3	3	3	3
PBC601	**CO1**	2	3	1	2	2
	CO2	X	2	3	1	1
	CO3	X	X	2	X	2
	CO4	X	X	1	X	2

	CO5	1	1	2	1	2
	CO6	X	X	1	1	1
HCP601	**CO1**	3	3	3	1	2
	CO2	3	3	3	1	2
	CO3	3	3	3	1	2
	CO4	3	3	3	1	2
	CO5	3	3	3	1	2
	CO6	3	3	3	1	2
ENO601	**CO1**	3	3	3	3	3
	CO2	3	3	3	3	3
	CO3	3	3	2	3	3
	CO4	3	3	3	3	3
	CO5	3	3	3	X	2
	CO6	3	3	3	3	3
HIN601	**CO1**	3	3	2	2	2
	CO2	2	2	2	2	2
	CO3	2	2	1	2	2
	CO4	1	1	2	1	1
	CO5	1	1	2	1	1
	CO6	X	X	1	X	X
PBI601	**CO1**	2	2	1	2	2
	CO2	1	1	1	1	1
	CO3	1	2	1	2	2
	CO4	X	X	X	1	1
	CO5	1	1	X	1	1
	CO6	1	1	2	1	X
HIS601	**CO1**	3	3	3	1	2
	CO2	3	3	3	1	2
	CO3	3	3	3	1	2
	CO4	3	3	3	1	2

	CO5	3	3	3	1	2
	CO6	3	3	3	1	2
ECO601	**CO1**	1	1	X	X	X
	CO2	1	1	2	3	1
	CO3	1	2	1	X	X
	CO4	X	1	1	1	X
POL601	**CO1**	3	2	2	3	3
	CO2	3	2	3	2	2
	CO3	2	2	3	2	3
	CO4	3	3	2	3	3
	CO5	2	3	3	3	3
	CO6	2	3	2	3	2
ENC601	**CO1**	2	2		2	3
	CO2	2	2	3	1	3
	CO3	2	2	3	2	2
	CO4	2	2	1	2	2
	CO5	2	2	2	3	2
	CO6	1	1	2	1	2
PED601	**CO1**	3	2	X	3	X
	CO2	3	2	X	3	X
	CO3	3	2	X	3	X
	CO4	3	2	X	3	X
	CO5	3	2	X	3	X
	CO6	3	2	X	3	X
HMS601	**CO1**	1	X	1	1	X
	CO2	1	X	2	2	X
	CO3	1	1	1	1	X
	CO4	1	X	1	1	X
	CO5	1	X	1	1	X
FNC601	**CO1**	2	X	2	2	1

	CO2	2	X	2	2	2
	CO3	2	X	2	2	1
	CO4	2	X	2	2	1
	CO5	2	X	2	2	1
	CO6	2	X	2	2	1
MAT601A	**CO1**	3	3	3	2	3
	CO2	3	2	3	2	3
	CO3	2	2	3	1	2
	CO4	2	3	2	2	2
	CO5	2	2	2	2	2
MAT601B	**CO1**	2	2	2	3	2
	CO2	3	3	3	1	3
	CO3	3	2	2	1	2
	CO4	2	3	3	3	3
	CO5	3	2	3	2	1
MAT601C	**CO1**	2	1	3	1	X
	CO2	2	1	3	1	X
	CO3	2	1	3	1	X
	CO4	2	1	3	1	X
	CO5	2	1	3	1	X
CS601A	**CO1**	1	X	X	1	X
	CO2	1	X	X	1	X
	CO3	1	X	X	1	X
	CO4	1	X	X	1	X
	CO5	1	X	X	1	X

	CO6	1	X	X	1	X
CS601B	**CO1**	1	X	X	1	X
	CO2	1	X	X	1	X
	CO3	1	X	X	1	X
	CO4	1	X	X	1	X
	CO5	1	X	X	1	X
	CO6	1	X	X	1	X
MUV601	**CO1**	1	1	1	1	X
	CO2	1	1	1	1	X
	CO3	3	1	1	1	X
	CO4	1	1	1	1	X
	CO5	1	1	1	1	X
	CO6	3	1	3	1	2

Department of Chemistry

About the Department

Chemistry department was founded as the part of undergraduate science faculty inaugurated by Jathedar S. Gurcharan Singh Tohra ji, (Pardhan S.G.P.C.) on 2nd March, 1996 under the leadership of Principal Prof. Jaswant Singh sandhu. Later on, in August, 2014 the department has introduced Post Graduate Programme, M.Sc. Chemistry under the leadership of Pricinpal Prof. Preetmohinder Pal Singh. The department furnishes the opportunity for students to obtain comprehensive fundamental knowledge of all fields of chemistry such as organic, inorganic, physical, biophysical and analytical. It also provides students with laboratory experience in inorganic and organic synthesis, analytical methods and physical chemical measurements. Thus department of chemistry offers both theoretical and practical knowledge of chemistry. Chemistry plays a key role in the studies of medicine, biology and technology. Chemistry department has close cooperation with other disciplines such as physics, mathematics and biology. Faculty members are available as academic advisors for consultation about their courses. They have a good rapport with the students. Faculty members motivate and guide students about various career opportunities. Frequent seminars, webinars have been organized for the benefit of teachers as well as students. Currently the department has three chemistry laboratories which are equipped with latest chemicals, apparatus and instruments.

Vision

The Department of Chemistry aspires to excel in chemical education and services. The faculty members are dedicated to excel in teaching. They are deeply engaged in production and dissemination of knowledge using modern pedagogy in the classroom. It is a goal of a faculty to instill in the student a sense of scientific enquiry that employs systematic and experimental approach.

Mission

The Department of Chemistry is committed to prepare competitive and professional graduates within an innovative and intellectually stimulating environment by offering high quality chemistry experiments, conduct basic and applied research of national and international impact and build proactive partnership with industries and offer effective training and technical services to the society. The Department of Chemistry pledges itself to encourage in the broadest and most liberal manner, the advancement of chemistry in all the branches through education, research and service mission.

Objectives

*****To furnish a comprehensive foundation in chemistry that emphasizes scientific reasoning and analytical problem solving capability

*To provide student with the requisite skills for achieving success in academics and in forthcoming careers opportunities

*To provide a broad exposure to students about various experimental techniques

*To make the department a thriving center of excellence in teaching and promoting chemistry

*Department aims at chemistry outreach in the form of books and other chemistry education activities that illustrates role of chemistry as central science

*To make the students aware of the application of scientific principles, chemistry in particular, to societal issues

Programme Outcomes (POs) of M. Sc. (Chemistry)

Purpose of post-graduate education in Science is to create highly skilled manpower in specific areas, which will lead to generation of new knowledge and creation of wealth for the country. Chemistry is a fundamental science and has contributed immensely to the improvement of the life of human beings by providing many of human requirements and essentialities. Chemistry is important to the world economy as well. The developments in Chemistry during last few decades are phenomenal. It is also seen that these developments are crossing the traditional vertical boundaries of scientific disciplines; the more inclination is seen towards biological sciences. New branches of chemistry are emerging and gaining importance, such as bioorganic chemistry, materials chemistry, computational chemistry, etc. The practice of Chemistry at industrial scale also is undergoing radical changes and is more or more based on deep understanding the chemical phenomena. The emerging Chemical Technologies are highly science based. The aid of computers has not only accelerated growth in the practice of Chemistry, but revolutionized the entire field. A Chemist cannot isolate himself from other disciplines. Thus, after a long span of more and more specialization in graduate and post-graduate syllabi, a symbiotic interdisciplinary approach now seems to be more relevant. The practice of Chemistry, as is witnessed, over a span of more than a century has also created concomitant and perhaps unavoidable impacts of human environment. The adverse effects were particularly noted during last few decades. The concept of sustainable development is now well accepted. Though not a separate branch of Chemistry, Green Chemistry has emerged as a new approach to the practice of Chemistry on the background of sustainability. The Chemical Industry is now pressurized from both the Government and the Society to develop ecofriendly processes and products which will reduce waste and prevent toxic substances from entering the environment. The principles and applications of Chemistry should be learnt on this background. M.Sc. Chemistry is a Post-Graduate Degree that is pursued by a student who has an Under Graduate Degree in the relevant field. The duration of the course is 2 years with 4 semesters included in the course. A bachelor's degree of 3 years in the relevant field from a recognized university with a minimum of 50% is eligible for this course. This course deals with Chemistry as a major subject with more concerned with physical, organic, inorganic Chemistry. This course allows you to specialize in a specific field of chemistry. MSc Chemistry has a wider range of scope in various fields such as pharmaceuticals and various research-based industries. Learning Outcome based Approach to Curricular Planning Nature & Extent of M.Sc. Chemistry Programme Chemistry is a branch of science which deals with matters and it's composition. In doing a Master of Science in Chemistry the students will dive into the subatomic level of particle creation, how synthetic compounds can be created and implemented. The specialized course of Chemistry will deal with the composition, behaviour, structure, and properties of Matter and other specific technical aspects with a detailed explanation. Chemistry is the science of matter and the changes effected by it. The science of matter is also a part of the discipline of Physics, but while Physics is more practical and applies a fundamental approach, Chemistry is more specialized and deals with topics such as the composition, behaviour, structure, and properties of matter. Chemistry provides an understanding of the physical and chemical process of atom and molecules and it focuses on the practical methods of creation of new molecular structures and its useful applications. Chemistry contains the basic principles of structural bonding between atoms and bonds. This subject contains a wide range of chemical reactions and shows how energy is being created. Chemistry is a physical science and is used in the investigation and assemblages of matter which could either be isolation and

combination incorporating concepts of energy and entropy in relation to the chemical process. The specific course will be divided into four semesters and the nature of the course will be oriented more towards nature and also to a lot of lucrative job opportunities. Aim of M.Sc. Chemistry Programme Highly qualified chemists are crucial to help develop tomorrow's solutions. By taking a Master (MSc) degree in chemistry, you will gain fundamental insights into chemical compounds with applications in medicine, catalysis, alternative energy sources and many other areas. Maybe you want to develop better solutions for a sustainable future or to understand more about global environmental issues affecting today's society? Accept the challenge and join us in creating a better future. The objective of the 2-year MSc in chemistry is to educate chemists to work independently with chemistry at a high level. Through lectures, laboratory work, exercises, and project work, as well as excursions, and you will gain knowledge about relevant working methods for research, industry, administration and education. The Master's degree in Chemistry also forms the foundation for doctoral programmes in Chemistry. You'll enter into a professional environment that is scientifically strong within all three specializations. The two-year Master's degree programme in chemistry provides academic specialization within the following areas: Inorganic, Organic and Physical chemistry. The main objectives are: • To impart training in Chemistry at advanced level in a more holistic way and enthuse the students for the subject. • To train the students to make them confident and capable of accepting any challenge in Chemistry. • To give a flavour of research in Chemistry and train the students for research career. • To abreast the students about the current status and new developments in Chemistry. • To make the students aware of the impact of Chemistry on environment and imbibe the concept of sustainable developments, • To educate the students with respect to skills and knowledge to practice chemistry in ways that are benign to health and environment, • To provide flexibility in selecting some of the courses as per the interest and also to provide space for fast learners, • To make the students aware of resources and make them capable of mining the data.

Course Outcomes (COs) of Various Courses of M.Sc. (Chemistry)

Semester	Course title	College Subject Code	Univ. Subject Code	Course outcomes On completion of the course students will be able to	
Sem-1.	Inorganic Chemistry 1	CHM-101	CH-411	CO1	Learn Metal-Ligand Equilibria in Solution
				CO2	Create awareness about Metal Ligand Bonding
				CO3	Understanding Reaction Mechanism of Transition Metal Complexes.
				CO4	Demonstrate the stereochemistry and Bonding
				CO5	Acquire the knowledge about Bent rule
	Organic Chemistry 1	CHM-102	CH-412	CO1	Acquire knowledge of Nature of Bonding in Organic Molecule
				CO2	Inculcate Nature of Bonding in Organic Molecule, Stereochemistry.
				CO3	To learn aliphatic and Aromatic Electrophilic and Nucleophilic Substitution
				CO4	Demonstration of factors affecting the reactivities of aliphatic and aromatic reactions.
				CO5	To understand Von Richter, Sommelet-Hauser and smiles rearrangements.
	Physical Chemistry 1	CHM-103	CH-413	CO1	Learn about Quantum Chemistry
				CO2	Demonstration about Angular Momentum
				CO3	Acquire knowledge about Thermodynamics and Statistical Thermodynamics.
				CO4	To acquire knowledge about Huckel theory of conjugated systems.
				CO5	To understand perturbation theory to the Helium atom.
	Computer for Chemists	CHM-104	CH-414(a)	CO1	To understand Computer Programming In FORTRAN/C/BASIC
				CO2	Demonstration of Word processing Software such as WORDSTAR/MS-WORD / EXCEL.
				CO3	To gain knowledge about Linear simultaneous equations to solve secular equations within the Huckel theory.
				CO4	Acquire knowledge of Use of Computer To Programmes
				CO5	To learn Programming in Chemistry
	Biology for Chemists	CHM-105	CH-414(b)	CO1	Learn about Cell Structure and functions,Carbohydrates.
				CO2	Demonstration about Lipids, Amino-acids, Peptides
				CO3	Understanding the structures of Proteins, Nucleic Acids
				CO4	Acquire knowledge about sugars.
				CO5	To demonstrate Purines and pyrimidines bases of nucleic acids.
	Mathematics for Chemists	CHM-106	CH-414(c)	CO1	Acquire knowledge of Vectors, Matrix Algebra
				CO2	Inculcate Elementary Differential Equations
				CO3	Demonstration of Differential Calculus, Permutation And Probability.
				CO4	Understanding the Rules for differentiation, applications of differential
				CO5	Awareness about curve sketching.

	Laboratory course (Inorganic chemistry)	**CHM-107**	**CH-415**	**CO1**	To provide Practical knowledge of Gravimetric Estimation of two constituents when present together in a given complex
				CO2	Analysis of two cation-system using EDTA
	Laboratory course (Organic chemistry)	**CHM-108**	**CH-416**	**CO1**	To determine corrected melting points of an unknown organic compounds.
				CO2	Preparation of various organic compounds by different methods.
	Laboratory course (Physical chemistry)	**CHM-109**	**CH-417**	**CO1**	To provide Practicalknowledge of Viscosity, Surface Tension
				CO2	To provide Practical knowledge of Solubility Density
				CO2	Analysis of two cation-system using EDTA
	Laboratory course (Organic chemistry)	**CHM-108**	**CH-416**	**CO1**	To determine corrected melting points of an unknown organic compounds.
				CO2	Preparation of various organic compounds by different methods.
Sem-2	**Inorganic chemistry 1**	**CHM-201**	**CH-421**	**CO1**	Inculcate the knowledge of Electronic Spectra and Magnetic Properties Of Transition Metal Complexes.
				CO2	Creating awareness about Metal–Complexes.
				CO3	Elaboration of Metal Cluster.
				CO4	Acquire knowledge about carboranes, metallobranes and metallocarboranes.
				CO5	To understand Spectroscopic method of assignment of absolute configuration in optically active metal chelates.
	Organic chemistry 1	**CHM-202**	**CH-422**	**CO1**	Inculcate the knowledge of Reaction Mechanism.
				CO2	Demonstration of Structure and Reactivity Addition to Carbon-Carbon Multiple Bonds
				CO3	Elaboration about Free Radical Reactions, Pericyclic Reactions, Elimination Reaction.
				CO4	To learn regio and chemoselectivity, orientation and reactivity.
				CO5	Acquire knowledge about Hammond's postulate, Curtin-Hammett Principle.
	Physical chemistry 1	**CHM-203**	**CH-423**	**CO1**	Gain conceptual knowledge of Chemical Dynamics
				CO2	To understand Non-equilibrium Thermodynamics
				CO3	Acquire knowledge about Macromolecules.
				CO4	Demonstration of Surface Chemistry ,Electrochemistry.
				CO5	To gain knowledge about Electrocatalysis.
	Group theory, Spectroscopy	**CHM-204**	**CH-424**	**CO1**	Gain conceptual knowledge of Symmetry And Group Theory In Chemistry
				CO2	To learn about Microwave, Vibrational Spectroscopy
				CO3	Demonstration of Magnetic Resonance and Molecular Spectroscopy.
				CO4	Understanding representation for the Cn, Cnv, Cnn, Dnn etc. group.
				CO5	To gain knowledge about Nuclear Quadrupole Resonance spectroscopy
	Laboratory course	**CHM-205**	**CH-425**	**CO1**	Gain experimental knowledge of Preparation of various coordination compounds.
				CO2	Study of electronic spectrum and magnetic, Properties of

	(Inorganic chemistry)				various coordination compounds
	Laboratory course (Organic chemistry)	**CHM-206**	**CH-426**	**CO1**	Qualitative Analysis of mixtures of two organic solids
				CO2	Gain experimental knowledge of mixtures of two organic solids
	Laboratory course (Physical chemistry)	**CHM-207**	**CH-427**	**CO1**	Gain experimental knowledge of Polarimetry
				CO2	Gain experimental knowledge Polarimetry, Flame Photometry
Sem-3	**Applications of Spectroscopy**	**CHM-301**	**CH-511**	**CO1**	Inculcate the knowledge of Electron Spin Resonance Spectroscopy, Mossbauer and Vibrational Spectroscopy
				CO2	To understand Nuclear Magnetic Resonance of Paramagnetic Substances in Solution
				CO3	Demonstration of Carbon-13 NMR spectroscopy and mass spectroscopy
				CO4	To learn Mode of bonding of ambidentate ligands
				CO5	To acquire knowledge about NMR spectroscopyCOSY,NOESY,DEPT,APT, and INADEQUATE technique.
	Organotransition Metal Chemistry	**CHM-302**	**CH-512**	**CO1**	To learn Homogeneous Catalysis and catalytic hydrogenation homogeneous
				CO2	Inculcate the knowledge of Compounds of Transition Metal-Carbon Multiple Bonds
				CO3	Demonstration Transition Metal Compounds with Bonds to Hydrogen, Alkyls and Aryls of Transition Metals.
				CO4	To Understand Fluxional organometallic compounds.
				CO5	Acquire knowledge about water gas shift reaction and Fischer–Tropsch Synthesis.
	Heterocyclic Chemistry	**CHM-303**	**CH-513**	**CO1**	To understand Dewar resonance energy and Diamagnetic susceptibility exaltations.
				CO2	Acquire the knowledge of Nomenclature of Heterocycles and their synthesis.
				CO3	To gain knowledge about Aromatic and non Aromatic Heterocycles.
				CO4	Demonstration of Meso-ionic Heterocycles, 1,2-Azoles and 1,3-Azoles
				CO5	To learn Synthesis of pharmaceutical compounds having heterocyclic ring with one or more heteroatom.
	Environmental Chemistry	**CHM-304**	**CH-514**	**CO1**	To understand Biogeochemical cycles of C,N,P,S and O. Biodistribution of elements.
				CO2	To gain knowledge about industrial pollution.
				CO3	Demonstration of environmental Toxicology
				CO4	Chemical composition of atmosphere.
				CO5	Chemical composition of water bodies.
	Laboratory	**CHM-305**	**CH-525**	**CO1**	Inculcate the experimental knowledge of Colorimetric

	course (Inorganic chemistry)				estimation of cations and anions.
				CO2	Acquire knowledge about separation techniques
	Laboratory course (Organic chemistry)	**CHM-306**	**CH-526**	**CO1**	Study of organic compounds
				CO2	Extraction of organic compound from natural sources
	Laboratory course (Physical chemistry)	**CHM-307**	**CH-527**	**CO1**	Inculcate the experimental knowledge of Colorimetry, Refractometry
				CO2	Inculcate the experimental knowledge of Chromatography, Spectro-photometric analysis
Sem-4	**Biophysical chemistry**	**CHM-401**	**CH-521**	**CO1**	Demonstration about Biological Cell and its Constituents, Enzymes, Mechanism of Enzyme Action.
				CO2	Acquire knowledge about Kinds of Reactions Catalysed by Enzymes,Co-Enzyme, Chemistry Biological Macromolecules.
				CO3	Elaboration about Proteins, Biological Macromolecules, The Nucleic Acids.
				CO4	Understanding the Interactions in Macromolecules, Structural Transition in Biomacromolecules.
				CO5	Inculcate Bioenergetics and ATP cycle, Cell Membranes And Transport Of Ions.
	Organic Synthesis	**CHM-402**	**CH-522**	**CO1**	Demonstration about Organolithium and organomagnesium compound and organometallic Reagents.
				CO2	Acquire knowledge about oxidation and reduction reactions.
				CO3	Inculcate Chemoselectivity and Felkin-Ahn Model, Diastereoselectivity, Cram's Rule.
				CO4	Elaboration of rearrangement reactions.
				CO5	Understanding Reterosynthetic Approach, Umpolung and Regeoselectivity
	Chemistry of Natural Products	**CHM-403**	**CH-523**	**CO1**	Acquire knowledge about Terpenoids and Carotenoids.
				CO2	Demonstration about Conine, Nicotine, Atropine, Quinine and Morphine.
				CO3	Elaboration of Testosterone, Estrone Progestrone, Aldosterone, Biosynthesis of Steroids
				CO4	Understanding Plant Pigments, Prostaglandins, Porphyrins.
				CO5	Inculcate Synthesis and reaction of Pyrethroids and rotenones
	Photo Chemistry and Solid State Chemistry	**CHM-404**	**CH-524**	**CO1**	Demonstration about Photochemical Reactions, Photochemistry of Alkenes
				CO2	Elaboration of Photochemistry of Carbonyl compound, Photochemistry of aromatic compounds
				CO3	Understanding Solid state reactions, Crystal defects and non-stochiometry
				CO4	Inculcate Acquire knowledge about
				CO5	Acquire knowledge about Electronic properties and Band Theory
	Laboratory course (Inorganic	**CHM-405**	**CH-525**	**CO1**	Amperometric determination of Zn+2 with EDTA, Analysis of water hardness.
				CO2	Oxidation-Reduction Titrations,Precipitation Titrations

	chemistry)				
	Laboratory course (Organic chemistry)	**CHM-406**	**CH-526**	**CO1**	Extraction of organic compound from natural sources.
				CO2	To determine saponification & iodine values of oils and fats.
	Laboratory course (Physical chemistry)	**CHM-407**	**CH-527**	**CO1**	Colorimetry, Spectro-photometric analysis.
				CO2	Refractometry, Chromatography.

Programme Outcomes

PO 1	Disciplinary Knowledge	LOCF based curriculum M.Sc. Chemistry Course helps students to develop in depth knowledge of the areas like inorganic, organic, physical chemistry. The systematic and intensive knowledge will help them to excel in application of chemistry in real life.
PO 2	Communication Skills	Chemists who engage in public communication: 1. Increase public appreciation of and excitement for chemistryas a source of knowledge about the world. 2. Develop scientifically informed consumers (i.e., consumers will be able to use chemistry information to make decisions orsolve problems) 3. Empower informed citizen participation in democraticprocesses. Encourage workforce development in the chemical sciences. 5. A broad range of skills are covered, from writing and presentation skills, to working in groups and revising for exams. Frequent examples drawn from chemistry highlight the relevance of the skills being learned.
PO 3	Critical Thinking	Although it is imperative in chemistry for a student to have the ability to think critically, critical thinking is not the only importantskill essential for overall success in chemistry. The students of Course will able to develop skills and attitudes needed for critical thinking which will help them in a comprehensive problem solving approach. They will be exposed to the pedagogy that helps them understand chemistry in real lifethrough class room training and case studies. It aims at buildingthe basic ability to think critically, evaluate dispassionately and solve complex problems creatively. The content is organised insuch a way that the students would be able to think from diverse perspectives and suggest solutions according to their own sensibilities.
PO 4	Problem Solving	It involves an understanding of the language in which the problemis stated, the interpretation of what is given in the problem and what is sought, an understanding of the science concepts involved in the solution, and the ability to perform operations if these are involved in the problem. Requiring students to use a worksheet with each problem may help them solve them in a more effective way. The worksheet includes a place for them to plan a problem, that is list what is given and what is sought; to describe the problem situation by writing down other concepts they retrieve from memory (the use of a picture may integrate these); to

		find thesolution; and to appraise their results.
PO 5	Analytical Reasoning	Since many Chemistry experiments require Analytical reasoning which give students the ability to look at information, be it qualitative or quantitative in nature, and discern patterns within the information. It includes, comprehending the basic structure of a set of relationships; recognizing logicallyequivalent statements; and inferring what could be true or must be true from given facts and rules. Analytical reasoning is axiomatic in that its truth is self-evident.
PO 6	Research related Skills	Course encourages students to gain proper research skillsrequired in Chemistry. ● Ability to find research problems. ● Statistical Analysis will provide them research tools to identify& solve the research problems. ● Course will develop ability to formulate & test hypothesis &research questions so that to find answers.
PO7	Team work & time management	M.Sc. Chemistry practical, seminars are designed in such a mannerand are done in groups, in bound time which helps to develop team work and time management skills throughapplication of concept based practices, participative classroom discussion, problem solving task, case studies etc.
PO 8	Scientific Reasoning	Inductive reasoning involves getting a collection of specific examples and drawing a general conclusion from them. Deductive reasoning takes a general principle and then draws a specificconclusion from the general concept. Both are used in the development of scientific ideas in M.Sc. Chemistry course.
PO 9	Reflective Thinking	This course enables the students for reflective thinking andlearning capacity, which is regarded as an essential attribute in thehealth professions to link theory with application and to addressthe challenges that arise in clinical practice. Through reflectivepractice, professionals continue to critique their skills, performance, outcomes, and behavior. Reflective writing toolssuch as statements, essays, diaries, logbooks, portfolios andjournals have been used to enhance the reflective thinking process.
PO 10	Digital Literacy	The chemistry curriculum covers teaching information literacy, scientific advancement requires chemists to know and build uponwhat research has been done before. This course encourages the learners to use digital resources by adopting latest technologies to survive and excel in ever-changing global scenario. Sufficient digital literacy can be ensured through smart classrooms and webbased learning resources.
PO 11	Self-Directing Learning	This course enables the students to have self directing learning approach. The course has been formulated in such a way that these will help the learners to postulate questions, eliciting responses from various sources and finding out the most suitable solutions to relevant problems. This encourages them towards the self direction, experimentation and intrinsically motivated research work.
PO 12	Multicultural Competence	Since the students of this course come from various states and cultures, pass graduates possess knowledge of the values andbeliefs of multiple cultures and a global perspective; and capabilityto effectively engage in a multicultural society and interact respectfully with diverse groups.

PO 13	Moral & ethical Values	Course has been designed in such a manner that it inculcatesmoral & ethical values in the learners. ● These values will help them not only to be successful, skilful professionals but also to be persons having responsible approachtowards environment, nation & society. ● The course also involve training the students to check unethicalbehaviour, falsification & manipulation of information in order toavoid debacles which can be seen rising persistently over the period of time. ● It would also help in becoming responsible citizens & facilitatecharacter building.
PO 14	Leadership readiness/ qualities	Programme pass graduates has the capability for mapping out the tasks of a team or an organization, and setting direction, formulating an inspiring vision, building a team who can help achieve the vision, motivating and inspiring team members to engage with that vision, and using scientific skills to guide people to the right destination, in a smooth and efficient way.
PO 15	Lifelong Learning	Programme pass graduates has the ability to acquire knowledge and skills, including 'learning how to learn, that are necessary for participating in learning activities throughout life, through self- paced and self-directed learning aimed at personal development, meeting economic, social and cultural objectives, and adapting to changing trades and demands of work place through knowledge and skill development.

Programme Specific Outcomes (PSOs)

PSO 1	An ability to employ the critical thinking and efficient problem solving skills in three basic areas of chemistry (Inorganic, Organic and Physical).
PSO 2	An ability to conduct experiments; analyzing data and interpret results; while observing responsible and ethical scientific conduct.
PSO 3	Demonstrate; solve and an understanding of the major concepts of all discipline of chemistry.
PSO 4	Employ the critical thinking and scientific knowledge to design, carryout, record and analyze results of chemical reactions.
PSO 5	Create an awareness of the impact of chemistry on the environment and society.
PSO 6	Use of various chemical tools, models, equipment and software like Chemdraw .
PSO 7	Understand the good laboratory practical and safety measures.

Mapping of COs with POs of M.Sc. Chemistry

X: No Correlation b/w CO & PO. 1: Weak Correlation b/w CO & PO

2: Medium Correlation b/w CO & PO 3. Strong Correlation b/w CO & PO

Course Outcomes		Program Outcomes														
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13	PO 14	PO 15
CHM-101	COI	2	1	3	2	x	3	x	3	x	x	2	x	x	x	2
	COII	2	1	x	2	2	3	x	3	x	x	2	x	x	x	2
	COIII	2	1	2	2	3	3	1	3	2	x	1	x	x	x	2
	COIV	2	1	2	1	2	3	2	3	2	x	x	x	x	x	2
	COV	2	1	2	2	2	3	1	3	2	x	1	x	x	x	3
CHM-102	COI	2	1	3	1	3	3	2	3	2	x	2	x	x	x	3
	COII	3	1	3	2	3	3	2	3	1	x	2	x	x	x	3
	COIII	2	2	3	2	3	3	2	3	2	x	2	x	x	x	3
	COIV	2	2	1	2	3	2	2	3	2	x	2	x	x	x	3
	COV	2	2	1	2	2	2	3	3	2	x	1	x	x	x	3
CHM-103	COI	2	1	3	2	2	2	3	3	2	x	2	X	X	X	3
	COII	2	1	3	2	3	2	3	3	2	x	2	X	X	X	3
	COIII	2	2	3	2	2	2	3	3	2	x	2	X	X	X	3
	COIV	3	1	2	1	3	1	2	3	1	X	2	X	X	X	3
	COV	2	1	1	2	3	3	1	3	3	x	1	X	X	X	3
CHM-104	COI	2	X	X	2	1	X	X	3	X	X	X	1	1	1	3
	COII	3	1	X	3	2	1	1	3	X	X	1	3	X	1	3
	COIII	2	X	X	1	X	X	X	3	X	X	X	2	1	X	3
	COIV	3	1	2	1	X	X	X	3	X	2	X	1	1	1	3
	COV	2	1	2	1	2	X	1	3	3	X	2	2	1	X	3
CHM-105	COI	2	x	2	3	1	3	1	3	3	x	1	x	x	x	2
	COII	2	x	2	1	1	3	2	3	2	X	1	X	X	X	2
	COIII	2	2	2	1	1	3	1	3	1	X	1	X	X	X	2
	COIV	3	1	2	1	1	3	2	3	2	X	1	X	X	X	2
	COV	3	3	2	1	x	3	1	3	2	X	2	X	X	X	2
CHM-106	COI	3	1	2	3	1	2	1	3	1	x	1	1	x	x	x
	COII	2	1	2	3	2	2	1	3	1	x	1	1	x	x	x
	COIII	3	1	2	3	2	3	1	3	1	x	1	1	x	x	x
	COIV	2	1	2	3	2	1	1	3	1	x	1	1	x	x	x
	COV	3	1	2	3	3	3	1	3	1	x	1	1	x	x	x
CHM-201	COI	3	1	2	2	2	3	X	3	X	X	2	X	X	X	3
	COII	3	1	2	2	1	2	X	3	X	X	3	X	X	X	3

	COIII	2	1	2	3	1	3	X	3	X	X	2	X	X	X	3
	COIV	3	1	2	2	1	3	1	3	X	X	3	X	X	X	3
	COV	2	1	1	3	2	3	X	3	X	X	2	X	X	X	2
CHM-202	COI	2	1	2	3	1	3	x	3	X	X	3	X	X	X	3
	COII	2	2	2	2	3	3	X	3	X	X	2	X	X	X	2
	COIII	3	1	1	3	1	2	x	3	x	X	2	X	X	X	3
	COIV	3	2	2	2	3	3	X	3	x	X	3	X	X	X	2
	COV	2	1	2	*2*	*1*	3	x	3	x	X	2	X	X	X	2
CHM-203	COI	3	2	2	*2*	*3*	2	X	3	x	X	3	X	X	X	2
	COII	2	2	1	*3*	*1*	2	X	3	x	X	1	X	X	X	2
	COIII	3	2	2	3	2	2	x	3	x	X	2	X	X	X	2
	COIV	2	1	1	3	3	3	1	3	x	X	2	X	X	X	3
	COV	2	1	2	3	1	2	1	3	X	X	1	X	X	X	2
CHM-204	COI	2	2	1	2	2	2	X	3	X	X	2	X	X	X	2
	COII	2	2	1	3	2	3	1	3	X	X	3	X	X	X	3
	COIII	3	1	1	2	2	2	X	3	X	X	3	X	X	X	3
	COIV	2	1	2	3	3	2	X	3	X	X	2	X	X	X	3
	COV	3	1	1	2	3	2	1	3	x	X	3	X	X	X	3
CHM-301	COI	3	1	3	1	3	3	1	3	X	X	3	X	X	X	3
	COII	3	1	3	2	3	3	1	3	X	X	2	X	X	X	2
	COIII	3	1	2	2	3	3	1	3	X	X	3	X	X	X	3
	COIV	3	1	3	2	3	3	1	3	X	X	2	X	X	X	3
	COV	2	1	2	2	3	3	X	3	X	X	3	X	X	X	3
CHM-302	COI	2	1	3	1	2	3	X	3	X	X	2	X	X	X	3
	COII	3	1	1	1	2	3	X	3	X	X	2	X	X	X	3
	COIII	2	1	3	2	2	3	X	3	x	X	3	x	X	X	3
	COIV	3	1	3	2	2	3	X	3	x	X	2	x	X	X	3
	COV	2	2	3	2	2	2	X	3	x	X	3	x	X	X	2
CHM-303	COI	2	1	1	1	1	2	X	2	x	X	2	x	X	X	2
	COII	2	1	3	2	1	2	X	3	x	X	3	x	X	X	2
	COIII	3	1	3	1	1	2	X	3	x	X	2	x	X	X	3
	COIV	3	1	2	1	1	3	X	2	x	X	3	x	X	X	2
	COV	3	1	3	1	1	3	X	2	X	X	3	X	X	X	3
CHM-304	COI	2	2	2	1	2	3	1	2	X	X	2	X	X	X	2
	COII	2	1	1	1	2	3	1	3	X	X	3	X	X	X	2
	COIII	3	1	3	1	2	3	1	3	X	X	2	X	X	X	2
	COIV	3	1	2	2	1	3	1	2	X	X	3	X	X	X	2
	COV	3	1	1	2	2	3	1	2	x	X	2	x	X	X	3
CHM-401	COI	3	2	3	2	1	3	X	2	X	X	3	X	X	X	3
	COII	2	1	2	2	1	2	X	3	X	X	2	X	X	X	3
	COIII	2	1	1	1	1	2	1	3	X	X	2	X	X	X	3
	COIV	3	1	3	1	1	2	1	3	X	X	2	X	X	X	3

	COV	3	1	3	1	2	2	X	3	X	X	2	X	X	X	2
CHM-402	COI	2	1	3	2	2	2	1	3	X	X	3	X	X	X	3
	COII	2	1	3	2	2	2	1	3	X	X	3	X	X	X	3
	COIII	2	1	3	1	1	3	1	3	x	X	2	x	X	X	3
	COIV	3	1	2	1	1	3	1	3	x	X	2	x	X	X	2
	COV	3	2	2	1	1	3	1	2	x	X	2	x	X	X	2
CHM-403	COI	2	1	2	1	1	3	X	2	x	X	2	x	X	X	2
	COII	3	1	2	2	2	3	X	2	x	X	2	x	X	X	2
	COIII	3	1	3	2	1	3	X	2	x	X	3	x	X	X	2
	COIV	3	1	1	2	1	3	1	3	x	X	2	x	X	X	2
	COV	3	1	1	2	1	3	1	3	X	X	2	X	X	X	2
CHM-404	COI	3	1	1	2	1	2	1	3	X	X	2	X	X	X	2
	COII	2	2	3	2	1	2	1	3	X	X	3	X	X	X	2
	COIII	3	1	3	2	2	3	X	3	X	X	2	X	X	X	2
	COIV	2	1	3	2	2	3	X	3	X	X	2	X	X	X	2
	COV	3	1	2	1	2	3	X	3	x	X	2	x	X	X	2

Mapping of COs with PSO

X: No Correlation b/w CO & PSO. 1: Weak Correlation b/w CO & PSO

2: Medium Correlation b/w CO & PSO 3. Strong Correlation b/w CO & PSO

Course Outcomes		Programme Specific Outcomes						
		PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CHM-101	COI	3	3	3	3	1	1	3
	COII	2	3	3	3	2	2	3
	COIII	2	3	2	3	1	2	3
	COIV	2	3	2	3	1	1	3
	COV	2	3	1	3	1	1	3
CHM-102	COI	2	2	1	3	1	2	2
	COII	3	3	2	3	2	2	2
	COIII	3	2	1	3	2	2	3
	COIV	2	3	2	2	2	1	3
	COV	3	2	1	2	1	1	3
CHM-103	COI	3	2	2	3	1	2	3
	COII	3	2	3	2	1	1	2
	COIII	2	2	2	2	1	2	2
	COIV	3	3	1	2	2	1	2
	COV	3	3	2	2	2	2	3
CHM-104	COI	2	2	3	3	2	1	3
	COII	2	2	2	3	2	2	3
	COIII	2	2	2	3	1	1	3
	COIV	2	2	2	2	1	2	3
	COV	2	3	1	2	1	2	3
CHM-105	COI	2	3	1	2	1	2	3
	COII	2	3	3	2	1	1	2
	COIII	2	3	2	2	2	1	2
	COIV	3	3	2	2	2	1	2
	COV	3	2	3	3	2	2	2
CHM-106	COI	3	2	3	3	2	1	2
	COII	3	2	3	3	2	2	3
	COIII	3	2	2	2	1	1	3
	COIV	2	3	2	2	1	1	3
	COV	2	3	1	2	1	1	3
CHM-201	COI	2	3	1	2	1	1	3
	COII	2	3	1	3	2	2	3
	COIII	2	2	3	3	2	2	2

	COIV	2	2	3	3	2	2	2
	COV	3	2	3	3	2	2	2
CHM-202	COI	3	2	1	3	1	1	3
	COII	3	2	2	2	1	1	3
	COIII	3	3	2	2	1	1	3
	COIV	3	3	3	2	1	2	3
	COV	3	3	3	2	2	2	3
CHM-203	COI	3	3	3	2	2	2	3
	COII	3	3	2	2	2	1	3
	COIII	2	2	2	3	2	1	3
	COIV	2	2	1	3	2	2	3
	COV	2	2	1	3	1	1	2
CHM-204	COI	2	2	2	3	2	2	2
	COII	3	2	2	3	1	1	2
	COIII	3	2	2	2	2	2	2
	COIV	2	3	1	2	1	1	2
	COV	2	3	1	2	2	1	2
CHM-301	COI	3	2	1	3	2	1	2
	COII	3	3	2	2	2	1	2
	COIII	3	2	2	3	2	2	3
	COIV	3	3	2	2	2	1	3
	COV	3	2	3	3	1	1	3
CHM-302	COI	3	3	3	2	1	2	3
	COII	3	2	2	3	1	1	2
	COIII	2	3	1	2	1	1	2
	COIV	2	2	2	2	2	1	3
	COV	3	2	3	2	1	2	3
CHM-303	COI	2	2	2	2	1	2	3
	COII	2	2	2	3	2	2	2
	COIII	2	3	3	3	1	2	2
	COIV	2	3	2	3	2	2	2
	COV	3	3	1	3	1	1	3
CHM-304	COI	2	3	1	2	3	1	3
	COII	3	2	3	2	3	1	2
	COIII	2	2	3	2	3	1	2
	COIV	2	2	2	2	3	2	2
	COV	2	2	2	3	3	2	2
CHM-401	COI	2	3	3	3	1	2	3
	COII	2	2	2	3	2	1	3
	COIII	2	2	3	3	1	1	3
	COIV	2	3	2	3	2	1	2
	COV	2	2	3	2	2	2	2

CHM-402	COI	2	2	2	2	1	2	2
	COII	2	3	2	2	1	1	2
	COIII	3	3	1	2	2	1	3
	COIV	3	3	1	2	1	1	3
	COV	3	3	2	3	1	1	3
CHM-403	COI	3	3	3	3	1	2	3
	COII	3	2	2	3	1	2	2
	COIII	3	2	1	3	2	2	2
	COIV	3	2	1	3	2	2	2
	COV	3	3	2	2	2	2	3
CHM-404	COI	3	2	1	2	1	1	3
	COII	3	2	2	2	1	1	3
	COIII	3	2	2	2	2	1	3
	COIV	3	3	2	2	1	2	2
	COV	3	3	1	3	2	2	2