SCHEME OF BCA PROGRAMME (NEP)(As per ordinance 14(1)) संशोधित

BCA FIRST SEMESTER   **SESSION 2025-26**

Course Code	Course Type	Course Title	Credit	External (Theory)	Internal	External (Practical)	Total	
				MAX	Max	Max	Min	Max
C-1	Major	Computer Architecture	4	70	30		35	100
		Computer Architecture (practical)	2			100	35	100
M-1	Minor	Mathematical Foundations to Computer Science	4	70	30		35	100
MD-1	MD	Information Technology	2	100			35	100
		Information Technology (Practical)	1			100	35	100
AEC-1	AEC	हिन्दी भाषा और संस्कृति	2	100			35	100
SEC-1	SEC	Personality Development	1	100			35	100
		Personality Development (Practical)	2			100	35	100
		Internship/ Apprenticeship/project work/CE	2		100		35	100

BCA SECOND SEMESTER :   **SESSION 2025-26**

Course Code	Course Type	Course Title	Credit	External (Theory)	Internal	External (Practical)	Total	
				MAX	Max	Max	Min	Max
C-2	Major	Programming Methodology	4	70	30		35	100
		Programming Methodology (Practical)	2			100	35	100
C-3	Major	Data Structures	4	70	30		35	100
		Data Structures (Practical)	2			100	35	100
M-2	Minor	Operating System	3	70	30		35	100
		Operating System (Practical)	1			100	35	100
AEC-2	AEC	English Language and Indian Culture	2	100			35	100
VAC-1	VAC	भारत बोध (Understanding India)	2	100			35	100

Part-A:Introduction			
Program: BCA	Sem: First	Year:First	Session: 2025 – 2026
Subject: Computer Application			
1	Course Code	C-1	
2	Course Title	Computer Architecture (Theory)	
3	Course Type	Major (Core Course)	
4	Pre-requisite(If any)	To study this course, a student must have basic knowledge of Computers.	
5	Course Learning Outcomes	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 Credits	
7	Total Marks	Max. Marks: 30+70	Min.PassingMarks:35
Part-B: Content of the Course			
Total numbers of Lectures: 60 hours			

Unit	Topics	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,*	8
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. *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 for efficiency, Debate on advancements in digital logic design.*	12
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 modes and their use cases.*	
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 and control – Handling Data hazards & Control hazards. **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. ***Suggested Activities:*** *Debate on Hardware vs. Microprogrammed Control, Assignment on designing a simplified processor. Discussion on RISC vs. CISC architectures, Analyze how modern processors handle instruction execution. 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 organization.*	16

Part C: Learning Resources
Text Books,Reference Books,Other resources

Suggested Readings:

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 प्रदेश हिन्दी ग्रंथ अकादमी की पुस्तकें।

Reference Books:
1. William Stalling, "Computer Organization & Architecture", Pearson Education Asia.
2. V. Carl Hamacher , "Computer Organization", TMH
3. Tannenbaum, "Structured Computer Organization", PHI.
4.Er. Rajiv Chopra, "Computer Architecture", Revised 3rd Edition, S. Chand & Company Pvt. Ltd

Suggested equivalent online courses/resources:
https://epgp.inflibnet.ac.in
https://www.eshiksha.mp.gov.in/mpdhe
Suggested Equivalent Online Courses:
https://nptel.ac.in/courses/106/105/106105163/
https://nptel.ac.in/courses/106/106/106106166/
https://nptel.ac.in/courses/106/106/106106134/

Part D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:
Maximum Marks: 100
Continuous Comprehensive Evaluation (CCE): 30 Marks
University Exam (UE): 70 Marks

Internal Assessment:	Total Marks: 30
Continuous Comprehensive Evaluation (CCE)	

External Assessment: University Exam Section Time: 03.00 Hours	Section (A) : Very Short Questions Section (B) : Short Questions Section (C) : Long Questions	Total Marks: 70
Part-A:Introduction		

Part-A:Introduction				
Program: BCA		Sem: First	Year:First	Session: 2025 – 2026
Subject: Computer Application				
1	Course Code	C-1		
2	Course Title	Computer Architecture (practical)		
3	Course Type	Major		
4	Pre-requisite(If any)	To study this course, a student must have basic knowledge of Computers.		
5	Course Learning Outcomes	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 Value	2		
7	Total Marks	Max. Marks: 100		Min.PassingMarks:35
Part-B: Content of the Course				
Total numbers of Practical Lectures: 30				

Unit	Topics covered:	No. of Lectures (2 Hours /lecture
	Suggestive list of Practical's 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 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	30

PartC:LearningResources
Text Books, Reference Books,Other resources
Suggested Readings:
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 प्रदेश हिन्दी ग्रंथ अकादमी की पुस्तकें ।

Reference Books:

1. William Stalling, "Computer Organization & Architecture", Pearson Education Asia.

2. V. Carl Hamacher , "Computer Organization", TMH

3. Tannenbaum, "Structured Computer Organization", PHI.

4. Er. Rajiv Chopra, "Computer Architecture", Revised 3rd Edition, S. Chand & Company Pvt. Ltd

Suggested Digital Platforms Web links:

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

Suggested equivalent online courses

https://nptel.ac.in/courses/106/105/106105163/   https://nptel.ac.in/courses/106/106/106106166/
https://nptel.ac.in/courses/106/106/106106134/

Part D: Assessment and Evaluation				
Internal Assessment: Continuous Comprehensive Evaluation (CCE)		External Evaluation:		100 Marks
(A) Class Interaction /Quiz		Section (A): Viva Voce on Practical		
(B) Submission of Practical Assignment followed by Execution on computer		Section (B): Practical Record File		
(C) Lab Attendance		Section (C): Table work / Experiments		
Total Internal Assessment Marks (A+B+C)		Total External Evaluation Marks (A+B+C)		100 Marks

Program: BCA		Sem: First	Year:First	Session: 2025 – 2026
Subject: Computer Application				
1	Course Code	M-1		
2	Course Title	Mathematical Foundations to Computer Science (Theory)		
3	Course Type	Minor –I		
4	Pre-requisite(If any)	To study this course, a student must have basic knowledge of Computers.		
5	Course Learning Outcomes	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 Credits		
7	Total Marks	Max. Marks: 30+70		Min.PassingMarks:35
Part-B: Content of the Course				
Total numbers of Lectures: 60 hours				

Unit	Topics	No. of Lectures
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. **Suggested Activities:** Decoding Ancient Logic, Statistical Legends: A Tribute to Indian Pioneers, Logic Meets Statistics: A Fun Debate.	5
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. **Suggested Activities:** Applications of Matrices to solve the problems related to Industries, Business, Economics and real world problems.	15
III	Statistics: Frequency distribution, Measures of central tendency: Mean, Median, Mode. Measure of dispersion: mean deviation, variance and standard deviation of ungrouped/grouped data. **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.	20
IV	Mathematical Logic: Statements and notations, Propositions and Truth table, Negation, Conjunction and Disjunction, Implications and Double implication, Bi-	20

	conditional propositions, Contrapositive Implication and converse, Contrapositive and inverse propositions, Tautology and Contradiction, Logical equivalences, De-Morgan Law. **Suggested Activities:** Applications of Mathematical Logic to solve the problems related to Industries, Business, Economics and real world problems.	

Part C: Learning Resources
Text Books,Reference Books,Other resources
Suggested Readings:

Text Books:
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 प्रदेश हिन्दी ग्रंथ अकादमी की पुस्तकें ।
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 Links:
https://www.eshiksha.mp.gov.in/mpdhe
https://epgp.inflibnet.ac.in
Suggested Equivalent Online Courses:
https://nptel.ac.in/courses/111106112/
https://nptel.ac.in/courses/111105090/
https://nptel.ac.in/courses/108104157

Part D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:
Maximum Marks: 100
Continuous Comprehensive Evaluation (CCE): 30 Marks
University Exam (UE): 70 Marks

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 Questions	Total Marks: 70

Part-A:Introduction			
Program: BCA	Sem: First	Year:First	Session: 2025 – 2026
Subject: Computer Application			
1	Course Code	MD-1	
2	Course Title	Information Technology (Theory)	
3	Course Type	Multi/Inter-disciplinary (MD)	
4	Pre-requisite(If any)	The student must have passed 12th Class	
5	Course Learning Outcomes	1.Understand IT components & its applications 2. Promote digital literacy, ethical awareness, and cyber hygiene. 3. Exposure to IT tools for office work including Indian languages 4. Encourage healthy and mindful habits through yoga and Indian values. 5. Introduce learners to emerging technologies like AI and cloud platforms.	
6	Credit Value	Theory – 2 Credits	
7	Total Marks	Max. Marks: 100	Min.PassingMarks:35
Part-B: Content of the Course			
Total numbers of Lectures: 30 hours			

Unit	Topics	No. of Lectures
I	Fundamentals of Information Technology & Indian Knowledge Systems - History of Computing: From Ancient Indian contributions (e.g., binary logic in Pingala's Chandaḥśāstra) to modern IT Overview of Computer Systems: Hardware, Software, I/O Devices, Memory Operating Systems (Windows/Linux), File Management Introduction to Number Systems with Indian numeral history Concept of Digital India and e-Governance initiatives **Activity :** 1. Visit to a Digital Seva Kendra (Common Service Center) 2. Create a poster on Indian IT innovations (ISRO, Aadhaar, etc.)	6
II	Office Tools, Language & Communication in IT- Word Processing, Spreadsheets, and Presentations Use of local languages in IT (Unicode, Google translation tools, Indic typing tools) English for IT: Email Writing, IT vocabulary, presentation skills Language models and voice-to-text (Google Lens, ChatGPT, AI typing tools) UPI and QR Code : Introduction, Functionality, Challenges and Application in Indian context. **Activity** : 1. Prepare a bilingual presentation (English + regional language) 2. Draft an email for a job application and create a digital resume	6
III	Internet, AI Tools & Cyber security Awareness - Introduction to Internet, Cloud, and Email Cyber security basics: Phishing, Malware, Identity Theft Digital Ethics and Indian perspectives on "Dharma in Technology" Hands-on: Google Workspace, ChatGPT, Canva, Gemini, Indian AI tools Cybercrime awareness: Government portals (CERT-IN, Cyber Crime Reporting Portal). **Activity** : 1. Mock simulation of cybercrime reporting 2. Create a "Stay Safe Online" digital awareness video or poster.	6
IV	Text and Image Data: Introduction, Storage Formats for pictures, Image compression fundamentals, Image acquisition with Digital Camera. Audio Data: Introduction, Audio Signals, Acquisition and Storage, Compression Video Data: Introduction, Capturing a moving scene with Video Camera, Compression, MPEG compression standard. **Activity** : 1. Understand how digital images are captured, stored in various formats, and compressed, while analyzing the impact of these factors on quality and size.	6

	2.Understand how audio and video data are captured, stored, and compressed, and how different formats and compression levels affect quality and file size.	
V	IT Profession, Indian Values, Yoga & Social Impacts of Technology - Careers in IT: Freelancing, BPO, Data Entry, Web Development, AI Work ethics, time management, and digital wellbeing Indian Values: Satya, Ahimsa, and Seva in Tech Service Yoga for concentration, posture correction, and stress management for IT users Social implications: Digital divide, screen addiction, misinformation. **Activity** : 1. Daily 5-minute yoga for eyes and back (Demonstration & practice) 2. Conduct a debate: "Has Technology made us more connected or more isolated?"	6

Part C: Learning Resources
Text Books,Reference Books,Other resources

Suggested Readings:

Textbooks:
- Introduction to Information Technology By RAJARAMAN V., PHI Learning Pvt. Ltd. (Fourteenth Printing, Third Edition, January 2018)
- "Fundamentals of Information Technology" – Alexis Leon & Mathews Leon
- Vedic Mathematics 2005, Sterling Publishers Pvt. Ltd. ISBN 978-81-7963-001-3 Reprint 2006, 2009
- "Digital Literacy Curriculum" – MeitY (Govt. of India)

Suggestive equivalent online courses:
- Diksha Portal, NPTEL, Cyber Surakshit Bharat
- MyGov Cyber Safety Module
- AI Tools Practice : ChatGPT, Bard/Gemini, Canva, Grammarly, Scratch/Python IDEs
- SWAYAM – Fundamentals of IT (AMU) – Comprehensive coverage of Module I, including history, hardware, OS, memory, number systems, and an intro to cybersecurity onlinecourses.swayam2.ac.in+15onlinecourses.swayam2.ac.in+15testbook.com+15.
- SWAYAM – Course in Information Technology (Savitribai Phule Pune Univ.) – A 30-module, 8-week program with cloud introduction, Google Workspace, e-Governance concepts and basic security onlinecourses.swayam2.ac.in+1swayam.gov.in+1.
- IIT Madras C Programming & Assembly Language (SWAYAM) – Ideal for Module IV: hands-on programming, logical thinking, algorithms, flowcharts, and connection to hardware fundamentals

Part D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:
Maximum Marks: 100
Continuous Comprehensive Evaluation (CCE): NIL Marks
University Exam (UE): 100 Marks

Internal Assessment: Continuous Comprehensive Evaluation (CCE)		Total Marks: NIL
External Assessment: University Exam Section Time: 03.00 Hours	Section (A) : Very Short Questions Section (B) : Short Questions Section (C) : Long Questions	Total Marks: 100

Part-A:Introduction			
Program: BCA	Sem: First	Year: First	Session: 2025 – 2026
Subject: Computer Application			
1	Course Code	MD-1	
2	Course Title	Information Technology (practical)	
3	Course Type	Multi/Inter-disciplinary	
4	Pre-requisite(If any)	The student must have passed 12th Class	
5	Course Learning Outcomes	After the completion of this course, a successful student will be able to do the following: 1.Understand & implement IT components & its applications 2. Promote digital literacy, ethical awareness, and cyber hygiene. 3. Exposure to IT tools for office work including Indian languages 4. Encourage healthy and mindful habits through yoga and Indian values. 5. Introduce learners to emerging technologies like AI and cloud platforms.	
6	Credit Value	1	
7	Total Marks	Max. Marks: 100	Min.PassingMarks:35
Part-B:Content of the Course			
Total numbers of Practical Lectures: 15			

Unit	Topics covered:	No. of Lectures (2 Hours /lecture
	Reference/Suggestive List of Practical Faculty is free to introduce innovative assignments as per student level 1. Identify and List Computer System Components Open a PC, identify hardware parts (RAM, HDD, motherboard, I/O devices), and create a labelled diagram. 2. Install and Compare OS (Windows vs Linux) Dual-boot or virtual install Linux (Ubuntu), compare file systems, UI, and commands. 3. File Management Operations Create folders, copy/move/delete files, use command-line (Windows CMD or Linux terminal). 4. Number System Converter Using Spreadsheet Convert between Decimal, Binary, Octal, and Hexadecimal. 5. Explore Digital India Portals Navigate portals like UMANG, MyGov, or eDistrict and note their services. 6. Create a Document with Word Processor Prepare a report with headings, bullet points, image insertion, and page formatting. 7. Use Spreadsheets for Budget/Attendance Calculation Formulas, charts, conditional formatting, and data filtering. 8. Prepare a Presentation with Animations Slides with images, transitions, and speaker notes (topic: e-Governance or AI in India). 9. Type a Paragraph in Hindi or Your Local Language Using Google Input Tools or Indic Keyboard with Unicode support. 10. Translate a Passage Using Google Translate Translate English to any Indian language, check accuracy, and voice pronunciation. 11. Practice Email Writing & IT Vocabulary Compose a formal IT-related email; identify 20 IT-specific terms. 12. Test Voice-to-Text Using Google Lens or ChatGPT Speak a paragraph and convert it to digital text. Analyze accuracy and limitations.	15

13. QR Code Scanner & UPI Demo (Mock Activity) Generate a QR code using a tool, and simulate UPI-based payments (no real transactions). 14. Create and Share a Document Using Google Workspace Collaborate on Google Docs or Sheets with comments and version history. 15. Visit CERT-IN and Cybercrime Portals Explore the Government's cybercrime reporting portal and note key features. 16. Hands-on with AI Tools (ChatGPT, Gemini, etc.) Ask an AI to generate a bio, convert text to summary, or translate content. Document outputs. 17. Capture an image, audio, and video using a smartphone or digital camera. Save each file in multiple formats (e.g., JPEG, PNG, WAV, MP3, MP4) and record file sizes. Compare quality and size across formats to understand storage and compression. 18. Record audio and video clips and compress them using Audacity and Hand Brake tools. Analyze quality differences and calculate compression ratios. 19. Draw a Flowchart for a Real-Life Task E.g., Making tea, submitting an online form. 20. Daily Yoga Routine for Digital Wellness Follow a 15-min yoga/stretch session for posture & stress relief. Log benefits weekly.	

PartC:LearningResources
Text Books, Reference Books,Other resources

Suggested Readings:

- Introduction to Information Technology By RAJARAMAN V., PHI Learning Pvt. Ltd. (Fourteenth Printing, Third Edition, January 2018)
- "Fundamentals of Information Technology" – Alexis Leon & Mathews Leon
- Vedic Mathematics 2005, Sterling Publishers Pvt. Ltd. ISBN 978-81-7963-001-3 Reprint 2006, 2009
- "Digital Literacy Curriculum" – MeitY (Govt. of India)

Suggested equivalent online courses/resources:

- Diksha Portal, NPTEL, Cyber Surakshit Bharat
- MyGov Cyber Safety Module
- AI Tools Practice : ChatGPT, Bard/Gemini, Canva, Grammarly, Scratch/Python IDEs
- SWAYAM – Fundamentals of IT (AMU) – Comprehensive coverage of Module I, including history, hardware, OS, memory, number systems, and an intro to cybersecurity onlinecourses.swayam2.ac.in+15onlinecourses.swayam2.ac.in+15testbook.com+15.
- SWAYAM – Course in Information Technology (Savitribai Phule Pune Univ.) – A 30-module, 8-week program with cloud introduction, Google Workspace, e-Governance concepts and basic security onlinecourses.swayam2.ac.in+1swayam.gov.in+1.

Part D: Assessment and Evaluation			
Internal Assessment: Continuous Comprehensive Evaluation (CCE)		External Evaluation:	100 Marks
(A) Class Interaction /Quiz		Section (A): Viva Voce on Practical	
(B) Submission of Practical Assignment followed by Execution on computer		Section (B): Practical Record File	
(C) Lab Attendance		Section (C): Table work / Experiments	
Total Internal Assessment Marks (A+B+C)		Total External Evaluation Marks (A+B+C)	100 Marks

Part-A:Introduction				
Program: BCA		Sem: first	Year:First	Session: 2025 – 2026
Subject: Computer Application				
1	Course Code	AEC-1		
2	Course Title	हिन्दी भाषा और संस्कृति (Theory)		
3	Course Type	AEC		
4	Pre-requisite(If any)	The student must have passed 12th Class		
5	Course Learning Outcomes	1 - भारतीय ज्ञान परम्परा से विद्यार्थियों को अवगत एवं लाभान्वित करवाना । 2 - इस पाठ्यक्रम के अध्ययन से विद्यार्थी हिन्दी के प्रसिद्ध रचनाकारों एवं उनकी रचनाओं से परिचित हो सकेंगे। 3 - पठित रचनाओं के माध्यम से विद्यार्थी देश की संस्कृति चेतना,संस्कार एवं राष्ट्रीय भावना से परिचित हो सकेगें 4 - व्याकरण एवं भाषा ज्ञान का बोध । 5 - सामान्य शब्दावली और विशेष शब्दावली के अध्ययन द्वारा भाषा एवं संस्कृति बोध का विकास करना । 6 - विशेष शब्दावली (बीज शब्द / की वर्ड) से परिचित करवाते हुए बोध के स्तर को विकसित करना । 7 - प्रतियोगी परीक्षाओं हेतु तैयार करना ।		
6	Credit Value	Theory – 2 Credits		
7	Total Marks	Max. Marks: 100		Min.PassingMarks:35
Part-B: Content of the Course				
Total numbers of Lectures: 15 hours				
Unit	Topics			No. of Lectures
I	1. भारतीय ज्ञान परम्परा क परिचय 2. भारतीय ज्ञान परम्परा में हिन्दी भाषा 3. महर्षि पाणिनि जीवन व दर्शन गतिविधियाँ – भारतीय ज्ञान परम्परा पर आधारित पोस्टर सृजन भारतीय ज्ञान परम्परा से संबंधित ग्रंथों / पुस्तकों का अवलोकन			6
II	1.मैथिलीशरण गुप्तः परिचय पाठ: मातृभूमि (कविता) 2. सूर्यकांत त्रिपाठी 'निराला: परिचय पाठ : भारत वंदना (कविता) 3. प्रेमचन्दः परिचय पाठ:शतरंज के खिलाडी (कहानी) गतिविधियाँ - कविता का सस्वर वाचन कहानी वाचन			6

III	1. वैचारिक - भारतीय भाषाओं में राम
	 2. आचार्य रामचन्द्र शुक्ल परिचय पाठ :
	   उत्साह (भावमूलक निबन्ध)
	 3. रामधारी सिंह दिनकरः परिचय
	   पाठ : भारत एक है (संस्कृति) लेख
	 4. शरद जोशी परिचय
	   पाठ :- अफसर (व्यंग्य)
	 गतिविधियाँ –
	  निबंध लेखन का अभ्यास
	 भारतीय संस्कृति पर आलेख लेखन
				6

IV	हिन्दी व्याकरण 1. शब्द रचना उपसर्ग एवं प्रत्यय 2. शब्द प्रकार: तत्सम, तदभव, देशज, विदेशी संकर, नव निर्मित शब्द 3. पर्यायवाची विलोमार्थी के लिए अनेक शब्द एक शब्द गतिविधियाँ- शब्द रचना संबंधी समूह चर्चा देशज-विदेशी शब्द सूची बनाना	6
V	हिन्दी व्याकरण 1. हिन्दी के प्रमुख विराम चिह्न 2. संक्षेपण बीज शब्द – धर्म, अद्वैत, भाषा, अवधारणा गतिविधियों- अनुच्छेद / श्रुतलेख के माध्यम से विराम चिह्नों का अभ्यास 3.संक्षेपण का अभ्यास सार बिन्दु (की वर्ड) / टैग सर्च करे: मैथिलीशरण गुप्त: मैथिलीशरण गुप्त की कविता- मातृभूमि सूर्यकान्त त्रिपाठी निरालाः भारत वंदना प्रेमचन्द - शतरंज के खिलाडी रामधारी सिंह दिनकर: भारत एक है। आचार्य रामचन्द्र शुक्ल: उत्साह निबन्ध भारतीय ज्ञान परम्परा: भारतीय ज्ञान परम्परा और हिन्दी भाषा धर्म क्या है ? शब्द रचना, शब्द प्रकार पर्यायवाची शब्द विलोम शब्द अनेक शब्द के लिए एक शब्द विराम चिह्न संक्षेपण	6

Part C: Learning Resources
Text Books,Reference Books,Other resources
Suggested Readings:

1. प्रेमचन्द्र - मानसरोवर खण्ड 3
2. आचार्य रामचन्द्र शुक्ल चिन्तामणि भाग - 1
3. शरद जोशी - "कहा जाता है (व्यग्य राग्रह)
4. डॉ. वासुदेव नन्दन प्रसाद आधुनिक हिन्दी व्याकरण और रचना, भारती भवन, ठाकुर बाडी रोड, पटना, बिहार
5.डॉ.राजेश्वर चतुर्वेदी हिन्दी व्याकरण उपकार प्रकाशन आगरा उ.प्र.
6.भारतीय ज्ञान परम्परा - विविध आयाम सम्पादक - प्रो. सरोज शर्मा, शिप्रा प्रकाशन - नई दिल्ली
7. प्राचीन भारतीय ज्ञान परम्परा लेखक - डॉ. अश्विन कुमार राठौर, प्रकाशक - श्री सॉईनाथ, प्रकाशन – नागपुर
8. हिन्दी ज्ञान कोश
9.इन्टरनेट सामग्री - टैग में उल्लेखित

Part D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:
Maximum Marks: 100
Continuous Comprehensive Evaluation (CCE): NIL Marks
University Exam (UE): 100 Marks

Internal Assessment: Continuous Comprehensive Evaluation (CCE)		Total Marks: NIL
External Assessment: University Exam Section Time: 02.00 Hours	Section (A):Very Short Questions Section (B) : Short Questions Section (C) : Long Questions	Total Marks: 100

Part-A:Introduction			
Program: BCA	Sem: First	Year:First	Session: 2025 – 2026
Subject: Computer Application			
1	Course Code	SEC-1	
2	Course Title	Personality Development (Theory)	
3	Course Type	SEC	
4	Pre-requisite(If any)	The student must have passed 12th Class	
5	Course Learning Outcomes	After the completion of this course, a successful student will be able to do the following: 1. Cultivate skills for successful life 2. Understand the importance of human values 3. Develop core skills for employability 4. Develop effective communication skills 5. Realize the role of technology in personality development.	
6	Credit Value	Theory – 1 Credits	
7	Total Marks	Max. Marks: 100	Min.PassingMarks:35
Part-B: Content of the Course			
Total numbers of Lectures: 15 hours			

Unit	Topics	No. of Lectures
I	Indian Knowledge System and Personality 1. Personality - Meaning, characteristics and importance 2. Human values and personality development - Empathy, compassion, spirit of service 3. Components of personality development in the Indian knowledge system. *Keywords - Human Values, Empathy and Compassion, Character Building, Ethics and Morality, Value-based Education, Self-awareness and Self-discipline, Spirituality and Personality* *Activity - 1. Assignment on the life sketch of any one of the great soul (Patanjali, Vedvyas, Gautam Buddha, Mahaveer Swami, Kabirdas, Gurunanakdev) 2. Chart making on the Components of Personality*	3
II	Personality Development 1. Agencies of Personality Development : ● Family Atmosphere - Parenting style, family values and emotional support. ● Peer Group - Team Spirit, Self image, Social learning ● Formal Education - Scout and guide, N.S.S., N.C.C., Sports ● Personal Efforts and Yoga - Self motivation, Goal, meditation and sound health. *Keywords - Parenting Style, Family Values, Emotional Support, Peer Group Influence, Team Spirit, Sports and Discipline, Goal Setting, Mind-Body Balance,* *Activity - 1. Pictorial Presentation of various yoga mudras and reports.*	3
III	2. Barriers of Personality Development *Keywords - Negative Peer Influence, Family Conflicts* *Activity -2. Group discussion and report writing on Personality development.*	3
IV	Communication Skills and Personality Development 1. Communication Skills: Meaning, Characteristics , types, importance. *Keywords - Effective Communication, Interpersonal Communication, Formal and Informal Communication,* *Activity -1. Pictorial Report writing on any cultural or academic programme held in College.*	3
V	. Role of communication Skills in Personality Development- Stage confidence, Body language, Voice modulation *Keywords - Non-Verbal Cues, Presentation Skills, Self-Expression, Listening Skills, Soft Skills Development, Expressive Skills, Personality Projection, First Impressions* *Activity -1. Pictorial Report writing on any cultural or academic programme held in*	3

	College.	
Part C: Learning Resources		
Text Books,Reference Books,Other resources		
Suggested Readings:		
1. Andrews, Sudhir (1988). How to Succeed at Interviews. 21st (rep.) Tata McGraw-Hill, New Delhi. 2. Covey, Stephen. (1989). The 7 Habits of Highly Effective People. NY: Free Press 3. Hindle, Tim (2003). Reducing Stress. Essential Manager series. Dk Publishing. 4. Lucas, Stephen (2001). Art of Public Speaking. Tata - Mc-Graw Hill, New Delhi. 5. माडडन, स्तिैट, "व्यक्ततत्ऱ का विकास", आनंद पेपरबैतस। 6. Petes S. J., Francis (2011). Soft Skills and Professional Communication. Tata McGraw-Hill Education, New Delhi 7. शमाड, पी. के ., (2014) "व्यक्ततत्ऱ विकास", भारतीश्री प्रकाशन। 8. Smith, B. (2004). Body Language. Rohan Book Company, Delhi.Suggested Digital Platforms & Web links		
Suggested equivalent online courses/resources:		
1. Basics of Communication: https://www.glowandlovelycareers.in/en/course-detail/niit 156/basics-of-communication 2. Social Etiquettes: https://www.glowandlovelycareers.in/en/course-detail/englishedge 904/social-etiquette 3. Self-Presentation: https://www.glowandlovelycareers.in/en/course-detail/niit-161/self presentation		
Part D: Assessment and Evaluation		
Suggested Continuous Evaluation Methods: Maximum Marks: 100 Continuous Comprehensive Evaluation (CCE): NIL Marks University Exam (UE): 100 Marks		
Internal Assessment: Continuous Comprehensive Evaluation (CCE)		Total Marks: NIL
External Assessment: University Exam Section Time: 03.00 Hours	Section (A) : Very Short Questions Section (B) : Short Questions Section (C) : Long Questions	Total Marks: 100

Part-A:Introduction				
Program: BCA	Sem: First		Year:First	Session: 2025 – 2026
Subject: Computer Application				
1	Course Code	SEC-I		
2	Course Title	Personality Development (practical)		
3	Course Type	SEC		
4	Pre-requisite(If any)	The student must have passed 12th Class		
5	Course Learning Outcomes	After the completion of this course, a successful student will be able to do the following: 1.Demonstrate improved self-awareness and self confidence through structured activities and reflective practices. 2. Apply effective communication skills—including verbal, non-verbal, and written forms—in academic and professional contexts. 3. Exhibit positive body language, stage presence, and voice modulation in public speaking or group interaction scenarios. 4. Collaborate effectively in team settings, showing empathy, leadership, and interpersonal sensitivity. 5. Set personal and professional goals, and implement techniques for self-motivation, time management, and self-discipline. 6. Identify and overcome common personal development barriers, such as fear of failure, negative self-image, and lack of confidence.		
6	Credit Value	2		
7	Total Marks	Max. Marks: 100		Min.PassingMarks:35
Part-B:Content of the Course				
Total numbers of Practical Lectures: 30				

Unit	Topics covered:	No. of Lectures (2 Hours /lecture
	1. To conduct a survey of a nearby Anganwadi, Government School, Primary Health Centre and submit a report. 2. Prepare your family genealogical tree and write a report on your family traditions. 3. Conduct an educational visit to a nearby Non Governmental Organization, Old Age Home, Charitable Hospital, Orphanage, Women Police Station etc. Observe its functioning and prepare a report. 4. Prepare a fact based write-up on an inspiring incident of any one great personality i.e. Swami Vivekanand, Mahatma Gandhi, Vinoba Bhave, A. P. J. Abdul Kalam, Ahilya Bai Holkar, Tantya Bheel, Lata Mangeshkar) 5. Compose a human value-based story that includes meaningful conversations. 6. Educational field visit to local place of historical significance and make a presentation.	30

PartC:LearningResources
Text Books, Reference Books,Other resources

Suggested Readings:

1.Andrews, Sudhir (1988). How to Succeed at Interviews. 21st (rep.) Tata McGraw-Hill, New Delhi.
2. Covey, Stephen. (1989). The 7 Habits of Highly Effective People. NY: Free Press
3. Hindle, Tim (2003). Reducing Stress. Essential Manager series. Dk Publishing.
4. Lucas, Stephen (2001). Art of Public Speaking. Tata - Mc-Graw Hill, New Delhi.

5. माडडन, स्तिट, "व्यक्ततत्ति का विकास", आनंद पेपरबैतस। 6. Petes S. J., Francis (2011). Soft Skills and Professional Communication. Tata McGraw-Hill Education, New Delhi 7. शमाड, पी. के ., (2014) "व्यक्ततत्ति विकास", भारतीश्री प्रकाशन। 8. Smith, B. (2004). Body Language. Rohan Book Company, Delhi.	

Suggested equivalent online courses/resources:
   https://www.glowandlovelycareers.in/en/course-detail/englishedge 904/social-etiquette
   https://www.glowandlovelycareers.in/en/course-detail/niit-161/self presentation	

Part D: Assessment and Evaluation			
Internal Assessment: Continuous Comprehensive Evaluation (CCE)		External Evaluation:	100 Marks
(A) Class Interaction /Quiz		Section (A): Viva Voce on Practical	
(B) Submission of Practical Assignment followed by Execution on computer		Section (B): Practical Record File	
(C) Lab Attendance		Section (C): Table work / Experiments	
Total Internal Assessment Marks (A+B+C)		Total External Evaluation Marks (A+B+C)	100 Marks

Part-A: Introduction			
Program: BCA	Sem: Second	Year: First	Session: 2025 – 2026
Subject: Computer Application			
1	Course Code	C-2	
2	Course Title	Programming Methodology (Theory)	
3	Course Type	Major (Core Course)	
4	Pre-requisite(If any)	To study this course, a student must have basic knowledge of Computers.	
5	Course Learning Outcomes	After the completion of this course, a successful student will be able to do the following: 1. Develop simple algorithms and flow charts to solve a problem with programming using top down design principles. 2. Writing efficient and well-structured computer algorithms/programs. 3. Learn to formulate iterative solutions and array processing algorithms for problems. 4. Use recursive techniques, pointers and searching methods in programming.	
6	Credit Value	Theory – 4 Credits	
7	Total Marks	Max. Marks: 30+70	Min.PassingMarks:35
Part-B: Content of the Course			
Total numbers of Lectures: 60 hours			

Unit	Topics	No. of Lectures
I	Indian Knowledge System: Ancient Indian Contribution: Brahmagupta "Chakravala method", Aryabhata Algorithm. The Panini Grammar System (Ashtadhyayi). Modern Contribution: Origin of Julia Programming Language, Indian Scientist who designed new programming languages and open source languages. Suggested Activities: Discuss how Panini's grammar rules resemble formal grammar in programming languages, Aryabhata Algorithm.	8
II	Introduction to Programming - Program Concept, Characteristics of Programming, Stages in Program Development, Algorithms, Notations, Design, Flowcharts, Types of Programming Methodologies. Basics of C++: A Brief History of C++, Application of C++, Compiling & Linking, Tokens, Keywords, Identifiers & Constants , Basic Data Types, User-Defined Data Types, Symbolic Constant, Type Compatibility, Reference Variables, Operator in C++, Scope Resolution Operator, Member Dereferencing Operators, Memory Management Operators, Manipulators, Type Cast Operator. Conditional Statements if construct, switch-case construct. Iterative Statements: while, do-while, and for loops, use of break and continue in loops, Using Nested Statements (Conditional as well as Iterative). *Suggested Activities: Implement a console-based quiz using formatted I/O, Use flowcharts and pseudocode tools to map variable types and memory usage.*	12
III	Functions In C++: The Main Function, Function Prototyping, Call by Reference Call by Address, Call by Value, Return by Reference, Inline Function, Default Arguments, Constant Arguments, Function Overloading, Function with Array.	12
IV	Classes & Objects: A Sample C++ Program with class, Defining Member Functions, Making an Outside Function Inline, Nesting of Member Functions, Private Member Functions, Arrays within a Class, Memory Allocation for Objects, Static Data Members, Static Member, Functions, Array of Objects, Object as Function Arguments, Friend Functions, Virtual functions, Returning Objects, Constant member functions, Pointer to Members, Local Classes. *Suggested Activities: Combine all the modules to create a comprehensive Library*	12

	Management System with features like adding books, managing users, calculating late fees, and tracking library statistics. Design a Simple Banking System in C++.	
V	Constructor & Destructor: Constructor, Parameterized Constructor, Multiple Constructors in a Class, Constructors with Default Arguments, Dynamic Initialization of Objects, Copy Constructor, Dynamic Constructor and Destructor. Inheritance: Defining Derived Classes, Single Inheritance, Making a Private Member Inheritable, Multilevel Inheritance, Hierarchical Inheritance, Multiple Inheritance, Hybrid Inheritance. Various types of Classes: Virtual Base Classes, Abstract Classes, Constructor in Derived Classes, Nesting of Classes. Operator Overloading & Type Conversion, Polymorphism. Pointers: Pointers with Arrays C++. Streams: C++ Stream Classes, Unformatted I/O Operation, Formatted I/O Operation, Managing Output with Manipulators, Exception Handling. *Suggested Activities: Building a Simple Student Management System, Designing a Vehicle Management System. Implement dynamic memory allocation for managing multiple vehicles.* *Create a Shape Management System to manage different geometric shapes like Circle, Rectangle, and Triangle. Develop a Payroll System for managing employee salaries.*	16

Part C: Learning Resources

Text Books,Reference Books,Other resources

Suggested Readings:

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. J. R. Hanly and E. B. Koffman, "Problem Solving and Program Design in C", Pearson, 2015.
4. E. Balguruswamy, "C++ ", TMH Publication ISBN O-07-462038-X
5. Herbert Shildt, "C++ The Complete Reference "TMH Publication ISBN 0-07-463880-7.
6. मध्य प्रदेश हिन्दी ग्रंथ अकादमी की पुस्तकें ।

Reference Books:
1. R. Lafore, 'Object Oriented Programming C++"
2. N. Dale and C. Weems, "Programming and problem solving with C++: brief edition", Jones & Bartlett Learning. Suggested Digital Platforms & Web links:

Suggestive Digital Platform Web Links:
https://www.eshiksha.mp.gov.in/mpdhe
Suggested Equivalent Online Courses:
https://nptel.ac.in/courses/106/105/106105151/
https://nptel.ac.in/courses/106/105/106105234/

Part D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:
Maximum Marks: 100
Continuous Comprehensive Evaluation (CCE): 30 Marks
University Exam (UE): 70 Marks

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 Questions	Total Marks: 70

Part-A:Introduction
	Program: BCA	Sem: second	Year: First	Session: 2025 – 2026
Subject: Computer Application
1	Course Code		C-2
2	Course Title		Programming Methodology (Practical)
3	Course Type		Major
4	Pre-requisite(If any)		To study this course, a student must have basic knowledge of Computers.
5	Course Learning Outcomes		After the completion of this course, a successful student will be able to do the following: 1. Develop simple algorithms and flow charts to solve a problem with programming using top down design principles. 2. Writing efficient and well-structured computer algorithms/programs. 3. Learn to formulate iterative solutions and array processing algorithms for problems. 4. Use recursive techniques, pointers and searching methods in programming.
6	Credit Value		2
7	Total Marks		Max. Marks: 100	Min.PassingMarks:35
Part-B:Content of the Course
Total numbers of Practical Lectures: 30
Unit		**Topics covered:**	No. of Lectures (2 Hours /lecture
		**Suggestive list of Practical's** Given the problem statement, students are required to formulate problem, develop flowchart/algorithm, write code in C++, execute and test it. Students should be given assignments on following: 1. Write a program to swap the contents of two variables. 2. Write a program for finding the roots of a Quadratic Equation. 3. Write a program to find area of a circle, rectangle, square using switch case. 4. Write a program to print table of any number. 5. Write a program to print Fibonacci series. 6. Write a program to find factorial of a given number using recursion. 7. Write a program to convert decimal (integer) number into equivalent binary number. 8. Write a program to check given string is palindrome or not. 9. Write a program to print digits of entered number in reverse order. 10. Write a program to print sum of two matrices. 11. Write a program to print multiplication of two matrices. 12. Write a program to generate even/odd series from 1 to 100. 13. Write a program whether a given number is prime or not. 14. Write a program for call by value and call by reference. 15. Write a program to create a pyramid structure 1 12 123 1234 16. Write a program to check entered number is Armstrong or not. 17. Write a program to input N numbers and find their average. 18. Write a program to find the area and volume of a rectangular box using constructor. 19. Write a program to design a class time with hours, minutes and seconds	30

	as data members. Use a data function to perform the addition of two time objects in hours, minutes and seconds. 20. Write a program to implement single inheritance.	

Part C: Learning Resources
Text Books, Reference Books,Other resources
Suggested Readings:

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. J. R. Hanly and E. B. Koffman, "Problem Solving and Program Design in C", Pearson, 2015
3. E. Balguruswamy, "C++ ", TMH Publication ISBN O-07-462038-X
4. Herbert Shildt, "C++ The Complete Reference "TMH Publication ISBN 0-07-463880-
5. मध्य प्रदेश हिन्दी ग्रंथ अकादमी की पुस्तकें ।

Reference Books:
1. R. Lafore, 'Object Oriented Programming C++"
2. N. Dale and C. Weems, "Programming and problem solving with C++: brief edition", Jones & Bartlett Learning.

Suggestive Digital Platform Web Links:
https://www.eshiksha.mp.gov.in/mpdhe
Suggested Equivalent Online Courses:
https://nptel.ac.in/courses/106/105/106105151/
https://nptel.ac.in/courses/106/105/106105234/

Part D: Assessment and Evaluation			
Internal Assessment: Continuous Comprehensive Evaluation (CCE)		External Evaluation:	100 Marks
(A) Class Interaction /Quiz		Section (A): Viva Voce on Practical	
(B) Submission of Practical Assignment followed by Execution on computer		Section (B): Practical Record File	
(C) Lab Attendance		Section (C): Table work / Experiments	
Total Internal Assessment Marks (A+B+C)		Total External Evaluation Marks (A+B+C)	100 Marks

Part-A:Introduction			
Program: BCA	Sem: First	Year:First	Session: 2025 – 2026
Subject: Computer Application			
1	Course Code	C-3	
2	Course Title	Data Structures (Theory)	
3	Course Type	Major (Core Course)	
4	Pre-requisite(If any)	To study this course, a student must have basic knowledge of Computers.	
5	Course Learning Outcomes	After the completion of this course, a successful student will be able to do the following: 1. Will be familiar with fundamental data structures, their implementation; become accustomed to the description of algorithms in both functional and procedural styles. 2. Have knowledge of complexity of basic operations like insert, delete, search on these data structures. 3. Possess ability to choose a data structure to suitably model any data used in computer applications. 4. Design programs using various data structures including hash tables, Binary and general search trees, heaps, graphs etc. 5. Assess efficiency trade offs among different data structure implementations. 6. Implement and know the applications of algorithms for searching and sorting. 7. Know the contributions of Indians in the field of programming and data structures.	
6	Credit Value	Theory – 4 Credits	
7	Total Marks	Max. Marks: 30+70	Min.PassingMarks:35
Part-B: Content of the Course			
Total numbers of Lectures: 60 hours			

Unit	Topics	No. of Lectures
I	Indian Knowledge System: Resemblance of efficient Sorting & Searching techniques with Ancient Indian classification methods in Ayurveda & Sanskrit texts. The Buddhist Numerical Sorting Method (Bhāskara II). Indian contribution in Data Structure: Dr. Sartaj Sahni, Dr. Arvind, R. K. Gupta. *Suggested Activities: Vedic Sorting Implementation: Develop a sorting algorithm inspired by Ayurvedic classification techniques. Study the resemblance of temple architecture to graph connectivity and model it using Graphviz/Network..*	8
II	Data Structure: Basic concepts, Linear and Non-Linear data structures Algorithm Specification: Introduction, Recursive algorithms, Data Abstraction, Performance analysis. Arrays: Representation of single, two-dimensional arrays, triangular arrays, sparse matrices-array and linked representations. Suggested Activities: Implementing a Simple To-Do List using Linear Data Structures, Exploring Non-Linear Data Structures with a Family Tree, Sparse Matrix Operations Using Arrays.	12
III	Stacks: Operations, Array and Linked Implementations, Applications- Infix to Postfix Conversion, Infix to Prefix Conversion, Postfix Expression Evaluation, Recursion Implementation. Queues: Definition, Operations, Array and Linked Implementations. Circular Queue-Insertion and Deletion Operations, Dequeue (Double Ended Queue), Priority Queue- Implementation. Linked Lists: Singly Linked Lists, Operations, Concatenating, circularly linked lists-Operations for Circularly linked lists, Doubly Linked Lists- Operations, Doubly Circular Linked List, Header Linked List. Suggested Activities: Express Calculator Using Stacks, Queue Simulation for a Bank	12

	System, Linked List-Based Music Playlist, Compare linked list pointer-based structure with ancient manuscript referencing, Develop a queue system (FIFO) for handling real-world ticket processing.	
IV	**Trees:** Representation of Trees, Binary tree, Properties of Binary Trees, Binary Tree Representations- Array and Linked Representations, Binary Tree Traversals, Threaded Binary Trees. Heap: Definition, Insertion, Deletion. Suggested Activities: Create efficient storage models for Ayurveda medicinal records using tree-based structures. Research how Vedic knowledge management compares with modern database indexing, Implement tree traversal to simulate genealogy in Vedic lineage texts, Implement heap sorting for priority based Ayurveda classification.	12
V	**Graphs:** Graph ADT, Graph Representations, Graph Traversals, Searching. Hashing: Introduction, Hash tables, Hash functions, Overflow Handling. Sorting: Bubble Sort, Selection Sort, Insertion Sort, Quick Sort, Merge Sort, Comparison of Sorting Methods, Search Trees: Binary Search Trees, AVL Trees- Definition and Examples. *Suggested Activities: Model Indian temple network connectivity using graph algorithms, Social Network Graph Simulation, Implementing a Hash Map, Graph Based Maze Solver.* *Students compete to optimize sorting algorithms based on Ayurvedic classification techniques, Use binary trees to model ancient Indian lineage systems.*	16

Part C: Learning Resources
Text Books,Reference Books,Other resources
Suggested Readings:

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. Sartaj Sahani, "Data Structures, Algorithms and Applications with C++", McGraw Hill.
4. Robert L. Kruse, "Data Structures and Program Design in C++", Pearson.
5. D. S. Malik, "Data Structure using C++", Second edition, Cengage Learning.
6. मध्य प्रदेश हिन्दी ग्रंथ अकादमी की पुस्तकें ।

Reference Books:
1. Adam Drozdek, "Data Structures and algorithm in C++", Third Edition, Cengage Learning.
2. M. A. Weiss, "Data structures and Algorithm Analysis in C", 2nd edition, Pearson.
3. Lipschutz, "Schaum's outline series Data structures", Tata McGraw-Hill. Suggested

Suggestive Digital Platform Web Links:
https://www.eshiksha.mp.gov.in/mpdhe
https://epgp.inflibnet.ac.in
Suggested Equivalent Online Courses:
https://nptel.ac.in/courses/106/102/106102064/
https://nptel.ac.in/courses/106/106/106106127/
https://nptel.ac.in/courses/106/105/106105085/

Part D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:
Maximum Marks: 100
Continuous Comprehensive Evaluation (CCE): 30 Marks
University Exam (UE): 70 Marks

Internal Assessment: Continuous Comprehensive Evaluation (CCE)		Total Marks: 30
External Assessment:	Section (A) : Very Short Questions Section (B) : Short Questions	Total Marks: 70

University Exam Section Time: 03.00 Hours	Section (C) : Long Questions	

Part-A:Introduction			
Program: BCA	Sem: second	Year: First	Session: 2025 – 2026

Subject: Computer Application		
1	Course Code	C-3
2	Course Title	Data Structures (Practical)
3	Course Type	Major
4	Pre-requisite(If any)	To study this course, a student must have basic knowledge of Computers.
5	Course Learning Outcomes	After the completion of this course, a successful student will be able to do the following: 1. Will be familiar with fundamental data structures, their implementation; become accustomed to the description of algorithms in both functional and procedural styles. 2. Have knowledge of complexity of basic operations like insert, delete, search on these data structures. 3. Possess ability to choose a data structure to suitably model any data used in computer applications. 4. Design programs using various data structures including hash tables, Binary and general search trees, heaps, graphs etc. 5. Assess efficiency tradeoffs among different data structure implementations. 6. Implement and know the applications of algorithms for searching and sorting. 7. Know the contributions of Indians in the field of programming and data structures.
6	Credit Value	2
7	Total Marks	Max. Marks: 100	Min.PassingMarks:35

Part-B:Content of the Course	
Total numbers of Practical Lectures: 30	

Unit	Topics covered:	No. of Lectures (2 Hours /lecture
	Suggestive list of Practical's Given the problem statement, students are required to formulate problem, develop flowchart/algorithm, write code in C++, execute and test it. Students should be given assignments on following: 1. Write a program to find largest element from an array. 2. Write a program to implement push and pop operations on a stack using array. 3. Write a program to perform insert and delete operations on a queue using array. 4. Write a program for Linear search. 5. Write a program for Binary search. 6. Write a program for Bubble sort. 7. Write a program for Selection sort. 8. Write a program for Quick sort. 9. Write a program for Insertion sort. 10. Write a program to implement linked list.	30

Part C: Learning Resources
Text Books, Reference Books,Other resources

Suggested Readings:

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. Sartaj Sahani, "Data Structures, Algorithms and Applications with C++", McGraw Hill.
4. Robert L. Kruse, "Data Structures and Program Design in C++", Pearson.
5. D. S. Malik, "Data Structure using C++", Second edition, Cengage Learning.
6. मध्य प्रदेश हिन्दी ग्रंथ अकादमी की पुस्तकें ।

Reference Books:
1. Adam Drozdek, "Data Structures and algorithm in C++", Third Edition, Cengage Learning.
2. M. A. Weiss, "Data structures and Algorithm Analysis in C", 2nd edition, Pearson.
3. Lipschutz, "Schaum's outline series Data structures", Tata McGraw-Hill.

Suggestive Digital Platform Web Links:
https://www.eshiksha.mp.gov.in/mpdhe
https://epgp.inflibnet.ac.in

Suggested Equivalent Online Courses:
https://nptel.ac.in/courses/106/102/106102064/
https://nptel.ac.in/courses/106/106/106106127/
https://nptel.ac.in/courses/106/105/106105085/

Part D: Assessment and Evaluation			
Internal Assessment: Continuous Comprehensive Evaluation (CCE)		External Evaluation:	100 Marks
(A) Class Interaction /Quiz		Section (A): Viva Voce on Practical	
(B) Submission of Practical Assignment followed by Execution on computer		Section (B): Practical Record File	
(C) Lab Attendance		Section (C): Table work / Experiments	
Total Internal Assessment Marks (A+B+C)		Total External Evaluation Marks (A+B+C)	100 Marks

Part-A:Introduction				
Program: BCA		Sem: Second	Year:First	Session: 2025 – 2026
Subject: Computer Application				
1	Course Code	M-2		
2	Course Title	Operating System (Theory)		
3	Course Type	Minor		
4	Pre-requisite(If any)	To study this course, a student must have basic knowledge of Computers.		
5	Course Learning Outcomes	After the completion of this course, a successful student will be able to do the following: 1. Describe the importance of computer system resources and the role of operating system in their management policies and algorithms. 2. Specify objectives of modern operating systems and describe how operating systems have evolved over time. 3. Understand various process management concepts and can compare various scheduling techniques, synchronization, and deadlocks. 4. Describe the concepts of multithreading and memory management techniques. 5. Identify the best suited memory management technique for any process. 6. Describe various file operations, file allocation methods and disk space management. 7. To understand and identify potential threats to operating systems and the security features design to guard against them. 8. Learn to operate the Linux system, along with its administration and Shell programming 9. Getting to know the Android OS and its application framework.		
6	Credit Value	Theory – 3 Credits		
7	Total Marks	Max. Marks: 30+70		Min.PassingMarks:35
Part-B: Content of the Course				
Total numbers of Lectures: 45 hours				

Unit	Topics	No. of Lectures
I	**Indian Knowledge System:** The BOSS operating system, open source softwares, growth of LINUX, Aryabhatt Linux, contributions of innovators – Rajen Sheth, Sunder Pichai etc. **Suggested Activities:** Aryabhatt Linux Coding Sprint, Open Source Innovation Hackathon	2
II	**Introduction to Operating System**: What is Operating System? History and Evolution of OS, Basic OS functions, Resource Abstraction, Types of Operating Systems– Multiprogramming Systems, Batch Systems, Time Sharing Systems; Operating Systems for Personal Computers, Workstations and Hand-held Devices, Process Control & Real time Systems. **Process Management**: Process Concepts, Process states & Process Control Block. **Process Scheduling**: Scheduling Criteria, Scheduling Algorithms (Preemptive & Non- Preemptive) – FCFS, SJF, SRTN, RR, Priority, Multiple-Processor, Real-Time, Multilevel Queue and Multilevel Feedback Queue Scheduling. **Deadlock** - Definition, Deadlock Characterization, Necessary and Sufficient Conditions for Deadlock. **Suggested Activities:** OS Evolution Timeline, OS Simulator Challenge, Process Scheduling Debate, Deadlock Detection Lab, Real-Time OS Case Study, OS Simulation with Deadlock Avoidance.	15
III	**Memory Management**: Introduction, Address Binding, Logical versus Physical Address Space, Swapping, Contiguous & Non-Contiguous Allocation, Fragmentation (Internal & External), Compaction, Paging, Segmentation, Virtual Memory, Demand Paging, Performance of Demand Paging, Page Replacement Algorithms. **File Management**: Concept of File System(File Attributes, Operations, Types), Functions	15

	of File System, Types of File System, Access Methods (Sequential, Direct & other methods), Directory Structure (Single-Level, Two-Level, Tree-Structured, Acyclic-Graph, General Graph), Allocation Methods (Contiguous, Linked, Indexed) **Disk Management**: Structure, Disk Scheduling Algorithms (FCFS, SSTF, SCAN, C-SCAN, LOOK), Swap Space Management, Disk Reliability, Recovery. **Suggested Activities:** Memory Management Simulator, File System Design Challenge, Disk Scheduling Algorithm Race, Virtual Memory Management Simulation, Disk Management Case Study, File System Forensics Lab.	
IV	**LINUX**: Introduction, History and features of Linux, advantages, hardware requirements for installation, Linux architecture, file system of Linux - boot block, super block, inode table, data blocks. Linux standard directories, Linux kernel, Partitioning the hard drive for Linux, installing the Linux system, system - startup and shut-down process, init and run levels. Process, Swap, Partition, fdisk, checking disk free spaces. Difference between CLI OS & GUI OS, Windows v/s Linux, Importance of Linux Kernel, Files and Directories. Concept of Open Source Software. **Suggested Activities:** Linux OS Architecture Poster, Linux System Installation Lab, Linux File System Exploration, CLI vs. GUI Challenge, Linux Kernel Deep Dive, Open Source Software Debate.	13

Part C: Learning Resources
Text Books,Reference Books,Other resources
Suggested Readings:

Textbooks:
1. A Silberschatz, P.B. Galvin, G. Gagne, Operating Systems Concepts, 8th Edition, John Wiley Publications.
2. A. S. Tanenbaum, Modern Operating Systems, 3rd Edition, Pearson Education.
3. Operating System by Peterson.
4. मध्य प्रदेश हिन्दी ग्रंथ अकादमी की पुस्तकें ।
Reference Books:
1. G. Nutt, Operating Systems: A Modern Perspective, 2nd Edition Pearson Education.
2. W. Stallings, Operating Systems, Internals & Design Principles, 8th Edition, Pearson Education.
3. M. Milenkovic, Operating Systems- Concepts and design, Tata McGraw Hill.
4. Operating System design and Concepts by Milan Milenkovic.

Suggestive Digital Platform Web Links:
https://www.eshiksha.mp.gov.in/mpdhe
https://epgp.inflibnet.ac.in
Suggested Equivalent Online Courses:
https://nptel.ac.in/courses/106/102/106102132/

Part D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:
Maximum Marks: 100
Continuous Comprehensive Evaluation (CCE): 30 Marks
University Exam (UE): 70 Marks

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 Questions	Total Marks: 70

Part-A:Introduction			
Program: BCA	Sem: second	Year: First	Session: 2025 – 2026
Subject: Computer Application			

1	Course Code	M-2
2	Course Title	Operating System (Practical)
3	Course Type	Minor-II
4	Pre-requisite(If any)	To study this course, a student must have basic knowledge of Computers.
5	Course Learning Outcomes	After the completion of this course, a successful student will be able to do the following: 1. Operate the Linux system. 2. Do administration 3. Do Shell programming
6	Credit Value	1
7	Total Marks	Max. Marks: 100 Min.PassingMarks:35

Part-B:Content of the Course	
Total numbers of Practical Lectures: 15	

Unit	Topics covered:	No. of Lectures (2 Hours /lecture
	Suggestive list of Practical's 1. Linux Directory Commands: pwd, mkdir, rm -rf, ls, cd, cd / , cd ~ 2. Linux File Commands: touch, cat, cat >, cat >>, rm , cp, mv, rename 3. Linux Permission Commands: su, id, useradd, passwd, groupadd, chmod, groupdel, chown, chgrp 4. Linux File Content & Filter Commands: head, tail, tac, more, less, grep, cat, cut, grep, comm, sed, tee, tr, uniq, wc, od, sort, diff. 5. Linux Utility Commands: find, bc, locate, date, cal, sleep, time, df, mount, exit, clear, gzip, gunzip. 6. Linux Networking Commands: ip, ssh, mail, ping, host 7. Edit Crontab file: to wall message on system on particular time automatically. 8. Vi editor: Create file, edit, save and quit. Highlighting the searched term within a file. cut, yank, undo.	15

Part C: Learning Resources
Text Books, Reference Books,Other resources

Suggested Readings:

Textbooks:
1. A Silberschatz, P.B. Galvin, G. Gagne, Operating Systems Concepts, 8th Edition, John Wiley Publications.
2. A.S. Tanenbaum, Modern Operating Systems, 3rd Edition, Pearson Education.
3. Operating System by Peterson.
4. मध्य प्रदेश हिन्दी ग्रंथ अकादमी की पुस्तकें ।

Reference Books:
1. G. Nutt, Operating Systems: A Modern Perspective, 2nd Edition Pearson Education.
2. W. Stallings, Operating Systems, Internals & Design Principles, 8th Edition, Pearson Education.
3. M. Milenkovic, Operating Systems- Concepts and design, Tata McGraw Hill.
4. Operating System design and Concepts by Milan Milenkovic.

Suggestive Digital Platform Web Links:
https://www.eshiksha.mp.gov.in/mpdhe
https://epgp.inflibnet.ac.in
Suggested Equivalent Online Courses:

https://nptel.ac.in/courses/106/102/106102132/			
Part D: Assessment and Evaluation			
Internal Assessment: Continuous Comprehensive Evaluation (CCE)		External Evaluation:	100 Marks
(A) Class Interaction /Quiz		Section (A): Viva Voce on Practical	
(B) Submission of Practical Assignment followed by Execution on computer		Section (B): Practical Record File	
(C) Lab Attendance		Section (C): Table work / Experiments	
Total Internal Assessment Marks (A+B+C)		Total External Evaluation Marks (A+B+C)	100 Marks

Part-A:Introduction				
Program: BCA		Sem: second	Year:First	Session: 2025 – 2026
Subject: Computer Application				
1	Course Code	AEC-2		
2	Course Title	English Language and Indian Culture (Theory)		
3	Course Type	AEC		
4	Pre-requisite(If any)	The student must have passed 12th Class		
5	Course Learning Outcomes	By the end of this course, students will be able to - imbibe values which make them aware of national heritage and making them responsible citizens critically read texts to identify main ideas, infer meanings, and assess the author's purpose. use grammar and vocabulary effectively for communication write appropriate correspondence and reports for various professional and social contexts. Prepare for various competitive exams by developing their English Language competence		
6	Credit Value	Theory – 2 Credits		
7	Total Marks	Max. Marks: 100		Min.PassingMarks:35
Part-B: Content of the Course				
Total numbers of Lectures: 30 hours				

Unit	Topics	No. of Lectures
I	Understanding Indian Culture 1. Rabindranath Tagore - "Where the mind is without fear" 2. Swami Vivekananda - "Chicago Speech (1893)" 3. R K Narayan - "Astrologer's Day" 4. Introduction to Sundarkand of Valmiki's Ramayan 5. A.L Basham: "The wonder that was India"(an excerpt) Keywords: Heritage, Diversity, Pluralism, Values, Patriotism, Spirituality. Humanism, Social Harmony, Tradition, Modernity. Activity: Group Discussion on theme - fearless thinking & nationalism" (Tagore), "religious harmony & tolerance" (Vivekananda), "social observations" (R.K. Narayan). Creative Expression - Poster or Collage on "What Indian culture means to me," A short presentation on a specific cultural aspect of the students' home state (e.g., a festival, a craft, a local custom).	12
II	Comprehension Skills 1. Reading Techniques: Skimming, Scanning 2. Identifying the Main Idea and Theme 3. Making Inferences and Drawing Conclusions 4. Analysing unseen passages on Indian history, society, and art. Keywords - Inference, Main Idea, Theme, Tone, Purpose, Context Clues, Summary, Paraphrasing, Critical Reading. Activity: Worksheets with unseen passages followed by questions on comprehension, vocabulary, and inference. Summarizing articles from newspapers or magazines on cultural or social issues in India	2
III	Basic Language Skills Grammar: 1. Parts of Speech 2. Articles 3. Subject-Verb Agreement 4. Tenses and their application Vocabulary: 1. Synonyms, Antonyms, Homonyms, and Homophones 2. One-word substitutes 3. Word formation: Suffixes and Prefixes Keywords - Tense, Agreement, Clause, Phrase, Synonym, Antonym, Prefix, Suffix. Activity: 4. Grammar exercises (fill-in-the-blanks, error correction, sentence transformation). 5. Vocabulary-building games and quizzes.	8

IV	Writing Skills 1. The Writing Process: Pre-writing, Drafting, Revising, and Editing. 2. Paragraph Writing: Structure, Topic Sentence, and Coherence. 3. Letter writing: Formal/Informal. Keywords: Cohesion, Coherence, Topic Sentence, Drafting, Revising, Editing. Activity: 1. Paragraph on given topics (e.g., "My Favourite Indian Festival," or "The Importance of Technology in Modern India"). 2. Letter / Application writing exercises 3. Essay Writing on contemporary relevant issues.	4
V	Situational Conversation- Context, Audience, Purpose, Type, Register 1. Meeting/Greeting - Introducing Self; Introducing people to one another 2. Apologies/Responses 3. Enquiring about a Course/ Requesting Information 4. Agreeing/Disagreeing (with a Proposal) Keywords - Register, Tone, Style, Audience, Purpose, Context, Etiquette, Persuasion. Activity: 1. Introducing and Greeting (e.g., formal business meeting, college orientation, conference with a guest speaker, informal club gathering). 2. Debate - Agreeing & Disagreeing with Proposals - such as: "The college should make attendance optional for lectures.	4

Part C: Learning Resources
Text Books,Reference Books,Other resources

Suggested Readings:

1. Tagore, R. Part (1912). Gitanjali (Song Offerings). "Where the Mind is Without Fear" is Poem No. 35 in this collection.) 04 London: Macmillan.
2. Complete Works of Swami Vivekananda. Vol. 1. Advaita Ashrama (Publication Department of Ramakrishna Math, Belur Math, Kolkata).
3. Swami Tapasyananda, Sundarkandam of Srimad Valmiki Ramayana. Sri ram Krishna Math, Madras
4. Narayan, R.K. Malgudi Days. Indian Thought Publications; 1st edition (11 December 2019); ISBN-10: 9788185986173
5. Cultural Heritage of India by S. Radhakrishnan & Haridas Bhattacharyya (ed.)
6. A Course in English Grammar and Composition by Geetha Nagaraj
7. Functional English by Dr. P. Kiranmai Dutt & Geetha Rajeevan (Foundation Books / Cambridge India)
8. Communicative English by E. Suresh Kumar, P. Sreehari, and J. Savithri (Orient Black Swan)
9. Practical English Usage by Michael Swan (Oxford)
10. Modern English Grammar by N.Krishnaswamy, Macmillion Publication
11. Developing Reading Skills: A Practical Guide to Reading Comprehension Exercises"by Francoise Grellet (Cambridge)
12. Writing Skills by Norman Coe, Robin Rycroft & Pauline Ernest (Cambridge)

Suggested Equivalent Online Courses:
1. NPTEL Course - "Communication Skills" (by IIT Kharagpur)
   https://nptel.ac.in/courses/109/106/109106175/
2. Swayam Course - "English Language for Competitive Exams" (by IIT Madras https://onlinecourses.nptel.ac.in/noc23_hs51/preview
3. British Council India - "Learn English: Speaking and Writing Skills" https://www.britishcouncil.in/english/courses-adults/learnonline
4. 4. Coursera - "Write Professional Emails in English" (by Georgia Tech) https://www.coursera.org/learn/professional-emails-english

Part D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:
Maximum Marks: 100
Continuous Comprehensive Evaluation (CCE): NIL Marks
University Exam (UE): 100 Marks

Internal Assessment: Continuous Comprehensive Evaluation (CCE)	Total Marks: NIL

Part-A:Introduction			
Program: BCA	Sem: Second	Year:First	Session: 2025 – 2026
Subject: Computer Application			
1	Course Code	VAC-I	
2	Course Title	भारत बोध (Understanding India)	
3	Course Type	VAC	
4	Pre-requisite(If any)	कक्षा 12वीं उत्तीर्ण	
5	Course Learning Outcomes	इस कोर्स का अध्ययन करने के बाद, 1.भारत के ऐतिहासिक सांस्कृतिक और संवैधानिक स्वरूप की मूलभूत समझ विकसित करना 2.भारतीय शिक्षा पद्धति, ज्ञान परंपरा और राष्ट्रीय मूल्यों के प्रति छात्रों में संवेदनशीलता उत्पन्न करना 3.भारत की स्वतंत्रता संग्राम, लोकतांत्रिक विकास और वैश्विक भूमिका को समझने में सहायता करना 4.भारत की स्वतंत्रता संग्राम, लोकतांत्रिक विकास और वैश्विक भूमिका को समझने में सहायता करना 5.संविधान में निहित दायित्यों एवं अधिकारों की जानकारी देकर छात्रों को जिम्मेदार नागरिक बनाना।	
6	Credit Value	Theory – 2 Credits	
7	Total Marks	Max. Marks: 100	Min.PassingMarks:35
Part-B: Content of the Course			
Total numbers of Lectures: 30 hours			

Unit	Topics	No. of Lectures
1	**भारतीय इतिहास और सांस्कृतिक विरासत** ● सिंधु, वैदिक, और शास्त्रीय काल की विशेषताएं ● सह–अस्तित्व और बहुलता कि भारतीय अवधारणा ● सांस्कृतिक प्रतीकः धर्म, स्थापत्य, संगीत, नाट्य, लोकाचार ● वसुदेव कुटुंबकम, सर्वे भवंतु सुखिनः जैसे सूत्रों की आधुनिक प्रासंगिकता **गतिविधियां** : ●लोक से संवाद कार्यक्रम — परिवार या समुदाय के किसी बुजुर्ग से प्रारंभिक जीवन– मूल्य एवं ज्ञान पर चर्चा, और उसका लेखा–जोखा । **असाइनमेंट विषयः** ● अपने गांव या नगर की किसी स्थानीय सांस्कृतिक धरोहर/ पर्व/ लोककलाओं का लघु लेख चित्रों सहित तैयार करें (500 शब्द)।	6
2	**भारतीय संविधान और नागरिक दायित्व** ●वैदिक राजधर्म और आधुनिक संविधान ●मूल अधिकार और कर्तव्यः धर्म– कर्तव्य –नैतिकता ●युवा नागरिक और लोकतांत्रिक भागीदारी ●शिक्षा का राष्ट्र निर्माण में योगदान **गतिविधियांः**	6

	● जननीति संवाद— छात्रों के बीच मोक संविधान सभा या युवा संसद का आयोजन, जिसमें भारत के मूल मूल्य प्रस्तुत करें। **असाइनमेंट विषयः** ● किसी एक मौलिक अधिकार और उससे जुड़े कर्तव्य का वैदिकध् शास्त्रीय दृष्टिकोण से विश्लेषण करें। ● भारतीय लोकतंत्र में युवाओं की भूमिका पर स्वराज से सुराज तक दृष्टिकोण में निबंध (400 शब्द)	
3	**भारतीय ज्ञान परंपरा और शिक्षा दृष्टिकोणः** ● भारतीय ज्ञान के स्रोतः वेद, उपनिषद, दर्शन, स्मृति ,लोक साहित्य ● गुरुकुल परंपरारू शिष्य —केंद्रित शिक्षण, वाचिक परंपरा और स्मृति आधारित अधिगम ● शिक्षा का उद्देश्यः आत्मोत्कर्ष एवं लोकसंग्रह ● शिक्षक की भूमिकाः आचार्य देवो भवः, चरित्र निर्माण, सामाजिक पुनर्निर्माण में योगदान **गतिविधियांः** ● ज्ञानवार्ता गोष्टी— शास्त्रीय शिक्षा पर आधारित शिक्षण पद्धति (उदाहरणरू संवाद , स्मृति आधारित अभ्यास) का डेमो प्रस्तुत करना। ● श्लोक— गायन और उसका अर्थार्थ संवाद— विशेष रूप से शैक्षावल्ली (तैत्तिरीयोपनिषद्), गीता आदि से। **असाइनमेंट विषयः** ● किसी वैदिक ऋचा या उपनिषद वाक्य के आधार पर भारतीय शिक्षा के उद्देश्य का विवेचन करे। ● अपने विद्यालय /ग्राम/ परिवार में देखे गए गुरु— शिष्य परंपरा या जीवन—परमार्थ के उदाहरण पर लघु लेख।	6
4	**भारत का जीवन— दर्शन और सतत भविष्य की अवधारणा** ● भारतीय जीवन—दृष्टिः पुरुषार्थ चतुष्टय, आश्रम व्यवस्था और कर्तव्य आधारित नैतिकता प्रकृति के साथ सामंजस्यःयज्ञ, पंचमहाभूत, ऋतुचक्र और पर्यावरण संतुलन ● भारतीय अर्थदर्शनः अर्थशास्त्र, स्वदेशी, श्रम—संस्कृति और लोक—उद्यम ● सतत विकास और पर्यावरणीय न्याय की भारतीय अवधारणा **गतिविधियांः** ● सादा जीवन उच्च विचार विषय पर पोस्टर या स्लोगन लेखन भारतीय पर्यावरणीय परंपराओं (जैसे यज्ञ, वृक्ष—पूजन, नदी महोत्सव आदि) पर समूह प्रस्तुति **असाइनमेंट विषयः** ● पंच महाभूत और भारतीय जीवन— दृष्टि ● स्वदेशी से आत्मनिर्भर भारत तक की यात्रा	6
5	**समकालीन भारत और वैश्विक भूमिका** ● स्वतंत्रता संग्राम में धार्मिक, सांस्कृतिक और बौद्धिक नेतृत्व की भूमिका ● भारत का योगदानः अंतरिक्ष विज्ञान, योग, कूटनीति ,शांति दर्शन	6

- आत्मनिर्भर भारतः परंपरा और नवाचार का समन्वय
- वैश्विक परिप्रेक्ष्य में भारतः सॉफ्ट पावर, बहुध्रुवीय विश्व में भूमिका

गतिविधियां:

- छात्रों द्वारा नीति– विकल्प प्रस्तुत करना (Indian model vs western model)
- भारत / 2047 विषय पर निबंध

असाइनमेंट विषयः

- ग्लोबल भारत और संस्कृत नेतृत्व की संभावना
- तकनीकी और नैतिकताः भारतीय समन्वय की खोज

Part C: Learning Resources
Text Books,Reference Books,Other resources
Suggested Readings:

1.काटदरे, इंदुमती। भारतीय शिक्षाः संकल्पना एवं स्वरूप। पुनरुत्थान प्रकाशन सेवा ट्रस्ट, अहमदाबाद ।

2.कुमार,कृष्ण। प्राचीन भारतीय शिक्षा पद्धति । श्री सरस्वती सदन,दिल्ली।

3. सलूजा,चंद किरण।(2023)। शिक्षा :भारतीय परिप्रेक्ष्य। संस्कृत संवर्धन प्रतिष्ठान , नई दिल्ली

4.कपूर, कपिल एवं सिंह, अवधेश कुमार (संपादक) (2005)। Indian knowledge system (खंड 1–2) । इंडियन इंस्टिट्यूट ऑफ एडवांस्ड स्टडी, शिमला डीके प्रिंटवर्ल्ड, नई दिल्ली।

5. स्वरूप, देवेंद्र। संस्कृति एकः नाम–रूप अनेक। प्रतिभा प्रकाशन, नई दिल्ली ।

6.स्वरूप, देवेंद्र (संपादक)(2010)। राष्ट्रीय शिक्षा आंदोलन का इतिहास (हिंदी संस्करण)। प्रतिभा प्रतिष्ठान, नई दिल्ली।

7.अग्रवाल, वासुदेव शरण (संपादक)(2023)। राष्ट, धर्म और संस्कृति (निबंध संचयन) प्रभात प्रकाशन, नई दिल्ली।

8.मिश्र रामेश्वर पंकज।(2024)। अद्वितीय समाजशास्त्र। प्रभात प्रकाशन ,नई दिल्ली।

9.पाण्डेय, ओमप्रकाश (संपादक)(2023)। भारत वैभव । राष्ट्रीय पुस्तक न्यास (एनबीटी), नई दिल्ली।

10.सुब्बारायप्पा, बी.वी.।भारतीय विज्ञान परंपरा। राष्ट्रीय पुस्तक न्यास (एनबीटी) नई दिल्ली।

Suggestive Digital Platform Web Links:
https://www.youtube.com/watch?v=VUOyldPX8h4
https://www.youtube.com/watch?v=1livkUGieFA&list=PLĺGFNXUDXOeholQwkZ2ekqaxY3PDtoDq-&index=4
https://www.youtube.com/watch?v=SuMnvLxc9ic
https://www.youtube.com/watch?y=iPuRqFImoSc
https://www.youtube.com/watch?y=YZQeUq5d48Q&list=PLa1TI5CC9RG8WPaNNDOk6ViSdhe0KsHE&index=6
https://www. youtube.com/watch?v=9PLs NGWbxE

Part D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:
Maximum Marks: 100
Continuous Comprehensive Evaluation (CCE): 00 Marks
University Exam (UE): 100 Marks

Internal Assessment:	Total Marks: 00
Continuous Comprehensive Evaluation (CCE)	

External Assessment:	Section (A) : Very Short Questions	Total Marks: 100
University Exam Section Time: 02.00 Hours	Section (B) : Short Questions	
	Section (C) : Long Questions	