

J.J. COLLEGE OF ARTS AND SCIENCE (AUTONOMOUS)

**(Re –accredited by NAAC with B⁺⁺ – 4th Cycle)
(Affiliated to Bharathidasan University, Trichy)
JJ Nagar, Sivapuram,
PUDUKKOTTAI – 622 422**

DEPARTMENT OF COMMERCE WITH COMPUTERAPPLICATIONS



M.Com. - Computer Applications

Syllabus based on



**TANSICHE Regulations on Learning Outcomes - Based Curriculum
Frame Work for Under Graduate Education**

[Those who are admitted 2023 - 2024 Onwards]

M.Com. Computer Applications

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 readinessqualities:

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.

Mapping of Course outcomes (COs) with Programme Outcomes (POs) and Programme Specific Outcomes (PSOs) can be carried out, assigning the appropriate level (1 – Low; 2 – Middle and 3 – High) in the grids:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PSO 1	PSO 2	PSO 3
CO 1									
CO 2									
CO 3									
CO 4									
CO 5									

Strong - 3

Medium – 2

Low - 1

Department of Commerce with Computer Applications

J.J. College of Arts and Science (Autonomous)

(Re-Accredited by NAAC with "B⁺⁺" Grade - Fourth Cycle)

Sivapuram Post, Pudukkottai – 622 422

Proposed Course Structure based on TANSCHÉ and UGC - LOCF

(Applicable for the Candidates admitted from academic year 2023-2024 Onwards)

FIRST YEAR								
I SEMESTER								
Sem	Course Code	Course Title	Hrs/Week	Credit	Ex. Hrs	Marks		
						Int	Ext.	Total
I	P1R3CMCC1	Business Finance	7	5	3	25	75	100
	P1R3CMCC2	Digital Marketing	7	5	3	25	75	100
	P1R3CMCC3	Banking and Insurance	6	4	3	25	75	100
	P1R3CMDSE1:1	Introduction to Industry 4.0	5	3	3	25	75	100
	P1R3CMDSE1:2	Big Data Analytics						
	P1R3CMDSE1:3	Business Intelligence						
	P1R3CMDSE2:1	Enterprise Resource Planning	5	3	3	25	75	100
	P1R3CMDSE2:2	Database Management System						
Total			30	20	-	-	-	500
II SEMESTER								
II	P2R3CMCC4	Strategic Cost Management	6	5	3	25	75	100
	P2R3CMCC5	Corporate Accounting	6	5	3	25	75	100
	P2R3CMCC6	Setting up of Business Entities	6	4	3	25	75	100
	P2R3CMDSE3:1	Data Mining and Data Warehousing	5	3	3	25	75	100
	P2R3CMDSE3:2	Technology in Banking						
	P2R3CMDSE4:1P	Financial Analytics (Practical)	5	3	3	40	60	100
	P2R3CMDSE4:2	Management Information System				25	75	
	P2R3CMSEC1:1	Capital Markets	2	2	3	25	75	100
	P2R3CMSEC1:2	Corporate Governance						
Total			30	22	-	-	-	700
III SEMESTER								
III	P3R3CMCC7	Security Analysis and Portfolio Management	6	5	3	25	75	100
	P3R3CMCC8	Research Methodology	6	5	3	25	75	100
	P3R3CMCC9	Open source Technology Theory	6	5	3	25	75	100
	P3R3CMCC10P	Open source Technology Practical	6	5	3	40	60	100
	P3R3CMDSE5:1	Applications of Cryptocurrency and Blockchain Technology	4	3	3	25	75	100
	P3R3CMDSE5:2	International Business						
	P3R3CMSEC2:1	Web Technology	2	2	3	25	75	100
	P3R3CMSEC2:2	Cyber Laws						
	P3R3CMINT	Internship.		3	-	-	-	100
Total			30	28	-	-	-	700
IV SEMESTER								
IV	P4R3CMCC11	Tools in Web Applications Theory	6	5	3	25	75	100
	P4R3CMCC12	Data Science and Analytics Theory	6	5	3	25	75	100
	P4R3CMCC13PW	Project work	18	10	-	-	-	100
		Extra Credit Online Course - MOOCS	-	-(4)				---
Total			30	20	-	-	-	300
Grand Total				90(4)	-	-	-	2100

CC- Core Course, DSE – Discipline Specific Elective, SEC – Skill Enhancement Courses, P – Practical
CIA Passing Minimum = 10, Ext. Passing Minimum = 30, Aggregate Mark for a Pass = 50

* Internship during Summer Vacation: The credits shall be awarded in semester III Statement of Marks

BUSINESS FINANCE

Category	L	T	P	O	Credits	Inst. Hours	Marks		
							CIA	External	Total
Core I	6	-	-	-	4	6	25	75	100
	Learning Objectives								
1	To outline the fundamental concepts in finance								
2	To estimate and evaluate risk in investment proposals								
3	To evaluate leasing as a source of finance and determine the sources of startup financing								
4	To examine cash and inventory management techniques								
5	To appraise capital budgeting techniques for MNCs								
	Course Units								
UNIT I (18 hrs)									
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 (18 hrs)									
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 (18 hrs)									
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 (18 hrs)									
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 (18 hrs)									
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.

Question pattern: Theory 40%; Problems: 60%

Course Outcomes

Students will be able to

CO 1	Explain important finance concepts
CO 2	Estimate risk and determine its impact on return
CO 3	Explore leasing and other sources of finance for startups
CO 4	Summarise cash receivable and inventory management techniques
CO 5	Evaluate techniques of long term investment decision incorporating risk factor

Books for study:

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

Books for reference:

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

Web references:

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

Mapping of Course Outcomes with POs and PSOs

	POs						PSOs		
	1	2	3	4	5	6	1	2	3
CO1	3	3	1	3	3	3	2	2	2
CO2	3	3	2	3	3	3	3	3	3
CO3	2	2	1	2	2	2	3	2	2
CO4	2	2	1	2	2	2	2	2	2
CO5	3	3	2	3	3	3	3	3	3

Strong - 3

Medium – 2

Low - 1

DIGITAL MARKETING

Marks

Category	L	T	P	O	Credits	Inst. Hours	Marks		
							CIA	External	Total
Core II	6	-	-	-	4	6	25	75	100
	Learning Objectives								
1	To assess the evolution of digital marketing								
2	To appraise the dimensions of online marketing mix								
3	To infer the techniques of digital marketing								
4	To analyse online consumer behaviour								
5	To interpret data from social media and to evaluate game based marketing								
	Course Units								
UNIT I							(18 hrs)		
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							(18 hrs)		
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							(18 hrs)		
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							(18 hrs)		
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							(18 hrs)		
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.									

Course Outcomes:	
Students will be able to:	
CO 1	Explain the dynamics of digital marketing
CO 2	Examine online marketing mix
CO 3	Compare digital media channels
CO 4	Interpret online consumer behavior
CO 5	Analyse social media data
Books for study: 1. Puneet Singh Bhatia, (2019) “Fundamentals of Digital Marketing”, 2nd Edition, Pearson Education Pvt Ltd, Noida. 2. Dave Chaffey, Fiona Ellis-Chadwick, (2019) “Digital Marketing”, Pearson Education Pvt Ltd, Noida. 3. Chuck Hemann & Ken Burbary, (2019) “Digital Marketing Analytics”, Pearson Education Pvt Ltd, Noida. 4. Seema Gupta, (2022) “Digital Marketing” 3rd Edition, McGraw Hill Publications Noida. 5. Kailash Chandra Upadhyay, (2021) “Digital Marketing: Complete Digital Marketing Tutorial”, Notion Press, Chennai. 6. Michael Branding, (2021) “Digital Marketing”, Empire Publications India Private Ltd, New Delhi.	
Books for reference: 1. Vandana Ahuja, (2016) “Digital Marketing”, Oxford University Press. London. 2. Ryan Deiss & Russ Henneberry, (2017) “Digital Marketing”, John Wiley and Sons Inc. Hoboken. 3. Alan Charlesworth, (2014), “Digital Marketing - A Practical Approach”, Routledge, London. 4. Simon Kingsnorth, Digital Marketing Strategy, (2022) “An Integrated approach to Online Marketing”, Kogan Page Ltd. United Kingdom. 5. Maity Moutusy, (2022) “Digital Marketing” 2nd Edition, Oxford University Press, London.	
Web references: 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	

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
CO1	3	3	2	3	3	3	3	3	3
CO2	3	3	2	3	3	3	3	3	3
CO3	3	3	2	2	3	2	3	3	2
CO4	3	3	2	2	3	3	3	3	3
CO5	3	3	1	3	3	2	3	3	2

Strong - 3

Medium – 2

Low - 1

BANKING AND INSURANCE

Course Code: P1R3CMCC3

Category	L	T	P	O	Credits	Inst. Hours	Marks		
							CIA	External	Total
Core III	6	-	-	-	4	6	25	75	100
	Learning Objectives								
1	To understand the evolution of new era banking								
2	To explore the digital banking techniques								
3	To analyse the role of insurance sector								
4	To evaluate the mechanism of customer service in insurance and the relevant regulations								
5	To analyse risk and its impact in banking and insurance industry								
	Course Units								
UNIT I							(18 hrs)		
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							(18 hrs)		
Contemporary Developments in Banking									
Distributed Ledger Technology - Blockchain: Meaning - Structure of Blockchain - Types of Block Chain - Differences between DLT and Blockchain - Benefits of Blockchain and DLT - Unlocking the potential of Blockchain - 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							(18 hrs)		
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 Conduct.									
UNIT IV							(18 hrs)		
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							(18 hrs)		
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.									
Course Outcomes									
Students will be able to									
CO 1		Relate the transformation in banking from traditional to new age							
CO 2		Apply modern techniques of digital banking							
CO 3		Evaluate the role of insurance sector							

CO 4	Examine the regulatory mechanism
CO 5	Assess risk mitigation strategies
Books for study:	
1. Indian Institute of Banking and Finance (2021), “Principles & Practices of Banking”, 5th Edition, Macmillan Education India Pvt. Ltd, Noida, Uttar Pradesh. 2. Mishra M N & Mishra S B, (2016), “Insurance Principles and Practice”, 22nd Edition, S. Chand and Company Ltd, Noida, Uttar Pradesh. 3. Emmett, Vaughan, Therese Vaughan M., (2013), “Fundamentals of Risk and Insurance”, 11th 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)	
Books for reference:	
1. Sundharam KPM & Varshney P. N., (2020), “Banking Theory, Law and Practice”, 20th Edition, Sultan Chand & Sons, New Delhi. 2. Gordon & Natarajan, (2022), “Banking Theory, Law and Practice”, 9th Edition, Himalaya Publishing House Pvt Ltd, Mumbai. 3. Gupta P. K. (2021), “Insurance and Risk Management” 6th Edition, Himalaya Publishing House Pvt Ltd, Mumbai. 4. Susanne Chishti., & Janos Barberis (2016), The Fintech book: The financial technology handbook for investors, entrepreneurs and visionaries. John Wiley & Sons.	
Web references:	
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 3. https://www.irdai.gov.in/ADMINCMS/cms/frmGeneral_Layout.aspx?page=PageNo108&flag=1	

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
CO1	2	2	1	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3
CO3	2	2	1	2	2	2	2	3	2
CO4	3	2	2	1	2	2	2	3	2
CO5	3	3	1	3	3	3	3	3	3
Strong - 3			Medium – 2			Low - 1			

INTRODUCTION TO INDUSTRY 4.0

Course Code: P1R3CMDSE1:1

Category	L	T	P	O	Credits	Inst. Hours	Marks		
							CIA	External	Total
Ele. I	4	-	-	-	3	4	25	75	100
	Learning Objectives								
1	To enable the students to comprehend the change from industry 1.0 to 4.0								
2	To gain knowledge on the challenges and future prospects of applying artificial intelligence								
3	To learn the applications of big data for industrial growth and development								
4	To understand the applications of IoT in various sectors								
5	To understand why education has to be aligned with industry 4.0								
	Course Units								
UNIT I							(12 hrs)		
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							(12 hrs)		
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							(12 hrs)		
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							(12 hrs)		
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		(12 hrs)
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.		
Course Outcomes		
Students will be able to		
CO 1	Discuss on the change from industry 1.0 to 4.0	
CO 2	Discover the challenges and future prospects of applying artificial intelligence	
CO 3	Apply big data for industrial growth and development	
CO 4	Apply IoT in various sectors like Manufacturing, Healthcare, Education, Aerospace and Défense	
CO 5	Appraise why education has to be aligned with industry 4.0	
Books for study:		
1. Seema Acharya J, Subhashini Chellappan, (2019) “Big Data and Analytics”, 2nd Edition, Wiley Publication, New Delhi. 2. Russel S, Norvig P (2010), “Artificial Intelligence: A Modern approach”, 3rd 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		
Books for reference:		
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 references:		
1. 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 3. https://www.vssut.ac.in/lecture_notes/lecture1428643004.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
CO1	2	2	2	3	3	3	3	3	3
CO2	2	3	2	3	3	3	3	3	3
CO3	2	3	2	3	3	3	3	3	3
CO4	2	3	2	3	3	3	3	3	3
CO5	2	3	2	3	3	3	3	3	3

Strong - 3

Medium – 2

Low - 1

FIRST YEAR SEMESTER I**BIG DATA ANALYTICS****ELECTIVE – I**Course Code: **P1R3CMDSE1:2**

Category	L	T	P	O	Credits	Inst. Hours	Marks		
							CIA	External	Total
Ele. I	4	-	-	-	3	4	25	75	100
	Learning Objectives								
1	To understand the various aspects of data science and applying them in health care								
2	To learn the applications of big data for industrial growth and development								
3	To understand the characteristics of 5 V's								
4	To know the big data problems								
5	To understand the Hadoop								
	Course Units								

UNIT I**(12 hrs)****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**(12 hrs)****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**(12 hrs)****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**(12 hrs)****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**(12 hrs)****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.**

Course Outcomes

Students will be able to

CO 1	Describe the Big Data landscape including examples of realworld big data problems
CO 2	Explain the advantages of Big Data.
CO 3	Explain the Vs of Big Data and its impacts of data collection, monitoring, storage, analysis and reporting
CO 4	Identify what are and what are not big data problems and be able to recast big data problems as data science questions
CO 5	Explain Hadoop technology

Books for study:

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

Books for reference:

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 references:

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.

Mapping of course outcomes with POs and PSOs

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

Category	L	T	P	O	Credits	Inst. Hours	Marks		
							CIA	External	Total
Ele. I	4				3	4	25	75	100
	Learning Objectives								
1	To provide basic knowledge of business intelligence system.								
2	To understand the modelling aspects behind Business Intelligence.								
3	To acquire the knowledge of data warehousing architectures.								
4	To develop the applications of data mining concepts.								
5	To impart the skills of decision support system modelling.								
	Course Units								
UNIT I	Introduction to Business Intelligence							14 Hours	
What is Business Intelligence? - Changing business environments and computerized decision support - Managerial decision making - Information Systems Support for Decision Making - Early Framework for Computerized Decision Support - Decision Support Systems - Framework for Business Intelligence (BI) - Business Analytics Overview.									
UNIT II	Foundations and Technologies for Decision Making							15 Hours	
Foundations and Technologies for Decision Making: Introduction - Phases of the Decision-Making Process–Intelligence phase – Design Phase – Choice phase – Implementation Phase – Components of Decision Support Systems (DSS).									
UNIT III	Data Warehousing& Business Reporting							15 Hours	
Data Warehousing: Concepts - Process Overview - Data Warehousing Architectures - Data Integration and the Extraction, Transformation, and Load (ETL) Processes. Business Reporting: Components - Data and Information Visualization – Different types of charts and graphs.									
UNIT IV	Online-line Analytical processing(OLAP)							14 Hours	
What is OLAP? OLAP and OLTP-operational data stores-OLAP applications and functionality. Data Mining: Concepts and Applications - Data Mining Process - Data Mining Methods – Classification - Accuracy of Classification Models - Cluster Analysis - Association Rule Mining.									
UNIT V	Decision Support Systems Modelling							14 Hours	
Decision Support Systems Modelling - Structure of Mathematical Models for Decision Support - Certainty, Uncertainty, and Risk - Decision Modelling with Spreadsheets - Multiple Goals, Sensitivity Analysis, What-If Analysis, and Goal Seeking - Decision Analysis with Decision Tables and Decision Trees - Automated Decision Systems.									

(Theory 75 Marks)		72
Book for Study		
1. Efraim Turban, Ramesh Sharda, DursunDelen, “Decision Support and Business Intelligence Systems”, Ninth Edition, Pearson 2013		
Books for Reference		
1. Larissa T. Moss, S. Atre, “Business Intelligence Roadmap: The Complete Project Lifecycle of Decision Making”, Addison Wesley, 2003. 2. Carlo Vercellis, “Business Intelligence: Data Mining and Optimization for Decision Making”, Wiley Publications, 2009. 3. David Loshin Morgan, Kaufman, “Business Intelligence: The Savvy Manager’s Guide”, Second Edition, 2012. 4. CindiHowson, “Successful Business Intelligence: Secrets to Making BI a Killer App”, McGraw-Hill, 2007. 5. Ralph Kimball , Margy Ross , Warren Thornthwaite, Joy Mundy, Bob Becker, “The Data Warehouse Lifecycle Toolkit”, Wiley Publication Inc.,2007		
Web Resources		
1. https://wciconsulting.com/tdwi-business-intelligence-ebook/ 2. https://www.ebooks.com/en-us/book/316905/business-intelligence/david-loshin/ 3. https://www.smartdatacollective.com/free-ebooks-on-big-data-business-intelligence/		
Course Outcomes		K Level
After completion of the course the student will be able to		
CO 1	Acquire the knowledge of business intelligence system.	K2
CO 2	Understand the modelling aspects behind Business Intelligence.	K3
CO 3	Identify the modern uses of data warehousing architectures.	K5
CO 4	Learn the data mining concepts.	K3
CO 5	Facilitate the ideas and concept of decision support system modelling.	K5

Mapping of course outcomes with POs and PSOs

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	2	2	3	2	3	3	2	3	3
CO2	3	2	3	3	3	3	3	2	3	2
CO3	3	2	2	3	3	3	2	2	3	2
CO4	3	2	3	3	2	2	3	2	2	2
CO5	3	2	2	3	2	3	3	3	3	2

Strong - 3

Medium – 2

Low - 1

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

(12 hrs)

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.

Course outcomes

Students will be able to

CO 1	Recall the history and growth of ERP
CO 2	Appraise the risks involved while using ERP
CO 3	Select from among various ERP technologies
CO 4	Analyse the dynamics of ERP marketplace
CO 5	Distinguish and choose appropriate ERP solutions or packages

Books for study:

1. Alexis Leon (2008), "Enterprise Resource Planning", 2nd 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.

Books for reference:

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 references:

1. 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
3. https://www.vssut.ac.in/lecture_notes/lecture1428643004.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
CO1	2	1	2	2	3	3	3	3	3
CO2	3	3	2	3	3	3	3	3	3
CO3	3	3	2	3	3	3	3	3	3
CO4	3	3	2	3	3	3	3	3	3
CO5	3	3	2	3	3	3	3	3	3
Strong - 3			Medium - 2			Low - 1			

FIRST YEAR SEMESTER I

DATABASE MANAGEMENT SYSTEM

ELECTIVE – II

Course Code: **P1R3CMDSE2:2**

Category	L	T	P	O	Credits	Inst. Hours	Marks		
							CIA	External	Total
Ele. II	4	-	-	-	3	4	25	75	100
	Learning Objectives								
1	To introduce the basic concepts of Relational Database Management System and the working knowledge of Linux environment								
2	To understand designing databases and queries in SQL								
3	To learn RDBMS								
4	To upskill the functions and operators								
5	To understand the constraints, locks and MySQL								
	Course Units								

UNIT I

(12 hrs)

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

(12 hrs)

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

(12 hrs)

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

(12 hrs)

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 (12 hrs)	
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.	
Course outcomes	
Students will be able to	
CO 1	Identify models and schemas in DBMS and LINUX
CO 2	Demonstrate Queries in SQL
CO 3	Discuss handling files and databases
CO 4	Apply skills on functions and operators in RDBMS
CO 5	Apply constraints and locks in SQL
Books for study: 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.	
Books for reference: 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.	
Web references: 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 . 3. http://www.dummies.com/how-to/content/common-linux-commands.html .	

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
CO1	2	3	3	3	2	2	2	3	2
CO2	3	3	2	3	3	3	2	2	3
CO3	1	2	2	2	1	2	1	2	2
CO4	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	1	2	1	3	2
Strong - 3						Medium – 2	Low - 1		

CORE – IV

Category	L	T	P	O	Credits	Inst. Hours	Marks		
							CIA	External	Total
CORE IV	6	-	-	-	5	6	25	75	100
Learning Objectives									
1	To analyse the aspects of strategic and quality control management								
2	To analyse and select cost control techniques								
3	To apply activity-based costing for decision making								
4	To utilise transfer pricing methods in cost determination								
5	To apply cost management techniques in various sectors								
Course Units									
UNIT I							(18 hrs)		
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							(18 hrs)		
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							(18 hrs)		
Activity Based Cost Management : Concept, Purpose, Stages, Benefits , Relevance in Decision making and its Application in Budgeting – Practical problems .									
UNIT IV Transfer Pricing							(18 hrs)		
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							(18 hrs)		
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.									
Course Outcomes									
Students will be able to									
1	Discuss strategic cost management and QC								
2	Choose the appropriate technique for cost control								
3	Utilise activity based costing in practice								
4	Adopt transfer pricing methods								
5	Build cost structure for Agriculture and IT sector								
Books for study:									
1. Ravi M Kishore (2018), “Strategic Cost Management”, 5 th Edition, Taxmann Publications Pvt. Ltd, New Delhi.									
2. Bandgar P. K., (2017), “Strategic Cost Management”, 1 st Edition, Himalaya Publishing House Pvt Ltd, Mumbai.									
3. Sexena V. K., (2020), “Strategic Cost Management and Performance Evaluation”, 1 st Edition, Sultan Chand & Sons, New Delhi.									
Books for reference:									
1. John K Shank and Vijay Govindarajan (2008), Strategic Cost Management, Simon & Schuster; Latest									

edition, UK

2. Jawahar Lal, (2015), “Strategic Cost Management”, 1st Edition, Himalaya Publishing House Pvt Ltd, Mumbai.)
3. Arora M. N., (2021), “A Text Book of Cost and Management Accounting”, 11th Edition, Vikas Publishing House Pvt. Ltd., New Delhi.

Web references:

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: 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
CO 1	3	3	3	3	3	3	3	3	3
CO 2	3	3	2	3	3	3	3	3	3
CO 3	3	3	2	3	3	3	3	3	3
CO 4	3	3	2	3	3	3	3	2	3
CO 5	3	3	1	3	3	3	3	3	3

Strong - 3

Medium – 2

Low - 1

Category	L	T	P	O	Credits	Inst. Hours	Marks		
							CIA	External	Total
CORE V	6				5	6	25	75	100
	Learning Objectives								
1	To understand the accounting treatment for issue of shares								
2	To determine profits for fire and marine insurance								
3	To prepare consolidated financial statements								
4	To account for price level changes								
5	To adopt financial reporting standards								
	Course Units								
UNIT 1							(18 hrs)		
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							(18 hrs)		
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							(18 hrs)		
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							(18 hrs)		
Contemporary Accounting Methods									
Accounting for price level changes – Social responsibility accounting – Human resource accounting - Forensic Accounting.									
UNIT V							(18 hrs)		
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.									
Question pattern: Theory: 20%; Problems: 80%									
Course Outcomes									
Students will be able to									
CO 1	Prepare Financial Statements of companies as per schedule III of Companies Act, 2013								
CO 2	Apply the provisions of IRDA Regulations, 2002 in the preparation of final accounts of Life Insurance and General Insurance Companies.								
CO 3	Prepare Consolidated Financial Statements of Holding Companies in accordance with AS 21.								
CO 4	Assess contemporary accounting methods								

CO 5	Examine Financial Reporting based on appropriate Accounting Standards and provisions of Companies Act 2013 with respect to Corporate Social Responsibility
Books for study: 1. Gupta R. L. & Radhaswamy M. (2021), “Corporate Accounting – Volume I & II”, 14th Edition, Sultan Chand & Sons, New Delhi. 2. Maheshwari S. N., Sharad K. Maheshwari & Suneel K. Maheshwari, (2022), “Advanced Accountancy - Volume I & II”, 11th 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”, 22nd Edition, Kalyani Publishers, New Delhi. 4. Reddy T. S. & Murthy A., (2022), “Corporate Accounting – Volume I & II”, 17th Edition, Margham Publications, Chennai.	
Books for reference: 1. Arulanandam M.A & Raman K.S., (2021), “Advanced Accounting (Corporate Accounting – II)”, 8th Edition, Himalaya Publishing House Pvt Ltd, Mumbai. 2. Shukla M C, Grewal T S and Gupta S C, (2022), “Advanced Accounts Volume II”, 19th Edition, Sultan Chand & Sons, New Delhi. 3. Gupta R. L., (2022), “Problems and Solutions in Company Accounts”, 2nd Edition, Sultan Chand & Sons, New Delhi.	
Web references: 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 4. http://ppup.ac.in/download/econtent/pdf/MBA%201st%20sem%20Lecture%20note%20on%20forensic%20accounting%20by%20Anjali.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
CO 1	3	3	2	3	3	3	3	3	3
CO 2	3	3	3	3	2	3	2	3	3
CO 3	3	3	2	3	3	3	3	3	3
CO 4	3	3	3	3	3	3	3	3	3
CO 5	3	3	3	3	3	3	3	3	3

Strong - 3

Medium – 2

Low - 1

SETTING UP OF BUSINESS ENTITIES

Course Code: P2R3CMCC6

Category	L	T	P	O	Credits	Inst. Hours	Marks		
							CIA	External	Total
CORE VI	6	-	-	-	4	6	25	75	100
Learning Objectives									
1	To understand the startup landscape and its financing								
2	To analyse the formation and registration of Section 8 company								
3	To outline the concept of LLP and business collaboration								
4	To understand the procedure for obtaining registration and license								
5	To create awareness about the legal compliances governing business entities								
Course Units									
UNIT I (18 hrs)									
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 – IPO – Crowd funding – Incubators - Mudra banks – Successful Startups in India.									
UNIT II (18 hrs)									
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 (18 hrs)									
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 (18 hrs)									
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 (18 hrs)									
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.

Course Outcomes

Students will be able to:

CO 1	Build a startup and acquire finance
CO 2	Comply with the legal requirements for Section 8 Company
CO 3	Initiate the proceedings for LLP
CO 4	Illustrate the registration and licensing procedure
CO 5	Examine the compliance of regulatory framework

Books for study:

1. Kailash Thakur, (2007) “Environment Protection Law and Policy in India”, 2nd 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”, 6th Edition, Bharath Law House, New Delhi

Books for reference:

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 (Prevention and Control of Pollution) Act, 1981, Bare Act, 2022 Edition, Universal/LexisNexis, Noida
3. The Water (Prevention and Control of Pollution) Act, 1974, Bare Act, 2022 Edition, Universal/LexisNexis, Noida
4. Cliff Ennico, (2005) “Small Business Survival Guide Starting Protecting and Securing your Business for Long-Term Success”, Adams Media, USA
5. Daniel Sitarz, (2011) “Sole Proprietorship: Small Business Start-up Kit”, 3rd Edition, Nova Publishing, USA

Web references:

1. https://www.icsi.edu/media/webmodules/FINAL_FULL_BOOK_of_EP_SBEC_2018.pdf
2. https://www.mca.gov.in/MinistryV2/incorporation_company.html 3)
3. <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>
5. https://www.indiacode.nic.in/bitstream/123456789/6196/1/the_environment_protection_act%2C1986.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
CO1	3	3	3	3	3	3	3	1	3
CO2	3	2	2	3	2	3	2	3	3
CO3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	3	3

Strong - 3

Medium – 2

Low - 1

DATA MINING AND DATA WAREHOUSING

Category	L	T	P	O	Credits	Inst. Hours	Marks		
							CIA	External	Total
Elec . III	4				3	4	25	75	100
	Learning Objectives								
1	To understand the basic concepts, principles and need of data warehousing								
2	To gain knowledge on the data warehouse architecture, modelling and its implementation.								
3	To understand steps in implementing data mart and its various dimensions								
4	To learn the features, types and challenges of data mining								
5	To aid the students to understand the various data mining tools and techniques								
	Course Units								
UNIT I							(12 hrs)		
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							(12 hrs)		
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 - necessary of metadata in data warehouses - types of metadata- metadata repository - benefits of metadata repository.									
UNIT III							(12 hrs)		
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 Modelling-Objectives of Dimensional Modelling- Advantages of Dimensional Modelling - Elements of Dimensional Modelling - Dimension Table- Multidimensional Data Model-Data Cube.									
UNIT IV							(12 hrs)		
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							(12hrs)		
Data Mining Tools & Techniques									
Data Mining 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.									
Course Outcomes									
Students will be able to:									

CO 1	Explain the basic concepts, principles and need of data warehousing
CO 2	Appraise data warehouse architecture, modelling and its implementation.
CO 3	Choose various steps in implementing data mart and its dimensions
CO 4	Recall the features and types of data mining
CO 5	Apply various data mining tools and techniques
Books for study: 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.	
Books for reference: 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, Dursun Delen, Efraim Turban (2018), “Business Intelligence”, Pearson Education Services Pvt Ltd, Noida.	
Web references: 1. https://mrcet.com/downloads/digital_notes/ME/III%20 year/ERP%20 Complete%20Digital%20notes.pdf 2. https://mrcet.com/pdf/Lab%20Manuals/IT/DATA%20WAREHOUSING%20AND%020DATA%20MINING%20(R18A0524).pdf00	

Mapping of course outcomes with POs and PSOs

	POs						PSOs		
	1	2	3	4	5	6	1	2	3
CO1	1	1	1	1	2	3	2	2	3
CO2	2	3	2	2	2	3	2	2	3
CO3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	3	3

Strong - 3

Medium – 2

Low - 1

TECHNOLOGY IN BANKING

Category	L	T	P	O	Credits	Inst. Hours	Marks		
							CIA	External	Total
Elec. III	4	-	-	-	3	4	25	75	100

1	To understand the network essentials for an operational core banking system
2	To provide an overview of customer centric electronic banking.
3	To understand the evolution of electronic fund transfer systems in the banking sector
4	To analyse the digital technologies offered in banking services.
5	To understand the information security system

UNIT I	(12 hrs)
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.	

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.

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.

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.

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.

Students will be able to

Discuss the utility of stand-alone and multi-user systems access in Core banking.

CO 2	Assess the multi-faceted electronic payment options available to customer and host transactions in banking.
CO 3	Evaluate the dynamic transitions in Electronic Fund transfer systems.
CO 4	Evaluate the enhanced utility and user interface and other recent developments in banking technologies.
CO5	Assess the information security system

Books for reference:

1. Vadlamani Ravi, (2007) “Advances in Banking Technology and Management: Impacts of ICT and CRM”, 1st 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”, 3rd 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 references:

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://eprocure.gov.in/cppp/rulesandprocs/kbadqkdlcswfjdelrquehwuxcfmijmuixngudufgbuubgubfugbububjxcgfvbdiibgfGhdfgFHtytYhRtMjk4NzY=#:~:text=%5B9th%20June%2C%202000%5D%20An,communication%20and%20storage%20of%20information%2C>

Note: Latest edition of the book may be used

Mapping of course outcomes with POs and PSOs

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

FIRST YEAR SEMESTER II

FINANCIAL ANALYTICS (PRACTICALS)

Course Code: P2R3CMDSE4:1

Category y	L	T	P	O	Credits	Inst. Hours	Marks		
							CIA	External	Total
Elec. IV	4	-	-	-	3	4	40	60	100
	Learning Objectives								
1	To understand the statistical concepts relating to Probability, decision making under uncertainty and analysis of exploratory data								
2	To learn the use of regression, time series analysis and building of models using accounting data								
3	To gain knowledge on R and python programming								
4	To prepare, analyse and forecast financial statements using cash flow statements								
5	To gain knowledge on concept, application, and issues in capital budgeting								
	Course Units								
UNIT I							(12 hrs)		
Statistical Concepts									
Probability, Normal, Lognormal distribution properties, Decision making under uncertainty - Cleaning and pre-processing financial data, Exploratory Data Analysis in Finance.									
UNIT II							(12 hrs)		
Simple Linear Models									
Use of Regression in Finance, Building Models using Accounting Data, Understanding stock price behaviour, time series analysis in finance.									
UNIT III							(12 hrs)		
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							(12 hrs)		
Cash Flow Concepts									
Cash flow statement – Prepare and Analyse, Modelling and forecasting of financial statements.									
UNIT V							(12 hrs)		
Capital Budgeting									
NPV, IRR – Concept, application, and issues, Use of real options for better financial outcomes.									
Course Outcomes									
Students will be able to									
CO 1	Analyse decisions under uncertainty and also analyse exploratory								
CO 2	Build models using accounting data and analyse using regression and time series tools								
CO 3	Apply R and python programming								
CO 4	Estimate and analyse financial statements using cash flow statements								
CO 5	Select appropriate capital budgeting techniques for decision making								
Books for study:									
1. Gary Koop, “Analysis of Economic Data”, 4 th Edition, Wiley, USA.									
2. David Ruppert, David S. Matteson, “Statistics and Data Analysis for Financial Engineering: with R examples”, Springer, USA.									
Books for reference:									
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 references:									
1. 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

Mapping of course outcomes with POs and PSOs

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

MANAGEMENT INFORMATION SYSTEM

Category	L	T	P	O	Credits	Inst. Hours	Marks		
							CIA	External	Total
Elec. IV	4				3	4	25	75	100
Learning Objectives									
1	To understand the basic concept of Information system								
2	To identify the importance of MIS								
3	To understand the Functional Management Information System								
4	To learn the role of system analyst								
5	To apply the concept of Enterprise Resource Planning								
Course Units									
UNIT I							(12 hrs)		
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							(12 hrs)		
Types of Management Information Systems									
Transaction Processing Information System - Information system for managers - Intelligence information system – Decision support system - Executive information systems.									
UNIT III							(12 hrs)		
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							(12 hrs)		
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							(12 hrs)		
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									
Course Outcomes									
Students will be able to									
CO 1	Identify the basic concept of Information system								
CO 2	Discuss the importance of MIS								
CO 3	Explain the functional MIS								
CO 4	Describe the role of system analyst								
CO 5	Apply the concept of Enterprise resource planning								
Books for study:									
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.

Books for reference:

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:

1. <https://cleartax.in/g/terms/mis-meaning-mis-full-form-marketing-information-system/amp>
2. <https://www.techtarget.com/searchitoperations/definition/MIS-management-information-systems>

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
CO1	1	1	2	2	1	2	1	2	2
CO2	2	2	2	2	1	2	1	2	2
CO3	3	3	3	3	1	2	1	2	3
CO4	3	3	3	3	2	3	2	3	3
CO5	3	3	3	3	2	3	2	3	3
	Strong - 3			Medium – 2			Low - 1		

CAPITAL MARKETS

Category	L	T	P	O	Credits	Inst. Hours	Marks		
							CIA	External	Total
Elec. IV	4				2	4	25	75	100
Learning Objectives									
1	To introduce the students concept of financial markets								
2	To teach the various aspects of regulation of Indian capital market								
3	To teach the working mechanism of primary market								
4	To enable the students to learn the working mechanism of Stock exchanges								
5	To enable the students to learn the concept of underwriting and IPO								
Course Units									
UNIT I		Introduction						12 Hours	
Financial markets - Definition - Role - functions - Constituents - Financial Instruments - Indian Financial Market - Global Financial Market - Capital Market - Evolution and growth - Constituents - Capital Market Instruments - Types - Preference shares- Equity Shares - Non - voting equity shares - Company fixed deposits - Warrants - Debentures and Bonds									
UNIT II		Regulation of Indian Capital Market						12 Hours	
Regulatory Framework - Committees on Regulatory Framework - SEBI - Objectives - Management - Powers and functions - Regulatory role - Investor Protection - Insider Trading - Rationale - Insiders - Insider information - Connected persons.									
UNIT III		Primary Market						12 Hours	
Meaning - NIM Vs Secondary Market - Methods of New Issue - Intermediaries in the new issues market - SEBI Guidelines on Primary Market - Listing - Agreement - Benefits - Consequences of Non-listing									
UNIT IV		Stock Exchange						12 Hours	
History - Meaning - Functions - Stock Exchange Vs Commodity Exchange - Stock Exchange Traders - Regulation of Stock Exchanges - Steps in Stock Trading - BSE and NSE - World Stock Exchanges - New York, London, Hong Kong and Tokyo Stock Exchanges.									
UNIT V		Underwriting and IPO						12 Hours	
Underwriting - Definition - Types - Mechanics - Benefits - Book Building - Concept - Characteristics - Process - IPO including e-IPO - Reverse book – building – Depository services - Demat Account - Electronic Settlement of Trade - Role of CDSL and NSDL - Online Stock Trading.									
(Theory 75 Marks)							Total Hours 60		
Book for Study The Capital Markets by Gary Strumeyer, Sarah Swammy, Released January 2017 Publisher(s): Wiley Publishers ISBN: 9781119220541									

Books for Reference

1. Frank J, Fabozzi, Franco Modigliani, (2000), “Capital Markets Institutions and Instruments” Prentice Hall, New Delhi
2. Gurusamy, (2014), “Capital Markets”, Vijay Nicole Imprints, Chennai.
3. Moorad Choudhry, (2000), “Capital Market Instruments, Analysis and Valuation”, FT Press, New York.
4. Mahesh Kulkarni & Dr. Suhas Kulkarni, (2001), “Capital Markets and Financial Services”, Nirali Publications, Mumbai.
5. Rajesh Chakraborty, Sankar D.E, (2011), “Capital Markets in India”, Sage Publications, New Delhi

Web Resources

- 1) <https://www.pdfdrive.com/capital-markets-financial-management-and-investment-management-e33414495.html>
- 2) <https://www.yumpu.com/en/document/view/64138725/e-book-download-capital-markets-fifth-edition-institutions-instruments-and-risk-management-the-mit-press-full-books>
- 3) https://ns.mstatic.in/LS/The_Capital_Market.pdf
- 4) http://www.columbia.edu/~sgd2002/pdf/Inside_the_Book.pdf
- 5) https://vinodkothari.com/wp-content/uploads/2014/01/Notes-on-Indian-Financial-Markets-final-_np_.pdf

Course Outcomes		K Level
After completion of the course the student will be able to		
CO1	Understand the role and importance of the Indian financial market	K2
CO2	Apply and analyze the Concepts relevant to Indian financial markets and financial institutions.	K4
CO3	Understand and analyze the mechanics and regulation of financial instruments and determine how the value of stocks, bonds, and securities are calculated.	K5
CO4	Evaluate empirical evidence of the market performance and accordingly the role of regulatory authorities to develop the financial market.	K6
CO5	Research and analyze specific problems or issues related to financial markets and institutions.	K4

Title of the Course: Capital Markets						Course Code: P2R3CMSEC1:1					
Course Outcomes (COs)	Programme Outcomes (POs)					Programme Specific Outcomes (PSOs)					Mean Score of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	2	2	3	2	3	3	3	2	3	2	2.5
CO2	3	2	3	3	2	3	2	2	3	3	2.6
CO3	3	3	2	2	3	3	2	3	2	3	2.6
CO4	3	2	2	2	2	2	3	3	3	3	2.5
CO5	2	2	3	2	3	2	2	2	3	2	2.3
	Mean Overall Score										2.5
	Result										High

FIRST YEAR SEMESTER II

CORPORATE GOVERNANCE

SKILL ENHANCEMENT COURSE 2

Course Code: P2R3CMSEC1:2

Category	L	T	P	O	Credits	Inst. Hours	Marks		
							CIA	External	Total
Elec. IV	4				2	4	25	75	100
	Learning Objectives								
1	To develop better and most efficient management of business organization								
2	To develop more applicable criteria towards performing the task								
3	Holding balance between social and economic goals.								
4	To encourage the efficient use of scarce resources.								
5	To ensure perspective work place management								
	Course Units								
UNIT I		Introduction of Corporate Governance					12 Hours		
Corporate Governance-Introduction, need, scope, and issues; Evolution of Corporate Governance; Genesis of Corporate Governance, Key features of Corporate Governance in the companies.									
UNIT II		Theories of corporate Governance					12 Hours		
Agency Theory, stewardship Theory, The Stakeholder Theory, Political Theory; Models of Corporate Governance; Regional Models: Indian Models: Principles of Corporate Governance and Organization for Economic Co-operation and Development (OECD) Principles.									
UNIT III		Personal & Politics Action					12 Hours		
Personal Action-Politics-Action Politics in Firm-Time Management; Corporate governance and the stakeholders - The business scene; Profit , Bottom line-Corporate styles; Leadership styles; essential components of leadership, understanding team work and leadership.									
UNIT IV		Poor Corporate Governance					12 Hours		
Meaning, consequences, effects and impact of poor Corporate Governance, Ways to improve Corporate Governance.									
UNIT V		Evaluation & Reporting					12 Hours		
Corporate Governance - Accountability issues - Board objective –Training and Development of directors-Performance evaluation of board –Corporate scandals, Whistle Blowing, Insider trading-Administering &Reporting of Corporate Governance.									
(Theory 75 Marks)							Total Hours 60		
Book for Study									
Corporate Social responsibility: Philip Kotler, Wiley India Pvt, Ltd.									
Books for Reference									
1. Corporate Governance-Company Secretary of India, Taxman, New Delhi									
2. Business Ethics and Corporate Governance-S.K.Bhatia-Deep and Deep publications New Delhi.									
Web Resources									
https://esource.dbs.ie/handle/10788/4196									
Course Outcomes							K Level		
After completion of the course the student will be able to									
CO1	Adopt the appropriate mechanism for effective governance						K2		
CO2	Value the shareholders and stakeholder rights and responsibilities						K1		

Category	L	T	P	S	Credits	Inst. Hrs	Marks		
							CIA	Ext.	Total
Core VII	6	-	-	-	5	6	25	75	100
Nature of Course						Skill Development			
Course objectives 1. To introduce the fundamentals of investment decision making including fundamental and technical analysis. 2. To impart knowledge on the basics of measuring risk and return. 3. To develop the skills required to make portfolio decision making. 4. To teach the uses of CAPM and APM. 5. To gain an understanding about the process of constructing a portfolio.									
UNIT I		Investment-an overview					19Hours		
Investment-an overview – Meaning, economic investment, financial investment, investment practice, features of investment, Savings Vs Investment, Factors and constraints of investment, Investment objectives.									
UNIT II		Risk and Return					18 Hours		
Risk and Return: Certainty, uncertainty, risk, types and sources of risk – Return: measurement of return, risk-return relationship, historical return, historical risk, expected rate of return and expected risk.									
UNIT III		Fundamental and Technical analysis					15 Hours		
Fundamental analysis: meaning, features, analytical framework –Technical analysis: meaning, mechanism, importance									
UNIT IV		Portfolio Management					19Hours		
Portfolio – meaning – types of portfolio – portfolio management: meaning, need, types and importance – portfolio management Vs wealth management –Portfolio management framework – Portfolio performance. Portfolio theory: portfolio analysis, objectives, Markowitz portfolio analysis, Random Walk Theory									
UNIT V		Efficient Market Hypothesis					19 Hours		
Efficient Market Hypothesis: Assumptions – three levels –CAPM and APM: meaning, risk-free an risky securities – risk averse investor, objectives, assumptions, validity, components and criticism of CAPM – Capital market Line									
(Theory: 75 Marks)							Total Hours 90		
Book for Study									
Kevin S, (2011), ‘Security Analysis and Portfolio Management’ Prentice Hall of India, New									

RESEARCH METHODOLOGY**P3R3CMCC8**

Category	L	T	P	S	Credits	Inst. Hrs	Marks		
							CIA	Ext.	Total
Core VIII	6	-	-	-	5	6	25	75	100
Nature of Course						Employability			

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
UNIT I (18 hrs)	
Introduction to Research Methodology	
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 – Identification of research gap – Framing of objectives.	
UNIT II (18 hrs)	
Hypothesis Testing and Research Design	
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.	
UNIT III (18 hrs)	
Data Collection	
Variable: Meaning and types – Techniques of data collection – Primary data: Meaning, Advantages and limitations – Techniques: Interview, Schedule, Questionnaire, Observation – Secondary Data: Meaning and sources.	
UNIT IV (18 hrs)	
Data Analysis	
Data Analysis – Range, Minimum, Maximum, – Bi-variate analysis: Simple correlation, Simple Regression, Chi-square, Paired samples t-test, ANOVA.	
UNIT V (18 hrs)	
Preparation of Research Report	
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.	
Question pattern: Theory: 80%; Problems: 20%	
Course Outcomes	
Students will be able to:	
CO 1	Recall the research concepts and recognize 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 Gaurav Garg, (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”, 12th Edition, Tata Mcgraw Hill, Noida (UP). 2. Sashi K.Guptha and Parneet Rangi,(2018) “Research Methodology” , Kalyani Publisher, Ludhiana. 3. Sharma R D and Hardeep Chahal, (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/ln_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%20NOTES%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
CO1	3	3	3	2	2	3	2	3	3
CO2	3	3	3	2	2	3	2	3	3
CO3	3	3	3	2	2	3	2	3	3
CO4	3	3	3	2	2	3	2	3	3
CO5	3	3	3	2	2	3	2	3	3
Strong - 3			Medium – 2			Low - 1			

Policy to ward Open Source.

Textbooks:

1. Lee, J., & Ware, B. (2003). *Open Source Web Development with LAMP using Linux, Apache, MySQL, PERL and PHP.*

Reference books:

1. Chun, W.J. (2006). *Core Python Programming*. Prentice Hall of India.
2. Card, R., Dumas, E., & Mevel, F. (2003). *The Linux Kernel Book*. John Wiley publications sons.
3. Suchring, S. (2002). *MySQL Bible*. John Wiley sons.
4. Lerdorf, R., & Tatro, L. (2002). *Programming PHP*. O'Reilly Publications

Outcomes

- Familiar with open source software products and development tools currently available on the market
- Develop web applications using open source software
- Be able to develop web-enabled software using open source tools and methodologies
- To using open source tools in developing web-enabled software
- Have a good understanding of how to develop software in a team with other developers

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
CO1	3	3	3	2	2	3	2	3	3
CO2	3	3	3	2	2	3	2	3	3
CO3	3	3	3	2	2	3	2	3	3
CO4	3	3	3	2	2	3	2	3	3
CO5	3	3	3	2	2	3	2	3	3

Strong - 3

Medium – 2

Low - 1

CORECOURSE X

OPEN SOURCE TECHNOLOGIES PRACTICAL

P3R3CMCC10P

Category	L	T	P	S	Credits	Inst. Hrs	Marks		
							CIA	Ext.	Total
Core VIII	6	-	-	-	5	6	40	60	100
Nature of Course						Employability			
Objectives									
- To develop technical solutions for problems using the open source software re directly available at free of cost. - To install Wamp Server and learn programming n PHP. - To understand the programming basics in Python Programming - To learn about database management software - Introduce them to use open source packages									
PHP									
- Create a simple HTML form and accept the user name and display he name through PHP echo statement. - Writea PHP script to redirect a user to a different page. - Create a PHP script which display the capital and country name from the given array .Sort the list by the name of the country - Connect with MySQL and create student marksheet									
Python									
- Create a simple calculator to do all the arithmetic operations - Create new module form mathematical operations and use in your program - Write a program to read and write files ,create and delete directories									
MYSQL Lab									
- CREATE TABLE Student (ID Integer, Name Varchar (100), Marks Integer); - To Insert Values In to A Table Type The Following Command: Insert Into Table_ Name Values (Value1, Value2, Value3, ...); The Values Should Correspond To The Column Name In Which The Value Is To Be Stored. - ALTER TABLE - Add Column_ Name Datatype. - Join The Tables(Inner Join ,Outer join, Left Join And Right join) - Modifying The Data In Table.									
Course outcomes									
CO1) Implement various applications using build systems CO2) Understand the installation of various packages in open source operating systems CO3) Create simple applications using Gambas CO4) Understand various version control systems CO5) Understand the kernel configuration and virtual environment									

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
CO1	3	3	3	2	2	3	2	3	3
CO2	3	3	3	2	2	3	2	3	3
CO3	3	3	3	2	2	3	2	3	3
CO4	3	3	3	2	2	3	2	3	3
CO5	3	3	3	2	2	3	2	3	3

Strong - 3**Medium – 2****Low - 1**

Category	L	T	P	O	Credits	Inst. Hrs	Marks		
							CIA	Ext.	Total
DSE 5	4	-	-	-	3	4	25	75	100
Nature of Course						Employability			
Course objectives									
1. Students can have basic set of skills to understand crypto currencies and block chain/DLT 2. students can understand Block Chain applications in Various Sectors 3. Students are able to learn the Current state of the crypto currency 4. Students can develop their Investment in alt coins and mining 5. Students can understand ICO Regulation									
UNIT I	Block Chain Fundamentals						12 Hours		
Block Chain Overview – Basis of Cryptography in the Block chain – Decentralized digital identity- transactions – block Building and Consensus mechanism – coding with solidity on Ethereum Block chain.									
UNIT II	Enterprise Applications of Block Chain						12Hours		
Pros and cons of using Block Chain - Block Chain applications in Various Sectors – notable block Chain consortium- Business decisions about Block Chain									
UNIT III	Block Chain and Crypto Currency overview						12Hours		
What is crypto currency and Block chain? - History of crypto currency - How is it different from fiat currency? - Current state of the field									
UNIT IV	Practical Use of Crypto Currency						12Hours		
The crypto currency ecosystem – Crypto currency and anonymity – Crypto currency wallets - Investment in alt coins and mining - Tax and inheritance									
UNIT V	Token Offering						12 Hours		
What is an Initial Coin Offering? - Advantage and Disadvantage of ICO - ICO Regulation - Securities Token Offering – Regulated ICOs - Trends in Token Offering									
(Theory 75 Marks)						Total Hours 60			
Book for Study Bitcoin and Crypto currency Technologies. Princeton University Press -Arvind Narayanan, Joseph Bonneau, Edward Felten, Andrew Miller, Steven Goldfeder.									
Books for Reference 1. Mastering Bitcoin. -Andreas M. Antonopoulos, 2. The Age of Crypto currency: How Bitcoin and Digital Money Are Challenging the Global Economic Order (by Wall Street Journal writers Paul Vigna and Michael J. Casey, explains crypto currency)									

Title of the Course: Application in Cryptocurrency and Block chain Technologies						Course Code:P3R3CMDSE5:1					
Course Outcomes (COs)	Programme Outcomes (POs)					Programme Specific Outcomes (PSOs)					Mean Score of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	3	2	3	3	3	3	3	3	3	2	2.8
CO2	3	3	3	3	3	3	2	3	3	3	2.9
CO3	3	3	2	2	3	3	2	3	3	2	2.6
CO4	3	2	3	2	2	3	3	2	2	2	2.4
CO5	3	3	2	3	3	3	3	3	3	3	2.9
	Mean Overall Score										2.98
	Result										High

INTERNATIONAL BUSINESS

P3R3CMDSE5:2

Category	L	T	P	S	Credits	Inst. Hrs	Marks		
							CIA	Ext.	Total
DSE5:2	4	-	-	-	3	4	25	75	100
Nature of Course							Employability		
Course objectives									
1. To teach the basics of international business 2. To acquaint students on the international trading environment 3. To gain an understanding on the multinational enterprises 4. To learn the various aspects of international financial management 5. To enable the students to gain an understanding on the recent developments in international business.									
UNIT I	Introduction						12 Hours		
International business – Meaning – Features – Factors - International Business Environment - External Influences of International Business – The Human and Cultural Environments facing Business.									
UNIT II	International Trading Environment						12 Hours		
International Trading Environment – WTO – TRIM – TRIP – IPR - Country Evaluation and Selection – Scanning for Alternative Influential Variable – Return on Investment on Country.									
UNIT III	Multinational Enterprises						12Hours		
Multinational enterprises – Meaning – Features - Impact of the Multinational Enterprise: Evaluating the Impact of the MNE – Economic Impact of the MNE.									
UNIT IV	International Financial Management						12 Hours		
International Financial Management – Meaning – Role - International Monetary System - Foreign Foreign Direct Investment – Strategies: Export and Import Strategies, Collaborative Strategies, Sourcing and Production Strategies.									
UNIT V	Recent developments in International Business						12 Hours		
Recent developments in International Business – E-business Strategy – International Business Intelligence – International Product Decisions.									
(Theory 75 Marks)								Total Hours 60	
Book for Study									
John D. Daniels & Lee H Radebough, (2009), International Business, Wesley									

Title of the Course: International Business						Course Code: P3R3CMDSE5:2					
Course Outcomes (COs)	Programme Outcomes (POs)					Programme Specific Outcomes (PSOs)					Mean Score of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	3	2	3	3	3	3	3	3	3	2	2.8
CO2	2	3	2	2	2	3	2	3	2	2	2.3
CO3	3	3	3	3	3	2	3	2	3	3	2.8
CO4	3	3	3	2	3	3	2	2	2	2	2.5
CO5	2	2	3	2	3	3	3	3	3	3	2.7
	Mean Overall Score										2.62

M.Com., Computer Applications

Second Year

SEC2:1

Semester III

WEB TECHNOLOGY**P3R3CMSEC2:1**

Category	L	T	P	O	Credits	Inst. Hrs	Marks		
							CIA	Ext.	Total
SEC 2	2	-	-	-	2	2	25	75	100
Nature of Course						Employability			

Course objectives

1. Students can familiar with Web pages and Web sites
2. Students can understand forms, video, audio and canvas
3. Students are able to learn the latest technology in Web (HTML 5.0 and Java Script)
4. Students can develop their own web technology
5. Students can understand the web data

UNIT I	Introduction to Internet and HTML 5.0	6Hours
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Introduction to Internet- World Wide Web: History –Web browsers- Web Servers- Uniform Resource Locator. Html 5.0 : Main Structure – Structural elements- HTML 5with CSS Text- Structuring main content areas – Adding blog posts and comments- WAI- ARIA- Redefined elements- Global Attributes- Removed attributes

UNIT II	Forms, Video –Audio and Canvas	6 Hours
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Forms- New input types -New attributes -Backwards compatibility -form fields and error messages -Overriding browser defaults -Using JavaScript for DIY validation - Avoiding validation Video and Audio -Native multimedia -Codecs -Rolling custom controls -Multimedia accessibility - Synchronizing media tracks Canvas -Canvas basics -Drawing paths -Using transformers -Capturing Images Pushing pixels - Animating your canvas paintings

UNIT III	Data storage and additional features	6 Hours
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Data Storage -Storage options -Web storage -Web SQL Database –Indexed DB Offline -Pulling the plug -The cache manifest -Network and fallback -The manifest - The browse-server process -Application Cache -Debugging tips -Using the manifest to detect connectivity -Killing the cache Drag and Drop -Getting into drag - Interoperability of dragged data -Drag any element -Adding custom drag icons – Accessibility

UNIT IV	Geo location and Messaging	6 Hours
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Geo location- Sticking a pin in your user- API methods Messaging and Workers- Chat chat with the Messaging API – Threading using Web Workers.

UNIT V	Representing Web Data	6 Hours
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XML - Documents and Vocabularies - Versions and Declaration –Namespaces; Event -oriented parsing: SAX -transforming xml documents; Selecting XML data: xpath; Template based transformations : xml-displaying xml documents in browser

(Theory 75Marks)

Total Hours 30

Deitel and deitel and Goldberg, Internet and world wide web: How to program (third edition), Pearson prentice hall,2003.

Books for Reference

1. Richard Clark, Christopher Murphy, Divyamanian, Oliver Studholme, Beginning HTML5 and CSS3: The Web Evolved, Apress, 2008
2. Douglas Crockford, JavaScript : The Good Parts, , "O" Rely, 2008.
3. Robert w. Sebesta, Programming the WWW, Third edition, , Pearson Prentice hall, 2005.
4. Bruce Lawson , Remy Sharp, Introducing HTML 5.0, Pearson, Second Edition, 2012.
5. David Flanagan, JavaScript: The Definitive Guide, O' Relliy, Fifth edition, 2006.

Web Resources

1. National Digital Library
2. <https://ptgmedia.pearsoncmg.com/images/9780321784421/samplepages/0321784421>
3. <http://auhd.edu.ye/upfiles/elibrary/Azal2020-01-22-01-38-51-40850>

Course Outcomes		K Level
After completion of the course the student will be able to		
CO1	Familiar with web pages.	K2 &K3
CO2	Understand how the browser and web pages are working.	K4
CO3	Familiar with latest web programming skills.	K5
CO4	Get a job with their own web Programming skills.	K6
CO5	Became a freelance web page developer.	K5

Title of the Course: WEB TECHNOLOGIES						Course Code: P3R2CMSEC2:1					
Course Outcomes (COs)	Programme Outcomes (POs)					Programme Specific Outcomes (PSOs)					Mean Score of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	2	3	2	3	2	2	3	2	3	2	2.4
CO2	3	3	3	2	3	2	3	2	3	2	2.6
CO3	2	3	2	3	3	2	2	2	2	3	2.4
CO4	2	3	3	2	3	3	2	3	3	3	2.7
CO5	3	2	3	3	3	3	3	2	3	2	2.7
	Mean Overall Score										2.56
	Result										High

CYBER LAWS

P3R3CMSEC2:2

Category	L	T	P	O	Credits	Inst. Hrs	Marks		
							CIA	Ext.	Total
SEC II	2	-	-	-	2	2	25	75	100
Nature of Course						Employability			
Course objectives 1.To gain through knowledge on the basic concepts which lead to the formation and 2.To execution of electronic contracts 3. To Study the Technical aspects of Cyber Security and Evidence Aspects 4. To acquire knowledge on Information Technology Act and EDI 5. To understand the concept of global trends									
UNIT I		Cyber Law					6 Hours		
Information Technology Bill 2000, UNO resolutions concerning cybercrime, provisions under law and scope of various cyber laws. Legal amendments in the Evidence Act concerning cyber crime									
UNIT II		Security Aspects					6 Hours		
Security Aspects: Introduction-Technical aspects of Encryption-Digital Signature-Data Security. Intellectual Property Aspects: WIPO-GII-ECMS-Indian Copy rights act on soft Propriety works Indian Patents act on soft propriety works..									
UNIT III		Security and Evidence Aspects					6 Hours		
Security and ethical challenges of E-Business: Breach in security - Evidence Aspects: Evidence as part of the law of procedures-Evidence as part of the law of procedures									
UNIT IV		Cyberspace					6 Hours		
Introduction- Concept of Cyberspace-E-Commerce in India-Privacy factors in E Commerce- cyber law in E-Commerce-Contract Aspects.									
UNIT V		Global Trends					6 Hours		
Global Trends- Legal frame work for Electronic Data Interchange: EDI Mechanism- Electronic Data Interchange Scenario in India									
(Theory: 75 Marks)							Total Hours 30		
Book for Study The Indian Cyber Law : Suresh T. Viswanathan, Bharat Law House, New Delhi									
Books for Reference 1. Understanding Laws Cyber Laws and Cyber Crimes by Garima Tiwari,2011 2. Cyber law for by Justice Vatindra Singh,2014 2nd edition 3. James A.O'Brien Tal Mc Graw hill edition. Fifth edition,2006									
Web Resources 1. National Digital Library 2. https://www.bharat-law-house-indian-cyber-laws-glossary-suresh-t-viswanathan-n-chandrababu-naidu-higher-education/p/itmcd2970dfb06f									
Course Outcomes								K Level	
After completion of the course the student will be able to									

CO1	Discuss the concepts of Cyber law and Cyber Space	K2,k3
CO2	Describe Cyber Security technical aspects	K4
CO3	Explain the Evidence Aspects	K5
CO4	Understand the Electronic Data Interchange Scenario in India	K6
CO5	To gain knowledge on Information Technology Act.	K5

Title of the Course: Cyber laws						Course Code: P3R3CMSEC2:2					
Course Outcomes (COs)	Programme Outcomes (POs)					Programme Specific Outcomes (PSOs)					Mean Score of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	2	3	2	2	2	2	3	2	3	2	2.3
CO2	3	3	3	2	3	2	3	2	3	2	2.6
CO3	2	2	2	3	3	2	2	2	2	3	2.3
CO4	2	3	3	2	3	2	2	3	3	3	2.6
CO5	3	2	3	3	3	3	3	2	3	2	2.7
	Mean Overall Score										2.5
	Result										High

Course Name	Internship				
Course Code	P3R3CMINT	Ex. Hrs.	L	P	C
Category	Core	-	-		3
Nature of Course	Employability				
Maximum Marks	100	Passing Minimum Marks	50		

TOOLS IN WEB APPLICATIONS THEORY

P4R3CMCC11

Category	L	T	P	S	Credits	Inst. Hrs	Marks		
							CIA	Ext.	Total
Core XI	6	-	-	-	5	6	25	75	100
Nature of Course							Employability		
Course objectives 1.To develop full-fledged knowledge in .NET Framework 4.5 and VS 2012, 2.understand the dynamic programming concepts in C#, 3.working with Graphic Rich desktop application in WPF, 4.Functioning of Various ASP.NET 4.5Web Controls 5. To understand the concept of web forms									
UNIT I		GETTING STARTED WITH .NET FRAMEWORK 4.5					16 Hours		
Evolution of .NET Framework- Benefits of .NET framework- Architecture of the .NET framework 4.5- New Features of .NET framework 4.5- Introducing visual studio 2012: Exploring New features of Visual studio 2012- Exploring the visual Studio 2012 Ultimate IDE- Performing Basic IDE Operations.									
UNIT II		INTRODUCING C# 5.0 IN VS 2012					20 Hours		
Need of C# - C# preprocessor Directives – New Features of C# 5.0 – Identifiers and Keywords – Data types, Variables and Constants – Expressions and operators – POINTERS, DELEGATES AND EVENTS: Pointers – Delegates – Events									
UNIT III		WORKING WITH WPF 4.5 (Windows Presentation Foundation)					18 Hours		
CONTROLS, RESOURCES, STYLES, TEMPLATES AND COMMANDS: Adding WPF Controls – Introducing Different Types of Controls in WPF – Using WPF Controls – Understanding Triggers – DATA ACCESS WITH ADO.NET: Understanding Databases – Understanding SQL – Understanding ADO.NET – Data Reader – Creating Connection Strings – Creating a Connection to a Database – Creating a Command Object – Working with Data Adapter.									
UNIT IV		ASP.NET 4.5 ESSENTIALS					18Hours		
Introducing New Features of ASP.NET 4.5 – Describing the ASP.NET Technologies – Describing ASP.NET Life Cycle – DEVELOPING A WEB APPLICATION: File Types in ASP.NET 4.5 – ASP.NET 4.5 Coding Models – Understanding ASP.NET 4.5 Page Directives – Working with Server Controls									
UNIT V		WEB FORMS STANDARD CONTROLS					18 Hours		
The Control Class – Web Control Class – Standard Controls – User Controls and Custom Controls – VALIDATION CONTROLS: Validation in ASP.NET Web Forms – The Base Validator Class – The Required Field Validator Control – The Range Validator Control – The Regular Expression Validator Control – The Compare Validator Control – The Custom Validator Control – The Validation Summary Control									

(Theory: 75 Marks)										Total Hours 90	
Book for Study											
1. Kogent Learning Solutions Inc., “.NET 4.5 Programming - Black Book” (6-in-1 covers .Net 4.5 Framework, Visual Studio 2012, C# 2012, ASP.NET 4.5, VB 2012, and F# 3.0), 2013, Comprehensive Problem Solver, Dreamtech Press, New Delhi.											
Books for Reference											
1. MridulaParihar, —ASP.NET Bible”, 2004, Wiley Dream tech India (P) Ltd., New Delhi											
2. Matt J. Crouch, “ASP.NET and VB.NET Web Programming”, 2002, Pearson Education Publishing Ltd., New Delhi											
3. Chris Payne, “SAMS Teach Yourself ASP.NET”, 2005, Pearson Education Publishing Ltd., New Delhi											
4. Oberg Robert J., “Introduction to C# using .NET”, 2002, Pearson Education Publishing Ltd., New Delhi.											
Web Resources											
1. National Digital Library											
2. https://www.wileyindia.com/net-4-5-programming-6-in-1-black-book.html											
3. https://www.gbl.bbau.ac.in:8090/cgi-bin/koha/opac-search.pl?q=ccl=Provider:Pearson,&offset=250&sort_by=relevance_dsc											
Course Outcomes											K Level
After completion of the course the student will be able to											
CO1	Get a clear picture about the .NET Framework.										K2 &K3
CO2	Gain the insight of the Assemblies, Namespaces and Web Application										K4
CO3	Accumulate the knowledge about Web Controls										K5
CO4	Get a fair idea about the statement and Rich, validation controls										K6
CO5	Get idea for various web forms controls										K6
Title of the Course: TOOLS IN WEB APPLICATIONS -THEORY						Course Code:P4R3CMCC11					
Course Outcomes (COs)	Programme Outcomes (POs)					Programme Specific Outcomes (PSOs)					Mean Score of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	2	2	3	3	2	2	2	3	3	3	2.5
CO2	3	3	2	2	3	3	3	2	3	2	2.6
CO3	3	3	2	3	2	2	3	3	2	2	2.5
CO4	3	3	2	2	2	2	2	3	3	2	2.4
CO5	3	2	3	3	3	2	3	3	2	3	2.7
	Mean Overall Score										2.54
	Result										High

M.Com., Computer Applications

Second Year

Core – XII

Semester IV

DATA SCIENCE AND ANALYTICS THEORY

P4R3CMCC12

Category	L	T	P	S	Credits	Inst. Hrs	Marks		
							CIA	Ext.	Total
Core XII	6	-	-	-	5	6	25	75	100
Nature of Course						Employability			

Course objectives

1. To understand the applications for the efficient use of Excel software in Data analytics
2. To understand the design and development of database for data science with analytical features.
3. Provide you with the knowledge and expertise to become a proficient data scientist
4. Demonstrate an understanding of statistics concepts that are vital for data science
5. Produce R code to statistically analyze a dataset

UNIT I	Fundamentals of Excel	18 Hours
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Features of MS-Excel, Excel Program Screen, the Ribbon, Office button and Quick Access tool bar, Worksheets, rows, columns, cells.

UNIT II	Worksheet basics and Editing a worksheet	18 Hours
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Creating a new workbook, opening a Workbook, Saving a Workbook, Entering labels, values, and formulas in worksheet - Editing cell contents - cutting, copying and pasting cells – Find and Replace - Undo, Inserting rows and columns, Deleting rows and columns, Adjusting row height and column width - Formatting cell values, conditional formatting

UNIT III	Structured Query Language	18 Hours
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Introduction, SQL literals, Data types in SQL, SQL operators, Commands in SQL, Data Definition Language (DDL) commands, creating tables, Table Modification, Table Truncation, Creating Tables with constraints, dropping tables, Data Manipulation Language (DML) commands: Inserting data into tables, updating data in tables and deleting data in tables. Transaction Control commands in SQL

UNIT IV	Introduction to Data Science	18 Hours
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Definition, benefits and uses of data science and big data. **Facets of Data:** Structured data, unstructured data, natural language, machine generated data, network data, audio, images and video streaming data.

Data science process: overview of data science process, defining the goal, Retrieving data, data preparation, data exploration, build the models, cleaning and transforming data, presentation and automation.

UNIT V	The Data Science Fundamentals	18 Hours
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DATA: Definition, characteristics of data, classification of digital data. Distributed file system, data integration frame work, machine learning framework, system deployment, security.

Data Mining: definition, languages for data science, collection data –hunting, logging, scraping, cleaning data –error vs. artifacts, data compatibility, dealing with missing values, outlier detection.

(Theory 75 Marks)

Total Hours 90

Course Name	Project work				
Course Code	P4R3CMCC13PW	Ex. Hrs.	L	P	C
Category	Core XV	-	18		10
Nature of Course	Employability				
Maximum Marks	100	Passing Minimum Marks		50	