# MAULANA AZAD NATIONAL URDU UNIVERSITY
## SCHOOL OF TECHNOLOGY
## DEPARTMENT OF CS&IT
Revised curriculum for
## Under CBCS 2017-18

**ALL PG PROGRAMS**

| S. No. | Course Code | Course Title | Hours/Week | | | Credits | Score | | End Exam Duration | Semester |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | L | T | P | | Internal | External | | |
| 1 | PGCS101GET | Information Technology for Business | 3 | 1 | 0 | 2 | 15 | 35 | 3 Hrs | I |
| 2 | PGCS150GEP | Information Technology for Business Lab | 0 | 0 | 4 | 2 | 50 | 50 | 3 Hrs | I |
| 3 | PGCS102GET | C Programming | 3 | 1 | 0 | 2 | 15 | 35 | 3 Hrs | I |
| 4 | PGCS151GEP | C Programming Lab | 0 | 0 | 4 | 2 | 50 | 50 | 3 Hrs | I |
| 5 | PGCS201GET | Database Management System | 3 | 1 | 0 | 2 | 15 | 35 | 3 Hrs | II |
| 6 | PGCS250GEP | Database Management System Lab | 0 | 0 | 4 | 2 | 50 | 50 | 3 Hrs | II |
| 7 | PGCS201SET | Fundamentals of Information Technology | 3 | 1 | 0 | 2 | 15 | 35 | 3 Hrs | II |
| 8 | PGCS301GET | Management Information System | 3 | 1 | 0 | 2 | 15 | 35 | 3 Hrs | III |
| 9 | PGCS350GEP | Management Information System Lab | 0 | 0 | 4 | 2 | 50 | 50 | 3 Hrs | III |

| Course Code | Course Title | | Lecture | | | |
|---|---|---|---|---|---|---|
| PGCS101GET | Information Technology for Business | | **L** | **T** | **P** | **Semester:** I |
| Version: | Date of Approval: | | 3 | 1 | 0 | |
| Scheme of Instruction | | | | Scheme of Examination | | |
| Total Duration | : | 30 Hrs. | | Maximum Score | : | 50 |
| Periods/ Week | : | 4 | | Internal Evaluation | : | 15 |
| Credits | : | 2 | | End Semester | : | 35 |
| Instruction Mode | : | Lecture | | Exam Duration | : | 3 Hrs. |

**Course Objectives:**
1. The main purpose of this course is to enhance student's technical skills in terms of operating computers, Hardware, Software, and its applications, Categories of Machines, Servers, How Computers works.
2. This course attempts to introduce the fundamentals of Information Technology, Application of Information technology in functional area.
3. This subject also introduce with Communication & Computer Networking, & Programming concepts, five generation of programming languages.

**Course Outcomes:**
1. Computer system, its components and types of computer system and working style of computer.
2. Application of Information Technology in functional Areas.
3. Computer network and types of network, and programming concepts and generation of programming languages.

| **Detailed Contents:** | |
|---|---|
| Unit: 1 | Computer Concepts and Applications: Introduction to Information Technology, Scope of IT in business, Categories of Machines- Servers, How Computers work- Hardware, Input Hardware Processing and Memory. Hardware: Storage Hardware, Output hardware, Software-System software, Application Software, History Input-Output devices. How the processor or CPU works: Control unit, ALU and Registers. How memory works: RAM, ROM, Flash, Floppy Disks, Hard disks, Optical Disks, Magnetic Tapes, Smartcards, Flash Memory Cards. |
| Unit: 2 | Introduction to Software: Introduction to Software: System Software, Components of System software. The operating system: What it does-Booting- User interface- CPU Management-File Management- Task Management: Multitasking, Multiprogramming, Timesharing, Multiprocessing, Formatting - System software: Device Drivers and Utility Programs- Desktop and Laptop- Operating Systems: DOS, Network operating systems, windows versions, UNIX, Linux. |
| Unit: 3 | Application of IT in functional Areas: IT and Marketing, IT and Finance, IT and Operational Management, IT and Human Resource Management - Enterprise Systems- Knowledge Management. |
| Unit: 4 | Data Communication, Networks and Internet Concepts: Data Communication, Networks and Internet Concepts: Benefits of Networks, Types of networks, Types of LAN, Components of LAN, Topology of LAN, Analog and Digital signal Internet Concepts, The internet and World Wide Web, Sending and Receiving E-mail, Search Engines, Other Internet Resources-FTP, Telnet, E-Commerce. Network and internet security issues, Extranet and Intranet. |
| Unit: 5 | Programming Concepts and Tools: Introduction to Programming, Concepts and Tools, Five step programming, Design the program, code the program, test the program, Document and maintain the program, Five generations of programming languages, Programming languages used today, Pseudo Code. |
| **Examination and Evaluation Pattern:** It include both internal evaluation (15 marks) comprising two class sessional exams/ assignments/ quiz/ seminar presentation etc. and external evaluation (35 marks) which is mainly end semester examination. | |

| Text Books: | |
|---|---|
| 1 | Alexis Leon & Mathew Loen, Introduction to Computers with MS-OFFICE-2000, TMH, -2001 |
| 2 | Williams/Sawyer, Using Information Technology, 2009 |
| Reference Books: | |
| 1 | Norton. P., Introduction to computers, 7Ed, TMH, 2010. |
| 2 | Curin ,D.P.,Foley, K.Sen, and C.S.Morin , Introduction to Information Technology – Breaking Wave, TMH, 1999. |
| 3 | Morley, D. and Parker, C. S., Understanding Computers: Today and Tomorrow, 11Ed, Thomson Learning, 2007 |

| Course Code | Course Title | Lecture | | | Semester: I |
|---|---|---|---|---|---|
| | | **L** | **T** | **P** | |
| PGCS150GEP | Information Technology for Business Lab (MS-Office) | 0 | 0 | 4 | |
| **Version:** | **Date of Approval:** | | | | |
| **Scheme of Instruction** | | | **Scheme of Examination** | | |
| Total Duration | : | 30 Hrs. | Maximum Score | : | 100 |
| Periods/ Week | : | 4 | Internal Evaluation | : | 50 |
| Credits | : | 2 | End Semester | : | 50 |
| Instruction Mode | : | Practical | Exam Duration | : | 3 Hrs. |

| **Course Objectives:** |
|---|
| 1. Working on word processing software to create, editing documents, and use of mail merge application |
| 2. Working of electronic spreadsheet to perform automatic calculation and creation of chart and graphs. |
| 3. Making presentation to show information using slide. |
| **Course Outcomes:** |
| 1. Use of MS-Word for creation of documents and use of mail-merge. |
| 2. Use of MS-Excel for creation of automatic spreadsheet for calculation. |
| 3. Use of MS-PowerPoint for creation of slide to show information attractively. |

| **Detailed Contents:** | |
|---|---|
| MS-WORD | Creating, saving editing and printing of documents Find and replace options formatting with tables, charts and pictures Mail Merge Spell check and grammar checks |
| MS-EXCEL | Creating, naming and saving worksheets Data entry-Manual and automatic Formatting cells and cell referencing Working with graphs and charts Creating and using formulas and functions Previewing and printing worksheets. Data management tools Statistical Applications– Measures of central tendency. |
| MS-POWERPOINT | Presenting features, creating, saving a presentation using different methods editing, using different designs, layouts, color schemes, formatting, custom animating and displaying the presentation |
| **Examination and Evaluation Pattern:** It include both internal evaluation (50 marks) comprising two class sessional exams/ assignments/ quiz/ seminar presentation etc. and external evaluation (50 marks) which is mainly end semester examination. | |

| **Text Books:** | |
|---|---|
| 1 | Microsoft office Word 2007, by Torben Lage Frandsen. |
| 2 | Microsoft office Excel 2007, by Torben Lage Frandsen. |
| 3 | Microsoft office Powerpoint 2007, by Torben Lage Frandsen. |
| **Reference Books:** | |
| 1 | |
| 2 | |
| 3 | |

| Course Code | Course Title | | Lecture | | | Semester: I |
|---|---|---|---|---|---|---|
| PGCS102GET | C Programming | | **L** | **T** | **P** | Semester: I |
| Version: | Date of Approval: | | 3 | 1 | 0 | |
| **Scheme of Instruction** | | | | **Scheme of Examination** | | |
| Total Duration | : | 30 Hrs. | | Maximum Score | : | 50 |
| Periods/ Week | : | 4 | | Internal Evaluation | : | 15 |
| Credits | : | 2 | | End Semester | : | 35 |
| Instruction Mode | : | Lecture | | Exam Duration | : | 3 Hrs. |

| **Course Objectives:** |
|---|
| 1. To provide an overview of computers and problem solving methods using 'C' language |
| 2. Serve as a foundation for the study of programming languages. |
| 3. Learn to develop program using 'C' language |
| **Course Outcomes:** |
| 1. The student would acquire various problem solving techniques and implement them in 'C' language. |
| 2. Understand the basic terminology used in computer programming and write, compile and debug programs in C language. |
| 3. Develop programs involving decision structures, loops and functions using different data types and data structures. |

| **Detailed Contents:** | |
|---|---|
| Unit: 1 | Introduction to Programming, Introduction to components of a computer system (disks, memory, processor, where a program is stored and executed, operating system, compilers etc.). |
| | Introduction to programming – definitions and developing Algorithms and flowcharts for simple programs. Introduction to C Programming: Origin and history of c programming character set, Identifiers and keywords data types, constants, variables operators, symbolic constants, Expressions, compound statements, structure of C program, Input and output function. |
| Unit: 2 | C Statements – selection statements – if nested if's, the if-else –if ladder the conditional expressions, switch statement nested switch statements, iteration statements – the for loop, for loop variations, the while loop, the do-while loop, declaring variable with in selection and iteration statements, jump statement, the return statement, the go to submit, break statement, exit ( ) function, the continue statement, expression statement. Block statements |
| Unit: 3 | Arrays – Array what is an array? – Array Declaration, Array Initialization – Accessing individual elements of an array – Two Dimensional Arrays – Passing an array element to a function – Rules of using an array. What are strings? String I/O, string Manipulation Functions – The General Form of a Function, elements of function, function categories, types of functions, Function Arguments Call by value, Call by Reference, return statement. Uses of functions. C pre – processor, storage classes – Automatic – Register, Static and external. |
| Unit: 4 | Pointers – definition, pointer variables, pointer expressions, arithmetic pointers, pointers and arrays, initializing pointers and functions and problems with pointers. Structures – definition, accessing structure members, structure assignments, array of structures, passing structures, structure pointers, uses of structures Unions – definitions, difference between structure and union, type def. |
| Unit: 5 | Files – introduction to streams and files, basics of files – file pointer, opening and closing files, writing and reading character, file functions. |
| **Examination and Evaluation Pattern:** It include both internal evaluation (15 marks) comprising two class sessional exams/ assignments/ quiz/ seminar presentation etc. and external evaluation (35 marks) which is mainly end semester examination. | |

| **Text Books:** | |
|---|---|
| 1 | Let Us C by Yashwanth Kanethar. |
| 2 | E. Balaguruswamy, Programming in ANSI C, Tata McGraw-Hill |
| **Reference Books:** | |
| 1 | Programming in C, 2nd Edition, Oxford by Pradip Dey, Mannas Ghosh |
| 2 | Brian W. Kernighan and Dennis M. Ritchie, The C Programming Language, Prentice Hall of India |

| Course Code | Course Title | | Lecture | | | Semester: I |
|---|---|---|---|---|---|---|
| PGCS151GEP | C Programming Lab | | **L** | **T** | **P** | **Semester:** I |
| **Version:** | **Date of Approval:** | | 0 | 0 | 4 | |
| **Scheme of Instruction** | | | | **Scheme of Examination** | | |
| Total Duration | : | 30 Hrs. | | Maximum Score | : | 100 |
| Periods/ Week | : | 4 | | Internal Evaluation | : | 50 |
| Credits | : | 2 | | End Semester | : | 50 |
| Instruction Mode | : | Practical | | Exam Duration | : | 3 Hrs. |

| **Course Objectives:** |
|---|
| 1. Provide an overview of computers and problem solving methods using 'C' language |
| 2. Serve as a foundation for the study of programming languages. |
| 3. Learn to develop program using 'C' language. |
| **Course Outcomes:** |
| 1. The student would acquire various problem solving techniques and will be able to implement them in 'C' language. |
| 2. Understand the basic terminology used in computer programming and write, compile and debug programs in C language. |
| 3. Develop programs involving decision structures, loops and functions using different data types and data structures & Understand difference between call by value and call by reference |

| **Detailed Contents:** |
|---|
| 1. Write C program to input and output the text message. |
| 2. Write C Program to perform all arithmetic operations. |
| 3. Write C Program to utilize the math function. |
| 4. Write C Program to perform the mathematical expressions. |
| 5. Write C Program for Local and Global Variables. |
| 6. Write C Program for internal static and external static variables. |
| 7. Write C Program to find the roots of a Quadratic equation. |
| 8. Write C Programs for all the Operators. (Arithmetical, Logical, Relational, Bitwise). |
| 9. Write C Programs for Increment and Decrement Operators. |
| 10. Write C Programs to implement the Ternary Operator. |
| 11. Write C Programs for special Operators. |
| 12. Write C Programs for all the Control Structures. (Sequential Control Structures, Conditional Control Structures, Iterative Control Structures). |
| 13. Write C Programs to display the different types of patterns using nested for loop. |
| 14. Write C Program for Statements. (switch, break, goto, continue etc.,). |
| 15. Write C Program to print biggest number from n numbers. |
| 16. Write a C Program to find the given integer number is even or odd number. |
| 17. Write a C Program to calculate the factorial of a given number. |
| 18. Write a C Program to swap the two numbers using temp variable and without using temp variable. |
| 19. Reading and Printing a single dimensional array of elements. |
| 20. Ascending and descending of an array. |
| 21. Sum of all odd numbers and sum of all even numbers in a single dimensional array. |
| 22. Mathematical operations on single dimensional arrays. |
| 23. Reading and Printing a multi-dimensional array of elements. |
| 24. Mathematical operations on multi-dimensional array of elements. |
| 25. Passing an array element to a function. |
| 26. Reading and Printing a string. |
| 27. C Programs on String functions. |
| 28. Write a C program to calculate string length by writing the user-define function. |
| 29. Function declaration and initialization. |
| 30. C Program to differentiate the parameters and arguments in functions. |
| 31. Programs for different types of inbuilt functions. |
| 32. Call by value and Call by reference programs in functions. |
| 33. Write a program to swap the given 2 number using passing by reference. |
| 34. Write C Programs to perform all valid arithmetic operations using pointers. |
| 35. C Program on Opening and closing a file |
| **Examination and Evaluation Pattern:** It include both internal evaluation (50 marks) comprising two class sessional exams/ assignments/ quiz/ seminar presentation etc. and external evaluation (50 marks) which is mainly end semester examination. |

| **Text Books:** | |
|---|---|
| 1 | E. Balaguruswamy, Programming in ANSI C, Tata McGraw-Hill |
| 2 | Object Oriented Programming with C++ By E.Balaguruswamy |
| **Reference Books:** | |
| 1 | Programming in C, 2nd Edition, Oxford by Pradip Dey, Mannas Ghosh |
| 2 | Brian W. Kernighan and Dennis M. Ritchie, The C Programming Language, Prentice Hall of India |

| Course Code | Course Title | | Lecture | | | |
|---|---|---|---|---|---|---|
| | | | **L** | **T** | **P** | **Semester:** II |
| PGCS201GET | Database Management System | | 3 | 1 | 0 | |
| **Version:** | **Date of Approval:** | | | | | |
| **Scheme of Instruction** | | | | **Scheme of Examination** | | |
| Total Duration | : | 30 Hrs. | | Maximum Score | : | 50 |
| Periods/ Week | : | 4 | | Internal Evaluation | : | 15 |
| Credits | : | 2 | | End Semester | : | 35 |
| Instruction Mode | : | Lecture | | Exam Duration | : | 3 Hrs. |

| **Course Objectives:** |
|---|
| 1. Knowledge of DBMS, in terms of use and implementations. |
| 2. Understand the concept of data planning and database design for serving different types of users with varying skill levels. |
| 3. Handling different user views of the same stored data, combining interrelated data , setting standards, controlling concurrent updates so as to maintain data integrity |
| **Course Outcomes:** |
| 1. Understand the relational database theory, and be able to write relational algebra expressions for queries, logical design of databases, including the E-R method and normalization approach. |
| 2. Illustrate commercial relational database system by writing SQL. |
| 3. Understand and analyze the database storage structures and access techniques like file and page organizations, indexing methods including B-tree, hashing, query evaluation techniques and and query optimization. |

| **Detailed Contents:** | |
|---|---|
| Unit: 1 | Data base System Applications, data base System VS file System – View of Data – Data Abstraction – Instances and Schemas – data Models – the ER Model – Relational Model – Other Models – Database Languages – DDL – DML – database Access for applications Programs – data base Users and Administrator – Transaction Management – data base System Structure – Storage Manager – the Query Processor. History of Data base Systems. Data base design and ER diagrams – Beyond ER Design Entities, Attributes and Entity sets – Relationships and Relationship sets – Additional features of ER Model – Concept Design with the ER Model – Conceptual Design for Large enterprises. |
| Unit: 2 | Introduction to the Relational Model – Integrity Constraint Over relations – Enforcing Integrity constraints – Querying relational data – Logical data base Design – Introduction to Views – Destroying /altering Tables and Views. Relational Algebra – Selection and projection set operations – renaming – Joins – Division – Examples of Algebra overviews – Relational calculus – Tuple relational Calculus – Domain relational calculus – Expressive Power of Algebra and calculus. |
| Unit: 3 | Form of Basic SQL Query – Examples of Basic SQL Queries – Introduction to Nested Queries Correlated Nested Queries Set – Comparison Operators – Aggregative Operators – NULL values – Comparison using Null values – Logical connectivity's – AND, OR and NOT – Impact on SQL Constructs – Outer Joins – Disallowing NULL values – Complex Integrity Constraints in SQL Triggers and Active Data bases. Schema refinement – Problems Caused by redundancy Decompositions – Problem related to decomposition – reasoning about FDS – First, Second, Third Normal forms – BCNF – Lossless join Decomposition – Dependency preserving Decomposition – Schema refinement in Data base Design – Multi valued Dependencies – Forth Normal Form. |
| Unit: 4 | Transaction Concept- Transaction State- Implementation of Atomicity and Durability Concurrent – Executions – Serializability- Recoverability – Implementation of Isolation – Testing for serializability Lock – Based Protocols – Timestamp Based Protocols- Validation- Base Protocols – Multiple Granularity. Recovery and Atomicity – Log – Based Recovery – Recovery with Concurrent Transactions – Buffer Management – Failure with loss of nonvolatile storage-Advance Recovery systems- Remote Backup systems. |
| Unit: 5 | Data on External Storage – File Organization and Indexing – Cluster Indexes, Primary and Secondary Indexes – Index data Structures – Hash Based Indexing – Tree base Indexing Comparison of File Organizations – Indexes and Performance Tuning- Intuitions for tree Indexes – Indexed Sequential Access Methods– B+ Trees: A Dynamic Index Structure |
| **Examination and Evaluation Pattern:** It include both internal evaluation (15 marks) comprising two class sessional exams/ assignments/ quiz/ seminar presentation etc. and external evaluation (35 marks) which is mainly end semester examination. | |

| **Text Books:** | |
|---|---|
| 1 | Data base Management Systems, Raghurama Krishnan, Johannes Gehrke, TATA McGrawHill 3rd Edition |
| 2 | Introduction to Database Systems, C.J.Date Pearson Education |
| **Reference Books:** | |
| 1 | Fundamentals of Database Systems , Elmasri,Navathe, Addison Wesley |
| 2 | Data base management system concept ,F. Korth., S. SudarshanMcGraw hill, V edition |

| Course Code | Course Title | Lecture | | | Semester: II |
|---|---|---|---|---|---|
| | | **L** | **T** | **P** | |
| PGCS250GEP | Database Management System Lab | 0 | 0 | 4 | |
| **Version:** | **Date of Approval:** | | | | |

| Scheme of Instruction | | | Scheme of Examination | | |
|---|---|---|---|---|---|
| Total Duration | : | 30 Hrs. | Maximum Score | : | 100 |
| Periods/ Week | : | 4 | Internal Evaluation | : | 50 |
| Credits | : | 2 | End Semester | : | 50 |
| Instruction Mode | : | Practical | Exam Duration | : | 3 Hrs. |

**Course Objectives:**

1. Learn to create the database
2. Be familiarized with the query language
3. Having hands on experience on the DDL commands
4. Having good understanding of DML and DCL commands
5. Familiarize the advance sql queries

**Course Outcomes:**

1. Design and implement a database schema for a given problem domain.
2. Populate query a database.
3. Create and maintain the tables using sql,pl/sql .

**Detailed Contents:**

1. Creation, altering and droping of tables and inserting rows into a table (use constraints while creating tables) examples using SELECT command.
2. Queries (along with sub Queries) using ANY, ALL, IN, EXISTS, NOTEXISTS, UNION, INTERSET, Constraints. Example:- Select the roll number and name of the student who secured fourth rank in the class.
3. Queries using Aggregate functions (COUNT, SUM, AVG, MAX and MIN), GROUP BY, HAVING and Creation and dropping of Views.
4. Queries using Conversion functions (to_char, to_number and to_date), string functions (Concatenation, lpad, rpad, ltrim, rtrim, lower, upper, initcap, length, substr and instr), date functions (Sysdate, next_day, add_months, last_day, months_between, least, greatest, trunc, round, to_char, to date)
5.
   i. Creation of simple PL/SQL program which includes declaration section, executable section and exception –Handling section (Ex. Student marks can be selected from the table and printed for those who secured first class and an exception can be raised if no records were found)
   ii. Insert data into student table and use COMMIT, ROLLBACK and SAVEPOINT in PL/SQL block.
6. Develop a program that includes the features NESTED IF, CASE and CASE expression. The program can be extended using the NULLIF and COALESCE functions.
7. Program development using WHILE LOOPS, numeric FOR LOOPS, nested loops using ERROR Handling, BUILT –IN Exceptions, USE defined Exceptions, RAISE- APPLICATION ERROR.
8. Programs development using creation of procedures, passing parameters IN and OUT of PROCEDURES.
9. Program development using creation of stored functions, invoke functions in SQL Statements and write complex functions.
10. Program development using creation of package specification, package bodies, private objects, package variables and cursors and calling stored packages.
11. Develop programs using features parameters in a CURSOR, FOR UPDATE CURSOR, WHERE CURRENT of clause and CURSOR variables.
12. Develop Programs using BEFORE and AFTER Triggers, Row and Statement Triggers and INSTEAD OF Triggers

**Examination and Evaluation Pattern:** It include both internal evaluation (50 marks) comprising two class sessional exams/ assignments/ quiz/ seminar presentation etc. and external evaluation (50 marks) which is mainly end semester examination.

| **Text Books:** | |
|---|---|
| 1 | ORACLE PL/SQL by example. Benjamin Rosenzweig, Elena Silvestrova, Pearson Education 3rd Edition |
| 2 | ORACLE DATA BASE LOG PL/SQL Programming SCOTT URMAN, Tata Mc-Graw Hill |

| **Reference Books:** | |
|---|---|
| 1 | SQL & PL/SQL for Oracle 10g, Black Book, Dr.P.S. Deshpande |
| 2 | |

| Course Code | Course Title | | Lecture | | | Semester: II |
|---|---|---|---|---|---|---|
| PGCS201SET | Fundamentals of Information Technology | | L | T | P | Semester: II |
| Version: | Date of Approval: | | 3 | 1 | 0 | |

| Scheme of Instruction | | | Scheme of Examination | | |
|---|---|---|---|---|---|
| Total Duration | : | 30 Hrs. | Maximum Score | : | 50 |
| Periods/ Week | : | 4 | Internal Evaluation | : | 15 |
| Credits | : | 2 | End Semester | : | 35 |
| Instruction Mode | : | Lecture | Exam Duration | : | 3 Hrs. |

| Course Objectives: |
|---|
| |
| Course Outcomes: |
| |

| Detailed Contents: | |
|---|---|
| Unit: 1 | **Computer Concepts and Applications:**<br>**1. Introduction to Information Technology-** Applications of computers**,** Categories of Machines, Servers,  Input-Output devices.<br>**2. Computer fundamentals-** Block diagram, CPU**-** Control unit, ALU and Registers,Memory unit.<br>**3. Role of memory**  – primary Memory-RAM,ROM. Secondary memory-, Secondary storage devices. |
| Unit: 2 | **Introduction to Software:**<br>**1. System Software**- components of System software-The operating system, what it does-Booting, User interface, CPU Management, File Management. Device Drivers and Utility Programs, Desktop and Laptop.<br>**2.Task Management-**<br>Multitasking,Multiprogramming,Timesharing,Multiprocessing,Formating,security Management<br>**3. Operating Systems**-DOS, Windows, UNIX, Linux. |
| Unit: 3 | **Application Software**<br>**1. Introduction to Word Processing-**creating, editing and saving documents, formatting features of work processing, working with tables.  Working with graphs, Mail merging, Previewing and Printing a document, Spell Check.<br>**2. Introduction to Electronic Spread Sheet-** creating naming and saving of worksheets, Data Entry –Manual and Automatic formatting features, Different types of built-in functions, graphs<br>**3. Presentation Software**: Presentation basics, creating, saving and displaying |
| Unit: 4 | **Data Communication, Networks and Internet Concepts:**<br>**1. Data Communication**:   Benefits of Networks, Types of networks, Types of LAN, Components of LAN,<br>Topology of LAN.<br>**2. Internet Concepts**- The Internet and World Wide Web,   Search Engines, , E-Commerce. |
| **Examination and Evaluation Pattern:** It include both internal evaluation (15 marks) comprising two class sessional exams/ assignments/ quiz/ seminar presentation etc. and external evaluation (35 marks) which is mainly end semester examination. | |

| Text Books: | |
|---|---|
| 1 | Alexis Leon & Mathew Leon: Introduction to Computers with MS-OFFICE-2000, TMH, -2001 |
| 2 | Peter Norton:  Introduction to Computers |
| **Reference Books:** | |
| 1 | Williams/Sawyer: Using Information Technology 3. Peter Norton: Introduction to Computers |
| 2 | Introduction to Information Technology – Breaking Wave |

| Course Code | Course Title | | Lecture | | | Semester: III |
|---|---|---|---|---|---|---|
| PGCS301GET | Management Information System | | **L** | **T** | **P** | |
| Version: | Date of Approval: | | 3 | 1 | 0 | |

| Scheme of Instruction | | | Scheme of Examination | | |
|---|---|---|---|---|---|
| Total Duration | : | 30 Hrs. | Maximum Score | : | 50 |
| Periods/ Week | : | 4 | Internal Evaluation | : | 15 |
| Credits | : | 2 | End Semester | : | 35 |
| Instruction Mode | : | Lecture | Exam Duration | : | 3 Hrs. |

| Course Objectives: |
|---|
| |
| Course Outcomes: |
| |

| Detailed Contents: | |
|---|---|
| Unit: 1 | Organisations and Computing: Introduction, Modern Organisation-IT enabled- Networked-Dispersed-Knowledge Organisation, Information Systems in Organisations- what are information systems?, Brief history of computing- ENIAC: Way to commercial computers- Advent of artificial intelligence- advent of personal computing-Free Software Movement- Advent of Internet, The role of internet- Internet and Web: they are different-the internet changes everything<br><br>Managing Information Systems in Organisations: Introduction, Managing in the Internet Era, Managing Information Systems in Organisation-the IT interaction model, Challenges for the manager-what information to build?-how much to spend on information systems?-what level of capabilities should be created with information systems?-how centralized should the services be?-what security levels are required?-what is technology road map for the organization? |
| Unit: 2 | Data and Information: Introduction, data and information- measuring data, information as a resource, information in organisational functions, types of information technology, types of information systems-transaction processing systems-management information systems<br><br>Decision making and communication: Introduction, Decision making with MIS-Tactical decisions-operational decisions-strategic decisions, communication in organisations- types of communication- examples of communications in organisations- decision making with communication technology<br><br>Competing with IT: Introduction, The competitive environment of business- partnering for mutual benefit-bargaining power of suppliers-bargaining power of buyers and customers-barriers to entry-threat of substitutes-industry regulations, Using IT for competing-competing on low cost-competing on differentiation |
| Unit: 3 | IT strategy: Introduction, Information goods-properties-technology lock-in and switching costs-network externalities-positive feedback-tippy markets, information systems and competitive strategy- value chain, the Role of CIO-information system's plan-vendor coordination-technology updates-return on investment on technology.<br><br>Business Process Integration with IT:    Introduction, Business Process Integration- Business processes-example of a complex process, Motivation for Enterprise Systems, Enterprise Resource Planning systems-finance and accounting module-human resource management module-manufacturing and operations module- sales and marketing module |
| Unit: 4 | SCM, CRAM and International Systems: Introduction, Supply Chain Management Systems, Customer Relationships Management Systems, Challenges of Enterprise Systems Implementations- Managing the implementation, International Information Systems-Outsourcing and off-shoring<br><br>Electronic Commerce: Introduction, E-commerce Technology, doing business over internet- networks-electronic data interchange (EDI)-online payment technology- Mobile commerce- ecommerce-portals-search engines-direct selling- auctions- aggregators, E-business<br><br>Decision Support Systems: Introduction, Understanding DSS- MIS and DSS-Decision making-types of decisions, Analytics and Business Intelligence- BI techniques |
| Unit: 5 | Managing Data Resources: Introduction , The Need for Data Management- History of data use, Challenges of Data Management- data independence- reduced data redundancy- data consistency- data access- data administration- managing concurrency-managing security- recovery from crashes-application development, Database Concepts- fields, records and files- basic architecture, Data Warehouses- data mining uses<br><br>Managing Social Media: Introduction, Social Dynamics of the Internet, Services of the Internet- Blogs-Social Networks, Technology of the Internet- Twitter-Rating-Tagging/folksonomies, Social issues-Media impact-Collaboration-Emergence of order, Social Networks in the Enterprise<br><br>Managing IT Function: Introduction, Challenges of Managing the IT function- Modern IT environment-Centralisation versus Decentralisation-IT security-Technology selection, Vendor Management- vendor selection-vendor contracts and service levels-Ongoing relationship management- vendor retention or termination<br><br>Ethical Issues: Introduction, Key issues- Privacy-Workplace Monitoring- Power over users |
| **Examination and Evaluation Pattern:** It include both internal evaluation (15 marks) comprising two class sessional exams/ assignments/ quiz/ seminar presentation etc. and external evaluation (35 marks) which is mainly end semester examination. | |

| Text Books: |
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| 1 |
| Reference Books: |
| 1 |

| Course Code | Course Title | | Lecture | | | Semester: III |
|---|---|---|---|---|---|---|
| PGCS350GEP | Management Information System Lab | | L | T | P | |
| | | | 0 | 0 | 4 | |
| Version: | Date of Approval: | | | | | |

| Scheme of Instruction | | | Scheme of Examination | | |
|---|---|---|---|---|---|
| Total Duration | : | 30 Hrs. | Maximum Score | : | 100 |
| Periods/ Week | : | 4 | Internal Evaluation | : | 50 |
| Credits | : | 2 | End Semester | : | 50 |
| Instruction Mode | : | Practical | Exam Duration | : | 3 Hrs. |

| **Course Objectives:** |
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| **Course Outcomes:** |
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| **Detailed Contents:** |
|---|
| 1.  Management Information System and its functional subsystem<br>2.  Study of physical and conceptual structure of MIS<br>3.  Study of Decision support system, it uses and characteristics<br>4.  Study of information system and its types<br>5.  Study of GDSS (Group Decision Support System) and it possible configuration<br>6.  Study of ERP (Enterprise Resource Planning)and its application |
| **Examination and Evaluation Pattern:** It include both internal evaluation (50 marks) comprising two class sessional exams/ assignments/ quiz/ seminar presentation etc. and external evaluation (50 marks) which is mainly end semester examination. |

| **Text Books:** |
|---|
| 1 |
| 2 |
| **Reference Books:** |
| 1 |
| 2 |