Dr. J. J. Magdum Trust's
Dr. J. J. Magdum College of Engineering, Jaysingpur
(An Autonomous Institute)
Master of Computer Application

Curriculum Structure as per NEP 2020, Academic Year: 2024-25

Programme Outcomes (PO):

Graduates will be able to*:*

1. Apply knowledge and skills to solve information technology problems using advanced available tools.

2. Function effectively in multi-disciplinary teams and work as a team member and team leader to get technical solutions.

3. Understand, Design and evaluate solutions for complex computing problems, and design and evaluate systems, components, or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.

4. Create, select, adapt and apply appropriate techniques, resources, and modern computing tools to complex computing activities, with an understanding of the limitations.

5. Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

6. Communicate with customer, colleagues, and managers. Communicate effectively with the computing community, and with society at large, about complex computing activities by being able to comprehend and write effective reports, design documentation, make effective presentations, and give and understand clear instructions.

7. Maintain professional work ethic, appearance, and demonstration of personal responsibility.

8. Recognize the need, and have the ability, to engage in independent learning for continual development as a computing professional.

9. Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary environments.

10. Identify a timely opportunity and using innovation to pursue that opportunity to create value and wealth for the betterment of the individual and society at large.

11. Implement cost effective and improved system.

12. Develop confidence for self-education and ability for lifelong learning.

Program Specific Outcomes (PSO):

PSO 1	Understand the structure, development methodologies of software systems, possess professional skills and obtain competency with a broad range of programming languages and platforms.
PSO 2	Apply analysis, design and development principles to provide user interactive solutions for various challenges.

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...:
Teaching and Evaluation Scheme
MCA (Master of Computer Application)
First Year MCA. (Semester- I)

Sr. No.	Course Code	Course Title	L	T	P	Contact Hrs/Wk	Course Credits	Theory CIE T-I	Theory CIE T-II	Theory CIE ISE	Theory ESE	Practical CIE	Practical ESE	TOTAL
1	01MCL101	Operating System	3	-	--	3	3	20	20	10	50	--	--	100
2	01MCL102	Python Programming	3	-	--	3	3	--	--	--	--	--	--	--
3	01MCL103	Database Management System	3	-	--	3	3	20	20	10	50	--	--	100
4	01MCL104	Software Engineering	3	1	--	4	4	20	20	10	50	--	--	100
5		Program Elective-I	3	1	--	4	4	20	20	10	50	--	--	100
6	01MCP105	Python Programming	--	--	4	4	2	--	--	--	--	50	50	100
7	01MCP106	Database Management System	--	--	2	2	1	--	--	--	--	50	50	100
8	01MCP107	Communication Skills	1	--	2	2	2	--	--	--	--	--	50	50
9	01MCL108	Audit Course - I	2	--	--	2	Audit	--	--		--	50	--	50
		Total	**17**	**02**	**08**	**27**	**22**	**80**	**80**	**40**	**200**	**150**	**150**	**700**

L- Lecture , T- Tutorial , P- Practical , T-I-Test I, T-II- Test II,
ISE- In Semester Evaluation, CIE- Continuous Internal Evaluation, ESE- End Semester Examination,

Program Electives - I

Sr.No.	Course Code	Courses
01	01MCL109	Open-Source Technologies
02	01MCL110	Digital Marketing

Master of Computer Application (MCA)

Under Faculty of Science and Technology (Engineering and Technology)

Part   I   Semester

01MCL101: Operating System

Course Details:

Course Details Class	First Year M.C.A. Sem-I
Course Code and Course Title	01MCL101:Operating System
Prerequisites	Basics of Computer Hardware and software
Teaching scheme: Lectures	3 Hrs.
Credits	3
Evaluation Scheme ESE + CIE for Theory	50 (ESE) + 50 (CIE)

Teaching scheme	Examination scheme
Lectures: 3 Hrs. /Week	Theory: 100 Marks, 50 (ESE) +50 (CIE)
Tutorial: - -NA	TW: --NA

Course Outcomes:
1. Student will able to understand the basic concepts of operating systems and processes.
2. Student will able to analyze Scheduling algorithms and concept of Deadlocks.
3. Student will able to apply various memory management schemes.
4. Student will able to understand the basics of Distributed Operating System

UNIT 1 : Introduction to Operating system   (12 HOURS)

Introduction**:** Operating system definition, Functions of Operating System, Logical View, System View, Types **of** operating System, System Calls, System Programs.

Processes**:** Process Concept, Thread Concept, Difference between Process and Thread, Process Control Block, Process operations, Inter-process Communication, Communication in Client-Server.

UNIT 2 : CPU Scheduling & Process Synchronization   (12 HOURS)

CPU Scheduling**:** Scheduling Concept, Scheduling Criteria, Scheduling algorithms, Scheduling Evaluation, Simulation Concept.

Process Synchronization**:** Synchronization concept, Need for Synchronization, Critical Section Problem, Semaphore, Monitor.

Deadlock: Deadlock concepts, Necessary Conditions for Deadlock, Deadlock Prevention, Deadlock Avoidance, Bankers Algorithm, Deadlock Detection, Deadlock Detection Algorithm for Single and Multiple Instance of Resources, Deadlock Recovery.

UNIT 3 : Memory& File Management   **(12 HOURS)**

Memory Management: Concept, Memory Management Techniques, Contiguous &Non Contiguous allocation, Relocation, Compaction, Logical & Physical Memory, Conversion of Logical to Physical address, Paging, Segmentation, Segment with paging, Virtual Memory Concept, Demand paging, Page fault.

File Management: File Structure, Protection, FILE system, Implementation, Directory structure, Free Space Management, File Access Methods, File Allocation Methods, Recovery.

UNIT 4 : Distributed Operating System   **(12 HOURS)**

Disk Management: Disk Structure, Disk Scheduling algorithm, Disk management, Swap Space concept and Management, RAID structure, Disk performance issues.

Distributed Operating System: Difference between Distributed & Centralized OS, Advantagesof Distributed OS, Types of Distributed OS

Text Books:
1. Operating System Silberschatz, Galvin , Gagne, Wiley publication
2. Operating System Concepts and Design , Milan Milenkovic, MGH

References:
1. Distributed Operating System P.K. Sinha, PHI
2. Operating system Achyut Godbole
3. Operating System In Depth Doeppner Wiley India
4. Operating System Rohit KhuranaVikas pub.

01MCL102: Python Programming

Course Details:

Course Details Class	First Year M.C.A. Sem-I
Course Code and Course Title	01MCL102: Python Programming
Prerequisites	Basics of Programming Languages C, C++
Teaching scheme: Lectures + Practical	3 Hrs. + 4 Hr.
Credits	3 + 2 = 5
Evaluation Scheme ESE + CIE for Theory	50 (ESE) + 50 (CIE)

Teaching scheme	Examination scheme
Lectures: 3 Hrs. /Week	
Practical: 2 Hr./Week	Practical:100 Marks POE: 50 Marks + TW(CIE): 50 Marks

Course Outcomes:
1. Student will able to Learn Basic Syntax of Python Programming.
2. Student will able to understand and implement concepts of object oriented methodology using Python.
3. Student will able to learn collections in Python.
4. Student will able to develop problem solving skills and their implementation through Python.

UNIT 1 : Introduction to Python   (12 HOURS)

Introduction to Python: an interpreted high level language, interactive mode and script mode. Variables, Expressions and Statements, Variables and Types-mutable and Immutable variable and Keywords. Operators and Operands in Python. (Arithmetic, relational and logical operators), Operator precedence .Expressions and Statements (Assignment statement); Taking input (using raw input) and input()) and displaying output - print statement, Comments in Python. Conditional and Looping Construct if - else statement and nested if – else while, for, use of rangefunction in for, Nested loops, break, continue.

UNIT 2 : Functions & Strings   (12 HOURS)

Functions: Built-In Function, invoking built in functions, Functions from math, random, time & date,User Define Function. Strings: Creating, initializing and accessing the elements; String operators: +, *, in, not in, range, slice [n:m], String built in functions & methods,Strings constants defined in string module, Regular Expression and Pattern Matching.

UNIT 3 : Lists, tuples, sets & dictionaries   (12 HOURS)

Lists: Concept of mutable lists, creating, initializing and accessing the elements of list, List operations. Tuples: Immutable concept, creating, initializing and accessing the elements in a tuple; Tuple functions: cmp(), len(), max(), min(), tuple(). Sets: Concept of Sets, creating, initializing and accessing the elements of Sets operation(Membership, union, intersection, difference, and symmetric difference. Dictionaries: Concept of key-value pair, creating, initializing and accessing the elements in a dictionary, Traversing, Dictionary functions & Methods.

UNIT 4   (12 HOURS)

Modules: Executing modules as scripts, The Module Search Path, ―Compiled‖ Python files Standard Modules , The dir( ) Function ,Packages Importing * From a Package. I/O and File Handling:, Output Formatting ,Reading and Writing Files(text and binary mode).Errors and **Exceptions:** Syntax Errors, Exceptions, Handling Exceptions, Raising Exceptions. Introduction to Object Oriented concepts in Python.

This course should consist of 10 to 12 programming exercises with focus on covering the hands-on aspects.

Text Books

1. Learning Python By Mark Lutz,O'Reilly Publication
2. Programming with python, A users Book, Michael Dawson, Cengage Learning
3. Python Essential Reference, David Beazley, Third Edition 5. Python Bible

References:

1. Practical Programming: An introduction to Computer Science Using Python, second edition, Paul Gries, Jennifer Campbell, Jason Montojo, The Pragmatic Bookshelf.
2. Python for Informatics: Exploring Information, Charles Severance
3. John V Guttag. ―Introduction to Computation and Programming Using Python‖, Prentice Hall of India
4. Nageswara Rao, ―Core Python Programming‖, Dreamtech

01MCL103: Database Management System

Course Details:

Course Details Class	First Year M.C.A. Sem-I
Course Code and Course Title	01MCL103: Database Management System
Prerequisites	Basics of Database
Teaching scheme: Lectures + Practical	3 Hrs. + 2 Hr.
Credits	3 + 1
Evaluation Scheme ESE + CIE for Theory	50 (ESE) + 50 (CIE)

Teaching scheme	Examination scheme
Lectures: 3 Hrs. /Week	Theory: 100 Marks, 50 (ESE) +50 (CIE)
Practical: 2 Hr./Week	POE: 50 Marks , TW(CIE): 25 Marks

Course Outcomes:

1. Student will able to understand basic concepts of DBMS and RDBMS.
2. Student will able to apply and practice data modeling using the entity-relationship and developing database designs.
3. Student will able to apply Structured Query Language (SQL) and learn SQL syntax.
4. Student will able to understand the needs of database processing and learn techniques for controlling theconsequences of concurrent data access.

UNIT 1 : Basics Of DBMS   (12 HOURS)

Basics Of DBMS: Database Concept, Characteristics and architecture of DBMS, Database users, 3-tier architecture of DBMS-its advantages over 2-tier, Introduction of Parallel, Distributed Databases, Mobile databases and Cloud databases.

UNIT 2 : Introduction to RDBMS & Normalization   (12 HOURS)

Introduction to RDBMS: Entity introduction, characteristics, Comparison between DBMS, RDBMS, Generalization and Aggregation
Normalization: Functional dependency, types of normalization (1NF, 2NF, 3NF, BCNF).
Data constraint: Primary key, Foreign key, Unique key, Null, Not Null, Default key.

UNIT 3 : SQL & NOSQL

SQL: Introduction to SQL, Features of SQL, Basic data types, SQL statements/commands, Set operations in SQL, order by and group by clause, between, in, like, create index, view and join command Nested queries, GRANT and REVOKE, Commit, Rollback, Save point. Join concept, Join Types, View.

NOSQL: Definition and Introduction, Features and Types of NOSQL databases, Sorted Ordered Column-Oriented Stores, Key/Value Stores, Document Databases, Graph Databases

Concurrency Control and Transaction Management: Transaction processing and

Unit 4: Concurrency control & transaction management   (12 Hours)

Concurrency control & transaction management, Concept of transaction processing, ACID properties, Locking techniques, Timestamp based protocols, Granularity of data items, Deadlocks. Database Recovery & Backup.

This course should consist of 10 to 12 programming exercises with focus on covering the hands-on aspects.

Text Books:

1. Introduction to database systems C. J. Date Pearsons Education 8th
2. Database system concept Korth, Silberschatz and Sudarshan MGH 5th

References:

1. Fundamentals of Database Systems Elmasri Navathe PearsonEducation5th
2. SQL /PL SQL For Oracle 11G BlackBook Dr.Deshpande WileyDreamtech2012
3. ORACLE PL/SQL Programming Scott Ulman TMH 9th
4. SQL, PL/SQL the programming language of Oracle Ivan Bayross BPB 4th
5. Advance Database Management System hakrabharati/DasguptaWileyDreamtech2011
6. Database Management systems Ramakrishnan&Gehrke, McGraw-Hill,3rd Ed..

01MCL104: Software Engineering

Course Details:

Course Details Class	First Year M.C.A. Sem-I
Course Code and Course Title	01MCL104: Software Engineering
Prerequisites	Basics of Computer Hardware and software
Teaching scheme: Lectures + Tutorial	3 Hrs. + 1Hr
Credits	3 + 1
Evaluation Scheme ESE + CIE for Theory	50 (ESE) + 50 (CIE)

Teaching scheme	Examination scheme
Lectures: 3 Hrs. /Week	Theory: 100 Marks, 50 (ESE) +50 (CIE)
Tutorial: 1 Hr./Week	TW: NA

Course Outcomes:

1. Students will get foundation of software engineering, various process models and can apply the new models in development process.
2. Students will have effective communication and interaction skills for requirement engineering tasks.
3. Students can implement good coding practices and testing strategies thoroughly using testing tools.
4. Students will understand the need of lifelong learning and adapt to new software engineering concepts.

Unit-1 Introduction to Software Engineering   (9 HOURS)

Introduction to Software Engineering

Definition, need for Software Engineering, Software Engineering Problem, Software Engineering approach, Software Development Life Cycle

Process Models-Water fall model- Classical, Iterative, Prototyping Model, Spiral Model, Rapid Application Development (RAD)

Unit-2 Requirements Anticipation and Investigation

(12 HOURS)

Requirements Anticipation and Investigation

Fact finding methods, Software requirement Specification (SRS)-Concept, Need, Characteristics, Components, Structure of SRS. Decision Analysis Tools:-Decision Tree, Decision TableData Flow Diagrams, Entity Relationship Diagram

Unit-3 : Design of input & Control   (12 HOURS)

Design of input & Control

Objectives of Input Design, Input Validations,

Design of output:- Objectives of Output, Design Types Of Output, Coupling & Cohesion

User Interface design: Elements of good design, design issues, features of modern GUI, error messages etc.,

Unit-4: Coding: Programming principles and guide lines, Coding process   (12 HOURS)

Coding: Programming principles and guide lines, Coding process

Testing: Testing fundamentals and types of Testing, Unit Testing, Integration Testing, System Testing, Alpha testing & Beta testing, Black Box, White Box, Testing process

Case Studies: Airline reservation System, Tours & Travels management System, Sales & PurchaseManagement System, Library Management System, Hospital Management System

Text Book-

1. System Analysis and design and Introduction to Software Engineering by Parthsarathi, B.W. Khalkar, Everest Publishing House

Reference Books-

1. An Integrated Approach to Software Engineering by Pankaj Jalote, Tata McGraw-Hill
2. Fundamentals of Software Engineering by Rajib Mall, PHI Learning
3. Software Engineering by R.S. Pressman, Tata McGraw-Hill
4. Software Engineering by Martin Shooman, McGraw-Hill

01MCL109: Open Source Technology

Course Details:

Course Details Class	First Year M.C.A. Sem-I
Course Code and Course Title	01MCL109: Open Source Technology
Prerequisites	Basic of Computer Technology
Teaching scheme: Lectures + Tutorial	3 Hrs. + 1 Hr.
Credits	3 + 1
Evaluation Scheme ESE + CIE for Theory	50 (ESE) + 50 (CIE)

Teaching scheme	Examination scheme
Lectures: 3 Hrs. /Week	Theory: 100 Marks, 50 (ESE) +50 (CIE)
Tutorial: 1 Hr./Week	TW: NA

Course Outcomes:-

1. Student will able to understand the difference between open-source software and commercial software.

2. Student will able to understand the policies, licensing procedures and ethics of FOSS.

3. Student will able to understand open-source philosophy, methodology and ecosystem.

4. Student will able to awareness with Open-Source Technologies.

UNIT 1: Introduction to Open-Source   (12 HOURS)

Introduction to Open-Source: Open Source, Need and Principles of OSS, Open-Source Standards, Requirements for Software, OSS success, Free Software, Examples, Licensing, Free Vs. Proprietary Software, Free Software Vs. Open-Source Software, Public Domain. History of free software, Proprietary Vs Open-Source Licensing Model, use of Open- Source Software, FOSS does not mean no cost. History: BSD, The Free Software Foundation and the GNU Project.

Open-Source Principles and Methodology Open-Source History, Open- Source Initiatives, Open Standards Principles, Methodologies, Philosophy, Software freedom, Open-Source Software Development, Licenses, Copyright vs. Copy left, Patents, Zero marginal cost, Income-generation Opportunities, Internationalization.

Licensing: What Is A License, How to create your own Licenses, Important FOSS Licenses (Apache, BSD, PL, LGPL), copyrights and copy lefts, Patent.

UNIT 2: Open-Source projects   (12 HOURS)

Open-Source projects: Starting and maintaining own Open-Source Project, Open-Source Hardware, Open-Source Design, Open-source Teaching, Open-source media.

Collaboration: Community and Communication, Contributing to Open- Source Projects Introduction to GitHub, interacting with the community on GitHub, Communication and etiquette, testing open-source code, reporting 15
 issues, contributing code. Introduction to Wikipedia, contributing to Wikipedia or contributing to any prominent open-source project of student's choice.

UNIT 3 : Open-Source Ethics and Social Impact   (12 HOURS)

Open-Source Ethics and Social Impact: Open source vs. closed source, Open-source Government, Ethics of Open-source, Social and Financial impacts of open-source technology, Shared software, Shared source, Open Source as a Business Strategy

UNIT 4: Open-Source Ecosystem   (12 HOURS)

Understanding Open-Source Ecosystem: Open-Source Operating Systems: GNU/Linux, Android, Free BSD, Open Solaris. Open-Source Hardware, Virtualization Technologies, Containerization Technologies: Docker, Development tools, IDEs, Debuggers, Programming languages, LAMP, Open-Source Database technologies.

Text Books:

1. Open Source Technology ─ First Edition – 1 January 2009 – Kailash Vadhera
2. Open Source Technology ─ First Edition – 1 January 2009 – Bhavesh Gandhi

References:

1.Open Source Way ─ By Karsten Wade & Shawn Powers‖
2.Producing Open Source Software By Karl Fogel..

01MCL110: Digital Marketing

Course Details:

Course Details Class	First Year M.C.A. Sem-I
Course Code and Course Title	**01MCL110: Digital Marketing**
Prerequisites	**Basic of Computer Technology**
Teaching scheme: Lectures + Tutorial	3 Hrs. + 1 Hr.
Credits	3 + 1
Evaluation Scheme ESE + CIE for Theory	50 (ESE) + 50 (CIE)

Teaching scheme	Examination scheme
Lectures: 3 Hrs. /Week	Theory: 100 Marks, 50 (ESE) +50 (CIE)
Tutorial: 1 Hr./Week	TW: NA

Course Outcomes:-

1. Student will able to understand concept and significance of Digital Marketing.

2. Student will able demonstrate the Technical Elements of Digital Marketing.

3. Student will able learn contemporary developments in Digital Marketing

4. Students will able use Google analytics tools for generating various reports.

UNIT 1: Basics of Digital Marketing   (12 HOURS)

Principles of Digital Marketing, Basics of Marketing, What is Digital Marketing?, Comparison of Traditional and Digital Marketing, Statistics of Digital Marketing, Benefits of Digital marketing, Emerging trends in Digital marketing, Digital marketing platforms, Digital Marketing ,strategy for websites, Career opportunities in Digital Marketing

UNIT 2: Website Designing   (12 HOURS)

Website Designing (Word Press), Types of Websites, Basics of HTML/CSS/JavaScript, Word Press Installation on Server, Understanding the Dashboard, Changing the Default Settings, Installing and customizing themes, Content management in WP, Creating categories, pages, and posts,Adding a menu, widgets to the website, Installing usefulplugins for site features, SEO specific plugins.

UNIT 3: SEO (Search Engine Optimization) and SEM (Search Engine Marketing) (12 HOURS)

I: SEO

Introduction to SEO, How Do Search engines work?, Search Engine Algorithms, Google Algorithm Updates, Google Search Console, Keyword Research Process, Keyword Research Tools, Competition Analysis, On page Optimization strategies, Content development strategy, Title & Meta Tags, Semantic SEO, Rich Snippets Integration, Speed Optimization, Off Page Optimization, Link Building Techniques as per latest standards, Local SEO Strategies, Penguin & Panda update recovery process, Reports and SERP Management, Click here for detailedSEO Curriculum

II. SEM

Introduction to Paid Marketing, Google Ads (Google AdWords) account and billing settings, Types of Campaigns PPC Campaign Setup, AdGroups and Keywords setup, idding strategies & Conversion Tracking, AdRank, Quality Score Optimization, Ad Formats & Ad Extensions, Shopping Campaigns, Dynamic search campaigns, Display Ads Campaigns, Remarketing campaigns, Mobile Apps Marketing, Video Marketing, Google Ads (Google AdWords) tools, MCC Account, AdWords Editor Tool

UNIT 4 : Google Analytics: (12 HOURS)

Google Analytics:

Purpose of website analytics, Tools for website analytics, Installing Google Analytics, Google Tag Manager, How to use Google Tag Manager, Implement Conversion Tracking, Basic terminology and KPI's, Audience Reports, Customer Acquisition Reports, Behavior Reports, Goals and Conversion Reports, Segmentation and Filters

Text Books:

1.Digital Markrting by Vibha mhatur, Saloni Arora.
2. Digital Marketing: Strategy, Implementation & Practice by Dave Chaffe,fiona ellis-chadwick

Reference Books:

1.MARKETING IN THE DIGITAL AGE Dinesh Kumar Professor of Marketing, JagranLakecity University, Bhopal Marketing faces a huge challenge in the digital era. T

2. Marketing 4.0: Moving from Traditional to Digital‖ by Philip Kotler

3.The Art of Digital Marketing: The Definitive Guide to Creating Strategic, Targeted, and Measurable Online Campaigns Hardcover –

4. Digital Marketing: Cases from India Paperback – 1 January 2018 by Edited by Rajendra Nargundkar and RomiSainy

01MCP107: Communication Skills

Course Details:

Course Details Class	First Year M.C.A. Sem-I
Course Code and Course Title	01MCP107: Communication Skills
Prerequisites	Oral, Written Communication
Teaching scheme: Practical	2 Hr.
Credits	1
Evaluation Scheme ESE + CIE for Theory	NA

Teaching scheme	Examination scheme
Lectures: --	Practical: 50 Marks, POE:50 (ESE)
Practical: 2 Hr./Week	TW: NA

Course Outcomes:

The objectives of this course are to introduce communication techniques, professional correspondence techniques and enhance writing skills of the students.

UNIT 1   (9 HOURS)

Communication: Nature and Importance of Communication, Objectives of Communication, Importance of Communication, Process and barriers to Communication, Elements of Communication, Forms of Communication.

Verbal Communication Techniques: Art of Speaking, Speech Styles. Oral Presentation, Preparation of Formal Speech, Meetings, Interviews, Group Discussion, Debate.

UNIT 2   (9 HOURS)

Non-verbal Communication: Meaning, Characteristics & classification of Non-verbal Communication, Body Language, Gestures, Postures, and Listening & observation skills.

Rapid review of Grammar: Corrections of common errors, Verb and its subject, forms of verb, Use of phrases and idioms, Use of infinitive Gerund and Participle, Errors & Use of Adjective and adverb , Punctuation and capitalization.

Text Books:

1. R.K. Chaddha Communication Techniques and skills – Dhanpal Rai Publication,New Delhi.
2. Pravil S. R. Bhatia, Professional Communication Skills- S. Chand and Co. New Delhi.
3. J.D.O'Connor, Better English pronunciation.

References:

1. Wren and Martin, Highschool English Grammar and Composition – Chand and Co.,New Delhi.
2. Sunita Mishra, C.Muralikrishna, Communication Skills for Engineers – Pearson Education.
3. Aspi Doctor, Principles and Practice of Business Communication Rhoda Doctor, Sheth Publication, Mumbai.
4. John Collin, ‒Perfect Presentation‖, Video Arts MARSHAL
5. Jenny Rogers ─ Effective Interviews‖, Video Arts MARSHAL
6. Raman Sharma, ─ Technical Communications‖, OXFORD

01MCL108: Audit Course - I

DISASTER MANAGEMENT

Course Details:

Course Details Class	First Year M.C.A. Sem-I
Course Code and Course Title	01MCL108: Audit Course-I
Prerequisites	Disaster Management
Teaching scheme: Lectures	2 Hrs.
Credits	--
Evaluation Scheme CIE for Theory	50 (CIE)

Teaching scheme	Examination scheme
Lectures: 2 Hrs. /Week	Theory: 50 Marks (CIE)
Tutorial: NA	TW: NA

Course Outcomes:

1. Student will able to understand how to react effectively to natural, manmade, and planetary hazards

2. Student will able to explore the history of the field and comprehend how past

   events are earthquake,Landslides and volcanic hazards.

3. Student will able to describe the basic concepts of the emergency management cycle mitigation, preparedness,response, and recovery

UNIT 1. INTRODUCTION   (4 HOURS)

Disaster: Definition, Factors And Significance; Difference Between Hazard And Disaster; Natural And Manmade Disasters: Difference, Nature, Types And Magnitude.

UNIT 2. REPERCUSSIONS OF DISASTERS AND HAZARDS   (5 HOURS)

Economic Damage, Loss Of Human And Animal Life, Destruction Of Ecosystem. Natural Disasters: Earthquakes, Volcanisms, Cyclones, Tsunamis, Floods, Droughts And Famines, Landslides And Avalanches, Man-made disaster: Nuclear Reactor Meltdown, Industrial Accidents, Oil Slicks And Spills, Outbreaks Of Disease And Epidemics, War And Conflicts.

UNIT 3. DISASTER PRONE AREAS IN INDIA   (5 HOURS)

Study Of Seismic Zones; Areas Prone To Floods And Droughts, Landslides And Avalanches; Areas Prone To Cyclonic And Coastal Hazards With Special Reference To Tsunami; Post-Disaster Diseases And Epidemics

UNIT 4. DISASTER PREPAREDNESS AND MANAGEMENT   (5 HOURS)

Preparedness: Monitoring of Phenomena Triggering A Disaster Or Hazard; Evaluation Of Risk: Application Of Remote Sensing, Data From Meteorological And Other Agencies, Media Reports: Governmental And Community Preparedness.

UNIT 5. RISK ASSESSMENT & DISASTER MITIGATION   (5 HOURS)

Disaster Risk: Concept And Elements, Disaster Risk Reduction, Global And National Disaster Risk Situation. Techniques Of Risk Assessment, Global Co-Operation In Risk Assessment And Warning, People's Participation In Risk Assessment. Strategies for Survival.
Disaster Mitigation: Meaning, Concept And Strategies Of Disaster Mitigation, Emerging Trends In Mitigation. Structural Mitigation And Non-Structural Mitigation, Programs Of Disaster Mitigation In India.

Text Books:

1. R. Nishith, Singh AK, ―Disaster Management in India: Perspectives, issues and strategies‖, New Royal book Company.

References:

1. Sahni, PardeepEt.Al, ―Disaster Mitigation Experiences and Reflections‖, Prentice Hall Of India, New Delhi.
2. . Goel S. L. ―Disaster Administration and Management Text and Case Studies‖, Deep & Deep Publication Pvt. Ltd., New Delhi.

Dr. J. J. Magdum College of Engineering, Jaysingpur
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Teaching and Evaluation Scheme
MCA (Master of Computer Application)
First Year MCA. (Semester- II)

Sr. No.	Course Code	Course Title	L	T	P	Contact Hrs/Wk	Course Credits	Evaluation Scheme							TOTAL
								Theory				Practical			
								CIE			ESE	CIE	ESE		
								T-I	T-II	ISE					
1	01MCL111	Data Communication and Network	3	1	--	4	4	20	20	10	50	--	--		100
2	01MCL112	Web Technology	3		--	3	3	20	20	10	50	--	--		100
3	01MCL113	Java Programming	3		--	3	3	--	--	--	--	--	--		--
4		Program Elective-II	3	1	-	4	4	20	20	10	50	--	--		100
5	01MCP114	Mini Project	--	--	6	6	3	--	--	--		50	50		100
6	01MCP115	Web Technology	--	--	2	2	1	--	--	--	--	50	50		100
7	01MCP116	Java Programming	--	--	4	4	2					50	50		100
8	01MCP117	Professional Communication	1	--	2	2	2	--	--	--	--	--	50		50
9	01MCL118	Audit Course - II	2	--	--	2	Audit	--	--	--	--	50	--		50
		Total	15	02	14	30	22	60	60	30	150	200	200		700

L- Lecture , T- Tutorial , P- Practical , T-I-Test I, T-II- Test II,
ISE- In Semester Evaluation, CIE- Continuous Internal Evaluation, ESE- End Semester Examination,

Program Elective -II

Sr. No.	Course Code	Courses
01	01MCL119	Internet of Things
02	01MCL120	Cyber Security

01MCL111: Data communication and Network

Course Details:

Course Details Class	First Year M.C.A. Sem-II
Course Code and Course Title	01MCL111: Data communication and Network
Prerequisites	Basics of Computer Network
Teaching scheme: Lectures	3 Hrs.
Credits	3 + 1
Evaluation Scheme ESE + CIE for Theory	50 (ESE) + 50 (CIE)

Teaching scheme	Examination scheme
Lectures: 3 Hrs. /Week	Theory: 100 Marks, 50 (ESE) + 50 (CIE)
Tutorial: --NA	TW: NA

Course Outcomes:

1. Student will able to understand the basic concepts of data communication and Networking.
2. Student will able to evaluate the performance of various networking models.
3. Student will able to analyze the performance of network on the basis of different services provided by it.
4. Student will able to identify security threats to network and tools to control network security.

UNIT 1 : Introduction to Networking and Data communication   (12 HOURS)

Introduction to Networking and Data communication: Need of Networking, Components of Data communication - sender, receiver, message, transmission media, Network Architecture-Client-Server and Peer to peer, Categories of Networks- LAN, WAN. MAN, Network topologies Bus, Ring, Star, Mesh, Transmission Media - Guided Media -Twisted-Pair Cable, Coaxial Cable, Fiber-Optic Cable, Unguided Media: Radio Waves, Microwaves, Infrared, and satellite communication,

UNIT 2 : Network Models and Services   (12 HOURS)

Network Models and Services: OSI reference model, TCP/IP reference model, Comparison of OSI and TCP/IP reference model, Protocol Standards, Introduction to Application Layer: Domain name system (DNS), Hypertext Transfer Protocol (HTTP), Simple Mail Transfer Protocol (SMTP), Telnet, File Transfer Protocol (FTP), Introduction to Presentation Layer, Services of Presentation Layer: Data encoding, Data encryption and data compression. Introduction to Session Layer, Services of session layer: Data Flow control, simplex, half-duplex, or full-duplex, Token Management, Synchronization.

UNIT 3 : Network Performance   (12 HOURS)

Network Performance: Transport layer - Transport Layer Primitives: listen, connect, send, receive, disconnect, Protocols: TCP, UDP, Network layer- IP Protocol and IP addressing, Connection oriented and connectionless services, Routing algorithm: Shortest path, Flooding, distance vector, Congestion control, Data link Layer- Data Link Layer protocols: Stop and Wait protocol, Sliding window protocol, Services of Data Link Layer: Framing, Error detection and correction, Flow control.

UNIT 4 : Network Vulnerabilities   (12 HOURS)

Network Vulnerabilities: Introduction to Vulnerabilities and Threats, Threats intransit, Protocol flaws, Impersonation, Active/Passive and Passive attacks: Virus, Worm. Malware, Hacking, Cracking, Sniffing, Spoofing, Dos, DDos, Masquerade, Trojan Horse. Ransomware, Logic bombs, Botnets, Key oggers, Rootkits, Identification of Network vulnerabilities. Network security controls: Authentication, Access Controls, Basic Cryptography terminologies.

Text Books:
1. Andrew S. Tanenbaum: Computer Networks, 4th Edition, PHI.
2. Computer Networks – Protocols, Standards, and Interfaces, 2nd Edition by Uyless Black.

Reference Books:
1. Computer Networking - A Top-Down Approach Featuring the Internet, 5th Edition, J. F. Kurose and K. W. Ross, Pearson Education, 2009.
2. Computer Networks: An Open Source Approach, 1st Edition, R2. Y. D Lin, R. H Hwang, and F.Baker, McGraw- Hill, 2011.
3. Bernard Menezes, _Network Security and Cryptography', Cengage Learning, ISBN: 978-81-315-1349—1.

01MCL112: Web Technology

Course Details:

Course Details Class	First Year M.C.A. Sem-II
Course Code and Course Title	01MCL112: Web Technology
Prerequisites	Basics of HTML, CSS, Database
Teaching scheme: Lectures + Practical	3 Hrs. + 2 Hr.
Credits	3 + 1
Evaluation Scheme ESE + CIE for Theory	50 (ESE) + 50 (CIE)

Teaching scheme	Examination scheme
Lectures: 3 Hrs. /Week	Theory: 100 Marks, 50 (ESE) +50 (CIE)
Practical: 2 Hr./Week	POE: 50 Marks , TW(CIE): 25 Marks

Course Outcomes:

1. Student will able to familiarize a student with Client-side and Server-side Programming.
2. Student will able to understand the website development using ASP.NET.
3. Student will able to inculcate skills pertaining to data access technology geared to facilitate thedevelopment of disconnected systems using .NET platform.
4. Student will able to familiarize the student with the development of N-tier web-based application.

UNIT 1 : Overview of HTML   (12 HOURS)

Overview of HTML, Structure of HTML document. Formatting text with HTML, adding local and remote links, adding graphics, creating lists in HTML, creating tables in HTML, Dividing the window with frames, Building interactivity with forms, Formatting site with cascading style sheets. Image maps – creating client-side and server-side image maps, Various HTML Editors JavaScript Overview, Data types, variables, scope of variables, casting, data type conversion rules, Expressions and operators. Arrays. Built-in functions, and Built-in objects- String, Date, Math, Types of dialog boxes-alert, prompt, confirm. Custom Functions. Working with Frames, Forms, Form elements and Form validation

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UNIT 2 : ADO and ADO.NET   (12 HOURS)

Comparison between ADO and ADO.NET and benefits offered by ADO.NET, ADO.NET managed providers, SQL managed providers, ADO.NET, OLED Bmanaged providers, creating, Data binding in ADO.NET. Introduction to SQL Server, Creatingtables, Views and stored procedure.

UNIT 3 : Understanding ASP.NET   (12 HOURS)

Architecture of ASP.NET web application. Understanding ASP.NET page structure. Page level events. Using standard controls, validation controls, Rich controls. Designing web sites with master pages and themes. ASP.NET folder structure, Validation process. Validation controls. Validation Groups and Custom Validation, Performing data access – Using Sql Data Sourcecontrol, using Grid View control, Form View, Repeater, Data List and ListView Developing 3-tier application using Object Data source.

UNIT 4 : Introduction to CSS   (12 HOURS)

State management, Caching, AJAX, AJAX Extenders. Building and understanding web services, anatomy of a web service, overview of web service namespaces, building a simple web service, Introduction to CSS, Types of CSS, Applying CSS to Master pages in ASP.NET.

The laboratory course should consist of 10 to 12 programming exercises with focus on covering thehands-on aspects covered in theory course.

Books:
1. The Complete Reference HTML- Thomas A.Powell
2. The ABC's of JavaScript – Lee Purcell & May Jane Mara
3. ASP.NET Unleashed – Stephen Walther - Sams Publishing
4. The Complete Reference ASP.NET - Matthew Macdonald
5. Designing Microsoft ASP.Net Applications (Microsoft Press) – Jonathan Goodyear,Brian Peek, Brad Fox.
6. Microsoft ASP.NET – Step by Step (Microsoft Press) - G. Andrew Duthie
7. Programming ASP .NET - Jesse Liberty, Dan Hurwitz, Publisher: O'Reilly Media

01MCL113: Java Programming

Course Details:

Course Details Class	First Year M.C.A. Sem-II
Course Code and Course Title	01MCL113: Java Programming
Prerequisites	Basic understanding of C++ and html.
Teaching scheme: Lectures + Practical	3Hrs. + 4 Hr.
Credits	3 + 2
Evaluation Scheme ESE + CIE for Theory	50 (ESE) + 50 (CIE)

Teaching scheme	Examination scheme
Lectures: 3 Hrs. /Week	Theory: 100 Marks, 50 (ESE) +50 (CIE)
Practical: 2 Hr./Week	POE: 50 Marks , TW(CIE): 25 Marks

Course Outcomes :

1. Students will be able to articulate the principle of object-oriented problem solving &programming**.**

2. Students will be able to program using multithreading, networking concept & develop web applications using servlet and jsp.

3. Students will be able to applications using database concepts

4. Students will be able to understand Advanced Java Concepts like Spring Boot, Micro services, Web services

UNIT 1 (12 HOURS)

Introduction to Java Programming:

Java Features, JVM, JIT Compiler, Java Programing Basics, Data Types, Control Flow, Arrays, Jagged Array.

OOPS:

Introduction, Class, Object, Static Keywords, Constructors, this keyword, Inheritance, Inner class, Anonymous Inner class, super keyword, Polymorphism (overloading and overriding), Abstraction, Encapsulation, Abstract Classes, Interfaces, Packages.

UNIT 2 (12 HOURS)

Multithreading & Servlet, JSP:

Multithreading and Concurrency in Java Networking, Socket Programming, Exception Handling, Logging Generics and Collections Framework classes, Servlet Filters, JSP Syntax and Scripting Elements, Expression Language (EL) and JSP Standard Tag Library (JSTL),

Model View Controller (MVC) architecture using Servlets and JSP

UNIT 3 (12 HOURS)
Java Database Connectivity (JDBC) & Hibernate:
JDBC overview, Architecture, Steps to create JDBC Application, Drivers, Database connection statements, Resultsets,
Hibernate framework application, Introduction Working on Hibernate framework and its advantage and disadvantage, Introduction to Using Hibernate framework in a live application.

UNIT 4 (12 HOURS)

Advanced Java Concepts
Types of software architectures, SOA and Monolith Architecture, Why Micro services. Detailed Micro Service Architecture, App Layer, Business Layer, Enteprise Layer, Infra Layer, Need of Spring Boot, Difference between Spring & Spring Boot, Advantages with Micro Services
 Web Services: Introduction to REST ful Web Services Building and Consuming REST ful APIs using JAX-RS SOAP Web Services with JAX-WS

This course should consist of 10 to 12 programming exercises with focus on covering the hands-on aspects.

Text Books:
1. Cay Horstmann and Gary Cornell - Core Java- Volume I Fundamentals, Pearson, Eight edition
2 Cay Horstmann and Gary Cornell - Core Java- Volume II - Advanced Features, Pearson, Eight edition
3. Bryan Basham, Kathy Sierra Head First Servlets and JSP, O'Reilly

01MCL119: Internet of Things

Course Details:

Course Details Class	First Year M.C.A. Sem-II
Course Code and Course Title	01MCL119: Internet of Things
Prerequisites	Computer Fundamentals.
Teaching scheme: Lectures +Tutorial	3 Hrs. + 1 Hr.
Credits	3 + 1
Evaluation Scheme ESE + CIE for Theory	50 (ESE) + 50 (CIE)

Teaching scheme	Examination scheme
Lectures: 3 Hrs. /Week	Theory: 100 Marks, 50 (ESE) +50 (CIE)
Tutorial: 1 Hr./Week	TW: NA

Course Outcomes:

1. Understand the role of IoT in various application domains.
2. Illustrate different technologies of IoT.
3. Identify various communication protocols used for IoT.
4. Elaborate emerging trends in IoT.

Unit 1: Introduction to IoT   (12 HOURS)
Fundamentals of IoT, IoT architecture: Design principals of IoT architecture, Outline of IoT architecture,IoT architectural Reference Model (ARM), Functional view, Information View, Deployment View and Operational View, Various platforms of IoT, Real time examples of IoT, Challenges of IoT.

Unit 2: Arduino Environment   (12 HOURS)
Arduino Uno architecture, Arduino IDE, Software and Libraries, Basics of Embedded C programming for Arduino, Interfacing basic hardware components with Arduino, Types of Sensors, Working of Sensors, Interfacing Sensors with Arduino. IoT communication technologies: Bluetooth, RFID, Wi-Fi.

Unit 3: IoT Application Development   (12 HOURS)
Introduction to ESP8266 Wi-Fi module, Wi-Fi libraries, Configuring ESP8266 with Arduino, Setting up Web Client for IoT, Interfacing ESP8266 with web services, Web Server for IoT: Introduction to Web server, Installation of Web server for IoT, Configuration of Web server for IoT, Posting data to web server.

Unit 4: RaspberryPi and Emerging Trends in IoT   (12 HOURS)
Introduction to RaspberryPi, Introduction to board of RaspberryPi, Operating systems on RaspberryPi, Configuring RaspberryPi, Programming RaspberryPi with Python, Accessing RaspberryPi, Other IoT devices, Role of Big data, Machine learning and Cloud computing in IoT.

Text Books:
1. Internet of Things, Srinivasa K. G., Cengage Learning India, 2017.
2. Internet of Things (A Hands on approach), Vijay Madisetti and Arshadeep Bagha, 1stedition,VPT, 2014

Reference Books:
1. Internet of Things: Architecture and Design principles, 1st edition, McGraw Hill, 2017
2. Arduino Programing in 24 hours, Richard Blum, Sams, 1st edition
3. RaspberryPi cookbook, Simon Mark, O'Reilly, 3rd edition.

01MCL120: Cyber Security

Course Details:

Course Details Class	Second Year M.C.A. Semester II
Course Code and Course Title	01MCL120: Cyber Security
Prerequisites	Computer Fundamentals
Teaching scheme: Lectures + Tutorial	3 Hrs. + 1 Hr.
Credits	3 + 1
Evaluation Scheme ESE + CIE for Theory	50 (ESE) + 50 (CIE)

Teaching scheme	Examination scheme
Lectures: 3 Hrs. /Week	Theory: 100 Marks, 50 (ESE) +50 (CIE)
Tutorial: 1 Hr./Week	TW: 25 NA

Course Outcomes:

After completion of this course student should be able to

1. Understand the fundamentals of Cyber security vulnerabilities.
2. Demonstrate different Cyber Security techniques.
3. Apply different Internet and Cyber Security Controls.
4. Describe Information Technology Act 2000.

Unit 1: Introduction to Cyber Security Vulnerabilities   (12 HOURS)

Introduction to Cyber space and security, Internet Security, Cloud Computing &Security, Social Network sites security, Cyber Security Vulnerabilities-Overview, vulnerabilities in software, System administration, Complex Network Architectures, Open Access to Organizational Data, Weak Authentication, Authorization, Unprotected Broadband communications, Cyber Security Awareness.

Unit 2: Cyber Security Techniques   (12 HOURS)

Introduction to Cryptography, Symmetric key Cryptography, Asymmetric key Cryptography, Message Authentication, Digital Signatures, Applications of Cryptography . Overview of Firewalls Types of Firewalls. Intrusion detection system: Types of Intrusion Detection System, Features and limitations. Intrusion prevention system: Honeypots, Types of Honeypots, Introduction to Honeynets.

Unit 3: Internet Security Controls   (12 HOURS)

Internet Security: Secure Socket Layer (SSL), Secure Hypertext Transfer Protocol(S/HTTP), IPSec, Secure Multipurpose Internet Mail 15Periods 6 Extensions(S/MIME). Web browser security: Filtering services in web browser. E-mail Security:, Encryption for Secure E-Mail, Secure E- Mail System: PGP (Pretty Good Privacy), S/MIME (Secure Multipurpose Internet Mail Extensions); Cyber Security Standards: ISO/IEC 27032, NIST- CSF

Unit 4: Cyber Law   (12 HOURS)

Introduction to Cyber Laws, Why do we need Cyber law: The Indian Context, Three Bodies of Law, Types, Levels, Computers Related Laws, Cybercrime and the Indian ITA 2000 and amendments, Honeypots, The Indian Penal Code (IPC) 1860, Mapping of Cybercrime with IT Act, Technology and Students: Indian Scenario.

Reference Books:-

1. Charlie Kaufman and Radia Perlman, Mike Speciner, ‒Network Security, Second Edition,
2. Private Communication in Public World‖, PHI 2002.
3. Tony Bradley, ‒Essential Computer Security: Everyone's Guide to Email, Internet and
4. Wireless security‖, Syngress Publication 2006.
5. Behrouz A. Ferouzan, ‒Cryptography & Network Security‖, Tata McGraw Hill, 2007.
6. Information & Network Security for GTU, I. A. Dhotre V. S. Bagad, Technical publication,
7. Cyber frauds, cyber crimes and law in India, Pavan duggal.
8. Digital forensics, DSCI.Nasscom, 2012.
9. Cyber crime investigation, DSCI.Nasscom, 2013 Other resources.
10. Dr. Farooq Ahmad, Cyber Law in India, Allahbad Law Agency- Faridabad.

<div align="center">**01MCP114: Mini Project**</div>

Course Details:

Course Details Class	Second Year M.C.A. Semester II
Course Code and Course Title	01MCP114: Mini Project
Prerequisites	Computer Fundamentals
Teaching scheme: Practical	8 Hrs.
Credits	4
Evaluation Scheme ESE + CIE for Theory	50 Marks +50 Marks

Teaching scheme	Examination scheme
Lectures: NA	NA
Practical: 8 Hr./Week	POE: 50 Marks , TW(CIE): 50 Marks

Course Outcomes:

After completion of this course student should be able to

1. Identify the problem in existing system.
2. Develop SRS document for proposed system.
3. Develop application using appropriate technology platform.
4. Validate the developed application

A group of maximum two students prepare a mini project under the guidance of internal guide. Project report will be evaluated by the internal teacher out of 20 marks and there will be viva-voce examination for 80 marks. The student should prepare the project report based courses studied in Semester I, Semester II and Semester III. Guidelines of Major Projects should be followed except industry certificate, joining report and industry work progress report.

01MCP117: Professional Communication

Course Details:

Course Details Class	First Year M.C.A. Sem-I
Course Code and Course Title	**01MCP117: Professional Communication**
Prerequisites	**Business Management**
Teaching scheme: Practical + Theory	**3 Hr. +1 Hr**
Credits	**2 + 1**
Evaluation Scheme ESE + CIE for Theory	**NA**

Teaching scheme	Examination scheme
Lectures: --	**Practical: 50 Marks,** POE:50 (ESE)
Practical: 2 Hr./Week	**TW: NA**

Course Outcomes:

To empower the students towards general and technical writing, oral communications and listening skills: letter writing, technical report writing, and business communication.

UNIT 1 (9 **HOURS**)

Expression: Practical communication skill development, business presentation with multimedia, speaking skill, prepared speech, extempore speech.

UNIT 2 (9 **HOURS**)

Writing: Technical/business letter, Resume Preparation, organization of writing material, poster presentation, writing technical document, preparing software user manual, preparing project documentation.

Text Books:
1. Business Correspondence & Report Writing, Sharma, TMH
2. Business Communication Strategies, Monipally, TMH

References:

1. English for Technical communication,Laxminarayanan,Scitech
2. Business Communication, Kaul,PHI
3. Communication Skill for Effective Mgmt., Ghanekar,EPH

01MCL118: Audit Course – II

VALUE EDUCATION

Course Details:

Course Details Class	First Year M.C.A. Sem-I
Course Code and Course Title	**01MCL118: Audit Course-II**
Prerequisites	Value Education
Teaching scheme: Lectures	2 Hrs.
Credits	--
Evaluation Scheme CIE for Theory	50 (CIE)

Teaching scheme	Examination scheme
Lectures: 2 Hrs. /Week	Theory: 50 Marks (CIE)
Tutorial: NA	TW: NA

Course Outcomes:

1. Understand the significance of ethical human conduct and self-development
2. Adopt value-based living and holistic technologies to save nature
3. Practice Self-control. Honesty through Studying effectively all religious messages

UNIT 1. VALUES AND SELF-DEVELOPMENT   (4 HOURS)

Values and self-development. Social values and individual attitudes. Work ethics, Indian vision of humanism. Moral and non- moral valuation. Standards and principles. Value judgments.

UNIT 2. CULTIVATION OF VALUES   (6 HOURS)

Importance of cultivation of values. Sense of duty. Devotion, Self-reliance. Confidence, Concentration. Truthfulness, Cleanliness. Honesty, Humanity. Power of faith, National Unity. Patriotism. Love for nature, Discipline.

UNIT 3. PERSONALITY AND BEHAVIOR DEVELOPMENT   (6HOURS)

Personality and Behavior Development - Soul and Scientific attitude. Positive Thinking. Integrity and discipline. Punctuality, Love and Kindness. Avoid fault Thinking. Free from anger, Dignity of labor. Universal brotherhood and religious tolerance. True friendship. Happiness vs suffering, love for truth. Aware of self-destructive habits. Association and Cooperation. Doing best for saving nature.

UNIT 4. CHARACTER AND COMPETENC   **(3 HOURS)**

Character and Competence –Holy books vs Blind faith. Self-management and Good health. Science of reincarnation. Equality, Nonviolence, Humility, Role of Women.

UNIT 5. SELF CONTROL   **(3HOURS)**

All religions and same message. Mind your Mind, Self-control. Honesty, Studying effectively.

Text Books:

1. Chakroborty, S.K. ‒Values and Ethics for organizations Theory and practice‖, Oxford University Press, New Delhi.

References:

1. R.P. Shukla, ‒Value education and human rights‖.