PART A:				
Program: **Certificate**		Class: **B.C.A.**	Year: **I**	Session: **2025-26**
Subject: **Computer**				
1.	Course Code	**UCOMPCA101**		
2.	Course Title	**Computer Architecture**		
3.	Course Type (Core Course/DSE/Minor/MD-ID/ SEC/VOC)	**Major –I** (Core Course)		
4.	Pre-Requisite (if any)	To study this course, a student must have basic knowledge of Computers.		
5.	Course Learning Outcomes (CLO)	**After the completion of this course, a successful student will be able to do the following**: 1. Understand the basic structure, operation and characteristics of digital computer. 2. Design simple combinational digital circuits based on given parameters. 3. Familiarity with working of arithmetic and logic unit. 4. Know about hierarchical memory system including cache memories and virtual memory. 5. Know the contributions of Indians in the field of computer architecture and related technologies.		
6.	Credit Value	**Theory – 4**		
7.	Total Marks	Max. Marks : **30 +**	Min. Passing Marks: 12+28	

PART B: Content of the		
No. of Lectures (in hours per week): **2 Hrs. per**		
Total No. of Lectures: **60**		
Module	**Topic**	**No. of Lectures**
I	**Indian Knowledge System:** Ancient Indian Contribution in Computer Architecture: Pingala's "Chandahśāstra", Panini Sanskrit Grammar. Modern Contribution: Dr. Vinod Dhami, Dr. Ajay Bhat, Dr. Vinod Khosla, Dr. Vijay P Bhatkar. ***Suggested Activities:*** *Debate on Pingala's "Chandahśāstra", Panini Sanskrit Grammar. Solve real-world problems inspired by PARAM's computational models. Discuss on Indian contributions to computing,*	0 2
II	**Fundamentals of Digital Electronics**: Decimal, Binary, Octal, Hexadecimal, Number System Conversions, Binary Arithmetic, Addition and subtraction of BCD, Octal Arithmetic, Hexadecimal Arithmetic, Binary Codes, Decimal Codes, Error detecting and correcting codes, ASCII, EBCDIC, Excess-3 Code, The Gray Code. **Logic Gates**, Boolean Algebra, Map Simplification, Combinational Circuits, Sequential Circuits, simple combinational circuit design problems. ***Suggested Activities:*** *Assignment on number systems, Verifying logic gates through truth tables,*	12
III	**Combinational Circuits:** Half Adder and Full Adder, Subtractor, Decoders, Encoder, Multiplexer, Demultiplexer. **Sequential Circuits:** Flip-Flops- SR Flip- Flop, D Flip-Flop, J-K Flip-Flop, T Flip-Flop. **Register:** 4 bit register with parallel load, Shift Registers- Bidirectional shift register with parallel load Binary. **Counters:** 4 bit synchronous and Asynchronous binary counter.	12

	Suggested Activities: *Designing combinational circuits, Hands-on session on designing adders and multiplexers, use simulation software to design basic combinational circuits, Students work in teams to optimize logic circuits*	
IV	**Basic Computer Organization**: Instruction codes, Computer Registers, Computer Instructions, Timing & Control, Instruction Cycles, Memory Reference Instruction, Input - Output & Interrupts, Instruction formats, Addressing modes, Instruction codes, Machine language, Assembly language. **Register Transfer and Micro operations**: Register Transfer Language, Register Transfer, Bus & Memory Transfer, Arithmetic Micro-operations, Logic Micro-operations, Shift Micro-operations.	12
	Suggested Activities: *Understand how processors access operands in memory, Implement AND, OR, XOR operations at the bit level, explore Panini's rule-based grammar and compare it with modern instruction set design, debate on addressing*	
V	**Processor and Control Unit**: Hardwired vs. Micro programmed Control Unit, General Register Organization, Stack Organization, Instruction Format, Data Transfer & Manipulation, Program Control, Introductory concept of RISC, CISC, advantages and disadvantages of both. **Pipelining**: concept of pipelining, introduction to Pipelined data path control – Handling Data hazards & Control hazards.	12
	Suggested Activities: *Debate on Hardware vs. Microprogrammed Control, Assignment on designing a simplified processor. Discussion on RISC vs. CISC*	
VI	**Memory and I/O Systems -** Peripheral Devices, I/O Interface. **Data Transfer Schemes -** Program Control, Interrupt, DMA Transfer, I/O Processor. **Memory Hierarchy**, Processor vs. Memory Speed, High-Speed Memories, Main memory, Auxiliary memory, Cache Memory, Associative Memory, Interleaving, Virtual Memory, Memory Management. **Ancient Manuscript Storage (Nalanda, Takshashila Libraries):** Similarity to hierarchical memory and indexing methods.	10
	Suggested Activities: *Understanding memory allocation in modern computers, Compare manuscript storage methods with modern hierarchical memory, Field Visit (if possible): Visit a digital archive/library to understand memory*	

PART C: Learning
Textbooks, Reference Books, Other
Suggested
Textbooks: 1. Gerard G. Emch, R. Sridharan, M. D. Srinivas: Contributions to the History of Indian Mathematics, Hindustan Book Agency, Vol. 3, 2005. 2. Udayan S. Patankar & Sunil M. Patankar: Elements of Vedic Mathematics, TTU Press, Tallinn 2018. 3. M. Morris Mano: "Computer System Architecture", PHI. 4. Heuring Jordan: "Computer System Design & Architecture" (A.W.L.). 5. Donald P Leach, Albert Paul Malvino, Goutam Saha: "Digital Principles & Applications", Tata McGraw Hill Education Private Limited, 2011Edition. 4. मध्य प्रदश हिन्दी ग्रथ अकादमी की पस्तक। **Reference Books:** 1. William Stalling, "Computer Organization & Architecture", Pearson Education Asia. 2. V. Carl Hamacher , "Computer Organization", TMH 3. Tannenbaum, "Structured Computer Organization", PHI.
Suggested Digital Platforms & Web
https://epgp.inflibnet.ac.in https://www.eshiksha.mp.gov.in/mpdh
Suggested Equivalent Online
https://nptel.ac.in/courses/106/105/106105163 / https://nptel.ac.in/courses/106/106/106106166

Part D: Assessment and		
Suggested Continuous Evaluation Methods: Maximum Marks: **100** Continuous Comprehensive Evaluation (CCE): **30** Marks University Exam (UE):		
Internal Assessment: Continuous Comprehensive Evaluation (CCE)		**Total Marks:** **30**
External Assessment: University Exam Section Time: 03.00 Hours	**Section (A) :** Very Short Questions **Section (B) :** Short Questions **Section (C) :** Long	**Total Marks:** **70**

PART A:				
Program: **Certificate**		Class:	Year: **I**	Session: **2025-26**
Subject: **Computer**				
1.	Course Code	**UMATHCA102**		
2.	Course Title	**Mathematical Foundations to Computer Science**		
3.	Course Type (Core Course/DSE/Minor/MD-ID/ SEC/VOC)	**Minor – I**		
4.	Pre-Requisite (if any)	To study this course, a student must have basic knowledge of Computers.		
5.	Course Learning Outcomes (CLO)	**After the completion of this course, a successful student will be able to do the following**: 1. Perform key operations for image processing, computer graphics, and data analysis. 2. Understand and implement linear transformations in 3D modeling,robotics, and neural networks. 3. Solve linear systems that arise in cryptography, game development,and AI algorithms. 4. Use matrices in machine learning models for efficient data manipulation and optimization. 5. Implement algorithms that involve graph theory, network flow analysis, and dynamic systems. Using the principles of logic to distinguish between sound and unsound reasoning in discourse of everybody. 6. Construct truth tables for logical expressions; test statements for logical equivalence and represent mathematical statements in the language of predicate language. 7. Using the appropriate set theoretic concepts, thinking process, tools and techniques in the solution to various conceptual or real-world problems. 8. Understanding Frequency Distributions that helps in efficiently summarizing and analyzing large datasets, detecting anomalies, and optimizing algorithms for better performance in areas like searching, sorting, and recommendation systems.		
6.	Credit Value	**Theory – 4**		
7.	Total Marks	Max. Marks : **30 + 70**	Min. Passing Marks: 12+28	

PART B: Content of the		
No. of Lectures (in hours per week): **2 Hrs. per**		
Total No. of Lectures: **60**		
Module	**Topics**	**No. of**
I	**Indian Knowledge System:** Basic concepts of Mathematical Logic in ancient India: Panini's Logical Structure, Avaktavtakta, Navya-Nyaya Logic. Indian Contributions in Statistics: P. C. Mahalanobis, C. Radhakrishna Rao, Samanta Chandra Sekhar Harichandan, J. K. Ghose, P. Maiti.	05
	Suggested Activities: *Decoding Ancient Logic, Statistical Legends: A Tribute to Indian Pioneers, Logic Meets Statistics: A Fun Debate.*	

II	**Determinants:** Basic Properties of Determinants, Minor determinant, Co-factors, Applications of determinants in finding the area of a triangle. **Matrices:** Concept of Matrices, Notation, order and equality of Matrices, Types of Matrices, Operations on Matrices, Addition and multiplication, Multiplication with a scalar, Simple properties of addition, multiplication and scalar multiplication, Transpose of a Matrix, Application of Matrices to solve real world problems.	15
	Suggested Activities: *Applications of Matrices to solve the problems related to Industries, Business, Economics and real world problems.*	
III	**Statistics:** Frequency distribution, Measures of central tendency: Mean, Median, Mode. Measure of dispersion: mean deviation, variance and standard deviation of ungrouped/grouped data.	20
	Suggested Activities: *Applications of* Mean, Median, Mode, mean deviation, variance and standard deviation *to solve the problems related to Industries, Business, Economics and real world problems.*	
IV	**Mathematical Logic:** Statements and notations, Propositions and Truth table, Negation, Conjunction and Disjunction, Implications and Double implication, Bi-conditional propositions, Contrapositive Implication and converse, Contrapositive and inverse propositions, Tautology and Contradiction, Logical equivalences, De-Morgan Law.	20
	Suggested Activities: *Applications of Mathematical Logic to solve the problems related to Industries, Business, Economics and real world problems.*	

PART C: Learning

Textbooks, Reference Books, Other

Suggested

Textbook

1. Gerard G. Emch, R. Sridharan, M. D. Srinivas: Contributions to the History of Indian Mathematics,
Hindustan Book Agency, Vol. 3, 2005.
2. Udayan S. Patankar & Sunil M. Patankar: Elements of Vedic Mathematics, TTU Press, Tallinn 2018.
3. Nita H. Shah, Foram A. Thakkar: Matrix and Determinant Fundamentals and Applications, CRC Press, 2020.
4. H. C. Saxena and J. N. Kapoor: Mathematical Statistics, S. Chand and Company, 2010.
5. R. M. Somasundaram: Discrete Mathematical Structures, PHI Learning Pvt. Ltd., 2003.
6. मध्य प्रदश हिन्दी ग्रथ अकादमी की पस्तक।

Reference Books:

1. Hari Kishan: A Textbook of Matrices, Atlantic Publishers & Dist, 2008
2. Shanti Narayan and P K Mittal: A Textbook of Matrices, S. Chand Publishing, 1953.
3. E. Rukmangadachari: Probability and Statistics, Pearson Education India; First edition, 2012.
4. R. P. Grimaldi, Discrete Mathematics and Combinatorial Mathematics, Pearson Education, 1998.

Suggestive Digital Platform Web

https://www.eshiksha.mp.gov.in/mpdhe https://epgp.inflibnet.ac.in

Suggested Equivalent Online

https://nptel.ac.in/courses/11110612/
https://nptel.ac.in/courses/11110500/
https://nptel.ac.in/courses/10810417

Part D: Assessment and		
Suggested Continuous Evaluation Methods: Maximum Marks: **100** Continuous Comprehensive Evaluation (CCE): **30** Marks University Exam (UE):		
Internal Assessment: Continuous Comprehensive Evaluation (CCE)		**Total Marks:** **30**
External Assessment: University Exam Section Time: 03.00 Hours	**Section (A) :** Very Short Questions **Section (B) :** Short Questions **Section (C) :** Long	**Total Marks:** **70**

PART A:			
Class: **B.C.A.**	Year: **I Year**	Session: **2025-26**	
Subject: **Computer**			
Course Code	UENTRCA103		
Course Title	Entrepreneurship Skills		
Course Type (Core Course/DSE/Minor/MD-ID/ SEC/VOC)	**Multi-Disciplinary** **Online through SWAYAM**		
Pre-Requisite (if any)	To study this course, a student must have basic knowledge of Computers.		
Course Learning Outcomes (CLO)	1. To sensitize students with the Entrepreneurship skills. 2. To make students understand entrepreneurial process, qualities and other aspects. 3. To enhance awareness of the students to the processes for starting new ventures. 4. To prepare students to know more about role of innovation and creativity in starting new venture. 5. To provide students with an understanding running of successful enterprise with live case study.		
Credit Value	**Theory – 3 Credits**		
Total Marks	Max. Marks : 100	Min. Passing Marks:	

PART A: Introduction				
Program: UG Level .	Class: I Year		Year:I	Session: 2025-26
Subject: Foundation Course (English)				
1.	Course Code	**UENGLCA104**		
2.	Course Title	English Language and Indian Culture		
3.	Course Type (Core Course/Elective/Generic Elective/ Vocational	**AECC/ Foundation Course**		
4.	Pre-Requisite (if any)	To study this course, a student should have basic knowledge of English language. This course will be studied by all the students of UG level under the Foundation Course category.		
5.	Course Learning Outcomes (CLO)	Through this course the students will be able to: 1. Prepare for various competitive exams by developing their English language competence. 2. Promote their comprehension skills by being exposed to a variety of texts and their interpretations. 3. Build and enhance their vocabulary. 4. Develop their communication skills by strengthening grammar and usages. 5. Inculcate values which make them aware of national heritage and environmental issues, making them responsible citizens.		
6.	Credit Value	2 Credit		
7.	Total Marks	Max. Marks: 30+70	Min. Pass Marks:12+28	

PART B: Content of the Course		
Total No. of Lectures-Tutorials- Practical (in hours er week): L-T-P		
Total No. of Lectures:		
Unit	Topics	No. of Lectures
I	**Reading, Writing and Interpretation Skills:** I. Where The Mind is Without Fear— Rabindranath Tagore [Key **Word: Patriotism]** 2. National Education — M. K. Gandhi **[Key Word: Edification]** 3. The Axe- R.K Narayan [Key **Word: Environment]** 4. The Wonder That Was India- A.L Basham (an excerpt) [Key **Word: Indianness]** 5. Preface to the Mahabharata C. Rajagopalachari [Key **Word: Indian Mythology]**	05
II	**Comprehension Skill:** Unseen Passage followed by Multiple choice questions	05
III_	Basic Language Skills 1: Vocabulary Building: Suffix, Prefix, Synonyms, Antonyms, Homophones, Homonyms and One-word substitution. 2: Basic Grammar: Noun, Pronoun, Adjective, Verb, Adverb, Prepositions, Articles, Time and Tense	05

PART C: Learning Resources
Textbooks, Reference Books, Other Resources

Suggested Readings

Essential English Grammar - Raymond Murphy, Cambridge University Press.

- Practical English Grammar Exercises 1- A. J. Thomson & A. V. Martinet, Oxford India.
- Practical English Usage - Michael Swan, Oxford
- English Grammar in Use - Raymond Murphy, Cambridge University Press.

PART D: Assessment and Evaluation			
Internal Assessment : Continuous Comprehensive Evaluation (CCE) : 30 Marks Shall be based on allotted assignments and Class Tests. The marks shall be as follows:		External Assessment: University Exam (UE) : 70 Marks Time : 03.00 Hours	
Assessment and presentation of assignment	10 Marks	Section (A) : Five Very Short Questions (50 Words Each) OR MCQ Questions	05 x 04 = 20 Marks OR 20 x 01 = 20 Marks
Class Test I (Objective Questions)	10 Marks		
Class Test II (Descriptive Questions)	10 Marks	Section (B) : Five Short Questions (200 Words Each)	10 x 03 = 30 Marks
Class Test III	10 Marks	Section (C): Two Long Questions (500 Words Each)	10 x 2 = 20 Marks
Total	30 Marks	Total	60 Marks
Any remarks/suggestions:			

Subject :- Computer Application		
Course Title	**Computer Fundamental with MS Office**	
Course Code	**UCOMPCA105**	
Course Type	Skill Enhancement Vocation Course	
Course Outcome	On the completion of this course student will be able- • To understand the fundamentals of computer • To use computer in his daily life as well as can do assigned official work with ease. • Troubleshoot, issues related to working with computer and internet • To communicate through internet as well as can use IT for day to day work	
Credit Value	4	
Total Marks	30+70	12+28

Part B: Content Of the Course
Computer Fundamentals
Total No. of Lectures =60 (4 hours/lectures per week):2-0-0

UNIT	TOPIC	No of Lecture
UNIT 1	**Knowing computer:** What is Computer, Basic Applications of Computer; Components of Computer System, Modern Central Processing Unit (CPU), Video Display Unit, Keyboard and Mouse, Optical Storage Devices, Basics of Hard Drive, Concepts of Hardware and Software; Concept of Computing, Data and Information; Applications of Information Electronics and Communication Technology; Communication software, commonly used application software Connecting keyboard, mouse, checking power supply. Computer software & its types: System software, Application software. Types of operating monitor and printer to CPU and systems, Role of operating system, Utility programs, Packages,	12
UNIT 2	**Operating Computer using GUI Based Operating System**: What is an Operating System; Basics of Popular Operating Systems; The User Interface, Basics of O.S Setup; Common utilities. MS Windows Operating System: Definition and functions, basic components of Windows. Icons. Desktop, Taskbar, Notification Area. Files and folders, Start menu operations, my computer, network neighbourhood, recycle-bin, windows explorer, creating copying, moving and deleting files, setting wall paper, changing the mouse pointer, paint, notepad, Setting date and time, screen saver, and appearance. Using Mouse; Using right Button of the Mouse and Moving Icons on the screen, Use of Common Icons, Status Bar, Using Menu and Menu-selection, Running an Application, Viewing of File, Folders and Directories, Creating and Renaming of files and folders, Opening and closing of different Windows; Using help; Creating Short cuts, Using Windows accessories	12
UNIT 3	**MS Word:** Introduction, Windows 2007 Interface, Customizing the Word Application, Document Views, Creating & Editing Document. Selecting, Deleting, Replacing Text, Copying text to another file. Insert, Formatting text and paragraph, [Using the Font, Dialog Box, Paragraph Formatting using Bullets and Numbering in paragraphs, Checking Spelling, Line spacing, Margins, Space before and after paragraph. Basic Formatting in MS Word 2007, Advanced Formatting, Navigating through a Word Document, Performing a Mail Merge, A Quick Look at Macros, Printing Documents, Print Preview **Excel 2007**: Introduction, Workbook, Worksheet, Formatting in excel **MS PowerPoint**: Introduction, Creating a Presentation	12
UNIT	Introduction to Internet, WWW and Web Browsers: Basic of Computer networks; LAN, WAN;	12

4	Concept of Internet; Applications of Internet; connecting to internet; What is ISP; Knowing the Internet; Basics of internet connectivity related troubleshooting, Web Browsing softwares, Search Engines; Understanding URL; Domain name; IP Address; Using e-governance website Basics of electronic mail; Getting an email account; Sending and receiving emails; Accessing sent emails; Using Emails; Document collaboration; Instant Messaging; Netiquettes (Internet etiquette).	
UNIT 5	Useful Google tools such as drive, sheet, doc, meet, etc Firewall, Computer Virus and Anti Virus Software, Internet Security & Privacy Basics of Electronic Data Interchange (EDI) and Electronic Payment System(EPS), Types of Payment System: Digital Cash, Electronic Cheque, Smart Card, Introduction to Digital Signature and Digital Certificates	12
	Suggested Digital Platforms, Weblinks 1. https://edu.gcfglobal.org/en/computerbasics/ 2. l1ttps://edu.gcfglobal.org/en/subjects/office/ 3. https://vikaspedia.in/education/digital-litercy/it-literacy-courses-in-associating-with-msup/computer-fundamentals 4. https://onlinecourses.swayam2.ac.in/nou20_cs03/ 5. https://www.tutorialspoint.com/computer_fundamentals/index.htm 6. https://ecomputernotes.com/e-commerce/electronic-commerce/define-electronic-payment-system-its-requirements-and-payment-methods 7. https://edu.gcfglobal.org/en/topics/googleapps/ 8 https://onlinecourses.swayam2.ac.in/cec19_cs06/preview 9. https://nptel.ac.in/courses/106/106/106106092/ 10. https://vikasped ia. in/education/d igital-litercy/it-literacy- courses-in- associating-with-msu p/com puter-funda menta ls 11. https://nptel.ac.in/courses/106/103/106103068/ Suggested Readings: • Introduction to Computers: C. Xavier, New Age International. • Computer Fundamentals : Concepts, Systems & Applications : Priti Sinha, Pradeep K., Sinha, BPB Publications • Fundamentals of Information technology : Alexis Leon & Mathews Leon,Vikas Publishing House, NewDelhi. • Microsoft Office 2019 For Dummies: Wallace Wang, Wiley	

PART A:				
Program: **Certificate**		Class:	Year: **I**	Session: **2025-26**
Subject: **Computer**				
1.	Course	**UCOMPCA106**		
2.	Course	**Computer Architecture**		
3.	Course Type (Core Course/DSE/Minor/MD-ID/ SEC/VOC)	**Major - 1** (Core Course)		
4.	Pre-Requisite (if any)	Ni		
5.	Course Learning Outcomes(CLO)	**After the completion of this course, a successful student will be able to do the following**: 1. Realization of the basic logic and universal gates. 2. Verify the behavior of logic gates using truth tables. 3. Implement Binary-to -Gray, Gray-to -Binary code conversions. 4. Design half and full adder circuit using basic gates. 5. Design and construct flip flops and verify the excitation tables.		
6.	Credit	**Practical - 2**		
7.	Total	Max. Marks: **100**	Min. Passing Marks:	

PART B: Content of the		
No. of Lab. Practical's (in hours per week): 1 **Hrs. per**		
Total No. of Labs: 3**0**		
	Suggestive list of	**No. of Labs.**
	1. Verification and interpretation of truth table for AND, OR, NOT gates 2. Verification and interpretation of truth table for NAND, NOR gates 3. Verification and interpretation of truth table for Ex-OR, Ex-NOR gates 4. Study of half adder using XOR and NAND gates and verification of its operation 5. Study of full adder using XOR and NAND gates and verification of its operation 6. Study of half subtractor and verification of its operation 7. Study of full subtractor and verification of its operation 8. Realization of logic functions with the help of NAND -Universal Gates	30 Hrs.

	9. Realization of logic functions with the help of NOR -Universal Gates 10. Verify the truth table of RS flip-flops using NAND and NOR gates 11. Verify the truth table of JK flip-flops using NAND and NOR gates 12. Verify the truth table of T and D flip-flops using NAND and NOR gates 13. Implementation of 4x1 multiplexer using logic gates 14. Implementation of 1x4 demultiplexer using logic gates 15. Verify Gray to Binary conversion using NAND gates only 16. Verify Gray to Binary conversion using NAND gates only	

PART C: Learning

Textbooks, Reference Books, Other

Suggested

Textbooks:

1. Gerard G. Emch, R. Sridharan, M. D. Srinivas: Contributions to the History of Indian Mathematics, Hindustan Book Agency, Vol. 3, 2005.
2. Udayan S. Patankar & Sunil M. Patankar: Elements of Vedic Mathematics, TTU Press, Tallinn 2018.
3. M. Morris Mano: "Computer System Architecture", PHI.
4. Heuring Jordan: "Computer System Design & Architecture" (A.W.L.).
5. Donald P Leach, Albert Paul Malvino, Goutam Saha: "Digital Principles & Applications", Tata McGraw Hill Education Private Limited, 2011Edition.
6. मध्य प्रदश हिन्दी ग्रथ अकादमी की पस्तक।

Reference Books:

1. William Stalling, "Computer Organization & Architecture", Pearson Education Asia.
2. V. Carl Hamacher , "Computer Organization", TMH

Suggested Digital Platforms Web

https://epgp.inflibnet.ac.in
https://www.eshiksha.mp.gov.in/mpdh

Suggested equivalent online

https://nptel.ac.in/courses/106/105/106105163
/
https://nptel.ac.in/courses/106/106/106106166

PART D: Assessment and valuation

Suggested Continuous Evaluation Methods:

Internal Assessment	**Marks**	**External Assessment**	**Marks**
Class Interaction/Quiz		Viva voce practical	
Attendance		Practical record file	
Assignments (Charts/ Model/Seminar/Rural Services/ Technology Dissemination/Report of Excursion/Lab visit/ Survey/Industrial Visit)		Table work/Experiment	
Total	**30**		**70**

UCOMPCA107 Computer fundamental with MS Office (Lab) PW

Course Overview

Field	Details
Program	Certificate
Class	UG I
Subject	Computer Application (BCA)
Course Code	UCOMPCA107
Course Title	Computer fundamental with MS Office (Lab) PW
Course Type	SEVC
Session	2025-26
Pre-requisite	Basic knowledge of computer peripherals (mouse, keyboard, monitor, etc.)

Course Learning Outcomes (CLOs)

Use keyboard shortcuts and MS Office tools effectively.
Create, format, and manage professional documents using Word.
Insert tables, images, drawings, and templates.
Perform calculations and manage data using Excel.
Create and customize PowerPoint presentations.
Use Mail Merge, Charts, and Macros efficiently.

Syllabus (Theory)

Unit	Topic Highlights	No. of Lectures
I	MSWord: Introduction, Features & area of use. Working with MS ord: Ribbon tabs-Home, Insert, Page Layout, References, Mailings, Review and View, Using word to create a new document, open, save and A background and borders, insert headers and footers, insert and edit tables, insert clip art and pictures to documents. Formatting Fonts in word, Drop Cap in word, Applying Text effects, Using Character Spacing, Borders and Colors, Inserting Header and Footer, Using Date and Time option in Word. Creating project abstract Features to be covered:-Formatting Styles, Inserting table, Bullets and Numbering, Changing Text Direction, Cell alignment, Footnote, Hyperlink, Symbols, Spell Check , Track Changes	6
II	Creating a Newsletter : Features to be covered:- Table of Content, Newspaper columns, Images from files and clipart, Drawing toolbar and Word Art, Formatting Images, Textboxes and Paragraphs Creating a Feedback form - Features to be covered- Forms, Text Fields, [Inserting objects Mail Merge .. creating custom document, creating main document, creating data source , editing data source, opening a data source, sorting the data source, finding a record in data source, editing main document sorting merged documents, filtering merged documents, printing merged	6

	documents, merging onto letterhead, using different data sources with a single main document.	
III	MS Excel : Introduction to Excel interface Understanding rows anc columns, Naming Cells, Working with excel workbook and sheets Formatting excel work book, New, Open, Close, Save, Save As Formatting Text: Font Size, Font Style, Font Color, Use the Bold, Italic, and Underline Wrap text, Merge and Centre Currency, Accounting and other formats, Modifying Columns, Rows & Cells, Perform Calculations with Functions, Creating Simple Formulas Setting up your own formula, Date and Time Functions, Financial Functions Logical Functions, Lookup and Reference, Functions Calculations - Features to be covered:- Cell Referencing, Formulae in excel - average, standard deviation, Charts, Renaming and Inserting worksheets, Hyper linking, Count function, Mathematical Functions, Statistical Functions, Text Functions. Sort and Filter Data with Excel Sort and filtering data Using number filter, Text filter, Custom filtering, Removing filters from columns, Conditional formatting	6
IV	Create Effective Charts to Present Data Visually Inserting Column, Pie chart etc. Create an effective chart with Chart Tool, Design, Format, and Layout options, Adding chart title, Changing layouts, Chart styles, Editing chart data range Editing data series, Protecting and Sharing the work book Protecting a workbook with a password, Allow user to edit ranges, Track changes, Working with Comments. Insert Excel Objects and Charts in Word, Use Macros to Automate Tasks Creating and Recording Macros, Assigning Macros to the work sheets, Saving Macro enabled workbook. Performance Analysis - Features to be covered:- Split cells, freeze panes, group and outline, Sorting, Boolean and logical operators, Conditional formatting Cricket Score Card creation - Features to be covered:-Pivot Tables, Interactive Buttons, Importing Data, Data Protection, Data Validation	6
V	Creating PowerPoint Presentations: Making presentation which demonstrate use of Hyperlinks, Inserting -Images, Clip Art, Audio, Video, Objects, Tables and Charts Create Master Layouts (slide, template, and notes), Types of views (basic, presentation, slide slotter, notes etc), Inserting - Background, textures, Design Templates, Hidden slides. Auto content wizard, Slide Transition, Custom Animation, Auto Rehearsing	6

Practical Labs

1. Create a document and apply formatting.
2. Design greeting cards using Word Art.
3. Create a bio-data with page borders.
4. Insert header/footer, page title.
5. Set margins, orientation, page layout.
6. Insert tables in Word.
7. Create a class mark sheet in Excel.
8. Save, secure, and print Excel sheets.
9. Create bar and pie charts for result analysis.
10. Excel sheet operations: copy, rename, insert, delete.
11. Create attendance sheet and calculate totals/averages.
12. Create faculty-wise student database with sort, filter, subtotal.
13. Apply themes and insert graphics in PPT.
14. Use transitions, animations, and master slides.
15. Perform Excel computations using functions.

Learning Resources

YouTube: https://www.youtube.com/watch?v=Zv3XMBb3V6A
NPTEL: http://www.digimat.in/nptel/courses/video/121106007/L12.html
Webucator Mail Merge: https://www.webucator.com/how-to/how-use-mail-merge-microsoft-word.cfm
Pivot Table 1: https://support.microsoft.com/en-us/office/create-pivottable-or-pivotchart-views-in-an-access-desktop-database-83e524df-dfbd-456d-9dd0-0a48claa6752
Pivot Table 2: https://support.microsoft.com/en-us/office/create-a-pivottable-to-analyze-worksheet-data-aa84538-bfe9-40a9-a8e9-199134456576

Suggested Books:

Microsoft Office 97 – Gini Courter, Annette Marquis (BPB)
MS Office 2000 for Everyone – Saxena Sanjay
Writer's Guide to Microsoft Word – Kari Holloway
Access 2016 Bible – Michael Alexander, Richard Kusleika

Excel 2019 – Greg Harvey
Microsoft PowerPoint Made Easy – Chris Smith

Assessment & Evaluation

Theory:

Internal (CCE)	30
External (University Exam)	70

Theory Paper Structure:

Section	No. of Qs	Marks per Q	Total
A (Very Short, 50 words)	4	5	20
B (Short, 200 words)	3	10	30
C (Long, 500 words)	2	10	20

Practical: Report File +Viva Voce +Attendance + Project

Internal	30
External	70