

  
**ANNAMALAI UNIVERSITY**

**Affiliated Colleges**

**311 M.Com. Computer Applications**

Programme Structure and Scheme of Examination for affiliated Colleges (under CBCS)  
(Applicable to the candidates admitted from the academic year 2023 -2024 onwards)

Part	Course Code	Study Components & Course Title	Credit	Hours/ Week	Maximum Marks		
					CIA	ESE	Total
<b>SEMESTER – I</b>							
Part A	23PCOAC11	Core I: Business Finance	5	7	25	75	100
	23PCOAC12	Core II: Digital Marketing	5	7	25	75	100
	23PCOAC13	Core III: Banking and Insurance	4	6	25	75	100
	23PCOAE14-1 23PCOAE14-2	Elective I: Introduction to Industry 4.0 Big Data Analytics	3	5	25	75	100
	23PCOAE15-1 23PCOAE15-2	Elective II: Enterprise Resource Planning Database Management System	3	5	25	75	100
<b>Total</b>			<b>20</b>	<b>30</b>			<b>500</b>
<b>SEMESTER – II</b>							
Part A	23PCOAC21	Core IV: Strategic Cost Management	5	6	25	75	100
	23PCOAC22	Core V: Corporate Accounting	5	6	25	75	100
	23PCOAC23	Core VI: Setting up of Business Entities	4	6	25	75	100
	23PCOAE24-1 23PCOAE24-2	Elective III: Data Mining and Data Warehousing Technology in Banking	3	4	25	75	100
	23PCOAE25-1 23PCOAE25-2	Elective IV: Financial Analytics (Practical) Management Information System	3	4	25	75	100
Part B(i)	23PCOAS26	Skill Enhancement Course SEC 1: Goods and Services Tax	2	4	25	75	100
<b>Total</b>			<b>22</b>	<b>30</b>			<b>600</b>

		<b>SEMESTER – III</b>					
Part A	23PCOAC31	<b>Core VII:</b> Taxation	5	6	25	75	100
	23PCOAC32	<b>Core VIII:</b> Research Methodology	5	6	25	75	100
	23PCOAP33	<b>Core IX:</b> Computer Applications in Business (Practical Only)	5	6	25	75	100
	23PCOAI34	<b>Core X:</b> Core Industry Module	4	6	25	75	100
	23PCOAE35-1 23PCOAE35-2	<b>Elective V:</b> Applied Data Analytics and Machine Learning (or) Python and R for Data Analytics	3	3	25	75	100
Part B(i)	23PCOAS36	<b>Skill Enhancement Course SEC II:</b> Employability Skills	2	3	25	75	100
Part B(ii)	23PCOAI37	<b>Summer Internship *</b>	2	-	25	75	100
			<b>26</b>	<b>30</b>			<b>700</b>
		<b>SEMESTER – IV</b>					
Part A	23PCOAC41	<b>Core XI:</b> Corporate Economic Laws	5	6	25	75	100
	23PCOAC42	<b>Core XII:</b> Human Resource Analytics	5	6	25	75	100
	23PCOAD43	Project with Viva-Voce	7	10	25	75	100
	23PCOAE44-1 23PCOAE44-2	<b>Elective VI:</b> Cyber and Data Security E-Commerce	3	4	25	75	100
Part B(i)	23PCOAS45	Skill Enhancement Course SEC III: E-filing of GST Returns	2	4	25	75	100
Part C	23PCOAX46	<b>Extension Activity</b>	1	-	100	-	100
			<b>Total</b>	<b>23</b>	<b>30</b>		<b>600</b>
			<b>Grand Total</b>	<b>91</b>			<b>2400</b>

\* Students should complete two weeks of internship before the commencement of III semester.

**Programme Outcomes:****PO1: Problem Solving Skill:**

Apply knowledge of Management Theories and Human Resource Practices to solve business problems through research in global context.

**PO2: Decision Making Skill:**

Foster analytical and critical thinking abilities to enable decision-making based on data.

**PO3: Ethical Value:**

Incorporate quality, ethical and value-based legal perspectives in all organisational activities.

**PO4: Employability Skill:**

Develop business acumen to enhance employability skills in the competitive environment.

**PO5: Entrepreneurial Skill:**

Equip with skills and competencies to become an entrepreneur.

**PO6: Contribution to Society:**

Succeed in career endeavours and contribute significantly to society.

**PO7: Communication Skill:**

Develop communication, managerial and interpersonal skills.

**PO8: Individual and Team Leadership Skill:**

Lead oneself and the team to achieve organizational goals.

**PO 9: Multicultural competence:**

Demonstrate knowledge of the values and beliefs of multiple cultures to address issues in the global scenario

**PO 10: Moral and ethical awareness/reasoning:**

Embrace moral and ethical values in one's life,

**PO 11: Leadership readiness qualities:**

Demonstrate to take up leadership mapping out the tasks and formulating an inspiring vision and mission

**PO 12: Lifelong learning:**

Acquire knowledge and skills, including "learning how to learn",

**Programme Specific Outcomes:****PSO 1 - Entrepreneurship:**

Exhibit entrepreneurial ability by enhancing critical thinking, problem solving, decision making and leadership skills that will facilitate startups and high potential organisations.

**PSO2 – Research and Development:**

Design and implement accounting, marketing, finance and HR systems and practices grounded in research that comply with mercantile laws, leading the organisation towards growth and development.

**PSO 3 – Contribution to the Society:**

Contribute to the development of the society by collaborating with stakeholders for mutual benefit.

**PSO4 - Placement:**

Demonstrate respectful engagement with others' ideas, behaviors, beliefs and apply in diverse frames of decisions and actions.

**PSO5 - Contribution to Business World:**

Facilitate production of employable, ethical and innovative professionals to sustain in the dynamic business world.

23PCOAC11	<b>CORE COURSE - 1</b>	<b>L</b>	<b>P</b>	<b>C</b>
<b>Semester-1</b>	23PCOAC11- <b>BUSINESS FINANCE</b>	<b>7</b>		<b>5</b>

<b>Learning Objectives:</b>	
<b>LO1:</b>	To outline the fundamental concepts in finance
<b>LO2:</b>	To estimate and evaluate risk in investment proposals
<b>LO3:</b>	To evaluate leasing as a source of finance and determine the sources of startup financing
<b>LO4</b>	To examine cash and inventory management techniques
<b>LO5</b>	To appraise capital budgeting techniques for MNCs

<b>Course Outcomes:</b>	
	After the successful completion of the course, the students will be able to:
<b>CO1:</b>	Explain important finance concepts
<b>CO2:</b>	Estimate risk and determine its impact on return
<b>CO3:</b>	Explore leasing and other sources of finance for startups
<b>CO4:</b>	Summarise cash receivable and inventory management techniques
<b>CO5:</b>	Evaluate techniques of long term investment decision incorporating risk factor

### **Unit I: Introduction to Business Finance and Time value of money**

Business Finance: Meaning, Objectives, Scope - Time Value of money: Meaning, Causes – Compounding – Discounting – Sinking Fund Deposit Factor – Capital Recovery Factor – Multiple Compounding – Effective rate of interest – Doubling period (Rule of 69 and Rule of 72) – Practical problems.

### **Unit II: Risk Management**

Risk and Uncertainty: Meaning – Sources of Risk – Measures of Risk – Measurement of Return – General pattern of Risk and Return – Criteria for evaluating proposals to minimise Risk (Single Asset and Portfolio) – Methods of Risk Management – Hedging currency risk.

### **Unit III: Startup Financing and Leasing**

Startup Financing: Meaning, Sources, Modes (Bootstrapping, Angel investors, Venture capital fund) - Leasing: Meaning – Types of Lease Agreements – Advantages and Disadvantages of Leasing – Financial evaluation from the perspective of Lessor and Lessee.

### **Unit IV: Cash, Receivable and Inventory Management**

Cash Management: Meaning, Objectives and Importance – Cash Cycle – Minimum Operating Cash – Safety level of cash – Optimum cash balance - Receivable Management: Meaning – Credit policy – Controlling receivables: Debt collection period, Ageing schedule, Factoring – Evaluating investment in accounts receivable - Inventory Management: Meaning and Objectives – EOQ with price breaks – ABC Analysis.

### **Unit V: Multi National Capital Budgeting**

Multi National Capital Budgeting: Meaning, Steps involved, Complexities, Factors to be considered – International sources of finance – Techniques to evaluate multi-national capital expenditure proposals: Discounted Pay Back Period, NPV, Profitability Index, Net Profitability Index and Internal Rate of Return – Capital rationing - Techniques of Risk analysis in Capital Budgeting.

### **Recent Trends in Business Finance**

Faculty member will impart the knowledge on recent trends in Business Finance to the students and these components will not cover in the examination.

**Text Books:**

1. Maheshwari S.N., (2019), "Financial Management Principles and Practices", 15<sup>th</sup> Edition, Sultan Chand & Sons, New Delhi.
2. Khan M.Y & Jain P.K, (2011), "Financial Management: Text, Problems and Cases", 8<sup>th</sup> Edition, McGraw Hill Education, New Delhi.
3. Prasanna Chandra, (2019), "Financial Management, Theory and Practice", 10<sup>th</sup> Edition, McGraw Hill Education, New Delhi.
4. Apte P.G, (2020), "International Financial Management" 8<sup>th</sup> Edition, Tata McGraw Hill, New Delhi.

**Supplementary Readings:**

1. Pandey I. M., (2021), "Financial Management", 12<sup>th</sup> Edition, Pearson India Education Services Pvt. Ltd, Noida.
2. Kulkarni P. V. & Satyaprasad B. G., (2015), "Financial Management", 14<sup>th</sup> Edition, Himalaya Publishing House Pvt Ltd, Mumbai.
3. Rustagi R. P., (2022), "Financial Management, Theory, Concept, Problems", 6<sup>th</sup> Edition, Taxmann Publications Pvt. Ltd, New Delhi.
4. Arokiamary Geetha Rufus, Ramani N. & Others, (2017), "Financial Management", 1<sup>st</sup> Edition, Himalaya Publishing House Pvt Ltd, Mumbai.

**Web Reference:**

1. <https://resource.cdn.icai.org/66674bos53808-cp8.pdf>
2. <https://resource.cdn.icai.org/66677bos53808-cp10u2.pdf>
3. <https://resource.cdn.icai.org/66592bos53773-cp4u5.pdf>
4. <https://resource.cdn.icai.org/65599bos52876parta-cp16.pdf>

**Note:** Latest edition of the books may be used

**Outcome Mapping**

CO	Programme Outcomes												Programme Specific Outcomes				
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
CO1	3	3	1	3	1	3	3	3	1	3	3	1	3	3	3	2	2
CO2	3	3	2	3	2	3	3	3	2	3	3	2	3	3	3	3	3
CO3	2	2	1	2	1	2	2	2	1	2	2	1	2	2	2	3	2
CO4	2	2	1	2	1	2	2	2	1	2	2	1	2	2	2	2	2
CO5	3	3	2	3	2	3	3	3	2	3	3	2	3	3	3	3	3

\*3– Strong, 2- Medium, 1- Low

**Note:** Question Paper shall cover 40% Theory and 60% Problems.

<b>23PCOAC12</b>	<b>CORE COURSE - 2</b>	<b>L</b>	<b>P</b>	<b>C</b>
<b>Semester-1</b>	<b>23PCOAC12 -DIGITAL MARKETING</b>	<b>7</b>		<b>5</b>

<b>Learning Objectives:</b>	
<b>LO1:</b>	To assess the evolution of digital marketing
<b>LO2:</b>	To appraise the dimensions of online marketing mix
<b>LO3:</b>	To infer the techniques of digital marketing
<b>LO4:</b>	To analyse online consumer behaviour
<b>LO5:</b>	To interpret data from social media and to evaluate game based marketing

<b>Course Outcomes:</b>	
	After the successful completion of the course, the students will be able to:
<b>CO1:</b>	Explain the dynamics of digital marketing
<b>CO2:</b>	Examine online marketing mix
<b>CO3:</b>	Compare digital media channels
<b>CO4:</b>	Interpret online consumer behavior
<b>CO5:</b>	Analyse social media data

#### **Unit I: Introduction to Digital Marketing**

Digital Marketing – Transition from traditional to digital marketing – Rise of internet – Growth of e-concepts – Growth of e-business to advanced e-commerce – Emergence of digital marketing as a tool – Digital marketing channels – Digital marketing applications, benefits and limitations – Factors for success of digital marketing – Emerging opportunities for digital marketing professionals.

#### **Unit II: Online Marketing Mix**

Online marketing mix – E-product – E-promotion – E-price – E-place – Consumer segmentation – Targeting – Positioning – Consumers and online shopping issues – Website characteristics affecting online purchase decisions – Distribution and implication on online marketing mix decisions.

#### **Unit III: Digital Media Channels**

Digital media channels – Search engine marketing – ePR – Affiliate marketing – Interactive display advertising – Opt-in-email marketing and mobile text messaging, Invasive marketing – Campaign management using – Facebook, Twitter, Corporate Blogs – Advantages and disadvantages of digital media channels – Metaverse marketing

#### **Unit IV: Online Consumer Behavior**

Online consumer behavior – Cultural implications of key website characteristics – Dynamics of online consumer visit – Models of website visits – Web and consumer decision making process – Data base marketing – Electronic consumer relationship management – Goals – Process – Benefits – Role – Next generation CRM.

#### **Unit V: Analytics and Gamification**

Digital Analytics – Concept – Measurement framework – Demystifying web data - Owned social metrics – Measurement metrics for Facebook, Twitter, YouTube, Slide Share, Pinterest, Instagram, Snapchat and LinkedIn – Earned social media metrics - Digital brand analysis – Meaning – Benefits – Components – Brand share dimensions – Brand audience dimensions – Market influence analytics – Consumer generated media and opinion leaders – Peer review – Word of mouth – Influence analytics – Mining consumer generated media – Gamification and game based marketing – Benefits – Consumer motivation for playing online games.

### Recent Trends in Digital Marketing

Faculty member will impart the knowledge on recent trends in Digital Marketing to the students and these components will not cover in the examination.

#### **Text Books:**

1. Kailash Chandra Upadhyay, (2021) "Digital Marketing: Complete Digital Marketing Tutorial", Notion Press, Chennai.
2. Michael Branding, (2021) "Digital Marketing", Empire Publications India Private Ltd, New Delhi.
3. Seema Gupta, (2022) "Digital Marketing" 3<sup>rd</sup> Edition, McGraw Hill Publications Noida.
4. Puneet Singh Bhatia, (2019) "Fundamentals of Digital Marketing", 2<sup>nd</sup> Edition, Pearson Education Pvt Ltd, Noida.

#### **Supplementary Readings:**

1. MaityMoutusy, (2022) "Digital Marketing" 2<sup>nd</sup> Edition, Oxford University Press, London.
2. Simon Kingsnorth, Digital Marketing Strategy, (2022) "An Integrated approach to Online Marketing", Kogan Page Ltd. United Kingdom
3. Vandana Ahuja, (2016) "Digital Marketing", Oxford University Press. London.
4. Alan Charlesworth, (2014), "Digital Marketing - A Practical Approach", Routledge, London.

#### **Supplementary Readings:**

1. MaityMoutusy, (2022) "Digital Marketing" 2<sup>nd</sup> Edition, Oxford University Press, London.
2. Simon Kingsnorth, Digital Marketing Strategy, (2022) "An Integrated approach to Online Marketing", Kogan Page Ltd. United Kingdom
3. Vandana Ahuja, (2016) "Digital Marketing", Oxford University Press. London.
4. Alan Charlesworth, (2014), "Digital Marketing - A Practical Approach", Routledge, London.

**Note: Latest edition of the books may be used**

#### **Web Reference:**

1. <https://www.digitalmarketer.com/digital-marketing/assets/pdf/ultimate-guide-to-digital-marketing.pdf>
2. <https://uwaterloo.ca/centre-for-teaching-excellence/teaching-resources/teaching-tips/educational-technologies/all/gamification-and-game-based-learning>
3. <https://journals.ala.org/index.php/ltr/article/download/6143/7938>



### Outcome Mapping

	Programme Outcomes												Programme Specific Outcomes				
CO	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
CO1	3	3	2	3	3	3	3	3	3	3	2	3	3	3	3	3	3
CO2	3	3	2	3	3	3	3	3	3	3	2	3	3	3	3	3	3
CO3	3	3	2	2	3	2	3	3	3	3	2	2	3	2	3	3	2
CO4	3	3	2	2	3	3	3	3	3	3	2	2	3	3	3	3	3
CO5	3	3	1	3	3	2	3	3	3	3	1	3	3	2	3	3	2

\*3– Strong, 2- Medium, 1- Low

<b>23PCOAC13</b>	<b>CORE COURSE - 3</b>	<b>L</b>	<b>P</b>	<b>C</b>
<b>Semester-1</b>	<b>23PCOAC13 BANKING AND INSURANCE</b>	<b>6</b>		<b>4</b>

<b>Learning Objectives:</b>	
<b>LO1:</b>	To understand the evolution of new era banking
<b>LO2:</b>	To explore the digital banking techniques
<b>LO3:</b>	To analyse the role of insurance sector
<b>LO4:</b>	To evaluate the mechanism of customer service in insurance and the relevant regulations
<b>LO5:</b>	To analyse risk and its impact in banking and insurance industry

<b>Course Outcomes:</b>	
	After the successful completion of the course, the students will be able to:
<b>CO1:</b>	Relate the transformation in banking from traditional to new age
<b>CO2:</b>	Apply modern techniques of digital banking
<b>CO3:</b>	Evaluate the role of insurance sector
<b>CO4:</b>	Examine the regulatory mechanism
<b>CO5:</b>	Assess risk mitigation strategies

### **Unit I: Introduction to Banking**

Banking: Brief History of Banking - Rapid Transformation in Banking: Customer Shift - Fintech Overview - Fintech Outlook - The Financial Disruptors - Digital Financial Revolution - New Era of Banking. Digital Banking – Electronic Payment Systems–Electronic Fund Transfer System – Electronic Credit and Debit Clearing – NEFT – RTGS –VSAT–SFMS–SWIFT.

### **Unit II: Contemporary Developments in Banking**

Distributed Ledger Technology – Blockchain: Meaning - Structure of Block Chain - Types of Block Chain - Differences between DLT and Block chain - Benefits of Blockchain and DLT - Unlocking the potential of Block chain – Crypto currencies, Central Bank Digital Currency (CBDC) - Role of DLT in financial services - AI in Banking: Future of AI in Banking - Applications of AI in Banking - Importance of AI in banking - Banking reimaged with AI. Cloud banking - Meaning - Benefits in switching to Cloud Banking.

### **Unit III: Indian Insurance Market**

History of Insurance in India – Definition and Functions of Insurance – Insurance Contract – Indian Insurance Market – Reforms in Insurance Sector – Insurance Organisation – Insurance organisation structure. Insurance Intermediaries: Insurance Broker – Insurance Agent - Surveyors and Loss Assessors - Third Party Administrators (Health Services) – Procedures - Code of Conduc

### **Unit IV: Customer Services in Insurance**

Customer Service in Insurance – Quality of Service - Role of Insurance Agents in Customer Service-Agent's Communication and Customer Service –Ethical Behaviour in Insurance – Grievance Redressal System in Insurance Sector –Integrated Grievance Management System- Insurance Ombudsman - Insurance Regulatory and Development Authority of India Act (IRDA) – Regulations and Guidelines

### **Unit V: Risk Management**

Risk Management and Control in banking and insurance industries – Methods of Risk Management – Risk Management by Individuals and Corporations – Tools for Controlling Risk.

### Recent Trends in Banking and Insurance

Faculty member will impart the knowledge on recent trends in Banking and Insurance to the students and these components will not cover in the examination.

#### **Text Books:**

1. Indian Institute of Banking and Finance (2021), "Principles & Practices of Banking", 5<sup>th</sup> Edition, Macmillan Education India Pvt. Ltd, Noida, Uttar Pradesh.
2. Mishra M N & Mishra S B, (2016), "Insurance Principles and Practice", 22<sup>nd</sup> Edition, S. Chand and Company Ltd, Noida, Uttar Pradesh.
3. Emmett, Vaughan, Therese Vaughan M., (2013), "Fundamentals of Risk and Insurance", 11<sup>th</sup> Edition, Wiley & Sons, New Jersey, USA.
4. Theo Lynn, John G. Mooney, Pierangelo Rosati, Mark Cummins (2018), Disrupting Finance: FinTech and Strategy in the 21st Century (Palgrave Studies in Digital Business & Enabling Technologies), Macmillan Publishers, NewYork (US)

#### **Supplementary Readings:**

- 1 Sundharam KPM & Varshney P. N., (2020), "Banking Theory, Law and Practice", 20<sup>th</sup> Edition, Sultan Chand & Sons, New Delhi.
- 2 Gordon & Natarajan, (2022), "Banking Theory, Law and Practice", 9<sup>th</sup> Edition, Himalaya Publishing House Pvt Ltd, Mumbai.
- 3 Gupta P. K. (2021), "Insurance and Risk Management" 6<sup>th</sup> Edition, Himalaya Publishing House Pvt Ltd, Mumbai.

#### **Web Reference:**

- 1 <https://corporatefinanceinstitute.com/resources/knowledge/finance/fintech-financial-technology>
- 2 [https://mrcet.com/downloads/digital\\_notes/CSE/IV%20Year/CSE%20B.TECH%20IV%20YEAR%20II%20SEM%20BCT%20\(R18A0534\)%20NOTES%20Final%20PDF.pdf](https://mrcet.com/downloads/digital_notes/CSE/IV%20Year/CSE%20B.TECH%20IV%20YEAR%20II%20SEM%20BCT%20(R18A0534)%20NOTES%20Final%20PDF.pdf)

<b>23PCOAE14-1</b>	<b>Elective Course - 1</b> <b>23PCOAE14-1INTRODUCTION TO</b> <b>INDUSTRY 4.0</b>	<b>L</b>	<b>P</b>	<b>C</b>
<b>Semester-1</b>		<b>5</b>		<b>3</b>

<b>Learning Objectives:</b>	
<b>LO1:</b>	To enable the students to comprehend the change from industry 1.0 to 4.0
<b>LO2:</b>	To gain knowledge on the challenges and future prospects of applying artificial intelligence
<b>LO3:</b>	To learn the applications of big data for industrial growth and development
<b>LO4:</b>	To understand the applications of IoT in various sectors
<b>LO5:</b>	To understand why education has to be aligned with industry 4.0

<b>Course Outcomes:</b>	
	After the successful completion of the course, the students will be able to:
<b>CO1:</b>	Discuss on the change from industry 1.0 to 4.0
<b>CO2:</b>	Discover the challenges and future prospects of applying artificial intelligence
<b>CO3:</b>	Apply big data for industrial growth and development
<b>CO4:</b>	Apply IoT in various sectors like Manufacturing, Healthcare, Education, Aerospace and Défense
<b>CO5:</b>	Appraise why education has to be aligned with industry 4.0

#### **Unit I: Introduction**

Industry: Meaning, Types - Industrial Revolution: Industrial Revolution 1.0 to 4.0: Meaning, Goals and Design Principles - Technologies of Industry 4.0 - Big Data – Artificial Intelligence (AI) – Industrial Internet of Things - Cyber Security – Cloud – Augmented Reality.

#### **Unit II: Artificial Intelligence**

Artificial Intelligence (AI): Need, History and Foundations -The AI - environment - Societal Influences of AI – Application Domains and Tools - Associated Technologies of AI - Future prospects of AI – Challenges of AI

#### **Unit III: Big Data**

Evolution - Data Evolution - Data : Terminologies - Essential of Big Data in Industry 4.0 - Big Data Merits and Limitations - Big Data Components : Big Data Characteristics - Big Data Processing Frameworks - Big Data Tools - Big Data Applications - Big Data Domain Stack : Big Data in Data Science – Big Data in IoT - Big Data in Machine Learning - Big Data in Databases - Big Data Usecases: Big Data in Social Causes - Big Data for Industry - Big Data Roles - Learning Platforms; Internet of Things (IoT) : Introduction to IoT – Architecture of IoT Technologies for IoT - Developing IoT Applications - Applications of IoT - Security in IoT.

#### **Unit IV: Applications of IoT**

IoT in Manufacturing – Healthcare – Education – Aerospace and Defence – Agriculture – Transportation and Logistics – Impact of Industry 4.0 on Society: Impact on Business, Government, People - Tools for Artificial Intelligence - Big Data and Data Analytics - Virtual Reality - Augmented Reality – IoT - Robotics

#### **Unit V: Industry 4.0**

Education 4.0 – Curriculum 4.0 – Faculty 4.0 – Skills required for Future - Tools for Education – Artificial Intelligence Jobs in 2030 – Jobs 2030 - Framework for aligning Education with Industry 4.0.

### Recent Trends in Industry 4.0

Faculty member will impart the knowledge on recent trends in Industry 4.0 to the students and these components will not cover in the examination.

#### Text Books:

1. Seema Acharya J, Subhashini Chellappan, (2019) "Big Data and Analytics", 2<sup>nd</sup> Edition, Wiley Publication, New Delhi.
2. Russel S, Norvig P (2010), "Artificial Intelligence: A Modern approach", 3<sup>rd</sup> Edition, Prentice Hall, New York.
3. Pethuru Raj and Anupama C. Raman, (2017), "The Internet of Things: Enabling Technologies, Platforms, and Use Cases", Auerbach Publications

#### Supplementary Readings:

1. Judith Hurwitz, Alan Nugent, Fern Halper, Marcia Kaufman, "Big Data for Dummies", John Wiley & Sons, Inc.
2. Nilsson (2000), Artificial Intelligence: A new synthesis, Nils J Harcourt Asia PTE Ltd

#### Web Reference:

1. [https://sist.sathyabama.ac.in/sist\\_coursematerial/uploads/SEEA1403.pdf](https://sist.sathyabama.ac.in/sist_coursematerial/uploads/SEEA1403.pdf)
2. [https://library.oapen.org/bitstream/handle/20.500.12657/43836/external\\_content.pdf?sequence=1](https://library.oapen.org/bitstream/handle/20.500.12657/43836/external_content.pdf?sequence=1)
3. [https://www.vssut.ac.in/lecture\\_notes/lecture1428643004.pdf](https://www.vssut.ac.in/lecture_notes/lecture1428643004.pdf)

**Note:** Latest edition of the books may be used

#### Outcome Mapping

CO	Programme Outcomes												Programme Specific Outcomes				
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
CO1	1	1	3	1	1	3	3	3	3	3	2	3	1	1	3	3	3
CO2	1	1	3	2	1	3	3	3	3	3	2	3	1	1	3	3	3
CO3	1	2	2	3	1	2	3	3	3	3	2	2	1	1	2	3	2
CO4	3	3	2	3	1	2	3	3	3	3	2	2	2	3	2	3	3
CO5	1	2	1	3	3	3	3	3	3	3	1	3	3	2	2	3	2

\*3– Strong, 2- Medium, 1- Low

<b>23PCOAE14-2</b>	<b>Elective Course - 1</b> <b>23PCOAE14-2 BIG DATA ANALYTICS</b>	<b>L</b>	<b>P</b>	<b>C</b>
<b>Semester-1</b>		<b>5</b>		<b>3</b>

<b>Learning Objectives:</b>	
<b>LO1:</b>	To understand the various aspects of data science and applying them in health care
<b>LO2:</b>	To learn the applications of big data for industrial growth and development
<b>LO3:</b>	To understand the characteristics of 5 V's
<b>LO4:</b>	To know the big data problems
<b>LO5:</b>	To understand the Hadoop

<b>Course Outcomes:</b>	
	After the successful completion of the course, the students will be able to:
<b>CO1:</b>	Describe the Big Data landscape including examples of realworld big data problems
<b>CO2:</b>	Explain the advantages of Big Data.
<b>CO3:</b>	Explain the Vs of Big Data and its impacts of data collection, monitoring, storage, analysis and reporting
<b>CO4:</b>	Identify what are and what are not big data problems and be able to recast big data problems as data science questions
<b>CO5:</b>	Explain Hadoop technology

#### **Unit I: Introduction to Data Science**

Introduction to data science – Case Studies – Data Science in Biomedicine and Healthcare – Sequence Processing – Medical Image Analysis – Natural Language Processing – Network Modelling and Probabilistic Modelling.

#### **Unit II: Big Data**

Big data: Meaning – Importance of Big Data – Example of Big Data – Source of Big Data - Machine -Generated Data - Advantages – Big Data generated by people – Organization of Generated Data - Integrating the data.

#### **Unit III: Characteristics of Big Data**

Characteristics of big data volume – Variety –Velocity – Characteristics of Big Data – Veracity – Valence and Value – Getting value out of Big Data using 5-step process to structure your analysis.

#### **Unit IV: Data Science: Getting value out of Big Data**

Building a Big Data Strategy – Happening of Big Data science – Five Components of Data Science. Steps in Data Science: Acquiring Data, Preprocessing and Exploring Data – Analysing Data – Communicating results – Turning insights into action.

#### **Unit V: Big Data Systems and Hadoop**

Meaning of Distributed File System – Scalable Computing over the Internet – Programming Models for Big Data – Introduction to Hadoop systems – The Hadoop Distributed File System: A Storage System for Big Data – YARN: A Resource Manager for Hadoop – Map Reduce: Simple Programming for Big Results – When to Reconsider Hadoop? – Cloud Computing: An important Big Data enabler.

### **Recent Trends in Big Data Analysis**

Faculty member will impart the knowledge on recent trends in Big Data Analysis to the

students and these components will not cover in the examination.

### Text Books:

1. Peter Guerra and Kirk Borne (2016), "Ten Signs of Data Science Maturity", O'Reilly Media Pvt Ltd, USA
2. Tom White (2012), "Hadoop: The Definitive Guide" Third Edition, O'Reilly Media, USA.
3. Seema Acharya (2015), SubhasiniChellappan, "Big Data Analytics", Wiley, USA

### Supplementary Readings:

1. Howard Wen, Big Ethics for Big Data, O'Reilly Media, USA.
2. Michael Mineli, Michele Chambers, Ambiga Dhiraj (2013), Big Data, Big Analytics: Emerging Business Intelligence and Analytic Trends for Today's Businesses, Wiley Publications, USA .
3. Judith S.Hurwitz, Alan Nugent, Fern Halper, Marcia Kaufman (2015), "Big Data for Dummies", John Wiley & Sons, Inc., USA.

### Web Reference:

1. <https://www.coursera.org/learn/big-data-introduction/home/welcome>
2. <https://www.coursera.org/learn/bioconductor?action=enroll&authMode=login>

Note: Latest edition of the books may be used

### Outcome Mapping

CO	Programme Outcomes												Programme Specific Outcomes				
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
CO1	3	3	2	3	3	2	3	3	3	3	2	3	2	3	3	3	3
CO2	3	3	1	3	3	3	3	3	3	3	2	3	3	3	3	3	3
CO3	3	3	1	3	3	2	3	3	3	3	2	2	3	3	2	3	2
CO4	3	3	2	3	3	3	3	3	3	3	2	2	3	3	3	3	3
CO5	3	3	1	3	3	2	3	3	3	3	1	3	3	3	2	3	2

\*3– Strong, 2- Medium, 1- Low

23PCOAE15-1	<b>Elective Course - 2</b> <b>23PCOAE15-1ENTERPRISE RESOURCE</b> <b>PLANNING</b>	<b>L</b>	<b>P</b>	<b>C</b>
Semester-1		<b>5</b>		<b>3</b>

<b>Learning Objectives:</b>	
<b>LO1:</b>	To learn the history and growth of ERP
<b>LO2:</b>	To understand the risks involved while using ERP
<b>LO3:</b>	To gain knowledge on the various ERP technologies
<b>LO4:</b>	To learn the dynamics of ERP marketplace
<b>LO5:</b>	To choose appropriate ERP solutions or packages

<b>Course Outcomes:</b>	
	After the successful completion of the course, the students will be able to:
<b>CO1:</b>	Recall the history and growth of ERP
<b>CO2:</b>	Appraise the risks involved while using ERP
<b>CO3:</b>	Select from among various ERP technologies
<b>CO4:</b>	Analyse the dynamics of ERP marketplace
<b>CO5:</b>	Distinguish and choose appropriate ERP solutions or packages

#### **Unit I: Enterprise an Overview**

Business Functions and Business Processes - Integrated Management Information - Business Modelling - Integrated Data Model. Business Processes: Major Business Processes. Introduction to ERP: Common ERP Myths - A Brief History of ERP - Reasons for the Growth of ERP Market - Advantages of ERP.

#### **Unit II: Risk of ERP**

People Issues - Process Risks - Technological Risks - Implementation Issues-Operation and Maintenance Issues - Unique Risks of ERP Projects - Managing Risks on ERP Projects. Benefits of ERP: Information Integration - Reduction of Lead Time - On-Time Shipment - Reduction in Cycle Time - Improved Resource Utilization - Better Customer Satisfaction - Improved Supplier Performance - Increased Flexibility - Reduced Quality Costs - Better Analysis and Planning Capabilities - Improved Information Accuracy and Decision Making Capability - Use of Latest Technology.

#### **Unit III: ERP and Related Technologies**

Business Process Reengineering (BPR) - Business Intelligence (BI) - Business Analytics (BA) - Data Warehousing- Data Mining - On - Line Analytical Processing (OLAP) - Product Life Cycle Management (PLM) - Supply Chain Management (SCM) - Customer Relationship Management (CRM) - Geographic Information Systems (GIS) - Intranets and Extranets. Advanced Technology and ERP Security: Technological Advancements - Computer Crimes - ERP and Security - Computer Security - Crime and Security.

#### **Unit IV: ERP Market Place and Market Place Dynamics**

Market Overview - ERP Market Tiers. Market Place Dynamics - Industry - Wise ERP Market Share - ERP: The Indian Scenario. Business Modules of an ERP Package: Functional Modules of ERP Software: Integration of ERP, Supply Chain, and Customer Relationship Applications.

#### **Unit V: ERP Implementation**

Benefits of Implementing ERP - Implementation Challenges. ERP Implementation Life Cycle: Objectives of ERP Implementation - Different Phases of ERP Implementation- Reasons for ERP Implementation Failure. ERP Package Selection: ERP Package Evaluation and Selection - The Selection Process - ERP Packages: Make or Buy.

### **Recent Trends in Enterprise Resource Planning**

Faculty member will impart the knowledge on recent trends in Enterprise Resource Planning



to the students and these components will not cover in the examination.

### Text Books:

1. Alexis Leon (2008), "Enterprise Resource Planning", 2<sup>nd</sup> edition, Tata McGraw-Hill, Noida.
2. Jagan Nathan Vaman (2008), "ERP in Practice", Tata McGraw-Hill, Noida.
3. Mahadeo Jaiswal and Ganesh Vanapalli (2009), "ERP", Macmillan India, Noida.

### Supplementary Readings:

1. Sinha P. Magal and Jeffery Word (2012), "Essentials of Business Process and Information System", Wiley India, USA.
2. Summer (2008), "ERP", Pearson Education, Noida.
3. Vinod Kumar Grag and N.K. Venkitakrishnan (2006), "ERP- Concepts and Practice", Prentice Hall of India, New Delhi.

### Web Reference:

1. [https://mrcet.com/downloads/digital\\_notes/CSE/III%20Year/ERP%20Digital%20notes.pdf](https://mrcet.com/downloads/digital_notes/CSE/III%20Year/ERP%20Digital%20notes.pdf)
2. [https://mrcet.com/downloads/digital\\_notes/ME/III%20year/ERP%20Complete%20Digital%20notes.pdf](https://mrcet.com/downloads/digital_notes/ME/III%20year/ERP%20Complete%20Digital%20notes.pdf)
3. [https://www.vssut.ac.in/lecture\\_notes/lecture1428643004.pdf](https://www.vssut.ac.in/lecture_notes/lecture1428643004.pdf)

Note: Latest edition of the books may be used

### Outcome Mapping

CO	Programme Outcomes												Programme Specific Outcomes				
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
CO1	1	3	1	3	2	1	3	3	3	3	2	3	2	1	1	3	3
CO2	3	3	3	3	1	3	3	3	3	3	2	3	1	1	3	3	3
CO3	3	3	2	3	1	3	3	3	3	3	2	2	1	2	2	3	2
CO4	3	3	3	3	1	3	3	3	3	3	2	2	2	1	3	3	3
CO5	1	2	3	3	3	2	3	3	3	3	1	3	3	1	2	3	2

\*3– Strong, 2- Medium, 1- Low

23PCOAE15-2	<b>Elective Course - 2</b> <b>23PCOAE15-2</b> <b>DATABASE MANAGEMENT SYSTEM</b>	L	P	C
Semester-1		5		3

<b>Learning Objectives:</b>	
<b>LO1:</b>	To introduce the basic concepts of Relational Database Management System and the working knowledge of Linux environment
<b>LO2:</b>	To understand designing databases and queries in SQL
<b>LO3:</b>	To learn RDBMS
<b>LO4:</b>	To upskill the functions and operators
<b>LO5:</b>	To understand the constraints, locks and MySQL

<b>Course Outcomes:</b>	
	After the successful completion of the course, the students will be able to:
<b>CO1:</b>	Identify models and schemas in DBMS and LINUX
<b>CO2:</b>	Demonstrate Queries in SQL
<b>CO3:</b>	Discuss handling files and databases
<b>CO4:</b>	Apply skills on functions and operators in RDBMS
<b>CO5:</b>	Apply constraints and locks in SQL

**Unit I: Introduction to Database Systems and Linux**

Introduction to File and Database systems Database System Structure - Data Models Introduction to Network Models: ER Model, Relational Model - Introduction to Linux Operating System - Properties of Linux - Desktop Environment - Linux basics commands - Working with Files - Text Editors - I/O Redirections - Pipes, Filters, and Wildcards - Changing Access Rights.

**Unit II: SQL Definition and Normalization**

SQL – Data Definition - Queries in SQL - Updates - Views - Integrity and Security. Relational Database design – Functional dependences and Normalization for relational databases (up to BCNF) - Query Forms.

**Unit III: Files and RDBMs**

Record Storage and Primary File Organization - Secondary Storage Devices - Operations on Files - Heap File - Sorted Files - Hashing Techniques - Index Structure for Files - Different Types of Indexes - B-Tree - B+Tree - Query Processing - Multimedia Databases - Basic Concepts and Applications - Indexing and Hashing - Text Databases - Overview of RDBMs - Advantages of RDBMs over DBMs – Introduction to Data Mining.

**Unit IV: Data Definition and Manipulation Language**

Data Definition Language - Data Manipulation Language - Transaction Control - Data Control Language Grant - Revoke Privilege Command - Set Operators - Joins- Kinds of Joins - Table Aliases - Sub queries - Multiple and Correlated Sub Queries - Functions - Single Row - Date, Character, Numeric, Conversion and Group Functions

**Unit V: Constraints and MYSQL**

Constraints - Domain, Equity, Referential Integrity Constraints - Locks - Types of Locks, Table Partitions - Synonym - Introduction to PL/SQL - Introduction - MySQL as an RDBMS Tool - Data types and Commands.

### Recent Trends in Database Management System

Faculty member will impart the knowledge on recent trends in Data Base Management System to the students and these components will not cover in the examination.

#### Text Books:

1. Ramakrishnan Raghu and Gehrke Johannes, "Database Management Systems", McGraw–Hill, USA.
2. Rajendra Prasad Mahapatra and Govind Verma, "Database Management System", Khanna Publications, New Delhi.

#### Supplementary Readings:

1. Ramon A Mata-Toledo and Pauline K Cushman, "Database Management System", Schaun's Outlines, New York.
2. Abraham Silberschatz, Henry F Korth and S. Sudarshan, "Database System Concepts" McGraw–Hill, USA.

**Note:** Latest edition of the books may be used

#### Web Reference:

1. <http://education-portal.com/academy/lesson/what-is-a-database-management-systempurpose-and-function.html>.
2. [http://www.comptechdoc.org/os/linux/usersguide/linux\\_ugbasics.html](http://www.comptechdoc.org/os/linux/usersguide/linux_ugbasics.html).
3. <http://www.dummies.com/how-to/content/common-linux-commands.html>.

#### Outcome Mapping

CO	Programme Outcomes												Programme Specific Outcomes				
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
CO1	2	2	1	2	1	3	3	3	3	3	2	3	1	1	2	3	3
CO2	2	3	2	3	1	1	3	3	3	3	2	3	1	1	2	3	3
CO3	2	2	3	2	1	3	3	3	3	3	2	2	1	2	3	3	2
CO4	3	3	3	3	3	3	3	3	3	3	2	2	3	2	3	3	3
CO5	2	2	3	3	3	3	3	3	3	3	1	3	2	1	3	3	2

\*3– Strong, 2- Medium, 1- Low

<b>23PCOAC21</b>	<b>CORE COURSE - 4</b>	<b>L</b>	<b>P</b>	<b>C</b>
<b>Semester-2</b>	<b>23PCOAC21:STRATEGIC COST MANAGEMENT</b>	<b>6</b>		<b>5</b>

<b>Learning Objectives:</b>	
<b>LO1:</b>	To analyse the aspects of strategic and quality control management
<b>LO2:</b>	To analyse and select cost control techniques
<b>LO3:</b>	To apply activity-based costing for decision making
<b>LO4:</b>	To utilise transfer pricing methods in cost determination
<b>LO5:</b>	To apply cost management techniques in various sectors

<b>Course Outcomes:</b>	
	After the successful completion of the course, the students will be able to:
<b>CO1:</b>	Discuss strategic cost management and QC
<b>CO2:</b>	Choose the appropriate technique for cost control
<b>CO3:</b>	Utilise activity based costing in practice
<b>CO4:</b>	Adopt transfer pricing methods
<b>CO5:</b>	Build cost structure for Agriculture and IT sector

**Unit I: Introduction to Strategic Cost Management**

Introduction to Strategic Cost Management (SCM) – Need for SCM – Differences between SCM and Traditional Cost Management - Value Chain Analysis: Meaning and steps - Quality Cost Management: Meaning of Quality and Quality Management – Cost of Quality – Indian Cost Accounting Standard 21 on Quality Control - Introduction to Lean System – Benefits of Lean System – Just in Time (JIT) – Kaizen Costing.

**Unit II: Cost Control and Reduction**

Cost Management Techniques: Cost Control: Meaning and Prerequisites - Cost Reduction: Meaning and Scope – Differences between Cost control and cost reduction - Pareto Analysis: Meaning, importance and applications - Target Costing: Meaning, steps and Principles – Life Cycle Costing: Meaning, Strategies for each stage of product life cycle, Benefits – Learning Curve: Meaning, Learning curve ratio and applications

**Unit III: Activity Based Cost Management**

Activity Based Cost Management: Concept, Purpose, Stages, Benefits, Relevance in Decision making and its Application in Budgeting – Practical problems.

**Unit IV: Transfer Pricing**

Transfer Pricing: Meaning, Benefits, Methods: Pricing based on cost, Market price on transfer price, Negotiated pricing and Pricing based on opportunity costs – Practical Problems.

**Unit V: Cost Management in Agriculture and IT sector**

Agriculture Sector: Features, Cost Structure, Cost Management, Tools to measure the performance, Minimum Support Price and International Perspective – Information Technology Sector: Features, Cost Structure, Cost Management and International Perspective.

**Recent Trends in Strategic Cost Management**

Faculty member will impart the knowledge on recent trends in Strategic Cost Management to the students and these components will not cover in the examination.

**Text Books:**

1. Ravi M Kishore (2018), "Strategic Cost Management", 5<sup>th</sup> Edition, Taxmann Publications Pvt. Ltd, New Delhi.

2. Bandgar P. K., (2017), "Strategic Cost Management", 1<sup>st</sup> Edition, Himalaya Publishing House Pvt Ltd, Mumbai.
3. Sexena V. K., (2020), "Strategic Cost Management and Performance Evaluation", 1<sup>st</sup> Edition, Sultan Chand & Sons, New Delhi.
4. Jain S.P. and Narang KL 2016, Cost Accounting, Kalyani Publishers, Ludhiana

### Supplementary Readings:

1. John K Shank and Vijay Govindarajan (2008), Strategic Cost Management, Simon & Schuster; Latest edition, UK
2. Jawahar Lal, (2015), "Strategic Cost Management", 1<sup>st</sup> Edition, Himalaya Publishing House Pvt Ltd, Mumbai.)
3. Arora M. N., (2021), "A Text Book of Cost and Management Accounting", 11<sup>th</sup> Edition, Vikas Publishing House Pvt. Ltd., New Delhi.
4. Lal Nigam B.M. and Jain I.C 2017, Cost Accounting Principles and Practice Hall of India, New Delhi,.

**Note:** Latest edition of the books may be used

### Web Reference:

1. <https://www.accountingtools.com/articles/strategic-cost-management.html#:~:text=Strategic%20cost%20management%20is%20the,it%20or%20have%20no%20impact.>
2. <https://ca-final.in/wp-content/uploads/2018/09/Chapter-4-Cost-Management-Techniques.pdf>
3. <https://resource.cdn.icai.org/66530bos53753-cp5.pdf>

**Note:** Question Paper shall cover 40%Theory and 60% Problems.

### Outcome Mapping

CO	Programme Outcomes												Programme Specific Outcomes				
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
CO1	3	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3
CO2	3	3	2	3	3	3	3	3	3	3	2	3	3	3	3	3	3
CO3	3	3	2	3	3	3	3	3	3	3	2	2	3	3	3	3	2
CO4	3	3	2	3	3	3	3	3	3	3	2	2	3	2	3	3	3
CO5	3	3	1	3	3	3	3	3	3	3	1	3	3	3	3	3	2

\*3– Strong, 2- Medium, 1- Low

<b>23PCOAC22</b>	<b>CORE COURSE - 5</b>	<b>L</b>	<b>P</b>	<b>C</b>
<b>Semester-2</b>		<b>23PCOAC22 :CORPORATE ACCOUNTING</b>	<b>6</b>	<b>5</b>

<b>Learning Objectives:</b>	
<b>LO1:</b>	To understand the accounting treatment for issue of shares
<b>LO2:</b>	To determine profits for fire and marine insurance
<b>LO3:</b>	To prepare consolidated financial statements
<b>LO4:</b>	To account for price level changes
<b>LO5:</b>	To adopt financial reporting standards

<b>Course Outcomes:</b>	
	After the successful completion of the course, the students will be able to:
<b>CO1</b> :	Prepare Financial Statements of companies as per schedule III of Companies Act, 2013
<b>CO2</b> :	Apply the provisions of IRDA Regulations, 2002 in the preparation of final accounts of Life Insurance and General Insurance Companies.
<b>CO3</b> :	Prepare Consolidated Financial Statements of Holding Companies in accordance with AS 21.
<b>CO4</b> :	Assess contemporary accounting methods
<b>CO5</b> :	Examine Financial Reporting based on appropriate Accounting Standards and provisions of Companies Act 2013 with respect to Corporate Social Responsibility

**Unit I: Issue of Shares and Final Accounts of Companies**

Issue of Shares: ESOPs - ESPS - Sweat Equity Shares - Book Building - Buy-back of Shares - Conversion of debentures into shares - Final accounts of Companies as per Schedule III of the Companies Act, 2013 – Managerial remuneration.

**Unit II: Insurance Company Accounts**

Insurance Company Accounts: Types of Insurance - Final accounts of life assurance Companies- Ascertainment of profit - Valuation Balance Sheet - Final accounts of Fire, Marine and miscellaneous Insurance Companies.

**Unit III: Consolidated Financial Statements**

Consolidated financial statements as per AS 21: Consolidated Profit and Loss Account – Minority interest – Cost of control – Capital reserve – Inter-company holdings – Preparation of consolidated Balance Sheet.

**Unit IV: Contemporary Accounting Methods**

Accounting for price level changes – Social responsibility accounting – Human resource accounting - Forensic Accounting.

**Unit V: Financial Reporting**

Financial reporting: Meaning, Objectives, Characteristics – Indian Accounting Standards (AS 5, AS 10, AS 19, AS 20) – Corporate Social Responsibility: Meaning, Key provisions of Companies Act, 2013, Accounting for CSR expenditure, Reporting of CSR, Presentation and disclosure in the financial statements.

**Recent Trends in Corporate Accounting**

Faculty member will impart the knowledge on recent trends in Corporate Accounting to the students and these components will not cover in the examination.

**Text Books:**

1. Gupta R. L. & Radhaswamy M. (2021), "Corporate Accounting – Volume I & II", 14<sup>th</sup> Edition, Sultan Chand & Sons, New Delhi.
2. Maheshwari S. N., Sharad K. Maheshwari & Suneel K. Maheshwari, (2022), "Advanced Accountancy - Volume I & II", 11<sup>th</sup> Edition, Vikas Publishing House Pvt. Ltd., New Delhi.
3. Jain S. P., Narang K. L., Simmi Agrawal and Monika Sehgal (2019), "Advanced Accountancy - Corporate Accounting – Volume - II", 22<sup>nd</sup> Edition, Kalyani Publishers, New Delhi.
4. Reddy T. S. & Murthy A., (2022), "Corporate Accounting – Volume I & II", 17<sup>th</sup> Edition, Margham Publications, Chennai.

**Supplementary Readings:**

1. Arulanandam M.A & Raman K.S., (2021), "Advanced Accounting (Corporate Accounting – II)", 8<sup>th</sup> Edition, Himalaya Publishing House Pvt Ltd, Mumbai.
2. Shukla M C, Grewal T S and Gupta S C, (2022), "Advanced Accounts Volume II", 19<sup>th</sup> Edition, Sultan Chand & Sons, New Delhi.
3. Gupta R. L., (2022), "Problems and Solutions in Company Accounts", 2<sup>nd</sup> Edition, Sultan Chand & Sons, New Delhi.
4. Singh S.K 2017, Corporate Accounting, SBPD Publications, New Delhi

**Note:** Latest edition of the books may be used

**Note:** Question Paper shall cover 20% Theory and 80% Problems.

**Web Reference:**

- 1 <https://resource.cdn.icai.org/66550bos53754-p1-cp9.pdf>
- 2 <https://resource.cdn.icai.org/66545bos53754-p1-cp4.pdf>
- 3 <https://resource.cdn.icai.org/66638bos53803-cp1.pdf>

**Outcome Mapping**

CO	Programme Outcomes												Programme Specific Outcomes				
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
CO1	3	3	2	3	3	3	3	3	3	3	2	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	2	3	2	3	3	3	3
CO3	3	3	2	3	3	3	3	3	3	3	2	2	3	3	3	3	2
CO4	3	3	3	3	3	3	3	3	3	3	2	2	3	3	3	3	3
CO5	3	3	3	3	3	3	3	3	3	3	1	3	3	3	3	3	2

\*3– Strong, 2- Medium, 1- Low

<b>23PCOAC23</b>	<b>CORE COURSE - 6</b> <b>23PCOAC23 :</b> <b>SETTING UP OF BUSINESS ENTITIES</b>	<b>L</b>	<b>P</b>	<b>C</b>
<b>Semester-2</b>		<b>6</b>		<b>4</b>

<b>Learning Objectives:</b>	
<b>LO1:</b>	To understand the startup landscape and its financing
<b>LO2:</b>	To analyse the formation and registration of Section 8 company
<b>LO3:</b>	To outline the concept of LLP and business collaboration
<b>LO4:</b>	To understand the procedure for obtaining registration and license
<b>LO5:</b>	To create awareness about the legal compliances governing business entities

<b>Course Outcomes:</b>	
	After the successful completion of the course, the students will be able to:
<b>CO1:</b>	Assess the various avenues of acquiring finance to setup a business entity
<b>CO2:</b>	Recall the legal requirements for Section 8 Company
<b>CO3:</b>	Examine the proceedings for LLP and joint venture
<b>CO4:</b>	Describe the registration and licensing procedure
<b>CO5:</b>	Examine the compliance of regulatory framework

### **Unit I: Startups in India**

Types of business organisations – Factors governing selection of an organisation - Startups – Evolution – Definition of a Startup – Startup landscape in India – Startup India policy – Funding support and incentives – Indian states with Startup policies – Exemptions for startups – Life cycle of a Startup – Important points for Startups – Financing options available for Startups – Equity financing – Debt financing – Venture capital financing – IPO – Crowd funding – Incubators - Mudra banks – Successful Startups in India.

### **Unit II: Not-for-Profit Organisations**

Formation and registration of NGOs – Section 8 Company – Definition – Features – Exemptions – Requirements of Section 8 Company – Application for incorporation – Trust: Objectives of a trust – Persons who can create a trust – Differences between a public and private trust – Exemptions available to trusts – Formation of a trust - Trust deed – Society – Advantages – Disadvantages – Formation of a society – Tax exemption to NGOs.

### **Unit III: Limited Liability Partnership and Joint Venture**

Limited Liability Partnership: Definition – Nature and characteristics – Advantages and disadvantages – Procedure for incorporation – LLP agreement – Annual compliances of LLP - Business collaboration: Definition – Types – Joint venture: Advantages and disadvantages – Types – Joint venture agreement - Successful joint ventures in India– Special Purpose Vehicle – Meaning – Benefits – Formation.

### **Unit IV: Registration and Licenses**

Registration and Licenses: Introduction – Business entity registration – Mandatory registration – PAN – Significance – Application and registration of PAN – Linking of PAN with Aadhar – TAN – Persons liable to apply for TAN – Relevance of TAN – Procedure to apply for TAN – GST: Procedure for registration – Registration under Shops and Establishment Act – MSME registration – Clearance from Pollution Control Board – FSSAI registration and license – Trade mark, Patent and Design registration.

### **Unit V: Environmental Legislations in India**



Geographical Indication of Goods (Registration and Protection) Act, 1999: Objectives, Salient Features - The Environmental Protection Act, 1986: Prevention, control and abatement of environmental pollution - The Water (Prevention And Control of Pollution) Act, 1974: The Central and State Boards for Prevention and Control of Water Pollution - Powers and Functions of Boards - Prevention and Control of Water Pollution - Penalties and Procedure- The Air (Prevention and Control of Pollution) Act, 1981: Central and State Boards for The Prevention and Control of Air Pollution - Powers And Functions - Prevention and Control of Air Pollution - Penalties and Procedure.

### Recent Amendments in Setting up of Business Entities

Faculty member will impart the knowledge on recent Amendments in Setting up of new Business Entities to the students and these components will not cover in the examination.

#### **Text Books:**

1. Kailash Thakur, (2007) "Environment Protection Law and Policy in India", 2<sup>nd</sup> Edition, Deep & Deep Publication Pvt. Ltd., New Delhi.
2. Avtar Singh, (2015), "Intellectual Property Law", Eastern Book Company, Bangalore
3. Zad N.S and Divya Bajpai, (2022) "Setting up of Business Entities and Closure" (SUBEC), Taxmann, Chennai
4. Amit Vohra & Rachit Dhingra (2022) "Setting Up Of Business Entities & Closure", 6<sup>th</sup> Edition, Bharath Law House, New Delhi

#### **Supplementary Readings:**

1. Setting up of Business Entities and Closure (2021), Module 1, Paper 3, The Institute of Company Secretaries of India, MP Printers, Noida
2. The Air/Water(Prevention and Control of Pollution) Act, 1981, Bare Act, 2022 Edition, Universal/LexisNexis, Noida
3. Cliff Ennico, (2005) "Small Business Survival Guide Starting Protecting and Securing your Business for Long-Term Success", Adams Media, USA
4. Daniel Sitarz, (2011) "Sole Proprietorship: Small Business Start-up Kit", 3<sup>rd</sup> Edition, Nova Publishing, USA

#### **Web Reference:**

- 1 [https://www.icsi.edu/media/webmodules/FINAL\\_FULL\\_BOOK\\_of\\_EP\\_SBEC\\_2018.pdf](https://www.icsi.edu/media/webmodules/FINAL_FULL_BOOK_of_EP_SBEC_2018.pdf)
- 2 [https://www.mca.gov.in/MinistryV2/incorporation\\_company.html](https://www.mca.gov.in/MinistryV2/incorporation_company.html) 3)
- 3 [https://legislative.gov.in/sites/default/files/The%20Limited%20Liability%20Partnership%20 Act,%202008.pdf](https://legislative.gov.in/sites/default/files/The%20Limited%20Liability%20Partnership%20Act,%202008.pdf)
- 4 <https://legislative.gov.in/sites/default/files/A1999-48.pdf>

### Outcome Mapping

CO	Programme Outcomes												Programme Specific Outcomes				
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
CO1	2	2	1	2	1	3	3	3	3	3	2	3	1	1	2	3	3
CO2	2	3	2	3	1	1	3	3	3	3	2	3	1	1	2	3	3
CO3	2	2	3	2	1	3	3	3	3	3	2	2	1	2	3	3	2
CO4	3	3	3	3	3	3	3	3	3	3	2	2	3	2	3	3	3
CO5	2	2	3	3	3	3	3	3	3	3	1	3	2	1	3	3	2

\*3- Strong, 2- Medium, 1- Low

23PCOAE24-1	<b>Elective Course - 3</b> <b>23PCOAE24-1</b> <b>DATA MINING AND DATA WAREHOUSING</b>	<b>L</b>	<b>P</b>	<b>C</b>
<b>Semester-2</b>		<b>4</b>		<b>3</b>

<b>Learning Objectives:</b>	
<b>LO1:</b>	To understand the basic concepts, principles and need of data warehousing
<b>LO2:</b>	To gain knowledge on the data warehouse architecture, modelling and its implementation.
<b>LO3:</b>	To understand steps in implementing data mart and its various dimensions
<b>LO4:</b>	To learn the features, types and challenges of data mining
<b>LO5:</b>	To aid the students to understand the various data mining tools and techniques

<b>Course Outcomes:</b>	
	After the successful completion of the course, the students will be able to:
<b>CO1:</b>	Explain the basic concepts, principles and need of data warehousing
<b>CO2:</b>	Appraise data warehouse architecture, modelling and its implementation.
<b>CO3:</b>	Choose various steps in implementing data mart and its dimensions
<b>CO4:</b>	Recall the features and types of data mining
<b>CO5:</b>	Apply various data mining tools and techniques

### **Unit I: Data Warehouse**

Definition - history of data warehouse - features of data warehouses - characteristics of data warehouse - goals of data warehousing- principles of data warehousing - need for data warehouse - benefits of data warehouse - need for separate data warehouse - difference between database and data warehouse - applications of data warehouses - components of data warehouse- data staging component.

### **Unit II: Data Warehouse Architecture**

Data warehouse architecture - properties of data warehouse architectures - types of data warehouse architectures- three-tier data warehouse architecture - ETL (extract, transform, and load) process - selecting an ELT tool- Difference between ETL and ELT types of data warehouses - data warehouse modelling - data modelling life cycle - types of data warehouse models- data warehouse design - data warehouse implementation- implementation guidelines - meta data - necessity of metadata in data warehouses - types of metadata- metadata repository - benefits of metadata repository.

### **Unit III: Data Mart**

Data Mart- Reasons for creating a data mart- Types of Data Marts- Steps in Implementing a Data Mart- Difference between Data Warehouse and Data Mart. - Dimensional Modeling- Objectives of Dimensional Modeling- Advantages of Dimensional Modeling - Elements of Dimensional Modeling - Dimension Table- Multidimensional Data Model-Data Cube.

### **Unit IV: Data Mining**

Definition - History of Data Mining- Features of Data Mining - Types of Data Mining - Data Mining Vs Data Warehousing- Advantages and Disadvantages of Data Mining - Data Mining Applications - Challenges of Implementation in Data mining - Steps involved in Data Mining - Classification of Data Mining Systems.

### **Unit V: Data Mining Tools & Techniques**

0 Implementation Process - Data Mining Architecture - Clustering in Data Mining - Different types of Clustering - Text Data Mining - Bitcoin Data Mining - Data Mining Vs Big Data - Data Mining Models - Trends in Data Mining.

### Recent Trends in Data Mining & Data Warehousing

Faculty member will impart the knowledge on recent trends in Data Mining & Data Warehousing to the students and these components will not cover in the examination.

#### Text Books:

1. Jiawei Han, MichelineKamber (2011), Data Mining, Concepts and Techniques, Morgan Kauffman Publishers, California.
2. Pang Ning Tan, Michael Steinbach, Vipin Kumar (2005), Introduction to Data Mining, Addison Wesley, USA.
3. K. P. Soman, ShyamDiwakar, V. Ajay (2006), Insight into Data Mining: Theory & Practice, Prentice Hall of India, New Delhi.

#### Supplementary Readings:

1. BPB Editorial Board (2004), "Data Mining", BPB publications, Noida.
2. Ian H. Witten & Eibe Frank (2011), "Data Mining, Practical Machine Learning Tools and Techniques", Morgan Kaufmann series.
3. Ramesh Sharda, DursunDelen, Efraim Turban (2018), "Business Intelligence", Pearson Education Services Pvt Ltd, Noida.

#### Web Reference:

- 1 [https://mrcet.com/downloads/digital\\_notes/ME/III%20 year/ERP%20 Complete%20Digital%20notes.pdf](https://mrcet.com/downloads/digital_notes/ME/III%20year/ERP%20Complete%20Digital%20notes.pdf)
- 2 [https://mrcet.com/pdf/Lab%20Manuals/IT/DATA%20WAREHOUSING%20AND%20DATA%20MINING%20\(R18A0524\).pdf00](https://mrcet.com/pdf/Lab%20Manuals/IT/DATA%20WAREHOUSING%20AND%20DATA%20MINING%20(R18A0524).pdf00)

Note: Latest edition of the books may be used

#### Outcome Mapping

CO	Programme Outcomes												Programme Specific Outcomes				
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
CO1	2	2	1	2	3	3	3	3	3	3	2	3	3	1	3	2	1
CO2	3	3	3	3	3	3	3	3	3	3	2	3	3	1	3	2	1
CO3	3	3	3	3	3	3	3	3	3	3	2	2	3	1	3	2	1
CO4	3	3	2	3	3	3	3	3	3	3	2	2	3	2	3	3	3
CO5	2	2	2	3	3	3	3	3	3	3	1	3	3	1	3	3	3

\*3– Strong, 2- Medium, 1- Low

<b>23PCOAE24-2</b>	<b>Elective Course - 3</b>	<b>L</b>	<b>P</b>	<b>C</b>
<b>Semester-2</b>	<b>23PCOAE24-2</b>	<b>4</b>		<b>3</b>

	<b>TECHNOLOGY IN BANKING</b>			
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<b>Learning Objectives:</b>	
<b>LO1:</b>	To understand the network essentials for an operational core banking system
<b>LO2:</b>	To provide an overview of customer centric electronic banking.
<b>LO3:</b>	To understand the evolution of electronic fund transfer systems in the banking sector
<b>LO4:</b>	To analyse the digital technologies offered in banking services.
<b>LO5:</b>	To understand the information security system

<b>Course Outcomes:</b>	
	After the successful completion of the course, the students will be able to:
<b>CO1:</b>	Discuss the utility of stand-alone and multi-user systems access in Core banking.
<b>CO2:</b>	Assess the multi-faceted electronic payment options available to customer and host transactions in banking.
<b>CO3:</b>	Evaluate the dynamic transitions in Electronic Fund transfer systems.
<b>CO4:</b>	Evaluate the enhanced utility and user interface and other recent developments in banking technologies.
<b>CO5:</b>	Assess the information security system

#### **Unit I: Introduction to Core Banking Computerization**

Essentials of Bank Computerization – Stand Alone and Multi-User System – Local Area Network and Wide Area Network: Features, Advantages and Limitations – Core Banking: Essential Requirements and Benefits.

#### **Unit II: Electronic Payment System and Banking Facilities**

Electronic Payment Systems – ATM: Features – Advantages – Disadvantages – Brown Label and White Label ATM, PIN, Electro Magnetic Cards, Credit Cards, Debit Cards and Smart Cards: Features, Benefits and Limitations – Multiple Pin in Smart Card – Electronic Purse – Electronic Cheque – Electronic Cash – Electronic Banking – Home Banking (Corporate and Personal) – Update Facilities – Internet Banking – Mobile Banking: Features, Advantages and Limitations – Signature Storage and Retrieval System – Cheque Truncation – MICR and OCR: Characteristics – Advantages and Limitations.

#### **Unit III: Electronic Fund Transfer and Its Transitions**

Electronic Fund Transfer System – Electronic Credit and Debit Clearing – NEFT, RTGS, VSAT, SFMS, SWIFT: Features, Advantages and Limitations – Digital Signature – Unified Payments Interface (UPI): Concept, Mechanism and Services Covered – Digital Wallets (E-Wallets): Features, Benefits and Types.

#### **Unit IV: Trends in Banking Technology**

Recent Developments in Banking Technology: Digital Account Opening – Application Programming Interface – Video Collaboration – Person-to-Person Payments – Cloud Computing – NUUP (National Unified USSD Platform), AePS (Aadhaar enabled Payment System) – APBS (Aadhaar Payments Bridge System) – Role of IDBRT (Institute of Development and Research in Banking) in banking technology development – Status of E-banking in India – Process of E-Banking – Benefits of E-banking – Emerging challenges in banking industry – Scope of IT to tackle the key challenges.

#### **Unit V: Information Security System**

Information security – Software based security systems – Hardware based security systems (smart card, M chip) – Hackers: Techniques used by the hackers, Phishing, Pharming, Key loggers, Screen loggers, Phishing – Trojans transaction poisoning – Card related fraud – Site cloning – False merchant site – Authentication methodologies and security measures (Password protection – Smart cards – Biometric characteristics) –

Encryption and security - Customer confidentiality - Regulatory environment of internet banking - Legal Framework for Electronic Transactions – Cyber security as per Information Technology Act, 2000 – RBI Guidelines on Internet Banking.

### Recent Trends in Technology in Banking

Faculty member will impart the knowledge on recent trends in Technology in Banking to the students and these components will not cover in the examination.

#### **Text Books:**

1. Sangeetha R, (2013) "Technology in Banking", 1<sup>st</sup> Edition, Charulatha Publications, Chennai.
2. Sohani, A K, (2012) "Technology in Banking Sector", SBS Publishers and Distributors Pvt Ltd, New Delhi.
3. Uppal R K and Dhiraj Sharma, (2017) "Banking with Technology: A New Vision -2020", Bharti Publication, New Delhi
4. Indian Institute of Banking and Finance, (2017) "Information Technology, Data Communications and Electronic Banking", 3<sup>rd</sup> Edition, Macmillan Publishers India Private Limited, Noida.

#### **Supplementary Readings:**

1. Vadlamani Ravi, (2007) "Advances in Banking Technology and Management: Impacts of ICT and CRM", 1<sup>st</sup> Edition, Information Science Reference, Hershey, (USA)
2. Lucian Morris and Tim Walker, (2021) "The Handbook of Banking Technology", John Wiley & Sons, New York.
3. Indian Institute of Banking and Finance, (2017), "Security in Electronic Banking", 3<sup>rd</sup> Edition, Macmillan Publishers India Private Limited, Noida.
4. Uppal R.K., Agrim Uppal (2008) "Banking Services and Information Technology: The Indian Experience", New Century Publications, New Delhi.

#### **Web Reference:**

- 1 <https://rbidocs.rbi.org.in/rdocs/Bulletin/PDFs/64767.pdf>
- 2 [https://www.researchgate.net/profile/Ravi-Vadlamani/publication/237383828\\_Chapter\\_I\\_Introduction\\_to\\_Banking\\_Technology\\_and\\_Management/links/572a89bc08aef7c7e2c4fbc3/Chapter-I-Introduction-to-Banking-Technology-and-Management.pdf](https://www.researchgate.net/profile/Ravi-Vadlamani/publication/237383828_Chapter_I_Introduction_to_Banking_Technology_and_Management/links/572a89bc08aef7c7e2c4fbc3/Chapter-I-Introduction-to-Banking-Technology-and-Management.pdf)
- 3 <https://eprocure.gov.in/cppp/rulesandprocs/kbadqkdIcswfjdelrquehwuxcfmijmuixngudufgubugubfugbububjxcgfvsbdiHbgfGhdfgFHtyhRtMjk4NzY=#:~:text=%5B9th%20June%2C%202000%5D%20An,communication%20and%20storage%20of%20information%2C>

**Note: Latest edition of the books may be used**

### Outcome Mapping

	Programme Outcomes												Programme Specific Outcomes				
CO	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
CO1	2	2	1	2	3	3	3	3	3	3	2	3	3	1	3	2	1
CO2	3	3	3	3	3	3	3	3	3	3	2	3	3	1	3	2	1
CO3	3	3	3	3	3	3	3	3	3	3	2	2	3	1	3	2	1
CO4	3	3	2	3	3	3	3	3	3	3	2	2	3	2	3	3	3
CO5	2	2	2	3	3	3	3	3	3	3	1	3	3	1	3	3	3

\*3- Strong, 2- Medium, 1- Low

23PCOAE25-1	<b>Elective Course - 4</b> <b>23PCOAE25-1 FINANCIAL ANALYTICS</b> <b>(PRACTICALS)</b>	<b>L</b>	<b>P</b>	<b>C</b>
<b>Semester-2</b>		<b>4</b>		<b>3</b>

<b>Learning Objectives:</b>	
<b>LO1:</b>	To understand the statistical concepts relating to Probability, decision making under uncertainty and analysis of exploratory data
<b>LO2:</b>	To learn the use of regression, time series analysis and building of models using accounting data
<b>LO3:</b>	To gain knowledge on R and python programming
<b>LO4:</b>	To prepare, analyse and forecast financial statements using cash flow statements
<b>LO5:</b>	To gain knowledge on concept, application, and issues in capital budgeting

<b>Course Outcomes:</b>	
	After the successful completion of the course, the students will be able to:
<b>CO1:</b>	Analyse decisions under uncertainty and also analyse exploratory
<b>CO2:</b>	Build models using accounting data and analyse using regression and time series tools
<b>CO3:</b>	Apply R and python programming
<b>CO4:</b>	Estimate and analyse financial statements using cash flow statements
<b>CO5:</b>	Select appropriate capital budgeting techniques for decision making

**Unit I: Statistical Concepts**

Probability, Normal, Lognormal distribution properties, Decision making under uncertainty - Cleaning and pre-processing financial data, Exploratory Data Analysis in Finance.

**Unit II: Simple Linear Models**

Use of Regression in Finance, Building Models using Accounting Data, Understanding stock price behaviour, time series analysis in finance.

**Unit III: Using R for Analysis of Data**

Quick introduction to R and Python, understanding data in finance, sources of data, Using R for analysis of data.

**Unit IV: Cash Flow Concepts**

Cash flow statement – Prepare and Analyse, Modelling and forecasting of financial statements.

**Unit V: Capital Budgeting**

NPV, IRR – Concept, application, and issues, Use of real options for better financial outcomes..

**Recent Trends in Financial Analytics**

Faculty member will impart the knowledge on recent trends in Financial Analytics the students and these components will not cover in the examination.

**Text Books:**

1. Gary Koop, "Analysis of Economic Data", 4<sup>th</sup> Edition, Wiley, USA.
2. David Ruppert, David S. Matteson, "Statistics and Data Analysis for Financial Engineering: with R examples", Springer, USA.



**Supplementary Readings:**

1. Ang Clifford, "Analyzing Financial Data and Implementing Financial Models Using 'R'", Springer, USA.
2. Wayne L. Winston, "Microsoft Excel 2013: Data Analysis and Business Modeling", Microsoft Publishing, USA.

**Web Reference:**

- 1 [https://personal.ntu.edu.sg/nprivault/MH8331/financial\\_risk\\_analytics.pdf](https://personal.ntu.edu.sg/nprivault/MH8331/financial_risk_analytics.pdf)
- 2 <https://dynamics.microsoft.com/en-us/finance/what-is-financial-analytics/>

**Note: Latest edition of the books may be used**

**Outcome Mapping**

	<b>Programme Outcomes</b>												<b>Programme Specific Outcomes</b>				
<b>CO</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>CO1</b>	2	2	1	2	3	3	3	3	3	3	2	3	3	1	3	2	1
<b>CO2</b>	3	3	3	3	3	3	3	3	3	3	2	3	3	1	3	2	1
<b>CO3</b>	3	3	3	3	3	3	3	3	3	3	2	2	3	1	3	2	1
<b>CO4</b>	3	3	2	3	3	3	3	3	3	3	2	2	3	2	3	3	3
<b>CO5</b>	2	2	2	3	3	3	3	3	3	3	1	3	3	1	3	3	3

\*3– Strong, 2- Medium, 1- Low

23PCOAE25-2	<b>Elective Course - 4</b> <b>23PCOAE25-2</b> <b>MANAGEMENT INFORMATION SYSTEM</b>	<b>L</b>	<b>P</b>	<b>C</b>
<b>Semester - 2</b>		<b>4</b>		<b>3</b>

<b>Learning Objectives:</b>	
<b>LO1:</b>	To understand the basic concept of Information system
<b>LO2:</b>	To identify the importance of MIS
<b>LO3:</b>	To understand the Functional Management Information System
<b>LO4:</b>	To learn the role of system analyst
<b>LO5:</b>	To apply the concept of Enterprise Resource Planning

<b>Course Outcomes:</b>	
	<b>After successful completion of the course, the students will be able to:</b>
<b>CO1:</b>	Identify the basic concept of Information system
<b>CO2:</b>	Discuss the importance of MIS
<b>CO3:</b>	Explain the functional MIS
<b>CO4:</b>	Describe the role of system analyst
<b>CO5:</b>	Apply the concept of Enterprise resource planning

**Unit I: Information System**

Introduction to information system - Management - Structure and Activities - Information needs and sources - Types of management decisions and information need - System classification - Elements of system, input, output, process and feedback.

**Unit II: Types of Management Information Systems**

Transaction Processing Information System - Information system for managers - Intelligence information system – Decision support system - Executive information systems.

**Unit III: Functional Management Information Systems**

Functional Management Information System: Production Information system - Marketing Information Systems - Accounting Information System - Financial Information System - Human Resource Information System.

**Unit IV: System design and Database**

System Analysis and Design: The work of a system analyst - SDLC- System design – Requirement analysis - Data flow diagram - Relationship diagram - Design -Implementation - Evaluation and maintenance of MIS - Database System: Overview of Database - Components - Advantages and disadvantages of database.

**Unit V:**

**The Origin Enterprise Resource Planning**

Enterprise Resource Planning (ERP) System - Benefits of the ERP - How ERP is different from conventional packages - Need for ERP - ERP components - Selection of ERP Package - ERP implementation - Customer Relationship management - Organisation & Types - Decision Making - Data & information - Characteristics & Classification of information - Cost & value of information - Various channels of information and MIS

**Recent Developments in Management Information System**

Faculty member will impart the knowledge on recent Management Information System to the students and these components will not cover in the examination.

**Text Books:**

1. Azam, M (2012), "Management Information System", McGrawHill Education, Noida
2. Laudon, K., Laudon, J. and Dass, R. (2010), "Management Information Systems – Managing the Digital Firm", 11th Edition, Pearson, Noida.
3. Murdick, R.G., Ross, J.E. and Claggett, J.R. (2011), "Information Systems for Modern Management", 3rd Edition, PHI, New Delhi.

**Supplementary Readings:**

1. O'Brien, J.A., Morakas, G.M. and Behl, R. (2009), "Management Information Systems", 9th Edition, Tata McGraw-Hill Education, Noida.
2. Saunders, C.S. and Pearson, K.E. (2009), "Managing and Using Information Systems", 3rd Edition, Wiley India Pvt. Ltd., New Delhi.
3. Stair, R. and Reynolds, G. (2012), "Information Systems", 10th Edition, Cengage Learning, Noida.

**Web references:**

<https://cleartax.in/g/terms/mis-meaning-mis-full-form-marketing-information-system/amp>

<https://www.techtarget.com/searchitoperations/definition/MIS-management-information-systems>

<b>23PCOAS26</b>	<b>SKILL ENHANCEMENT COURSE SEC-1 23PCOAS26:GOODS AND SERVICES TAX</b>	<b>L</b>	<b>P</b>	<b>C</b>
<b>Semester 2</b>		<b>4</b>		<b>2</b>

<b>Learning Objectives:</b>	
<b>LO1:</b>	To enable the students to understand the basic concept of indirect tax
<b>LO2:</b>	To provide the students to know the structure of GST
<b>LO3:</b>	To educate the students with registration process of GST
<b>LO4:</b>	To educate the students for Input Tax Credit
<b>LO5:</b>	To understand the filing of returns and payment procedure of GST and Refund process and assessment.
<b>Course Outcomes:</b>	
	After the successful completion of the course, the students will be able to:
<b>CO1:</b>	Comprehend the fundamentals of indirect tax and need for GST
<b>CO2:</b>	Understand the structure of GST and their schemes in practice
<b>CO3:</b>	Disseminate various modes of registration of GST
<b>CO4:</b>	Familiarize themselves with the adjustment of debit and credit notes
<b>CO5:</b>	Understand and apply the e-filing of GST in practice

**Unit I: Introduction to Goods and Services Tax**

Indirect Taxes – Problems of Indirect taxes – Need for introduction of GST – Commodities kept out the preview of GST – Other indirect Taxes

**Unit II: Structure of GST**

GST Structure – CGST –SGST- IGST – Futures – Exemptions – Schemes – Composition Schemes – Ordinary Scheme – GST Structured Rates

**Unit III: GST Registration Process**

Registration process in GST – Types – Compulsory Registration - Cancellation

**Unit IV: Input Tax Credit**

Input Tax Credit – Adjustment of Debit Notes and Credit Notes – Problems in Input Tax Credit

**Unit V: Returns, Payments, Refund Process and Assessment**

Process of Return Filing-Types of Returns - E-Ledger and E-Payment Process in GST- Assessment Methods – Refund under GST – Refund under Special Occasions - Authorities of GST

**Recent Amendments in Goods and Services Tax**

The faculty member will impart the knowledge on recent trends in Goods and Services Tax to the students and these components will not cover in the examination.

**Text Books:**

1. Bal Balachandran V., 2024, Indirect Taxes, Sultan Chand and Sons, New Delhi
2. SSar Sarangi 2024 Goods and Services Tax Precept and Practice 2024, Centax Publications, New Delhi
3. Anandaday Mishra, 2024, GST Law and Procedure, Taxmann Publications Pvt Limited, New Delhi
4. Raj. C. A., Agarwa. K, 2019, Taxation and Indirect Taxes, Taxmann Publications Pvt Limited, New Delhi

**Supplementary Readings:**

1. Anjali Agarwal, 2024, Goods and Service Tax, New Century Publications, New Delhi
2. Sanjeet Sharma and Shaileja Anand, 2024, VK Global Publications (P) Ltd., New Delhi
3. Mishra. SK, 2024, Simplified Approach to GST, Educreation Publishing, New Delhi
4. Viswanthan.B, 2024, Goods and Services Tax in India, New Century Publications, New Delhi

**Web Reference:**

- 1 <https://taxguru.in/goods-and-service-tax/download-free-book-goods-services-tax-gst-india.html>
- 2 <https://cleartax.in/s/gst-book-online-pdf>

## M.Com. Computer Applications

Second Year

Core – VII

Semester III

### TAXATION

Course Code	Title of the Course	Category	L	T	P	O	Credits	Inst. Hours	Marks		
									CIA	External	Total
23PCOAC31	TAXATION		6	-	-	-	5	6	25	75	100

#### Learning Objectives

1	To identify deductions from gross total income and computation of income for different classes of assesseees
2	To understand the procedure for filing of returns and tax planning
3	To analyse the structure on international business taxation
4	To assess Goods and Services Tax and filing GST returns
5	To compute customs duty as per Customs Act

### Course Units

<b>UNIT I</b>	<b>(18 hrs)</b>
Assessment of persons Tax Exemptions for Agricultural Income - Deductions to be made in computing total income (80G, 80GGB & 80GGC, 80IA, 80IAB, 80IAC, 80IB, 80IBA, 80ID, 80IE, 80JJA, 80JJAA, 80LA, 80M, 80P, 80PA) – Assessment of Firms, AOP, BOI, Company and Co-operative society.	
<b>UNIT II</b>	<b>(18 hrs)</b>
<b>Tax Returns and Tax planning</b> <b>Return of income: Statutory obligation, Return Forms, Time for filing of return, Revised return, Modified return–Assessment -Tax Deducted at Source - Advance payment of Tax: Persons liable to pay, Due date, Computation - Payment in pursuance of order of Assessing Officer, Consequences on non-payment. – Tax planning, Tax avoidance and Tax evasion - Tax planning and specific management decisions: Make or buy, Own or lease, Retain or replace, Shut down or continue.</b>	
<b>UNIT III</b>	<b>(18 hrs)</b>
<b>International business taxation</b> <b>International business taxation - Taxation of Non-resident - Double taxation relief - Transfer pricing and other anti-avoidance measure - Application and interpretation of tax treaties - (Double taxation avoidance agreement - DTAA) - Equalization levy.</b>	
<b>UNIT IV</b>	<b>(18 hrs)</b>
<b>Goods and Services Tax</b> <b>Goods and Services Tax: GST Act, 2017 - Registration – Procedure for registration under Schedule III – Amendment of registration – Rates of Tax of IGST, CGST, SGST/UGTST- Assessment of GST- Self-assessment – Provisional assessment – Scrutiny of returns –</b>	

**Assessment of non filers of returns – Assessment of unregistered persons – Assessment in certain special cases – Tax Invoice – Credit and Debit Notes – Payment of Tax – Input Tax Credit - Anti profiteering – Filing of Returns- Penalties – Prosecution – Appeal and Revision.**

**UNIT V**

**(18 hrs)**

**Customs Act, 1962**

**Customs Act, 1962: Important Definitions – Basics – Importance of Customs Duty – Constitutional authority for levy of Customs Duty – Types of Customs Duty – Prohibition of Importation and Exportation of goods – Valuation of goods for Customs Duty – Transaction Value – Assessable Value – Computation of Assessable Value and Customs Duty.**

### **Course Outcomes**

**Students will be able to:**

CO 1	Estimate taxable income
CO 2	File returns and plan taxes
CO 3	Illustrate the nuances of international business taxation
CO 4	Apply the provisions of GST
CO 5	Assess the provisions of Customs Act

### **Books for study:**



### **Books for reference:**

1. Sha R. G. and Usha Devi N.,(2022) “Income Tax” (Direct and Indirect Tax), HimalayaPublishing House,Mumbai.
2. GirishAhuja and Ravi Gupta, “Practical Approach to Direct and Indirect Taxes: Containing Income Tax and GST”, Wolters Kluwer India Private Limited
3. Swetha Jain, GST Law & Practice, Taxmann Publishers Pvt.Ltd, Chennai.
4. Daty V.S., “GST - Input Tax Credit”,Taxmann Publishers, Chennai.
5. AnuragPandy,“Law & Practices of GST and Service Tax”- Sumedha Publication House, New Delhi.

**Web references:**

1. [https://www.icsi.edu/media/webmodules/16112021\\_Advance\\_Tax\\_Laws.pdf](https://www.icsi.edu/media/webmodules/16112021_Advance_Tax_Laws.pdf)
2. [https://www.icsi.edu/media/webmodules/Final\\_Direct\\_Tax\\_Law\\_17\\_12\\_2020.pdf](https://www.icsi.edu/media/webmodules/Final_Direct_Tax_Law_17_12_2020.pdf)
3. [https://www.icsi.edu/media/webmodules/TL\\_Final\\_pdf\\_25102021.pdf](https://www.icsi.edu/media/webmodules/TL_Final_pdf_25102021.pdf)

Note: Latest edition of the books may be used

**Mapping of course outcomes with POs and PSOs**

	POs						PSOs		
	1	2	3	4	5	6	1	2	3
<b>CO1</b>	3	3	3	3	3	3	3	2	3
<b>CO2</b>	3	3	3	3	3	3	2	2	3
<b>CO3</b>	3	3	3	3	3	3	3	2	3
<b>CO4</b>	3	3	3	3	3	3	3	2	3
<b>CO5</b>	3	3	3	3	3	3	3	3	3

**Strong - 3**

**Medium – 2**

**Low - 1**



**M.Com. Computer Applications**

Second Year

Core – VIII

Semester III

**RESEARCH METHODOLOGY**

Course Code	Title of the Course	Category	L	T	P	O	Credits	Inst. Hours	Marks		
									CIA	External	Total
223PCOAC32	<b>RESEARCH METHODOLOGY</b>		6	-	-	-	5	6	25	75	100

**Learning Objectives**

1	To understand the fundamentals of research
2	To construct theoretical design and formulate hypotheses
3	To evaluate the data collection techniques
4	To perform parametric and non-parametric tests
5	To enhance report writing skills and develop ethical conduct in research

## Course Units

<b>UNIT I</b>	<b>(18 hrs)</b>
<b>Introduction to Research Methodology</b>	
Research: Definition – Objectives – Motivations for research – Types of research – Maintaining objectivity in research – Criteria of good research – Applications of research in business - Formulating a research problem – Literature Review – Reasons for review – Reference management tools - Identification of research gap – Framing of objectives.	
<b>UNIT II</b>	<b>(18 hrs)</b>
<b>Hypothesis Testing and Research Design</b>	
Hypothesis – Formulation of hypothesis – Testing of hypothesis – Type I and Type II errors – Research design – Types of research design - Methods of data collection: Census, Sample survey, Case study – Sampling: Steps in sampling design, Methods of sampling – Testing of reliability and validity – Sampling errors.	
<b>UNIT III</b>	<b>(18 hrs)</b>
<b>Data Collection</b>	
Variable: Meaning and types - Techniques of data collection – Primary data: Meaning, Advantages and limitations – Techniques: Interview, Schedule, Questionnaire, Observation – Secondary Data: Meaning and sources.	
<b>UNIT IV</b>	<b>(18 hrs)</b>
<b>Data Analysis</b>	
Data Analysis – Uni-variate Analysis: Percentile, Mean, Median, Mode, Standard deviation, Range, Minimum, Maximum, Independent sample t-test – Bi-variate analysis: Simple correlation, Simple Regression, Chi-square, Paired samples t-test, ANOVA, Man-Whitney test – Wilcoxon signed rank test – Kruskal Wallis test (Simple problems)	
Multi Variate Analysis: Multiple Correlation, Multiple Regression, Factor Analysis, Friedman’s test, Cluster analysis, Confirmatory Factor Analysis (CFA), Structural Equation Modelling (SEM), Multiple Discriminant Analysis.	
<b>UNIT V</b>	<b>(18 hrs)</b>
<b>Preparation of Research Report</b>	

**Report preparation – Guidelines and precautions for interpretation – Steps in Report writing - Style of research reports (APA, MLA, Anderson, Harvard) – Mechanics of report writing – Ethics in Research – Avoiding plagiarism – Plagiarism checker tools – Funding agencies for business research.**

**Question pattern: Theory: 80%; Problems: 20%**

### Course Outcomes

Students will be able to:

CO 1	Recall the research concepts and recognise the research problem
CO 2	Formulate research hypothesis and determine the sample size
CO 3	Select appropriate method for data collection
CO 4	Make inferences based on statistical tests
CO 5	Draft a research report avoiding plagiarism

### Books for study:

1. Tripathi, (2014) “Research Methodology in Management and Social Sciences”. Sultan Chand & Sons, New Delhi.
2. Kothari C.R and GauravGarg, (2020) “Research Methodology” – Methods and Techniques. New Age International (P) Limited, New Delhi.
3. Krishnaswami and Ranganathan, (2011) “Methodology of Research in Social Sciences”, Himalaya Publishing House, Mumbai.

### Books for reference:

1. Donald R. Cooper, Pamela S. Schindler and J.K.Sharma, “Business Research Methodology”, 12<sup>th</sup> Edition, Tata Mcgraw Hill, Noida (UP).
2. SashiK.Guptha and ParneetRangi,(2018) “Research Methodology” , Kalyani Publisher, Ludhiana.
3. Sharma R D and HardeepChahal, (2004) “Research Methodology In Commerce and Management”, Anmol Publications, New Delhi

### Web references:

1. [https://www.cartercenter.org/resources/pdfs/health/ephti/library/lecture\\_notes/health\\_science\\_students/In\\_research\\_method\\_final.pdf](https://www.cartercenter.org/resources/pdfs/health/ephti/library/lecture_notes/health_science_students/In_research_method_final.pdf)
2. <https://ccsuniversity.ac.in/bridge-library/pdf/MPhil%20Stats%20Research%20Methodology-Part1.pdf>
3. [https://prog.lmu.edu.ng/colleges\\_CMS/document/books/EIE%20510%20LECTURE%20N%20OTES%20first.pdf](https://prog.lmu.edu.ng/colleges_CMS/document/books/EIE%20510%20LECTURE%20N%20OTES%20first.pdf)
4. <https://www.statisticssolutions.com/academic-research-consulting/data-analysis-plan/>

Note: Latest edition of the books may be used

**Mapping of course outcomes with POs and PSOs**

	POs						PSOs		
	1	2	3	4	5	6	1	2	3
<b>CO1</b>	3	3	3	2	2	3	2	3	3
<b>CO2</b>	3	3	3	2	2	3	2	3	3
<b>CO3</b>	3	3	3	2	2	3	2	3	3
<b>CO4</b>	3	3	3	2	2	3	2	3	3
<b>CO5</b>	3	3	3	2	2	3	2	3	3
	<b>Strong - 3</b>			<b>Medium – 2</b>			<b>Low - 1</b>		

**M.Com. Computer Applications**

Second Year

Core–IX

Semester III

**COMPUTER APPLICATIONS IN BUSINESS**

Course Code	Title of the Course	Category	L	T	P	O	Credits	Inst. Hours	Marks		
									CIA	External	Total
23PCOAP33	<b>COMPUTER APPLICATIONS IN BUSINESS (Practical Only)</b>		6	-	4	-	5	6	25	75	100

**Learning Objectives**

1	To understand the fundamentals of SPSS
2	To compare the values obtained in t-test and ANOVA
3	To perform regression and non-parametric tests
4	To create company, groups and ledgers and obtain financial statements using Tally Prime
5	To understand inventory management and account for goods and services tax

## Course Units

**UNIT I**

**(18 hrs)**

**Introduction to SPSS**

Opening a data file in SPSS – Variable view – Data view – Entering data into the data editor – Saving the data file– Table creation – Descriptive statistics: Percentile values, Measures of central tendency, Measures of dispersion, Distribution – Cronbach’s Alpha test – Charts and graphs - Editing and copying SPSS output.

**UNIT II(18 hrs)**

**Parametric Tests in SPSS**

**Compare means: One-sample t-test, Independent Samples t-test, Paired-samples t-test and One-way ANOVA, Two-way ANOVA - Correlation: Bi-variate, Partial and Multiple. Simple linear regression.**

**UNIT III**

**(18 hrs)**

**Non-parametric Tests in SPSS**

**Chi-square test - Mann Whitney’s test for independent samples – Wilcoxon matched pairs sample test– Friedman’s test – Wilcoxon signed rank test – Kruskal Wallis test**

**UNIT IV**

**(18 hrs)**

**Introduction to Tally Prime**

**Tally Prime: Introduction – Starting Tally Prime – Creation of a Company - Selecting company - Shutting a company - Altering company– Creating Accounting groups and ledgers – Vouchers – Practical problems for a new and existing business and not-for profit**

**organisation. Accounting reports: Introduction – Displaying Trial balance, Profit and Loss Account, Balance sheet, Day book, Purchase register, Sales register, Cashflow/Funds flow and ratio analysis – Practical problems.**

**UNIT V**

**(18 hrs)**

**Inventory and GST in Tally Prime**

**Inventory: Introduction to Inventory Masters – Creation of stock group – Creation of Godown – Creation of unit of measurement – Creation of stock item – Entering inventory details in Accounting vouchers – Practical problems. GST: Introduction – Enabling GST – Defining tax details – Entries in Accounting vouchers – View invoice report – Practical problems.**

**Question Pattern: 100% Practical**

**Course Outcomes**

Students will be able to:

<b>CO 1</b>	Create data file in SPSS
<b>CO 2</b>	Examine Means of samples
<b>CO 3</b>	Conduct non-parametric tests
<b>CO 4</b>	Create a company, form groups and get automated financial statements
<b>CO 5</b>	Automate inventory management and GST filing

**Books for study:**



**Books for reference:**

- 1. Kulas John, Renata Garcia Prieto Palacios Roji, Smith Adams (2021), IBM SPSS Essentials: Managing and Analysing Social Sciences Data, 2<sup>nd</sup> Edition, John Wiley & Sons Inc., New York**
- 2. Rajathi. A, Chandran. P (2011), SPSS for You, MJP Publishers, Chennai**
- 3. Sangwan Rakesh (2022), Learn Tally Prime in English, Ascend Prime Publication, Pilani**
- 4. Lodha Roshan (2022), Tally Prime with GST Accounting, Law Point Publication, Kolkata**

**Web references:**

- 1. <https://www.spss-tutorials.com/basics/>**
- 2. <https://www.tallyclub.in/>**
- 3. <https://tallysolutions.com/business-guides/inventory-management-in-tally-erp9/>**

Note: Latest edition of the books may be used

**Mapping of course outcomes with POs and PSOs**

	POs						PSOs		
	1	2	3	4	5	6	1	2	3
<b>CO 1</b>	2	3	2	2	3	3	2	3	3
<b>CO 2</b>	3	3	2	2	3	3	2	3	3
<b>CO 3</b>	3	3	2	2	3	3	2	3	3
<b>CO 4</b>	3	3	2	3	3	3	3	3	3
<b>CO 5</b>	3	3	2	3	3	3	3	3	3

**Strong - 3**

**Medium – 2**

**Low - 1**

## M.Com. Computer Applications

Second Year

Core – X

Semester III

<b>23PCOAI34</b>	<b>CORE INDUSTRY MODULE</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Semester-3</b>				<b>4</b>	<b>4</b>

Industrial visits are an essential part of the academic curriculum in the post-graduate courses. Being a part of interactive learning, such educational visits give students a major exposure to real working environments and a practical perspective of a theoretical concept relevant to their domain. In addition, industrial visits bridge the widening gap between theoretical learning and practical exposure by giving students the first-hand exposure to identify the inputs and outputs for different business operations and processes performed at the workplace. Intending to go beyond classroom learning, the industrial tours contribute greatly to holistic student development by letting students learn about the market trends, the industry future scenario of the industry and the new technologies being applied.

### Purpose

Industrial visits allow students to meet industry leaders, professionals, entrepreneurs, policymakers, and corporates who share their wisdom, learning, and experiences.

### Aim

- 1) To interact the students with actual industry personals.
- 2) To inform them of the industrial procedures required to enter in any company.
- 3) To experience the working environment in industry and visualize all the essential Departments in the Industry.
- 4) Interaction of students with the peoples of all critical departments.
- 5) To prepare the students for the carrier path in different departments of industry.

### Instructions

1. All the students must be in formal wear/shoes.
2. Male students are supposed to be neat in appearance. (Clean shaved)
3. You are not supposed to engage in any unacceptable activity that would hamper the repute of the institute (like smoking, chewing, pan masala, tobacco, and using any kind of drugs)
4. You must safeguard your own belongings.
5. Please avoid bringing any expensive gadget or valuables.
6. You are supposed to go somewhere with faculty permission
7. You must follow the faculty decision and behave decently.
8. Any violation during the industrial visit will be viewed very seriously
9. Participating students must abide by the rules and guidelines
10. If any complaint/misbehavior is reported against student during Industrial Visit, the Head of the department shall take appropriate action against the candidate ranging from suspension to termination depending upon the case.

The students must prepare the Industrial Visit Report for about 15 pages and submit of the same at least one month before the last working day of the III Semester. Evaluation of the Reports will be done (for 75 marks) as usual during the III Semester Examination however the academic quality of the reports will be based on the certificate issued by the Guide teachers who will award internal marks (25) based on the regularity and performance in report writing by the student's company profile.

The report must contain

Introduction  
 Purpose of Industrial Visit  
 Objective  
 Company Profile  
 Mission and Vision  
 Company Structure  
 Process of Inputs Acceptance  
 Methods of Products Manufactured  
 Quality Control Measures  
 Environmental Safety  
 Challenges faced by the industry  
 Awards and Recognitions  
 Observation & Learning  
 Experience from Industrial Visit  
 Conclusion

### Outcome Mapping

	Programme Outcomes												Programme Specific Outcomes				
CO	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
CO1	2	3	2	2	3	3	3	3	3	3	2	3	2	3	3	2	1
CO2	3	3	2	2	3	3	3	3	3	3	2	3	2	3	3	2	1
CO3	3	3	2	2	3	3	3	3	3	3	2	2	2	3	3	2	1
CO4	3	3	2	3	3	3	3	3	3	3	2	2	3	3	3	3	3
CO5	3	3	2	3	3	3	3	3	3	3	1	3	3	3	3	3	3

\*3- Strong, 2- Medium, 1- Low



**M.Com. Computer Applications**

Second Year

Elective – V Part -A

Semester III

**APPLIED DATA ANALYTICS AND MACHINE LEARNING**

Course Code	Title of the Course	Category	L	T	P	O	Credits	Inst. Hours	Marks		
									CIA	External	Total
23PCOAE35-1	<b>APPLIED DATA ANALYTICS AND MACHINE LEARNING</b>		3	-	-	-	3	3	25	75	100

LEARNING OBJECTIVES	
1.	To understand basics of data analysis in Python
2.	To interpret the data analysis pipeline via usage of NumPy and Pandas.
3.	To examine methods of working with textual and time series data
4.	To investigate machine learning techniques with Scikit-Learn
5.	To understand advanced machine learning techniques

**Course Units**

<p><b>UNIT I</b> <span style="float: right;"><b>(12 hrs)</b></span></p> <p><b>Introduction to Data Analysis with Python</b>            Introduction to Data Analysis with Python: Data Analysis - Understanding Nature of Data - Data Analysis Process - Quantitative and Qualitative Data Analysis-Introduction to Python - PyPI, SciPy.Getting started with Python - Explore the first data set - The Jupyter notebook.</p>
<p><b>UNIT II</b> <span style="float: right;"><b>(12 hrs)</b></span></p> <p><b>Working across the entire data analysis pipeline</b>            Working across the entire data analysis pipeline, - Getting, cleaning and manipulating the data - Numpy library – Ndarray - Basic Operation- Shape Manipulation - Array Manipulation - General Concepts - Pandas Library- Introduction to Pandas Data Structures - Index functionalities - Operations between Data Structures - Interacting with Databases.</p>
<p><b>UNIT III</b> <span style="float: right;"><b>(12 hrs)</b></span></p> <p><b>Working with textual and time-series data</b>            Working with textual data - Working with time-series data - Databases in Python - Statistical data analysis.</p>
<p><b>UNIT IV</b> <span style="float: right;"><b>(12 hrs)</b></span></p> <p><b>Basics of machine learning with Scikit-learn</b>            Basics of machine learning with Scikit-learn - Introduction to machine learning -Fitting a first model - Cost functions and outliers - Linear regressions - Gradient descent - Feature engineering.</p>
<p><b>UNIT V</b> <span style="float: right;"><b>(12 hrs)</b></span></p> <p><b>Advanced machine learning techniques</b>            Advanced machine learning techniques: K-nearest neighbours - Logistic regressions - Decision trees and SVMs - Clustering and Dimensionality reduction - Introduction to deep</p>

learning.
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### Course Outcomes

Students will be able to:

<b>CO 1</b>	Demonstrate data analysis with apt knowledge in foundational concepts of Python
<b>CO 2</b>	Demonstrate getting, cleaning and manipulation of data using NumPy and Pandas
<b>CO 3</b>	Use Python for Statistical Data analysis
<b>CO 4</b>	Use Scikit-Learn for advanced Data analysis
<b>CO 5</b>	Explain advanced machine learning techniques

#### Books for study:

1. Fabio Nelli (2018), "Python Data Analytics with Pandas, Numpy and Matplotlib", 2<sup>nd</sup> Edition, Apress, New York.
2. Paul Barry, Shroff (2011), "Head First Python", 1<sup>st</sup> Edition, O'Reilly Media, USA.
3. Mark Lutz, Shroff (2011), "Programming Python", 4<sup>th</sup> Edition, O'Reilly Media, USA.

#### Books for reference:

1. Wes McKinney, "Python for Data Analysis", 2<sup>nd</sup> Edition, O'Reilly publication, USA.
2. Martin C Brown (2001), "Python the Complete Reference", McGraw Hill, USA.
3. Mark Lutz, Shroff (2010), "Python Pocket Reference", 3<sup>rd</sup> Edition, O'Reilly Media, USA.
4. Ashok NamdevKamthane, Amit Ashok Kamthane (2018), "Problem Solving and Python Programming", McGraw Hill Education Pvt. Ltd. Noida.

#### Web references:

1. <https://pandas.pydata.org/pandas-docs/version/1.4.4/pandas.pdf>
2. [https://mrcet.com/downloads/digital\\_notes/CSE/IV%20Year/MACHINE%20LEARNING\(R17A0534\).pdf](https://mrcet.com/downloads/digital_notes/CSE/IV%20Year/MACHINE%20LEARNING(R17A0534).pdf)

Note: Latest edition of the books may be used.

### Mapping of course outcomes with POs and PSOs

	POs						PSOs		
	1	2	3	4	5	6	1	2	3
<b>CO1</b>	1	2	1	3	3	1	3	2	1
<b>CO2</b>	1	2	1	3	3	1	3	2	1
<b>CO3</b>	1	2	1	3	3	1	3	2	1
<b>CO4</b>	1	2	1	3	3	1	3	2	1
<b>CO5</b>	1	2	1	3	3	1	3	2	1

**Strong - 3**                      **Medium - 2**                      **Low - 1**

**M.Com. Computer Applications**

**Second Year**

**Elective–V Part - A**

**Semester III**

**PYTHON AND R FOR DATA ANALYTICS**

Course Code	Title of the Course	Category	L	T	P	O	Credits	Inst. Hours	Marks		
									CIA	External	Total
<b>23PCOAE35-2</b>	<b>PYTHON AND R FOR DATA ANALYTICS</b>		3	-	-	-	3	3	25	75	100

Learning Objectives	
1.	To understand the basics of Python
2.	To learn Bio Python
3.	To understand the features of R
4.	To learn data handling
5.	To identify the use of bio conductor

**COURSE UNITS**

<p><b>UNIT I</b> (12 hrs)</p> <p><b>Introduction to Python</b>            Installation of Python - Variables - Types - Strings - Jupiter notebooks - Objects - Functions - Control structures - Operators - User-Defined Functions - Data Structures - List, Tuple - Dictionary.</p>
<p><b>UNIT II</b> (12 hrs)</p> <p><b>Numpy and Scipy</b>            Numpy library – Ndarray - Basic Operations - Conditions and Boolean Arrays - Shape Manipulation - Array Manipulation - General Concepts - Structured Arrays - Reading and Writing Array on Files - SciPy Library for Statistics: linalg sub package - Normality- Correlation - t-Test- Chi-Test- ANOVA.</p>
<p><b>UNIT III</b> (12 hrs)</p> <p><b>R Programming</b>            Introduction to R - Installing R - Features of R - Reserved words - Operators, -Strings - Data types and operations - Basic Data types – Vectors - List, Matrices – Arrays - Factors - Data frames - Flow control - Decision making - Loop Control Statements -Loops.</p>
<p><b>UNIT IV</b> (12 hrs)</p> <p><b>Visualisation using R</b>            R as a Deluxe Calculator - Creating Objects and Assigning Values - Graphics: Simple Plotting - Advanced Plotting - Using Color in Plots - Using Subscripts and Superscripts in Graph Labels - Interactive Graphics - Saving Graphical Output - Loops.</p>
<p><b>UNIT V</b> (12 hrs)</p> <p><b>Data Handling</b>            Feature selection models - Data Preprocessing - Normalization - Methods - Data reduction - Data sampling - Heat maps - Classification: Based on analogy - rules - probabilities - statistics and prediction with R.</p>

**Course Outcomes**

Students will be able to:

CO 1	Describe the basics of Python
CO 2	Explain the necessity for programming in biology
CO 3	Apply R programming
CO 4	Discuss Data handling
CO 5	Apply R in Phylogenetics

**Books for study:**

1. Fabio Nelli (2018), "Python Data Analytics with Pandas, Numpy and Matplotlib", 2<sup>nd</sup> Edition, Apress, New York.
2. Wes McKinney, "Python for Data Analysis", 2<sup>nd</sup> Edition, O'Reilly publication, USA.
3. Jeeva Jose (2018), "Beginner's Guide for Data Analysis using R Programming", Khanna Book Publishing Co. Ltd., New Delhi.
4. Norman Matloff (2011), "The Art of R programming - A tour of statistical software design", 1<sup>st</sup> Edition, No Starch Press, USA.

**Books for reference:**

1. Mark Lutz (2009), "Learning Python", O'Reilly Media Publication, USA.
2. Martin C Brown (2001), "Python: The Complete Reference". McGraw-Hill Media, USA.
3. Gentleman R, Carey V.J, Huber W, Irizarry, RA, and Dudoit, S, "Bioinformatics and Computational Biology Solutions Using R and Bioconductor", Springer, New York.

**Web references:**

1. [www.sthurlow.com/python/](http://www.sthurlow.com/python/)
2. [www.learnpython.org](http://www.learnpython.org)
3. [www.codecademy.com/en/tracks/python](http://www.codecademy.com/en/tracks/python)

Note: Latest edition of the books may be used

**Mapping of course outcomes with POs and PSOs**

	POs						PSOs		
	1	2	3	4	5	6	1	2	3
<b>CO1</b>	2	2	2	2	1	2	1	2	3
<b>CO2</b>	2	2	2	2	1	2	1	2	2
<b>CO3</b>	3	3	3	3	2	3	2	3	3
<b>CO4</b>	3	3	3	3	3	3	3	3	3
<b>CO5</b>	3	3	3	3	3	3	3	3	3

**Strong - 3****Medium - 2****Low - 1**

**M.Com. Computer Applications**

Second Year

Skill Enhancement Course

Semester III

**EMPLOYABILITY SKILLS**

Semester 3 Subject Code	Subject Name	Category	L	T	P	O	Credits	Inst. Hours	Marks			
									CIA	External	Total	
23PCOAS36	<b>EMPLOYABILITY SKILLS</b>	Extra Disciplinary	3	-	-	-	2	45	25	75	100	
<b>Course Objectives</b>												
C1	To learn about the employability skills											
C2	To understand dimensions of task oriented skills											
C3	To study on critical problem-solving techniques											
C4	To develop employability skills											
C5	To understand the logical and reasoning skills											
<b>SYLLABUS</b>												
UNIT	Details							No. of Hours	Course Objectives			
I	<b>INTRODUCTION TO EMPLOYABILITY SKILLS</b> Meaning – Definition – Hard skills and soft skills –Employability skills and vocational skills – Employability and employment – Employability attributes.							9	C1			
II	<b>UNPACKING EMPLOYABILITY SKILLS</b> Embedded employability skills – Dimensions of competency – Task skills –Task Management skills – Contingency Management skills – Job/Role Environment skills.							9	C2			
III	<b>INTER – RELATIONSHIPS OF EMPLOYABILITY SKILLS</b> Communication – Team work – Problem solving – Initiative and Enterprise – Planning and Organizing – Self management – Learning – Technology.							9	C3			
IV	<b>RESUME WRITING</b> Meaning – Features of good resume – Model (Exercise). Etiquettes – Dress, Cleanliness, Etiquettes to be followed inside the employment seeking process.							9	C4			
V	<b>Arithmetic and Logical Reasoning Skills – Exercise.</b>							9	C5			
<b>Total</b>								<b>45</b>				
<b>Course Outcomes</b>												
<b>Course Outcomes</b>	On completion of this course, students will;											
<b>CO1</b>	Acquire employability skills							PO4, PO6, PO7				
<b>CO2</b>	understand dimensions of task oriented skills							PO4, PO6, PO7				
<b>CO3</b>	study on critical problem-solving techniques							PO4, PO6, PO7				
<b>CO4</b>	develop employability skills							PO4, PO6, PO7				

<b>CO5</b>	understand the logical and reasoning skills	PO4, PO6, PO7
<b>Reading List</b>		
1.	<a href="https://www.jobjumpstart.gov.au/article/what-are-employability-skills">https://www.jobjumpstart.gov.au/article/what-are-employability-skills</a>	
2.	<a href="https://www.simplilearn.com/why-are-employability-skills-important-article">https://www.simplilearn.com/why-are-employability-skills-important-article</a>	
3.	<a href="https://blog.hubspot.com/marketing/employability-skills">https://blog.hubspot.com/marketing/employability-skills</a>	
4.	<a href="https://www.indeed.com/career-advice/finding-a-job/employability-skills">https://www.indeed.com/career-advice/finding-a-job/employability-skills</a>	
<b>References Books</b>		
1.	Soft Skills, Dr. K. Alex	
2.	Winning Interview Skills, Compiled & Edited by J.K. Chopra.	
.	A Modern Approach to Verbal and Non- Verbal Reasoning, R. S. Aggarwal.	
4.	Fafinski, S., Finch, E. (2014). Employability Skills for Law Students. United Kingdom: OUP Oxford.	
5.	Trought, F. (2017). Brilliant Employability Skills: How to Stand Out from the Crowd in the Graduate Job Market. United Kingdom: Pearson Education Limited.	
6.	Chaita, M. V. (2016). Developing Graduate Employability Skills: Your Pathway to Employment. United States: Universal Publishers.	

	<b>PO 1</b>	<b>PO 2</b>	<b>PO 3</b>	<b>PO 4</b>	<b>PO 5</b>	<b>PO 6</b>	<b>PO 7</b>	<b>PO 8</b>
<b>CO 1</b>				3		3		
<b>CO 2</b>				3		3		
<b>CO 3</b>		2		3		3		
<b>CO 4</b>				3	2	3	1	
<b>CO 5</b>				3		3		

3-Strong

2-Medium

1-Low

<b>Semester 3 Subject Code</b>	<b>Subject Name</b>	<b>Category</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>O</b>	<b>Credits</b>	<b>Inst. Hours</b>	<b>Marks</b>		
									<b>CIA</b>	<b>External</b>	<b>Total</b>
<b>23PCOAI37</b>	<b>Summer Internship</b>	-	-	-	-	-	2	-	25	75	100

**Refer to the Regulations**

**M.Com. Computer Applications**

Second Year

Core – XI

Semester IV

**CORPORATE AND ECONOMIC LAWS**

Course Code	Title of the Course	Category	L	T	P	O	Credits	Inst. Hours	Marks		
									CIA	External	Total
<b>23PCOAC41</b>	<b>CORPORATE AND ECONOMIC LAWS</b>		<b>6</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>5</b>	<b>6</b>	<b>25</b>	<b>75</b>	<b>100</b>

**Learning Objectives**

<b>1</b>	To analyse current and capital account transactions and deal with foreign currency under FEMA Act
<b>2</b>	To understand unethical competitive practices and forums for redressal of consumer disputes under Competition Act and Consumer Protection Act
<b>3</b>	To understand the procedure for obtaining patents and copyright under The Copyright and Patents Act
<b>4</b>	To evaluate offences and punishment for money laundering under Prevention of Money Laundering Act
<b>5</b>	To explain the registration and related procedures under Real Estate Act

**Course Units**

**UNIT I** **(18 hrs)**

**Introduction to Foreign Exchange Management Act, 1999**

**Foreign Exchange Management Act, 1999: Introduction – Definitions – Current Account transactions – Capital Account transactions – Realisation, repatriation and surrender of foreign currency – Remittance of assets – Possession and retention of foreign currency or foreign coins – Authorised person – Adjudication and Appeal.**

**UNIT II** **(18 hrs)**

**Competition Act, 2002 and Consumer Protection Act, 2019**

**Competition Act, 2002: Objective – Prohibition of Agreements, Prohibition of Abuse of Dominant Position – Regulation of combinations – Competition Commission of India: Duties, Powers and Functions of Commission – Appellate Tribunal.**

**The Consumer Protection Act, 2019: Objects; Rights of consumers – Consumer Dispute Redressal Commissions – Consumer protection councils – Procedure for admission to complaints – Appeal against orders.**



<b>UNIT III</b>	<b>(18 hrs)</b>
<p>Law relating to intellectual property rights          Law relating to intellectual property rights: Introduction – The Copyright Act, 1957: Works in which copyright subsist – Ownership of copyright and the rights of the owner – Assignment of copyright – Disputes with respect to assignment of copyright – Term of copyright – Registration of copyright – Infringement of copyright.          The Patents Act, 1970: Inventions not patentable - Applications for patents – Publication and examination of applications – Grant of patents and rights conferred – Register of patents.          Trademarks Act, 1999: Conditions for registration – Procedure for and duration of registration – Effect of registration – Collective marks.</p>	
<b>UNIT IV</b>	<b>(18 hrs)</b>
<p><b>Prevention of Money Laundering Act, 2002</b>  <b>Prevention of Money Laundering Act, 2002: Offence of money laundering –Punishment for money laundering –Attachment, adjudication and confiscation – Obligations of Banking Companies, Financial Institutions and Intermediaries – Summons, Search and Seizure – Appellate Tribunal.</b></p>	
<b>UNIT V</b>	<b>(18 hrs)</b>
<p><b>Real Estate (Regulation and Development) Act, 2016</b>  <b>Real Estate (Regulation and Development) Act, 2016: Introduction – Salient features of the Act – Registration of Real Estate Project – Registration of Real Estate agents – Functions and duties of promoter – Rights and duties of Allottees – Offences, penalties and adjudication – Specimen agreement for sale to be executed between the promoter and the allottee.</b></p>	

### Course Outcomes

Students will be able to:

CO 1	Recall important provisions of FEMA
CO 2	Evaluate the provisions of the Competition Act, 2002 and Consumer Protection Act to govern commercial competition and protect a consumer
CO 3	Recall the process relating to obtaining copyrights and patents.
CO 4	Examine the provisions of Money Laundering Act
CO 5	Analyse the provisions relating to regulation of real estate.

### Books for study:

### Books for reference:

1. Sekar G and SaravanaPrasath B (2022), Students' Handbook on Corporate and Economic Law, Commercial Law Publishers (India) Pvt.Ltd., New Delhi
2. Taxmann (2021), FEMA & FDI Ready Reckoner, 15<sup>th</sup> Edition, Taxmann Publications, New Delhi
3. [Ahuja V.K. and Archa Vashishtha](#) (2020), Intellectual Property Rights (contemporary Developments), Thomson Reuters, Toronto, (CAN)

**Web references:**

1. <https://resource.cdn.icai.org/67333bos54154-m3cp1.pdf>
2. <https://resource.cdn.icai.org/67335bos54154-m3cp3.pdf>
3. <https://resource.cdn.icai.org/68523bos54855-cp1.pdf>
4. <https://resource.cdn.icai.org/68524bos54855-cp2.pdf>

Note: Latest edition of the books may be used

**Mapping of course outcomes with Pos and PSOs**

	Pos						PSOs		
	1	2	3	4	5	6	1	2	3
<b>CO1</b>	3	3	2	2	3	3	3	2	3
<b>CO2</b>	3	3	3	2	2	3	2	2	3
<b>CO3</b>	3	3	2	2	2	3	2	2	3
<b>CO4</b>	3	3	3	3	3	3	3	2	3
<b>CO5</b>	3	3	2	2	3	3	3	2	3
	<b>Strong – 3</b>			<b>Medium – 2</b>			<b>Low – 1</b>		

**M.Com. Computer Applications**

Second Year

Core – XII

Semester IV

**HUMAN RESOURCE ANALYTICS**

Course Code	Title of the Course	Category	L	T	P	O	Credits	Inst. Hours	Marks		
									CIA	External	Total
<b>23PCOAC42</b>	<b>HUMAN RESOURCE ANALYTICS</b>		<b>6</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>5</b>	<b>6</b>	<b>25</b>	<b>75</b>	<b>100</b>

**Learning Objectives**

<b>1</b>	To understand the concept and framework of human resource analytics
<b>2</b>	To evaluate the process of human resource analytics and the relevant research tools
<b>3</b>	To illustrate the evolution, types and design of HR metrics
<b>4</b>	To deal with data collection and transformation
<b>5</b>	To adopt tools and techniques for predictive modelling

**Course Units**

<b>UNIT I</b> Introduction to Human Resource Analytics Human Resource Analytics: Introduction –Concept – Evolution – Importance – Benefits – Challenges – Types of HR Analytics – HR Analytics Framework and Models.	<b>(18 hrs)</b>
<b>UNIT II</b> Business Process and HR Analytics Business Process and HR Analytics: Introduction – Data Driven Decision Making in HR – Data Issues – Data Validity – Data Reliability – HR Research tools and techniques –Statistics and Statistics Modelling for HR Research	<b>(18 hrs)</b>
<b>UNIT III</b> Introduction to HR Metrics HR Metrics: Introduction – Historical Evolution of HR metrics- Importance – Types of HR Metrics – Types of data – HR Metrics Design Principles — HR Scorecard – HR Dashboards.	<b>(18 hrs)</b>
<b>UNIT IV</b> HR Analytics and Data HR Analytics and Data:Introduction – HR Data Collection – Data quality – Big data for Human Resources – Process of data collection for HR Analytics – Transforming data into HR information – HR Reporting – Data Visualization – Root cause analysis.	<b>(18 hrs)</b>
<b>UNIT V</b> HR Analytics and Predictive Modelling HR Analytics and Predictive Modelling: Introduction – HR Predictive Modelling – Different phases – Predictive analytic tools and techniques – Information for Predictive analysis – Software solutions – Predictive Analytic Models for Quantitative Data – Steps involved in predictive analytics.	<b>(18 hrs)</b>

**Course Outcomes**

Students will be able to:

<b>CO 1</b>	Examine the concept of human resource analytics
<b>CO 2</b>	Apply the HR tools and techniques in decision making
<b>CO 3</b>	Examine the different types of HR metrics and their relative merits
<b>CO 4</b>	Collect and transform data leading to HR reporting
<b>CO 5</b>	Build models for predictive analysis

**Books for study:**

1.	[Redacted]
2.	[Redacted] Pvt. Ltd
3.	[Redacted]

**Books for reference:**

1. Ramesh Soundararajan and Kuldeep Singh (2019), Winning on HR analytics, Sage publishing, New Delhi
2. Anshul Saxena (2021), HR analytics: quantifying the intangible, 1<sup>st</sup> Edition, Blue Rose publishers, New Delhi
3. Michael J. Walsh (2021), “HR analytics essentials you always wanted to know”, 7<sup>th</sup> Edition, Vibrant publishers, Mumbai.

**Web references:**

1. <https://hbr.org/webinar/2017/06/leveraging-hr-analytics-in-strategic-decisions>
2. <https://www.mbaknol.com/human-resource-management/human-resource-metrics/>
3. <https://www.managementstudyguide.com/hr-metrics-and-workforce-analysis.htm>

Note: Latest edition of the books may be used

**Mapping of course outcomes with Pos and PSOs**

	Pos						PSOs		
	1	2	3	4	5	6	1	2	3
<b>CO1</b>	3	2	2	3	3	3	3	3	3
<b>CO2</b>	3	3	2	3	3	3	3	3	3
<b>CO3</b>	3	3	2	3	3	3	3	3	3
<b>CO4</b>	3	3	2	3	3	3	3	3	3
<b>CO5</b>	3	3	2	3	3	3	3	3	3

**Strong – 3                      Medium – 2                      Low – 1**

**M.Com. Computer Applications****Second Year****PROJECT****Semester IV****PROEJCT WORK**

<b>Course Code</b>	<b>Title of the Course</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>O</b>	<b>Credits</b>	<b>Inst. Hours</b>	<b>Marks</b>		
								<b>CIA</b>	<b>External</b>	<b>Total</b>
<b>23PCOAD43</b>	<b>PROEJCT WORK WITH VIVA-VOCE</b>		-	-	-	<b>7</b>	<b>10</b>	<b>25</b>	<b>75</b>	<b>100</b>

**-Refer to the Regulations -**

**M.Com. Computer Applications**

Second Year

Elective – VI A

Semester IV

**CYBER AND DATA SECURITY**

Course Code	Title of the Course	Category	L	T	P	O	Credits	Inst. Hours	Marks		
									CIA	External	Total
<b>23PCOAE44-1</b>	<b>CYBER AND DATA SECURITY</b>		<b>4</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>4</b>	<b>25</b>	<b>75</b>	<b>100</b>
<b>Learning Objectives</b>											
1.	To understand threats and risks in cybersecurity landscape										
2.	To interpret cybersecurity framework and regulations										
3.	To examine data security and integrity regulations										
4.	To discuss network security management										
5.	To recall cybersecurity disasters										

**Course Units**

<p><b>UNIT I</b> <span style="float: right;"><b>(12 hrs)</b></span></p> <p><b>Cybersecurity Landscape</b></p> <p>Cybersecurity Landscape: Threats that are related to current and emerging trends, cyber security awareness, high profile cybercrime statistics and methods, the importance and functions of Governance, Risk Management, and Compliance in Cyber security program management, best practices in risk management including the domains of risk assessment and risk treatment, the structure and content of Cybersecurity-related strategy, plans, and planning. types of vulnerabilities and frauds in different domains eg. Financial and Banking, Ecommerce, Telecom, GDPR.</p>
<p><b>UNIT II</b> <span style="float: right;"><b>(12 hrs)</b></span></p> <p><b>Cybersecurity Frameworks</b></p> <p>Cybersecurity Frameworks: International and industry-specific cybersecurity regulations, challenges to organisation, multiple security regulations, Define key concepts and terminology in Cybersecurity, threats to cybersecurity, strategies to identify and remediate vulnerabilities in information assets, the systemic components (including personnel) necessary for an effective cybersecurity program, NIST Framework.</p>
<p><b>Unit III</b> <span style="float: right;"><b>(12 hrs)</b></span></p> <p><b>Data Security</b></p> <p>Data Security: Data Integrity and Security, digital security, Data volume and velocity, Bigdata, multiple data sources, data diversity, Data (dis)organization, Unique data storage requirements, Security tools, Inflexible reporting and query systems.</p>
<p><b>Unit IV</b> <span style="float: right;"><b>(12 hrs)</b></span></p> <p><b>Managing Network Security</b></p> <p>Managing Network Security: The threats to data from information communication technology (ICT), the issues and practices associated with managing network security,</p>

Identify the practices, tools, and methodologies associated with assessing network security, the components of an effective network security program. Phishing attacks on sites, digital advertising spoofing, Search indexing

**Unit V (12 hrs)**

**Cybersecurity Incidents and Disasters**

Cybersecurity Incidents and Disasters: Hacking attempts, web site defacement, denial of service attacks, information disclosures, natural and man-made cybersecurity disasters, the components of a cybersecurity contingency planning program, contingency strategies including data backup and recovery and continuity of cybersecurity operations, the components and structure of an effective cybersecurity disaster recovery program, the components and structure of an effective cybersecurity incident response program. Digital ecosystem, Cloud computing.

**Course Outcomes**

Students will be able to:

CO 1	Develop plans to mitigate risks and threats to cybersecurity
CO 2	Solve vulnerabilities in cybersecurity frameworks
CO 3	Solve issues in integrity issues in cybersecurity
CO 4	Implement radical changes in cybersecurity management
CO 5	Formulate strategies to overcome cybersecurity disasters

**Books for study:**

1. Nina Godbole, SunitBelapure(2016), "Cyber Security", Wiley India, New Delhi.
2. AvantikaYadav (2017), "Cyber security", Narosa Publishing House Pvt Ltd. New Delhi.
3. Tim Mather, SubraKumaraswamy, ShahedLatif (2010), "Cloud Security and Privacy", OREILLY Media, USA.

**Books for reference:**

1. Nina Godbole, "Information Systems Security", Wiley India, New Delhi.
2. Kenneth J. Knapp, "Cyber Security & Global Information Assurance", Information Science Publishing.
3. Thomas J Mowbray (2016), "Cyber Security Managing Systems, Conducting Testing and Investigating Intrusions", Wiley India Pvt. Ltd, New Delhi.

**Web references:**

1. [https://mrcet.com/pdf/Lab%20Manuals/IT/CYBER%20SECURITY%20\(R18A0521\).pdf](https://mrcet.com/pdf/Lab%20Manuals/IT/CYBER%20SECURITY%20(R18A0521).pdf)
2. <http://www.uptti.ac.in/classroom-content/data/cyber%20security%20unit-3.pdf>

Note: Latest edition of the books may be used.

**Mapping of course outcomes with POs and PSOs**

	POs						PSOs		
	1	2	3	4	5	6	1	2	3
<b>CO1</b>	3	3	3	3	2	2	2	3	2
<b>CO2</b>	3	3	3	3	2	2	2	2	3
<b>CO3</b>	3	3	3	3	2	2	2	2	3
<b>CO4</b>	3	3	2	3	2	2	2	2	2
<b>CO5</b>	3	3	2	3	2	2	2	3	3

Strong - 3

Medium – 2

Low - 1

## M.Com. Computer Applications

Second Year

Elective – VI B

Semester IV

### E-COMMERCE

Course Code	Title of the Course	Category	L	T	P	O	Credits	Inst. Hours	Marks		
									CIA	External	Total
23PCOAE44-2	E-COMMERCE		4	-	-	-	3	4	25	75	100

LEARNING OBJECTIVES	
1.	To explain use of Information technology and e-commerce for entrepreneur
2.	To apply the functions of Windows operating system
3.	To apply the advance functions of MS word
4.	To apply the functions of MS excel
5.	To understand the concept of E-Commerce and Electronic payments
<p><b>Course Units</b> <b>UNIT I</b> <span style="float: right;">(12 hrs)</span></p> <p><b>E-Commerce and Electronic Payment Systems</b></p> <p>What is Electronic Commerce - Brief history of Electronic Commerce - Advantages and Limitations of Electronic Commerce - Types of Electronic commerce - Integrating Electronic Commerce - Key questions for management - Overview of the Electronic payment technology- Requirements for Internet based payments - Electronic payment medium – Electronic Commerce and Banking.</p>	
<p><b>UNIT II</b> <span style="float: right;">(12 hrs)</span></p> <p><b>Electronic Data Interchange</b></p> <p>Benefits of EDI, EDI technology, EDI standards, EDI communications, EDI Implementation, EDI Agreements, EDI Security. Electronic Payment Systems, Need of Electronic Payment System: Study and examine the use of Electronic Payment system and the protocols used, Study Electronic Fund Transfer and secure electronic transaction protocol for credit card payment. Digital economy: Identify the methods of payments on the net – Electronic Cash, cheques and credit cards on the Internet.</p>	
<p><b>UNIT III</b> <span style="float: right;">(12 hrs)</span></p> <p><b>Consumer Oriented E Commerce:</b></p> <p>E-Retailing: Traditional retailing and e retailing, Benefits of e retailing, Key success factors, Models of e retailing, Features of e retailing. E services: Categories of e-services, Web-enabled services, matchmaking services, Information-selling on the web, e entertainment, Auctions and other specialized services. Business to Business Electronic Commerce</p>	
<p><b>Unit IV</b> <span style="float: right;">(12 hrs)</span></p> <p><b>E-security and Web based business</b></p> <p>Security in the cyberspace - Designing for security -Virus -Security Protection and Recovery - Encryption - Business-to-Business Electronic Commerce - Intranets and Extranets - Intranets and Supply Chain Management - Legal and Ethical issues - Case studies.</p>	
<p><b>Unit V</b> <span style="float: right;">(12 hrs)</span></p>	



**Issues in E Commerce**

Understanding Ethical, Social and Political issues in E-Commerce: A model for Organizing the issues, Basic Ethical Concepts, Analyzing Ethical Dilemmas, Candidate Ethical principles Privacy and Information Rights: Information collected at E-Commerce Websites, The Concept of Privacy, Legal protections Intellectual Property Rights: Types of Intellectual Property protection, Governance.

**Course Outcomes**

Students will be able to:

<b>CO 1</b>	Understand the hardware and software of a system
<b>CO 2</b>	Apply the functions of Windows operating system
<b>CO 3</b>	Apply the advance functions of MS word
<b>CO 4</b>	Apply the functions of MS excel
<b>CO 5</b>	Understand the concept of E-Commerce and Electronic payments

**Books for study:**

1. Ravi Kalkota and Andrew B Whinston, "Frontiers of Electronic Commerce", Pearson, Noida.
2. Henry Chan, Raymond Lee, Tharam Dillon, Elizabeth Chang, "E-Commerce Fundamentals and Applications, Wiley Publishers, New Delhi.
3. Senn, "Information Technology: Principles, Practices and Opportunities James", Prentice Hall, New Delhi.
4. Richard Hammer (1998), "Enterprise Resource Planning",

**Books for reference:**

1. Efraim Turban, Jae Lee, David King ,H. Michael Chung (2001), "Electronic Commerce - A Managerial Perspective", Addison-Wesley, USA.
2. Anita Agrawal, Rahul Kotian, Tushar Agarwal and Vijalakshmi Kannan, (2016), "E Commerce and Digital Marketing", Himalaya Publishing House, Mumbai.

**Web references:**

1. <https://www.slideshare.net/kamalgulati7/full-notes-on-ecommerce-study-material-for-ecommerce>
2. <https://www.techtarget.com/searchcio/definition/e-commerce?amp=1>

**Mapping of course outcomes with POs and PSOs**

	POs						PSOs		
	1	2	3	4	5	6	1	2	3
<b>CO1</b>	2	2	1	2	2	2	2	2	2
<b>CO2</b>	2	2	2	2	2	2	2	2	2
<b>CO3</b>	3	3	3	3	3	3	3	3	3
<b>CO4</b>	3	3	3	3	3	3	3	3	3
<b>CO5</b>	3	3	3	3	3	3	3	3	3

**Strong - 3                      Medium – 2                      Low – 1**

### SEC –III/PROFESSIONAL COMPETENCY SKILL

<b>23PCOAS45</b>	<b>e-FILING OF GST RETURNS</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Semester-4</b>		<b>4</b>			<b>2</b>

<b>Learning Objectives:</b>	
<b>LO1:</b>	To comprehend the concept and relevance of the Goods and Services Tax
<b>LO2:</b>	To teach the learners how to prepare data for GSTR Forms.
<b>LO3:</b>	To gain knowledge regarding filing GST returns
<b>LO4:</b>	To comprehend the procedures involved in GST filing,
<b>LO5:</b>	To learn about the penalties for late filing of GST returns
<b>Course Outcomes:</b>	
	After the successful completion of the course, the students will be able to:
<b>CO1:</b>	Prepare students to file their GST returns online.
<b>CO2:</b>	Aids in the completion of GSTR forms (GSTR 1 -GSTR 11).
<b>CO3:</b>	Describe the procedures for GSTR filing.
<b>CO4:</b>	Learn about the penalties for late filing of GST returns.
<b>CO5:</b>	Understand the concept of interest on past-due taxes.

#### Contents

1. Forms and due dates
2. GSTR Registration Forms
3. ITC Forms
4. Steps involved in filing GST return
5. GSTR1: Return for Outward Supplies
6. Difference between GSTR2A and GSTR2B
7. GSTR3B: Summary of Inward and Outward Supplies
8. GSTR4: Return for Composition Dealers
9. GSTR5: Return for Non-Resident Taxable Persons
10. GSTR6: Return for Input Service Distributors
11. GSTR7: Return for Taxpayers Deducting TDS
12. GSTR8: Return for E-Commerce Operators Collecting TCS
13. GSTR10:  
Return for Registered Person whose GST Registration gets Cancelled
14. GSTR11: Return for UIN (Unique Identification Number) Holders
15. Penalty for late Filing of GST Return
16. Interest on Outstanding Tax
17. GSTR9C- Reconciliation Statement
18. GSTR9B- Filed by Electronic Commerce Operators

#### Recent Amendments in Filing of GST Returns

Faculty member will impart the knowledge on recent Amendments in Filing of GST Returns to the students and these components will not cover in the examination.

**TextBooks:**

1. BalachandranV., 2024, Indirect Taxes, Sultan Chand, and Sons, New Delhi
2. SatrangiG., Goods and Services Tax Precept and Practice 2024, Centax Publications, New Delhi
3. AnandadayMishra, 2024, GST Law and Procedure, Taxmann Publications Pvt Limited, New Delhi
4. Raj.C.A., Agarwa.K, 2024, Taxation and Indirect Taxes, Taxmann Publications Pvt Limited, New Delhi

**Supplementary Readings:**

1. Anjali Agarwal, 2024, Goods and Service Tax, New Century Publications, New Delhi
2. Sanjeet Sharma and Shaileja Anand, 2024, VK Global Publications (P) Ltd., New Delhi
3. Mishra. SK, 2024, Simplified Approach to GST, Educreation Publishing, New Delhi
4. Viswanthan. B, 2024, Goods and Services Tax in India, New Century Publications, New Delhi

**Web Reference:**

- 1 <https://taxguru.in/goods-and-service-tax/download-free-book-goods-services-tax-gst-india.html>
- 2 <https://cleartax.in/s/gst-book-online-pdf>

**Note: LATEST EDITION OF THE BOOKS MAY BE USED**

**Outcome Mapping**

CO	Programme Outcomes												Programme Specific Outcomes				
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
CO1	3	3	3	3	3	3	3	3	3	3	2	3	3	2	3	2	3
CO2	3	3	3	3	3	3	3	3	3	3	2	3	3	2	3	2	3
CO3	3	3	3	3	3	3	3	3	3	3	2	2	3	2	3	2	3
CO4	3	3	3	3	3	3	3	3	3	3	2	2	3	2	3	3	3
CO5	3	3	3	3	3	3	3	3	3	3	1	3	3	2	3	3	3

\*3– Strong, 2- Medium, 1- Low



**M.Com. Computer Applications****Second Year****PROJECT****Semester IV****PROEJCT WORK**

<b>Course Code</b>	<b>Title of the Course</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>O</b>	<b>Credits</b>	<b>Inst. Hours</b>	<b>Marks</b>		
								<b>CIA</b>	<b>External</b>	<b>Total</b>
<b>23PCOAX46</b>	<b>Extension Activity</b>		-	-	-	<b>1</b>	-	<b>100</b>	-	<b>100</b>

**-Refer to the Regulations-**