Bachelor of Business Administration- BBA

Programme Objectives

BBA is a professional program inculcating managerial and entrepreneurial attitude amongst the learners and helps them to become a successful business leader. It is basically a leadership development program for enhancing leadership abilities, cultivating rational business vision.

1. To provide adequate basic understanding about Management Education among the students.
2. To prepare students to exploit opportunities being newly created in the Management Profession.
3. To train the students in communication skills effectively.
4. To develop appropriate skills in the students so as to make them competent and provide themselves self-employment.
5. To inculcate Entrepreneurial skills.

Programme Outcome of BBA

1. Understand basic Management concepts and theories as they are applicable in various business scenarios.
2. Develop analytical skill to understand the problem correctly and develop solution.
3. Awareness of Law and legislations related to business and their implementation.
4. Understand the business environment through knowledge of Economics, Business demography, international business and financial services.
5. Develop entrepreneurship through knowledge of Idea generation, Business planning activity, product development, awareness of Intellectual property rights and marketing media.
6. Ability to effectively communicate in oral and written form.
7. Ability to use basic mathematics and statistical concepts in day to day business activity.
8. Identify, evaluate, analyze, interpret and apply information to address problems and make decisions in a business context.
9. Ability to use computing facility to support business activity.
10. Ability to use different accounting techniques and calculation of tax.

PROGRAM SPECIFIC OUTCOME:

1: Recognize the need to adapt business practices to the opportunities and challenges of an evolving global environment.

2: Demonstrate ability to recognize and identify ethical conflicts, apply ethical reasoning and assess response options relative to the needs and interests of relevant stakeholders to address issues in a business context.

3: Identify, evaluate, analyze, interpret and apply information to address problems and make reasoned decisions in a business context.

4: Communicate in a business context in a clear, concise, coherent and professional manner.

5: Demonstrate the understanding and ability to apply professional standards, theory, and research to address business problems within specific concentrations.

FYBBA Semester I (CBCS) Pattern 2019

Course: Principles of Management(101)
CC credit:3
Course Objectives:
1. To understand basic concept regarding organization business administration.
2. To examine how various management principles.
3. To develop managerial skills among the students.

	Course unit Description	Outcome
CO1	Nature of management	To learn basic aspects of management thinking Develop ability of managerial thinking & cultivate business acumen
CO2	Evolution of management thought	To understand different approaches of management scientist to management thought & philosophy To help to understand various approaches of management thinking
CO3	Major managerial functions	To understand different functions of management & their roles. Develop ability to organise various programs & events.
CO4	Recent trends in management	To understand the themes in modern management & changes in the business To learn about new systems of management.

COURSE NAME: BUSINESS COMMUNICATION SKILLS
COURSE CODE: 102
CCT: credit 4

Course Objectives:
1 To understand what is the role of communication in personal and business world
2. To understand system and communication and their utility
3. To develop proficiency in how to write business letters and other communications.

	COURSE UNIT DESCRIPTION	OUTCOME
CO1	Concept of Communication	Apply communication theories. Show an understanding of opportunities in the field of communication.
CO2	Methods and types of Communication	Demonstrate critical and innovative thinking. Display competence in oral, written, and visual communication
CO3	Business Correspondence	Use current technology related to the communication field.

		Demonstrate positive group communication exchanges
CO4	Analysis of different Media of Communication	Respond effectively to cultural communication differences. Communicate ethically.

COURSE Business Accounting
COURSE CODE: 103
CC credit:3

Objectives:
1. To develop right understanding regarding role and importance of monetary and financial transactions in business.
2. To cultivate right approach towards classifications of different transactions and their implications.
3. TO develop proficiency preparation of basic financial as to how to write basis accounting statement -Trading and P&L

	Course Unit Description	Outcome
CO1	Financial Accounting-Accounting concepts, principles and conventions. Classification of accounts	1. Understand role and importance of accounting in Business and how accounting concept can be implemented in business.
CO2	Accounting Transactions and Final Accounts-	1. Understand how to record different financial transactions and their financial implications.
CO3	Bank Reconciliation Statements-preparation of Bank Reconciliation Statement	1. Understand the kind of accounting relationship between customer and bank.
CO4	Computerized Accounting-Role of computers and Financial application, Accounting Software packages	1. Understand growing importance of software and to know how to use software and to write books of accounts

Course: Business economics (Micro)

Course code:104

CC credit:3

Course Objectives:
1. To understand role of economics as it influences society and business

2. To study how different decisions are taken in relation to price demand and supply

3. To develop right understanding regarding Monopoly, perfect competition, revenue Etc

	Course unit description	outcome

CO 1	Concept of Business economics	With this unit students should be able to understand importance of economics in their life. They should also able to know the role and purpose of economics in society and students should be able to think in prudent manner.
CO 2	demand and supply analysis	After completion of this unit students are able to understand how the concept of demand and supply works in particular economy. Students should be able to examine the implications of changes in demand and supply on economics and ability to select right alternatives in a given situation.
CO 3	revenue and cost analysis	With this unit students will understand the role and function of revenue in different economic decision.
CO 4	pricing under various market conditions	After completion of this unit students should be able to know and understand concept of market and different forces affecting compl market under different economic circumstances and they also able understand market forces governing economic situations.

Course: Business mathematics (105)

CC credit:3

Objective :

- To develop appropriate understanding as how to use mathematic like computation interest, profit, percentage etc.
- To develop appropriate model for estimation of profit. Applying ratio to interpreted and evaluate financial data collection of 5 years reports of varies companies for analysis. .
- To cultivate right understanding regaining numerical aptitude.

	Unit	**Course Outcome**
CO1	1.Numerical Methods for Business Managers	1. Ability to develop mathematical competence for various interests related transaction and other activities. 2. Work with simple and compound interest, annuities, invoice preparation, trade discounts, taxes, and depreciation problems in various situations and use correct mathematical terminology, notation, and symbolic processes in order to be prepared for future coursework in business and mathematics that requires the use of and an understanding of the concepts of business mathematics.
CO2	2..Numerical Methods for Business Managers	1. Ability to examine concept of discounts in different business solutions. 2. Gain experience in using various techniques

		of mathematical permutation and combination to prove simple mathematical properties of a variety of discrete structures.
CO3	3..Numerical Methods for Business Managers	1. Ability to apply the various concepts in business situation. 2. Appreciate business mathematics concepts that are encountered in the real world, understand and be able to communicate the underlying business concepts and mathematics involved to help another person gain insight into the situation.

Course: Business Demography (106)

CCT Credit: 04
Course Objectives:
1. To give proper understanding regarding concept of demography in modern economic setup
2. To study how population and structure changes affecting quality of life and business
3. To develop clarity of concept regarding social economic process and urbanization and its impact on society

	Course unit Description	Outcome
CO1	Unit 1: Concept of Demography Study of demography as an essential discipline of social economic change	• Understand Growing importance of Demography in modern economics and society and the components of demography • understand Socio economic changes as a outcome of demographic changes
CO2	Unit2 Distribution of population and Population growth	• To understand how population growth influences economy and society
CO3	Unit 3 Population as Resource	• To understand importance of human resource in modern and socio- economic environment and to learn about role of literacy in economic development • Ability to examine implications of changes in population
CO4	Unit 4 Urbanization and its implications Concept of urbanization,	• To understand the various determinants of urbanization and migration • Ability to understand how urbanization affects the resource allocation and resource planning

FYBBA Semester II Pattern 2019

Course Name -: BUSINESS ORGANISATIONS AND SYSTEM
Course Code -: 201
Credit: 4
Course Objective:
1) To understand role and functions of modern business
2) To develop right understanding regarding business environment
3) To study how a business institution functions in a given economic set up.

	COURSE UNIT DESCRIPTION	OUTCOME
CO1	Nature and evolution of Business	Understand the purpose of business, learn how a business unit works and serves the society, historical progress of business as an economic entity, socio economic changes have led to economic development and assess the new trends in commerce
CO2	Forms of Business Organization	Understand the significance of different forms of business organizations their types, function, merits and limitations
CO3	Setting up of a business enterprise	Understanding of the main working aspects of organisations, not only from an economic point of view but also considering organisations as part of society. Knowledge of a comprehensive glossary of economic terms widely used in the analysis and discussion of behaviour organisation
CO4	Study of Domestic and Foreign Trade	learn about how a retail trade works in business system, different forms of retail trade and their contribution in the economy and able to give a brief introduction to stages of internationalization

Course : Principles of marketing(202)
Credit:3
Course Objectives:
1. To develop right understanding regarding marketing environment in the country
2. To develop appropriate conceptual understanding as to develop basic marketing concept
3. To develop new understanding regarding regarding services, rural marketing & new trends in marketing.

	Course unit Description	Outcome
CO1	Concept & functioning of marketing	To Understand marketing concepts To understand role functions & importance of marketing manager
CO2	Marketing Environment & marketing segmentation	To know about changing various factors which affect the marketing system & Indian marketing system To know the types of segmentation
CO3	Constituents of marketing mix	To understand the marketing mix To know each constituents of Marketing mix to get success in the market.

CO4	Classification & types of markets	To understand different types of markets,their role & functions Awareness of recent trends in marketing

Subject: Principles of Finance
Subject Code: 203
Credit:3

Objectives

1. To cultivate right approach towards money , finance , and their role inbusiness

2. To develop right understanding regarding various sources of finance and their role and utility inbusiness

3. To develop basic skills as to concept of capital structure and concept of capitalstructure

	Course Unit Description	Outcome
CO1	Basic conceptsin finance Financial Management Approaches of financial management	1) To develop Competence to apply various concept in finance for decision making
CO2	Sources ofFinance External and Internal Sources	1) To develop rational understanding regarding role and utility of different sources of finance
CO3	Capital Structure Factors affecting capital structure, Capitalization	1) To understand importance of rational and sound financial structure 2)To understand role of capital as a determinant businesssuccess
CO4	Recent Trends in business Finance Venture Capital, Leasing, Microfinance, Mutual Fund	1) To have right understanding how modern business is changing and what are the new trends in business finance

Course: Basics of Cost Accounting
Course code 204
Credit: 3
Objectives:
1. To develop rational understanding regarding concept of cost expenditure in business
2. To develop understanding how overheads influence the cost structure of cost
3. To develop skills for computation of total cost for a particular product

	Course unit Description	Outcome
CO1	**Basic concept in cost Accounting**	• Understand importance of costing in decision making • Ability to understand importance of costing and role of costing
CO2	**Elements of cost and Cost Sheet**	• Ability to examine different aspects of cost as they influence total cost structure and sales price.

		• Ability to prepare comprehensive cost sheet.
CO3	**Overheads**	• Understand concept of overhead as it contributes to total cost of a product or service • Ability to ascertain and distinguish different types of overheads as it influences the total cost in a given situation
CO4	**Contact and process cost and Methods of costing**	• Ability to ascertain cost of a particular contract under different circumstances. • Ability to ascertain cost of a particular process and calculation of normal/abnormal loss or gain.

Business Statistics
Course code 205
Credit 3
Course Objectives:

1. To understand role and importance of statistics in various business situations
2. To develop skills related with basic statistical technique
3. Develop right understanding regarding regression, correlation and data interpretation

	Course unit Description	Outcome
CO1	Frequency Distribution	• Recognises the different methods of Classification and Tabulation • Interprets the diagrams and graphs. • apply various methods to collect and represent data.
CO2	Measure of Central Tendency	• Recognizes central tendency and various measures of central tendency • Evaluates and interpret partition values – Quartiles, Deciles and Percentiles.
CO3	Measures of Dispersion	• Recognize and evaluate the measures of dispersion-Range, Quartile deviation, Mean deviation, Standard deviation.
CO4	Correlation and Regression	• Calculate and interpret the correlation between two variables. • understand regression analysis
CO5	Index Numbers	• Interpret and use a range of index numbers commonly used.

Fundamentals of Computers
Course code 206
Credit 4

Course Objectives

1 .The main focus lies on software programs the students will need during their studies, projects and further on in their professional life, e.g. creating presentation with Power Point, text writing with Word and analyzing data with Excel.
2. This course is a skills-oriented course which will help students to become familiar with software systems and the internet.
3.The purpose of business informatics as an academic discipline is the development and application of theories, concepts, models, methods and tools for analysing, designing, and using information systems.
4.It is expected, that students can handle browsers, word processors, spreadsheets, electronic mail software, etc.

	Course unit Description	Outcome
CO1	1:Introduction to computers	• Understand main characteristics of Computer, fundamental hardware components that make up a computer's hardware and the role of each of these components, the basic ideas used in translating high level languages to machine language. • Students will understand the difference between hard copy and soft copy and devices which are used to input and output soft copy.
CO2	Unit 2:Basics of Computer Networks and Internet	• .How OS evolved from simple control programs to batch OS, multiprogramming OS. • To understand structure and modelling of computer networking and data communication in business process.
CO3	Unit 3: Introduction to Spreadsheet Software and Presentation Software	• . Construct formulas, including the use of built-in functions, and relative and absolute references,create and modify charts as well they can use the Excel online Help feature. • Students will analyze, design, implement through MS-Powerpoint.
CO4	Unit 4: Introduction to Internet and Cyber Security	• To understand structure and modelling of computer networking and software in business process.

Course: Principles of Human Resource Management
Course Code– GC – 301
Credits - 3

Course Objectives:

1. To introduce the basic concepts of Human Resource Management.
2. To cultivate right approach towards Human Resource and their role in business.
3. To create awareness about the various trends in HRM among the students.

At the end of the course following outcome is expected:

	Course unit description	Outcome
CO 1	Introduction to HRM	1. After completion of this unit students understand the basic concept of HRM and develop knowledge about various functions, importance and role of HRM
CO 2	Job Analysis &Planning for Human Resources	1. After completion of this unit Students will learn and understand about the methods of Job Analysis & how Human Resource Planning play an important role in the Organisation.
CO 3	Career Planning , Employee Morale & Job Satisfaction	1.After completion of this unit will explore the students in enhancing the knowledge about Career Planning, Employee Morale & Job Satisfaction.
CO 4	HRM in Changing Environment &Trends in HRM	1. Students will get knowledge about Changing Environment of HRM and different trends in HRM after completion of this unit.

Course: Supply Chain Management(302)

Course Objectives :

1. To enable the students to have a comprehensive understanding of Supply Chain Management.
2. To understand key concepts and issues of Logistics and Inventory Management.
3. To understand Warehousing and its role in Space Management.
4. To understand supply chain network design & role of IT in SCM.

At the end of the course following outcome is expected :

	Course unit Description	Outcome
CO1	Introduction to Supply Chain Management	1.Students will understand concept & functions of supply chain 2.Students will learn Supply chain Strategies 3.Understand GSCM & GSCM concept & Bull-whip effect in SCM
CO2	Manufacturing & Warehousing	1. Students able to understand manufacturing scheduling & flow system 2.Students will understand warehousing & space management 3. Students will learn different Strategies of

		Warehousing.
CO3	Logistic Management & IT in Supply Chain management	1. Students will learn the methods of Logistics Planning. 2.Students will know the role of Inventory Management in Customer Service. 3.Understand the role of Information Technology in SCM.
CO4	Key Operation Aspects in Supply Chain	1.Understand the Supply Chain Network Design. 2. Students able to know the Role of Distributors in SCM. 3. Students will understand Relationship Management with Customers and Employees

Course : Global Competencies and Personality Development

Course Code :GC- 303

Course Objectives:

1. To build self-confidence, enhance self-esteem, and improve overall personality.
2. To enhance global and cultural competencies.
3. To groom for appropriate behaviour in social and professional circles.

At the end of the course following outcome is expected:

	Course unit Description	**Outcome**
CO1	Introduction to Personality and its Development	• study the nature and meaning of personality. • understand various factors affecting personality development of an individual. • learn various theories of personality development.
CO2	Global Competence and Self Development	• understand the concept of Global Competence. • decipher the characteristics of globally competent individual • develop self- esteem and self-confidence. • understand the concept of SWOC Analysis and learn goal setting by providing theoretical as well as practical knowledge.
CO3	Development of Social and Interpersonal Skills	• Learn various techniques for effective communication. • To train students for impressive self-introduction. • Understand how to introduce various methods for positive attitude development. • Learn various styles and qualities of leaders. • Understand the structure of team and to develop ability to work under pressure and flexibility at workplace. • To develop social empathy and explain social

		responsibilities of the individual. • To introduce various workplace ethics.
CO4	Projecting a Positive Social Image	• Learn the importance of positive social image of the individual. • Understands basics of grooming and effective use of body language. • Learn the importance of the time management. • Develop ability of effective public speaking. • Learn e-mails, telephone, international, social etiquettes and table manners

	Course Unit Description	Outcome

Subject: Fundamentals of Rural Development (304)

Objectives

1. To understand the development issues related to rural society.

2. To find the employment opportunities for rural youth.

3. To create interest among the rural youth to participate in rural development programmes and schemes for sustainable development.

4. To discourage seasonal and permanent migration to urban areas.

CO1	Unit1:Introduction to Rural Development • Rural Development • Need of Rural Development • Approaches of Rural Development	**1)** Understand the role of Rural Development in the Economic development **2)** Learn about different approaches of Rural development. **3)** Understand the need of Rural development.
CO2	Unit 2:Rural Development Planning & Management • Rural Development Planning –District Rural Development Agency (DRDA)- Organisation Structure • Functions of DRDA • NGO's and Rural Development • Self Help Groups (SHG's) formation	**1)** Learn about the determinants of Rural Development planning. **2)** Understanding the function of DRDA. **3)** Develop the knowledge and ability of the students about the concepts of NGOs nad Rural Development
CO3	Unit 3: Agriculture Enterprise &Agro-based industries. • Agriculture Entrepreneur • Agri-business Enterprise Issues and prospectus • Micro Financing • Marketing and Management Agro based products • Agro based Industries	**1)** Understanding problems related to Rural Entrepreneurship **2)** Learn about the determinants of agroprenuership **3)** Understand the issues and prospectus of Agri business. **4)** To learn that how to manage and market Agro based products
CO4	Unit 4: Information Technology and Rural Development • Rural Development and Internet. • Information & Communication Technology (ICT) for Rural Development • IT –Enable Services for an e-village • Challenges of Rural Development	**1)** Develop IT skills **2)** Understand the role of Internet in Rural Development **3)** Develop the knowledge & ability of the students about the concepts ICT and e-development in villages.

Finance Specialization –

Course Name: Management Accounting
Discipline Specific Electives (DSE- B- FM)
Course Code: B 305 FM
Credit: 3+1=4

Objectives:
1. To impart basic knowledge of Management Accounting.
2. To understand the implications of various financial ratios in decision making.
3. To understand Application and use of various tools of management accounting in the business.

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	**UNIT 1 Introduction of** Management Accounting	• Understand basic concepts of Management Accounting • Understand difference between Financial Accounting, cost Accounting and Management Accounting
CO2	**UNIT 2 Analysis and Interpretation of Financial Statement**	• Understand limitations of financial statement and importance Financial analysis • Understand different methods of analysis • Ability to calculate and apply various financial ratios in decision making.
CO3	**UNIT 3 Marginal Costing**	• Understand concept of Marginal Costing • Ability to calculate contribution and breakeven point to reach profitability level of any business.
CO4	**UNIT 4 Budget and budgetary Control**	• Understand the concept of budget, budgetary control and its application in business • Ability to prepare cash budget

Subject: Banking and Finance (306)

Objectives

1. Study of banking function and its operations.
2. To study the functioning of Regulatory Authorities in India.
3. To study recent technology in banking industry.

	Course Unit Description	**Outcome**
CO1	Unit 1:Introduction	1.Understand the structure of

	• Origin, meaning and definition of bank, evolution of banking in India, structure of banking system in India	Banking System in India. 2.Learn about the origin of Banking in India.
CO2	Unit 2: Functions of Banks • Functions of Banks- 1. Primary functions- Accepting deposits and granting loans 2. Secondary functions- • Public utility services and agency services	1.Understand various functions and activities of banks. 2.Know about various operations performed by Banks.
CO3	Unit 3: Regulatory Authorities in India • Reserve Bank of India (RBI) – Role and functions of RBI • Insurance Development Authority (IRDA) • SEBI- Objectives, power and functions of SEBI	1. Understand the functioning and powers of various Regulatory Authorities in India.
CO4	Unit 4: Technology in banking • Need and importance of technology in banking. • ATM, Debit card, Credit card, • Tele banking, Net banking, mobile banking, • RTGS, NEFT, Swift • cyber security in E- banking	1. Learn about the use of technology in banking and study of security measures while using E-banking. 2. Understand how to use new technology in banking operations along with its cyber security.

HR Specilization

Discipline Specific Electives (DES- C- HRM)
Organisational Behaviour (OB)
Course Code: DSE- C -305 HRM
Credits: 3+1=4

Course Objectives:

- To describe the major theories, concepts, models and frameworks in the field of Organisational Behaviour.
- To explain determinants of Organisational Behaviour at Individual, Group and Organisational Level.
- To give knowledge about approaches to line-up individual, groups & managerial behaviour in order to achieve organisational goals

	Course unit description	Outcome
CO 1	Introduction to Organisational Behaviour (OB)	1. After completion of this unit Students able to understand how Organisational Behaviour is important in corporate live.
CO 2	Individual Determinants of Organisational Behaviour	1. After completion of this unit Students will learn and understand about the determinants of OB at industrial levels and able to know the importance of various OB theories which

		make the overall personality development in students.
CO 3	Group Interaction & Organisational Behaviour	1. After completion of this unit it will explore the students in enhancing the knowledge about leadership skills, group formation etc.
CO 4	Dynamics of Organisation	1. After completion of this unit Students will get knowledge about OB at each organizational level, and they could know how to manage the forces that act as stimulants to change.

Discipline Specific Electives (DES- C- HRM)
Legal Aspects in Human Resources DSE - C 306 (HRM)
Course Code: DSE - C 306 (HRM)
Credits: 2+2=4

Course Objectives:

1. To study and explain rights of employees at work place.
2. To understand the Applications of different Legal Aspects in HR.

	Course unit description	Outcome
CO 1	Introduction of Legal issues related to HR in the Organisation.	1. After completion of this unit Students able to understand the rights of employees at work place and the legal issues related to HR in an organisation.
CO 2	Wage & Salary Administration and The Workmen's Compensation Act, 1923.	1. After completion of this unit Students will learn and understand about the basic concepts of Wage & Salary Administration and they will understand the Applications of The Workmen's Compensation Act, 1923.
CO 3	The Payment of Gratuity Act,1972 and Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act 2013.	1. After completion of this unit it will explore the students in enhancing the knowledge about the applications of The Payment of Gratuity Act,1972 and understand the Applications of Sexual Harassment of Women at Workplace (Prevention , Prohibition And Redressal) Act 2013.

Marketing Specialization

Course: Retail Management

Course Code- DSE A 306 MM

Credits 2+2=4

Course Objectives

1. To provide basic understanding of forces that shape retail industry

2. To provide understanding of retail operations and strategy

3. To provide understanding of opportunities and challenges in retail industry.

	Course unit Description	**Outcome**
CO1	Introduction to Retailing	To understand retail concepts, strategy. To know and understand retail new innovations along with opportunity & challenges
CO2	Retailing Strategy	To understand strategic planning for retail business. To understand the factors which affect store designing and layout.
CO3	Managing the Retail Business	To know and understand the challenges while implementing the plan for retail business.
CO4	Future of Retailing	To understand recent trends in retail and develop the critical thinking ability to analysis challenges in retail sector.

Consumer Behaviour& Sales Management

SY BBA Course Code- A 305 MM

Credits 3+1=4

Course Objectives:

1. To develop significant understanding of Consumer behaviour in Marketing.

2. To understand the relationship between consumer behaviour& Sales Management.

3. To develop conceptual based approach towards decision making aspects & its implementation considering consumer behaviour in Sales Management.

	Course unit Description	**Outcome**
CO1	Introduction and Determinants of Consumer Behaviour	To understand the concept of consumer behaviour.To know opportunities and its challenges
CO2	Consumer Decision Making Process	To understand Strategy building & its effectiveness.
CO3	Basics to Sales Management & its Organization	To understand sales organizations & its impact upon the performance of the organizations.
CO4	Training, Managing &Motivating the Sales Force	To understand the tools and techniques to Manage& Control the sales function - organization - sales individual.

Class: SYBBA **Semester : IV**

Subject: Entrepreneurship and Small Business Management- GC-401

Course Code – 401

Credits – 3

Course Objectives:

1. To understand the concept and process of Entrepreneurship.

2. To Acquire Entrepreneurial spirit and resourcefulness.

3. To get acquainted with the concept of Small Business Management.

4. To understand the role and contribution of Entrepreneurs and Small Businesses in the growth and development of individual and the nation.

	Course unit Description	**Outcome**
CO1	Entrepreneurial Perspective	To understand the concept of Entrepreneurship in growth and development. To understand and develop a vision how Entrepreneurship can take as a career.
CO2	Business Opportunity Identification	To understand Environment scanning with various tools. To understand and develop Various thinking mode.
CO3	Management of MSMEs and Sick Enterprises	To understand the concept of MSME and its challenges.
CO4	Study of Women-founded Start-ups in India and Entrepreneurs' biography	To Understand the key aspects of success and failure of businesses.

Course : Production & Operations Management (402)
Course Code – 402

Credits – 3

Course Objectives :

1. To understand the key concepts of Production and Operation Management.
2. To understand the various manufacturing methods and role in managing business.
3. To create awareness about the various safety measures and ergonomics in industries.

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Introduction to Production & Operations Management	1.The basic concept of production and operation management.

		2. Understanding the manufacturing methods and various plant layouts used in industries.
CO2	Production Design, Planning, Control	1. Understand importance of PPC & how product developed, planned and controlled in manufacturing. 2. Develop the Problem- solving and decisionmaking skills
CO3	Productivity and Ergonomics	1. understand the peoples efficiency in their working condition& quality management. 2.knowledge to the students regarding Ergonomics and safety measures..
CO4	Maintenance Management	1.Understand the Changing Environment, maintenance methods of production and operation

Course: Decision Making And Risk Management
Course code 403 –GC
Credits: 3

Objectives:
1. To learn the key topics in decision making and risk management so that they can improve decision making and reduce risk in their management activities and organizations.
2. Find the best alternative in a decision with multiple objectives and uncertainty.
3. Describe the process of making a decision.
4. Analyze an organization's decision making system.
5. Develop a risk management process.

	Course unit	**Outcome**
CO1	Introduction to Decision making and Risk Management	To understand the role and scope of Decision making and Risk management in organizations
CO2	Decision making Tools and Models	To understand the importance of Decision making tools and models in business.
CO3	Role of Decision Making and leadership	To understand the role of leadership and its allied aspects while making decisions.
CO4	Organizational Values in Decision Making and Risk Management	To understand the role and importance of organizational values in Decision making and Risk Management

Course Name: International Business Management

Course Code: 404 GC

Credit: 3

Objectives:

1. To acquaint the students with emerging trends and issues in International Business.
2. To study the impact of International Business Environment on foreign market operations.
3. To analyze International trade models.
4. To analyze the International Investment and its risks associated.
5. To understand financial aspects in world economies, their need and functionality

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	**UNIT 1** Introduction to International Business	• Understand the Role and Scope of International Business. • Understand the concepts and role of International trade theories.
CO2	**UNIT 2** International Business Environment	• Understand role of International Business and its importance at National and International Level. • Understand International Business study in Business Environment.
CO3	**UNIT 3** International Finance	• Understand terms of trade in the International Market. • Understand various Finance and Trade techniques at International level. • Understand the Global Finance Institutions functioning
CO4	**UNIT 4** International Economic Zones and Foreign Trade	• Understand the functions of International Organizations. • Understand the opportunities and risks for India with respect to financial globalization. • Understand the world economy and factors affecting it through Case Studies.

Marketing Specialization

Course: Advertising and Promotion Management- DSE- 405 A-MM

Course Code - 405 A-MM

Credits – (3+1)=4

Course Objectives:

1. To develop knowledge and understanding of importance of advertising.

2. To understand different sales promotion techniques.

3. To know about promotion management.

	Course unit Description	Outcome
CO1	Introduction and Advertising Effectiveness.	To understand the basic concept of advertising and social issues, ethics. To know effectiveness of advertising on performance and profit.
CO2	Copy and medias decisions	To Understand concept of copy creations and media selection.
CO3	Promotion Management	To understand the effectiveness of promotion.
CO4	Online advertising	To understand the advantages of online advertising.

Course: Digital Marketing- DSE 406 A- MM

Course Code – 406 A-MM

Credit –(2+ 2) = 4

Course Objectives:

1. To provide students with the Knowledge about business advantages of the digital marketing and its importance for marketing success.

2. To help students become In demand professional by being acquainted through various Digital channels & their ways of Integration.

3. To get Basic Knowledge of Google Analytics for measuring effects of Digital Marketing & getting Insights of Future trends that will affect the future development of the digital marketing.

	Course unit Description	Outcome
CO1	Introduction to Digital Marketing	To understand the role & Importance of Digital Marketing.
CO2	Digital Marketing Planning and Structure	To understand Digital Strategy building & its effectiveness.
CO3	Social Media Marketing	To understand the importance of Digital Platforms & its impact upon the performance of the organizations in complex & varied environment.
CO4	Computer Laboratory Work	To Understand the of digital tools effectively for marketing

Finance Specialization

Course: Business Taxation- 405- B-FM
Course code 405 –B-FM
Credits: (3+1) = 4

Objectives:

1. To understand different concepts & definitions under Income Tax Act 1961.
2. To understand the importance of Taxation to the students.
3. To update the students with the latest development in the subject of Taxation.
4. To acquire knowledge about the submission of Income tax returns.
5. To prepare students competent enough to take up to employment in tax planner.
6. To develop ability to calculate taxable income of the person as per Income Tax Act 1961.

	Course unit	Outcome
CO1	Introduction to Income Tax act 1961.	• Understand the basic concepts of Income tax act. • Know & study the tax structure of India. • Understand the historical background of Indian Income tax structure.
CO2	Heads of Income and computation of total income as per Income Tax 1961.	• Understand & study different heads of income under income tax act 1961. • know various exemptions & deductions under Income tax act 1961. • know the tax compliances of business & Individual person.
CO3	Computation of Total Taxable Income & Filing of Online ITR.	• Ability of computation of total taxable income. • Understand the procedure of online ITR filing.
CO4	Other important aspects of Income tax act 1961	• Understand important concepts of Income tax act 1961, such as TDS, TCS, Advance tax etc.

Course: Financial Services. 406 B- FM
Course code: 406 B-FM
Credits: 4 = (2+2)

Course Objectives:
1. To Study in detail financial services in India.
2. To study & Understand working of Indian financial system.
3. To make the students well acquainted regarding financial markets.

	Course unit Description	Outcome
CO1	Indian Financial system: an overview	• Understand the basic concepts of Indian Financial system.
CO2	Fundamental of Financial Markets	• Understanding of the functioning of financial markets of India.
CO3	Financial Services in India and Derivatives &Commodity Market	• Understand functioning of financial institution of India.

HR Specialization

Course- Human Resource Management Functions& Practices- DSE 405 C- HRM
Course Code: DSE- 405 –C-HRM
Credits – 3+1=4

Course Objectives:

1. To acquire comprehensive Knowledge of Human Resource Management Functions &Practices.
2. To explain the methods of Performance Appraisal, Training, Executive Development and Employee Compensation.
3. To acquire knowledge about various HR practices adopted by theorganization

	Course unit description	Outcome
CO 1	Introduction to HRM Functions, Performance Appraisal, Training and Executive Development	• After completion of this unit students understand the basic concept of HRM functions and different methods of performance appraisal.
CO 2	Employee Compensation and Other Functions of HRM	• After completion of this unit Students will learn and understand about the concepts of Employee Compensation and other functions of HRM.
CO 3	Introduction to HRM Practices, Workers Participation in Management	• After completion of this unit students will explore about how Workers Participation is an important aspect in an organization and various forms of WPM
CO 4	Organisational Development	• Students will get knowledge about an understanding regarding OD Programme and its interventions.

Course: Employee Recruitment & Record Management DSE- 406 C- HRM
Course Code: DSE-406 C- HRM
Credits: 2+2=4

Course Objectives:

1. To study and explain employee acquisition and its importance inindustry.
2. To cultivate right approach towards employee recruitment and recordmanagement

	Course unit description	Outcome
CO 1	Manpower Planning and Forecasting	• After completion of this unit Students able to understand the process and Importance of Manpower Planning and will understand the Techniques of Manpower Forecasting.
CO 2	Recruitment and Selection	• After completion of this unit Students able to understand the Sources and Methods of Recruitment and they will understand detailed Process of Selection in the Organization.

CO 3	Employee Record Management	• After completion of this unit students gain knowledge & Applications of Employee Record Management in Organization and they will understand the types of Employee Records.
CO 4	Computer Course (Prescribed Course or Online Course)	• After completion of this course students will be familiarise with Computer applications used in • Particular department and understanding jargons of the field and they will understand various concepts and steps relating to designing of computer technologies and its applications in various field.

Course- TY BBA Research Methodology
Course Code: GC-501
Credits – 3

Course Objectives:

1. To develop an understanding of the right approach of Research Methodology and its role in Business.

2. To develop an understanding of the basic framework of the identification of various sources of information for data collection.

3. To develop an understanding of various Designs, Tools and Techniques of Research Study.

4. To enable the students in conducting Research work and write Research Paper and Research Project Report.

	Course unit description	Outcome
CO 1	**Introduction to Research Methodology and Research Problem**	• After completion of this unit Students gains in content knowledge, skill acquisition, and overall confidence and comfort for major concepts in the understanding concept of research.
CO 2	**Research Design and Research Sampling**	• After completion of this unit Students will gain knowledge acquisition about Research Design and Sampling Design
CO 3	**Methods of Data Collection and Processing and Analysis of Data**	• After completion of this unit students will gain experience with instrument development and data collection methods. • Practical understanding of data processing and Data Analysis.
CO 4	**Interpretation and Report Writing**	• Students will understand about Changing Environment of HRM and its effects. • A better understanding of Report and Research Paper writing

Course- TY BBA Database Administration and Data Mining
Course Code: GC-502
Credits – 3

Course Objectives:

1. To understand the Database Management System
2. To understand the Data Mining Concepts
3. To understand the current trends in Data Management

	Course unit description	Outcome
CO 1	**Introduction to Database Management System**	• After completion of this unit Students will understand the database concepts thoroughly.
CO 2	**Database Administration**	• After completion of this unit Students will gain the knowledge of data administrator duties.
CO 3	**Data Warehousing**	• After completion of this unit students will understand the data warehouse concepts thoroughly
CO 4	**Data Analytics and Data Mining**	• Students will understand that how the data is analyzed throughout the mining process

Course- TY BBA Business Ethics
Course Code: GC-503
Credits – 3

Course Objectives:

1. To provide a comprehensive understanding of the concepts of Business Ethics
2. To develop theoretical tools to understand current ethical issues and their impacts on business.
3. To analyze the role of Ethics in business, Government and Society.
4. To analyze the Ethical scenario concerning to Environment and consumer protection

	Course unit description	Outcome
CO 1	**Introduction toBusiness Ethics.**	• After completion of this unit students undertand the role of Ethics and its importance at National and International Level in business as well as individual level.
CO 2	**Corporation and Stakeholder Ethics**	• After completion of this unit Students will understand the modern Organization role and responsibility towards stakeholders and they understand the concept of business, government, and societal ethics.
CO 3	**Corporate Social Responsibility and Marketing Ethics**	• After completion of this unit students will explore understand the role of CSR in traditional and Modern Business, they Identify the efficiency relevancy ofCSR in today's world.
CO 4	**Environmental and Consumer Ethical Issues**	• Students will get knowledge about an understanding regarding OD Programme and its interventions.

Course- TY BBA Management of Corporate Social Responsibility
Course Code: GC-504
Credits – 3

Course Objectives:

1. To understand the concept and process of CSR
2. To Understand the industrial contribution for CSR Policy
3. To Understand the context of CSR of present-day Management
4. To Understand the contribution of CSR for the development of Society

	Course unit description	Outcome
CO 1	**Introduction to CSR**	• After completion of this unit Students will be able to understand evolution, concept, importance of CSR, Charity and Corporate governance.
CO 2	**Modules of Corporate Social Responsibility**	• After completion of this unit Students will gain knowledge of various models, international framework of CSR and sustainable development goals.
CO 3	**CSR – Legislation in India and the World**	• After completion of this unit students will be clear with the provision of section 135, appointment of independent directors, schedule VII Of Companies Act, 2013 and net profits thereof.
C04	**Identifying Key stakeholders and their Roles and Recent Trends & Opportunities in CSR**	• Students will understand Role of Public Sector, Non-profit organizations, Local self-Governance in implementation of CSR and tools for sustainability and challenges.

Course- TY BBA Marketing Environment Analysis and Strategies
Course Code: DSE -505 A
Credits – 4

Course Objectives:
1.To develop students' understanding of the factors shaping Marketing Environment
2.To develop students' ability to analyze the Business Environment
3.To develop students' understanding of the strategies for sustaining the forces in Marketing Environment

	Course unit description	Outcome
CO 1	**Marketing Environment**	• After Completion of this unit students will understand the meaning, factors influencing Marketing environment, and impact on marketing decisions.
CO 2	**Business Analysis**	• After completion of this unit Students will understand the meaning, process and critical success factors of business analysis will the help of KPI and BCG Matrix.
CO 3	**Marketing Research**	• After completion of this unit students will interpret meaning, need, steps in Marketing research, big data analytics and environment affecting consumer behavior.
CO 4	**Marketing Strategies**	• Students will get knowledge about new product development strategies, pricing strategies, process, aspects of distribution and communication strategies.

Course- TY BBA Legal Aspects In Marketing Management
Course Code: DSE -506 A
Credits – 2 + 4 = 6

Course Objectives:
1. To understand the application of different legal aspects in Marketing Management

	Course unit description	Outcome
CO 1	**Introduction and Doorstep Selling/ Home Delivery**	• After Completion of this unit students will be familiar with legal aspects of marketing management, concepts of doorstep selling, telesales and direct mail.
CO 2	**Advertising and Pricing**	• After completion of this unit Students will understand the meaning, importance, types, of advertisement with respect to laws of broadcasting, price related, surcharge payment regulations.
CO 3	**Online Marketing and CRM**	• After completion of this unit students will understand the concept of online marketing, legal considerations for data protection, types of cookies and CRM.

Course- TY BBA Analysis of Financial Statements
Course Code: DSE -505 B
Credits – 3 + 1 = 4

Course Objectives:
1. To develop the conceptual framework of financial analysis and provide practical exposure to apply various tools of Financial Statement Analysis.
2. To enable to use of various types of ratios for financial and investment decisions.
3. To impart knowledge about Cash Flow and Fund Flow Statements and their importance in financial analysis.

	Course unit description	Outcome
CO 1	**Introduction to legal aspects of Finance**	• After Completion of this unit students will understand the fundamentals of Legal aspects of Finance. • Also students know and Understand the basics of various financial instruments.
CO 2	**The issue, Listing of Securities & Investor Protection**	• After completion of this unit Students will understand the process of fundraising through IPO and will also understand legal procedure of IPO listing & Delisting
CO 3	**Companies Act 2013 & Investor Protection**	• After completion of this unit students will explore understand Companies Act 2013. Also various legal documents a Company prepares and how do they select appropriate sources of Finance to raise capital.
CO 4	**Goods &Service Act 2017**	• Students will get knowledge about e basics of Goods & Service Tax. And various basic aspects related to GST.

Course- TY BBA Legal Aspects of Finance and Security Laws
Course Code: DSE -506 B

Credits – 2 + 4 = 6

Course Objectives:

1. To understand the Legal Aspects of Finance & Security Laws.
2. To know the legal provisions to obtain finance from various source of finance.
3. To explore various finance & securities-related laws in India.

	Course unit description	Outcome
CO 1	**Introduction to legal aspects of Finance**	• After Completion of this unit students will understand the fundamentals of Legal aspects of Finance. • Also students know and Understand the basics of various financial instruments.
CO 2	**The issue, Listing of Securities & Investor Protection**	• After completion of this unit Students will understand the process of fundraising through IPO and will also understand legal procedure of IPO listing & Delisting
CO 3	**Companies Act 2013 & Investor Protection**	• After completion of this unit students will explore understand Companies Act 2013. Also various legal documents a Company prepares and how do they select appropriate sources of Finance to raise capital.
CO 4	**Goods &Service Act 2017**	• Students will get knowledge about e basics of Goods & Service Tax. And various basic aspects related to GST.

Course: Cross Culture HR & Industrial Relations
Course Code: GC 505 C
Credits: 3+1=4

Course Objectives:

1. To study and explain employee acquisition and its importance in industry.
2. To cultivate right approach towards employee recruitment and record management

	Course unit description	Outcome
CO 1	Introduction to cross-Cultural Management Understanding Culture and Cross-Culture	• After completion of this unit Students able to understand the Cultural Variables in Multinational Enterprises and learn some basic business etiquette and dining etiquette that will help to work in different countries across the globe.
CO 2	Cross-Culture and Human Resource Management	• After completion of this unit Students will understand the relationship between Cross-Culture and Human Resource Management.
CO 3	Fundamentals of Industrial Relations	• After completion of this unit students gain knowledge on the relation between Ethical Codes & Industrial Relations.
CO 4	The Industrial Disputes Act,1947, The Factories Act, 1948 and The Maternity Benefit Act 2017	• After completion of this course students will get the knowledge about authorities under The Industrial Disputes Act,1947 and will able to understand the conditions of work in manufacturing establishments coming within a factory.

TY BBA –Semester V (CBCS) Pattern 2019
Cases in Human Resource Management + Project Viva
Course code DSE 506 C
Credit - 2+4 = 6

Course Objectives:

1. To understand the application of theory into practice.
2. Design critical thinking by making judgments related to problems in Case Studies of Human Resource.
3. Develop critical thinking for solving Case Studies of Human Resource.
4. To analyze the broad fundamental components of HRM

	Course unit Description	**Outcome**
CO1	Case Study – Introduction	To understand the challenges faced/confronted in recent times. To develop necessary skill set for application of various HR issues.
CO2	Case Study – Introduction	Develop critical thinking for solving Case Studies of Human Resource. To understand the challenges faced/confronted in recent times. To understand the challenges faced/confronted in recent times. To develop necessary skill set for application of various HR issues.

Course- TY BBA Essentials of E commerce
Course Code: GC 601
Credits – 3

Course Objectives:

1. To understand the importance, role, and activities of E-Commerce.
2. To understand various E-Money and E-Payment systems used in E-Commerce.
3. To understand the concept of E-Marketing and its tools in E-Commerce.
4. To Understand the concept of Cyber Space and Cyber Security in E-Commerce

	Course unit description	Outcome
CO 1	E-Commerce and Business Model Concepts	• Student will understand the concept and role of E-Commerce business with context to India. • Student will understand the concept of various business models used in E-Commerce. • Student will understand the role of IT infrastructure in the development of E-Commerce in India.
CO 2	E-Money and E-Payment Systems	• Student will understand the concept of digital currencies. • Student will understand various modern digital payment systems used in Ecommerce.
CO 3	Role of E-Marketing	• Student will understand various tools and techniques used in E-Commerce. • Student will understand the role of modern tools used in E-marketing
CO 4	Cyber Security and Technology.	• Student will understand the concept of cyber warfare and crimes that took place in cyberspace. • Student will understand the role of IT Act -2000 with the Indian context

Course- TY BBA- Management Information System
Course Code: GC 602
Credits – 3

Course Objectives:

1. To understand the importance, role, and activities of E-Commerce.
2. To understand various E-Money and E-Payment systems used in E-Commerce.
3. To understand the concept of E-Marketing and its tools in E-Commerce.
4. To Understand the concept of Cyber Space and Cyber Security in E-Commerce

	Course unit description	Outcome
CO 1	Basic Concepts of Information Technology and Management Information System	• Student will gains in content knowledge, skill acquisition, and overall confidence and comfort for understanding the basic concept of MIS.
CO 2	Decision Making and Information	• Students understand the models of Decision Making and their application Decision-Making Process
CO 3	System Analysis and Design	• Student will understand and get the knowledge of the different System Development Model.
CO 4	Information system applications	• Student will understand the application of MIS in an enterprise.

Course- TY BBA Business Project Management
Course Code: GC 603
Credits – 3

Course Objectives:

1. To develop a significant understanding of Project Management.
2. To develop a concept based approach towards Management of Business Projects.
3. To develop the relationship between the significance of Businesses Projects & their Management

	Course unit description	Outcome
CO 1	Introduction to Project Management	Students will understand the role & importance of Management in Business Projects. Students develop the skills of managing Business Projects.

CO 2	Planning & Implementing your Project	Students develop conceptual clarity in Planning & Implementation of Business Projects.
CO 3	Business Project Management Techniques	Students will understand the tools & techniques necessary to effectively manage & control the projects in businesses.
CO 4	Managing Project issues & their commencement	Students will Understand the Business Project Issues & strategies for its addressal.

Course- TY BBA Management of Innovations and Sustainability
Course Code: GC 604
Credits – 3

Course Objectives:

1. To understand the concepts of Innovation and Sustainability in a practical sense.
2. To better know the significance of organizational sustainable development and the economic implications of sustainable development.
3. To learn about the most common errors made when handling sustainable growth.
4. To understand the concept of Sustainability Innovation. Understand socio-political aspects of sustainable development – social responsibility aspect.

	Course unit description	Outcome
CO 1	Management of Innovation Sustainability: An Introduction.	It enables students to learn the basics of Entrepreneurship and entrepreneurial development which will help them to provide the vision for their Start-up.
CO 2	Managing Innovationwith Firms& Strategies and Concepts for Innovation.	It enables students to develop interest and positive approach towardsentrepreneurship and new start-ups.
CO 3	Service Innovation and Sustainability Innovation in Business	After completion of this unit students will be able to collect relevant data and its analysis and interpretation.
CO 4	Management ofsustainable development	After completion of this unit students will Understand the key aspects of success and failure of Businesses.

Course- TY BBA International Brand Management

Course Code: -DSE A 605 MM

Credits – 3+1=4

Course Objectives:

1. To develop students' understanding of the concept of developing brands
2. To develop students' understanding of the concept of brand equity
3. To develop students' understanding of the strategies in managing brand portfolios

	Course unit description	Outcome
CO 1	Understanding Brand	Students will understand the key conceptual foundations of developing and managing a strong brand.
CO 2	Developing Brand	It enables students to develop the process of creating a brand.
CO 3	Evaluating Brand	The module reviews the methods of measuring and interpreting brand performance
CO 4	Managing Brand	Students will learn to focuses on the stewardship and management of brands over time, geographic areas, and market segments. It covers the strategies for more established brands as they attempt to grow and stay relevant over time.

Course- TY BBA Marketing Specialization
Cases in Marketing Management +Project
Course Code: 606 A
Credits – 2+ 4 = 6

Course Objectives: To understand the application of theory into practice.

	Course unit description	Outcome
CO 1	Case Study – Introduction.	Student know the gist of the case study and way of attempt or solution
CO 2	Areas of Case Study.	Students will develop the ability about getting acquainted with the theory and its application in a real-life scenario.

Course- TY BBA Finance Specialization
Financial Management
Course Code: DSE B 605 FM
Credits – 3+1=4

Course Objectives:
1. To know various sources of finance of business.
2. To study and understand the capital structure of the company and its cost of capital
3. To study optimum capital mix & concept of over capitalization & undercapitalization.

	Course unit description	Outcome
CO 1	Sources of Finance	Students will understand various sources of finance for raising capital /funds required for the business. By studying various sources of finance analytical & reasoning skills will be developed.
CO 2	Capital Structure	Students will develop the ability about getting acquainted with the theory and its application in a real-life scenario.
CO 3	Capitalisation	Students will understand the process of undercapitalization & overcapitalization. It helps to develop professional & problem-solving skills.
CO 4	Capital Budgeting	Students will understand the process of evaluation of mutually exclusive proposals. It helps to evaluate different investment proposals through experiential learning.

Course- TY BBA Finance Specialization
Cases in Finance +Project
Course Code: DSE 606 B FM
Credits – 2+4=6

Course Objectives:
1. To Study &understand the core areas of finance.
2. To study the practical applications of finance.
3. To prepare project reports based on the internship & understanding of core areas of finance.

	Course unit description	Outcome
CO 1	Fund Raising & Capital Budgeting.	Students will understand the importance of fundraising and they will understand the practical applications of Capital Budgeting.
CO 2	Working Capital Management	Students will understand the concept &importance of Working Capital Management and they will understand the practical applications of Working Capital.
CO 3	Cost of Capital	Students will understand the process of undercapitalization & overcapitalization. It

		helps to develop professional & problem-solving skills.
CO 4	Project Report	Students will understand implications of selected core areas of finance under study.

Course: Global Human Resource Management
Course Code: DSE 605 C HRM
Credits: 3+1=4

Course Objectives:

3. To understand the concepts, theoretical framework, and issues of HRM in Global Perspective
4. Identify and Understand issues and practices about the major HRM functions within the context of the global environment.
5. To learn how to conduct strategic human resource management in an international setting and they learn how companies manage their expatriates.
6. To look at HRM in a broader, comparative, and international perspective to deal with complex issues and manifold risks and to study understanding of international approaches to dealing with people in organizations.

	Course unit description	Outcome
CO 1	Introductionto Global HRM	After completion of this unit students will gains in content knowledge, skill acquisition, and overall confidence and comfort for major concepts in understanding the concept of Global HRM.
CO 2	Global HR Functions-I	After completion of this unit students will get the Practical Knowledge Acquisition about Global Recruitment and Selection.
CO 3	Global HR Functions-II	After completion of this unit students will understand the concepts of Global Training & Development, Global Compensation and Global Performance Management.
CO 4	GlobalHRM Trends andFuture	After completion of this unit students will be

	Challenges	aware of technology in GlobalHRM and will be able to understand the relationship between Knowledge Management and Global HRM.

Course- TY BBA Human Resource Management Specialization

Recent Trends & HR Accounting + Project

Course Code DSE 606 C HRM

Credit 2+4 = 6

Course Objectives

1.To make students understand the theoretical and practical fundamental knowledge of Recent Trends in HRM and HR Accounting.

2.To describe various Employee Engagement Strategies to enhance Employee Engagement.

3.To discuss the uses of Human Resource Information Systems in organizations.

4. To explain the different methods used to calculate the value of human Resources.

5. To define Human Resource Audit and outline its scope.

6. To study the methods of Human Resource Valuation.

Sr. No		CO
1	Employee Engagement.	Student will learn content knowledge, skill acquisition, and overall confidence and comfort for understanding the basic concept of Employee Engagement.
2	Human Resource Information System and Personnel Research.	Students Exposure of hidden skills and talent of students
3	Human Resource Accounting and Human Resource Audit.	A better understanding of different methods of HR valuation through computer lab practice Practical Knowledge Acquisition about HR Accounting and HR Audit.

A.T.S.S.'s
College of Business Studies and Computer Applications
Chinchwad, Pune 19
(Affiliated to SavitribaiPhule Pune University, Recognized by Govt. of Maharashtra , Accredited by NAAC)
Academic Year 2019 – 20
Program: BSc (Computer Science)
Department of Computer Science & Applications

Program: BBA (Computer Application)

Program Outcomes (PO)

PO1: Apply knowledge of computing fundamentals, mathematics and domain knowledge Appropriate for the conceptualization of computing models. (Computational Knowledge).

PO2: Identify, analyze, formulate, Design and develop the real world requirements by critical Thinking for complex problems in IT enabled services. (Critical Thinking & problem Solving approach)

PO3: Recognize the need and adopt appropriate tools and techniques for modern computing Practices. (Usage of modern tools)

PO4: Make use of ethical practices and cyber regulations in the computing field for Managing software projects in diverse environments. (Ethics & Management)

PO5: Understand the societal, environmental and moral values and its impact with respect to Computing, communication, literary and professional practice.(social responsibility)

PO6: Communicate effectively with society at large, such as, being able to comprehend and Writeeffective reports, design documentation and make effective presentations.(communication & team work)

P07: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change (Life long learning)

PEO – Program Educational Objectives:

1. To produce skill oriented human resource.
2. To import practical skills among students.
3. To make industry ready resource.
4. To bring the spirit of entrepreneurship.

F. Y. BBA(CA)

Semester I

COURSE: BUSINESS COMMUNICATION SKILLS (CA-101)

Course Objectives:
1 To understand what is the role of communication in personal and business world
2. To understand system and communication and their utility
3. To develop proficiency in how to write business letters and other communications.

At the end of the course following outcome is expected:

	COURSE UNIT DESCRIPTION	OUTCOME
CO1	Concept of Communication	Apply communication theories. Show an understanding of opportunities in the field of communication.
CO2	Methods and types of Communication	Demonstrate critical and innovative thinking. Display competence in oral, written, and visual communication
CO3	Business Correspondence	Use current technology related to the communication field. Demonstrate positive group communication exchanges

Course: Principles of Management(CA-102)

Course Objectives :
1.To understand basic concept regarding organization business administration
2.To examine how various management principles.
3.To develop managerial skills among the students.

At the end of the course following outcome is expected :

	Course unit Description	Outcome
CO1	Nature of management	To learn basic aspects of management thinking Develop ability of managerial thinking & cultivate business acumen
CO2	Evolution of management thought	To understand different approaches of management scientist to management thought & philosophy To help to understand various approaches of management thinking
CO3	Major managerial functions	To understand different functions of management & their roles. Develop ability to organise various programs & events.
CO4	Recent trends in management	To understand the themes in modern management & changes in the business

		To learn about new systems of management.

Course: C Language(CA- 103)

Course Objectives:

- To understand algorithmic thinking and apply it to creating C programs.
- To write user defined function for effective programming.
- To understand and manipulate arrays.
- To understand the concepts of passing arrays to functions and pointers.
- To write C program for simple real time applications using structures and files.

Ability to handle possible errors during program execution:

	Course unit Description	Outcome
CO1	Introduction	To Explore algorithmic and flowchart approaches to problem solving.
CO2	Managing I/O Operations	To Familiar with Fundamentals
CO3	Decision Making and looping	Developing Conditional and Iterative statement
CO4	Programs through conditional and looping statements	Practice on Program to develop logical thinking.
CO5	Arrays and Strings	Ability to work with Advance concept-arrays, Strings
CO6	Functions	Understanding a concept of functional: Modular concept.
CO7	Introduction to pointer	Ability to work with Pointerin c.
CO8	Structures	To learn User define datatype: structure, union

Course:DBMS (DATABASE MANAGEMENT SYSTEMS (CA-104)

Course Objectives:

1) This course provides an introduction to the relational model. We will cover basic relational database design, conceptual data modeling practices, some relational database management system , operation and fundamental Structured Query Language (SQL)

2. Enables students to understand relational database concepts and Normalization concepts in database system.

3. Enables student to write SQL Simple Queries and Nested Queries that use DDL and DML command.

	Course unit Description	Outcome

CO1	File Structure and Organization	1) To understand the file structure and its organization.
CO2	Database Management System	1) Students get the knowledge of Relational Database concepts which is the basic requirements of every organization.
CO3	Relational Model	1)Give a description of the Database Management structure.
CO4	SQL (Structured Query Language)	1) Students are able to Compare relational model with the Structured Query Language (SQL)
CO5	Relational Database Design	1) Students are able to Normalize the complex data into simple tables.

Course: Statistics (CA-105)

Course Objectives:

1. To understand role and importance of statistics in various business situations
2. To develop skills related with basic statistical technique
3. Develop right understanding regarding regression, correlation and data interpretation

	Course unit Description	Outcome
CO1	Concept of statistics.	• Explains the history, definition and scope of Statistics . • Differentiates population and sample.
CO2	Measures of central tendency and dispersion	• Recognizes central tendency and various measures of central tendency • Explains and evaluates various measures of central tendency.
CO3	Measures of Dispersion :	• Recognizes the importance of measuring dispersion. • Explains and evaluates the measures of dispersion-Range, Quartile deviation, Mean deviation, Standard deviation.
CO4	Correlation and Regression	• Concept of correlation, positive & negative correlation, Karl Pearson's Coefficient of correlation • Meaning of regression, two regression equations, Regression coefficients and properties.

Course: Principles of Programming and Algorithm (107) :

Course Objectives:

1 .To use modular programming approach in diversified problem domains.
2. To use programming logic for solving real world problems.
3. To decide effectiveness of computer based solutions.

.

	Course unit Description	Outcome
CO1	Unit 1: Algorithms	• Will understand importance of algorithm, program development cycle, how programs are been developed sequentially with help of algorithm.
CO2	Unit 2: Flowchart	• Student will be able to show .detail designing of algorithm and flow of programs with the help of flowchart
CO3	Unit 3: Function	• Student will be able to understand the use of function, library function and recursion with its syntax
CO4	Unit 4: Array	• To understand definition, characteristics and types of array .

F. Y. BBA(CA)

Semester II

Course: Organizational Behavior & HumanResource Management (OB & HRM) (CA -201)

Course Objectives:

On successful completion of this course, the student/learner will be able to

	Unit 1	Course outcome
CO1	Introduction to OB	Students should be able to understand the basic concept of OB and to will also acquaint about major trends in OB
CO2	Introduction to HRM	After completion of this unit students should be able to get basic knowledge of HRM practices carried out in today's scenario.
CO3	Procurement	After completion of this unit students would know the process of recruitment and selection of employees in an organization.
CO4	Training & Development	With this unit students know the training and development methods and evaluation of employees skills in organization.

Course: Financial Accounting (CA-202)

Course Objectives:

i) Todeveloprightunderstandingregardingroleandimportanceofmonetaryandfinancialtransactionsin business

ii) Tocultivaterightapproachtowardsclassificationsofdifferenttransactionsandtheirimplications

iii) To developproficiencypreparationofbasicfinancialastohowtowritebasisaccountingstatement-TradingandP&L.

At the end of the course following outcome is expected:

	Course Unit Description	Outcome
CO1	Financial Accounting- definition and Scope, objectives, Accounting concepts, principles and conventions	• understand role and importance of accounting in Business and how accounting concept can be implemented in business • Computation ability in business ability to distinguished between various accounting concepts and practices
CO2	Voucher system; Accounting Process, Journals, Ledger, Cash Book , subsidiary books ,Trial Balance preparation of Final Accounts of Sole Proprietorship(Trading and Profit & LossAccount and Balance Sheet	• To understand how to record different financial transactions and their financial implications • Ability to write different accounting tractions and prepare basic financial tractions
CO3	Meaning, importance and preparation of Bank Reconciliation Statement	• To understand the kind of accounting relationship between customer and bank. • Ability to write necessary set of entries in books of accounts and in cash book and compare them with bank statement to understand their implications andeffect.
CO4	Computerized Accounting- Role of computers and Financial application, Accounting Software packages	• Ability to understand growing importance of software and to know how to use software and to write books of accounts Ability to use software like tally for writing of accounts

Course: Business Mathematics (CA-203)

Course Objectives:

- To develop appropriate understanding as how to use mathematic like computation interest, profit, percentage etc.
- To develop appropriate model for estimation of profit. Applying ratio to interpreted and evaluate financial data collection of 5 years reports of varies companies for analysis. .

- To cultivate right understanding regaining numerical aptitude.

Course Outcomes:

Course Outcomes(CO)/Learning Outcomes On successful completion of this course, the student/learner will be able to

	Course unit Description	Course Outcome
CO1	Ratio, Proportional and Percentage	To apply the various concepts in business situation.
CO2	Profit and loss	To examine concept of discounts in different business solutions.
CO3	Interest and AnnuityShares and Mutual Fund	To work with simple and compound interest, annuities, invoice preparation, trade discounts, taxes, and depreciation problems in various.
CO4	Matrix and Determinant	To perform the matrix operations
CO5	Linear programming Problem	To develop linear programming (LP) models.
CO6	Transportation Problem	To understand the mathematical tools that are needed to solve optimization problems using mathematical software to solve the proposed models.

Course: RELATIONAL DATABASE (CA-204)

Course Objectives:

1) This course provides an introduction to the relational model. We will cover basic relational database design, conceptual data modeling practices, some relational database management system, operation and fundamental Structured Query Language (SQL)
2. Enables students to understand relational database concepts and Normalization concepts in database system.
3. Enables student to write SQL Simple Queries and Nested Queries that use DDL and DML command.

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Introduction To RDBMS	• Understanding of various RDBMS products • Use of relational database • To get knowledge of Front End and Backend • Helps student to learn different types of data models

CO2	Overview of PLSQL	• To understand variousdata types , operators functions and control statements • Students get the knowledge of Relational Database concepts which is the basic requirements of every organization.
CO3	Transaction Management	• Understanding use of transaction and effect on database • Application of properties • Understanding of various states.
CO4	Concurrency Control & RecoverySystem	• To understand concept of concurrency control and recovery system. • To understand various concepts of it based on real life examples.

Course: Web Technology(HTML- JS-CSS) (CA-205)
Course Objectives:

i) To know & understand concepts of internet programming.
ii) To understand how to develop web based applications using JavaScript.

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	1. Introduction	Learn client and server, HTTP, FTP, IP protocols, WWW, Response and Request mechanism.
CO2	Web Design	Details how to design a website its look and feel, its planning etc.
CO3	HTML	All html tags and how to create webpage using html.
CO4	Style Sheets	CSS in detail with its implementation for creating website.
CO5	JavaScript	Understand how to develop web based applications.

S. Y.
BBA(CA)
Semester III

Course: Digital Marketing (CA-301)

Course Objectives:

1) The aim of this syllabus is to give knowledge about using digital marketing in and as business.
2) To make SWOT analysis, SEO optimization and use of various digital marketing tools.

At the end of the course following outcome is expected

	Course unit Description	Outcome
CO1	**Unit :1 E-Commerce**	1) Helps the students to get to Know about Ecommerce Concept 2) Understanding what is Internet Marketing
CO2	**Unit :2 Introduction to New Age Media (Digital) Marketing**	1) Students get the knowledge of What are Digital Marketing concepts which is the basic requirements of every organization when it targets a new Group. 2)Students Get an Knowledge for Doing Project and understanding the flow of System and to attract the audience.
CO3	**Unit :3 Creating Initial Digital Marketing Plan**	1) Students get the knowledge of Various Keys supports of SWOT analysis: Strengths, Weaknesses, Opportunities, and 2) Threatsand how to write various quires using Relational algebra concepts.
CO4	**Unit :4 Marketing using Web Sites**	1) Give the detail description on Optimization of Web sites and why it is necessary 2) Explained how MS Expression Web works and what are various uses
CO5	**Unit :5 Search Engine Optimization**	Students are able to understand the concept of SEO Optimization and what are essential factors involved in it and how to write the SEO along with its importance in Digital world.
CO6	**Unit :6 Customer Relationship Management**	1) Students are able to understand the concept of Introduction to CRM 2) Give details description of what is CRM platform and how it is helpful in Digital Marketing. 3) Explained various stages of CRM models And CRM strategy regarding it.
CO7	**Unit :7 Social Media Marketing**	1) Understanding Social Media Marketing Social Networking. 2) Understanding the concepts of Web analytics – levels 3) Understanding the different Modes of Social Media Marketing and how actually it works
CO8	**Unit : 8 Digital Marketing Budgeting**	Understanding the Resource planning And in terms of Cost estimating, Cost budgeting, Cost control

Course: Data Structure(CA-302)

Objectives:

1. To understand the concepts of ADTs
2. To learn linear data structures – lists, stacks, and queues
3. To understand sorting, searching and hashing algorithms
4. To apply Tree and Graph structures

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Unit 1: Basic Concept and Introduction to Data Structure	1) To understand need and types of data structure. Ability to analyze algorithms and algorithm correctness.
CO2	Unit 2: Linear Data Structure	1)To understand and implement different searching and sorting techniques
CO3	Unit 3: Linked List	1) To learn linear data structure linked list and solution for specific problems.
CO4	Unit 4:Stack	1) To learn linear data structure stack and solution for specific problems.
CO5	Unit 5:Queue	1) To learn linear data structure queue and solution for specific problems.
CO6	Unit 6:Trees	1) To learn Non-linear data structure trees and solution for specific problems.
CO7	Unit 7:Graph	1) To learn Non-linear data structure graph and solution for specific problems.

Course: Software Engineering (CA-303)

Course Objectives:

1. To Understand System Concepts.
2. To Understand Software Engineering Concepts.
3. To Understand the application of Software Engineering concepts and design in software Development

At the end of the course following outcome is expected:

	Course unit Description	**Outcome**
CO1	Unit 1: Introduction to System Concepts	• Basic knowledge and understanding of the analysis and design of complex systems.
CO2	Unit 2: Introduction to Software Engineering	• Understand the need of software , types of Software and the main use of Software Engineering.
CO3	Unit 3: System Development Life Cycle (SDLC)	• Gain ability to design, develop,evaluate,test and maintain large-scale software systems and understood process models used in software

		Engineering.
C04	Unit 4 :Requirements Engineering	• Understandrequirements Engineering Tasks and Requirements of Engineering Process
CO5	Unit 5:Analysis and Design Tool	• Understood Designing and implement data flow analysis, Decision tress, Structure chart and diagram and data dictionary.
CO6	Unit 6:Software Testing	• Understood the Software Testing Process and different types of testing.
CO7	Unit7:Software Maintenance	• Ability to do maintenance of software and understood different types of maintenance , Reverse Engineering and Restructuring and forward Engineering

Course: PHP (CA-304)
Course Objectives:

1. Understand how server-side programming works on the web.
2. Using PHP built-in functions and creating custom functions
3. Understanding POST and GET in form submission.
4. How to receive and process form submission data.
5. Read and process data in a MySQL database.

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Unit 1 :PHP Basics	1) Give students the basic understanding of how things work in the Web world from the technology point of view as well as to give the basic overview of the different technologies. 2)Giving introduction about Clients- Servers and Communication & Web server and Web browser 3) Introduction to develop dynamic web pages by using server side scripting language PHP.
CO2	Unit 2: Control Structures and Loops	1) Understood Control Structures and Loops
CO3	Unit 3 :Functions, Objects and Errors	1) Learn different functions & string built in functions and class concept in php.
CO4	Unit 4: Working with Forms	1)Understood POST and GET in form submission
CO5	Unit 5: More with Forms	Learn to retrieve values from form, validation of form and Email handling programming.

CO6	Unit 6: Storing and Protecting Data	Learn to receive and process form submission data using cookies and Session.
CO7	Unit 7 :Database Overview	Learn to Read and process data in a MySQL database and explain differentadvanced database techniques.

Course: Big Data (CA - 305)

Course Objectives

1. To enable learners to develop expert knowledge and analytical skills in current anddeveloping areas of analysis statistics, and machine learning
2. To enable the learner to identify, develop and apply detailed analytical, creative, problem solving skills. 3. Provide the learner with a comprehensive platform for an career development, innovation and further study.

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Unit 1: INTRODUCTION TO BIG DATA	1) To enable students to know about Big data and difference between big data and traditional data. 2) To know about application area of big data.
CO2	Unit 2: INTRODUCTION TO DATA SCIENCE	1) Understood data science and skill set required by data scientist. 2) Understood data analytics details and statistical model.
CO3	Unit 3:INTRODUCTION TO MACHINE LEARNING	1) Understood basics of machine learning. 2) Understood various algorithms.
CO4	Unit 4:DATA ANALYTICS WITH R/ WEKA MACHINE LEARNING	1) Understood Data analytics tools. 2) Demonstration of WEKA tool.

S. Y. BBA(CA)

Semester IV

Course: Networking (CA-401)

Course Objectives:

1. To prepare students with basic networking concepts: data communication, protocol and standards, various topologies and applications of network.
2. To know about computer network.
3. To understand different topologies used in networking
4. To learn different types of network.
5. To understanding the use of connecting device used in network.
6. Learn how computer network hardware and software operate

7. Investigate the fundamental issues driving network design
8. Learn about dominant network technologies.

At the end of the course following outcome is expected :

	Course unit Description	Outcome
CO1	Introduction to Computer Network	1) Students can get job as a Network Administrator in any organization. 2) This subject has wide scope in every MNC's as Networking is required everywhere.
CO2	Network Models	1)Able to explain various terminologies and concepts related to Network Models 2)Identify the different types of network topologies and protocols
CO3	Transmission Media	2) Understand the concept of reliable and unreliable transfer protocol of data and how TCP and UDP implement these concepts, to understand the client/server model and socket API with their implications, skills to implement a network protocol based on socket programming.
CO4	Wired and Wireless LANs	Understand connecting LAN's, backbone networks, and virtual LAN's. Students should understand operations of Able to compare and contrast the data transmission modes: serial and parallel as well as synchronous, asynchronous, and isochronous with relevant examples. bridges and the spanning tree algorithm.
CO5	Network Devices	Familiarity with the basic protocols of computer networks, and how they can be used to assist in network design and implementation.
CO6	Network Security	Can effectively discuss that bandwidth utilization is goal-oriented and involves trade-offs by showing that multiplexing (TDM, FDM, WDM) efficiently use bandwidth while spread spectrum inefficiently use bandwidth to ensure privacy and anti-jamming.

Course: Object Oriented Concept Through Cpp (CA-402)

Course Objectives:

1. To acquire an understanding of basic object-oriented concepts and the issues involved ineffective class design.
2. To understand the concept of data abstraction and encapsulation.
3. To Enables student to write C++ programs that use: object-oriented concepts such asinformation hiding, constructors, destructors and inheritance.

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Introduction to C++	• Students will understand the features of C++supporting object-oriented programming, concept and application of OOP
CO2	Beginning with C++	• Understanding the basic concepts,Implementation and build models in C++. • Understanding the implementation of user define function.
CO3	Classes and Objects	• Understanding concept of classes and objects. • Understand to build/ produce object-oriented software using C++ through classes and object.
CO4	Constructor and Destructor	• To know about constructor and destructor. • Understand to develop application using constructor.
CO5	Inheritance	• Understand how to apply inheritance to implement programs in C++. • To know different types of inheritance.
CO6	Polymorphism.	• Understand how to apply polymorphism to implement programs in C++. • To know different types of polymorphism.
CO7	Managing console, I/O operations	• Understand advanced features of C++ specifically stream I/O and templates.
CO8	Working with Files	• Understand how to handle files. • To know how to perform various operations on file.
CO9	Template	• Understand advanced features of C++ template. • To know how to create template.

Course: **Operating System(CA-403)**

Course Objectives:

1. Issues related to memory management and various related algorithms.
2. To understand design issues related to File management and various related algorithms
3. To know the services provided by Operating System
4. To know the scheduling concept
5. To understand design

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	**Introduction to Operating System**	• Explain the fundamental components of a computer operating system.
CO2	**System Structure**	• Study structure of operating system.
CO3	**Process Management**	• Define, restate, discuss, and explain the policies for scheduling. • Define states of process management.
CO4	**CPU Scheduling**	• Understand various queues in process execution. • How CPU get allocated for process execution using various algorithms like fcfs, SJF, Priority, round robin.
CO5	**Process Synchronization**	• Understand the process management policies and scheduling of processes by CPU. • Understand the critical section problem along with semaphore.
CO6	**Deadlock**	• To Define, restate, discuss, and explain the concept of deadlocks in real life. • To Understand the Mutual exclusion, Deadlock detection and agreement protocols of Distributed operating system
CO7	**Memory Management**	• Calculate efficiency of different memory management.
CO8	**File System**	• To define, restate, discuss, and explain the policies for file systems.
CO9	**I/O System**	• To define, restate, discuss, and explain the policies for I/O systems.

Course: **Advance PHP (CA-404)**

Course Objectives:

1. To know & understand concepts of internet programming.
2. Understand how server-side programming works on the web.
3. Understanding How to use PHP Framework (Joomla / Druple)

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Introduction to Object Oriented Programming in PHP	• Understand OOP concept of visibility, inheritance and interface
CO2	Web Techniques	• Study about processing form.
CO3	XML	• Understand concept of XML. • Define document object model and XML extension.
CO4	Ajax with PHP	• Learn Ajax basic script • Learn how to connect with database using Ajax and PHP
CO5	Introduction to Web Services	• To understand core building block of web services.
CO6	PHP Framework (Joomla / Druple	• To define, restate, discuss, and explain the concept of deadlocks in real life. • To Understand PHP framework and MVC architecture.

Class:TYBBA(CA)
Semester:V

Course: Cyber Security CA-501
Course Objectives:

- To introduce the object oriented programming concepts.
- To understand object oriented programming concepts, and apply them in solving problems.
- To introduce the principles of inheritance and polymorphism; and demonstrate how they relate to the design of abstract classes
- To introduce the implementation of packages and interfaces
- To introduce the concepts of exception handling and multithreading.
- To introduce the design of Graphical User Interface using applets and swing controls

	Course Unit Description	**Outcome**
CO1	Introduction to Cyber Crime and Cyber Security	Have a good understanding of Cyber Security and the Tools.
CO2	Cyber offenses and Cyberstalking	Identify the different types of Cyber Crimes.
CO3	Tools and Methods Used in Cybercrime	Have a good understanding of Cyber laws
CO4	Cybercrimes and Cyber security: The Legal Perspectives	Have a good understanding of Cyber laws
CO5	Cyber Forensics	To develop Cyber forensics awareness.
CO6	Cybersecurity: Organizational Implications	Identify attacks, security policies and credit card frauds in mobile and Wireless Computing Era
CO7	Cybercrime: Illustrations, Examples and Mini-Cases	Identify attacks, security policies and credit card frauds in mobile and Wireless Computing Era

Course: Object Oriented Software Engineering: CA-502
Course Objectives

1. To understand the fundamentals of object modeling
2. To understand and differentiate Unified Process from other approaches.
3. To design with static UML diagrams.
4. To design with the UML dynamic and implementation diagrams.
5. To improve the software design with design patterns.

6. To test the software against its requirements specification.

	Course Unit Description	**Outcome**
CO1	Introduction and basics of Software Modelling	To design with the UML dynamic and implementation diagrams.
CO2	SRS Documentation	To understand and differentiate Unified Process from other approaches.
CO3	Introduction to UML	Students will be able to give Design Specifications for Project.
CO4	Object Oriented Concepts and Principles	To design with static UML diagrams.
CO5	Structural Modeling	Students will acquire Knowledge in Basic Modeling.
CO6	Basic Behavioural Modeling	To design with the UML dynamic and implementation diagrams.
CO7	Architectural Modelling	To improve the software design with design patterns
CO8	Object Oriented Analysis	To improve the software design with design patterns
CO9	Object Oriented Design	To test the software against its requirements specification.

Course Name: Core Java CA-503

Course Objectives:

- To introduce the object oriented programming concepts.
- To understand object oriented programming concepts, and apply them in solving problems.
- To introduce the principles of inheritance and polymorphism; and demonstrate how they relate to the design of abstract classes
- To introduce the implementation of packages and interfaces
- To introduce the concepts of exception handling and multithreading.
- To introduce the design of Graphical User Interface using applets and swing controls.

	Course Unit Description	**Outcome**

CO1	Java Fundamentals	Understanding the basic fundamentals and important terminologies of java.
CO2	Classes, Objects and Methods	Understanding how to create classes and objects
CO3	Inheritance, Package and Collection	Understanding newnew functionalities like Interface, Packages etc. and Get detailed knowledge of collection, map, Iterator etc.
CO4	File and Exception Handling	Understand exception and file handling in detailed
CO5, CO6	Applet, AWT, Event and Swing Programming	Understanding how to create small internet applications using applet and know how to create GUI in java using AWT and Swing

Course: Python 504
Course Objectives:

1. To learn and understand Python programming basics and paradigm.
2. To learn and understand python looping, control statements and string manipulations.
3. Students should be made familiar with the concepts of GUI controls and designing GUI applications.
4. To learn and know the concepts of file handling, exception handling

	Course Unit Description	**Outcome**
CO1	Introduction to Python	Understand Python programming basics and paradigm.
CO2	Modules and Packages	Understand python looping, control statements and string manipulations.
CO3	Classes ,Objects and Inheritance	understand Python programming basics and paradigm
CO4	Exception Handling	concepts of file handling, exception handling.
CO5	GUI Programming	GUI application and how to handle exceptions and files.
CO6	Python Libraries	Students should be made familiar with the concepts of GUI controls and designing GUI applications.

Course Code: 506
Course: Computer Laboratory Based on 503 and 504(2 credits each)

	Outcome
CO1	Use the concepts of Python or MongoDB to develop applications.
CO2	Apply the concepts of core JAVA Programming for problem solving
CO3	Demonstrate his theoretical knowledge practically in computer laboratory.

SEM V I

TYBBA(CA)

Course: Recent Trends in IT (CA-601)

Course Objectives
1. To introduce upcoming trends in Information technology.
2. To study Eco friendly software development concepts.
3. To provide a strong foundation of fundamental concepts in Artificial Intelligence.
4. To evaluate the performance of various data mining task.
5. To understand Data analytics using Spark Programming.

	Course Unit Description	**Outcome**
CO1	Introduction to recent trends	To introduce upcoming trends in Information technology.
CO2	Artificial Intelligence	To discuss the basic concepts AI
CO3	AI Search Techniques	To provide a strong foundation of fundamental concepts in Artificial Intelligence.
CO4	Data Warehousing	To apply basic, intermediate and advanced techniques to mine the data
CO5	Data Mining	To evaluate the performance of various data mining task
CO6	Spark	To provide an overview of the concept of Spark programming.

Course: Software Testing(CA-602)

Course Objectives:

1. To provide learner with knowledge in Software Testing techniques.
2. To understand how testing methods can be used as an effective tool in providing quality assurance for software.
3. To provide skills to design test case plan for testing software

	Course Unit Description	**Outcome**
CO1	Introduction	To provide learner with knowledge in Software Testing techniques.
CO2	Approaches to Testing –Testing Methods	Students will be introduced to testing tools.
CO3	Software Testing Strategies &Software metrics	To understand how testing methods can be used as an effective tool in providing quality assurance for software.
CO4	Software metrics	To provide skills to design test case plan for testing software
CO5	Testing for Specialized Environments	Students will acquire Knowledge of Basic SQA.
CO6	Testing Tools& Software Quality Assurance (Introduction)	Students will be able to design basic Test Cases.

Course: Advanced Java(CA-603)

Course Objectives

1. To know the concept of Java Programming.
2. To understand how to use programming in day to day applications.

	Course Unit Description	**Outcome**
CO1	JDBC	Students will know the concepts of JDBC Programming
CO2	Multithreading	Students will know the concepts of Multithreading and Socket Programming.
CO3	Networking	Students will know the concepts of Spring and Hibernate
CO4	Servlet and JSP	Students will develop the project by using JSP and JDBC
CO5	Spring & Hibernate	Students will develop applications in Spring and hibernate.

Course: Android Programming (CA-604)

Course Objective:

1. To understand the Android Operating System and develop applications using Google's Android open source platform.

2. To understand the issues relating to Wireless applications

	Course Unit Description	**Outcome**
CO1	Introduction to android programming	Demonstrate their understanding of the fundamentals of Android operating systems
CO2	Activity, intent and layout	Demonstrate their skills of using Android software development tools
CO3	Basic UI design	Student will be able to write simple GUI applications, use built-in widgets and components, work with the database to store data locally, and much more
CO4	Adapter and menu	To understand the issues relating to Wireless applications.
CO5	Threads and notification	Student will able to understand use of threads and notifications
CO6	Content provider	Student will able to understand working of content provider
CO7	Location based services and google map	Students will understand issues relating to Wireless applications.

Course: Computer Laboratory based on 603 and 604(2 credits each)

	Outcome
CO1	Apply the knowledge of Android Programming for app development
CO2	Use the concepts of JDBC for Database connectivity
CO3	Apply the concepts of Adv JAVA for distributed applications and problem solving
CO4	Demonstrate theoretical knowledge practically in computer laboratory.

TYBBA(CA)

SEMISTER VI

Course: Advanced Web Technology (601)
Course Objectives:
1. To know & understand concepts of internet programming.
2. To understand the concepts of XML and AJAX.

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Introduction to Object Oriented Programming in PHP	Explain class, object, inheritance & interface concepts in php.
CO2	Web Techniques	1) Giving introduction about Clients- Servers and Communication & Web server and Web browser 2) Introduction to develop dynamic web pages by using server side scripting language PHP. 3) Explain cookie and session handling.
CO3	Databases	**1)** Introducing PHP and MYSQL database connectivity **2)**Explain differentadvanced database techniques
CO4	XML	Learn styling, formatting and various XML parsers
		used for websites.
CO5	Web services	Explain concept of Web service.
CO6	Ajax	Design of dynamic and interactive web sites 2) Use of advanced web techniques to build effective web pages. 3)Students learn various recent web technologies viz. PHP, XML, AJAX etc used for client side and server side scripting

Course : Advanced Java old pattern

Course Objectives :
1 To know the concepts of java programming.
2. To understand how to use programming in day to day application.
3. To develop programming logic.

At the end of the course following outcome is expected :

	Course unit Description	Outcome
CO1	JDBC	To understand database connectivity with MS access and SQL server.
CO2	Networking	To understand client server technology.
CO3	JSP	To understand creation of dynamic web pages.
CO4	Servlet	To understand creation of dynamic web pages through server.
CO5	Multithreading	To understand concepts of thread and develop application using multithreading.
CO6	Java Beans	To introduce Java beans and Beans Development Kit.
CO7	RMI	To introduce RMI, Stubs and Skeleton

Course : Recent Trends in IT
Course Objectives :
1. To introduce upcoming trends in Information technology.
2. To study Eco friendly software development.

At the end of the course following outcome is expected

	Course unit Description	Outcome
CO1	Software Process And Project Metrics, Analysis Concepts AndPrinciples	To study Eco friendly software development.
CO2	Distributed Databases	Main objective is to understand the principles

		and foundations of distributed databases.
CO3	Data Warehouse	To learn architecture of Data Warehouse
CO4	Network Security	To understand data security and its importance
CO5	Computing and Informatics	To learn concept of cloud computing.

Course: Sofware Testing (604)

Course Objectives:-

1. To know the concept of software testing.
2. To understand how to test bugs in software.
3. To develop programming logic.

At the end of the course following outcome is expected

	Course unit Description	Outcome
CO1	Software Testing	Fundamentals of testing
CO2	Approaches to Testing - I	Types of testing in details
CO3	Testing for Specialized Environments	Able to test on GUI's and all real time systems
CO4	Software Testing Strategies &Software metrics	Types of testing in details
CO5	Specialized Testing & Testing	ble to do testing with Tools.

A.T.S.S.'s

College of Business Studies and Computer Applications

Chinchwad, Pune 19

(Affiliated to Savitribai Phule Pune University, Recognized by Govt. of Maharashtra , Accredited by NAAC)

Academic Year 2019 – 20

Program: BSc (Computer Science)

Department of Computer Science & Applications

Program Outcomes (PO)

PO1: Knowledge: Apply the knowledge of mathematics, Electronics and Computer science, to the solution of complex problems.

PO2: Problem analysis: Identify, formulate, and analyze most challenging computer science problems and reaching substantiated conclusions using principles of mathematics, and Computer sciences.

PO3: Design/development of solutions: Design and Develop solutions for complex problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal considerations.

PO4: Modern tool usage: Create, select, and apply appropriate techniques, resources and IT tools including prediction and modelling to complex activities with an understanding of the limitations.

PO5: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the Computer Science.

PO6: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO7: Project management: Demonstrate knowledge and understanding of the management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO8: Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PEO – Program Educational Objectives:

1. To provideknowledge of technological and practical aspects of electronics.
2. To familiarize with current and recent technological developments
3. To enrich knowledge through activities such as industrial visits, seminars, projects etc.
4. To train students in skills related to computer industry and market.
5. To create foundation for research and development in Electronics/Computer.
6. To develop analytical abilities towards real world problems.
7. To help students to build-up a progressive and successful career.

F. Y. BSc.

Semester I

Course: Problem Solving using Computer and 'C' Programming (CS-111)

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Problem Solving Aspects 'C' Fundamentals	Explain the algorithmic approaches to problem solving.
CO2	Control Structures	Develop programs using control structures.
CO3	Functions	Develop Modular programming.
CO4	Array	Develop modular programs using arrays in 'C'.
CO5	Practical and Oral	Improve written, oral, and presentation communication skills related to the subject of Problem Solving using Computer and 'C'and engage in a life-long learning.

Course: Database Management Systems (CS-112)

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Introduction to DBMS	Explain the fundamental concepts of database and its structure.
CO2	Conceptual Design	Analyze DB design process and explain the various data models
CO3	SQL	Develop SQL queries and create relational database in PostgresSQL.
CO4	Relational Database Design	Design relational data structures of moderate complexity with concepts of decomposition and Normalization.
CO5	Practical and Oral	Improve written, oral, and presentation communication skills related to the subject of Database Management Systemsand engage in a life-long learning.

Course: Semiconductor Devices and Basic Electronic Systems(ELC-111)

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Semiconductor Diodes and Bipolar Junction Transistor (BJT)	Explain the basics of semiconductor devices and analyze different types of transistor circuits
CO2	MOSFET	Explain the concept of MOSFET
CO3	Power Supply and Oscillators	Design different types of power supply units, oscillators and multivibrator circuits
CO4	Data Converters	Explain the operation of data converter
CO5	Practical and Oral	Improve written, oral, and presentation communication skills related to the subject of Semiconductor Devices and Basic Electronic Systems and engage in a life-long learning.

Course: Principles of Digital Electronics (ELC-112)

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Number System and Digital Codes	Analyze the basics of number systems
CO2	Logic gates and Boolean Algebra	Design the logical circuit using logic gates and boolean expression.
CO3	Combinational Circuits	Design the combinational circuits.
CO4	Practical and Oral	Improve written, oral, and presentation communication skills related to the subject of Principles of Digital Electronics and engage in a life-long learning.

Course: Matrix Algebra (MTC-111)

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Introduction	Explain the fundamentals of Matrix Algebra
CO2	Linear Equation in Linear Algebra-I	Analyze the Linear Equation and solve it in Maxima Software
CO3	Linear Equation in Linear Algebra-II	Explain the Partitioned Matrix,Matrix Factorization and solve problems to present solutions
CO4	Determinants	Explain the determinant measures geometrically and analyze the determinant problems.
CO5	Practical and Oral	Improve written, oral, and presentation communication skills related to the subject of Matrix Algebra and engage in a life-long learning.

Course: Discrete Mathematics (MTC-112)

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Logic	Analyze basic logic statements including and construct simple mathematical proofs
CO2	Lattices and Boolean Algebra	Explain basic mathematical objects, simple mathematical propertiesand solve problems in maxima
CO3	Counting principle	Analyze the problems in maxima, combinatorial problems by applying basic counting techniques and explain various techniques of mathematical permutation and combination
CO4	Recurrence relation	Explain the computer programs in a formal mathematical manner and solve problems using recurrence relations to implement recurrence relation in maxima.
CO5	Practical and Oral	Improve written, oral, and presentation communication skills related to the subject of Discrete Mathematics and engage in a life-

		long learning.

Course: Descriptive Statistics – 1(CSST-111)

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Data Condensation and Presentation of Data	Explains fundamentals of Statistics and methods of data collection by interpreting diagrams and graphs
CO2	Descriptive Statistics	Explains and evaluates various measures of central tendency and dispersion-Range, Quartile deviation, Mean deviation, Standard deviation.
CO3	Moments, Skewness and Kurtosis	Explain the concept of moments, skewness and kurtosis of distributions and solve problems.
CO4	Theory of Attributes	Explain the association of attributes and different methods of measures of association.
CO5	Practical and Oral	Improve written, oral, and presentation communication skills related to the subject of Descriptive Statistics – 1 and engage in a life-long learning.

Course: Mathematical Statistics (CSST- 112)

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Theory of Probability	Explain the different approaches to probability and evaluates probability of events
CO2	Conditional Probability and Independence	Explains the meaning & concept of conditional probability and analyzeits application level problems.
CO3	Random Variable	Analyze the random variable and a probability distribution.
CO4	Standard Discrete Distributions	Explain the role of the standard normal distribution by solving probabilities using various methods.
CO5	Practical and Oral	Improve written, oral, and presentation communication skills related to the subject of Mathematical Statisticsand engage in a life-long learning.

Semester II

Course: Advanced 'C' Programming (CS-121)

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Pointers, Strings	Develop the programs based on pointers and string and explain the dynamic memory management concept.

CO2	Structures And Unions	Develop the programs based on Structures and Unions
CO3	File Handling	Explain the files and their operations and develop the related programs
CO4	Preprocessor	Explain the concept of header files.
CO5	Practical and Oral	Improve written, oral, and presentation communication skills related to the subject of Advanced 'C' Programming and engage in a life-long learning.

Course: Relational Database Management Systems (CS-122)

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Relational Database Design Using PLSQL	Analyze and design a real database application using PLSQL.
CO2	Transaction Concepts and concurrency control	Explain the properties of transaction mgmt.
CO3	Database Integrity and Security Concepts	Explain the database security concepts and database integrity
CO4	Crash Recovery	Explain the recovery management in DBMS
CO5	Other Databases	Explain the latest trend in DB world, parallel and distributed Databases.
CO6	Practical and Oral	Improve written, oral, and presentation communication skills related to the subject of Relational Database Management Systems and engage in a life-long learning.

Course: Instrumentation System (ELC-121)

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Introduction to Instrumentation System	Explain the concept of instrumentation system and specifications of sensor
CO2	Sensors and Actuators	Explain the different types of sensors and actuators and application of it.
CO3	Smart Instrumentation System and Smart Sensor	Explain the smart instrumentation system and smart sensors
CO4	Op-Amp as Signal Conditioner	Design and implementation of op-amp and its circuits
CO5	Practical and Oral	Improve written, oral, and presentation communication skills related to the subject of Instrumentation System and engage in a life-long learning.

Course: Basics of Computer Organization (ELC- 122)

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Flip flops	Design and implementation of flip flops

CO2	Shift Registers and Counters	Design and implementation sequential circuits
CO3	Basics of computer system	Explain the basics of computer system
CO4	Memory Organization	Explain the concept of memory organization
CO5	Practical and Oral	Improve written, oral, and presentation communication skills related to the subject of Basics of Computer Organization and engage in a life-long learning.

Course: Linear Algebra (MTC-121)

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	General Vector Spaces	Analyze the linear equations, matrix algebra and vector spaces by applying computational techniques and algebraic skills
CO2	Eigenvalues and Eigenvectors	Analyze the eigenvalues and eigenvectors by applying computational techniques and algebraic skills
CO3	Orthogonality and Symmetric Matrices	Explain the orthogonal projections, symmetric matrices and analyze orthogonality of vectors.
CO4	The Geometry of Vector Spaces	Explain the Affine Combinations, Affine Independence & Convex combinations with Geometric visualization.
CO5	Practical and Oral	Improve written, oral, and presentation communication skills related to the subject of Linear Algebra and engage in a life-long learning.

Course: Graph Theory (MTC- 112)

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	An introduction to graph	Analyze the problems related networks and graphs
CO2	Connected graph	Explain the theory of paths and the degree of connectedness of a graph and prove central theorems about connectivity.
CO3	Euler and Hamilton graph	Analyze the graph theoretical problems by applying the algorithms
CO4	Trees	Analyze the central theorems about trees.
CO5	Practical and Oral	Improve written, oral, and presentation communication skills related to the subject of Graph Theory and engage in a life-long learning.

Course: Methods of Applied Statistics (CSST-121)

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Correlation	Analyze the correlation between two variables and explain the significance.

CO2	Regression	Analyze the linear regression equation and explain the concept of regression analysis.
CO3	Multiple Regression and Multiple, partial Correlation	Analyze the Multiple and partial correlation between two variables explain its significance
CO4	Time series	Explain the concepts of time series and their application
CO5	Practical and Oral	Improve written, oral, and presentation communication skills related to the subject of Methods of Applied Statistics and engage in a life-long learning.

Course: Continuous Probability Distributions and Testing of Hypothesis (CSST-122)

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Standard Continuous Probability Distributions	Analyze the problems related standard continuous probability distribution.
CO2	Concepts and definitions related to testing of hypothesis	Explain the fundamentals of hypothesis and hypothesis testing.
CO3	Parametric Tests	Explain the appropriate statistical methods for data analyzing by applying parametric tests.
CO4	Simulation	Explain the different types of simulation which is applied in engineering disciplines.
CO5	Practical and Oral	Improve written, oral, and presentation communication skills related to the subject of Methods of Applied Statistics and engage in a life-long learning.

S. Y. BSc.

Semester III

Course: Data Structures and Algorithms – I (CS- 231)

	Course unit Description	**Outcome**
CO1	Introduction to Data Structures and Algorithm Analysis	Explain the need and types of data structure and analyze algorithms and its correctness.
CO2	Arrays	Explain the concept of static allocation and Develop the different searching and sorting techniques using Arrays.
CO3	Linked List	Explain the concept of dynamic allocation and Develop the linked list data structures and solution for specific problems.
CO4	Stack	Develop the stack data structures and solution for specific problems.
CO5	Queue	Develop the Queues data structures and solution for specific problems.
CO6	Practical and Oral	Improve written, oral, and presentation communication skills related to the subject of Data Structure using ‘C’ and engage in a life-long learning.

Course: Software Engineering (CS-232)

	Course unit Description	Outcome
CO1	Introduction To Software Engineering and Process Models	Analyzes and design the complex systems by applying software engineering principles and techniques.
CO2	Agile Development	Explain the software process models such as the waterfall, evolutionary models, Incremental Process Models and Agile Process Models
CO3	Requirements Analysis	Explain the requirements engineering tasks and requirements engineering process
CO4	Requirements Modeling	Explain the concepts of Modeling and UML in which different diagrams like use case, class etc.
CO5	Design Concepts	Designing and implement data flow analysis and diagram and data dictionary.
CO6	Practical and Oral	Improve written, oral, and presentation communication skills related to the subject of Software Engineering and engage in a life-long learning.

Course: Microcontroller Architecture & Programming (ELC-231)

	Course unit Description	Outcome
CO1	Basics of Microcontroller & Intel 8051 architecture	Explain the basics of Microcontroller and its architecture.
CO2	Programming model of 8051	Develop the different programming models using embedded C
CO3	Timer /Counter, Interrupts	Develop the programming models using embedded C for various peripherals.
CO4	Interfacing, Serial Communication	Explain the interfacing ADC, DAC etc, and implement different microcontroller applications using embedded C
CO5	Practical and Oral	Improve written, oral, and presentation communication skills related to the subject of The 8051 Architecture, Interfacing & Programming and engage in a life-long learning.

Course: Digital Communication and Networking (ELC-232)

	Course unit Description	Outcome
CO1	Introduction to Electronic Communication	Explain the basic communication system and Design of Hamming code
CO2	Modulation and Demodulation	Design and implementation of different modulation and demodulation circuits. Understand the impact and limitations of various digital modulation techniques
CO3	Multiplexing, Spectrum Spreading and Media Access Control	Explain the concept of digital communication techniques. To acknowledge the need of spread spectrum schemes.

CO4	Computer Networking	Identify functions of data link layer and network layer while accessing communication link To choose appropriate and advanced techniques to build the computer network
CO5	Practical and Oral	Improve written, oral, and presentation communication skills related to the subject of Communication Principles and engage in a life-long learning.

Course: Groups and Coding Theory (MTC-231)

	Course unit Description	**Outcome**
CO1	Integers	Explain Division Algorithm, Euclid lemma, Equivalence relation.
CO2	Groups	Analyze the binary operations and the dimension of a groups.
CO3	Finite Groups and Subgroups	Explain order of groups, subgroups, finite subgroups, permutation groups
CO4	Groups and Coding Theory	Explain Coding of Binary Information and Error detection Decoding and Error Correction Introduction to Public Key Cryptography
CO5	Practical and Oral	Students are able to apply their skills and knowledge, that is, translate information presented verbally into mathematical form, select and use appropriate mathematical formulae or techniques in order to process the information and draw the relevant conclusion.

Course: Numerical Analysis (MT-232)

	Course unit Description	**Outcome**
CO1	Algebraic and Transcendental Equation	Explain the numerical methods to obtain approximate solutions to mathematical problems.
CO2	Calculus of Finite Differences and Interpolation	Analyze the common numerical methods to obtain approximate solutions for intractable mathematical problems
CO3	Numerical Integration	Analyze the numerical methods for various mathematical operations and tasks and implement numerical methods.
CO4	Numerical Solution of Ordinary Differential Equation	Analyze numerical methods for various mathematical operations and tasks, such as interpolation, differentiation, integration and implement numerical methods.
CO5	Practical and Oral	Improve written, oral, and presentation communication skills related to the subject of Numerical Analysisand engage in a life-long learning.

Course: Technical English (EN 231)

At the end of the course following outcome is expected:

	COURSE UNIT DESCRIPTION	OUTCOME
CO1	Literature Components	Explain the texts with attention to ambiguity, complexity, and aesthetic value and develop new strategies to enhance reading comprehension.
CO2	Vocabulary	Develop the communication skills by enhancingnew vocabulary.
CO3	Grammar	Explain the grammar terminology.
CO5	Oral	Improve written, oral, and presentation communication skills related to the subject of Technical Englishand engage in a life-long learning.

Semester IV

Course: Data Structures and Algorithms-II (CS-241)

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Tree	To efficiently implement tree data structures and solution for specific problems.
CO2	Efficient Search Trees	To efficiently understand Search Tree Algorithms and solution for specific problems.
CO3	Graph	To efficiently implement the graph data structures and solution for specific problems.
CO4	Hash Table	To efficiently implement the Hash Table data structures and solution for specific problems.
CO5	Practical and Oral	Improve written, oral, and presentation communication skills related to the subject of Data Structures and Algorithmsand engage in a life-long learning.

Course: Computer Networks -I(CS-242)

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Introduction to Networks and Network Models	To understand the OSI and TCP/IP Reference Models, Layers and working of various protocols.
CO2	Lower Layers	To understand the lower layer model, protocols and interworking between computer networks with its application and implications.
CO3	Network Layer	Understand Network layer services and working process of IPv4 and IPv6
CO4	Transport Layer	Understand Transport layer services, working process of Connectionless and Connection-Oriented services.

CO5	Practical and Oral	Improve written, oral and presentation communication skills related to the subject of Computer Networks and engage in a life-long learning.

Course:The 8051 Architecture, Interfacing &Programming(ELC-221)

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Basics of Microcontroller & Intel 8051 architecture	Explain the basics of Microcontroller and its architecture.
CO2	Programming model of 8051	Develop the different programming models using embedded C
CO3	Timer / counter, serial communication, Interrupts & Programs using C language.	Develop the programming models using embedded C for various peripherals.
CO4	Interfacing, programming using C – language & applications of 8051	Explain the interfacing and implement different microcontroller applications using embedded C
CO5	Practical and Oral	Improve written, oral, and presentation communication skills related to the subject of The 8051 Architecture, Interfacing & Programming and engage in a life-long learning.

Course:Communication Principles(ELC-222)

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Introduction to Electronic Communication	Explain thebasic communication system and Design of Hamming code
CO2	Modulation and Demodulation	Design and implementation of different modulation and demodulation circuits
CO3	Multiplexing and Multiple Access Techniques	Explain the concept of digital communication techniques.
CO4	Wireless Communication System	Explain the different advanced wireless systems and its application
CO5	Practical and Oral	Improve written, oral, and presentation communication skills related to the subject of Communication Principles and engage in a life-long learning.

Course: Computational Geometry (MT-221)

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Two Dimensional Transformation	Analyze the computational geometry in 2D transformation
CO2	Three Dimensional Transformation	Analyze the computational geometry in 3D transformation and explain Orthogonal projection, axonometric projection, oblique projection, perspective projection.
CO3	Plane Curves	Analyze various curves representation.
CO4	Space Curves	Analyze the Bezier Curves and strategies to

		model solve problems
CO5	Practical and Oral	Improve written, oral, and presentation communication skills related to the subject of Computational Geometry and engage in a life-long learning.

Course: Operation Research (MTC 222)

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Modelling with Linear Programming	Develop linear programming (LP) models and graphical representation of a two dimensional
CO2	The simplex method Duality	Analyze the simplex method to solve maximization LP problems and duality problems
CO3	Transportation Model and its variant	Explain the mathematical tools to solve optimization problems.
CO4		
CO5	Decision Analysis and Games	Analyze the zero-sum two- person games andexplain the best strategy using decision making methods under uncertainty and game theory.
CO5	Practical and Oral	Improve written, oral, and presentation communication skills related to the subject of Operation Researchand engage in a life-long learning.

Course: Technical English (EN 221)

At the end of the course following outcome is expected:

	Course Unit Description	Outcome
CO1	Literature Components	Explain the working knowledge of poetry as a literary genreans distinct literary characteristics of poetic forms.
CO2	Communication Skills	Develop the critical and innovative thinkingby oral, written, and visual communication.
CO5	Oral	Improve written, oral, and presentation communication skills related to the subject of Technical English and engage in a life-long learning.

T. Y. BSc.

Semester V

Course: Operating System-I (CS - 351)

At the end of the course following outcome is expected:

	Course unit Description	Outcome

CO1	Introduction to Operating Systems	Identify the role of Operating System To understand the design of control unit
CO2	Processes and Threads	Identify the basic concept of Processes and states of processes Understanding concept of thread. Thread Scheduling by operating system
CO3	Process Scheduling	Understanding CPU Scheduling, Synchronization, Deadlock Handling and Comparing CPU Scheduling Algorithms.
CO4	Synchronization	Synchronization in process and threads by operating system and concept of Semaphore.
CO5	Memory Management	Memory management by operating system using with the help of various schemes
CO6	Practical and Oral	Improve written, oral, and presentation communication skills related to the subject of Operating system- II and engage in a life-long learning.

Course: Computer Network-II (CS - 352)

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Application Layer	To understand different protocols of application layer.
CO2	Multimedia	To understand concepts of multimedia.
CO3	Cryptography and Network Security	Explain the various types of Cryptography
CO4	Security in the Internet	Explain the structure and working of Security in the Internet and Network/INTERNET security.
CO5	Data Link Layer and Medium Access Sub layer	Explain the structure of Data Link Layer and their sub layers and solve problems related to

		Error detection and correction.
CO6	Practical and Oral	Improve written, oral, and presentation communication skills related to the subject of Computer Network-II and engage in a life-long learning.

Course: Web Technologies - I(CS - 353)

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Introduction to HTML, HTTP and PHP	Explain web techniques to develop dynamic web pages by using server side scripting language PHP.
CO2	Function and String	Understand how to develop a dynamic and interactive Web site
CO3	Arrays	Understand the use of programming constructs
CO4	Files and database handling	Understand how to handle different databases.
CO5	Handling email with php	Explain different advanced database techniques

Course: Foundation of Data Science (CS-354)

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Introduction to Data Science	Understand the process of Data Science., Obtain, clean/process, and transform data.
CO2	Statistical Data Analysis	Detect and diagnose common data issues, such as missing values, special values, outliers, inconsistencies, and localization. Demonstrate proficiency with statistical analysis of data.
CO3	Data Preprocessing	Prepare data for use with a variety of statistical methods and models and recognize how the quality of the data and the means of data collection may affect conclusions.
CO4	Data Visualization	Present results using data visualization techniques.

Course:Object Oriented Programming using Java - I(CS-355)

Atthe endofthe coursefollowing outcomeis expected:

	CourseunitDescription	Outcome
CO1	An Introduction to Java	1.Understand fundamentals of programming such as variables, conditional and iterative execution, methods. 2.Be able to use the Java SDK environment to create, debug and run simple Java programs.
CO2	Objects and Classes	1.Understand fundamentals of object-oriented programming in Java, including defining classes, invoking methods, using class libraries
CO3	Inheritance and Interface	1. Understand the

		inheritance and interface concept and learn how to apply them.
CO4	Exception and File Handling	1. Understand Exception and file handling. 2. Understand how to interact with file using java programs.
CO5	User Interface with AWT and Swing	1. Understand and learn AWT, Swing concepts and how to implement.

Course: Theoretical Computer Science (CS-356)

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Introduction	Explain the operations on languages and regular expression identifiers.
CO2	Finite Automata	Explain the finite state,DFA as a pattern recognizer, NFA to DFA method.
CO3	Regular Languages Context Free Grammar and Languages	Explain regular language and context free language
CO4	Push Down Automaton	Develop the PDA using empty state &final state method.
CO5	Turing Machine	Explain the Turing machine and classes of problems.

Course: Python programming(CS-3510)

At the end of the course following outcome is expected

	Course unit Description	Outcome
CO1	An Introduction to Python	To be familiar about the basic constructs of programming such as data, operations, conditions, loops, functions etc
CO2	Control Statements	To be familiar about the basic constructs of programming such as data, operations, conditions, loops, functions etc Develop logic for problem solving
CO3	Lists, functions, tuples and dictionaries, Sets	To be familiar about the basic constructs of programming such as data, operations, conditions, loops, functions etc
CO4	Modules,Working with files, Exception handling	To write python programs and develop a small application project

Course: (CS-3511) Blockchain Technology

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Introduction to Blockchain	Understand what and why of blockchain technology.
CO2	How Blockchain Works?	Explore major components of blockchain.
CO3	Smart Contracts	Learn about Bitcoin, Cryptocurrency and Ethereum. To learn blockchain programming using Python, Flask Web Framework, and HTTP client Postman.

Course Title:(CS-357) Practical Course based on CS – 351

Course Outcomes:

1. Process synchronization
2. Processes and Thread Scheduling by operating system
3. Memory management by operating system using with the help of various scheme

Course Title: (CS-358) Practical Course based on CS - 353 and CS – 354

Course Outcomes:

1. Understand how to develop dynamic and interactive Web Page
2. Prepare data for use with a variety of statistical methods and recognize how the quality of the data may affect conclusions.
3. Perform exploratory data analysis

Course Title:(CS-359) Practical Course based on CS – 355

Course Outcomes:

1. Use an integrated development environment to write, compile, run, and test simple object-oriented Java programs.
2. Read and make elementary modifications to Java programs that solve real-world problems.
3. Validate input in a Java program.

Semester VI

Course: Operating System-II (CS - 361)

At the end of the course the following outcome is expected:

	Course unit Description	Outcome
CO1	Process Deadlocks	Explain the concept of deadlocks in real life. Understand the mutual exclusion, deadlock detection and agreement protocols.
CO2	File system Management	Explain the policies for file systems and thpes of File allocation
CO3	Disk scheduling	Understanding of Scheduling storage or disk for processes. To improve the performance of disk i/o by reducing average seek time compared to the existing disk scheduling algorithm.
CO4	Introduction to Distributed operating systems & Architecture	Distributed Operating System and its architecture and the extended features in distributed OS. Illustrate principles and importance of distributed operating system Gain knowledge of distributed operating system architecture
CO5	Mobile Operating Systems	Analyze the various device and resource management techniques for mobile operating system.

Course: Software Testing (CS- 362)

At the end of the course the following outcome is expected:

	Course unit Description	Outcome
CO1	Introduction to Software Testing	Fundamentals of testing
CO2	Software Testing Strategies & Techniques	Types of testing in details
CO3	Levels of Testing	Able to test on GUI's and all real-time systems and levels of testing
CO4	Testing Web Applications	Types of testing in details. Testing of Web applications
CO5	Agile Testing	Able to do testing with Tools.

Course:Web Technologies – II (CS-363)

At the end of the course the following outcome is expected:

	Course unit Description	Outcome
CO1	Introduction to Web Techniques	Learn -PHP, Server Side Scripting Language
CO2	XML	Learn XML and XML parsers.
CO3	Java Script and Jquery	Using MVC based framework easy to design and handling the errors in dynamic website.
CO4	AJAX	Learn AJAX to make our application more dynamic.

CO5	PHP framework CodeIgniter	Using MVC based framework easy to design and handling the errors in dynamic website.

Course: Data Analytics (CS-364)

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Introduction to Data Analytics	Use appropriate models of analysis, assess the quality of input, and derive insight from results.
CO2	Machine Learning Overview	Analyze data, choose relevant models and algorithms for respective applications
CO3	Mining Frequent Patterns, Associations, and Correlations	Understand different data mining techniques like classification, prediction, clustering and association rule mining
CO4	Social Media and Text Analytics	Apply modeling and data analysis techniques to the solution of real world business problems

Course: Object Oriented Programming using Java-II(CS-365)

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Collections	Understanding of concept of Collections
CO2	Multithreading	develop a game application using multithreading
CO3	Database Programming	To access open database through Java programs using Java Data Base Connectivity (JDBC) and develop the application.
CO4	Servlets and JSP	Understand and Create dynamic web pages, using Servlets and JSP.
CO5	Spring Framework	Work with basics of framework to develop secure web applications

Course: Compiler Construction (CS-366)

At the end of the course the following outcome is expected:

	Course unit Description	Outcome
CO1	Introduction	Understand and design code generation and optimization techniques.
CO2	Lexical Analysis (Scanner)	Understand tools like LEX and YACC.
CO3	Syntax Analysis (Parser)	Understand the process of scanning and parsing of source code
CO4	Syntax Directed Definition	Learn the conversion code written in source language to machine language.
CO5	Code Generation and Optimization	Learn the conversion code written in source language to machine language.

Course: Software Testing Tools (CS- 362)

At the end of the course the following outcome is expected:

	Course unit Description	Outcome
CO1	Introduction to Test case design	Identify errors, bugs in the given application Design entry and exit criteria for test case, design test cases in excel

CO2	Test cases for simple programs	Write simple programs make use of loops and control structures.
CO3	Test cases and Test plan	Write Test Plan for given application with resources required.
CO4	Defect Report	Defect Life Cycle Classification of Defect
CO5	Testing Tools	Automation Tools Types of Testing Tools

Course Title: (CS -367) Practical Course based on CS - 361

Course Outcomes: After completion of this course students will be able to understand the concept of

1. Management of deadlocks by operating system
2. File System management
3. Disk space management and scheduling for processes

Course Title :(CS-368) Practical Course based on CS - 363 and CS - 364

Course Outcomes:

1. Build dynamic website.
2. Using MVC based framework easy to design and handling the errors in dynamic website.

Course Title: (CS-369) Practical Course based on CS - 365

Course Outcomes:

1. To Learn database Programming using Java
2. Understand and Create dynamic web pages using Servlets and JSP.
3. Work with basics of framework to develop secure web applications

A.T.S.S.'s

College of Business Studies and Computer Applications

Chinchwad, Pune 19

(Affiliated to Savitribai Phule Pune University, Recognized by Govt. of Maharashtra , Accredited by NAAC)

Academic Year 2019 – 20

Program: MSc (Computer Science)

Department of Computer Science & Applications

Program Outcomes (PO)

PO1: Able to developed the necessary learning skills and independence for further studies.

PO2: Can initiate and lead projects within the scientific field and be responsible for the work of individuals and groups.

PO3: Can communicate scientific information, challenges and findings to scholars as well as to general audience.

PO4: Are capable of presenting and describing scientific issues and research findings.

PO5: Can make decisions in an independent, professional manner and support them.

PO6: Can decide which analytical methods and complex theories are applicable.

PO7: Can communicate statistical and mathematical information.

PO8: To help students build-up a successful career in Computer Science and to produce entrepreneurs who can innovate and develop software products

PEO – Program Educational Objectives:

1. To apply and continuously acquire knowledge, both theoretical and applied, related to core areas of computer science.
2. To solve diverse and unique problems in software design and development processes,
3. To work productively as computer professionals.

MSc (CS)

Semester I

Course: Paradigm of Programming Language (CSUT111)

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Introduction Names, Scopes, and Bindings	Explain the issues involved in programming language design and functional logic, object oriented programming paradigms
CO2	Control Flow Data Types	Explain the control flow, subroutines, parameter passing and design/implementation issues of Data types in different languages.
CO3	Subprograms and Implementing Subprograms	Explain the Subprogram.
CO4	Data Abstraction and Object Orientation	Explain the OOPs concept in different languages.
CO5	Functional Programming in Scala	Explain the new Functional language.
CO6	Practical and Oral	Improve written, oral, and presentation communication skills related to the subject of Paradigm of Programming Language and engage in a life-long learning.

Course: Design and Analysis of Algorithm (CSUT112)

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Basics of Algorithms	Explain the fundamentals of Design and Analysis of Algorithms
CO2	Divide and conquer strategy Greedy Method	Explain the Concept of Divide and Greedy method Conquer method to solve the real world problems
CO3	Dynamic Programming Decrease and Conquer	Explain the Dynamic programming techniques and concept of Divide and Conquer method to solve the real world problems
CO4	Backtracking Branch and Bound	Explain the concept of Backtracking, Branch and Bound to compute the real world problems.
CO5	Problem Classification	Explain the concept of NP Hard and NP Complete Problems
CO6	Practical and Oral	Improve written, oral, and presentation communication skills related to the subject of Design and Analysis of Algorithm and engage in a life-long learning.

Course: Database Technologies (CSUT113)

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Introduction to NOSQL (Core concepts) Implementation with NOSQL databases	Explain the basic concepts of NOSQL and the different database used in NOSQL.
CO2	Schema Migrations	Explain the schema is changed from RDBMS to NOSQL
CO3	Polygot Persistence (Multi model types)	Design the of different NOSQL database in

		enterprise and changing the traditional database to NOSQL.
CO4	Beyond NoSQL	Explain the file system in NOSQL and different database can be used other than NOSQL
CO5	Choosing your database	Explain the selection of NOSQL database, so that the performance of application increases.
CO6	Practical and Oral	Improve written, oral, and presentation communication skills related to the subject of Database Technologies and engage in a life-long learning.

Course: Artificial Intelligence (CSDT114B)

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Introduction to Artificial Intelligence	Understand the concept of Artificial Intelligence
CO2	Searching	Design and implement the of searching techniques
CO3	Knowledge representation	Understand the basics of knowledge representation
CO4	Introduction to AI with python	Design and implement the python programming
CO5	Machine learning	Understand the concept of machine learning and able to apply ML Algorithm
CO6	Practical and Oral	Improve written, oral, and presentation communication skills related to the subject of Artificial Intelligence and engage in a life-long learning.

Semester II

Course: Advanced Operating System (CSUT121)

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Introduction to UNIX/Linux Kernel	Develop the software in and for Linux/UNIX environments.
CO2	File and Directory I/O	Explain the theory and implementation of processes, resource control.
CO3	Process Environment, Process Control and Process Relationships	Explain the process management policies and scheduling of processes by CPU.
CO4	Memory Management	Explain the concepts and implementation Memory management policies and virtual memory.
CO5	Signal Handling	Analyze the system in s- domain and explain mathematical description and representation of continuous and discrete time signals and systems.
CO6	Practical and Oral	Improve written, oral, and presentation communication skills related to the subject of Advanced Operating System and engage in a life-long learning.

Course: Software Project Management (CSUT113)

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Introduction to Project Management Project Management Components	Explain the scope project and project goals, constraints, deliverables, performance criteria, control needs, and resource requirements in consultation with stakeholders
CO2	Scope Management Time management Cost Management Quality Management Human Resource Management Communication Management Risk Management Procurement Management	Explain the all aspects of project management.
CO3	Software Metrics Software Reliability	Explain the role of project management in organization change
CO4	Planning a measurement program	Explain the projects in response to issues that arise internally and externally.
CO5	Quality Standards	Utilize technology tools for communication, collaboration, information management, and decision support.
CO6	Practical and Oral	Improve written, oral, and presentation communication skills related to the subject of Software Project Management and engage in a life-long learning.

Course: Mobile Technologies (CSUT122)

At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Introduction to Mobile Computing	Understand the fundamental design paradigms and technologies to mobile computing applications.
CO2	Android Fundamentals	Understand the fundamentals of Android operating systems
CO3	Android UI Design Advanced Android Programming	Develop software on mobile platform and software with reasonable complexity on mobile platform.
CO4	Android Thread and Notification	Understand the thread and notification in Android
CO5	Phone Gap Programming iOS Fundamentals	Understand the Phone Gap programming and fundamentals of iOS operating system.
CO6	Practical and Oral	Improve written, oral, and presentation communication skills related to the subject of Mobile Technologies and engage in a life-long learning.

Semester III

Course Software Architecture and Design Pattern (CSUT231)
At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Introduction	Understand types of UML Diagram. Understand RUP (Rational Unified Process). Understand Phases of RUP. Understand Life cycle .
CO2	Software Architecture	Able to understand the basic concepts of software architecture and software architecture Business cycle. Using concepts from architecture description languages, they will learn to deconstruct existing systems and then extend them with new capabilities.
CO3	Architectural Styles	Understand the various architectural styles with case studies. Students will understand requirements traceability and how to insure the system meets cross-cutting end-to-end software architectural properties
CO4	Introduction to Patterns	Design creational and structural patterns Learn about behavioural patterns.
CO5	Study of Design Patterns	Understand the concepts of various architectural patterns and some design patterns
CO6	GRASP(General Responsibility Assignment Software Patterns)	Understand a collection of general objected-oriented design patterns related to assigning defining objects. Understand how to apply UML and patterns.
CO7	Study of Frameworks	The class project will involve mixing architectural styles including distributed computing, service-oriented architectures, database-centric architectures, web architectures. Understand Struts and Hibernate Frameworks
CO8	Case Study (struts or any other web Architecture)	Do a case study in utilizing architectural structures.
CO9	Practical and Oral	Improve written, oral, and presentation communication skills related to the subject of Paradigm of Programming Language and engage in a life-long learning.

Course: Machine Learning (CSUT232)
At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Introduction to Machine Learning	Recognize the characteristics of machine learning that make it useful to real-world problems. Understand statistic applied in Ml
CO2	Machine Learning Models	Interpret the concepts of supervised Unsupervised and Semi supervised learning. Differentiate various learning approaches. Use of matrices for evaluation.
CO3	Regression Models	Understand working of Regression Model and SVM.
CO4	Classification Models	Apply theoretical foundations of decision trees to identify best split and Bayesian classifier to label data points. Identify classifier model for machine learning applications.
CO5	Clustering Models	Illustrate and apply clustering algorithms and identify its applicability in real life problems.
CO6	Association Rules	Understand Key Terms: Support, Confidence and Lift. Working of Apriori Algorithm.
CO7	Reinforcement Learning	Understand Reinforcement learning ,Q learning and their application.
CO8	Deep Learning	Illustrate the working Neural Networks (ANN,CNN,RNN).
CO9	Practical and Oral	Improve written, oral, and presentation communication skills related to the subject of Paradigm of Programming Language and engage in a life-long learning.

Course: Web Framework (CSUT233)
At the end of the course following outcome is expected:

	Course unit Description	Outcome
CO1	Java Script Basics	Understands basics of JavaScript like dataypes, variables, etc. Learn HTML DOM, Promises, and call backs
CO2	Introduction to Node JS	Learn introduction to Node js with its advantages Learn how to install Node js.

CO3	Node JS Modules	Explore what is functions, buffer, modules and directories in Node js
CO4	Node Package Manager	Learn about Node Package Manager How to install, update package globally
CO5	Web Server	Learn how to create Web Server How to handle HTTP request, HTTP streaming.
CO6	File System	Understands File Model Also learn the various file operations like read, write etc.
CO7	Events	Learn about Asynchronous JS Promises
CO8	Working with Databases	Learn various database operations Learn Mongoose database and querying with Mongoose database.
CO9	Express JS	Learn what is Express JS Understands routing, responding, configuration, views, error handling in detail.
CO10	Introduction to DJango	Learn what is DJango Learn how to get and install DJango
CO11	Getting Started with DJango	Learn about 3 core files : model.py, urls.py, views.py Setting up database connections (MySQL/SQLServer) Installing and using 'Out of the Box' Django features
CO12	DJango URL Patterns and Views	Learn how to design a good URL schema
CO13	DJango Forms	Learn various Form Classes, its Validations, Authentication, Advanced Form Processing Techniques Learn DJango REST Framework and DJango Piston
CO14	Practical and Oral	Improve written, oral, and presentation communication skills related to the subject of Paradigm of Programming Language and engage in a life-long learning.

CSUIT241: Industrial Training /Institutional Project **Total Credits: 20**

At the end of the course following outcome is expected:

CO 1	Participate in the projects in industries during his or her industrial training.
CO 2	Describe use of advanced tools and techniques encountered during industrial training and visit.
CO 3	Interact with industrial personnel and follow engineering practices and discipline prescribed in industry.
CO 4	Develop awareness about general workplace behavior and build interpersonal and team skills.
CO 5	Prepare professional work reports and presentations.