DEPARTMENT OF COMPUTER SCIENCE
SOBAN SINGH JEENA UNIVERSITY
ALMORA UTTARAKHAND

National Education Policy-2020
Skill Enhancement Courses(SEC)
Offered by
Computer Science

Undergraduate Programme
FYUP/Honours Programme

SUBJECT: COMPUTER SCIENCE

EFFECTIVE FROM ACADEMIC YEAR 2025-26

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Contents	Page No.
Course title: SEC 1 : MS Word(Office 365)	3
Course title: SEC 2 : MS Excel(Office365)	4
Course title: SEC 3 : MS Powerpoint(Office 365)	5
Course title: SEC 4 : Cyber Security Basics	6
Course title: SEC 5 : Unix System Administration and Shell Programming	8
Course title: SEC 6 : Client-side Web Technology	9
Course title: SEC 7 : Server-side Web Technology	10

Subject: Computer Science		
Programme/Class: Certificate	**Year:** 1st	
Course Code:	**Course Title:** MS Word(Office 365)	**L| T|P(0|0|2)**

Unit	Topics
I.	**Introduction to Office 365:** Overview of word processing software, Introduction to Office 356 interface. **Basic Document Editing:** Creating, saving, and opening documents, Basic text formatting (font, size, style), Paragraph formatting (alignment, indentation, spacing).
II.	**Advanced Text Formatting:** Styles and formatting, Bulleted and numbered lists, Headers and footers.
III.	**Working with Tables:** Creating and formatting tables, Inserting and editing table contents.
IV.	**Working with Graphics:** Inserting images and shapes, Formatting and positioning graphics.
V.	**Advanced Features:** Using templates, Creating and using styles, Mail merge.
VI.	**Introduction to Word** - Fonts, Colors, Etc., Word art, Smart art, Shapes, Grouping, Guidelines fo incorporating images and shapes, Instructions for customizing colors, headers, footers , page numbers Instructions for using the Screen recording feature, Auto animations, charts graphs and (tables as part o excel)
VII.	Printing, Steps to convert a PDF document into a word file, PDF conversion with annotations included o excluded, based on preference, Using spell checker and grammar checker tools, Utilizing review feature and option.
VIII.	Managing emails and attachments effectively, Steps for integrating and using Google slides within Office 365.
IX.	Guide to integrating ChatGPT and Copilot with MS Word for enhanced productivity.

Textbooks

1. Microsoft Office 365: In Practice, 2021 Edition, Randy Nordell, McGraw-Hill Education, 2021
2. Microsoft Word 365: Comprehensive (Shelly Cashman Series), Jennifer Duffy & Lisa Friedrichsen, Cengage Learning, 2022
3. Microsoft Word 365 Step by Step, Joan Lambert, Microsoft Press, 2023
4. Office 365 All-in-One For Dummies, Peter Weverka, Wiley, 2nd Edition, 2022

Reference Books

1. Mastering Microsoft Word 365: Create Professional Documents with Ease, Tom Bunzel, Independently Published, 2023
2. Microsoft Word for Academic Writing, Hilary Glasman-Deal, Palgrave Macmillan, 2nd Edition, 2021
3. The Artificial Intelligence Guidebook: ChatGPT, Copilot and Productivity, Paul Armstrong, AI Insider Press, 2024
4. Digital Literacy: Concepts and Techniques, Rajiv Mathur, Laxmi Publications, Latest Edition
5. Learning Microsoft Office 365: A Hands-On Approach, Scott A. Garrigan, Pearson Education, 2021

Subject: Computer Science		
Programme/Class: Certificate	**Year:** 1st	
Course Code:	**Course Title:** MS Excel(Office 365)	**Credits: L | T | P (0 | 0 | 2)**

Course outcomes:

- To understand the basics of spreadsheets and their applications.
- To learn to create, format, and manage data in OpenOffice Calc.
- To use formulas and functions to perform calculations and data analysis.
- To create charts and graphs to visualize data effectively.

Course Prerequisites: Basic computer skills.

Units	Topics
I.	**Introduction to Spreadsheets**: Overview of spreadsheet software, Introduction to Excel interface, Structure and formats of data used in Excel, Using comments and lookup function, Cross sheet reference. Basic Spreadsheet Operations: Creating, saving, and opening spreadsheets, Entering and editing data, Formatting cells and data, Hidden rows and columns, transpose pivot functions.
II.	**Formulas and Functions:** Number formatting, Using basic formulas for calculations (e.g., addition subtraction), Understanding cell references (relative, absolute), Using common functions (e.g., SUM AVERAGE, IF), Automatic calculations.
III.	**Data Management:** Sorting and filtering data, using data validation, Managing multiple sheets, Applying conditional formatting and removing duplicate entries.
IV.	**Charts and Graphs:** Creating different types of charts (e.g., bar chart, pie chart), Customizing charts (e.g., titles, legends, axes), Adding charts to presentations or Documents.
V	Guide to integrating ChatGPT and Copilot with Office 365 for enhanced productivity
VI.	Guide to integrating ChatGPT and Copilot with MS Excel for enhanced productivity.

Software Requirement:

- MS EXCEL (latest version)

Textbooks

1. Microsoft Excel 365: Comprehensive (Shelly Cashman Series), Steven M. Freund & Eric Schmieder, Cengage Learning, 2022
2. Microsoft Excel 365 Step by Step, Curtis Frye, Microsoft Press, 2022
3. Excel Bible, Michael Alexander & Richard Kusleika, Wiley, 2022 Edition
4. Microsoft Office 365: In Practice, 2021 Edition, Randy Nordell, McGraw-Hill Education, 2021
5. Office 365 All-in-One For Dummies, Peter Weverka, Wiley, 2nd Edition, 2022

Reference Books

1. Mastering Microsoft Excel 365: Tips, Tricks and Shortcuts, Bill Jelen (Mr. Excel), Holy Macro! Books, 2023
2. Data Analysis and Business Modeling with Excel, Wayne L. Winston, Microsoft Press, 6th Edition, 2021
3. Excel for Dummies, Greg Harvey, Wiley, 2022 Edition
4. Excel Power Pivot & Power Query for Dummies, Michael Alexander, Wiley, 2021
5. The Artificial Intelligence Guidebook: ChatGPT, Copilot and Productivity, Paul Armstrong, AI Insider Press, 2024

Subject: Computer Science		
Programme/Class: Diploma	**Year:** 2nd	
Course Code:	**Course Title:** MS Powerpoint (Office 365)	**Credits: L | T | P (0 | 0 | 2)**

Course outcomes:

- To understand the basics of creating presentations.
- To learn to create, format, and manage slides in OpenOffice Impress.
- To use multimedia elements to enhance presentations.
- To develop skills for delivering effective presentations.

Course Prerequisites: Basic computer skills.

Units	Topics
I.	Introduction to Presentations: Overview of presentation software, Introduction to PowerPoint interface.
II.	Creating Presentations: Creating a new presentation, Adding, deleting, and rearranging slides, Using templates and themes.
III.	Formatting Slides: Formatting text and objects, Applying backgrounds and styles, Using master slides.
IV.	Enhancing Presentations: Adding images, shapes, and multimedia elements, Using transitions and animations, Incorporating charts and graphs.
V.	Delivering Presentations: Setting up slideshow options, Using presenter tools and notes, Tips for effective presentation delivery.
VI.	Guide to integrating ChatGPT and Copilot with MS Powerpoint for enhanced productivity.

Software Requirement:

- MS PowerPoint (latest version)

Textbooks

1. Microsoft PowerPoint 365: Comprehensive (Shelly Cashman Series), Susan L. Sebok & Lisa Friedrichsen, Cengage Learning, 2022
2. Microsoft PowerPoint 365 Step by Step, Joan Lambert, Microsoft Press, 2023
3. Microsoft Office 365: In Practice, 2021 Edition, Randy Nordell, McGraw-Hill Education, 2021
4. Office 365 All-in-One For Dummies, Peter Weverka, Wiley, 2nd Edition, 2022
5. Introduction to Microsoft PowerPoint 365, Linda Foulkes, Independently Published, 2021

Reference Books

1. The Art of Presentation: Delivering Successful Technical Talks, Patrick J. Sweeney, Cambridge University Press, Latest Edition
2. Slide:ology – The Art and Science of Creating Great Presentations, Nancy Duarte, O'Reilly Media, 2nd Edition, 2020
3. The Artificial Intelligence Guidebook: ChatGPT, Copilot and Productivity, Paul Armstrong, AI Insider Press, 2024
4. Advanced Microsoft PowerPoint Techniques, William R. Mills, Packt Publishing, 2021
5. Presentation Zen: Simple Ideas on Presentation Design and Delivery, Garr Reynolds, New Riders, 3rd Edition, 2021

Subject: Computer Science		
Programme/Class: Diploma	**Year:** 2nd	
Course Code:	**Course Title:** Cyber Security Basics	**Credits: L | T | P(1| 0| 1)**

Course outcomes:

- To understand the cyber security threat landscape.
- To develop a deeper understanding and familiarity with various types of cyberattacks,cybercrimes, vulnerabilities and remedies thereto.
- To analyze and evaluate existing legal framework and laws on cyber security.
- To analyze and evaluate the digital payment system.
- To analyze and evaluate the importance of personal data its privacy and security.
- To analyze and evaluate the security aspects of social media platforms and ethical aspectsassociated with use of social media.

Course Prerequisites: Basic computer skills.

Units	Topics
I.	Introduction to Cyber crime- Cybercrime and offences, cybercrime against women and children, financial frauds, social engineering attacks, malware and ransomware attacks, zero day and zero click attacks. Cybercriminals modus-operandi ,Reporting of cybercrimes, Remedial and mitigation measures, Legal perspective of cybercrime, IT Act 2000 and its amendments, , Organizations dealing with Cybercrime and Cyber security in India, Case studies.
II.	Introduction to Social networks. Types of Social media, Social media platforms, Social media monitoring, Hashtag, Viral content, Social media marketing, Social media privacy, Challenges, opportunities and pitfalls in online social network, Security issues related to social media, Flagging and reporting of inappropriate content, Laws regarding posting of inappropriate content, Best practices for the use of Social media, Case studies.
III.	Modes of digital payments- Banking Cards, Unified Payment Interface (UPI),e-Wallets, Unstructured Supplementary Service Data (USSD), Aadhar enabled payments, Digital payments related common frauds and preventive measures. RBI guidelines on digital payments and customer protection in unauthorized banking transactions.
IV.	End Point device and Mobile phone security, Password policy, Security patch management, Data backup, Downloading and management of third party software, Device security policy, Cyber Security best practices, Significance of host firewall and Ant-virus, Management of host firewall and Anti-virus, Wi-Fi security, Configuration of basic security policy and permissions

Lab: Cyber Security basics

1. Checklist for reporting cybercrime at Cybercrime Police Station.
2. Checklist for reporting cybercrime online.
3. Reporting phishing emails.
4. Demonstration of email phishing attack and preventive measures.
5. Basic checklist, privacy and security settings for popular Social media platforms.
6. Reporting and redressal mechanism for violations and misuse of Social mediaplatforms.
7. Configuring security settings in Mobile Wallets and UPIs.
8. Checklist for secure net banking
9. Setting, configuring and managing three password policy in the computer (BIOS, Administrator and

		Standard User). 10. Setting and configuring two factor authentication in the Mobile phone. 11. Security patch management and updates in Computer and Mobiles. 12. Managing Application permissions in Mobile phone. 13. Installation and configuration of computer Anti-virus. 14. Installation and configuration of Computer Host Firewall. 15. Wi-Fi security management in computer and mobile

Textbooks

1. Cyber Security and Cyber Laws, Alfred Basta, Nadine Basta & Mary Brown, Cengage Learning, 1st Edition, 2018
2. Fundamentals of Cyber Security, Bhushan Trivedi, Oxford University Press, 1st Edition, 2021
3. Cyber Law & Information Technology, Talwant Singh, Bharat Law House Pvt. Ltd., 2nd Edition, 2022
4. Information Security and Cyber Laws, Saurabh Sharma, Vikas Publishing, Revised Edition, 2021
5. Digital Payment Systems and Security, R. Chandrasekaran, Oxford University Press, 1st Edition, 2022

Reference Books

1. Cyber Crime in India, Dr. R. K. Chaubey, Ashok Law House, 5th Edition, 2020
2. Cyber Law: The Indian Perspective, Justice Yatindra Singh, Universal Law Publishing, 5th Edition, 2021
3. Social Media Communication: Concepts, Practices, Data, Law and Ethics, Jeremy Harris Lipschultz, Routledge, 3rd Edition, 2021
4. Cyber Security and Social Media, Nina Godbole & Sunit Belapure, Wiley India, 1st Edition, 2020
5. Digital Payments and Cyber Security, Tanupriya Choudhury & S. Balamurugan, CRC Press (Taylor & Francis), 1st Edition, 2023

Subject: Computer Science		
Programme/Class: Diploma	**Year: 3rd**	
Course Code:	**Course Title:** Unix System Administration & Shell Programming	**Credits: L | T | P (0 | 0 | 2)**

Course outcomes:

- To understand the UNIX operating system and its memory management, input/output processing, internal and external commands.
- To learn the File Systems and Process Management of UNIX.
- To learn and explore the use of operating system utilities such as text editors.
- To understand Shell Scripting and Shell Programming.
- To develop capability to name and state the function of UNIX commands

Course Prerequisites: Basic understanding of Unix/Linux operating systems.

Units	Topics
I.	Getting Started: Introduction to Linux, Package manager, File Management, Directories, File Permission, Environment, Basic Utilities, Pipes & Filters, Processes, Communication, The vi Editor.
II.	Shell Programming: What is Shell? What is shell script, Writing and executing the shell script, Shell variable (user defined and system variables), System calls, Using system calls, Pipes and Filters, Decision making in Shell Scripts (If else, switch), Loops in shell, Functions, Utility programs (cut, paste, join, tr, unix utilities), Pattern matching utility (grep), Special Variables, Using Arrays, Basic Operators, Shell Substitutions, Quoting Mechanisms, IO Redirections, Shell Functions, Man page Help, Simple filters, the process, TCP/IP Networking Tools, The X Window System, Filters using regular expressions. Customizing the environment, Programming in C/C++ in UNIX environment, Shell programming, Perl, System and network administration.
III.	Advanced Unix: Regular Expressions, File System Basics, User Administration, System Performance, System Logging, Signals and Traps.

Textbooks

1. UNIX and Shell Programming, B.M. Harwani, Oxford University Press, 1st Edition, 2013
2. Linux Command Line and Shell Scripting Bible, Richard Blum & Christine Bresnahan, Wiley, 4th Edition, 2021
3. Introduction to UNIX and Shell Programming, M. G. Venkateshmurthy, Pearson Education, 1st Edition, 2005
4. Advanced Programming in the UNIX Environment, W. Richard Stevens & Stephen A. Rago, Addison-Wesley, 3rd Edition, 2013
5. The Linux Programming Interface, Michael Kerrisk, No Starch Press, 1st Edition, 2010

Reference Books

1. UNIX Shell Programming, Yashavant Kanetkar, BPB Publications, 2nd Edition, 2019
2. Linux in Easy Steps, Mike McGrath, In Easy Steps Limited, 6th Edition, 2021
3. Practical Guide to Linux Commands, Editors, and Shell Programming, Mark G. Sobell, Pearson Education, 4th Edition, 2017
4. UNIX and Linux System Administration Handbook, Evi Nemeth, Garth Snyder, Trent R. Hein, Ben Whaley & Dan Mackin, Pearson, 5th Edition, 2017
5. Perl: The Complete Reference, Martin C. Brown, McGraw-Hill Education, 2nd Edition, 2012

Subject: Computer Science		
Programme/Class: B.Sc.	**Year:** 3rd	
Course Code:	**Course Title:** Client-side Web Technology	**Credits: L | T | P (0 | 0| 2)**

Course outcomes:

- To understand the concepts of HTML and CSS
- To make differentiate between JavaScript and CSS
- To develop a client server application

Course Prerequisites: Basic Computer Knowledge

Units	Topics
I.	Introduction to HTML: HTML and its features, Concept of WWW, Internet and WWW, HTTP Protocol: Request and Response, Web browser and Web servers, Features of Web 2.0, Basic HTML, formatting and fonts, commenting code, color, hyperlink, lists, tables, images, simple HTML forms, website structure, HTML5.
II.	Introduction to CSS: CSS: Need for CSS, introduction to CSS, basic syntax and structure, using CSS, Inline styles, embedded style sheets, conflicting styles, linking external style sheets, positioning elements, backgrounds, element dimensions, background images, colors and properties, manipulating texts, using fonts, borders and boxes, margins, padding lists, positioning using CSS, CSS2, Overview and features of CSS3.
III.	JavaScript: Client-side scripting with JavaScript, variables, functions, conditions, loops and repetition, Pop up boxes, Advance JavaScript: JavaScript and objects, JavaScript own objects, the DOM and web browser environments, Manipulation using DOM, forms and validations, DHTML: Combining HTML, CSS and JavaScript, Events and buttons, Libraries and JQuery, Event-driven programming and the inclusion of click events.

Textbooks

1. HTML, CSS & JavaScript All in One (Sams Teach Yourself), Julie C. Meloni, Pearson Education, 3rd Edition, 2018
2. Web Technologies: HTML, JavaScript, PHP, Java, JSP, ASP.NET, XML and AJAX, Uttam K. Roy, Oxford University Press, 1st Edition, 2010
3. Beginning HTML, XHTML, CSS, and JavaScript, Jon Duckett, Wiley India, 1st Edition, 2010
4. HTML5 and CSS3 Made Simple, Ivan Bayross & Meera Kanhere, BPB Publications, Latest Edition
5. Internet and Web Technology, Raj Kamal, McGraw-Hill Education, 1st Edition, 2016

Reference Books

1. Eloquent JavaScript: A Modern Introduction to Programming, Marijn Haverbeke, No Starch Press, 3rd Edition, 2018
2. JavaScript: The Definitive Guide, David Flanagan, O'Reilly Media, 7th Edition, 2020
3. Learning Web Design: A Beginner's Guide to HTML, CSS, JavaScript, and Web Graphics, Jennifer Niederst Robbins, O'Reilly Media, 5th Edition, 2018
4. HTML5: The Missing Manual, Matthew MacDonald, O'Reilly Media, 2nd Edition, 2014
5. Head First HTML and CSS, Elisabeth Robson & Eric Freeman, O'Reilly Media, 2nd Edition, 2012

Subject: Computer Science		
Programme/Class: B.Sc.	**Year:** 3rd	
Course Code:	**Course Title:** Server-side Web Technology	**Credits: L | T | P (0 | 0| 2)**

Course outcomes:

- To understand the concept of Scripting Languages.
- To understand the Web Development

Course Prerequisites: Basic knowledge of Client-side Web Technology

Units	Topics
I.	Introduction to PHP: Installation of PHP, Basic Syntax, defining variables and constants, data types, operators and expression, decision making statements, loop making constructs, mixing decisions and looping with HTML
II.	String Handling: Creating a string and accessing its content, searching and replacing content of a string, formatting a string, string built-in-functions
III.	Handling HTML Form with PHP: Creating a form, Basics of Server, Hosting, URL, submitting data to the server at the backend using GET and POST methods, GET vs POST methods, create a student' registration form, Use of official internet documentation and finding relevant links, basics of HTTPS.
IV.	Database Connectivity with MySQL: Connectivity with database, database creation,creating tables, insertion and retrieval of the data from the database, data manipulation.

Textbooks

1. Learning PHP, MySQL & JavaScript: With jQuery, CSS & HTML5, Robin Nixon, O'Reilly Media, 6th Edition, 2021
2. PHP and MySQL Web Development, Luke Welling & Laura Thomson, Addison-Wesley, 5th Edition, 2016
3. Web Technologies: HTML, JavaScript, PHP, Java, JSP, ASP.NET, XML and AJAX, Uttam K. Roy, Oxford University Press, 1st Edition, 2010
4. PHP Programming with MySQL: The Web Technologies Series, Don Gosselin, Cengage Learning, 2nd Edition, 2011
5. Beginning PHP and MySQL: From Novice to Professional, W. Jason Gilmore, Apress, 5th Edition, 2014

Reference Books

1. Core PHP Programming, Leon Atkinson & Zeev Suraski, Pearson Education, 3rd Edition, 2004
2. PHP: A Beginner's Guide, Vikram Vaswani, McGraw-Hill Education, 1st Edition, 2008
3. Head First PHP & MySQL, Lynn Beighley & Michael Morrison, O'Reilly Media, 1st Edition, 2008
4. PHP and MySQL for Dynamic Web Sites: Visual QuickPro Guide, Larry Ullman, Peachpit Press, 5th Edition, 2017
5. Modern PHP: New Features and Good Practices, Josh Lockhart, O'Reilly Media, 1st Edition, 2015