



**Swami Shraddhanand College
(University of Delhi)**
Alipur, Delhi- 1100036
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Lesson Plan (Semester IV 5th Jan to 3rd May, 2023)

Name of Teacher	Dr. Meera Sharma	Department	Computer Science
Course	B.A. Prog. Computer Applications	Semester	Fourth
Paper	Multimedia Systems and Applications	Academic Year	5 th Jan-3 rd May 2023
Learning Objectives			
<ul style="list-style-type: none"> The course provides an overview of fundamentals of multimedia systems. The students will be taught how to represent, process and retrieve multimedia data such as text, images, sound, video and animation. 			
Learning Outcomes			
<ul style="list-style-type: none"> enumerate and describe the multimedia components. generate, manipulate and use images in multimedia projects using bitmap, vector and 3-D images. create basic animations. 			
Lesson Plan			
Week No.	Theme/ Curriculum	Any Additional Information	
1	Multimedia: Introduction to multimedia, components, uses of multimedia, multimedia applications, virtual reality		
2	Text: Fonts and faces, using text in multimedia, font editing and design tools, hypermedia and hypertext.		
3	Images: Still images – bitmaps, vector drawing, 3D drawing and rendering.		
4	Images (contd.): Natural light and colors, computerized colors, color palettes, imagefile formats.		
5	Sound, Video and Animation: Digital Audio, MIDI audio, MIDI vs digital audio.		
6	Sound, Video and Animation (contd.): Audio file formats, how video works, analogvideo, digital video.		
7	Sound, Video and Animation (contd.): Video file formats, video shooting and editing.		
8	Sound, Video and Animation (contd.): Principles of animation, animation file formats.		
9	Sound, Video and Animation (contd.): Animation techniques.		

10	Internet and Multimedia: WWW and HTML, Multimedia on the web.	
11	Internet and Multimedia (contd.): Web servers, web browsers, web page makers and site builders.	
12	Making Multimedia: Stages of a multimedia project, requirements to make good multimedia.	
13	Making Multimedia (contd.): Hardware peripherals - connections, memory and storage devices.	
14-15	Making Multimedia (contd.): Multimedia software and authoring tools.	
<p>Books:</p> <ol style="list-style-type: none"> 1. Vaughan, T. (2017). Multimedia: Making It Work (9th edition). McGraw Hill Education. 2. Andleigh, K., & Thakkar, K. (2015). Multimedia System Design (1st edition). Pearson Education India. 3. Keyes, J. (2000). The Ultimate Multimedia Handbook. TMH. 4. Steinmetz, R., & Naharstedt, K. (2012). Multimedia Computing, Communications Applications. Pearson. 		
Online Resources (if Any)	GIMP and BLENDER OSS	
Assignment and Class Test Schedule for Semester	Assignment: Assigned to students on different topics in March 2023. Class Test: 6 th April 2023 .	



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Lesson Plan (Sem II, March 2023 to June 2023)

Name of Teacher	Dr. Meera Sharma	Department	Computer Science
Course	All Courses	Semester	Second
Paper	SEC: Basic IT Tools	Academic Year	March-June 2023
Learning Objectives			
<ul style="list-style-type: none">To enable students develop IT skills that are a pre-requisite in today's work environment.To equip them with basic computing skills that will enhance their employability in general.To enable the student to analyse and present information in a meaningful manner.			
Learning Outcomes			
<ul style="list-style-type: none">By studying this course, students will be able to use word-processor to generate documents with appropriate formatting, layout, review and referencing.By studying this course, students will be able to manage data in worksheets and workbooks and analyze it using spreadsheet functions and inbuilt formulas.By studying this course, students will be able to draw analysis on data using spreadsheets to make decisions.By studying this course, students will be able to make meaningful representations of data in the form of charts and pivot tables.By studying this course, students will be able to manage data in database tables and use the same for generating queries, forms and reports.			
Lesson Plan			
Week No.	Theme/ Curriculum	Any Additional Information	
1-4	Unit 1: Introduction to Spreadsheets Spreadsheets: Concept of worksheets and workbooks, creating, opening, closing and saving workbooks, moving, copying, inserting, deleting and renaming worksheets, working with multiple worksheets and multiple workbooks, controlling worksheet views, naming cells using name box, name create and name define; Exchanging data using clipboard, object linking and		

	<p>embedding; Printing and Protecting worksheets: Adjusting margins, creating headers and footers, setting page breaks, changing orientation, creating portable documents and printing data and formulae; Implementing file level security and protecting data within the worksheet; Understanding absolute, relative and mixed referencing in formulas, referencing cells in other worksheets and workbooks, correcting common formula errors, working with inbuilt function categories like mathematical, statistical, text, lookup, information, logical, database, date and time and basic financial functions.</p>	
5-8	<p>Unit 2: Data Analysis in Spreadsheets Consolidating worksheets and workbooks using formulae and data consolidate command; Choosing a chart type, understanding data points and data series, editing and formatting chart elements, and creating sparkline graphics, Analysing data using pivot tables: Creating, formatting and modifying a pivot table, sorting, filtering and grouping items, creating calculated field and calculated item, creating pivot table charts, producing a report with pivot tables. Introduction to recording and execution of macros.</p>	
9-11	<p>Unit 3: Word Processing Introduction: Creating and saving your document, displaying different views, working with styles and character formatting, working with paragraph formatting techniques using indents, tabs, alignment, spacing, bullets and numbering and creating borders; Page setup and sections: Setting page margins, orientation, headers and footers, end notes and foot notes, creating section breaks and page borders; Working with tables: Creating tables, modifying table layout and design, sorting, inserting graphics in a table, table math, converting text to table and vice versa; Create newspaper columns, indexes and table of contents, Spell check your document using inbuilt and custom dictionaries, checking grammar and style, using thesaurus and finding and replacing text; Create bookmarks, captions and cross referencing, adding hyperlinks, adding sources and compiling and bibliography; Mail merge: Creating and</p>	

	<p>editing your main document and data source, sorting and filtering merged documents and using merge instructions like ask, fill-in and if-then-else; Linking and embedding to keep things together.</p>	
12-15	<p>Unit 4: Databases Introduction to Database Development: Database Terminology, Objects, Creating Tables, working with fields, understanding Data types, Changing table design, Assigning Field Properties, Setting Primary Keys, using field validation and record validation rules, Indexing, working with multiple tables, Relationships & Integrity Rules, Join Properties, Record manipulation, Sorting & Filtering; Select data with queries: Creating Query by design & by wizard (Select, Make Table, Append, Delete, Cross Tab, Update, Parameterized Query, Find Duplicate and Find Unmatched), Creating multi table queries, creating & working with table joins. Using operators & expressions: Creating simple & advance criteria; Working with forms: Creating Basic forms, working with bound, unbound and calculated controls, understanding property sheet, Working with Data on Forms: Changing Layout, creating Sub Forms, creating list box, combo box and option groups; Working with Reports: Creating Basic Reports, Creating Header & Footer, Placing Controls on reports, sorting & grouping, Creating Sub reports.</p>	
<p>Books:</p> <p>Essential/recommended readings</p> <ol style="list-style-type: none"> 1. Swinford, E., Dodge, M., Couch, A., Melton, B. A. (2013). Microsoft Office Professional 2013. United States: O'Reilly Media. 2. Wang, W. (2018). Office 2019 For Dummies. United States: Wiley. Microsoft. 3. Lambert, J. (2019). Microsoft Word 2019 Step by Step. United States: Pearson Education. <p>Suggestive readings</p> <ol style="list-style-type: none"> 4. Jelen, B. (2013). Excel 2013 Charts and Graphs. United Kingdom: Que. 5. Alexander, M., Jelen, B. (2013). Excel 2013 Pivot Table Data Crunching. United Kingdom: Pearson Education. 6. Alexander, M., Kusleika, R. (2018). Access 2019 Bible. United Kingdom: Wiley. 		
Online Resources (If Any)	None	
Assignment and Class Test Schedule for Semester	<p>Assignment: Pivot table, Vlookup and Hlookup questions May 2023. Class Test : Mid of May 2023.</p>	

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Lesson Plan(Semester I, Nov 2022 to Feb 2023)

Name of Teacher	Dr. Shveta Kundra Bhatia	Department	Computer Science
Course	B.A.(Prog)	Semester	First
Paper	Introduction to Programming using C++	Academic Year	2022-23

Learning Objectives

- Providing a broad understanding of Object Oriented Programming concepts.
- Students shall have understanding of variables and functions.
- Students will be able to write programs involving mathematical calculations.

Learning Outcomes

- The basic programming and OOPs concepts
- Creating C++ programs
- Tokens, expressions and control structures in C++
- Arranging same data systematically with arrays
- Classes and objects in C++
- Constructors and destructors in C++

Lesson Plan		
Week No.	Theme/ Curriculum	Any Additional Information
1	Introduction to C++ Basic concepts of programming Object Oriented Programming concepts	
2- 4	Data Types and expressions Operators and Operands	
5-8	Control Constructs in C++ Conditional If statement For loop, while loop, do while loop	
9-10	Arrays, Pointers and User Defined functions	
11-15	Classes and Objects	Class Test and Assignment
<p>Books:</p> <ol style="list-style-type: none"> 1. E. Balaguruswamy, Object Oriented Programming with C++, 7th edition, McGraw – Hill Education, 2017. 2. Robert Lafore, Object Oriented Programming in C++, 4th edition, SAMS Publishing, 2016. 		
Online Resources (If Any)	https://www.tutorialspoint.com/python/index.htm https://www.w3schools.in/python https://www.geeksforgeeks.org/python/	



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Lesson Plan(Semester I, Nov 2022 to Feb 2023)

Name of Teacher	Dr. Shveta Kundra Bhatia	Department	Computer Science
Course	B.A.(Prog)	Semester	First
Paper	Programming Fundamentals using Python	Academic Year	2022-23

Learning Objectives

- To understand why Python is a useful scripting language for developers.
- To learn how to design and program Python applications.
- To learn how to use lists, The tuples, and dictionaries in Python programs.
- To learn how to identify Python object types.
- To learn how to use indexing and slicing to access data in Python programs.
- To define the structure and components of a Python program.
- To learn how to write loops and decision statements in Python.
- To learn how to write functions and pass arguments in Python.

Learning Outcomes

- The student shall be able to build basic programs using fundamental programming constructs like variables, conditional logic, looping, and functions
- Work with user input to create fun and interactive programs

Lesson Plan		
Week No.	Theme/ Curriculum	Any Additional Information
1-2	Introduction to Python Basic concepts of programming	
3-6	Data Types and expressions Operators and Operands Control Constructs in Python Conditional If statement	
7-8	User Defined Functions Passing by value and reference Returning by value and reference	
9- 15	Built in Data structures: Lists Tuples Sets Dictionaries	Class Test and Assignment
<p>Books:</p> <ol style="list-style-type: none"> 1. Kamthane, A. N. & Kamthane, A. A., "Programming and Problem Solving with Python", 2nd edition, McGraw Hill Education, 2020. 2. Balaguruswamy E., "Introduction to Computing and Problem Solving using Python", 2nd edition, McGraw Hill Education, 2018. 3. Taneja, S. & Kumar, N., "Python Programming- A modular Approach", Pearson Education India, 2018. 		
Online Resources (if Any)	https://www.tutorialspoint.com/cpp/index.htm https://www.w3schools.in/cpp https://www.geeksforgeeks.org/cpp/	



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Lesson Plan Dec 2022 - Feb 2023

Name of Teacher	Ms. Akanksha Gupta	Department	Computer Science
Course	B.A.(H)/B.Sc(H)/B.Com(H) Skill Enhancement Course	Semester	First
Paper	Programming with Python	Academic Year	2022

Learning Objectives

- To provide exposure to basic problem-solving techniques with computers
- To develop logical thinking abilities and to propose novel solutions for real world problems through programming language constructs.
- To deepen the empirical knowledge on applying programming on business domains.

Learning outcomes

After studying this course, students will be able to:

- interpret the basic representation of the data structures and sequential programming.
- gain knowledge of, and ability to use control framework terminologies.
- work out using the core data, structures as lists, dictionaries, tuples, and sets.
- choose appropriate programming paradigms, interrupt and handle data using files to propose solutions through reusable modules.
- propose possible error-handling constructs for unanticipated states/inputs.
- implement exemplary applications on real-world problems.

Lesson Plan

<i>Week No.</i>	<i>Theme/ Curriculum</i>	<i>Any Additional Information</i>
1-2	Unit-1: Introduction Relationship between computers and programs, Basic principles of computers, File systems, Using the Python interpreter, Introduction to binary computation, Input / Output.	

3-4	Unit-2: Data types and control structures Operators (unary, arithmetic, etc.), Data types, variables, expressions, and Statements.	
5-6	Assignment statements, Strings and string operations, Control Structures: loops and decision.	
7-8	Unit-3: Modularization and Classes Standard modules, Packages, Defining Classes, Defining functions, Functions and arguments(signature).	
9-10	Unit-4: Data structures and Object-oriented design Data Structures (array, List, Dictionary), Error processing, Exception Raising and Handling Programming types.	
11	Object Oriented Programming, Object Oriented Design, Inheritance and Polymorphism,	
12	Revision of syllabus	CLASS TEST AND ASSIGNMENT DISCUSSION
<p>Books:</p> <ol style="list-style-type: none"> 1. Taneja, S., Kumar, N., Python Programming- A modular Approach, Pearson Education India, 2018. 2. Balaguruswamy E., Introduction to Computing and Problem Solving using Python, 2nd edition, McGraw Hill Education, 2018. 		
Online Resources (If Any)	None	
Assignment and Class Test Schedule for Semester	Assignment: Practical questions from guidelines. Class Test : On 6th Feb, 2023.	



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Lesson Plan Dec 2022 - Feb 2023

Name of Teacher	Ms. Akanksha Gupta	Department	Computer Science
Course	B.A.(H)/B.Sc(H)/B.Com(H) Value Addition Course	Semester	First
Paper	Digital Empowerment	Academic Year	2022

Learning Objectives

- Understanding digital world and need for digital empowerment.
- Awareness about digital India.
- Explore, communicate, collaborate in cyberspace.
- Awareness about cyber safety and security.

Lesson Plan

<i>Week No.</i>	<i>Theme/ Curriculum</i>	<i>Any Additional Information</i>
1	Digital inclusion and digital empowerment: Needs and challenges, Vision of Digital India	
2	Digi locker, E- hospitals, BHIM, E-Pathshala, E-Health, RTI, ITR, Education platforms.	
3-4	Communication and Collaboration in the Cyber Space - E-Mail, Blogs, Social media, Digital platforms.	
5-6	Online learning platforms, File sharing, messaging, Video conferencing.	
7-8	Cyber security, Threats in digital world, Cyber attacks, Blockchain.	
9-10	Security initiatives taken by the Government of India.	
11	Ethical issues in Digital world - ethics in cyberspace.	

12	Revision, discussion of syllabus.	CLASS TEST AND ASSIGNMENT DISCUSSION
Online Resources (If Any)	https://www.digitalindia.gov.in/ https://www.digilocker.gov.in/ https://nha.gov.in/ https://diksha.gov.in/ https://swayam.gov.in/ https://digitalindia.gov.in/content/ekranti https://rtionline.gov.in/index.php https://en.wikipedia.org/wiki/Digital_collaboration https://www.prodigygame.com/in-en/blog/virtual-learning-tools/ https://dexterward.com/secure-collaboration/ https://safety.google/security-privacy/ https://safety.google/ https://www.niti.gov.in/sites/default/files/2019-07/CyberSecurityConclaveAtVigyanBhavanDelhi_1.pdf https://www.csoonline.com/article/3541148/the-biggest-data-breaches-in-india.html https://www.kaspersky.com/resource-center/preemptive-safety/what-is-netiquette https://iccopr.com/wp-content/uploads/2017/10/Ethics-in-Digital-Communications-Guidelines.pdf https://www.csk.gov.in/	
Assignment and Class Test Schedule for Semester	Assignment: Exploring Govt. websites and downloading their mobile apps. Class Test : On 10th Feb, 2023.	



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Lesson Plan Dec 2022 - Feb 2023

Name of Teacher	Ms. Akanksha Gupta	Department	Computer Science
Course	B.A.(H)/B.Sc(H)/B.Com(H) Generic Elective I	Semester	First
Paper	Programming using C++	Academic Year	2022

Learning Objectives

- Write simple programs using built-in data types of C++.
- Implement arrays and user defined functions in C++.
- Solve problems in the respective domain using suitable programming constructs in C++.
- Solve problems in the respective domain using the concepts of object oriented programming in C++.

Lesson Plan

Week No.	Theme/ Curriculum	Any Additional Information
1-2	Overview of Procedural and Object-Oriented Programming, Using main() function, Header Files, Compiling and Executing simple C++ programs. Data types, Variables, Keywords, Operators, Expressions.	
3-4	Decision making constructs - if and switch Looping - while, do-while, for Iteration	
5-6	Arrays Type casting Functions	
7-8	Classes and objects, abstraction, encapsulation Constructors and Destructors	

9-10	Implementation of inheritance and polymorphism	
11	Template functions and Classes	
12	Revision of syllabus	CLASS TEST AND ASSIGNMENT DISCUSSION
<p>Books:</p> <ol style="list-style-type: none"> 1. Stephen Prata, C++ Primer Plus, 6th Edition, Pearson India, 2015. 2. E Balaguruswamy, Object Oriented Programming with C++, 8 th edition, McGraw-Hill Education, 2020. 3. D.S. Malik, C++ Programming : From Problem Analysis to Program Design, 6th edition, Cengage Learning, 2013. 		
Online Resources (If Any)	https://www.w3schools.com/cpp/default.asp https://www.tutorialspoint.com/cplusplus/index.htm	
Assignment and Class Test Schedule for Semester	Assignment: Back questions from book. Class Test : On 7th Feb, 2023.	



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Lesson Plan Dec 2022 - Feb 2023

Name of Teacher	Ms. Akanksha Gupta	Department	Computer Science
Course	B.A.(H)/B.Sc(H)/B.Com(H) Skill Enhancement Course	Semester	First
Paper	Advanced Spreadsheets Tools	Academic Year	2022

Learning Objectives

- To enable the students to use Excel for advanced data analysis.
- To equip the students to with automation skills on excel.
- To enable the students to use excel for informed decision making.

Learning outcomes

After studying this course, students will be able to:

- make meaningful representation in the form of charts and pivot tables.
- draw analysis on data using spreadsheets, and use interpretation to make decisions.
- generate word documents with appropriate formatting, layout, proofing.
- manage data for generating queries, forms and reports in a database.

Lesson Plan

<i>Week No.</i>	<i>Theme/ Curriculum</i>	<i>Any Additional Information</i>
1-2	Unit 1: Excel Advanced Techniques Templates, Efficiency, and Risk (Standard Deviation, Variance, and Coefficient of Variation), Data Validation, Functions and Power functions, Array Formulae (Frequency Distribution), Tables, Advanced Range Names,	
3-4	What-if-analysis: Goal-seek, Data tables, and Scenario Manager, Data analysis Tool Pack: Descriptive Statistics, Moving averages, Histogram, Covariance, correlation,	

	and Regression analysis. Problem Solving using Solver, Integrating excel with other tools: MS word, outlook, PowerPoint, Access, Power BI.	
5-6	Unit 2: Excel Interactivity and Automation Index and Match, Offset, Dynamic Charting, Database functions, Text functions, and Error functions: IfError, IsError, Aggregate, Circular Reference, Formula Auditing, Floating-Point Errors, Form Controls (Button, Combo, Check box, Spinner, List, Option), Visual Basic (only basic).	
7-8	Recording Macros, Absolute and relative macros, editing macros, Use of spinner buttons and command buttons; Sub Procedure, Function Procedure (creating New Functions) Working with Loops: Do_while loop, For_Next loop; Creating User Forms: Message Box, Input Box; If_Then_Else.	
9-10	Unit 3: Introduction to VBA Conditional Formatting, Charts, Slicers, Sparklines, Graphics Tricks and Techniques, Worksheet Automation using Macros: Absolute and relative macros, editing macros, Creating new functions using macros, Use of spinner buttons and command buttons.	
11	Unit 4: Data Analysis and Decision-Making Working with External Data, Advanced Uses of PivotTables, PowerPivot, Reporting with PowerPivot, Power query, Dashboard, Creating a spreadsheet in the area of: Loan and Lease statement; Ratio Analysis; Payroll Accounting; Capital Budgeting (NPV & IRR), Portfolio Management, Breakeven analysis, and Sensitivity analysis.	
12	Operations Management: Constraint, Forecasting & Trend Analysis optimization, Assignment Problems; Depreciation Accounting (Single Method); Graphical representation of data; Frequency distribution and its statistical parameters; Correlation and Regression Analysis.	CLASS TEST AND ASSIGNMENT DISCUSSION

Books:

1. Excel 2016 Power Programming with VBA, Michael Alexander, Dick Kusleika, Wiley.
2. Financial Analysis and Modelling Using Excel and VBA, Chandan Sengupta,

Second Edition, Wiley Student Edition.

3. MS Excel 2016, Data Analysis & Business Modelling, Wayne Winston, PHIL.

**Online
Resources (If
Any)**

None

Assignment
and Class
Test
Schedule for
Semester

Assignment: Practical questions from guidelines.
Class Test : On 6th Feb, 2023.



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Lesson Plan Jan 2023 - April 2023

Name of Teacher	Ms. Akanksha Gupta	Department	Computer Science
Course	B.A.(H)/B.Sc(H)/B.Com(H) Generic Elective IV	Semester	Fourth
Paper	Information Security and Cyber Laws	Academic Year	2023

Learning Objectives

On successful completion of the course, students will be able to:

1. Learn, structure, mechanics and evolution of various crime threats
2. Learn to protect information systems from external attacks by developing skills in enterprise security, wireless security and computer forensics.
3. Analyze the risks involved while sharing their information in cyber space and numerous related solutions like sending protected and digitally signed documents
4. Insights of ethical hacking and usage of password cracking tools
5. Get an overview of different ciphers used for encryption and decryption.

Lesson Plan

<i>Week No.</i>	<i>Theme/ Curriculum</i>	<i>Any Additional Information</i>
1-2	Unit 1 Definitions : Protection, Security, risk, threat, vulnerability, exploit, attack, confidentiality, integrity, availability, non-repudiation, authentication , authorization, codes, plain text, encryption, decryption, cipher text, key, ciphers, Symmetric and asymmetric cryptography, Public key , private key ,Crypt analysis,, Cyber forensics. Substitution cipher (Caesar), Transposition cipher (Rail-Fence).	
3-4	Unit 2 Risk analysis, process, key principles of conventional computer security, security policies, data protection, access control, internal vs	

	external threat, security assurance, passwords, access control, computer forensics and incident response.	
5-6	Unit 3 CYBER ATTACKS (definitions and examples): Denial-of-service attacks, Man-in-the-middle attack, Phishing, spoofing and spam attacks, Drive-by attack, Password attack, SQL injection attack, Cross-site scripting attack, Eavesdropping attack, Birthday attack, Malware attacks, Social Engineering attacks.	
7-8	Unit 4 Brief Introduction of handling the attacks described in UNIT 3. Firewalls, logging and intrusion detection systems, e-mail security, security issues in operating systems, ethics of hacking and cracking.	
9-10	Unit 5 Definitions: Digital Signature and Electronic Signature, Digital Certificate i.[Section 43] Penalty and compensation for damage to computer etc. ii.[Section 65] Tampering with computer source documents iii.[Section 66A] Punishment for sending offensive messages through communication service etc. iv.[Section 66B] Punishment for dishonestly receiving stolen computer resource or communication device v.[Section 66C] Punishment for identity theft vi.[Section 66D] Punishment for cheating by impersonation by using computer resource vii.[Section 66E] Punishment for violation of privacy viii.[Section 66F] Punishment for cyber terrorism ix.[Section 67] Punishment for publishing or transmitting obscene material in electronic form x.[Section 67A] Punishment for publishing or transmitting of material containing sexually explicit act, etc. in electronic form xi.[Section 67B] Punishment for publishing or transmitting of material depicting children in sexually explicit act, etc. in electronic form xii.[Section 72] Breach of confidentiality and privacy	
11	Unit 6 Brief introduction of IT infrastructure in India, National agencies handling IT.	
12	Revision of syllabus	CLASS TEST AND ASSIGNMENT DISCUSSION

Books:

1. Merkow, M., & Breithaupt, J.(2005) Information Security Principles and Practices. 5th edition. Prentice Hall.
2. Snyder, G.F. (2010). Network Security, Cengage Learning.
3. Whitman, M. E. & Mattord, H. J. (2017) Principles of Information Security. 6th edition. Cengage Learning.

Online Resources (If Any)	https://blog.netwrix.com/2018/05/15/top-10-most-common-types-of-cyber-attacks/ https://www.ibef.org/industry/infrastructure-sector-india.aspx
Assignment and Class Test Schedule for Semester	Assignment: To be assigned in March 2023 - Notes making, questions solving and presentation on a given topic. Class Test : April, 2023.



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Lesson Plan(Semester IV, Jan 2023 to May 2023)

Name of Teacher	Dr. Shveta Kundra Bhatia	Department	Computer Science
Course	B.A (Prog.)	Semester	FOURTH
Paper	Data Handling using Spreadsheet	Academic Year	2022-23

Learning Objectives

- To enable students develop IT skills that are a pre-requisite in today's work environment.
- To equip them with basic computing skills that will enhance their employability in general.
- To enable the student to analyse and present information in a meaningful manner.

Learning Outcomes

On successful completion of this course, a student will be able to:

- Perform data analysis and manipulation in a spreadsheet.
- Use built-in mathematical functions in a spreadsheet.
- Perform what-if analysis using Goal seek, ASAP utility add-ins in spreadsheets.
- Sort and filter data.
- Protect a spreadsheet

Lesson Plan

<i>Week No.</i>	<i>Theme/ Curriculum</i>	<i>Any Additional Information</i>
1	Introduction to Spreadsheets: Concept of worksheets and workbooks, creating, opening, closing and saving workbooks, moving, copying, inserting, deleting and renaming worksheets	

2- 4	Working with multiple worksheets and multiple workbooks, controlling worksheet views, naming cells using name box, name create and name define; Exchanging data using clipboard, object linking and embedding; Printing and Protecting worksheets: Adjusting margins, creating headers and footers, setting page breaks, changing orientation, creating portable documents and printing data and formulae	
5-8	Implementing file level security and protecting data within the worksheet; Understanding absolute, relative and mixed referencing in formulas, referencing cells in other worksheets and workbooks, correcting common formula errors, working with inbuilt functions.	
9-10	Spreadsheet functions: VLOOKUP, HLOOKUP Nested functions, Pivot table Charts: Data visualization using built in charts	
11-15	What-if scenarios, goal seek, solver Data validation Creating a drop down list from a range of cells Data filtering and sorting Calculating linking sheets Detective tools Using regular expression in functions Add-in in calc	Class Test and Assignment
<p>Books:</p> <p>[1] : Libre Office 7.0 Calc Guide</p> <p>[2] : Libre Office 4.1 Calc Guide The Document Foundation</p>		



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Lesson Plan(Semester IV, Jan 2023 to May 2023)

Name of Teacher	Dr. Shveta Kundra Bhatia	Department	Computer Science
Course	B.Sc. (P) Physical Science	Semester	FOURTH
Paper	Programming in C++	Academic Year	2022-23

Learning Objectives

- Providing a broad understanding of Object Oriented Programming concepts.
- Students shall have understanding of variables and functions.
- Students will be able to write programs involving mathematical calculations.

Learning Outcomes

- The basic programming and OOPs concepts
- Creating C++ programs
- Tokens, expressions and control structures in C++
- Arranging same data systematically with arrays
- Classes and objects in C++
- Constructors and destructors in C++

Lesson Plan		
Week No.	Theme/ Curriculum	Any Additional Information
1	Introduction to C++ Basic concepts of programming Object Oriented Programming concepts	
2- 4	Data Types and expressions Operators and Operands	
5-8	Control Constructs in C++ Conditional If statement For loop, while loop, do while loop Arrays, Pointers, Structures	
9-10	User Defined functions and Classes	
11-15	Classes, Inheritance, File Handling	Class Test and Assignment
<p>Books:</p> <p>1. Robert Lafore, Object Oriented Programming in C++, 4th edition, SAMS Publishing, 2016.</p>		
Online Resources (If Any)	https://www.tutorialspoint.com/cpp/index.htm https://www.w3schools.in/cpp https://www.geeksforgeeks.org/cpp/	



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Lesson Plan(Semester VI, Jan 2023 to May 2023)

Name of Teacher	Dr. Shveta Kundra Bhatia	Department	Computer Science
Course	B.Sc. (P) Physical Science	Semester	SIXTH
Paper	PHP Programming	Academic Year	2022-23

Learning Objectives

This course will introduce server side scripting to students through PHP programming language. They will learn to design web applications with a specific functionality, and dynamic websites requiring handling/processing data input by users.

Learning Outcomes

On successful completion of the course, students will be able to:

1. Use different data types and control structures in PHP.
2. Handle arrays and strings in PHP.
3. Create dynamic interactive web pages with PHP.
4. Use PHP built-in functions as well as define custom functions.
5. Perform data validation in PHP.
6. Manipulate and manage a database using PHP.

Lesson Plan		
<i>Week No.</i>	<i>Theme/ Curriculum</i>	<i>Any Additional Information</i>
1	Introduction to three tier web application and MAMP development, front end, business layer and back end connectivity, role of PHP in web application development, software requirements.	
2- 4	Starting PHP- Programming: Basics of PHP global variables, scope of a variable, expressions, operators, implicit operator precedence, simple and explicit casting, procedural scripts, decision making based on conditions, case structure, loops.	
5-8	Modular Programming: Functions and objects, Passing parameters. Strings and Arrays, Creating and accessing strings: built-in functions for string and string formatting, creating index based and associative array, accessing array elements	
9-10	Forms and form processing: Capturing form data, GET and POST form methods, Processing of form data and use of regular expressions.	
11-15	Integrating PHP & DBMS: Connecting PHP and DBMS, creating database, defining database structure and accessing data stored in tables using PHP.	Class Test and Assignment
<p>Books:</p> <ol style="list-style-type: none"> 1. Nixon, R. (2014). Learning PHP, MySQL, JavaScript, CSS & HTML5. 4th Edition, O'reilly. 2. Welling, L., Thompson, L. (2008). PHP and MySQL Web Development. 4th Edition, AddisonWesley Professional. 3. Boronczyk, T., & Psinas, M. E. (2008). PHP and MYSQL (Create-Modify-Reuse). Wiley India Private Limited. 4. Holzner, S. (2007). PHP: The Complete Reference. McGraw Hill Education (India). 5. Sklar, D., & Trachtenberg, A. (2014). PHP Cookbook: Solutions & Examples for PHP Programmers. O'Reilly Media. 		
Online Resources (If Any)	https://www.tutorialspoint.com/php/index.htm https://www.geeksforgeeks.org/php/	



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Lesson Plan

Name of Teacher	Mahesh Kumar Saini	Department	Computer Science
Course	B.A/B.Com.(P)	Semester	6th
Paper	GE : Multimedia and Web Design	Academic Year	2023
<i>Week No./ Date</i>	<i>Theme/ Curriculum</i>		
1.	Multimedia definition Components, uses Multimedia application		
2.	Text Using Text in Multimedia Hypertext & Hypermedia		
3.	Image Making Still Images How Vector Drawing Works		
4.	Color Palettes Sound		
5.	MIDI Audio MIDI vs Digital Audio		
6.	Animation		
7.	Video		
8.	Multimedia Input/Output Devices: scanner, camera, microphone, speaker, monitors, printers.		
9.	Multimedia Storage Devices: CD ROMs, DVDs, Blue ray disk.		
10.	Sound editor, video editor		
11.	animator, authoring tools .		

12.	Concept of website, website as a communication resource. Internet, intranet and extranet
	Assignment Submission
13.	basic concepts related to website designing.
14.	HTML: Introduction to hypertext markup language (html) document type definition, creating web pages,
	Internal written Assessment
15.	graphical elements, lists, hyperlinks, tables, web forms, inserting images, frames, use of CSS
Suggested Readings	
Books	<ul style="list-style-type: none"> • [1] Tay Vaughan, Multimedia: Making It Work, McGraw Hill Education (India), Ninth edition • [2] J. A. Ramalho, Learn Advanced HTML 4.0 with DHTML, BPB Publications, 2007



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Lesson Plan Jan 2023 - April 2023

Name of Teacher	Ms. Akanksha Gupta	Department	Computer Science
Course	B.A.(Prog.) Skill Enhancement Course	Semester	Sixth
Paper	System Administration and Maintenance	Academic Year	2023

Learning Objectives

The course focuses on administration of operating systems(windows, linux/unix), installation and maintenance. The students will also learn the difference between desktop based and server based operating system.

Learning outcomes

On successful completion of the course, a student will be able to:

1. distinguish between features of Linux/Unix and windows operating system.
2. install/uninstall hardware and software.
3. configure system environment.
4. troubleshoot network connectivity issues.
5. examine system performance issues.
6. examine file structure and properties.

Lesson Plan

<i>Week No.</i>	<i>Theme/ Curriculum</i>	<i>Any Additional Information</i>
1-2	Unit 1: Introduction to Operating system: Basics of operating system, services, features and functions of different operating systems, Kernel, API, CLI, GUI, devices and device drivers, IPv4, IPv6.	
3-4	Unit 2: Exploring different Operating Systems: Introduction to Linux/Unix based operating	

	systems, introduction to Windows based operating systems, difference between Linux/Unix and other 68 operating systems, introduction to server based operating systems, difference between desktop based (Windows 10) and server based operating systems like Windows server 2003/2008.	
5-6	Unit 3: Linux/Ubuntu System Environment: Configuring desktop environment and desktop settings, installing and configuring software and hardware, exploring file structure, terminal, shell, basic Unix Commands like cat, ls, cd, date, cal, man, echo, pwd, mkdir, rm, rmdir, kill etc.	
7-8	Unit 4: Windows System Environment: Configuring desktop environment and desktop settings, installing and configuring software and hardware, explore system configuration using control panel, creating users, add/ delete users, difference between workgroup and domain, concept of user profiles – creating and roaming, concept of Active Directory, process and disk management, Windows task manager, exploring file structure and file properties, backup and recovery.	
9-10	Unit 5: Network Administration :Examine network settings using commands like ipconfig/ifconfig, hostname, net, netstat, whoami etc.,	
11	Unit 5 contd. troubleshoot network connectivity issues using commands like: ipconfig, ping, tracert, route etc., sharing resources (files, printers etc.) on the network, accessing a system remotely using remote desktop.	
12	Revision of syllabus and practical completion	CLASS TEST AND ASSIGNMENT DISCUSSION
<p>Books:</p> <ol style="list-style-type: none"> 1. Panek, W., & Wentworth, T. (2010). Mastering Windows 7 administration. Wiley Publishing Inc. 2. Snyder, G., Hein, T. R., & EviNemeth, B. W. (2018). UNIX and Linux System Administration Handbook (Fifth edition). Pearson. 3. Sobell, M.S. (2014). A Practical Guide to Ubuntu Linux (Fourth edition). Prentice Hall. 		
Online Resources (If Any)	None	

Assignment and Class Test Schedule for Semester	Assignment: Practical questions from guidelines. Class Test : April, 2023.
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