

GEC-DS-1 DISCRETE STRUCTURES

No. of Credits: 3	Sessional:	25 Marks
L T P Total	Theory :	75 Marks
		100
3 0 0 3	Total :	Marks
	Duration of Exam:	3 Hours

Note: Examiner will be required to set *Seven* questions in all having two parts. Part I will have Question Number 1 consisting of total 10 parts (short-answer type questions) covering the entire syllabus and will carry 15 marks. In Part II, there will be *Six* questions. Examiner will set one and a half questions from each Unit of the syllabus and each question will carry 15 marks. Question Number 1 will be compulsory. In addition to compulsory question, student will have to attempt four more questions from Part II.

COURSE OBJECTIVES:

Throughout the course, students will be expected to demonstrate their understanding of Discrete Mathematics by being able to do each of the following:

1. Use mathematically correct terminology and notation.
2. Construct correct direct and indirect proofs.
3. Use division into cases in a proof.
4. Use counterexamples.
5. Apply logical reasoning to solve a variety of problems.

SYLLABUS

UNIT I

Set Theory and Propositional Calculus: Introduction to set theory, Set operations, Algebra of sets, Duality, Finite and Infinite sets, Classes of sets, Power Sets, Multi sets, Cartesian Product, Representation of relations, Types of relation, Equivalence relations and partitions, Partial ordering relations and lattices.

UNIT II

Function and its types: Composition of function and relations, Cardinality and inverse relations
Introduction to propositional Calculus: Basic operations: AND (\wedge), OR(\vee), NOT(\sim), Truth value of a compound statement, propositions, tautologies, contradictions.

UNIT III:

Techniques of Counting and Recursion and recurrence Relation: Permutations with and without repetition, Combination. Polynomials and their evaluation, Sequences, Introduction to AP, GP and AG series, partial fractions, linear recurrence relation with constant coefficients, Homogeneous solutions, Particular solutions, Total solution of a recurrence relation using generating functions.

UNIT IV

Algebraic Structures: Definition and examples of a monoid, Semigroup, Groups and rings, Homomorphism, Isomorphism and Automorphism, Subgroups and Normal subgroups, Cyclic groups, Integral domain and fields, Cosets, Lagrange's theorem.

COURSE OUTCOMES:

1. For a given logic sentence express it in terms of predicates, quantifiers, and logical connectives
2. For a given a problem, derive the solution using deductive logic and prove the solution based on logical inference
3. For a given a mathematical problem, classify its algebraic structure
4. Evaluate Boolean functions and simplify expressions using the properties of Boolean algebra
5. Develop the given problem as graph networks and solve with techniques of graph theory

Text Books/Reference Books:

1. Discrete Mathematics by Johnson Bough R., 5th Edition, PEA, 2001.
2. Concrete Mathematics: A Foundation for Computer Science, Ronald Graham, Donald Knuth and Oren Patashnik, 1989, Addison-Wesley
3. Mathematical Structures for Computer Science, Judith L. Gersting, 1993, Computer Science Press.
4. Applied Discrete Structures for Computer Science, Doerr and Levasseur, (Chicago: 1985, SRA)
5. Discrete Mathematics by A. Chtewynd and P. Diggle (Modular Mathematics series), 1995, Edward Arnold, London
6. Schaums Outline series: Theory and problems of Probability by S. Lipshutz, 1982, McGraw-Hill Singapore
7. Discrete Mathematical Structures, B. Kolman and R.C. Busby, 1996, PHI
8. Discrete Mathematical Structures with Applications to Computers by Tembley & Manohar, 1995, Mc Graw Hill.
9. Elements of Discrete Mathematics, C.L Liu, 1985, McGraw Hill

Note: Latest and additional good books may be suggested and added from time to time.

GEC-DS-2
PRINCIPLES OF SOFTWARE ENGINEERING

No. of Credits: 3
L T P Total
3 0 0 3

Sessional: 25 Marks
Theory : 75 Marks
Total : 100Marks
Duration of Exam: 3 Hours

Note: Examiner will be required to set *Seven* questions in all having two parts. Part I will have Question Number 1 consisting of total 10 parts (short-answer type questions) covering the entire syllabus and will carry 15 marks. In Part II, there will be *Six* questions. Examiner will set one and a half questions from each Unit of the syllabus and each question will carry 15 marks. Question Number 1 will be compulsory. In addition to compulsory question, student will have to attempt four more questions from Part II.

COURSE OBJECTIVES:

1. To enable the students to apply a systematic application of scientific knowledge in creating and building cost effective software solutions to business and other types of problems.
2. To make the students understand project management concepts & their metrics.
3. To make the students understand requirement engineering and its models (Information, functional, behavioral).
4. To make the students understand to develop quality software, its maintenance & introduce about software reliability.

SYLLABUS

UNIT I

Introduction: Software Crisis, Software Processes & Characteristics, Software life cycle models, Waterfall, Prototype, Evolutionary and Spiral Models.

Software Requirements Analysis & Specifications:

Requirement engineering, requirement elicitation techniques like FAST, QFD, requirements analysis using DFD, Data dictionaries ER Diagrams, Requirements documentation, Nature of SRS, Characteristics & organization of SRS.

UNIT – II

Software Project Management Concepts: The Management spectrum, The People, The Problem, The Process, The Project.

Software Project Planning: Size Estimation like lines of Code & Function Count, Cost Estimation Models, COCOMO, Risk Management.

UNIT – III

Software Design: Cohesion & Coupling, Classification of Cohesiveness & Coupling, Function Oriented Design, Object Oriented Design, Software Metrics: Software measurements: What & Why, Token Count, Halstead Software Science Measures, Design Metrics, Data Structure Metrics

Software Implementation: Relationship between design and implementation, Implementation issues and programming support environment, Coding the procedural design, Good coding style

UNIT – IV

Software Testing: Testing Process, Design of Test Cases, Types of Testing, Functional Testing, Structural Testing, Test Activities, Unit Testing, Integration Testing and System Testing, Debugging Activities.

Software Maintenance: Management of Maintenance, Maintenance Process, Reverse Engineering, Software Re-engineering, Configuration Management, Documentation.

COURSE OUTCOMES:

The student will be able to

1. Understand Software life cycle models and have a knowledge of different phases of Software life cycle.
2. Identify, formulate, review, estimate and schedule complex software projects using principles of mathematics.
3. Create a bug free software with good design and quality by using appropriate techniques and modern engineering and IT tools.
4. Analyze verification, validation activities, static, dynamic testing, debugging tools and techniques and importance of working in teams.

Text Books/ Reference Books:

1. Pressman : Software Engineering, TMH.
2. K.K Aggarwal & Yogesh Singh: Software Engineering, New Age International Publishers.
3. Jalote, Pankaj : An Integrated Approach to Software Engineering, Narosa Publications.
4. Ghezzi, Carlo : Fundaments of Software Engineering, PHI.
5. Fairly, R.E. : Software Engineering Concepts, McGraw-Hill.
6. Lewis, T.G.: Software Engineering, McGraw-Hill.
7. Shere : Software Engineering & Management, Prentice Hall.

Note: Latest and additional good books may be suggested and added from time to time.

GEC-DS-3
COMPUTER ORGANIZATION-1

No. of Credits: 3
L T P Total
3 0 0 3

Sessional: 25 Marks
Theory : 75 Marks
Total : 100Marks
Duration of Exam: 3 Hours

Note: Examiner will be required to set *Seven* questions in all having two parts. Part I will have Question Number 1 consisting of total 10 parts (short-answer type questions) covering the entire syllabus and will carry 15 marks. In Part II, there will be *Six* questions. Examiner will set one and a half questions from each Unit of the syllabus and each question will carry 15 marks. Question Number 1 will be compulsory. In addition to compulsory question, student will have to attempt four more questions from Part II.

COURSE OBJECTIVES:

The basic objective of this course is to give students an introduction of:

1. How Computer Systems work and the basic principles.
2. Concept of computer architecture and Micro programming.

SYLLABUS

UNIT – I

Information Representation: Number Systems, Binary Arithmetic, Fixed-point and Floating-point representation of numbers, BCD Codes, Error detecting and correcting codes, Character Representation – ASCII, EBCDIC, Unicode

UNIT – II

Binary Logic: Boolean Algebra, Boolean Theorems, Boolean Functions and Truth Tables, Canonical and Standard forms of Boolean functions, Simplification of Boolean Functions – Venn Diagram, Karnaugh Maps.

UNIT – III

Digital Logic: Introduction to digital signals, Basic Gates–AND, OR, NOT, Universal Gates and their implementation – NAND, NOR, Other Gates – XOR, XNOR etc. NAND, NOR, AND-OR-INVERT and OR-AND-INVERT implementations of digital circuits, Combinational Logic – Characteristics, Design Procedures, analysis procedures, Multiple NAND and NOR circuits.

UNIT – IV

Combinational Circuits: Half-Adder, Full-Adder, Half Subtractor, Full-Subtractor, Parallel binary adder/ subtractor, YMCU University of Science & Technology Faridabad Page 8 Encoders, Decoders, Multiplexers, Demultiplexers, Comparators, Code Converters, BCD to Seven-Segment Decoder.

COURSE OUTCOMES:

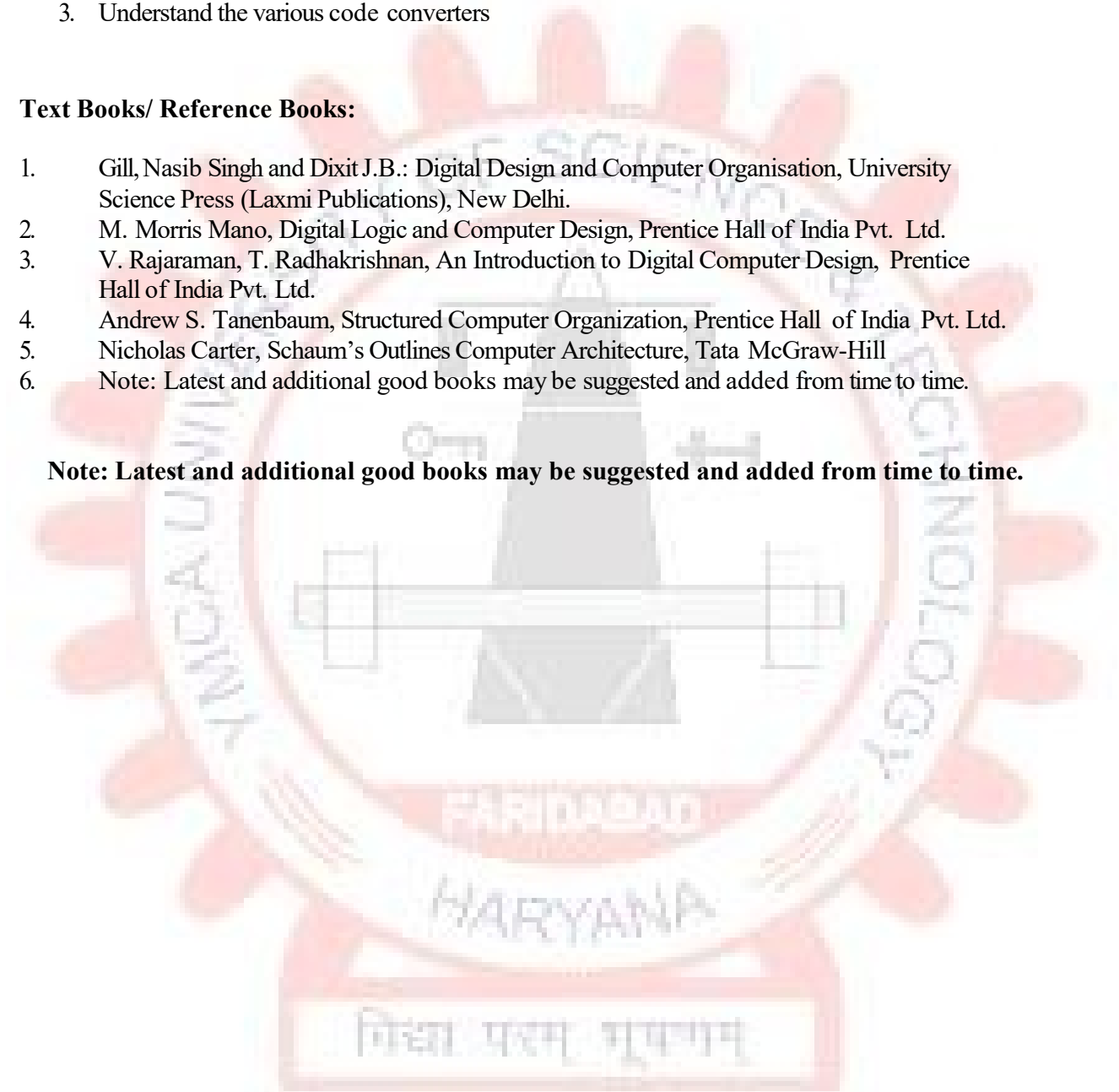
After completion of this course, student will be able to

1. Understand the working of logic families and logic gates
2. Design & implement combinational logic circuits
3. Understand the various code converters

Text Books/ Reference Books:

1. Gill, Nasib Singh and Dixit J.B.: Digital Design and Computer Organisation, University Science Press (Laxmi Publications), New Delhi.
2. M. Morris Mano, Digital Logic and Computer Design, Prentice Hall of India Pvt. Ltd.
3. V. Rajaraman, T. Radhakrishnan, An Introduction to Digital Computer Design, Prentice Hall of India Pvt. Ltd.
4. Andrew S. Tanenbaum, Structured Computer Organization, Prentice Hall of India Pvt. Ltd.
5. Nicholas Carter, Schaum's Outlines Computer Architecture, Tata McGraw-Hill
6. Note: Latest and additional good books may be suggested and added from time to time.

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GEC-DS-4 OPERATION RESEARCH

No. of Credits: 3	Sessional:	25 Marks
L T P Total	Theory :	75 Marks
		100
3 0 0 3	Total :	Marks
	Duration of Exam:	3 Hours

Note: Examiner will be required to set *Seven* questions in all having two parts. Part I will have Question Number 1 consisting of total 10 parts (short-answer type questions) covering the entire syllabus and will carry 15 marks. In Part II, there will be *Six* questions. Examiner will set one and a half questions from each Unit of the syllabus and each question will carry 15 marks. Question Number 1 will be compulsory. In addition to compulsory question, student will have to attempt four more questions from Part II.

COURSE OBJECTIVES:

This course aims at familiarizing the students with quantitative tools and techniques, which are frequently applied to business decision-making & to provide a formal quantitative approach to problem solving and an intuition about situations where such an approach is appropriate.

SYLLABUS

UNIT I

DEVELOPMENT-DEFINITION-CHARACTERISTICS AND PHASES: Types of models—operation Research models – applications. **ALLOCATION :** Linear Programming Problem Formulation – Graphical solution – Simplex method – Artificial variables techniques -Two-phase method, Big-M method – Duality Principle.

UNIT II

TRANSPORTATION PROBLEM: Formulation–Optimal solution, unbalanced transportation problem – Degeneracy. Assignment problem – Formulation – Optimal solution - Variants of Assignment Problem Traveling Salesman problem.

REPLACEMENT : Introduction, Replacement of items that deteriorate with time – when money value is not counted and counted – Replacement of items that fail completely, group replacement. staffing problem, equipment renewal problem.

UNIT III

SYSTEM RELIABILITY: Introduction-Definition-Failure Rates-Bath-tub shaped failure rate(Hazard Rate)-Reliability of systems-series arrangement and parallel arrangement- methods of assuring reliability. Software Reliability - Comparison of Software and Hardware Reliability- Development of Software Reliability Models- Parameter Estimation of Models and Prediction of Reliability Levels- criteria to Compare Software Reliability models.

UNIT IV

INFORMATION THEORY-Introduction, measure of Information, binary unit of information entropy, properties of average measure of entropy, important relations for various entropies, set of

axioms for an entropy function, uniqueness theorem, communication system, noiseless channel, Channel capacity, efficiency and redundancy, executed mutual information, encoding.

WAITING LINES : Introduction – Single Channel – Poisson arrivals – exponential service times – with infinite population and finite population models– Multichannel – Poisson arrivals, exponential service times with infinite population single channel Poisson arrivals.

COURSE OUTCOMES:

After completing this course student will be able:

1. Identify and develop operational research models from the verbal description of the real system.
2. Understand the mathematical tools that are needed to solve optimisation problems.
3. Use mathematical software to solve the proposed models.
4. Develop a report that describes the model and the solving technique, analyse the results and
5. propose recommendations in language understandable to the decision-making processes in Management Engineering.

Text books / Reference Books:

1. Operations Research / S.D.Sharma-Kedarnath
2. Introduction to O.R/Taha/Pearson
3. Operation Research/A.P.VERMA/SK KATARIA AND SONS
4. Operations Research/P.K.GUPTA & D.S.HIRA
5. Software Reliability / John D.musa ,Anthony Iannino and KajuzuhiraOkumoto/ Mc-Grawhill

Note: Latest and additional good books may be suggested and added from time to time.

GEC-DS-5 SOFTWARE TESTING

No. of Credits: 3	Sessional:	25 Marks
L T P Total	Theory :	75 Marks
3 0 0 3	Total :	100 Marks
	Duration of Exam:	3 Hours

Note: Examiner will be required to set *Seven* questions in all having two parts. Part I will have Question Number 1 consisting of total 10 parts (short-answer type questions) covering the entire syllabus and will carry 15 marks. In Part II, there will be *Six* questions. Examiner will set one and a half questions from each Unit of the syllabus and each question will carry 15 marks. Question Number 1 will be compulsory. In addition to compulsory question, student will have to attempt four more questions from Part II.

COURSE OBJECTIVES:

1. To study fundamental concepts in software testing, including software testing objectives, process, criteria, strategies, and methods.
2. To discuss various software testing issues and solutions in software unit test; integration, regression, and system testing.
3. To learn how to planning a test project, design test cases and data, conduct testing operations, manage software problems and defects, generate a testing report.
4. To expose the advanced software testing topics, such as object-oriented software testing methods, and component-based software testing issues, challenges, and solutions.
5. To gain software testing experience by applying software testing knowledge and methods to practice-oriented software testing projects.
6. To understand software test automation problems and solutions.
7. To learn how to write software testing documents, and communicate with engineers in various forms.

SYLLABUS

UNIT I:

Software testing principles: Types of Debugging and testing, fundamentals of test process, Need for testing, Psychology of testing, Testing economics, Software Verification & Validation, types of testing.

UNIT – II

Testing strategies: White box testing techniques: Control Flow based testing -Statement coverage, Branch Coverage, Path Coverage; Data flow based testing, Mutation testing, Automated code coverage analysis, Black box testing techniques: Boundary value analysis, Robustness testing, Equivalence partitioning, Cause-effect graphing, Syntax testing - Finite state testing; Levels of testing - Unit, Integration and System Testing; Acceptance testing: α , β , and γ testing.

UNIT – III

Testing object oriented software: Challenges, Differences from testing non-Object Oriented Software, Class testing strategies, Class Modality, State-based Testing, Message Sequence Specification. Testability and related issues: Design for Testability - Observability & Controllability - Built- in Test – Design by Contract - Precondition, Post condition and Invariant - Impact on inheritance - Applying in the real world Regression Testing – Challenges.

UNIT – IV

Miscellaneous topics: Automated Tools for Testing - Static code analyzers, Test case generators, GUI Capture/Playback, Stress Testing, Testing Client-server applications, Testing compilers and language processors, Testing web-enabled applications, Ad hoc testing: Buddy testing, pair testing, Exploratory testing, Agile and extreme testing.

COURSE OUTCOMES:

After completion of this course, Student will be able to understand

1. the concept of software.
2. how software works.
3. how to find errors, bugs in the software.
4. different testing strategies with advantages and disadvantages.

Text Books/Reference Books:

1. Glenford J. Myers, “The Art of Software Testing”, 2/e, John Wiley & Sons
2. Mathur P Aditya, Foundations of Software Testing, Pearson Education, 2008
3. D. Srinivasan & R. Gopalswamy, Software Testing – Principles & Practices, Pearson Education
4. Robert V. Binder, “Testing Object-Oriented Systems: Models Patterns and Tools”, Addison Wesley.
5. Patton Ron, Software Testing, 2/e, Pearson education.
6. Limaye G. M., Software Testing – Principles, Techniques, and Tools, Tata McGraw Hill.

Note: Latest and additional good books may be suggested and added from time to time.

GEC-DS-6 COMPUTER ORGANIZATION-II

No. of Credits: 3
L T P Total
3 0 0 3

Sessional: 25 Marks
Theory : 75 Marks
Total : 100 Marks
Duration of Exam: 3 Hours

Note: Examiner will be required to set *Seven* questions in all having two parts. Part I will have Question Number 1 consisting of total 10 parts (short-answer type questions) covering the entire syllabus and will carry 15 marks. In Part II, there will be *Six* questions. Examiner will set one and a half questions from each Unit of the syllabus and each question will carry 15 marks. Question Number 1 will be compulsory. In addition to compulsory question, student will have to attempt four more questions from Part II.

COURSE OBJECTIVES:

The basic objective of this course is to give students an introduction of:

1. The basic principles for accessing I/O devices and memory unit.
2. Concepts of advanced processors, parallel and pipelining techniques.

SYLLABUS

UNIT – I

Sequential Logic: Characteristics, Flip-Flops, Clocked RS, D type, JK, T type and Master-Slave flip-flops. State table, state diagram and state equations. Flip-flop excitation tables

UNIT – II

Sequential Circuits: Designing registers–Serial Input Serial Output (SISO), Serial Input Parallel Output (SIPO), Parallel Input Serial Output (PISO), Parallel Input Parallel Output (PIPO) and shift registers. Designing counters – Asynchronous and Synchronous Binary Counters, Modulo-N Counters and Up-Down Counters

UNIT – III

Memory & I/O Devices: Memory Parameters, Semiconductor RAM, ROM, Magnetic and Optical Storage devices, Flash memory, I/O Devices and their controllers.

UNIT – IV

Instruction Design & I/O Organization: Machine instruction, Instruction set selection, Instruction cycle, Instruction Format and Addressing Modes. I/O Interface, Interrupt structure, Program controlled, Interrupt-controlled & DMA transfer, I/O Channels, IOP.

COURSE OUTCOMES:

1. Design & analyse sequential logic circuits
2. Acquire basic knowledge of digital logic families & semiconductor memories
3. Acquire basic knowledge of computer architecture.

Text Books/ Reference Books:

1. Gill, Nasib Singh and Dixit J.B.: Digital Design and Computer Organisation, University Science Press (Laxmi Publications), New Delhi.
2. M. Morris Mano, Digital Logic and Computer Design, Prentice Hall of India Pvt. Ltd.
3. V. Rajaraman, T. Radhakrishnan, An Introduction to Digital Computer Design, Prentice Hall of India Pvt. Ltd.
4. Andrew S. Tanenbaum, Structured Computer Organization, Prentice Hall of India Pvt. Ltd.
5. Nicholas Carter, Schaum's Outlines Computer Architecture, Tata McGraw-Hill.

Note: Latest and additional good books may be suggested and added from time to time.



GEC-DS-7
MULTIMEDIA TECHNOLOGIES

No. of Credits: 3				Sessional:	25 Marks
L	T	P	Total	Theory :	75 Marks
3	0	0	3		100
				Total :	Marks
				Duration of Exam:	3 Hours

Note: Examiner will be required to set *Seven* questions in all having two parts. Part I will have Question Number 1 consisting of total 10 parts (short-answer type questions) covering the entire syllabus and will carry 15 marks. In Part II, there will be *Six* questions. Examiner will set one and a half questions from each Unit of the syllabus and each question will carry 15 marks. Question Number 1 will be compulsory. In addition to compulsory question, student will have to attempt four more questions from Part II.

COURSE OBJECTIVES:

The course is designed for students:

1. Those who want to broaden their knowledge by including multimedia studies.
2. Looking for a foundation from which to pursue advanced topics in multimedia studies.
3. Professional developers who want a technical foundation for developing applications with distributed multimedia components.
4. Networks professionals who needs to manage multimedia delivery service.

SYLLABUS

UNIT I

Basics of Multimedia Technology: Computers, communication and entertainment; multimedia an introduction; framework for multimedia systems; multimedia devices; CD- Audio, CD-ROM, CD-I, presentation devices and the user interface; multimedia presentation and authoring; professional development tools; LANs and multimedia; internet, World Wide Web & multimedia distribution network ATM& ADSL; multimedia servers & databases; vector graphics; 3D graphics programs; animation techniques; shading; anti-aliasing; morphing; video on demand.

UNIT II

Image Compression & Standards: Making still images; editing and capturing images; scanning images; computer color models; color palettes; vector drawing; 3D drawing and rendering; PEG-objectives and architecture; JPEG-DCT encoding and quantization, JPEG statistical coding, JPEG predictive lossless coding; JPEG performance; overview of other image file formats as GIF, TIFF, BMP, PNG etc.

UNIT III

Audio & Video: Digital representation of sound; time domain sampled representation; method of encoding the analog signals; sub band coding; fourier method; transmission of digital sound; digital audio signal processing; stereophonic & quadraphonic signal processing; editing sampled sound; MPEG Audio; audio compression & decompression; brief survey of speech recognition and generation; audio synthesis; musical instrument digital interface; digital video and image compression; MPEG motion video compression standard; DVI technology; time base media representation and delivery.

UNIT IV

Virtual Reality: Applications of multimedia, intelligent multimedia system, desktop virtual reality, VR operating system, virtual environment displays and orientation making; visually coupled system requirements; intelligent VR software systems. Applications of environment in various fields.

COURSE OUTCOMES:

1. Course focuses on multimedia information representation and relevant signal processing aspects, multimedia networking and communications, and multimedia standards especially on the audio, image and video compression.
2. The students are expected to achieve a basic understanding of multimedia systems. With such background equipment, students would be able to evaluate more advanced or future multimedia systems.
3. To learn various multimedia authoring systems and various networking aspects used for multimedia applications.
4. Develop various Multimedia Systems applicable in real time
5. Understand about Design interactive multimedia software and apply various networking protocols for multimedia applications.

Text Books/Reference Books

1. Multimedia: Sound & Video, Lozano, 1997, PHI, (Que)
2. Multimedia: Production, planning and delivery, Villamil & Molina, Que, 1997
3. Multimedia on the PC, Sinclair, BPB
4. Multimedia: Making it work, Tay Vaughan, fifth edition, 1994, TMH.
5. Multimedia in Practice by Jeff coate Judith, 1995, PHI.
6. Multimedia Systems by Koegel, AWL x Multimedia Making it Work by Vaughan.
7. Multimedia Systems by John .F. Koegel, 2001, Buford.
8. Multimedia Communications by Halsall & Fred, 2001, AW.

Note: Latest and additional good books may be suggested and added from time to time.

GEC-DS-8 PRINCIPLES OF ACCOUNTING

No. of Credits: 3

L	T	P	Total
3	0	0	3

Sessional: 25 Marks

Theory : 75 Marks

Total : 100Marks

Duration of Exam: 3 Hours

Note: Examiner will be required to set *Seven* questions in all having two parts. Part I will have Question Number 1 consisting of total 10 parts (short-answer type questions) covering the entire syllabus and will carry 15 marks. In Part II, there will be *Six* questions. Examiner will set one and a half questions from each Unit of the syllabus and each question will carry 15 marks. Question Number 1 will be compulsory. In addition to compulsory question, student will have to attempt four more questions from Part II.

COURSE OBJECTIVES:

This course introduces students to the world of accounting and assumes no prior knowledge of the subject area. It will be demonstrated how a practical understanding and interpretation of accounting reports and other accounting tools can improve decision-making and add value for company stakeholders.

SYLLABUS

UNIT I

Meaning and nature of accounting, Scope of financial accounting, Interrelationship of Accounting with other disciplines, Branches of Accounting, Accounting concepts and convention, Accounting standards in India.

UNIT – II

Journal, Rules of Debit and Credit, Sub Division of Journal: Cash Journal, Petty Cash Book, Purchase Journal, Purchase Return, Sales Journal, Sales Return Journal, Ledger, Trial Balance

UNIT-III

Preparation of Final Accounts, Profit & Loss Account, Balance Sheet without adjustments and with adjustments.

UNIT – IV

Meaning of Inventory, Objectives of Inventory Valuation, Inventory Systems, Methods of Valuation of Inventories-FIFO, LIFO and Weighted Average Method, Concept of Depreciation, Causes of Depreciation, Meaning of Depreciation Accounting, Method of Recording Depreciation, Methods of Providing Depreciation

COURSE OUTCOMES:

1. This course will impart knowledge to the students regarding preparation of financial statements their analysis.
2. The students will be able to understand applications of cost accounting and cost control

techniques like standard costing etc.

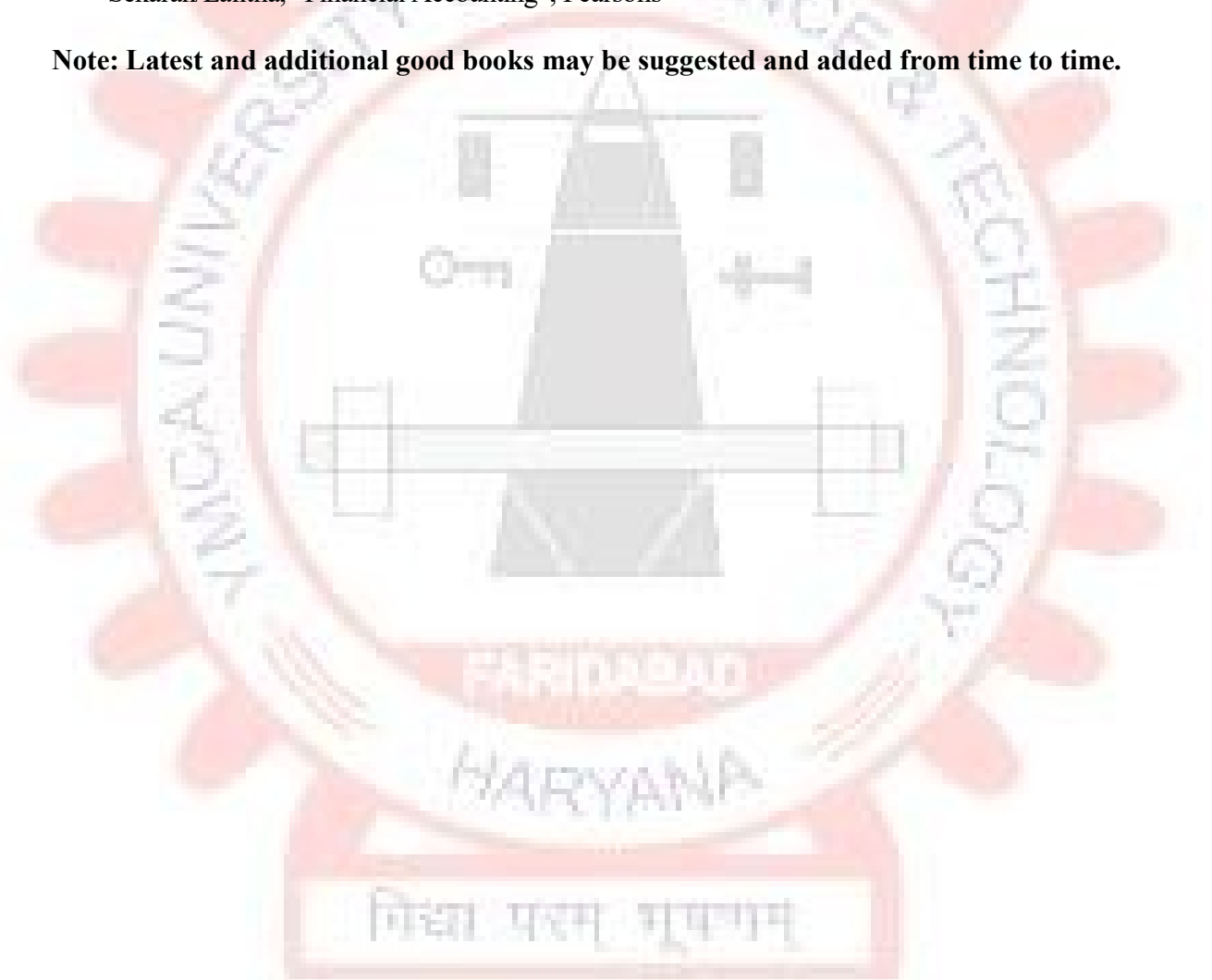
3. The course will help them to take better managerial decisions.

4. Students will be able to know about budget control technique

Text Books/Reference books

1. Maheshwari, S.N. and Maheshwari, S. K., (2009) An Introduction to Accountancy, Eighth Edition, Vikas Publishing House.
2. Gupta R. L., & Gupta V.K., "Principles & Practice of Accounting", Sultan Chand & Sons, 1999.
3. Tulsian, P.C., (2009) Financial Accountancy, 2nd edition, Pearson Education.
4. Monga J R, "Introduction to Financial Accounting", Mayur Paperbacks, 2010. [R3] Raja Sekaran/Lalitha, "Financial Accounting", Pearsons

Note: Latest and additional good books may be suggested and added from time to time.



GEC-DS-9 MANAGEMENT INFORMATION SYSTEM

No. of Credits: 3				Sessional:	25 Marks
L	T	P	Total	Theory :	75 Marks
3	0	0	3		100
				Total :	Marks
				Duration of Exam:	3 Hours

Note: Examiner will be required to set *Seven* questions in all having two parts. Part I will have Question Number 1 consisting of total 10 parts (short-answer type questions) covering the entire syllabus and will carry 15 marks. In Part II, there will be *Six* questions. Examiner will set one and a half questions from each Unit of the syllabus and each question will carry 15 marks. Question Number 1 will be compulsory. In addition to compulsory question, student will have to attempt four more questions from Part II.

COURSE OBJECTIVES:

The course provides a foundation in the theory and practical application of information systems within an organization. Managing, analyzing, designing, and implementing an MIS will be the focus of the course. Strategic value, methodologies, quality, decision making, modeling, re-engineering, software, hardware, and ethics will all be included. This course is an introduction to Management Information Systems solutions through business-driven information systems.

SYLLABUS

UNIT – I

The meaning and role of MIS: What is MIS?. Decision support systems, systems approach, the systems view of business, MIS Organization within the company. Management Organizational theory and the systems approach: Development of organization theory, management and organizational behavior, management, information, and the systems approach.

UNIT – II

Information Systems for decision making: Evolution of an information system, Basic Information Systems, decision making and MIS, MIS as a technique for making programmed decisions, decision assisting information systems. Strategic and project planning for MIS: General business planning, appropriate MIS response, MIS planning – general, MIS planning – details.

UNIT – III

Conceptual system design: Define the problems, set system objectives, establish system constraints, determine information needs, determine information sources, develop alternative conceptual designs and select one, document the system concept, prepare the conceptual design report.

UNIT IV

Implementation, evaluation and maintenance of the MIS: Plan the implementation, acquire floor space and plan space layouts, organize for implementation, develop procedures for implementation, train and operating personnel, computer related acquisitions, develop forms for data collection and information, dissemination, develop the files, test the system, cut over, document the system, evaluate the MIS, control and maintain the system. Pitfalls in MIS development: Fundamental weaknesses, soft spots in planning, design problems, implementation: The TAR PIT.

COURSE OUTCOMES:

1. Relate the basic concepts and technologies used in the field of management information systems.
2. Compare the processes of developing and implementing information system.
3. Translate the role of information systems in organizations, the strategic management processes, with the implications for the management.
4. Apply the understanding of how various information systems like DBMS work together to accomplish the information objectives of an organization.

Text books/Reference Books:

1. R. G. Murdick, J. E. Ross and J. R. Clagget, "Information Systems for Modern Management", 3rd Edition by, PHI – 1994.
2. Parker, Charles Case, Thomas, "Management Information System: Strategy & Action", 2nd Edition, TMH, 1993

Note: Latest and additional good books may be suggested and added from time to time.

GEC-DS-10 MATLAB

No. of Credits: 3
L T P Total
3 0 0 3

Sessional: 25 Marks
Theory : 75 Marks
100
Total : Marks
Duration of Exam: 3 Hours

Note: Examiner will be required to set *Seven* questions in all having two parts. Part I will have Question Number 1 consisting of total 10 parts (short-answer type questions) covering the entire syllabus and will carry 15 marks. In Part II, there will be *Six* questions. Examiner will set one and a half questions from each Unit of the syllabus and each question will carry 15 marks. Question Number 1 will be compulsory. In addition to compulsory question, student will have to attempt four more questions from Part II.

COURSE OBJECTIVES:

The course is intended to assist undergraduates in learning the basics of programming in general and programming MATLAB in particular. Basics of programming in MATLAB will be covered, with the goal of having students become comfortable enough to continue learning MATLAB and other programming languages on their own.

SYLLABUS

UNIT 1

Introduction to Programming

Components of a computer, working with numbers, Machine code, Software hierarchy.

Programming Environment

MATLAB Windows, A First Program, Expressions, Constants, Variables and assignment statement, Arrays.

UNIT 2

Graph Plots

Basic plotting, Built in functions, Generating waveforms, Sound replay, load and save.

UNIT 3

Procedures and Functions

Arguments and return values, M-files, Formatted console input-output, String handling.

Control Statements

If, Else, Else-if, Repetition statements: While, for loop.

UNIT 4

Manipulating Text

Writing to a text file, Reading from a text file, Randomizing and sorting a list, searching a list.

GUI Interface

Attaching buttons to actions, Getting Input, Setting Output.

COURSE OUTCOMES:

After completion of this course, student will be able to

1. Learn basics of Programming environment of MATLAB.
2. Understand how to use control statements in MATLAB
3. Understand how to manipulate text using MATLAB.

Text Books/ Reference Books:

1. MATLAB: An Introduction with Applications, by Amos Gilat, 2nd edition, Wiley, 2004.
2. C.B. Moler, Numerical Computing with MATLAB, SIAM, 2004.

Note: Latest and additional good books may be suggested and added from time to time.



GEC-DS-11 BUSINESS ECONOMICS

No. of Credits: 3
L T P Total
3 0 0 3

Sessional: 25 Marks
Theory : 75 Marks
Total : 100 Marks
Duration of Exam: 3 Hours

Note: Examiner will be required to set *Seven* questions in all having two parts. Part I will have Question Number 1 consisting of total 10 parts (short-answer type questions) covering the entire syllabus and will carry 15 marks. In Part II, there will be *Six* questions. Examiner will set one and a half questions from each Unit of the syllabus and each question will carry 15 marks. Question Number 1 will be compulsory. In addition to compulsory question, student will have to attempt four more questions from Part II.

COURSE OBJECTIVES:

To integrate the basic concepts of economics with the tools of mathematics and statistics in order to analyze and make optimal business decisions.

SYLLABUS

UNIT I

Introduction to Business Economics and Fundamental concepts: Nature, Scope, Definitions of Business Economics, Difference Between Business Economic and Economics, Contribution and Application of Business Economics to Business. Micro Vs. Macro Economics. Opportunity Costs, Time Value of Money, Marginalism, Incrementalism, Market Equilibrium and Forces, Risk, Return and Profits.

UNIT II

Demand Analysis & Elasticity of Demand: Objectives, Meaning, Law of Demand, Movement Vs. Shift in Demand Curve, Measurement of Elasticity of Demand, Factors Affecting Elasticity of Demand, Income Elasticity of Demand, Cross Elasticity of Demand, Advertising Elasticity of Demand and Expectation Elasticity of Demand. Demand Forecasting: Need, Objectives and Methods (Brief)

UNIT III

Consumer Behavior: Cardinal Utility Approach: Diminishing Marginal Utility, Law of Equi-Marginal Utility. Ordinal Utility Approach: Indifference Curves, Marginal Rate of Substitution, Budget Line and Consumer Equilibrium.

Theory of Production: Meaning and Concept of Production, Factors of Production, production function, ISO Quants. Fixed and Variable Factors. Law of Variable Proportion (Short Run Production Analysis), Law of Returns to a Scale (Long Run Production Analysis).

UNIT IV

Cost Analysis & Price Output Decisions: Concept of Cost, Cost Function, Short Run Cost, Long Run Cost, Economics and Diseconomies of Scale. Explicit Cost and Implicit Cost, Private and Social Cost. Pricing Under Perfect Competition, Pricing Under Monopoly, Control of Monopoly, Price Discrimination, Pricing Under Monopolistic Competition, Pricing Under Oligopoly.

COURSE OUTCOMES:

After completion of this course, student will be able to

1. Demonstrate the applicability of the concept of organizational behavior to understand the behavior of people in the organization.
2. Demonstrate the applicability of analyzing the complexities associated with management of individual behavior in the organization.
3. Analyze the complexities associated with management of the group behavior in the organization.
4. Demonstrate how the organizational behavior can integrate in understanding the motivation (why) behind behavior of people in the organization.

Text Books/ Reference Books:

1. Chaturvedi, D.D. and S. L. Gupta; *Managerial Economics*, Brijwasi Publishers, 2003.
2. Diwedi, D.N.; *Managerial Economics*, Vikas Publishers, 2003.
3. Mehta, P. L.; *Managerial Economics*, Sultan Chand & Sons., 2003.
4. Koutsoyiannis, A.; *Modern Micro Economics*, Macmillan Press Ltd., 2003.
5. Dwivedi, D.N.; *Microeconomics: Theory and Applications*, Pearson Education, 2003.
6. Peterson, Lewis; *Managerial Economics*, 4th Pearson Education, 2002.

Note: Latest and additional good books may be suggested and added from time to time.

GEC-DS-12 E-BUSINESS

No. of Credits: 3

L T P Total

3 0 0 3

Sessional: 25 Marks

Theory : 75 Marks

Total 100 Marks

Duration of Exam: 3 Hours

Note: Examiner will be required to set *Seven* questions in all having two parts. Part I will have Question Number 1 consisting of total 10 parts (short-answer type questions) covering the entire syllabus and will carry 15 marks. In Part II, there will be *Six* questions. Examiner will set one and a half questions from each Unit of the syllabus and each question will carry 15 marks. Question Number 1 will be compulsory. In addition to compulsory question, student will have to attempt four more questions from Part II.

COURSE OBJECTIVES:

This course introduces the concepts, vocabulary, and procedures associated with E-Commerce and the Internet. The student gains an overview of all aspects of E-Commerce. Topics include development of the Internet and E-Commerce, options available for doing business on the Internet, features of Web sites and the tools used to build an E-Commerce web site, marketing issues, payment options, security issues, and customer service.

SYLLABUS

UNIT - I

Electronic Commerce: Overview of Electronic Commerce, Scope of Electronic Commerce, Traditional Commerce vs. Electronic Commerce, Impact of E-Commerce, Electronic Markets, Internet Commerce, e-commerce in perspective, Application of E Commerce in Direct Marketing and Selling, Obstacles in adopting E-Commerce Applications; Future of E-Commerce.

UNIT - II

Value Chains in electronic Commerce : Supply chain, Porter's value chain Model, Inter Organizational value chains, Strategic Business unit chains, Industry value chains. Security Threats to E-commerce: Security Overview, Computer Security Classification, Copyright and Intellectual Property, security Policy and Integrated Security, Intellectual Property Threats, electronic Commerce Threats, Clients Threats, Communication Channel Threats, server Threats.

UNIT - III

Implementing security for E-Commerce: Protecting E-Commerce Assets, Protecting Intellectual Property, Protecting Client Computers, Protecting E-commerce Channels, Insuring Transaction Integrity, Protecting the Commerce Server. Electronic Payment System: Electronic Cash, Electronic Wallets, Smart Card, Credit and Charge Card.

UNIT - IV

Business to Business E-Commerce: Inter-organizational Transitions, Credit Transaction Trade Cycle, a variety of transactions. Electronic Data Interchange (EDI): Introduction to EDI, Benefits

of EDI, EDI Technology, EDI standards, EDI Communication, EDI Implementation, EDI agreement, EDI security.

COURSE OUTCOMES:

After completion of course, students would be able to:

1. Understand the basic concepts of electronic transactions.
2. Study of various types of business models and customer relationship management.
3. Students will be able to understand about various business strategies and marketing strategies.
4. Study of various legal and ethical issues related to electronic transactions.
5. Study of intellectual property rights and its importance.
6. Study of Entrepreneurship management
7. Study of analyzing the external environment, the competition and designing the framework for establishing a venture capital.
8. Study of business intelligence and knowledge management tools.

Text Books/ Reference Books:

1. R.Kalakota and A.B.Whinston, Readings in Electronic Commerce, Addison Wesley.
2. David Kosiur, Understanding E- Commerce, Microsoft Press, 1997.
3. Soka, From EDI to Electronic Commerce, McGraw Hill, 1995.
4. David whitely, E-commerce Strategy, Technology and application, Tata McGraw Hill.
5. Gary P. Schneider and Jame Perry, Electronic Commerce Thomson Publication.
6. Doing Business on the Internet E-COMMERCE S. Jaiswal; Galgotia Publications.
7. E-Commerce An Indian Perspective; P.T.Joseph; S.J.; PHI.
8. E-Commerce; Efrain Turbon; Jae Lee; David King; H.Michael Chang.

Note: Latest and additional good books may be suggested and added time to time.