Govt College for Girls, Sec-14, Gurugram

Course Lesson Plan 2023-24 (Odd Sem)

Class: **MSc 3rd Semester** **Room No 80**

Course Title: **Computer Security**

Instructor: **Mrs Vasudha Sharma**

Course Outcomes:

By the end of the course the students will be able to:

CO1:	Describe fundamental concepts of Computer Security
CO2:	Determine and analyze software vulnerabilities and security solutions to reduce the risk of exploitation
CO3:	Design and develop secure Operating system, Database and Network architecture
CO4:	Design security policies , models and implement them.
CO5:	Learn about administering security planning, Risk analysis, legal issues like copyrights, patents and rights of Employees and employers
CO6:	Learn about cryptocurrency, and blockchain applications and implement blockchain in lab.

Reference Books:

1. Security in Computing by Charles P. Pfleeger, SL Pfleegar , Pearson 4th Ed
2. Nina Godbole and Sunit Belpure: Cyber Security Understanding Cyber Crimes, ComputerForensics and Legal Perspectives, Wiley.
3. Achyut S.Godbole: Data Communication and Networking, McGraw –Hill Education New Delhi.
4. Forouzan: Data Communication and Networking (Global Edition) 5/e, McGraw Hill Education India.

5. Forouzan, B.A.: Cryptography & Network Security. Tata McGraw-Hill Education.

Evaluation Scheme:

Internal Assessment: 20 Marks External Assessment: 80

Continuous Assessment:

S. No.	Component	Duration	Max. Marks	Coverage
1.	Test-I	45 min	5	Based on Unit –I
2.	Test-II	45 min	5	Based on Unit – II,III
3.	Assignment-I	1 Week	5	Based on Unit –IV
4	Attendance		5	

Contact Hours: 6 Lectures (45 Minutes each)/Week

S.No.	Lectures	Topic to be covered	Text book
1.	July	Security Problem in Computing: meaning of Computer Security, Computer Criminals, Methods of Defense, Elementary Cryptography: Substitution Ciphers, Transpositions, Making "Good" Encryption Algorithms, The Data Encryption Standard, The AES Encryption Algorithm, Public Key Encryptions, Uses of Encryption	R1
2.	August	Secure Programs, Non-malicious Program Errors, viruses and other malicious code, Targeted Malicious code, controls Against Program Threats, Protection in General-Purpose operating system protected objects and methods of protection, File protection Mechanisms, User Authentication Designing Trusted O.S : Security polices	R1
3	September	Models of security, trusted O.S. design, Assurance in trusted OS. Implementation examples.Database Security: Security requirements, Reliability and integrity, Sensitive data, Inference,	R1

		Multilevel database, proposals for multilevel security.	
4.	October	Security in Network: Threats in Network, Network Security Controls, Firewalls, Intrusion Detection Systems, Secure E-mail. Security Planning, Risk Analysis, Organizational Security policies, Physical Security. Legal Privacy and Ethical Issues in Computer Security:	R1
5.	November	Protecting Programs and data, Computer Crime, Praia, Ethical issues in Computer Security, Case studies of Ethics	R1

Vasudha
(Vasudha)

Government College for Girls, Sec-14, Gurugram
Course Lesson Plan 2023-24 (Odd Semester)

Class: B.Sc Maths Hons. Semester-III

Room No - 38

Course Title: Database Management and Oracle

Instructor: Sarita Sheera

Course Outcomes:
By the end of the course the students will be able to:
CO1 Describe the fundamental elements of database management systems.
CO2 Explain the basic concepts of relational data model, entity-relationship model, relational database design, relational algebra and SQL.
CO3 Understand basic database storage structures and access techniques: file and page organizations, indexing methods.
CO4 Design ER-models to represent simple database application scenarios
CO5 Convert the ER-model to relational tables, populate relational database and formulate SQL queries on data.
CO6 Improve the database design by normalization.
CO7 Write SQL and PL/SQL commands to create and manipulate database objects.

Text Books:
TB1. Elmsari and Navathe, "Fundamentals of Database Systems", Pearson Education, 7th Edition, 2016.
TB2. Korth, Silberschatz, "Fundamentals of Database System Concepts", TMH, 6th Edition, 2010.

Reference Books:
RB1. Ullman J. D., "Principals of Database Systems", Galgotia Publications, 2nd Edition, 1999.
RB2. C.J.Date, A. Kannan, S. Swamynathan "An Introduction to Database Systems", Pearson Education, 8th Edition, 2006.
RB3. Desai B., "An Introduction to Database Concepts", Galgotia Publications, New Delhi.

Evaluation Scheme:

Internal Assessment: 20 Marks

External Assessment: 80

Continuous Assessment:

S. No.	Component	Duration	Max. Marks	Date	Coverage
1.	Assignment-I	1 Week	10	Third week of August	Based on Unit –I
2.	Test-I	45 Minutes	10	Second Week of September	Based on – II
3.	Assignment-II	1 Week	10	Second Week of October	Based on Unit –III
4.	Test-II	45Minutes	10	Third week of November	Based on Unit – IV

Contact Hours: 6 Lectures (45 Minutes each)/Week

AUG 2023	Basic Concepts: File systems vs DBMS, advantages and disadvantages of DBMS, objectives of a database. Database systems concepts and architecture. Data Modeling for a database: records and files, abstraction and data integration. Database Management System: Relational, Network, and Hierarchical. Relational Data Manipulations: Relational Algebra, Relational Calculus, SQL.
SEP 2023	Relational Database Design: Functional dependencies, Finding keys; 1st to 3rd NFs, CNF, Losses Join and Dependency preserving decomposition. Query Processing: General strategies for query processing, query optimization, query processor. Database security issues and recovery techniques.
OCT 2023	Introduction to Oracle: Modules of Oracle, Invoking SQLPLUS, Data types, Data Constraints, Operators, Data manipulation: Create, Modify, Insert, Delete and Update; Searching, Matching and Oracle Functions. SQL*Forms: Form Construction, user-defined form, multiple-record form, Master-detail form. PL/SQL Blocks in SQL*Forms, PL/SQL syntax, Data types, PL/SQL functions, Error handling in PL/SQL, package functions, package procedures, Oracle transactions.
NOV 2023	SQL*Report Writer: Selective dump report, Master-detail Report, Control-break Report, Test report. Database Triggers: Use & type of database Triggers, Database Triggers Vs SQL*Forms, Database Triggers Vs. Declarative Integrity Constraints, BEFORE vs AFTER Trigger Combinations, Creating a Trigger, Dropping a Trigger.
DEC 2023	TEST AND REVISION

Sarita Sheera
Associate Professor
Computer Science

Govt. College for Girls, Sec-14, Gurugram
Lesson Plan 2023-24(Odd sem)

Class: Master of Commerce (1st Semester)

Course Title: Computerised Accounting

Instructor: Dr. Sangeeta Rani

Objectives:
After successful completion of this course, student will be able to:
- Understand ERP and Basic Accounting.
- ERP Computer Implementation.
- Basic of Tally.
- To create and manage a small Company in Tally.

Text Books:
1. Computerised Accounting: Garima Agarwal, Himalaya

Reference Books:
1. Computerised Accounting: A. Murali Krishna, Vaagdevi publications
2. Computerised Accounting: Dr. G. Yogeshweran, PBP.

Evaluation Scheme:

Final Assessment: 35

S. No.	Component	Duration	Max. Marks	Date	Coverage
1.	Assignment-I	1 Week	05*	First Week of Sep	Based on Unit –I Basic of Accounting
2.	Class Test	45 Minutes	10	Fourth Week of Sept	Based on Unit –I and Unit –II Portion (Tally Basic)
3.	Assignment-II	1 Week	05*	Third Week of Oct	Based on Unit –III and IV (Inventory and Stock)
4.	Attendance	Throughout the semester	05		

* Best of Two Assignments

S.No.	Lectures	Topic to be covered
1.	Aug	Introduction to Accounting. Basic of Accounting Terms; Owner, Company, Debit and Credit.
2.		Basic of Accounting Terms; Ledger, Inventory, Goods, Assets: Fixed and Variable, Liabilities.
3		Introduction to ERP. Introduction to Computerised Accounting. Pros and Cons of Computerised Accounting. Introduction to various ERP software available and in use.
4.	Sep (1,2 Week)	**Unit – I**: Introduction to Tally. Features available in Tally. Introduction to chart of Accounts. Maintaining chart of Accounts in ERP (Tally).
5.	Sep 3rd Week	Maintaining chart of Accounts in ERP (Tally). Introduction-Getting Started with Enterprise Resource Planning (ERP)
6.	Sep (4th Week and Last)	**Unit II** – Mouse / Keyboard Conventions-Company Creation, Shut a Company, Select a Company.
7.	Oct (1,2 Week)	Alter Company , Basic of Ledger : Single Ledger Creation
8.		Multi-Ledger Creation, Altering and Displaying Ledgers.
9.	Oct (3,4 Week and Last)	**Unit III** - Introduction to Stock Creation.
10.		Maintaining Stock-Keeping Units (SKU): Introduction,
11.	Nov (2,3, Week)	Inventory Masters in ERP, Creating Inventory Masters.
12.		**Unit IV**- Introduction to Stock. Basic terminology of Stock Creation.
13.	Nov (4th Week and last)	Creation of Stock Group,
14.		Creation of Units of Measure,
15.	Dec	Creation of Stock Item,
16.		Basic of Godown: Creation of Godown.
17.		Defining of Stock Opening Balance in ERP Stock Category,

Govt. College for Girls, Sec-14, Gurugram
Course Lesson Plan 2023-24 (Odd Sem.)

Class: BCom 1st SEM **(Section A)**

Course Title: Basics of Computer-I

Teacher: Ms. Komal Bansal

Suggested Readings:
[1]. Introduction of Information System ALEXISLEON
[2]. Computer Fundamentals-Nasib Singh Gill.
[3]. Introduction to Information Technology, ITL Education Solutions limited, Pearson Education

Month	Topics / Chapters
July	Discussion of syllabus and methodology, Introduction to Computers: Definition of Computer; Components of Computer
August	Characteristics of Computers; History evolution of Computers, Generation of computers; Classification of Computers- According to Purpose, According to Technology, According to Size and Storage Capacity; Human being VS Computer; Difference between Computer and Calculator **Assignment on Types of Computers, TEST OF UNIT 1**
September	Input Devices: Mouse, Keyboard, Light pen, Track Ball, Joystick, MICR, Optical Mark reader and Optical Character Reader Scanners, Voice system, Web Camera. Output Devices: Hard Copy Output Devices; Line Printers, Character Printers, Chain Printers, Dot-matrix Printers, Daisy Wheel Printer, Laser Printers, Ink Jet Printers; Plotters, Soft Copy device –Monitor, Sound Cards and speakers **Assignment on Input & Output Devices**
October	Memory and Mass Storage Devices: Characteristics of Memory Systems; Memory Hierarchy; Types of Primary Memory; RAM and ROM; Secondary and Back-up; Magnetic Disks, Characteristics and classification of Magnetic Disks; Optical Disks; Magnetic Tapes **TEST OF UNIT 3**
November	MS- Word: Fundamentals of MS-Word, Features of MS-Word, Menus, Formatting and Standard Toolbars, Ruler, Scroll Bar, Creating, Editing, Saving, export and import files, inserting and copying the files, Working with frames, Paragraph formatting, Columns, Pictures, Tables, Macros and Mail Merge **Assignment on MS-Word, Test of UNIT 4**

(Komal Bansal)

Govt. College for Girls, Sec-14, Gurugram
Department of Computer Science
Course Objectives

Class: BCom 1st SEM **(Section A)**

Course Title: Basics of Computer-I

Teacher: Ms. Komal Bansal

Course Learning Outcomes:
By the end of the course, the students will be able to:
CO1: Identify system components, computer hardware and software.
CO2: Formulate opinions about the impact of computers on society.
CO3: Learn the functional units and classify types of computers, how they process information and how individual computers interact with other computing systems and devices.
CO2: Basic Knowledge of input/output devices & various types of memories.
CO3: Learn basic word processing and become proficient in using the features of MS Word.
CO4: Describe the role of paging, segmentation, and virtual memory in operating systems.
CO5: Defining I/O systems, Device Management Policies and Secondary Storage Structure and Evaluation of various Disk Scheduling Algorithms.

Text Book:
T1. Silberschatz, Galvin and Gagne, Operating System Principles, 7th Ed. Addison Wesley.

Reference Books:
[1]. Gary Nutt, Operating Systems, 3rd Ed. Pearson Education, India
[2]. Tanenbaum, Modern Operating Systems, PHI.
[3]. W. Stalling, Operating Systems, Macmillan.
[4]. H. M. Dietel, Operating Systems, Addison Wesley Longman.
[5]. Maurice J. Bach, The design of Unix Operating system, Pearson Education, India.
[6]. Sumitabha Das, Unix Concepts & Applications: includes SCO UNIX & Linux, Tata McGraw Hill.

Komal

Govt. College for Girls, Sec-14, Gurugram
Course Lesson Plan 2023-24 (Odd Sem.)

Class: BCA 3rd SEM

Course Title: Operating System (BCA-201) **Room No** – 83 (Sec A) & 25 (Sec B)

Teacher: Ms. Komal Bansal

Text Book:
T1. Silberschatz, Galvin and Gagne, Operating System Principles, 7th Ed. Addison Wesley.

Reference Books:
[1]. Gary Nutt, Operating Systems, 3rd Ed. Pearson Education, India
[2]. Tanenbaum, Modern Operating Systems, PHI.
[3]. W. Stalling, Operating Systems, Macmillan.
[4]. H. M. Dietel, Operating Systems, Addison Wesley Longman.
[5]. Maurice J. Bach, The design of Unix Operating system, Pearson Education, India.

6 Lectures (45 Minutes each)/Week

Month	Topics / Chapters
July	Discussion of syllabus and methodology, Fundamentals of Operating system: Introduction to Operating System and its need
August	Operating System services, Early systems, Structures - Simple Batch, Multi programmed, timeshared, Personal Computer, Parallel, Distributed Systems, Real-Time Systems, Process Management: Process concept, Operation on processes, Cooperating Processes, Threads, and Inter-process Communication **Assignment on Types of OS, Test of Process Management**
September	CPU Scheduling: Basic concepts, Scheduling criteria, Scheduling algorithms: FCFS, SJF, Round Robin & Queue Algorithms. Device Management: Disk structure, Disk scheduling: FCFS, SSTF, SCAN, C-SCAN, LOOK, C-LOOK **Assignment on Types of Device Scheduling, Test of CPU Scheduling**
October	Deadlocks: Deadlock characterization, Methods for handling deadlocks, Banker's Algorithm, Memory Management: Logical versus Physical address space, Swapping, Contiguous allocation, Paging, Segmentation, Virtual Memory: Demand paging, Performance of demand paging **Assignment on Memory Management, Test of deadlock**
November	Page replacement, Page replacement algorithms, Thrashing, File management: File system Structure, Allocation methods: Contiguous allocation, Linked allocation, Indexed allocation, Free space management: Bit vector, Linked list, Grouping, Counting **Assignment on File Management, Test of Unit 4**

(Komal Bansal)

Govt. College for Girls, Sec-14, Gurugram
Department of Computer Science
Course Objectives

Class: BCA 3rd SEM

Course Title: Operating System (BCA-201)

Teacher: Ms. Komal Bansal

Course Learning Outcomes:
By the end of the course, the students will be able to:
CO1: Identify the role of Operating System.
CO2: Awareness of different types of Operating System and their services.
CO3: Understanding CPU Scheduling, Deadlock Handling and Comparing CPU Scheduling Algorithms. Solve Deadlock Detection Problems.
CO4: Describe the role of paging, segmentation, and virtual memory in operating systems.
CO5: Defining I/O systems, Device Management Policies and Secondary Storage Structure and Evaluation of various Disk Scheduling Algorithms.

Text Book:
T1. Silberschatz, Galvin and Gagne, Operating System Principles, 7th Ed. Addison Wesley.

Reference Books:
[1]. Gary Nutt, Operating Systems, 3rd Ed. Pearson Education, India
[2]. Tanenbaum, Modern Operating Systems, PHI.
[3]. W. Stalling, Operating Systems, Macmillan.
[4]. H. M. Dietel, Operating Systems, Addison Wesley Longman.
[5]. Maurice J. Bach, The design of Unix Operating system, Pearson Education, India.
[6]. Sumitabha Das, Unix Concepts & Applications: includes SCO UNIX & Linux, Tata McGraw Hill.

Government College for Girls, Sec-14, Gurugram
Course Lesson Plan 2023-24 (Odd Semester)

Class: MSc (CS) I Semester

Course Title: Computer Organisation And Architecture **Room No - 83**

Instructor: Jyoti

Course Outcomes:
By the end of the course the students will be able to:
CO1 Understand different number systems, binary addition and subtraction, 2's complement representation and operations with this representation.
CO2 Understand the theory and architecture of central processing unit.
CO3 Understand Register Transfer Language, Micro operations and Instruction Cycle.
CO4 Design a simple CPU with applying the theory concepts.
CO5 Summarize the memory organization function of each element of a memory hierarchy.
CO6 Understand the concepts of parallel processing, pipelining and interprocessor communication.

Text Books:
T1. Mano, M.M. : Digital Logic and Computer Design, Prentice- Hall of India.

Reference Books:
R1. Gill Nasib Singh and Dixit J.B.: Digital Design and Computer Organization, University Science Press (Laxmi Publications), New Delhi.
R2. Mano, M.M. : Digital Design, Prentice-Hall of India.
R3. Anand Kumar : Fundamentals of Digital Circuits, PHI.
R4. W. Stallings, "Computer Organization and Architecture - Designing for Performance", Prentice Hall of India.

Evaluation Scheme:

Internal Assessment: 20 Marks **External Assessment: 80**

Continuous Assessment:

S. No.	Component	Duration	Max. Marks	Date	Coverage
1.	Assignment-I	1 Week	10	Last week of August	Based on Unit –I
2.	Test-I	45 Minutes	10	Second week of September	Based on – II
3.	Assignment-II	1 Week	10	Second Week of October	Based on Unit –III
4.	Test-II	45Minutes	10	Third week of November	Based on Unit – IV

Contact Hours: 6 Lectures (45 Minutes each)/Week

AUG 2023	Representation of Information: Number Systems: Binary, Octal and Hexadecimal, Integer and Floating-point representation, Character codes: ASCII and EBCDIC. Basic Building Blocks and Circuit Design: Boolean Algebra and Logic Gates: OR, AND, NOT, XOR Gates; De Morgan's theorem; Universal building blocks; Simplifying logic circuits : sum of product and product of sum form; Karnaugh Map simplification; Combinational logic blocks (Adders, Multiplexers, Encoders, Decoder), Sequential logic blocks (Latches, Flip-Flops, Registers, Counters).
SEP 2023	Register transfer and Micro-operations: Register Transfer Language; Bus and memory Transfer; Micro operations: Arithmetic, Logic & Shift Micro operations. Basic Computer Organization and Design: Instructions Codes, Register reference, Memory Reference & Input-Output instructions, Instruction Cycle, Timing and Control, Interrupts; Design of Control unit: Hardwired control unit, Micro-programmed control unit.
OCT 2023	Memory Organization: Memory Hierarchy, Main Memory, Auxiliary Memory, Cache Memory, Virtual Memory. Register Organization and Parallel Processing: General Register Organization, Stack Organization, Instruction Formats, Addressing Modes; Data Transfer & Manipulation Instructions, CISC and RISC: Features and Comparison, Pipeline and Vector Processing: Parallel processing, Pipelining, Arithmetic Pipeline, Instruction pipeline and Arrays Processors.
NOV 2023	Input-Output Organization: Peripheral Devices, Input-Output interface, Asynchronous Data Transfer, Modes of transfer, Priority interrupt, Direct Memory Access (DMA), input-output processors (IOP), Serial communication. Multi-processors, characteristics of multi-processors, Interconnection structures, Inter-processor Arbitration, Inter-processor Communication and Synchronization, Cache Coherence.
DEC 2023	TEST AND REVISION

Jyoti

Jyoti
Assistant Professor
Computer Science