

Apeejay Institute of Management & Engineering

Technical Campus

Course Outcomes (COs)

1. School of Management Studies

- **Masters of Business Administration (MBA)**
- **Bachelors of Business Administration (BBA)**
- **Bachelor of Commerce (B.COM)**

2. School of Information Technology

- **Masters of Computer Applications (MCA)**
- **Bachelor of Computer Applications (BCA)**

3. School of Engineering & Technology

- **Bachelor of Technology (B-TECH)(CSE)**
- **Bachelor of Technology (B-TECH)(ECE)**

School of Management Studies

Masters of Business Administration (MBA) (Batch 2018 Onwards)

S.No.	Code and Subject Name	Course Outcomes
1	MBA101-18 Foundations Of Management	CO 1 Describe fundamental concepts and principles and conventions of accounting.
		CO 2 Explain the role and responsibilities of managers and adapt to the various styles of management across organizations.
		CO 3 Develop analytical abilities to face the business situations.
		CO 4 Apply various tools that would facilitate the decision making process in the business.
		CO 5 Develop peer based learning and working in groups and teams.
		CO 6 To comprehend the application of various controlling techniques in management.
2	MBA 102-18 Managerial Economics	CO 1 Understand the basic concepts of economics and relate it with other disciplines and identify the importance of economics in managerial decision making.
		CO 2 Measure price elasticity of demand, understand the determinants of elasticity and apply the concepts of price, cross and income elasticity of demand.
		CO 3 Analyze the demand and supply conditions and assess the position of a company and explain the concepts of factors of production, collective bargaining and the underlying theories of factors of production.
		CO 4 Recognize the relationship between short-run and long-run costs and will also be able to establish the linkage between production function and cost function
		CO 5 Compare and contrast four basic types of market i.e. perfect, monopoly, monopolistic and oligopoly and can determine price and output under different market types.
		CO 6 Understand basic concepts of macroeconomics and shall be able to measure national income using different approaches.
3	MBA 103-18 Quantitative Techniques	CO 1 To have a deeper and rigorous understanding of fundamental concepts in business decision making under subjective conditions.
		CO 2 To apply the concepts of central tendency and variation in managerial decision making.
		CO 3 To enhance knowledge in probability theory and normality and its distribution concepts.
		CO 4 To understand the concept of correlation regression analysis and their applications.
		CO 5 To apply the learnt techniques to build the best fit route of transportation for carrying

		schedule of activities.
		CO 6 To apply the operations techniques in reality to market scenario.
4	MBA 104-18 Accounting For Management And Reporting	CO 1 To familiarize the students about the basic concepts, principles and process of accounting and to make them aware about the formats of financial statements of public limited, banking and insurance companies.
		CO 2 To explain the students about the concepts of cost and various intricacies for preparing the cost sheet.
		CO 3 To acquaint students about the decision making techniques using the concepts of marginal costing, standard costing and budgetary control.
		CO 4 To enable the students to analyse financial statements using various tools for financial analyse and interpret the financial position of a business organization.
		CO 5 To familiarize the students about the contemporary developments in the accounting.
		CO 6 To make students aware about the recent developments in financial reporting and regulations so that they may understand and appreciate the concept and process of harmonization of financial reporting practices.
5	MBA 105-18 Business Environment And Indian Economy	CO 1 Outline how an entity operates in a complex business environment.
		CO 2 To systematically learn impact of legal & regulatory, macroeconomic, cultural, political, technological, global and natural environment on Business enterprise.
		CO 3 To examine the critical opportunities and threats that arise from an analysis of external business conditions by applying scenario planning to synthesize trends prevailing in the external environment.
		CO 4 To describe how various types of economic systems play a significant role in the success of a business.
		CO 5 To understand the nature of Indian Economy and various issues relating to Indian Economy having a direct or indirect impact on business environment.
		CO 6 To discuss various development strategies in India.
6	MBA 106-18 Business Ethics And Corporate Social Responsibility	CO 1 To integrate and apply contemporary Ethics & Governance issues in a business context
		CO 2 To analyse and apply ethics to contemporary business practices.
		CO 3 To analyse key perspectives on corporate social responsibility and their application.
		CO 4 To evaluate different corporate ownership structures and their key governance features.
		CO 5 To understand the ethical decision making, ethical reasoning, the dilemma resolution process.
		CO 6 To analyse and apply corporate governance perspectives to contemporary business practices.

7	MBA 107-18 Business Communication For Managerial Effectiveness	CO 1 To understand the basics of communication and its process, and the various barriers in the communication.
		CO 2 To learn the listening skills and comprehend the value of business etiquettes
		CO 3 To comprehend Non – Verbal communication skills and its application for effective Communication.
		CO 4 To learn the skills of writing effective business messages, letters and reports
		CO 5 To develop the presentation skills and learning to organize and structure a Presentation using visual aids
		CO 6 To prepare the students for interview , employment messages and resume writing skills
8	MBA 201-18 Business Analytics For Decision Making	CO 1 To have a deeper and rigorous understanding of fundamental concepts in business decision making under subjective conditions
		CO 2 To enhance knowledge in probability theory and normality and its distribution concepts
		CO 3 To conduct research surveys through multiple regression and multiple correlation
		CO 4 To design a good quantitative purpose statement and good quantitative research questions and hypotheses
		CO 5 To know the various types of quantitative sampling techniques and conditions to use.
		CO 6 To utilize the time series method to predict the future of sales in a concern.
9	MBA 202-18 Legal Environment For Business	CO 1 Students shall be able to understand the legal and regulatory framework of business environment.
		CO 2 Students shall be able to identify the fundamental legal principles behind contractual agreements.
		CO 3 Students shall be able to understand the legal provisions of sales of goods.
		CO 4 Students shall be able to understand the concept of negotiable instruments as well as rules pertaining to crossing, transferring and dishonouring of negotiable instruments.
		CO 5 Students shall have understanding of legal rules governing admission, retirement and death of partner and dissolution of partnership firm.
		CO 6 Students shall be able to understand the legal framework relating to the process of incorporation of Joint Stock Company
10	MBA 203-18 Marketing Management	CO 1 To learn the basics of marketing, selling, marketing mix and its core concepts.
		CO 2 To understand the intricacies of the marketing environment and marketing information systems for effective marketing planning and strategies.
		CO 3 To equip the students with necessary skills for effective market segmentation, targeting and positioning
		CO 4 To prepare the students for understanding the various components of product mix, product

		life cycle and comprehend the new product development process.
		CO 5 To develop an understanding of promotion mix and strategies for successful promotion
		CO 6 To gain knowledge about the emerging trends in marketing and pyramid marketing.
11	MBA 204-18 Human Resource Management	CO 1 To explain the basics of Human Resource Management and analyse the evolution of HRM.
		CO 2 To comprehend the environment of HRM.
		CO 3 To appraise various functions of HRM that facilitate employee hiring viz. human resource planning, job analysis recruitment and selection.
		CO 4 To understand the role of training, development, career planning and performance appraisal functions in human resource development.
		CO 5 To examine the provisions of employee health, safety and welfare.
		CO 6 To analyse the concerns of government, employees and employers in establishing Industrial relations.
12	MBA 205-18 Production & Operations Management	CO 1 Understand ever growing importance of Production and Operations management in uncertain business environment.
		CO 2 Gain an in-depth understanding of resource utilization of an organization.
		CO 3 Appreciate the unique challenges faced by firms in services and manufacturing.
		CO 4 Understand the subject as a crucial part of functional management.
		CO 5 Develop skills to operate competitively in the current business scenario.
		CO 6 Understand the concepts of inventory and purchasing management.
13	MBA 206-18 Corporate Finance And Indian Financial System	CO 1 To explain the evolution, objectives and functions of corporate finance and interface of corporate finance with other functional areas.
		CO 2 To illustrate the concept of time values of money and valuation of securities.
		CO 3 To comprehend the significance of capital structure theories in capital structure decisions.
		CO 4 To understand the applications of approaches of working capital management.
		CO 5 To be able to describe the role of various financial institutions on Indian financial system.
		CO 6 To discuss the evolution of financial markets and various financial instruments.
14	MBA 207-18 Entrepreneurship Development And Project Management	CO 1 To explain the characteristics, functions and traits of an entrepreneur.
		CO 2 To illustrate the concept of corporate entrepreneurship and development of the same in the organizations.
		CO 3 To comprehend the significance of women entrepreneurs, rural entrepreneurship and social entrepreneurship.
		CO 4 To examine entrepreneurial strategies to explore new entry opportunities, methods of enhancing creativity and generation of ideas.
		CO 5 To be able to develop an effective business plan.

		CO 6 To explain the basic concepts of project management and analyse different phases of project management viz. generation and screening of project ideas, project analysis, selection, financing, implantation and review.
15	MBAGE 201-18 Computer Applications For Business	CO 1 Develop understanding of computer fundamentals, functions and their classifications
		CO 2 Develop a clear understanding and knowledge about the functioning of a Computer software and window operating system
		CO 3 Demonstrate proficiency in Microsoft word & Excel.
		CO 4 Apply formatting and editing features to enhance worksheets.
		CO 5 Use styles, themes, and conditional formats to customize worksheets.
		CO 6 Apply the concepts of data base and Access for editing Data; managing reports and labels, Managing Multiple Tables.
16	MBA 301-18 Organizational Behaviour & Design	CO 1 To explain the basics of Orgnaizational behaviour and various challenges for OB in national and global environment.
		CO 2 To illustrate the foundations of Individual Behaviour and analyse the influence of individual level factors viz. learning, personality, perception, attitude and motivation on behaviour in organizations.
		CO 3 To assess the significance of leadership and role of leadership styles in effectiveness of the team.
		CO 4 To examine the dynamics of group development, group properties and formation of organizational culture.
		CO 5 To demonstrate dimensions of organisational design and types of organisational structure and to analyse the influence of environment on organisational design.
		CO 6 To interpret the effect of political climate (conflict, power and politics) on human behaviour.
17	MBA 302- 18 Marketing Research	CO 1 Understand the process of marketing research and its application in managerial decision making
		CO 2 Identify various sources of data for marketing research.
		CO 3 Examine different research methods and be able to apply them.
		CO 4 Identify different research designs and develop a research proposal.
		CO 5 Design an effective questionnaire and test reliability and validity of the scales.
		CO 6 Apply different methods of data preparation and data analysis.
18	HVPE 101-18 Human Values, De-Addiction And Traffic Rules	CO 1 To help the students appreciate the essential complementarily between 'VALUES' and 'SKILLS' to ensure sustained happiness and prosperity which are the core aspirations of all human beings

		CO 2 To facilitate the development of a Holistic perspective among students towards life, profession and happiness, based on a correct understanding of the Human reality and the rest of Existence. Such a holistic perspective forms the basis of Value based living in a natural way.
		CO 3 To highlight plausible implications of such a Holistic understanding in terms of ethical human conduct, trustful and mutually satisfying human behavior and mutually enriching interaction with Nature.
Specialization : Marketing		
19	MBA 921-18 Consumer Behaviour	CO 1 Provide an understanding of how consumers make decisions.
		CO 2 Analyze personal and environmental factors that influence consumer decisions.
		CO 3 Understand the processes used when individuals, group or organizations make buying decisions.
		CO 4 Understand how and why marketers craft particular messages to appeal to consumers.
		CO 5 Understand the interrelationship with other functional areas of business as a part of the management process.
		CO 6 Assess the process of opinion leadership and its relationship with firm's promotional strategy.
20	MBA 922-18 Services Marketing	CO 1 Understand the fundamental concepts of service marketing and its functions.
		CO 2 Identify the role and significance of various elements of service marketing mix.
		CO 3 Analyze customer requirement, measure service quality and design and deliver better service.
		CO 4 Analyze integrated services marketing communications and services marketing triangle.
		CO 5 Examine various pricing strategies and pricing approaches in service sectors.
		CO 6 Understand service marketing applications in different service sectors.
21	MBA 923-18 Integrated Marketing Communication And Sales Management	CO 1 Apply the key terms, definitions, and concepts used in integrated marketing communications.
		CO 2 Conduct and evaluate marketing research and apply these findings to develop competitive IMC Programme.
		CO 3 Examine the role of various promotional strategies such as advertising, direct marketing, sales promotion and PR in effectiveness of marketing communication.
		CO 4 Understand and apply the concepts of sales management and organization.
		CO 5 Develop sales related marketing policies such as product policies, distribution policies & pricing policies.
		CO 6 Explain various sales operations such as sales budget, sales territories, sales Quota's, control

		of sales, sales meeting and sales contest, organizing display, showroom and exhibition.
22	MBA 924-18 Retail Management	<p>CO 1 Understand opportunities and challenges in retail management and retail management decision process.</p> <p>CO 2 Examine various types of retail formats and comprehend the application of theories of retail development on business models in retail.</p> <p>CO 3 Discuss and apply various function of store management.</p> <p>CO 4 Recognize the importance of store design and apply the concepts of store design to determine store layout and merchandising.</p> <p>CO 5 Understand the importance of customer service in improving retail service qualities.</p> <p>CO 6 Describe the applications of IT in retailing.</p>
23	MBA 925-18 International And Social Media Marketing	<p>CO 1 Assess the challenges in international marketing and understand various international market entry strategies.</p> <p>CO 2 Evaluate international marketing environment and identify various international trade barriers and regional blocks.</p> <p>CO 3 Develop international product, pricing and communication policy and examine international distribution system.</p> <p>CO 4 Discuss the evolution of social media marketing and identify various benefits and applications of social media.</p> <p>CO 5 Explain how to develop effective social media marketing strategies for various types of industries and businesses.</p> <p>CO 6 Describe the major social media marketing portals that can be used to promote a company, brand, product, service or person.</p>
24	MBA 926-18 Product And Brand Management	<p>CO 1 Understand what a product is, the various levels which make it up, and different types of products.</p> <p>CO 2 Examine various challenges and issues involved in product planning and development.</p> <p>CO 3 Discuss and apply the concepts of test marketing and market entry of a product.</p> <p>CO 4 Recognize the features and importance of a brand and conduct branding research.</p> <p>CO 5 Understand the concept of brand loyalty and measuring brand performance.</p> <p>CO 6 Describe the role of various branding strategies in brand equity management.</p>
Specialization : Finance		
25	MBA 913-18 Behavioural Finance	<p>CO 1 Understand and differentiate between different theories of behavioural finance.</p> <p>CO 2 Examine the concepts of bounded rationality</p> <p>CO 3 Discuss various anomalies in the market giving rise to behavioural bias.</p> <p>CO 4 Describe the basis of behavioural bias of professional investors trading in market.</p>

		CO 5 Understand the concept of market efficiency and will be able to relate it with the concept of behavioural finance.
		CO 6 Describe the challenges to the efficient market hypothesis.
26	MBA 914-18 Mergers, Acquisitions And Corporate Restructuring	CO 1 To explain the popularity of merger and acquisition strategies in firms competing in the global economy.
		CO 2 To describe the reasons why firms use an acquisition strategy to achieve strategic competitiveness.
		CO 3 To describe the issues that are significant in valuation decisions, and the factors which work against achieving success when using an acquisition strategy.
		CO 4 To define the restructuring strategy and distinguish among its common forms.
		CO 5 To explain the regulatory aspects of mergers, acquisitions and corporate restructuring.
		CO 6 To explain the popularity of merger and acquisition strategies in firms competing in the global economy.
27	MBA 915-18 International Finance And Financial Derivatives	CO 1 Understand the framework of international exchange rate system including factors influencing exchange rates.
		CO 2 Discuss the basics of different types of derivative contracts like futures, options and swaps.
		CO 3 Understand various types of risks / exposures in forex trading and their management.
		CO 4 Describe various theories underlying the concepts of international finance.
		CO 5 Understand trading strategies using options contracts.
		CO 6 Describe the regulatory framework of derivatives contracts in India.
28	MBA 916-18 Taxation And Personal Financial Planning	CO 1 The students will be familiarised with the concepts of tax management, tax avoidance and tax evasion and the methods of ways of tax planning.
		CO 2 To acquaint students with the provision of the current finance act with regard to various head of income.
		CO 3 To enable students to compute the tax liability of individuals after considering their residential status, various exempted incomes, permissible deduction, clubbing of income and setting off of losses.
		CO 4 To familiarise students with the concept, objectives and importance of personal financial planning and enable the students to understand the implications of environmental factors and time value of money on the personal financial statements.

		CO 5 To enable students to identify various types of risks any individual is exposed to and how they can hedge diversifiable risk.
		CO 6 To familiarise students with various instruments available for investment by an individual for achieving their personal financial goals
Specialization : Human Resource Management		
29	MBA 933-18 International Human Resource Management	CO 1 Understand issues, opportunities and challenges pertaining to international HRM.
		CO 2 Develop competency in dealing with cross cultural situations.
		CO 3 Understand the strategic and functional roles of HRM in various international contexts, especially in areas such as recruitment and selection, performance management, training, learning and development, career management, compensation, motivation and repatriation;
		CO 4 Identify the role of cross cultural leadership in managing multicultural teams.
		CO 5 Understand external forces (e.g. globalisation, sociocultural changes, political and economic changes) that have the potential to shape international HRM.
		CO 6 Develop generic and transferable skills-especially in diagnosing international HRM
30	MBA 934-18 Strategic Human Resource Management	CO 1 Understand an integrated approach to the development of HR strategies that enable the organization to achieve its goals.
		CO 2 Describe the process of strategic HRM
		CO 3 Discuss the strategic role of HR systems such as strategic staffing, strategic appraisal, strategic reward system etc.
		CO 4 Explain various human aspects of strategy implementation.
		CO 5 Identify the role of leadership in implementing strategic change.
		CO 6 Understand Global HRM and role of global HRM in successful implementation of MNC strategy
31	MBA 935-18 Leadership And Team Dynamics	CO 1 Understand the history of leadership and current leadership theories.
		CO 2 Explain how leadership models are put into practice personally, locally, and globally.
		CO 3 Discuss the knowledge of developing leadership abilities.
		CO 4 Describe the concept of Strategic Leadership and ethical leadership.

		CO 5 Explain composition, formation, and development of teams.
		CO 6 Illustrate the dynamics of team Performance and motivation and the role of leadership in dynamics of team management and decision making.
32	MBA 936-18 Performance And Compensation Management	CO 1 Increase the awareness of the process and principles of performance Management / appraisal.
		CO 2 Identify the negative aspects of appraisal systems and consider how these might be overcome.
		CO 3 Discuss performance with regard to pay awards, and whether these should, or should not be automatically related to each other.
		CO 4 Demonstrate a familiarity with the appeal process relating specifically to the performance review.
		CO 5 Illustrate different ways to strengthen the pay-for-performance link and also learn the concepts of Payment and employee benefits issues for contingent workers.
		CO 6 Develop appropriate reward and compensation policies.
Specialization : Management Information Systems		
33	MBA 943 – 18 : Managing Software Projects	CO 1 Understanding approaches for managing and optimizing the software development process
		CO 2 Examine contemporary software life cycle processes, activities and work products
		CO 3 Apply different methods to identify, analyze, and manage software project risks
		CO 4 Estimate software project effort, cost, and schedule for an intermediate size project
		CO 5 To make aware about the various software project teams in terms of roles and responsibilities and managers can plan their projects and minutely work out the cost and time overrun of projects.
34	MBA 944 – 18 : Managing Digital Innovation And Transformation	CO 1 Identify how Digital Transformation impacts corporate strategies
		CO 2 Understand Security Issues in Digital Transformations
		CO 3 Understand the risk associated with evolving international clients and environment
		CO 4 To learn Security Issues, Methods & Laws
		CO 5 Understanding cloud computing
35	MBA 945 – 18 : IT Consulting	CO 1 To analyze the IT requirements of the organization and the underlying environment.
		CO 2 To advise IT solutions and services based on requirements.
		CO 3 To understand RFP Analysis.

		CO 4 To provide an understanding about SLA.
		CO 5 To familiar with ethics in consulting.
36	MBA 946 – 18 : Strategic Management of IT	CO 1 To develop an understanding of strategic management concepts and techniques and acquire the ability to apply the same in business situations
		CO 2 Learning how to use IT as a tool to implement business strategies and gain competitive advantage, not merely to support business operations.
		CO 3 In addition to familiarizing students with new technological changes in management, students are expected to integrate and apply their prior learning to strategic decision making in organisations
		CO 4 Integrate and apply knowledge gained in basic courses to the formulation and implementation of strategy from holistic and multi-functional perspectives.
		CO 5 Analyze and evaluate critically real life company situations and develop creative solutions, using a strategic management perspective.
Specialization : Operations Management		
37	MBA 951-18 Operation Strategy	CO 1 Understand the strategic role of operations management in creating and enhancing a firm's competitive advantages.
		CO 2 Analyze, evaluate and recommend changes in the operations strategy of an organization.
		CO 3 Demonstrate a managerial point of view i.e. capacity for analyzing operations problems on a functional, business and company wide basis.
38	MBA952-18 Operation Research Applications	CO 1 Be able to understand the characteristics of different types of decision-making environments and the appropriate decision making approaches and tools to be used in each type.
		CO 2 Model Formulation and applications that are used in solving business decision problems.
		CO 3 Be able to design new simple models, like: CPM, PERT to improve decision –making and develop critical thinking and objective analysis of decision problems.
39	MBA953-18 Supply Chain & Logistic Management	CO 1 Demonstrate a clear understanding of the key concepts applied in logistics and supply chain management.
		CO 2 To highlight the importance of all activities of the supply chain and an understanding of concepts like inbound and outbound logistics, offshore and inshore logistics.
		CO 3 To develop skills for planning, designing the operational facilities of supply chain with the analytical and critical understanding
40	MBA954-18 Quality Toolkit For Managers	CO 1 Evaluate the principles of quality management and to explain how these principles can be applied within quality management systems.

		CO 2 To provide students with the requisite knowledge of concepts and to impart practical CO 3 skills and techniques required in the area of strategies for managing technology in business
		CO 4 Critically appraise the organizational, communication and teamwork requirements for effective quality management
		CO 5 Critically analyze the strategic issues in quality management, including current issues and developments, and to devise and evaluate quality implementation plans
Specialization : Business Analytics		
41	MBA 961-18 Marketing Analytics	CO 1 To learn how to analyse market conditions in the era of social media.
		CO 2 To learn to apply statistical tools on marketing data metrics.
		CO 3 Understand how the “first principles” of marketing strategy helps firms organize the analytics opportunity and challenge in today’s data era, and
		CO 4 Use and execute data analytic techniques, and case studies to understand how to solve marketing analytics problems in a scientific and process-driven manner.
42	MBA 962-18 Data Sciences Using R	CO 1 Know advanced aspects of big data analytics, applying appropriate machine learning techniques to analyse big data sets
		CO 2 Assess the statistical significance of data mining results, basic statistical modelling and analysis using the open-source tool R
		CO 3 Describe what Data Science is and the skill sets needed to be a data scientist.
		CO 4 Understand concepts like Big Data, Data Mining, Data Analytics and Machine Learning
		CO 5 Understand various algorithm for data analysis (classification and Clustering)
43	MBA 963-18 Data Visualization For Managers	CO 1 Employ best practices in data visualization to develop charts, maps, tables, and other visual representations of data.
		CO 2 Use Tableau’s visualization tools to conduct data analysis, especially exploration of an unfamiliar dataset.
		CO 3 Create compelling, interactive dashboards to combine several visualizations into a cohesive and functional whole.
		CO 4 Utilize advanced Tableau features including parameters, data blending, custom SQL, very large datasets, custom date hierarchies, and others.
		CO 5 Use data visualizations, dashboards and Tableau Stories to support relevant communication for diverse audiences.
44	MBA 964-18 Business	CO 1 Understand the importance of forecasting in making accurate decisions in economic and

Forecasting	business environments
	CO 2 Understand the basics in regression analysis, time series analysis and their applications in forecasting
	CO 3 Understand how to handle the trend, seasonal and cyclical issues in forecasting analysis.
	CO 4 Construct forecasting reports to higher level management for vital decision-making process.
	CO 5 Use the software packages for developing forecasting models.
	CO 6 Be prepared for more advanced study of economic and business forecasting

Bachelors of Business Administration (BBA)

S.No.	Code and Subject Name	Course Outcomes
1	BBA 101 Principles and Practices of Management	CO 1 Describe fundamental concepts, nature and principles of Management.
		CO 2 Explain the role and responsibilities of managers and adapt to the various styles of management across organizations.
		CO 3 Develop analytical abilities to face the business situations.
		CO 4 Apply various tools that would facilitate the decision making process in the business.
		CO 5 Develop peer based learning and working in groups and teams.
2	BBA 102 Basic Accounting	CO 1 To understand the basic underlying concepts, principles and conventions of accounting. To identify the rules of debit and credit in accounting.
		CO 2 To identify the rules of debit and credit in accounting
		CO 3 To get an overview of the regulatory framework of accounting in India.
		CO 4 To prepare trading, profit & loss and balance sheet of a firm.
		CO 5 To comprehend the concept of depreciation and different methods to treat depreciation in accounting
3	BBA-GE 101 Managerial Economics- I	CO 1 Understand the basic concepts of managerial economics and apply the economic way of thinking to individual decisions and business decisions.
		CO 2 Measure price elasticity of demand, understand the determinants of elasticity and apply the concepts of price, cross and income elasticity of demand.
		CO 3 Understand and estimate production function and Law of Diminishing Marginal Utility.
		CO 4 Understand and explain four basic market models of perfect competition, monopoly, monopolistic competition, and oligopoly, and how price and quantity are determined in each model.
		CO 5 Understand the different costs of production and how they affect short and long run decisions.
4	BTHU103/18 English	CO 1 The objective of this course is to introduce students to the theory, fundamentals and tools of communication.
		CO 2 To help the students become the independent users of English language.
		CO 3 To develop in them vital communication skills which are integral to their personal, social and professional interactions.
		CO 4 The syllabus shall address the issues relating to the Language of communication.

		CO 5 Students will become proficient in professional communication such as interviews, group discussions, office environments, important reading skills as well as writing skills such as report writing, note taking etc.
5	BTHU104/18 English Practical/Laboratory	CO 1 To develop in them vital communication skills which are integral to personal, social and professional interactions.
		CO 2 The syllabus shall address the issues relating to the Language of communication.
		CO 3 Students will become proficient in professional communication such as interviews, group discussions and business office environments, important reading skills as well as writing skills such as report writing, note taking etc.
6	HVPE 101-18 Human Values, De-addiction and Course	CO 1 To facilitate the development of a Holistic perspective among students towards life, profession and happiness, based on a correct understanding of the Human reality and the rest of Existence. Such a holistic perspective forms the basis of Value based living in a natural way.
		CO 2 To highlight plausible implications of such a Holistic understanding in terms of ethical human conduct, trustful and mutually satisfying human behavior and mutually enriching interaction with Nature.
7	BBA202-18 Business Environment Objectives	CO 1 To analyze about the relationships between Government and business and understand the political, economic, legal and social policies of the country .
		CO 2 To understand the current economic conditions in developing emerging markets, and evaluate present and future opportunities.
		CO 3 To be acquainted with prerequisite knowledge required to understand the Probability and applications of probability theory.
		CO 4 To understand the concept of the Industrial functioning and strategies to overcome challenges in competitive markets.
8	BBAGE 201-18 Managerial Economics-Ii	CO 1 To be acquainted with prerequisite knowledge required to understand the Probability and applications of probability theory.
		CO 2 To understand the concept of correlation regression analysis and their applications.
		CO 3 To apply the learnt techniques in statistical testing and their applications.
9	EVS102-18 Environment Studies	CO 1 Students will enable to understand environmental problems at local and national level through literature and general awareness.
		CO 2 The students will gain practical knowledge by visiting wildlife areas, environmental institutes and various personalities who have done practical work on various environmental Issues.

		CO 3 The students will apply interdisciplinary approach to understand key environmental issues and critically analyze them to explore the possibilities to mitigate these problems.
		CO 4 Reflect critically about their roles and identities as citizens, consumers and environmental actors in a complex, interconnected world
10	BBA 301- Organizational Behaviour	CO 1 To explain the basics of Organizational behaviour and various challenges for OB.
		CO 2 To illustrate the foundations of Individual Behaviour and various factors influencing individual behaviour viz. learning, personality, perception, attitude and motivation.
		CO 3 To examine the dynamics of group development and group properties.
		CO 4 To understand various dimensions of organisational culture.
		CO 5 To analyse the process of conflict management and approaches to stress management.
11	BBA 302- Marketing Management	CO 1 Describe the intricacies of the marketing environment and marketing information systems for effective marketing planning and strategies.
		CO 2 Develop necessary skills for effective market segmentation, targeting and positioning. - Illustrate various components of product mix, product life cycle and comprehend the new product development process.
		CO 3 Develop an understanding of promotion mix and strategies for successful promotion
12	BBA 303-18 Cost And Management Accounting	CO 1 Estimate the breakeven point of the firm.
		CO 2 Understand and apply the concepts of budgetary control for better decision-making.
		CO 3 Understand and estimate material, labour, overheads and sales variances for comparing planned with actual results.
13	BBA- 304 Production and Operations Management	CO 1 Gain an in-depth understanding of resource utilization of an organization.
		CO 2 Appreciate the unique challenges faced by firms in services and manufacturing.
		CO 3 Understand the subject as a crucial part of functional management.
		CO 4 Develop skills to operate competitively in the current business scenario.
14	BBA- SEC 301 IT Tools for Business	CO 1 Develop understanding of computer fundamentals, functions and their

		classifications
		CO 2 Develop a clear understanding and knowledge about the functioning of a Computer software and window operating system
		CO 3 Demonstrate proficiency in Microsoft word & Excel.
		CO 4 Apply formatting and editing features to enhance worksheets.
		CO 5 Use styles, themes, and conditional formats to customize worksheets.
15	BMPD302-18 Mentoring and Professional Development	CO 1 Describe the intricacies of the marketing environment and marketing information systems for effective marketing planning and strategies.
		CO 2 Develop necessary skills for effective market segmentation, targeting and positioning.
		CO 3 Illustrate various components of product mix, product life cycle and comprehend the new product development process.
		CO 4 Develop an understanding of promotion mix and strategies for successful promotion
16	BBA 401 Business Research Methods	CO 1 Explain the objectives and process of conducting research and its application in business.
		CO 2 Analyse the different types of research design and experimental errors.
		CO 3 Understand various techniques of sampling and methods of data collection.
		CO 4 Examine different types of scales and appraise about data preparation and analysis.
		CO 5 Identify and prepare various types of reports.
17	BBA 402 Human Resource Management	CO 1 To analyse the functions of compensation management namely, wages and salary administration, incentives and fringe benefits.
		CO 2 To comprehend the meaning and concept of Industrial relations.
18	BBA 403 Financial Management	CO 3 Apply time value of money techniques to various pricing and budgeting problems.
		CO 4 Apply modern techniques in capital budgeting analysis.
19	BBA GE- 401 Entrepreneurship Development	CO 1 Illustrate the steps in starting MSME.
		CO 2 Comprehend government policies and regulatory framework available in India to facilitate the process of entrepreneurial development.
		CO 3 Identify different sources of finance for new enterprises and assess the role of financial institutions and various government schemes in entrepreneurial development.

20	BBA SEC- 401 Business Ethics & Corporate Social Responsibility	CO 1 Understand the relationship between ethics, morals and values in the workplace
		CO 2 Discuss the moral and social responsibility dimensions of corporate governance.
		CO 3 Describe models of CSR in India.
		CO 4 Assess international framework for CSR.
21	BMPD402-18 Mentoring and Professional Development	CO 1 To explain the basics of Human Resource Management and analyse the evolution of HRM.
		CO 2 To appraise various functions of HRM that facilitate employee hiring viz. human resource planning, job analysis recruitment and selection.
		CO 3 To understand the role of training, development, career planning and performance appraisal functions in human resource development.
		CO 4 To analyse the functions of compensation management namely, wages and salary administration, incentives and fringe benefits.
		CO 5 To comprehend the meaning and concept of Industrial relations.

Bachelor of Commerce (B.COM) (Batch 2018 Onwards)

S.No.	Code and Subject Name	Course Outcomes
1.	BCOM 101-18: Business Organization And Management	To acquaint the students with the fundamentals of managing business. It focuses on the basic roles, skills and functions of management, with special attention to managerial responsibility. The course will use and focus on Indian experiences, approaches and cases.
2.	BCOM 102-18 : Financial Accounting	The aim course is to familiar students with basic concepts and principles of accounting and different types of accounts in business.
3.	BCOMGE 101- 18 : Managerial Economics	<p>CO 1 Understand the basic concepts of managerial economics and apply the economic way of thinking to individual decisions and business decisions.</p> <p>CO 2 Measure price elasticity of demand, understand the determinants of elasticity and apply the concepts of price, cross and income elasticity of demand.</p> <p>CO 3 Understand and estimate production function and Law of Diminishing Marginal Utility.</p> <p>CO 4 Understand and explain four basic market models of perfect competition, monopoly, monopolistic competition, and oligopoly, and how price and quantity are determined in each model.</p> <p>CO 5 Understand the different costs of production and how they affect short and long run decisions.</p>
4.	BTHU103-104/18 : English	<p>CO 1 To help the students become the independent users of English language.</p> <p>CO 2 To develop in them vital communication skills which are integral to their personal, social and professional interactions.</p> <p>CO 3 The syllabus shall address the issues relating to the Language of communication.</p> <p>CO 4 Students will become proficient in professional communication such as interviews, group discussions, office environments, important reading skills as well as writing skills such as report writing, note taking etc.</p>
5.	HVPE 101-18 : Human Values, De-Addiction And Traffic Rules	<p>This introductory course input is intended</p> <ol style="list-style-type: none"> 1. To help the students appreciate the essential complementarity between 'VALUES' and 'SKILLS' to ensure sustained happiness and prosperity which are the core aspirations of all human beings. 2. To facilitate the development of a Holistic perspective among students towards life, profession and happiness, based on a correct understanding of the Human reality and the rest of Existence. Such a holistic perspective forms the basis of Value based living in a natural way. 3. To highlight plausible implications of such a Holistic understanding in terms of ethical human conduct, trustful and mutually satisfying human behavior and mutually enriching interaction with Nature.

6.	BMPD102-18 : Mentoring and Professional Development	<p>The objective of mentoring will be development of:</p> <ol style="list-style-type: none"> 1. Overall Personality 2. Aptitude (Technical and General) 3. General Awareness (Current Affairs and GK) 4. Communication Skills 5. Presentation Skills
7.	BCOM 201-18: Cost Accounting	<p>Course Objective: The main aim of this Paper is to familiarize the students with the basics of Cost Accounting and acquaint them with the application of Cost Accounting tools and techniques to aid managerial decision-making.</p> <p>Course Outcome: Students will be able to apply Cost Accounting tools and techniques to aid managerial decision-making. It also makes them aware of various latest developments in this field.</p>
8.	BCOM 202-18: Business Environment	<p>Course Objective: The objective of this paper is to acquaint students with the issues of business environment in which corporate sector has to operate. It will also familiarize them with the techniques available for scanning and monitoring the environment. It also aims at providing some basic knowledge about international environment pertaining to business.</p> <p>Course Outcome: On completion of this course, learners will be able to:</p> <p>CO 1 Familiarize with the nature of business environment and its components.</p> <p>CO 2 The students will be able to demonstrate and develop conceptual framework of business environment and generate interest in international business.</p> <p>CO 3 Understand the definition of ethics and the importance and role of ethical behavior in the business world today.</p>
9.	BCOMGE 201-18: Business Statistics	<p>Course Objective: The course aims to familiarize students with the basic statistical tools used to summarize and analyze quantitative information for decision making. Analysis of numbers is required for taking decisions related to every aspect of business.</p> <p>Course Outcome: The students will be able to analyze quantitative information required for taking decisions related to different aspects.</p>
10.	EVS102-18: Environment Studies	<p>Course Objective:</p> <ol style="list-style-type: none"> 1. Students will enable to understand environmental problems at local and national level through literature and general awareness. 2. The students will gain practical knowledge by visiting wildlife areas, environmental institutes and various personalities who have done practical work on various environmental Issues. 3. Reflect critically about their roles and identities as citizens, consumers and environmental actors in a

		<p>complex, interconnected world</p> <p>Course Outcome: The students will apply interdisciplinary approach to understand key environmental issues and critically analyze them to explore the possibilities to mitigate these problems.</p>
11.	BMPD202-18: Mentoring and Professional Development	<p>Course Objective: The objective of mentoring will be development of:</p> <ol style="list-style-type: none"> 1. Overall Personality 2. Aptitude (Technical and General) 3. General Awareness (Current Affairs and GK) 4. Communication Skills 5. Presentation Skills <p>Course Outcome: Students will improve its communication skills and overall personality. They will also aware about what is happening in the world.</p>
12.	BCOM 301-18: Management Accounting	<p>Course Objectives: To enable the students to understand the importance of the subject through analysis and interpretation of financial statements, calculation of ratios and their analysis. Preparation of funds flow and cash flow statement with a view to prepare management reports for decision making.</p> <p>Learning Outcome: At the end of this course, the students will be able to know the application of various tools of analyzing the financial statements of business.</p>
13.	BCOM 302-18 Mercantile Law	<p>Course Objective: To provide the brief idea about the frame work of Indian Business Laws. To orient students, about the legal aspects of business. Along with these the course aims to familiarize the students with case law studies related to Business Laws.</p>
14.	BCOM 303-18 : Human Resource Management	<p>Course Objective: To provide an in-depth overview of the field of HRM, what are the roles and responsibilities of HR professionals how the primary functions affect the broader business strategy.</p>
15.	BCOMGE 301: INDIAN ECONOMY	<p>Course Objective: The purpose of this course is to familiarize the students with various aspects of Indian Economy. It also aims to develop a perspective on the different problems and approaches to economic planning and development in India.</p> <p>Course Outcomes (COs): On completion of the course students will be able to:</p> <p>CO 1 Develop ideas of the basic characteristics of Indian economy, its potential on natural resources.</p> <p>CO 2 Understand the importance, causes and impact of population growth and its distribution, translate and relate them with economic development.</p> <p>CO 3 Grasp the importance of planning undertaken by the government of India, have knowledge on the various objectives, failures and achievements as the foundation of the ongoing planning and economic reforms taken by the government.</p>

		<p>CO 4 Understand agriculture as the foundation of economic growth and development, analyse the progress and changing nature of agricultural sector and its contribution to the economy as a whole.</p> <p>CO 5 Be aware of the changes in the composition as well as direction of foreign trade after international trade and know the causes and effects of deficits in the balance of payments, measures adopted to correct the deficits and identify the need for having trade reforms.</p>
16.	BCOM SEC 301-18 : Workshop on IT tools for Business and E-Commerce	Course Objective: To develop an understanding and practical exposure to different IT tools used as an aid in business and e-commerce. The aim is to equip the students with the relevant skills and working knowledge of various office management tools, Windows based operating systems and software packages such as Windows-95, 98, 2000-Professional, windows -XP and MS -Office. Further develop an understanding of the practices and technology required for the running an Ecommerce business.
17.	BMPD302-18 : Mentoring and Professional Development	<p>Course Objective: The objective of mentoring will be development of:</p> <ol style="list-style-type: none"> 1. Overall Personality 2. Aptitude (Technical and General) 3. General Awareness (Current Affairs and GK) 4. Communication Skills 5. Presentation Skills
18.	BCOP-401: Corporate Accounting –II	The main objective of teaching this subject is to make the students aware of some of the important technical issues of corporate accounting.
19.	BCOP 402 : Indirect Tax Laws	To gain knowledge of various provisions of Central Excise, Customs Laws, Service tax, VAT & Sales Tax and to understand the applications of provisions in different circumstances.
20.	BCOP 403 : Cost Accounting –I	To develop students' knowledge of Cost Accountancy to help them understand the basics of the subject.
21.	BCOP 404 : Business Finance	To gain knowledge of management and financing of working capital and to understand concepts relating to financing and investment decisions.
22.	BCOP-405 : Management Of Financial Services	The objective of this paper is to enable students to understand the concepts and types of various financial services available in the market. This paper is also aimed to enable students to compare and analyze the performance of various financial services available in the market.
23.	BCOP-501: Cost Accounting-II	To develop the skill of decision making to have cost competitiveness and to gain knowledge of recent developments in costing and finally to have a general idea of cost accounting record rules & standards.

24.	BCOP 502 : Income Tax –I	To impart basic knowledge and equip students with application of principles and provisions of Income-tax Act, 1961 as amended up-to-date.
25.	BCOP 503 : Marketing Management	<p>Course Objectives</p> <ol style="list-style-type: none"> 1. To introduce students to the fundamental principles and concepts of marketing and to provide them with a structure to apply marketing in decision making framework. 2. Understand the role of marketing as a fundamental organisational policy process. <p>Course Outcomes</p> <p>CO 1 The course will imbibe the basic understanding among the students to become successful marketers.</p> <p>CO 2 Apply the knowledge, concepts, tools necessary to understand the challenges and issues of marketing a growing international and global context.</p> <p>CO 3 Analyze the interaction of marketing and environmental forces through an understanding of marketing decisions and practices with social, technological, economic and political forces.</p>
26.	BCOP 504: Management Accounting	<p>Course Objectives: To enable the students to understand the importance of the subject through analysis and interpretation of financial statements, calculation of ratios and their analysis. Preparation of funds flow and cash flow statement with a view to prepare management reports for decision making.</p> <p>Learning Outcome: At the end of this course, the students will be able to know the application of various tools of analyzing the financial statements.</p>
27.	BCOP 505: Tally	<p>Course Objectives: To impart basic knowledge about computerized accounting and equip students with application of Tally package.</p> <p>Learning Outcome: At the end of this course, the students will be able to exercise the basic tools of tally software for the preparation of books of accounts of business.</p>
28.	BCOP 601 : Income Tax –II	<p>Course Objective</p> <p>To impart basic knowledge about administrative structure of Income Tax Department.</p> <p>Course Outcome</p> <p>CO 1 Equip students with relevant provisions of Income-tax Act, 1961 as amended up-to-date about Return of income, TDS etc.</p> <p>CO 2 Date of filing of return</p> <p>CO 3 Relevant forms of return</p> <p>CO 4 Different types of returns</p>
29.	BCOP 602 : Industrial Relations And Labour Laws	<p>Course Objective</p> <p>To give insight into industrial relations.</p> <p>Course Outcome</p> <p>CO 1 To give insight into related aspects prevailing in a company.</p>

		CO 2 To familiarise the students with various Labour Legislations applicable to a Company
30.	BCOP 603 : Financial Management	<p>Course Objective To give insight into financial decision making.</p> <p>Course Outcome CO 1 To give insight into composition of different securities in the total capital structure CO 2 To familiarize the students with various factors considered while managing the Finance of a Company</p>
31.	BCOP 605 : Entrepreneurship Development	<p>Course Objective To impart basic knowledge and equip students with concept of entrepreneurship.</p> <p>Course Outcome Upon successful completion of the course, students should be able to identify and develop the entrepreneurial talents of students by promoting creative thinking.</p>
32.	EVSC 101 : Environmental Science	<p>Course Objective To Measure environmental variables and interpret results</p> <p>Course Outcome Upon successful completion of the course, students should be able to CO 1 Evaluate local, regional and global environmental topics related to resource use and management CO 2 Propose solutions to environmental problems related to resource use and management CO 3 Interpret the results of scientific studies of environmental problems CO 4 Describe threats to global biodiversity, their implications and potential solutions</p>

School of Information Technology

Masters of Computer Applications (MCA)

Master of Computer Applications (MCA) [Batch 2019 onwards]		
S.No.	Code and Subject Name	Course Outcomes
1	PGCA1901 Mathematics	CO 1 Represent data using various mathematical notions.
		CO 2 Explain different terms used in Basic Calculations
		CO 3 Describe various Operations and Formulas used to solve variety of Mathematical Problems.
2	PGCA1902 Fundamentals of Computer and Programming in Python	CO 1 Learn the functional units and classify types of computers, how they process information and how individual computers interact with other computing systems and devices.
		CO 2 Understand an operating system and its working, and solve common problems related to operating systems
		CO 3 Familiar with Python environment, data types, operators used in Python.
		CO 4 Compare and contrast Python with other programming languages.
		CO 5 Learn the use of control structures and numerous native data types with their methods.
		CO 6 Design user defined functions, modules, and packages.
		CO 7 Identify and handle the exceptions in programs through appropriate exceptions handling methods
3	PGCA1903 Operating System	CO 1 Identify the role of different components of operating systems.
		CO 2 Implement various strategies for task management in operating systems.
		CO 3 Explain various implementation issues in operating systems.
		CO 4 Discuss how various resource managements are implemented in operating systems.
4	PGCA1904 Relational Database Management System	CO 1 Understand the basic concepts of RDBMS
		CO 2 Formulate, using SQL, solutions to a broad range of query and data update problems.
		CO 3 Demonstrate an understanding of normalization theory and apply such knowledge to the normalization of a database.
		CO 4 Apply the concept of Transaction Management in RDBMS.
5	PGCA 1905 Technical Communication	CO 1 The objective of the course is to help the students become the independent users of English language.
		CO 2 Students will acquire basic proficiency in reading & listening, comprehension, writing and speaking skills.
		CO 3 Students will be able to understand spoken and written English language, particularly the language of their chosen technical field.
		CO 4 They will be able to converse fluently.

		CO 5 They will be able to produce on their own clear and coherent texts.
6	PGCA 1906 Fundamentals of Computer and Programming in Python Laboratory	CO 1 Solve simple to advanced problems using Python language.
		CO 2 Develop logic of various programming problems using numerous data types and control structures of Python.
		CO 3 Implement different data structures using Python.
		CO 4 Implement modules and functions using Python.
		CO 5 Design and implement the concept of object oriented programming structures.
		CO 6 Implement file handling
7	PGCA 1907 Relational Database Management System Laboratory	CO 1 Able to understand various queries and their execution
		CO 2 Populate and query a database using SQL DML/DDDL commands.
		CO 3 Declare and enforce integrity constraints on a database
		CO 4 Programming PL/SQL including stored procedures, stored functions, cursors
		CO 5 Able to design new database and modify existing ones for new applications and reason about the efficiency of the result
8	PGCA 1908 Technical Communication Laboratory	CO 1 The objective of the course is to help the students become the independent users of English language.
		CO 2 Students will acquire basic proficiency in listening and speaking skills.
		CO 3 Students will be able to understand spoken English language, particularly the language of their chosen technical field.
		CO 4 They will be able to converse fluently
		CO 5 They will be able to produce on their own clear and coherent texts
9	PGCA 1909 Web Technologies	CO 1 Understand the basics of Internet and Web Services.
		CO 2 Describe and differentiate Programming Language and Markup Language.
		CO 3 Connect various web pages and web sites together.
		CO 4 Capture user input from the remote users.
		CO 5 Learn connectivity concepts of Front End and Back End.
10	PGCA 1910 Computer Networks	CO 1 Familiar with the different Network Models.
		CO 2 Understand different protocols working at Medium Access Sublayer.
		CO 3 Learn the concept of network routing through algorithms.
		CO 4 Learn and understand Internet protocols and network security
11	PGCA 1911 Object Oriented Programming using C++	CO 1 Understand Object oriented approach for finding solutions to various problems with the help of C++ language.
		CO 2 To understand Object oriented approach for finding Solutions to various problems with the help of C++ language
		CO 3 Create computer based solutions to various real-world problems using C++

12	PGCA 1912 Software Engineering	CO 1 Aware about the engineering approach to analysis, design and built the software
		CO 2 Understand the phases and activities involved in the software life cycle models
		CO 3 Analyse problems, and identify and define the computing requirements appropriate to its solution.
		CO 4 Apply design and development principles in the construction of software systems of varying complexity
		CO 5 Apply current techniques, skills, and tools necessary for computing practice.
		CO 6 Apply various testing techniques to test a software
		CO 7 Measure various characteristics of software.
		CO 8 Compare and choose between maintenance and reengineering of software, when there is requirement to make changes in the software.
13	PGCA 1913 Data Structures	CO 1 Choose appropriate data structure as applied to specified problem definition.
		CO 2 Handle operations like searching, insertion, deletion, traversing mechanism etc. on various data structures.
		CO 3 Apply concepts learned in various domains like DBMS, compiler construction, computer graphics etc.
		CO 4 Use linear and non-linear data structures like stacks, queues , linked list etc.
		CO 5 Develop his/her logics and programming skills
14	PGCA 1914 Web Technologies Laboratory	CO 1 Understand Static and Dynamic concepts of web designing.
		CO 2 Develop ability to retrieve data from a database and present it online.
		CO 3 Design web pages that apply various dynamic effects on the web site.
		CO 4 Solve complex and large problems using Scripting Language & Markup Language.
15	PGCA 1915 Object Oriented Programming using C++ Laboratory	CO 1 To learn programming from real world examples.
		CO 2 To understand Object oriented approach for finding solutions to various problems with the help of C++ language.
		CO 3 To create computer based solutions to various real-world problems using C++
		CO 4 To learn various concepts of object oriented approach towards problem solving
16	PGCA 1916 Data Structures Laboratory	CO 1 Student will be able to apply appropriate constructs of Programming language, coding standards for application development
		CO 2 Students will be able to programming skills for solving problems.
		CO 3 Select appropriate searching and/or sorting techniques for application development.
		CO 4 Students will be able to learn graphs and its techniques.

Bachelor of Computer Applications (BCA)

Bachelor of Computer Applications (BCA) [Batch 2019 onwards]		
S.No.	Code and Subject Name	Course Outcomes
17	UGCA1901 Mathematics	CO 1 Represent data using various mathematical notions.
		CO 2 Explain different terms used in basic mathematics.
		CO 3 Describe various operations and formulas used to solve mathematical problems
18	UGCA1902 Fundamentals of Computer and IT	CO 7 Understanding the concept of input and output devices of Computers
		CO 8 Learn the functional units and classify types of computers, how they process information and how individual computers interact with other computing systems and devices.
		CO 9 Understand an operating system and its working, and solve common problems related to operating systems
		CO 10 Learn basic word processing, Spreadsheet and Presentation Graphics Software skills.
		CO 11 Study to use the Internet safely, legally, and responsibly
19	UGCA1903 Problem Solving using C	CO 7 Student should be able to understand the logic building used in Programming.
		CO 8 Students should be able to write algorithms for solving various real life problems.
		CO 9 To convert algorithms into programs using C .
20	UGCA1904 Workshop on Desktop Publishing	CO 7 The students will gain professional skills of <i>Desk Top Publishing</i> Tools like designing, Printing & Publishing by using various tools.
		CO 8 Develop skills in printing jobs through basic understanding of a variety of designing tools.
		CO 9 Apply these concepts and knowledge in designing field including practice from text formatting to final publishing.
		CO 10 Workshops are included to enhance professional skills like Brochures, Flexes, Business Cards, Certificates and News Letter layouts etc.
21	UGCA1905 Problem Solving using C Laboratory	CO 7 Students should be able understand the logic building used in programming
		CO 8 Students should be able to write algorithms for solving various real-life problems
		CO 9 Students should be able to convert the algorithms into computer programs using C language.
22	UGCA1906 Fundamentals of Computer and IT Laboratory	CO 7 Familiarizing with Open Office (Word processing, Spreadsheets and Presentation).
		CO 8 To acquire knowledge on editor, spread sheet and presentation software.
		CO 9 The students will be able to perform documentation and accounting operations.
		CO 10 Students can learn how to perform presentation skills.
23	BTHU103/18 English	CO 7 The objective of this course is to introduce students to the theory, fundamentals and tools of communication.
		CO 8 To help the students become the independent users of English language.

		CO 9 To develop in them vital communication skills which are integral to their personal, social and professional interactions.
		CO 10 The syllabus shall address the issues relating to the Language of communication.
		CO 11 Students will become proficient in professional communication such as interviews, group discussions, office environments, important reading skills as well as writing skills such as report writing, note taking etc.
24	BTHU104/18 English Practical/Laboratory	CO 7 The objective of this course is to introduce students to the theory, fundamentals and tools of communication.
		CO 8 To help the students become the independent users of English language.
		CO 9 To develop in them vital communication skills which are integral to personal, social and professional interactions.
		CO 10 The syllabus shall address the issues relating to the Language of communication.
		CO 11 Students will become proficient in professional communication such as interviews, group discussions and business office environments, important reading skills as well as writing skills such as report writing, note taking etc.
25	HVPE101-18 Human Values, De-addiction and Traffic Rules	CO 7 To help the students appreciate the essential complementarily between 'VALUES' and 'SKILLS' to ensure sustained happiness and prosperity which are the core aspirations of all human beings.
		CO 8 To facilitate the development of a Holistic perspective among students towards life, profession and happiness, based on a correct understanding of the Human reality and the rest of Existence. Such a holistic perspective forms the basis of Value based living in a natural way.
	HVPE102-18 Human Values, De-addiction and Traffic Rules (Lab/ Seminar)	CO 9 To highlight plausible implications of such a Holistic understanding in terms of ethical human conduct, trustful and mutually satisfying human behavior and mutually enriching interaction with Nature.
26	UGCA1907 Fundamentals of Statistics	CO 7 Understand the science of studying & analyzing numbers.
		CO 8 Identify and use various visualization tools for representing data.
		CO 9 Describe various statistical formulas.
		CO 10 Compute various statistical measures
27	UGCA1908 Computer System Architecture	CO 7 Know about the basic functioning of various parts of computer system from hardware point of view and interfacing of various peripheral devices used with the system.
		CO 8 Learn number system and various types of micro-operations of processor.
		CO 9 Learn the communication of various components through common bus.
		CO 10 Learn how to design Combinational & Sequential circuits
28	UGCA1909	CO 1 To learn programming from real world examples.

	Object Oriented Programming using C++	CO 2 To understand Object oriented approach for finding CO 3 Solutions to various problems with the help of C++ language.
		CO 4 To create computer based solutions to various real-world problems using C++
		CO 5 To learn various concepts of object oriented approach towards problem solving
29	UGCA1910 Object Oriented Programming using C++ Laboratory	CO 1 To learn programming from real world examples.
		CO 2 To understand Object oriented approach for finding Solutions to various problems with the help of C++ language.
		CO 3 To create computer based solutions to various real-world problems using C++
		CO 4 To learn various concepts of object oriented approach towards problem solving
30	UGCA1911 Fundamentals of Statistics Laboratory	CO 1 Represent data using various Frequency table and Graphs.
		CO 2 Apply various operations/ formulas using any software/package to solve statistical problems.
31	UGCA1912 Computer System Architecture Laboratory	CO 7 The students will be able to perform number system conversions.
		CO 8 The students will understand the function of all components of Computer architecture.
		CO 9 The students will understand various types of basic, combinational & universal logic gates
		CO 10 The students will learn how to design Combinational circuits like Adder, Subtractor, Decoder, Encoder, Multiplexer, Demultiplexer
		CO 11 The students will learn how to design Sequential circuits like Flip Flops, Counters
32	EVS102-18 Environmental Studies	CO 1 Students will enable to understand environmental problems at local and national level through literature and general awareness.
		CO 2 The students will gain practical knowledge by visiting wildlife areas, environmental institutes and various personalities who have done practical work on various environmental Issues.
		CO 3 The students will apply interdisciplinary approach to understand key environmental issues and critically analyze them to explore the possibilities to mitigate these problems.
		CO 4 Reflect critically about their roles and identities as citizens, consumers and environmental actors in a complex, interconnected world

School of Engineering & Technology

Bachelor of Technology (B-TECH)(CSE)

S.No.	Code and Subject Name	Course Outcomes
1.	BTPH104-18 Semiconductor Physics	CO 1 Understand and explain the fundamental principles and properties of electronic materials and semiconductors
		CO 2 Understand and describe the interaction of light with semiconductors in terms of fermi golden rule.
		CO 3 Understand the design, fabrication, and characterization techniques of Engineered semiconductor materials.
		CO 4 Develop the basic tools with which they can study and test the newly developed devices and other semiconductor applications.
2.	BTPH114-18 Semiconductor Physics Lab	CO 1 Able to verify some of the theoretical concepts learnt in the theory courses.
		CO 2 Trained in carrying out precise measurements and handling sensitive equipment.
		CO 3 Introduced to the methods used for estimating and dealing with experimental uncertainties and systematic "errors."
		CO 4 Learn to draw conclusions from data and develop skills in experimental design.
		CO 5 Write a technical report which communicates scientific information in a clear and concise manner.
3.	BTAM104-18 Mathematics Paper-I	CO 1 The objective of this course is to familiarize the prospective engineers with techniques in basic calculus and linear algebra.
		CO 2 It aims to equip the students with standard concepts and tools at an intermediate to advanced level that will serve them well towards tackling more advanced level of mathematics and applications that they would find useful in their disciplines.
4.	BTME101-18 Engineering Graphics & Design	CO 1 Therefore, there are many areas in Engineering in which the skills of the CAD technicians play major roles in the design and development of new products or construction. Students prepare for actual work situations through practical training in a new state-of-the-art computer designed CAD laboratory using engineering software.
		CO 2 To prepare you to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
		CO 3 To prepare you to communicate effectively
		CO 4 to prepare you to use the techniques, skills, and modern engineering tools necessary for engineering practice
5.	Mentoring and Professional	CO 1 Overall Personality
		CO 2 Aptitude (Technical and General)

	Development	CO 3 General Awareness (Current Affairs and GK)
		CO 4 Communication Skills
		CO 5 Presentation Skills
6.	BTCH101-18 Basic Science Course	CO 1 The concepts developed in this course will aid in quantification of several concepts in chemistry that have been introduced at the 10+2 levels in schools. Technology is being increasingly based on the electronic, atomic and molecular level modifications.
		CO 2 Quantum theory is more than 100 years old and to understand phenomena at nanometer levels, one has to base the description of all chemical processes at molecular levels. The course will enable the student to:
		CO 3 Analyse microscopic chemistry in terms of atomic and molecular orbitals and intermolecular forces.
		CO 4 Rationalise bulk properties and processes using thermodynamic considerations.
		CO 5 Distinguish the ranges of the electromagnetic spectrum used for exciting different molecular energy levels in various spectroscopic techniques.
		CO 6 Rationalise periodic properties such as ionization potential, electronegativity, oxidation states and electronegativity.
		CO 7 List major chemical reactions that are used in the synthesis of molecules
		CO 8 Estimate rate constants of reactions from concentration of reactants/products as a function of time
		CO 9 Measure molecular/system properties such as surface tension, viscosity, conductance of solutions, redox potentials, chloride content of water, etc
		CO 10 Synthesize a small drug molecule and analyse a salt sample
7.	BTSP101-18 Programming for Problem Solving	CO 1 To formulate simple algorithms for arithmetic and logical problems.
		CO 2 To translate the algorithms to programs (in C language).
		CO 3 To test and execute the programs and correct syntax and logical errors.
		CO 4 To implement conditional branching, iteration and recursion.
		CO 5 To decompose a problem into functions and synthesize a complete program using divide and conquer approach.
		CO 6 To use arrays, pointers and structures to formulate algorithms and programs.
		CO 7 To apply programming to solve matrix addition and multiplication problems and searching and sorting problems.
		CO 8 To apply programming to solve simple numerical method problems, namely root finding of function, differentiation of function and simple integration.
8.	BTMP101-18 Workshop/Manufacturing Practices	CO 1 Upon completion of this course, the students will gain knowledge of the different manufacturing processes which are commonly employed in the industry
		CO 2 To fabricate components using different materials.
		CO 3 Upon completion of this laboratory course, students will be able to fabricate components with their

		own hands.
		CO 4 They will also get practical knowledge of the dimensional accuracies and dimensional tolerances possible with different manufacturing processes.
		CO 5 By assembling different components, they will be able to produce small devices of their interest
9.	BTEE-101-18 Basic Electrical Engineering	CO 1 To have the knowledge of DC circuits,
		CO 2 To have the knowledge AC Circuits, basic magnetic circuits,
		CO 3 To have the knowledge working principles of electrical machines
		CO 4 To have the knowledge Components of low voltage electrical installations.
10.	BTHU-101-18 English	CO 1 The objective of the course is to help the students become the independent users of English language.
		CO 2 Students will acquire basic proficiency in reading & listening, comprehension, writing and speaking skills.
		CO 3 Students will be able to understand spoken and written English language, particularly the language of their chosen technical field.
		CO 4 They will be able to converse fluently.
		CO 5 They will be able to produce on their own clear and coherent texts.
11.	BTHU-102-18 English Laboratory	CO 1 Students will acquire basic proficiency in listening and speaking skills.
		CO 2 Students will be able to understand spoken English language, particularly the language of their chosen technical field.
		CO 3 They will be able to converse fluently
		CO 4 They will be able to produce on their own clear and coherent texts.
12.	BTCS301-18 Data Structure & Algorithms	CO 1 For a given algorithm student will able to analyze the algorithms to determine the time and computation complexity and justify the correctness;
		CO 2 Student will be able to handle operation like searching, insertion, deletion, traversing on various Data Structures and determine time and computational complexity;
		CO 3 Student will able to write an algorithm Selection Sort, Bubble Sort, Insertion Sort, Quick Sort, Merge Sort, Heap Sort and compare their performance in term of Space and Time complexity;
		CO 4 Students will be able to choose appropriate Data Structure as applied to specific problem definition
		CO 5 Demonstrate the reusability of Data Structures for implementing complex iterative problems.
13.	BTCS302-18 Object Oriented Programming	CO 1 Identify classes, objects, members of a class and the relationships among them needed to solve a specific problem;
		CO 2 Demonstrate the concept of constructors and destructors. And create new definitions for some of the operators;
		CO 3 Create function templates, overload function templates;

		CO 4 Understand and demonstrate the concept of data encapsulation, inheritance, polymorphism with virtual functions; &
		CO 5 Demonstrate the concept of file operations, streams in C++ and various I/O manipulators.
14.	BTCS304-18 Object Oriented Programming Lab	CO 1 Develop classes incorporating object-oriented techniques;
		CO 2 Design and implement object-oriented concepts of inheritance and polymorphism;
		CO 3 Illustrate and implement STL class of containers and need for exceptions to handle errors for object oriented programs; &
		CO 4 Design and implement any real world based problem involving GUI interface using object-oriented concepts.
15.	BTAM304-18 Mathematics Paper-III)	CO 1 Understand the functions of several variables that are essential in most branches of engineering;
		CO 2 Apply multiple integrals to deal with areas and volumes of various structures which are quite significant in real world;
		CO 3 Formulate and solve engineering problems related to convergence, infinite series, power series and Taylor series;
		CO 4 Create, select and utilize the learnt techniques of first degree ordinary differential equations to model real world problems &;
		CO 5 Be acquainted with the knowledge required to solve higher order ordinary differential equations.
		CO 6 Understand the functions of several variables that are essential in most branches of engineering;
16.	BTES301-18 Digital Electronics	CO 1 Demonstrate the operation of simple digital gates, identify the symbols, develop the truth table for those gates; combine simple gates into more complex circuits; change binary, hexadecimal, octal numbers to their decimal equivalent and vice versa.
		CO 2 Demonstrate the operation of a flip-flop. Design counters and clear the concept of shift registers.
		CO 3 Study different types of memories and their applications. Convert digital signal into analog and vice versa.
17.	BTES302-18 Digital Electronics Lab	CO 1 Realize combinational circuits using logic gates.
		CO 2 Realize sequential circuits using logic gates.
		CO 3 Realize various types of Flip-flops and counters
18.	BTES401-18 Computer Organization & Architecture	CO 1 Understand functional block diagram of microprocessor;
		CO 2 Apply instruction set for Writing assembly language programs;
		CO 3 Design a memory module and analyze its operation by interfacing with the CPU;
		CO 4 Classify hardwired and microprogrammed control units; &
		CO 5 Understand the concept of pipelining and its performance metrics.
19.	BTCS303-18	CO 1 Improve practical skills in designing and implementing basic linear data structure algorithms;

	Data Structure & Algorithms Lab	CO 2 Improve practical skills in designing and implementing Non-linear data structure algorithms;
		CO 3 Use Linear and Non-Linear data structures to solve relevant problems;
		CO 4 Choose appropriate Data Structure as applied to specific problem definition; &
		CO 5 Implement Various searching algorithms and become familiar with their design methods.
20.	BTCS402-18 Operating Systems	CO 1 Explain basic operating system concepts such as overall architecture, system calls, user mode and kernel mode;
		CO 2 Distinguish concepts related to processes, threads, process scheduling, race conditions and critical sections;
		CO 3 Analyze and apply CPU scheduling algorithms, deadlock detection and prevention algorithms;
		CO 4 Examine and categorize various memory management techniques like caching, paging, segmentation, virtual memory, and thrashing;
		CO 5 Design and implement file management system; &
		CO 6 Appraise high-level operating systems concepts such as file systems, disk-scheduling algorithms and various file systems
21.	BTCS403-18 Design and Analysis of Algorithms	CO 7 For a given algorithms analyze worst-case running times of algorithms based on asymptotic analysis and justify the correctness of algorithms;
		CO 8 Explain when an algorithmic design situation calls for which design paradigm (greedy/ divide and conquer/backtrack etc.);
		CO 9 Explain model for a given engineering problem, using tree or graph, and writethe corresponding algorithm to solve the problems;
		CO 10 Demonstrate the ways to analyze approximation/randomized algorithms (expected running time, probability of error); &
		CO 11 Examine the necessity for NP class based problems and explain the use of heuristic techniques.
		CO 12 For a given algorithms analyze worst-case running times of algorithms based on asymptotic analysis and justify the correctness of algorithms;
22.	BTES401-18 Computer Organization & Architecture Lab	CO 13 Assemble personal computer;
		CO 14 Implement the various assembly language programs for basic arithmetic and logical operations; &
		CO 15 Demonstrate-the-functioning-of microprocessor/microcontroller based systems with I/O interface.
23.	BTCS 404-18 Operating Systems Lab	CO 1 Understand and implement basic services and functionalities of the operating system;
		CO 2 Analyze and simulate CPU Scheduling Algorithms like FCFS, Round Robin, SJF, and Priority;
		CO 3 Implement commands for files and directories;
		CO 4 Understand and implement the concepts of shell programming;
		CO 5 Simulate file allocation and organization techniques; &
		CO 6 Understand the concepts of deadlock in operating systems and implement them in multiprogramming system.

24.	BTCS405-18 Design and Analysis of Algorithms Lab	CO 7 Improve practical skills in designing and implementing complex problems with different techniques;
		CO 8 Understand comparative performance of strategies and hence choose appropriate, to apply to specific problem definition;
		CO 9 Implement Various tree and graph based algorithms and become familiar with their design methods; &
		CO 10 Design and Implement heuristics for real world problems.
25.	HSMC122-18 UNIVERSAL HUMAN VALUES	CO 1 By the end of the course, students are expected to become more aware of themselves, and their surroundings (family, society, nature); they would become more responsible in life, and in handling problems with sustainable solutions, while keeping human relationships and human nature in mind.
		CO 2 They would have better critical ability. They would also become sensitive to their commitment towards what they have understood (human values, human relationship and human society).
		CO 3 It is hoped that they would be able to apply what they have learnt to their own self in different day-to-day settings in real life, at least a beginning would be made in this direction.
26.	BTCS401-18 Discrete Mathamatics	To be able to express logical sentence in terms of predicates, quantifiers, and logical connectives
		To derive the solution for a given problem using deductive logic and prove the solution based on logical inference
		For a given a mathematical problem, classify its algebraic structure
		To evaluate Boolean functions and simplify expressions using the properties of Boolean algebra
		To develop the given problem as graph networks and solve with techniques of graph theory.
27.	HSMC102-18/ PHILOSOPHY	Students will develop strong natural familiarity with humanities-along with right-understanding enabling them to eliminate conflict and strife in the individual and society. Students shall
		Students shall be able to relate philosophy to literature, culture, society and lived experience can be considered.
		understanding enabling them to eliminate conflict and strife in the individual and society.

Bachelor of Technology (B-TECH)(ECE)

S.No.	Code and Subject Name	Course Outcomes
1.	BTPH105-18 Physics	CO1 Understand and explain the fundamental principles and properties of electronic materials and semiconductors
		CO2 Understand and describe the interaction of light with semiconductors in terms of fermi golden rule
		CO3 Understand and describe the impact of solid-state device capabilities and limitations on electronic circuit performance
		CO4 Understand the design, fabrication, characterization techniques, and measurements of Engineered semiconductor materials and Learn the basics of the optoelectronic devices, LEDs, semiconductor lasers, and photo detectors.
2.	BTPH115-18 Physics Lab	CO1 Able to verify some of the theoretical concepts learnt in the theory courses.
		CO2 Trained in carrying out precise measurements and handling sensitive equipment.
		CO3 Introduced to the methods used for estimating and dealing with experimental uncertainties and systematic "errors."
		CO4 Learn to draw conclusions from data and develop skills in experimental design.
		CO5 Write a technical report which communicates scientific information in a clear and concise manner.
3.	BTAM101-18 Mathematics -I	CO1 To familiarize the prospective engineers with techniques in calculus, multivariate analysis and linear algebra.
		CO2 To aims to equip the students with standard concepts and tools at an intermediate to advanced level that will serve them well towards tackling more advanced level of mathematics and applications that they would find useful in their disciplines.
4.	BTME101-18 Engineering Graphics & Design	CO1 Therefore, there are many areas in Engineering in which the skills of the CAD technicians play major roles in the design and development of new products or construction. Students prepare for actual work situations through practical training in a new state-of-the-art computer designed CAD laboratory using engineering software.
		CO2 To prepare you to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
		CO3 To prepare you to communicate effectively
		CO4 to prepare you to use the techniques, skills, and modern engineering tools necessary for engineering practice
5.	BMPD101-18Me ntoring and Professional Development	CO1 Overall Personality
		CO2 Aptitude (Technical and General)
		CO3 General Awareness (Current Affairs and GK)
		CO4 Communication Skills
		CO5 Presentation Skills

6.	BTCH101-18-Chemistry Basic Science Course	CO1 The concepts developed in this course will aid in quantification of several concepts in chemistry that have been introduced at the 10+2 levels in schools. Technology is being increasingly based on the electronic, atomic and molecular level modifications.
		CO2 Quantum theory is more than 100 years old and to understand phenomena at nanometer levels, one has to base the description of all chemical processes at molecular levels. The course will enable the student to:
		CO3 Analyse microscopic chemistry in terms of atomic and molecular orbitals and intermolecular forces.
		CO4 Rationalise bulk properties and processes using thermodynamic considerations.
		CO5 Distinguish the ranges of the electromagnetic spectrum used for exciting different molecular energy levels in various spectroscopic techniques.
		CO6 Rationalise periodic properties such as ionization potential, electronegativity, oxidation states and electronegativity.
		CO7 List major chemical reactions that are used in the synthesis of molecules
		CO8 Estimate rate constants of reactions from concentration of reactants/products as a function of time
		CO9 Measure molecular/system properties such as surface tension, viscosity, conductance of solutions, redox potentials, chloride content of water, etc
		CO10 Synthesize a small drug molecule and analyse a salt sample
7.	BTPS101-18 Programming for Problem Solving	CO 1 To formulate simple algorithms for arithmetic and logical problems.
		CO2 To translate the algorithms to programs (in C language).
		CO3 To test and execute the programs and correct syntax and logical errors.
		CO4 To implement conditional branching, iteration and recursion.
		CO5 To decompose a problem into functions and synthesize a complete program using divide and conquer approach.
		CO6 To use arrays, pointers and structures to formulate algorithms and programs.
		CO7 To apply programming to solve matrix addition and multiplication problems and searching and sorting problems.
		CO8 To apply programming to solve simple numerical method problems, namely root finding of function, differentiation of function and simple integration.
8.	BTMP101-18 Workshop/Manufacturing Practices	CO1 Upon completion of this course, the students will gain knowledge of the different manufacturing processes which are commonly employed in the industry
		CO2 To fabricate components using different materials.
		CO3 Upon completion of this laboratory course, students will be able to fabricate components with their own hands.
		CO4 They will also get practical knowledge of the dimensional accuracies and dimensional tolerances possible with different manufacturing processes.
		CO5 By assembling different components, they will be able to produce small devices of their interest

9.	BTEE-101-18 Basic-Electrical Engineering	CO1 To have the knowledge of DC circuits,
		CO2 To have the knowledge AC Circuits, basic magnetic circuits,
		CO3 To have the knowledge working principles of electrical machines
		CO4 To have the knowledge Components of low voltage electrical installations.
10.	BTHU-101-18 English	CO1 The objective of the course is to help the students become the independent users of English language.
		CO2 Students will acquire basic proficiency in reading & listening, comprehension, writing and speaking skills.
		CO3 Students will be able to understand spoken and written English language, particularly the language of their chosen technical field.
		CO4 They will be able to converse fluently.
		CO5 They will be able to produce on their own clear and coherent texts.
11.	BTHU-102-18 English Laboratory	CO1 Students will acquire basic proficiency in listening and speaking skills.
		CO2 Students will be able to understand spoken English language, particularly the language of their chosen technical field.
		CO3 They will be able to converse fluently
		CO4 They will be able to produce on their own clear and coherent texts.
12	BTEC-301-18 Electronic Devices	CO1 Understand physics of semiconductors and behavior of charge carriers within semiconductors
		CO2 Understand the working of semiconductor diodes supported with mathematical explanation.
		CO3 Understand the working of BJT and MOSFET with their equivalent small signal models.
		CO4 Understand the chemical processes used in fabrication of integrated circuits.
13.	BTEC-302-18, Digital System Design	CO1 Apply concepts of Boolean algebra for handling logical expressions
		CO2 Understand working and realization of combinational circuits.
		CO3 Understand working flip-flops and use them in designing of sequential circuits.
		CO4 Understand fundamental concepts of logic families and architectural of programmable devices.
		CO5 Use HDL programming tool for simulation of combinational & sequential circuits.
14.	BTEC-303-18 Electromagnetic Waves	CO1. Understand characteristics & wave propagation through transmission lines
		CO2 Understand Maxwell's equations for electromagnetic waves
		CO3 Characterize uniform plane wave

		CO4 Calculate reflection and transmission of waves at media interface
15.	BTEC-304-18 Network Theory	CO1 Analyze linear networks using network theorems.
		CO2 Use Laplace transform to analyze transient & steady state response of linear networks. Comprehend network parameters to CO3 analyze two port networks.
		CO4 Realize one port networks using Foster's and Cauer's methods
16.	BTAM-303-18 Mathematics III	CO1 The mathematical tools needed in evaluating multiple integrals and their usage.
		CO2 The effective mathematical tools for the solutions of differential equations that model physical processes.
		CO3 The tools of differentiation and integration of functions of a complex variable that are used
		in various techniques dealing engineering problems.
		CO4 To introduce the solution methodologies for second order Partial Differential Equations with applications in engineering
		CO5 To provide an overview of probability and statistics to engineers
17.	BTEC-311-18 Electronic Devices Lab	CO1 Realize use of diodes in circuits with proper understanding to their working.
		CO2 Understand characteristics & working of BJT in different configurations.
		CO3 Understand characteristics & working of MOSFET in circuits.
		CO4 Think and design working circuits based on diodes, BJTs and MOSFETs.
18.	BTEC-311-18 Digital System Design Lab	CO1 Realize combinational circuits using logic gates.
		CO2 Realize sequential circuits using logic gates.
		CO3 Write & simulate VHDL programs for combinational & sequential circuits.
		CO4 Think and design working projects using digital 74XX ICs.
19.	BTEC-401-18 Analog Circuits	CO1 Understand the biasing of transistors and analyze BJT/FET amplifiers
		CO2 Analyze various rectifier and amplifier circuits
		CO3 Analyze sinusoidal and non-sinusoidal oscillator
		CO4 Understand the functioning of OP-AMP and design OP-AMP based circuits
		CO5 Explain the design of ADC and DAC.
20.	BTEC-402-18 Microprocessors and Microcontrollers	CO1 Understand architecture & functionalities of different building block of 8085 microprocessor.
		CO2 Understand working of different building blocks of 8051 microcontroller
		CO3 Comprehend and apply programming aspects of 8051 microcontroller.
		CO4 Interface & interact with different peripherals and devices.

21.	BTCS-301-18 Data Structures and Algorithms	CO1 Understand operations like searching, insertion, deletion, traversing on linear Data
		CO2 Structures and to determine their computational complexities
		CO3 Understand operations like searching, insertion, deletion, traversing on various non linear Data Structures and to determine their computational complexities
		CO4 Write algorithms for Selection Sort, Bubble Sort, Insertion Sort, Quick Sort, Merge Sort, Heap Sort and compare their performance in term of Space and Time complexity.
		CO5 Apply appropriate Data Structure as per specific problem definition
22.	BTEC-403-18 Signals & Systems	CO1 Mathematically characterize different types of signals and systems.
		CO2 Analyze the behavior of linear-shift invariant systems.
		CO3 Apply concepts of Fourier and Laplace Transforms to analyze continuous-time signals and systems.
		CO 4 Investigate discrete-time signals and systems using Discrete-Time Fourier and Z-Transforms and simple Probability concepts.
23.	HSMC 122-18 Universal Human Values-2	CO 1 Students will enable to understand environmental problems at local and national level through literature and general awareness.
		CO2 The students will gain practical knowledge by visiting wildlife areas, environmental institutes and various personalities who have done practical work on various environmental Issues.
		CO3 The students will apply interdisciplinary approach to understand key environmental issues and critically analyze them to explore the possibilities to mitigate these problems.
		CO4 Reflect critically about their roles and identities as citizens, consumers environmental actors in a complex, interconnected world
24.	BTEC-411-18 Analog Circuits Lab	CO1 Study and verify the characteristics of diodes in circuits with proper understanding to their working.
		CO2 Understand characteristics & working of BJT in different configurations.
		CO3 Understand characteristics & working of OP-AMPs in circuits.
		CO4 Think and design working circuits based on diodes, BJTs and MOSFETs.
25.	BTEC-411-18 Microprocessors and Microcontrollers	CO1 Realize combinational circuits using logic gates.
		CO2 Realize sequential circuits using logic gates.
		CO3 Write & simulate VHDL programs for combinational & sequential circuits.
		CO4 Think and design working projects using digital 74XX ICs.
26.	BMPD-341-18 Mentoring and	CO1 The objective of mentoring will be development of: - Overall Personality

	Professional Development*	<ul style="list-style-type: none"> - Aptitude (Technical and General) - General Awareness (Current Affairs and GK) - Communication Skills - Presentation Skills
27.	BTEC-501-18Analog and Digital Communication	CO1 Analyze and compare different analog modulation schemes for their efficiency and bandwidth CO2 Analyze the behavior of a communication system in presence of noise CO3 Investigate pulsed modulation system and analyze their system performance CO4 Analyze different digital modulation schemes and can compute the bit error performance
28.	BTEC-502-18 Digital Signal Processing	CO1 Represent signals mathematically in continuous and discrete time and frequency domain CO2 Get the response of an LSI system to different signals CO3 Design of different types of digital filters for various applications
29.	BTEC-503-18 Linear Integrated Circuits	CO1 Understand Differential and Cascade Amplifiers CO2 Know the basics, working and characteristics of Op-Amps CO3 Investigate various applications of Op-amps CO4 Understand some specialized Op-Amps CO5 Interpretation of Data Sheets and their Applications thereof.
30.	BTEC-504-18 Control Systems	CO1 Characterize a system and find its study state behaviour CO2 Investigate stability of a system using different tests CO3 Design various controllers CO4 Solve liner, non-liner and optimal control problems
31.	BTEC-905A-18 Routing and Switching	CO1 Demonstrate a basic understanding of small and medium-sized networks, CO2 including general network technologies. CO3 Ability to assist the design of small and medium-sized networks, and implement the designs. CO4 Ability to construct simple networks and integrate voice, wireless, cloud, security, and storage technologies into their networks in order to support a variety of applications.
32.	BTEC-905B-18 WLAN & Security	CO1 Demonstrate the basic understanding of small and medium-sized WLANs. CO2 Ability to assist the design of small and medium-sized WLANs. CO3 Implement the designs using wireless controllers and AP devices.
33.	BTEC-905C-18	CO1 Analyse the fundamentals of cloud computing technologies and applications

	Cloud Computing and Services	CO2 Cloud computing characteristics and service attributes for compliance with enterprise objectives
		CO3 Manage the cloud and understand the security prospective involved in protecting against breaches
		CO4 Examine the emerging areas of cloud computing and its relation with traditional model of commuting
34.	BTEC-905D-18 Artificial intelligence	CO1 Apply the concepts of knowledge representation, planning and reasoning for real world applications.
		CO2 Demonstrate the knowledge of probability theory, python programming and Tensor low programming
		CO3 Ability to apply AI techniques to solve complex problems using machine learning.
35.	BTEC-905E-18 Introduction to Big Data	CO1 Identify Big Data and its Business Implications.
		CO2 List the components of Hadoop and Hadoop Eco-System.
		CO3 Access and Process Data on Distributed File System
		CO4 Manage Job Execution in Hadoop Environment
36.	BTEC-905F-18 IoT and Applications	CO1 Understand the vision and application of IoT..
		CO2 Use of Devices, Gateways and Data Management in IoT.
		CO3 Building state of the art architecture in IoT.
		CO4 Smart Applications of IoT
37.	BTEC-511-18 Analog and Digital Communication Laboratory	CO1 study and verify the characteristics and output waveforms of AM, FM, PCM
		CO2 study and compare noise in AM and FM systems
		CO3 investigate the output responses of PAM, PCM, PSK, FSK, MSK.
38.	BTEC-512-18 Digital Signal Processing	CO1 Write programs to develop various signals.
		CO2 Write programs to generate standard sequences.
		CO3 Develop programs to verify convolution
		CO4 Develop programs to design various filters
39.	BTEC-513-18 Linear Integrated Circuits	CO1 study and investigate the configurations of Differential amplifiers.
		CO2 measure the performance parameters of an OP-Amp.
		CO3 use Op-Amps for various applications