

Uttarakhand Sanskrit University, Haridwar



CURRICULUM

FOR

Certificate in Computer Application

(C.C.A.)

(06 Months: 1 Semester Program)

(Effective from Session 2026-27)

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Uttarakhand Sanskrit University, Haridwar
Certificate in Computer Application – 06 Months

Name of Program	Certificate in Computer Application (CCA)
Duration	06 Months – (01 Semester)
Eligibility	10+2 from a recognized Board/University.
Objective of Program	The course is designed to develop basic computer literacy and practical skills required for academic, professional, and day-to-day activities. It provides foundational knowledge of computer systems, operating systems, office applications, digital services, internet technologies, cyber security, and emerging technologies. The course also develops practical skills for effective and responsible use of digital tools.
Program Outcomes	After completing the course, the students will be digitally literate and will be able to: • Identify the basic components, terminology, input/output devices, memory, and storage systems of a computer. • Understand basic concepts of software, operating systems, computer networks, and digital technologies. • Perform basic file and folder management using a graphical operating system. • Use word processors, spreadsheets, and presentation software for academic and professional tasks. • Create basic documents, spreadsheets, presentations, and DTP materials using appropriate digital tools. • Use Hindi and Sanskrit typing tools to prepare digital content. • Use internet services, email, search engines, and online collaboration tools effectively. • Access and use digital academic and e-governance services such as DigiLocker and Academic Bank of Credits/APAAR-related services. • Perform common digital financial activities safely using UPI, online banking, QR codes, and digital payment services. • Apply basic cybersecurity and safe digital practices, including password security, two-factor authentication, phishing awareness, and malware protection. • Understand the basic concepts and responsible use of Artificial Intelligence and emerging digital technologies. • Demonstrate responsible and effective use of digital resources for academic, professional, and day-to-day activities.
Medium of Instruction	English/Hindi
Program Structure	06 Months (01 Semester)
Program Passing Rules	As per norms of University.

Uttarakhand Sanskrit University, Haridwar
Certificate in Computer Application – 06 Months

Semester – I					
S.No.	Paper Code	Paper Name	Theoretical Marks	Sessional Marks	Total Marks
1	CCA01	Computer Fundamentals	75	25	100
2	CCA02	Operating System and PC Packages	75	25	100
3	CCA03	Digital Awareness and Cyber Security	75	25	100
4	CCA04	Computer Applications Practical			100
					400

Uttarakhand Sanskrit University, Haridwar
Certificate in Computer Application – 06 Months
Paper-I: CCA01 - Computer Fundamentals

Total Marks: 100

External Marks: 75

Internal Marks: 25

Course Objective:

The course aims to provide students with a foundational understanding of computers, their components, memory and storage systems, software, programming languages, number systems, Unicode, and basic computer networking. It also develops basic awareness of commonly used digital and computing technologies.

Course Outcomes:

After completing this course, students will be able to:

- CO1.** Identify the basic components of a computer system, including CPU, motherboard, input devices, output devices, and related hardware.
- CO2.** Explain the basic concepts of computer memory, secondary storage, and cloud storage.
- CO3.** Differentiate between system software and application software and describe the basic concepts of computer viruses, malware, and antivirus software.
- CO4.** Explain basic concepts of programming languages, binary and decimal number systems, and Unicode.
- CO5.** Describe the basic concepts of computer networks and common methods of Internet connectivity such as Wi-Fi, mobile hotspot, broadband, and LAN cable.

Course Content / Syllabus

Unit	Description
1	Introduction to computers, history, characteristics, advantages, and limitations. Computer Block Diagram, CPU, ALU, Control Unit, Motherboard, System Bus, SMPS, and UPS. Input Devices: Keyboard, Mouse, Joystick, Scanner, Touch Screen, OMR, OCR. Output Devices: Monitors, Printers (Inkjet, Laser), Projectors, Speakers. Memory & Storage: Primary Memory (RAM, ROM, Cache); Secondary Storage (HDD, SSD, Pen Drive); Introduction to Cloud Storage (e.g., Google Drive).
2	Software Basics: Classification of Software – System Software and Application Software; Introduction to Computer Viruses, Malware, and Antivirus Software. Programming Languages: Introduction to Low-Level and High-Level Languages; Number Systems: Binary and Decimal; Introduction to Unicode. Networking Basics: Introduction to computer networks; LAN, MAN, WAN; basic methods of Internet connectivity such as Wi-Fi, mobile hotspot, broadband, and LAN cable.

Text & Reference Books:

1. Sinha, P. K., Sinha, P., & Pande, R. K., Computer Fundamentals, 8th Edition, BPB Publications.
2. Thareja, R., Fundamentals of Computers, 2nd Edition, Oxford University Press.
3. Goel, A., Computer Fundamentals, Pearson Education.
4. Rajaraman, V., Fundamentals of Computers, PHI Learning.
5. Forouzan, B. A., Data Communications and Networking, 5th Edition, McGraw-Hill Education.

Uttarakhand Sanskrit University, Haridwar
Certificate in Computer Application – 06 Months
Paper-II: CCA02 - Operating System and PC Packages

Total Marks: 100

External Marks: 75

Internal Marks: 25

Course Objective:

The course aims to develop practical knowledge of operating systems, file and folder management, office automation, word processing, spreadsheets, presentations, Hindi and Sanskrit typing tools, and basic desktop publishing. It enables students to prepare and manage common digital documents and academic materials.

Course Outcomes:

After completing this course, students will be able to:

- CO1.** Perform basic operations in a Windows operating system, including file and folder management and basic system settings.
- CO2.** Create, edit, format, save, print, and manage documents using word-processing software.
- CO3.** Create and manage spreadsheets, apply basic formulas and functions, sort and filter data, and prepare charts.
- CO4.** Create and deliver basic presentations using text, tables, images, slide designs, animations, transitions, and slide shows.
- CO5.** Use Hindi and Sanskrit typing tools and create basic pamphlets, ID cards, and posters using appropriate DTP or image-editing tools.

Course Content / Syllabus

Unit	Description
1	Operating System: Working with Windows OS, Desktop, Taskbar, Icons, File & Folder Management (Create, Rename, Delete), Control Panel basics, adding/sharing printers. Office Package: Introduction, Introduction to Office Automation, Components of MS Office; Introduction to Open Office, Google Docs. MS Word: Creating, saving, opening, and printing documents. Font styles, cut/copy/paste, undo/redo, spell check, find & replace; Page setup, headers/footers, bullets & numbering, creating & formatting tables, inserting images/shapes; Mail Merge: Creating letters, admit cards, and notices using Mail Merge. Language Tools: Sanskrit and Hindi typing tools.
2	Spreadsheets, Presentations & DTP Basics: MS Excel: Concept of Workbooks & Worksheets, Cells, Rows, and Columns. Data entry, cell formatting, inserting/deleting rows & columns; Essential formulas & functions: SUM, AVERAGE, COUNT, MIN, MAX, IF. Sorting, filtering data, and creating charts. MS PowerPoint: Creating presentations, adding/deleting slides, inserting text, tables, images, slide design, custom animations, transitions, and slide shows. DTP Basics: Designing simple pamphlets, ID cards, and posters using desktop publishing or image-editing tools.

Text & Reference Books:

- Lambert, J., & Frye, C., Microsoft Office Step by Step (Office 2021 and Microsoft 365), 1st Edition, Microsoft Press, 2022.
- Kroenke, D., & Nilson, D., Office 365 in Business, Wiley, 2011.
- Thareja, R., Fundamentals of Computers, 2nd Edition, Oxford University Press.
- Sinha, P. K., Sinha, P., & Pande, R. K., Computer Fundamentals, 8th Edition, BPB Publications.
- Goel, A., Computer Fundamentals, Pearson Education.

Uttarakhand Sanskrit University, Haridwar
Certificate in Computer Application – 06 Months
Paper-III: CCA03 - Digital Awareness and Cyber Security

Total Marks: 100

External Marks: 75

Internal Marks: 25

Course Objective:

The course aims to develop practical digital literacy and awareness of Internet services, email, online collaboration tools, e-governance and academic digital services, digital financial tools, cybersecurity, and Artificial Intelligence. It also promotes safe, responsible, and effective use of digital technologies.

Course Outcomes:

After completing this course, students will be able to:

- CO1.** Explain the basic concepts of the Internet, web browsers, search engines, IP addresses, URLs, and HTTP/HTTPS.
- CO2.** Use email and basic online collaboration tools such as Google Docs, Google Sheets, and Google Forms for academic and professional activities.
- CO3.** Access and use digital academic and e-governance services such as DigiLocker, Academic Bank of Credits (ABC), APAAR ID, and other relevant online portals.
- CO4.** Use common digital financial services such as UPI, QR codes, online banking, and online bill-payment facilities while following basic safety practices.
- CO5.** Apply basic cybersecurity practices, including strong passwords, two-factor authentication, privacy and safe browsing, phishing awareness, malware protection, and responsible use of AI tools.

Course Content / Syllabus

Unit	Description
1	Internet Basics: Internet concepts and applications, common Internet services, web browsers, WWW, search engines, IP address, URL, and basic understanding of HTTP/HTTPS. Email & Digital Tools: Sending and receiving emails, CC/BCC, attachments, and basic use of Google Docs, Google Sheets, and Google Forms. E-Governance & Academic Digital Services: Basics of E-Commerce; DigiLocker, Academic Bank of Credits (ABC), APAAR ID, and other relevant e-Governance portals. Digital Financial Tools: OTP, QR codes, UPI, online banking, card safety, and online bill payments.
2	Cyber Security: Need for cyber security, strong password creation, and Two-Factor Authentication (2FA). Safety Practices: Email and social media security, privacy and safe browsing practices, phishing, spam calls, fraudulent activities, and malware protection. AI Tools in Education: Introduction to Artificial Intelligence (AI), basic applications of AI in education, effective, safe, and responsible use of AI tools, and awareness of misinformation, privacy, and limitations of AI-generated content.

Text & Reference Books:

- Forouzan, B. A., Data Communications and Networking, 5th Edition, McGraw-Hill Education.
- Jain, V. K., O Level Module – M1.2: Internet & Webpage Designing, BPB Publications.
- Stallings, W., & Brown, L., Computer Security: Principles and Practice, 5th Edition, Pearson.
- Turban, E., & King, D., Electronic Commerce: A Managerial Perspective, Pearson Education.
- Russell, S., & Norvig, P., Artificial Intelligence: A Modern Approach, 4th Edition, Pearson.

Uttarakhand Sanskrit University, Haridwar
Certificate in Computer Application – 06 Months
Paper-IV: CCA04 - Computer Applications Practical

Total Marks: 100

Course Objective:

The course aims to provide hands-on experience in using computers, operating systems, office applications, digital services, cyber security practices, and AI tools. It enables students to apply the knowledge gained from the theory courses to perform common academic, professional, and day-to-day digital tasks safely and effectively.

Course Outcomes:

After completing this practical course, students will be able to:

- CO1.** Identify computer components and peripheral devices and perform basic Windows and file-management operations.
- CO2.** Create and format documents, spreadsheets, presentations, and basic DTP materials using appropriate digital tools.
- CO3.** Use email, Google Docs, Google Sheets, and Google Forms for basic digital communication and collaboration.
- CO4.** Use digital academic and e-governance services and identify common phishing, fraudulent, and cyber security threats.
- CO5.** Demonstrate strong password practices, two-factor authentication, safe digital-payment practices, and responsible use of AI tools for academic activities.

Practical:

Description (Practical based on Papers CCA01, CCA02 and CCA03)
A. Computer Fundamentals ➤ Identify computer components and peripheral devices. ➤ Identify and demonstrate the use of common storage devices. ➤ Perform basic Windows and file-management operations.
B. Office Applications ➤ Create and format a document in MS Word. ➤ Create a table and use basic formatting. ➤ Prepare a mail-merge document. ➤ Create a spreadsheet using formulas/functions. ➤ Sort/filter data and create a chart. ➤ Prepare a PowerPoint presentation. ➤ Create a simple poster/pamphlet/ID card.
C. Digital Awareness & Cyber Security ➤ Create/send email with attachment and use CC/BCC. ➤ Use Google Docs/Sheets/Forms. ➤ Demonstrate DigiLocker/academic digital services. ➤ Demonstrate a safe digital payment workflow using a simulated/example environment. ➤ Identify phishing/fraudulent messages. ➤ Demonstrate strong password and 2FA concepts. ➤ Use an AI tool responsibly for a simple academic task.