



Estd. 1962
"A++" Accredited by
NAAC(2021)
With CGPA 3.52

**SHIVAJI UNIVERSITY, KOLHAPUR - 416004,
MAHARASHTRA**

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शिवाजी विद्यापीठ, कोल्हापूर - ४१६००४, महाराष्ट्र

दूरध्वनी - ईपीएबीएक्स - २६०९०००, अभ्यासमंडळे विभाग दूरध्वनी विभाग ०२३१-२६०९०९३/९४



Ref./SU/BOS/Com & Mgmt./ 101

Date : 03/12/2022

To,

The Principal/Co-ordinator/Director
All Affiliated M. Com IT Colleges/Institutions,
Shivaji University, Kolhapur

Subject : Regarding Syllabi of M. Com. IT Part I (Sem I/II) Choice Based Credit System (CBCS) degree programme under the Faculty of Commerce & Management as per National Education Policy, 2020

Sir/Madam,

With reference to the subject mentioned above, I am directed to inform you that the University authorities have accepted and granted approval to the revised Syllabi of **M. Com. IT (Information Technology) Part I (Sem I/II) Choice Based Credit System (CBCS)** under the Faculty of Commerce & Management as per National Education Policy, 2020

This syllabi shall be implemented from the academic year **2022-2023** onwards. A soft copy containing the syllabus is attached herewith and it is also available on university website www.unishivaji.ac.in (Online Syllabus).

You are therefore, requested to bring this to the notice of all Students and Teachers concerned.

Thanking you,

Yours faithfully,

Dy. Registrar

Encl : As above

Copy to,

1. Dean, Faculty of Commerce & Management
2. Chairman, Board of Studies

for information

3. Director, BOEE
4. Appointment Section
5. P. G. Admission Section
6. O. E. 1 Section
7. Affiliation Section (U.G./P.G.)
8. Computer Center/I.T.
9. Eligibility Section
10. Distance Education, SUK
11. P.G. Seminar Section

for information and necessary action.

SHIVAJI UNIVERSITY KOLHAPUR



ESTD. 1962
NAAC A++ Grade

Faculty of Commerce and Management

Master of Commerce-Information Technology (M. Com. (IT))
Under Choice Based Credit System (CBCS)
(Structure and Syllabus in accordance with National Education Policy to be
implemented from Academic Year 2022-23)

Shivaji University, Kolhapur
Master of Commerce (M. Com.)- Information Technology
Under the Faculty of Commerce and Management
Choice Based Credit System (CBCS)
(Regulations in accordance with National Education Policy to be implemented from
Academic Year 2022-23)

1. Implementation of Revised guidelines and rules: The revised guidelines and rules shall be implemented gradually as mentioned below:

| Postgraduate Programme: | | | |
|--------------------------------|--|---------------------|---------|
| Level 8 | Postgraduate Diploma (One year or two semesters) | M. Com. (IT)Part-I | 2022-23 |
| Level 9 | Master's Degree (Two years or four semesters) | M. Com. (IT)Part-II | 2023-24 |
| Level 9 | Master's Degree (One year or two semesters after obtaining a four-year Bachelor's Degree (Honours/Research)) | M. Com. (IT)Part-II | 2026-27 |

(If the candidate wants to exit after a certain level, the Awards after completing specific level will be: Postgraduate Diploma in Commerce and M. Com.(IT) for Level-8 and Level-9 respectively. Other provisions for multiple entry and exit as per the university's rules and regulations are applicable).

2. Eligibility: The candidate completed Three Years B. Com.(IT) Degree (or Level-7 of NEP framework) will be eligible for M. Com.(IT) Part-I (Level 8). The candidate completed Four Year B. Com.(IT) (Hon./Research) (Level-8) will be eligible for M. Com.(IT) Part-II (Level 9) directly.

3. Pattern of M. Com.(IT) Programme: Combination of internal assessment and semester-end examination for M. Com.(IT) will be 80:20 pattern shall be applicable for each theory paper in each semester wherein 80 marks shall be for University Semester-end examination and 20 marks for internal assessment except Project Work and Apprenticeship. In that case Project Work will have 60 marks and Viva-voce will have 40 marks and for Apprenticeship total 150 marks will be their which will be assessed by university appointed committee.

4. Weightage: There shall be Two Year M. Com.(IT) Programme with 74 Credits. The candidate wish to attempt for Four Year B. Com.(IT)(Hon./Research) may opt for 4th year which will have 38 credits (Please refer the university regulations and structure of the programme for details).

5. Structure: The Structure of M. Com.(IT) Programme is given below:

| Semester | Discipline Specific Course (DSC) | Discipline Specific Electives (DSE) | Field Work/ Internship/ Apprenticeship | Skill Enhancement Course (Multidisciplinary) | Credits required |
|----------------|----------------------------------|-------------------------------------|--|--|------------------|
| Level-8 | | | | | |
| I | DSC1 (4) | DSE1(4) | | SEC-1 (2) | 18 |
| | DSC2 (4) | DSE2 (4) | | | |
| | | | | | |
| II | DSC3 (4) | Research Project (4) | Internship/ Apprenticeship (6) | SEC-2 (2) Logic | 20 |
| | DSC4 (4) | | | | |
| | | | | | 38 |
| Level-9 | | | | | |
| III | DSC5 (4) | DSE1 (4) | | SEC-3 (2) | 18 |
| | DSC6 (4) | DSE2 (4) | | | |
| | | | | | |
| IV | DSC7 (4) | DSE1 (4) | | SEC-4 (2) Research Ethics | 18 |
| | DSC8 (4) | DSE2 (4) | | | |
| | | | | | 36 |
| | | | | | 74 |

6. List of Courses:

List of Courses for M. Com.(IT) Part-I (Semester-I & II) is given in the annexure.

7. Scheme of Examination:

The Question paper in each Semester for each theory course (paper) for M. Com. (all Semesters) shall be of 80 marks. Total marks for each course shall be based on continuous assessments and semester-end examination. Combination of internal assessment and semester-end examination for M. Com.(IT) will be as follows:

| | |
|-----------------------------|-------|
| Total marks for each course | = 100 |
| Internal Assessment | = 20 |
| Semester-end Examination | = 80 |

Internal Assessment Process shall be as follows:

- (a) The Internal Assessment (for 20 % Marks) shall be based on test, assignment, seminar, practical/case study, field work, project work etc. This assessment process should be conducted after completing 50% of syllabus of the course/s.
- (b) In case a student has failed to attend internal assessment on scheduled date, it shall be deemed that the student has dropped the test. However, in case of student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the Programme Coordinator/Principal/Head of the Department. The Programme coordinator/Principal/Head of the Department in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher but before commencement of the concerned semester-end examination.

(c) List of Courses

| Semester-I | | Semester-II | |
|-------------------|--|--------------------|--|
| Course Code | Course (Subject) | Course Code | Course (Subject) |
| DSC-1 | Management Concepts and Organizational Behaviour (Management Concepts) | DSC-3 | AI Applications in Management |
| DSC-2 | Managerial Economics | | |
| DSE-A-I | Emerging trends in Information Technology | DSE-A-III | Research Applications in IT (Research Methodology) |
| DSE-A-II | Computer Networks | DSE-A-IV | Research Project |
| SEC-1 | Skill Enhancement Course-1 | SEC-2 | Skill Enhancement Course-2 |
| | | I/A | Internship/ Apprenticeship |

Syllabus of M. Com.(Information Technology)
Under Faculty of Commerce and Management
Shivaji University Kolhapur

Syllabus in accordance with NEP- 2020

Introduced from Academic Year 2022-23

M.Com.(IT) -I Semester- I

DSC-1

Management Concepts and Organizational Behaviour (Management Concepts)

Objectives:

- 1) To acquaint the students with the basic management concepts and process.
- 2) To create awareness among students about the modern trends in the management and impact of globalization.

| Total Marks : 80 | | Hours of Teaching: 60 |
|--|---|------------------------------|
| UNIT I :- Evolution of Management Thought:- | Contribution of Michal porter Mary Parker Follet, Peter Drucker and C.K pralhad Management in 21st century. International Management - Impact of globlization on management. | 10 |
| Unit - 2:- Basics of Management: | Definition, characteristics and significance of management, Managerial skills, Henry Mintzberg's rolesof manager, Management of Change- Need for change, Resistance to change and remedies to overcome the resistance. | 15 |
| Unit - 3:- Managerial Functions: | Planning: Concept, significance and process. Organizing: Concept and principles, Staffing, Directingand Controlling: Concepts and process. | 15 |
| Unit - 4:- Leadership and Motivation: | (A) Leadership: Concept and theories of leadership- Traits theory, Behavioural theories, Fiedler's Contingency Theory, Harsey-Blanchard's Theory, The Managerial Grid, Likert's four systems of leadership. (B) Motivation: Concept and process of motivation, Theories of motivation- Maslow's Need Hierarchy Theory, Hertzberg's Two Factor Theory, McGregor's Theory 'X' and Theory 'Y', Alderfer's ERG theory, | 20 |

| | | |
|--|-----------------------------------|--|
| | Victor Vroom's expectancy theory. | |
|--|-----------------------------------|--|

References:

- 1) Organization and Management- Dr.C.B.Gupta
- 2) Business Organization and Management - M.C. Shukla
- 3) The Practice of Management- Peter Drucker
- 4) Principles of Management O.B. K. Aghurth
- 5) Management and Organizational Behaviour-P. Subbarao
- 6) Organizational Behaviour - Keith avis
- 7) Organizational Behaviour - Stephen Robbins
- 8) Organizational Behaviour - Dr. Anjali Ghanekar

M.Com. Part-I (Information Technology) Semester-I
DSC-2
MANAGERIAL ECONOMICS

PREAMBLE :- Managerial Economics is a new branch of Economics. It is applied Economics and constitutes Micro as well as Macro Economic theories, which are useful to business manager in daily decision making regarding his business. Therefore, it is essential to the commerce and management students to aware about the Managerial Economics. They should be well versed in the knowledge of Managerial Economics by keeping this view the syllabus of Managerial Economics is prepared accordingly, to face the problems of the business during the globalization era.

| Total Marks : 80 | | Hours of Teaching: 60 |
|---|--|------------------------------|
| Unit 1: Introduction to Managerial Economics | Meaning, Definition, Nature and Scope of Managerial Economics- Economic Theory and Managerial Theory- Role and Responsibilities of Business Manager- Managerial Economics and Decision making – Objectives of Business Firm. | 14 |
| Unit 2: Demand Analysis | Demand function- Law of Demand- Elasticity of demand- Types of elasticity of demand- Measurement of price elasticity of demand – Use of elasticity of demand in Managerial decisions. | 14 |
| Unit 3: Theory of Consumer's Choice | Indifference curve Analysis- Revealed Preference Theory. Theory of Consumer's Choice under risks- Demand forecasting – Methods of Demand Forecasting. | 16 |
| Unit 4: Production Theory | Production Function- short run production function – Long-run production function- Economics of Scale- cost concepts- their nature, shape and Interrelationship. | 16 |

| | | |
|--|----------------------|--|
| | Break Even Analysis. | |
|--|----------------------|--|

| Reference Books :- | | |
|--------------------|-------------------------------------|---|
| 1. | Dean Joel | ‘Managerial Economics’, Tata MC Graw Hill, Delhi. |
| 2. | D.N. Dwivedi | ‘Managerial Economics’, Vikas publishing House PVT Ltd. New Delhi. |
| 3. | R. Cauvery, U.K. | ‘Managerial Economics’, S.Chand& Company Ltd. New Delhi. |
| 4. | M.Girija, R. Meenakshi | |
| 5. | Gough J. & S. Hill S. | . ‘Fundamentals of Managerial Economics Macmillan, London. |
| 6. | Peterson, H. Craig & W. Cris Lewis, | ‘Managerial Economics’, Prentice Hall Delhi. |
| 7. | Dr. M.N. Shinde, | ‘Managerial Economics’, AjabPublication, Kolhapur. |
| 8. | H.L. Ahuja, | ‘Advanced Economic Theory’ |
| 9. | K.K. Dewtt, | ‘Modern Economic Theory’ S.Chand& Company Ltd. New Delhi. |
| 10. | Mehta P.L. | ‘Managerial Economics’, S. Chand & Company Ltd. New Delhi. |
| 11. | Gopal Krishna D., | ‘A Study of Managerial Economics’ Himalaya publishing house, Bombay. |
| 12. | Hague D.C. | Managerial Economic Analysis for Business Decisions, Longman Group Ltd, London. |

M.Com. Part-I (Information Technology) Semester-I

DSE-AI

Emerging Trends in Information Technology

Course Outcomes:

Students who complete this course should be able to:

1. **Make use of** social media for the different functional areas in the business.
2. **Explain** the design and architecture of mobile based applications for the business.
3. **Determine** the role of Expert Systems and Big Data Management for the Business Intelligence.
4. **Examine** Cloud Computing Architecture for transformation, development and agility in the business.

| Marks : 80 Total | Hours of Teaching: 60 | Theory: 40 | Practical: 20 |
|---|--|------------|---------------|
| UNIT I- Social Networking a) Theory | Social Networking: Definition, Types of Social Networking Sites, Examples of Social Networking Sites: Facebook, Twitter, WhatsApp, Social Networking Analysis: Attributes and Metrics of Social Networking, Social Networking Models, Security and Privacy Issues of Social Networking Sites, Business Applications: Marketing and HR, Educational Applications, Social and Political Applications. | | 10 |
| b) Practical | Case Study on usage of Social networking for Marketing with special reference to Facebook and Twitter. | | 05 |
| UNIT II- MOBILE COMPUTING a) Theory | Mobile Computing Applications: Characteristics of Mobile computing, Structure of Mobile Computing Application. Mobile Computing Platforms: Special Constrains & Requirements, Commercial Mobile Operating Systems: iOS, Android, BlackBerry, Windows M.Commerce Applications: Structure, Pros & Cons, Mobile Banking Services, Mobile Payment Systems, Security Issues in M.Commerce. | | 10 |
| b) Practical | Case Study to explain Mobile Payment system with special reference to Paytm and mPesa | | 05 |
| UNIT III- DATA ANALYTICS a) Theory | Business Intelligence- Introduction to Artificial Intelligence and Expert System, Components of Expert System, Implementing Expert System for Banking and Finance sector. Introduction to Big Data: Definition, Sources of Big Data, Characteristics of Big Data, Applications of Big | | 10 |

| | | |
|--|--|-----------|
| | Data Big Data Analytics: Introduction to Hadoop, Features, Architecture, Components of Hadoop, Map-Reduce Architecture, Examples of Map-Reduce. | |
| b) Practical | Case Study to determine the role of Expert System with special reference to Credit Risk Analysis for Banking and Finance Sector. | 05 |
| UNIT IV- CLOUD COMPUTING a) Theory | Cloud Models: NIST Cloud Computing Reference Architecture, IaaS, PaaS, SaaS, Public v/s Private Cloud, Basics of Virtualization: Types of Virtualization, Implementation Levels of Virtualization, Virtualization for Data-center, Programming Support: Google App Engine, Amazon AWS, Security in the Cloud: Data Security, Application Security, Virtual Machine Security | 10 |
| b) Practical | Case Study to examine SaaS Applications for Business with special reference to Business Productivity tool of Amazon AWS. | 05 |

Reference Book

1. Karabi Bandyopadhyay, Mobile Commerce, PHI-2013
2. Shuen Shroff, Web 2.0: A Strategy Guide, O'Reilly
3. Eva Foucher, Social Networking: The Top Social Networking Websites That Help
4. You Build an Online Presence Quickly, CreateSpace Independent Publishing Platform
5. John W. Rittinghouse and James F. Ransome, "Cloud Computing: Implementation, Management, and Security", CRC Press, 2010.
6. Toby Velte, Anthony Velte, Robert Elsenpeter, "Cloud Computing, A Practical Approach", Tata MacGraw Hill, 2009.
7. Jy Liebowitz, "Big Data and Business analytics", CRC press, 2013.
8. Tom White, Hadoop: The Definitive Guide, O'Reilly, 3rd edition
9. Decision Support Systems and Data Warehouse, B. Ravinath, New Age International Publishers

M.Com. Part-I (Information Technology) Semester-I

DSE AII: Computer Networks

Course Outcomes:

The students will be able to :

1. Visualize the different aspects of networks, protocols and network design models.
2. Analyze and compare different LAN protocols.
3. Examine various Data Link layer design issues and Data Link protocols.
4. Compare and select appropriate routing algorithms for a network.
5. Examine the important aspects and functions of different layers in internetworking.

| Marks : 80 Total | | Hours of Teaching: 60 | Theory: 40 | Practical: 20 |
|------------------|--|-----------------------|------------|---------------|
| Unit I | Basics of Data communication | | | 10 |
| a) Theory | Data Communication concept -Components-sender, receiver, message, transmission media, Data Flow- simplex, half-duplex, or full-duplex, Networks- Definition, Advantages and disadvantages, Categories of Networks- LAN, WAN. MAN, Network Architecture-Client-Server and Peer to peer, Multiplexing – Frequency Division Multiplexing, Wavelength-Division Multiplexing, Time-Division Multiplexing, switching -Circuit switching, Packet Switching, Message Switching | | | |
| b) Practical | Case study on Network topology | | | 05 |
| Unit II | Transmission media and Reference Models | | | 10 |
| a) Theory | Transmission Media: Guided Media - Twisted-Pair Cable, Coaxial Cable, Fiber-Optic Cable, Unguided Media: Radio Waves, Microwaves, Infrared, satellite communication Transmission Modes- Parallel and Serial -(Asynchronous, Synchronous) Reference Models- OSI reference model, TCP/IP reference model, Comparison of OSI and TCP/IP reference model, Protocol Standards, IP address scheme and characteristics of IP address. | | | |
| b) Practical | Case study on network components | | | 05 |
| Unit III | Data link, Network and Transport layer | | | 10 |
| a) Theory | Data link Layer- Design issues, Framing, error detection and correction, Network layer- design issues of network layer, , Classless and Classfull Addressing, Routing algorithm (shortest path, Flooding, distance vector), Congestion control, Transport layer - Transport Layer Primitives: listen, connect, send, receive, disconnect, Protocols: TCP, UDP | | | |
| b) Practical | Case study on structure of different IP address scheme. | | | 05 |
| Unit IV | Session, Presentation and Application layer | | | 10 |
| a) Theory | Session layer: Services- dialog management, synchronization, activity management, exception handling, Remote procedure calls, Presentation layer:- Services: Translation, compression, encryption, Cryptography: concept, symmetric key & asymmetric key cryptography, | | | |

| | | |
|---------------------|--|-----------|
| | Application layer: Functions, DNS, SMTP, SNMP, FTP, HTTP | |
| b) Practical | Study of different application layer protocols | 05 |

Reference Books :

1. Behrouz A. Forouzan: Data Communications and Networking, 4th Edition, Tata McGrawHill, 2006.
2. William Stallings: Data and Computer Communication, 8th Edition, Pearson Education, 2007.
3. Larry L. Peterson and Bruce S. David: Computer Networks - A Systems Approach, 4th Edition, Elsevier, 2007.
4. Andrew S. Tanenbaum: Computer Networks, 4th Edition, PHI.
5. Internetworking With TCP/IP, Douglas Comer, volume 1, Prentice-Hall Publisher, 2005
6. Nader F. Mir: Computer and Communication Networks, Pearson Education, 2007
7. Black, Data & Computer Communication, PHI
8. Miller, data Communication & Network, Vikas

M.Com.(IT) -I Semester- II
DSC-3: Discipline Specific Course
AI Applications in Management

| Course | Course Content | Total 100 Marks |
|-------------------------|---|--|
| Course Outcomes: | After completion of this course student should be able to- 1. To understand different problem solving techniques in AI. 2. To Analyze the process of developing Expert System 3. To identify different AI based models used for data analysis 4. To determine the role of AI in management. | (Marks: 80 for Examination & 20 Internal Evaluation) |
| Unit-I: | AI Problem solving | 15Hours |
| Theory: | AI Problem solving: Introduction to AI, heuristic techniques-Generate and-test, Hill climbing, Best-First Search problem reduction, constraint satisfaction, Mean-Ends analysis Knowledge representation – mapping between facts and representations, Approaches to knowledge representation, Issues in knowledge representations, searching techniques | |
| Practical: | Identify any AI application based on searching techniques. | |
| Unit-II | Expert system | 15Hours |
| Theory: | Introduction and Characteristics of Expert system, Advantages and disadvantages, Applications of Expert system, Components of Expert Systems, Rule based knowledge representation techniques , Inference Engine, Forward chaining, backward chaining, Factors associated with development of an Expert System, Expert system life cycle. Introduction to Expert system shell. | |
| Practical: | Analyse the role of expert system in Health Care with its limitations. | |
| Unit-III | AI Models | 15Hours |
| Theory: | Introduction Fuzzy Sets, Fuzzy Rules, Linguistic Variables and hedges Operations of Fuzzy sets, Fuzzy inference, Certainty factor Artificial Neural Network: The Neural as a simple computing element, The perception Multilayer Neural network, Application of Neural Network. | |
| Practical: | .Develop a model for Rain forecasting based on weather conditions. | |
| Unit-IV | AI applications in Management | 15Hours |
| Theory: | Information Retrieval, Information Extraction, Natural Language Processing, Machine Translation, Speech Recognition, Robotics, Sales Funnel Analysis, Planning and Perception, Customer Segmentation and Value, Future of Artificial Intelligence. | |
| Practical: | Evaluate the role of AI techniques in any organization (Service/Manufacturing organization.) | |

Reference Books:

1. E. Rich and K. Knight, "Artificial Intelligence", Tata McGraw Hill.
2. Sivanandam Principles of Soft Computing, 2ed, w/cd, wiley
3. E. Charnaik and D. McDermott, "Introduction to artificial Intelligence", Addison-Wesley Publishing Company.
4. Dan W. Patterson, "Introduction to Artificial Intelligence and Expert Systems", PHI.
5. Nils J. Nilson, "Principles of Artificial Intelligence", Narosa Publishing Co.
6. W.F. Clofisin and C.S. Mellish, "Programming in PROLOG", Narosa Publishing Co.
7. M. Chandwick and J.A. Hannah, "Expert Systems for Personal Computers", Galgotia Publications Pvt. Ltd.
8. M.Sasikumar, S.Ramani etc. "Rule based Expert System", Narosa Publishing House.

**DSC-A III: Discipline Specific Course
Research Applications in IT (Research Methodology)**

| Course | Course Content | Total 100 Marks |
|---------------------------|--|------------------------|
| Course Outcomes | <p>After completion of this course student should be able to-</p> <ol style="list-style-type: none"> 1. Define various terms used in research process 2. Describe research design, sample design and sampling methods 3. Apply appropriate methods for data collection and data analysis for research work and write research report. 4. Design Research proposal in the area of Information Technology. | |
| Marks:100 | Total Hours of Teaching: 60 University Exam :80 | Internal :20 |
| Syllabus Contents: | | |
| Unit 1: | <p>Introduction to Research and Research Design:</p> <p>Research Introduction: Meaning, Objectives and Motivation in Research, Types of Research, Research Approaches, Research Process. Research Design: Meaning and Significance of Research Designs, Features of a Good Research Design, Types of Research Design, Contents of Research Design.</p> | 10Periods |
| Practical | <p>Enlist Number of Contemporary information technology problems for Which Research is Required. Discuss the Research Issues/Problems in Class for Better Comprehension. Prepare Statement of a Research Problem for Every information technology Problems.</p> | 5 Periods |

| | | |
|------------------|---|-------------------|
| Unit 2: | Sampling and Data Collection: Sample Design: Steps in Sample Design, Determining the Size of | 10 Periods |
| | Sample, Sampling Methods - Simple Random Sampling, Stratified Sampling, Systematic Sampling, Cluster Sampling and Selective Sampling. Measurement of Data: Measurement and Scaling Techniques, Errors in Measurement, Tests of Sound Measurement, Scaling and Scale Construction Techniques. Data Collection: Types of Data, Sources of Data– Primary and Secondary, Methods of Collecting the Data. Tools For Data Collection: Questionnaire, interview, schedule, mail survey, email/ internet. Steps in Questionnaire Design, Characteristics of a Good Questionnaire, Testing the Validity of the Data. | |
| Practical | Select Any One Statement of Research Problem Out of Above Enlisted Problems in practical on first unit. Prepare a Detailed Research Design. Design the Research for Small Sample Size. | 5Periods |
| Unit 3: | Data Analysis and Report Writing Data Analysis: Introduction to data analysis, Statistical techniques for data analysis, Hypothesis: Meaning, Hypothesis Formulation, Types of Hypothesis, Characteristics of Good Hypothesis, Testing of Hypothesis -Types ofHypothesis test. Report writing and layout of report. | 10 Periods |
| Practical | Prepare a Comprehensive Report of Research Under Study. Use Layout of Project Report Containing Five Chapters for Righting a Report. | 5 Periods |
| Unit 4: | Case Studies on research areas in Information Technology: Big Data, Cloud computing and AI. | 10 Periods |
| Practical | Select any one research areas from this unit and Prepare research proposal. | 5 Periods |

Reference Books:

1. Research Methodology, G. C. Ramamurthy, Dreamtech Press
2. Research Methodology-Concepts and Cases, Deepak Chawala, Neena Sondhi, Vikas Publication
3. Research Methodology Methods & Techniques, C. R. Kothari, New Age International Zikmund Thomson SouthWestern, Edition, 2nd
4. Business Research Methods, Donald Cooper & Pamela Schindler, TMGH
5. Business Research Methods, Alan Bryman & Emma Bell, Oxford Univpress

Nature of Question Paper:

Marks:80

Duration : 3Hrs

Instructions: 1) Question number 1, 2 and 3 are compulsory

2. Attempt any two questions from question number 4 to 6

Q1 a. Choose the appropriate alternative (10)

b. True or false (6)

Q.2 Case Study/Problem (16)

Q.3 Short Notes (any 4 out of 6) (16)

Q.4 Long answer question/practical problem (16)

Q.5 Long answer question/practical problem (16)

Q. 6. a. Short answer question/ problem (8)

b. Short answer question/ Problem (8)

DSC-A IV: Discipline Specific Course

Research Project

Course Outcomes:

The students of this course will be able to:

1. Recognize issues in IT implementation.
2. Critically apply theory to issues in IT implementation in order to identify and justify effective IT implementation.
3. Design IT implementation framework for implementation of IS in business organization.

Student has to prepare the project report under the guidance of allotted guide. Student should prepare research project related to the IT implementation in various functional areas of management with respect to any organization. Principal of the college will decide the last date of submission of final copy. Student should submit two typed copies to the college (One copy for the college and another copy for his/her personal record. Students may prepare additional copies for the guide etc.) A viva- voce examination will be conducted after the Semester IV examination. Committee will be appointed by the University for Project Evaluation and viva-voice. A committee will consist of 3 members. (One expert is internal and two are external chairman will be from external experts and have to submit final marks to the university.

Project Report is to be evaluated for 100 marks by committee bifurcated as 60 Marks for project work and 40 Marks for Viva-Voce

GUIDELINES FOR PROJECT WORK:

1. A student has to take project work at the Sem.-II.
2. Research project is done individually.
2. Student should take guidance from allotted guide.
3. Two copies of “Project Work” should be submitted to the principal of the college in stipulated time.
4. The nature of project work should be such that it could be useful for organization, industry and students as well.
5. The project report shall be duly assessed by the external committee appointed by university. shall be communicated by the Principal to the University after receiving the Seat Numbers from the University along with the marks of internal credit from theory and practical to be communicated for all other courses.

6. Student should not use logos and name of company on the project report pages.
7. Header and Footer shall consist of university name and institute name respectively. No other information should be included in the Header and Footer.
8. Use of colours in text matter should be avoided.

DETAILS OF PROJECT REPORT

TITLE: Title of research should be specific in nature, it should be short, crispy and should reflect management problem.

CONTENTS: The contents should be given in the following manner in tabular form

| Sr.No | Chapter | Page No |
|-------|---------|---------|
| | | |

- a. Serial number of the chapter.
- b. Heading of the chapter
- c. Page numbers.

Distribution of Marks: Project report viva voce of 100 Marks bifurcated into Projectwork - 60 Marks and Viva-Voce -40 Marks

FORMAT OF PROJECT REPORT

Preface

- a) Certificate of the college
- b) Declaration by Guide
- c) Declaration of Students
- d) Acknowledgement

Contents/ index

Heading of the chapter, page numbers, sub headings of the chapter.

Chapter I – Introduction to the study & Research Methodology

- 1.1 Introduction
- 1.2 Objective and importance of the study
- 1.3 Scope and limitations of study
- 1.4 Research Methodology

Chapter II – Theoretical Background

Chapter III – Introduction to the Organisation

- a. Name of the unit
- b. Location or address of the unit
- c. Brief history of the unit and present position
- d. IT Infrastructure in organisation
- e. Organization chart

Chapter IV – Analysis or Interpretation of Data

Chapter V – Findings, Suggestions and Conclusions

Appendices Bibliography

APPENDICES

The document charts, questionnaires, tables, schedules etc which are actually referred to in the body of the project report (this consists of chapters I to VI) are to be included under appendix or appendices. So, the appendices may include.

- a. Questionnaires used for collecting information.
- b. Schedules used for collecting information.
- c. Tables formed for presenting the data.
- d. Documents/forms etc., referred to in the body of the project report.
- e. Diagram, graphs etc. referred to in the body of the project report.
- f. Guide student meeting record form.

BIBLIOGRAPHY

Bibliography means list of books, journals, published work actually referred to or used in the writing of the project report. This is not a separate chapter. The bibliography has to be written in a specific manner. It must be in the following manner.

The name of author (surname followed by initials), title of the book (is to be underline), year of publication, place of publication, number of the edition, name of the publisher in full (address), pages referred to. Or bibliography should be written following international standards as APA or MLM system.

M.Com.(IT) -I Semester- II
DSC-I/A: Internship/ Apprenticeship

| | | | |
|---|---|----------------------|-------------|
| Course Outcomes | After completion of this course student should be able to- 1. Identify the problem in existing system and develop SRS. 2. Understand the industrial line of work and corporate work culture. 3. Select appropriate technology platform for problem solving 4. Develop application using appropriate technology platform. 5. Test developed application for user acceptance. 6. Write project report in professional format. | | |
| Marks:150 | | University Exam :100 | Internal:50 |
| Guide Lines for Internship/ Apprenticeship: | | | |
| 1. Project Internship/Apprenticeship is to be completed by the student at any commercial organisation/NGO, Government or Semi-Government organisation, cooperative society, bank, local authority etc. (The list is for reference only; not exhaustive; other similar organisations can be considered for I/A) 2. Internship/Apprenticeship is to be completed by the student under the guidance of mentor from the college as well as industry/organisation guide where he/she is doing internship/apprenticeship. 3. Internship//Apprenticeship Report is to be prepared which shall be based on the field work and a copy of it has to be submitted to the college/ university department before commencement of semester end examination. 4. Total duration of Internship/Apprenticeship shall be of 180 hours. The college/university department has flexibility to allow the students to complete the Internship/Apprenticeship at any time during the semester, but the report of I/A has to be submitted before commencement of semester end examination. 4. The format for the submission of the Internship Report. a. Paper: The Report shall be typed on white paper, A4 size, for the final submission. The report to be submitted must be original and subsequent copies may be photocopied on any paper. b. Typing: The typing shall be of standard letter size, 1.5 spaced and on both side of the paper. (Normal text should have Times New Roman, Font size 12. Headings can have bigger size) c. Margins: The typing must be done in the following margins: Left -----1.5 inch, Right -----1 inch Top ----- 1 inch, Bottom ----- 1 inch | | | |

d. Front Cover:

The front cover should contain the following details:

TOP : The title in block capitals of 6mm to 15mm letters.

CENTRE: Full name in block capitals of 6mm to 10mm letters.

BOTTOM: Name of the University, Course, Year of submission -all in block capitals of 6mm to 10mm letters on separate lines with proper spacing with center alignment.

e. Blank Sheets:

At the beginning and end of the report, two white black papers should be provided, one for the purpose of binding and other to be left blank.

Documentation Format

- a) Cover Page
- b) Institute/College Recommendation
- c) Organization Certificate
- d) Guide Certificate
- e) Declaration
- f) Acknowledgement
- g) Index

Chapter Scheme**1) Introduction to Project**

- Introduction
- Existing System
- Need and scope of Computer System
- Organization Profile(Optional & applicable for live project only)

2) Proposed System

- Objectives
- Requirement Engineering.
 - Requirement Gathering
 - Software Requirements

3) System Analysis

- System Diagram
 - DFD
 - ERD
 - UML(if applicable)

(Note: Use advanced tools and techniques as per requirement.)

4) System Design

- Database Design
- Input Design & its samples
- Output Design (on screen)

5) Implementation

- System Requirement
 - Hardware
 - Software
- Installation process

- User Guideline

6) Reports (with valid Data)

(Minimum 6-10 reports)

7) Conclusion and Suggestions

- Conclusion
- Limitations
- Suggestion

Annexure

- Source code(Include Main Logic source code)
- Questioner/Schedule(if used)
- Joining Report, Progress Reports ,Student Guide Meet Record

References

In case of unsatisfactory project work and performance in the viva voce of the said candidate's project is to be rejected with written justification in the following format.

| | |
|--|--|
| SHIVAJI UNIVERSITY, KOLHAPUR | |
| M.Com.(IT) Part – II (Sem- II) | |
| Examination Center: | |
| Name of the Candidate: | |
| Title of Project: | |
| Name of the Guide: | |
| The committee undersigned unanimously reject the project due to following reasons. | |
| 1. The performance of candidate is unsatisfactory hence rejected: Examiners Comments: | |
| 2. The project is found to be copied hence rejected*: | |

*In case of copied project the formal process of reporting copy to the university is to be followed with the said proforma duly filled and signed by members of committee.