BANGALORE UNIVERSITY

SCHEME AND SYLLABUS

For the course

BACHELOR OF COMPUTER APPLICATIONS (BCA)

NEP2021 Scheme

Academic Year 2021-22 and onwards

Department of Computer Science and Applications
BANGALORE UNIVESITY, BANGALORE

BANGALORE UNIVERSITY BCA SYLLABUS (NEP) [Based on I-C. Model of Karnataka State Higher Education Council]

Semester	Course Code	Title of the Paper	Credits	Languages, Skill Enhancement (SEC), & Ability Enhancement Courses (AECC)	Credits	Total Credits
I	CA-C1T	Discrete Structure	3	OE1: Open Elective [Event Management/ Financial Literacy]	3	27
	CA-C2T	Problem solving Techniques	3	Language L1 English	3	
	CA-C3T	Data Structure	3	Language L2 Kannada/Hindi/Sanskrit	3	
	CA-C4L	Problem solving Lab	2	SEC I : Environmental Studies	3	
	CA-C5L	Data Structure Lab	2	Physical Education	1	
				Health & Wellness	1	
II	CA-C6T	Computer Architecture	3	OE2: [Fundamentals of Investments in Capital/E- Business]	3	27
	CA-C7T	Object Oriented Programming using Java	3	Language L1 English	3	
	CA-C8T	Database Management System	3	Language L2 Kannada/Hindi/Sanskrit	3	
	CA-C9L	Java Lab	2	SEC 2 : Digital Fluency	3	
	CA-C10L	Database Management System Lab	2	Physical Education	1	
				NCC/NSS/CL/R&R	1	
III	CA-C11T	Operating Systems	3	OE3: Open Elective [Investments in Stock Market/ Entrepreneurship Skills]	3	27
	CA-C12T	Computer Networks	3	Language L1 English	3	
	CA-C13T	Python Programming	3	Language L2 Kannada/Hindi/Sanskrit	3	
	CA-C14L	Computer Networks Lab	2	SEC 3 : Constitution of India	3	
	CA-C15L	Python Programming Lab	2	Physical Education	1	
				NCC/NSS/CL/R&R	1	

BANGALORE UNIVERSITY BCA SYLLABUS (NEP) [Based on I-C. Model of Karnataka State Higher Education Council]

Semester	Course Code	Title of the Paper	Credits	Languages, Skill Enhancement (SEC), & Ability Enhancement Courses (AECC)	Credits	Total Credits
IV	CA-C16T	Software Engineering	3	OE4: Open Elective [Corporate Governance/Business Leadership Skills]	3	27
	CA-C17T	Design and Analysis of Algorithm	3	Language L1 English	3	
	CA-C18T	Internet Technologies	3	Language L2 Kannada/Hindi/Sanskrit	3	
	CA-C19L	Design and Analysis of Algorithm Lab	2	SEC 4 : Artificial Intelligence	3	
	CA-C20L	Internet Technologies Lab	2	Physical Education	1	
				NCC/NSS/CL/R&R	1	
V	CA-C21T	Artificial Intelligence	4	CA-V1 Vocation Course I : Quantitative Techniques	3	25
	CA-C22T	Data Analytics	4	CA-E1 Elective I : a. Data Mining b. Computer Graphics	3	
	CA-C23T	Web Programming	4	SEC III : Cyber Crime, Cyber Law, and Intellectual Property Right	3	
	CA-C24L	Data Analytics Lab	2			
	CA-C25L	Web Programming Lab	2			
VI	CA-C26P	Project Work	4	CA-V2 Vocation Course II : Electronic Content Design	3	24
	CA-C27T	Machine Learning	4	CA-E2 Elective II : a. Operations Research b. Software Testing	3	
	CA-C28T	Mobile Application Development	4	Internship	2	
	CA-C29L	Machine Learning Lab	2			
	CA-C30L	Mobile Application Development Lab	2			

CA-CIIT: OPERATING SYSTEMS

Total Teaching Hours: 48 No. of Hours/Week: 03

UNIT-I

[12 Hours]

Introduction: Computer System Organization, Architecture, Structure, Operations, Process Management, Memory Management, Storage Management, Kernel Data Structures, Computing Environments. Operating System Structures: Services, System Calls, Types, Operating System Structure, System Boot. Processes: Process Concept, Scheduling, Operations, Inter process Communication. Multithreaded
Programming: Multicore Programming, Multithreading Models.

UNIT-II

[12 Hours]

Process Synchronization: The Critical-Section Problem, Peterson's Solution, Synchronisation Hardware, Mutex Locks, Semaphores, Classic Problems of Synchronization, Monitors, Synchronization Examples. Process Scheduling: Criteria, Scheduling Algorithms, Multi-Processor Scheduling, Real-time CPU Scheduling. Deadlocks: System model, Characterization, Methods for handling deadlocks, Deadlock Prevention, Avoidance, Detection and Recovery from deadlock.

UNIT-III

[12 Hours]

Memory Management Strategies: Background, Swapping, Contiguous Memory Allocation. Segmentation, Paging, Structure of the Page Table. Virtual Memory Management: Demand Paging; Copy-on-Write, Page Replacement; Allocation of Frames; Thrashing, Memory-Mapped Files, Allocating Kernel Memory. File System: File Concept, Access Methods, Directory and Disk Structure, Protection. File-System Implementation: Structure

UNIT - IV

[12 Hours]

File-System and Directory Implementation, Allocation Methods, Free Space Management, Efficiency and Performance, Recovery. Mass-Storage Structure: Overview, Disk Scheduling, Disk Management. Distributed Systems: Advantages, Types of Network- based OS, Robustness, Design Issues, Distributed File Systems. Case Studies: The Linux System, Windows 10 (Process, Memory, storage management).

Text Books:

1. Abraham Silberschatz, Peter Baer Galvin, Greg Gagne: Operating Systems Concepts, 9th Edition, 2016 India, Wiley.

Reference Books:

1. William Stallings, "Operating Systems-Internals and Design Principles", Pearson, IX Edition, 2018
2. D M Dhamdhere: Operating Systems - A Concept Based Approach, III Edition, Tata McGraw-Hill, 2015.
3. Harvey M Deitel, Paul J Deitel, Dr Choffnes, "Operating Systems", Pearson Education Limited (Publisher), 3rd Edition, 2013.
4. J. Archer Harris, John Cordani, "Operating Systems", Schaum's Outline, Indian Edition, Mc Graw Hill Education (India), First Edition
5. Gary Nutt, Nabendu Chaki, Sarmistha Neog, "Operating Systems" Pearson Education Limited, 3rd Edition, 2016.

CA-C12T: COMPUTER NETWORKS

Total Teaching Hours: 48

No. of Hours / Week: 03

UNIT-I

[12 Hours]

Introduction: Data Communications, Networks, Network Types, Internet History, Network Models: Protocol Layering, The OSI Model, TCP/IP Protocol Suite, Introduction to Physical Layer: Transmission Impairments, Data Rate Limits, Performance, Introduction to Data-Link-Layer: Link-Layer Addressing, Error Detection and Correction: Block Coding, Cyclic Codes, Checksum

UNIT - II

[12 Hours]

Data Link Control: Data-Link Layer Protocols, HDLC, Point-To-Point (PPP), Media Access Control (MAC): ALOHA, CSMA, CSMA/CD, CSMA/CA, Reservation, Polling, Token Passing, FDMA, TDMA, CDMA

UNIT - III

[12 Hours]

Introduction to Network Layer: Network-Layer Services, Packet Switching, Network-Layer Performance, IPV4 Addresses, Network Layer Protocols: Internet Protocol (IP), ICMPv4, Mobile IP, Unicast Routing: Routing Algorithms, Unicast Routing Protocols, Next Generation IP: IPv6 Addressing

UNIT - IV

[12 Hours]

Introduction to Transport Layer: Introduction, Transport-Layer Protocols, Transport-Layer Protocols: User Datagram Protocol, Transmission Control Protocol: TCP Services, TCP Features, Segment, A TCP Connection, TCP Congestion Control, Flow Control, Error Control, Application Layer: WWW, E-MAIL, Domain Name System (DNS), Quality of Service: Flow Control To Improves QoS, Integrated Services

Text Books:

1. Behrouz A. Forouzan, "Data Communications and Networking", 5th Edition, McGraw Hill Education,2013.

Reference Books:

1. Andrew S. Tanenbaum, David J. Wetherall, "Computer Networks", 5th Edition, Prentice Hall,2011.
2. Larry L. Peterson and Bruce S. Davie, "Computer Networks A System Approach", 5th Edition, MKP, 2012.
3. James F. Kurose, Keith W. Ross, " Computer Networking, A Top-Down Approach", 5th Edition,
Pearson, 2012.

Web Resources:

1. https://www.geeksforgeeks.org/computer-network-tutorials/
2. https://codescracker.com/networking/
3. https://youtube.com/playlist?list=PLxCzCOWd7aiGFBD2-2joCpWOLUrDLvVV_

CA-C13T: PYTHON PROGRAMMING

Total Teaching Hours: 48

No. of Hours/week: 03

UNIT-I

[12 Hours]

Parts Python Programming Language: Python Interpreter/Shell, Identifiers, Keywords, Statements and Expressions, Variables, Operators, Precedence and Associativity, Data types, Indentation, Comments, Reading Input, Print Output, Type Conversions, The type() function and Is operator, Dynamic and Strongly Typed Language Control Flow Statements: The if Decision Control Flow Statement, The if... else DecisionControl FlowStatement, The if... elif... else Decision Control Statement, Nested if Statement, The while Loop, TheforLoop, The continue and break Statements. Functions: Built-In Functions, Commonly Used Modules, Function Definition and Calling the Function. The return Statement and void Function, Scope and Life time of Variables, Default Parameters, Command Line Arguments. Strings: Creating and Storing Strings, Basic String operations, Accessing Characters in Stringby IndexNumber, String Slicing and Joining, String
methods

UNIT - II

[12 Hours]

Lists: Creating Lists, Basic ListOperations, Indexing and Slicing in Lists, Built-In Functions Used on Lists, List Methods, ThedelStatement, Dictionaries: Creating Dictionary, Accessing and modifying key:value pairs in Dictionaries, Built-In Functions Used on Dictionaries, Dictionary methods, ThedelStatement. Tuples and Sets: Creating Tuples, Basic Tuple Operations, Indexing and Slicing in Tuples, Built-In Functions Used onTuples, Relations between Tuples and Lists, Relations between Tuples and Dictionaries, Tuple Methods, Using zip() Function, Sets, Set Methods, Frozenset.

UNIT - III

[12 Hours]

Files: Types of files, Creating and Reading Text Data, File Methods to Read and Write Data, Reading and Writing Binary Files, The Pickle module, Reading and writing CSV files, Object-Oriented Programming: Classes and Objects, Creating Classes in Python, Creating Objects in Python, The Constructor Method, Classes with Multiple Objects, Class Attributes versus Data attributes, Encapsulation, Inheritance, The Polymorphism.

UNIT - IV

[12 Hours]

Data Visualization: Generating Data-Installing Matplotlib, Plotting a Simple Line Graph, Random Walks, Rolling Dice with Plotly. Downloading Data- The CSV File Format, Mapping Global Data Sets: JSON Format, Working with APIs: Using a Web API, Visualizing Repositories Using Plotly.

Text Books:

1. Gowrishankar S, Veena A, "Introduction to Python Programming", 1st Edition, CRC Press/Taylor & Francis, 2018. ISBN-13: 978-0815394372. [Unit I&II- 2,3,4,5,6,7,8,9 Unit III-11,12].
2. Eric Matthes, "Python Crash Course- A Hands-On, Project-Based Introduction to Programming", 2nd Edition, No Starch Press, 2019. [Unit III-15, Unit IV-16]
3. Wesley J. Chun, "Core Python Applications Programming", 3rd Edition, Pearson Education, 2016.

Reference Books:

1. Kamthane, A. N., & Kamthane, A.A. McGraw Hill Education, 2017. "Programming and Problem Solving with Python",
2. Mark Lutz, "Learning Python", 5th edition, Orelly Publication, 2013, ISBN 978-1449355739.
3. Ljubomir Perkovic, "Introduction to Computing Using Python- An Application Development
Focus", Wiley, 2012.

CA-C14L: COMPUTER NETWORKS LAB

1. Execute the following commands:

arp, ipconfig, hostname, netdiag, netstat, nslookup, pathping, ping route, tracert

2. Study of diferent types of network cables.

3. Practically implement the cross-wired cable and straight wired cable using crimping tool.

4. Study of network IP address configuration (Classification of address, static and dynamic address)

5. Study of network IP address configuration: (IPv4 and IPv6, Subnet, Supernet)

6. Study of network devices: (Switch, Router, Bridge)

7. Configure and Connect the computer in LAN.

8. Block the website using "Windows Defender Firewall" in windows 10.

9. Share the folder in a system, and access the files of that folder from other system using IP address.

10. Share the printer in Network, and take print from other PC.

11. Configuration of wifi hotspot, and connect other devices (mobile/laptop).

12 Configuration of switches

13.Configuration of VO box fixing

14.Making your own patch cord.

15. Configuration of VLAN using Packet Tracer/ GNS3

16. Configuration of VPN using Packet Tracer/ GNS3

References:

1. Paul Browning, "101 CompTIA Networs+ LABS", 2018, Reality Press Ltd.

Web References:

1.youtube.com/watch?v=rurs7cdT5cc
2.https://www.youtube.com/watch?v=JOZ8_cPgu8
3.https://www.alphr.com/block-websites-windows/

CA-C15L: PYTHON PROGRAMMING LAB

1. Write a program to demonstrate basic data type in python
2. Create a list and perform the following methods

   1) insert() 2) remove() 3) append()
   4) len() 5) pop() 6) clear()

3. Create a tuple and perform the following methods

   1) Add items 2) len() 3) check for item in tuple 4)Access items

4. Create a dictionary and apply the following methods

   1) Print the dictionary items 2) access items 3) use get()
   4)change values 5) use len()

5. Write a program to create a menu with the following options

   1. TO PERFORM ADDITITON 2. TO PERFORM SUBTRACTION
   3. TO PERFORM MULTIPICATION 4. TO PERFORM DIVISION

Accepts users input and perform the operation accordingly. Use functions with arguments.

6. Write a python program to print a number is positive/negative using if-else.
7. Write a program for filter() to filter only even numbers from a given list.
8. Write a python program to print date, time for today and now
9. Write a python program to add some days to your present date and print the date added.
10. Write a program to count the numbers of characters in the string and store them in a dictionary data
structure
11. Write a program to count frequency of characters in a given file.
12. Using a numpy module create an array and check the following: 1. Type of array 2. Axes of array 3. Shape
of array 4. Type of elements in array
13. Write a python program to concatenate the dataframes with two different objects
14. Write a python code to read a csv file using pandas module and print the first and last five lines of a file.
15. Write a python program which accepts the radius of a circle from user and computes the area (use math
module)
16. Use the following data (load it as CSV file) for this exercise. Read this file using Pandas or NumPy or using in-built matplotlib function.

a. Get total profit of all months and show line plot with the following Style properties
Generated line plot must include following Style properties: -

- Line Style dotted and Line-color should be blue
- Show legend at the lower right location.
- X label name=Months
- Y label name= Sold units
- Line width should be 4

Months	Pen	Book	Marker	Chair	Table	Pen stand	Total units	Total profit
1	2500	1500	5200	9200	1200	1500	21100	211000
2	2630	1200	5100	6100	2100	1200	18330	183300
3	2140	1340	4550	9550	3550	1340	22470	224700
4	3400	1130	5870	8870	1870	1130	22270	222700
5	3600	1740	4560	7760	1560	1740	20960	209600
6	2760	1555	4890	7490	1890	1555	20140	201400
7	2980	1120	4780	8980	1780	1120	29550	295500
8	3700	1400	5860	9960	2860	1400	36140	361400
9	3540	1780	6100	8100	2100	1780	23400	234000
10	1990	1890	8300	10300	2300	1890	26670	266700
11	2340	2100	7300	13300	2400	2100	41280	412800
12	2900	1760	7400	14400	1800	1760	30020	300200

b. Display the number of units sold per month for each product using multiline plots. (i.e., Separate Plotline for each product.

c. Read chair and table product sales data and show it using the bar chart.

- The bar chart should display the number of units sold per month for each product. Add a separate bar for each product in the same chart.

d. Read all product sales data and show it using the stack plot.

Name of the Programme: Bachelor of Commerce (B.Com)
Course Code: 3.7.1 Open Elective Course (OEC)
Name of the Course: Entrepreneurship Skills

Course Credits	No. of Hours per week	Total No. of Teaching Hours
3 Credits	3+0+0 Hrs	42 Hrs

Pedagogy: Classrooms lecture, Case studies, Group discussion & Seminar etc

Course Outcomes: On successful completion of the course, the Students will be able to

- Identify the Factors that influence Entrepreneurship.
- Understand the Skillsets required for Entrepreneur.
- Identify the opportunities for developing Entrepreneurship skills
- through National and State Level Institutions.
- Role played by MSME in the development of Indian Economy.
- Identify the different Government Schemes available for promoting Entrepreneurs in India.

Syllabus

Module No. 1: Introduction to entrepreneur & Entrepreneurship (10 Hrs)

Meaning, Definition, Types of Entrepreneurs, Functions of Entrepreneur, Skills/traits required to be an entrepreneur, Problems faced by Entrepreneur, Difference between Intrapreneur and Entrepreneur. Meaning and Definition, Objectives of Entrepreneurship, Factors influencing Entrepreneurship, Role of Entrepreneurship in Economic Development

Module No. 2 : Skillsets for Entrepreneur [10 Hrs]

Introduction to Entrepreneurial Skills, Skillsets for Entrepreneur – Communication, Creative thinking, Leadership, Networking, Sales, Negotiation, Self-Motivational Skills. Forms of Entrepreneurial Skills - Business management skills, Teamwork and leadership skills, Customer service skills, Financial skills, Analytical and problem-solving skills, Strategic thinking and planning skills, Technical skills, Time management and organizational skills, Branding, marketing and networking skills, Procedure to improve entrepreneurial skills.

Module No. 3 : Institutional Programs for Entrepreneurship [12 Hrs]

Entrepreneurship Development Programme, - Need for EDP – Problems of EDP – National and State Level Institutions for Entrepreneurship Development Programme - SISI, SIDO, NSIC, EDI, NIESBUD, NAYA, CEDOK, KSWDC, EDC

Business Plan – Meaning Importance, Steps involved in preparing a Business Plan, Financial, Marketing, Human Resource, Technical and Social aspects of the Business Plan - Common pitfalls to be avoided while preparing a Business Plan. Micro, Small and Medium Enterprises (MSME) - Meaning, Definition, investment limit, Role played by MSME in the development of Indian Economy, Problems faced by MSME and the steps taken to solve the problems.

Module No 4. Promoting Entrepreneur [10 Hrs]

Indian Entrepreneur, Promoting Entrepreneurs in India, Startup India, Funds for Startup (Meaning, Significance and Application Procedure) - Angel Investors, Crowdfunding, Venture C Funding From Business Incubators, Government Schemes for Startup Funding – Gramin Banks, PMMY-MUDRA Loan, DIC, SIDA, SISI, NSIC, and SIDO, etc.

Women Entrepreneur: Meaning, Role played by Women Entrepreneur in the economic development, Problems faced by Women Entrepreneur, Ways to Overcome the Challenges of Women Entrepreneurs.

Skill Developments Activities:

- Identify any two Entrepreneurs and brief about their contribution for Indian Economy.
- Visit any two National or State Level Institutions for Entrepreneurship Development Programme and prepare a report on their functioning.
- Identify the best sources of Start-ups Funding in India, and brief about the procedure for application.
- Select any two Indian Women Entrepreneurs, and brief about their glorious journey of Entrepreneurship.

Books for Reference

- K. Ramachandran: Entrepreneurship Development, McGraw-Hill Education (India) Pvt. Limited.
- R.R. Chole, P.S. Kapse, P.R. Deshmukh: Entrepreneurship Development and Communication Skills, Scientific Publishers
- Mark. J. Dollinger, Entrepreneurship – Strategies and Resources, Pearson Edition.
- Vasant Desai: The Dynamics of Entrepreneurship Development and Management, HPH
- R. C. Agarwal, Dr. B. K. Mehta: Entrepreneurship and Small Business, SBPD Publishing House
- Rekha & Vibha – Entrepreneurial Management, VBH
- K. Venkataramanappa, Entrepreneurial Development, SHB Publications
- Robert J. Calvin: Entrepreneurial Management, McGraw-Hill
- Dr. R.C. Bhatia: Entrepreneurship – Business and Management, Sultan Chand & Sons
- Jack M. Kaplan, Jack McGourty: Patterns of Entrepreneurship Management, John Wiley & Sons, Inc.

Note: Latest edition of text books may be used.

Name of the Programme: Bachelor of Commerce (B.Com.)
Course Code: 3.7.2 Open Elective Course (OEC)
Name of the Course: Investments in Stock Market

Course Credits	No. of Hours per week	Total No. of Teaching Hours
3 Credits	3+0+0 Hrs	42 Hrs

Pedagogy: Classroom lecture, Tutorials, Group discussion, Seminar, Case studies, Fieldwork etc.,

- Course Outcomes: On successful completion of the course, the Students will be able to
- Describe the Investment avenues and the investment environment
- Measure risk and return associated with investments
- Apply fundamental and technical analysis in stocks investment Understand the dynamics of investing in stock markets

Syllabus

Module No. 1: Introduction to Investment [8 Hrs]
Meaning, Objectives of Investment, Difference between savings and investment, Golden principles of investment, The investment environment, The investor life cycle, Investment avenues in India.

Module No. 2 : Risk & Returns on Investment [8 Hrs]
Risk and return trade-off, measuring returns – ROI, Absolute returns, Annualized return, Extended Internal Rate of Return (XIRR), Types of risks in investments – Systematic and Unsystematic Risk, Measuring Risk - Standard deviation and Beta, Managing risks in investments.

Module No. 3 : Investment Analysis [14 Hrs]
Features of fundamental analysis, Top-down vs. Bottom-up fundamental analysis, Components of economic analysis, Economic Analysis - international & domestic economic scenario, Economic forecasting techniques, Characteristics of an industry analysis, Key components of an industry, Porter's Five Forces of Competition framework, Company analysis – Financial and Non-financial parameters. Technical Analysis – concept, assumptions and approaches, Difference between fundamental and technical analysis, Chart patterns and analysis, Moving averages, Trend analysis, efficient market hypothesis.

Module No 4. Investing in Stock Market [12 Hrs]
Stock exchange – Features, History of stock exchanges in India, BSE and NSE, Role of stock exchanges, Players in stock markets, Role of SEBI, Ways of investing in stock market, DEMAT and Trading account, Trading Process in stock exchanges.

Skill Developments Activities:
- List out types of Investment avenues available in BSE
- Learners will also practice technical analysis with the help of relevant software.
- Practice use of Technical charts in predicting price movements through line chart, bar chart, candle and stickchart, etc., moving averages, exponential moving average.
- Calculate risk and return of stocks using price history available on NSE website. Any other activities, which are relevant to the course.

Books for Reference:

- Chandra, P. (2017). Investment Analysis and Portfolio Management. New Delhi: Tata McGraw Hill Education.
- Kevin, S. (2015). Security Analysis and Portfolio Management. Delhi: PHI Learning.
- Madhumathi, R. (2012). Security Analysis and Portfolio Management. Uttar Pradesh: Pearson (India)
- Pandian, P. (2012). Security Analysis and Portfolio Management. New Delhi: Vikas Publishing House.
- S K Singla (2021-2022). Security Analysis and Portfolio Management. Kalyani publishers,

- Note: Latest edition of text books may be used.

Discipline/Subject: GENERIC ENGLISH -L2

Total Credits for the Program: 03

III Semester – Generic English Faculty of Science	50/56 hours	Marks
Unit 1: Receptive Skills: Reading Skills and Listening Skills	**23 hours**	**40 marks**
1. Reading Skills – Short Play Pygmalion – George Bernard Shaw	15 hours	30 marks
2. Listening Skills – Persuasive Speeches a. Dr. B R Ambedkar's Constituent Assembly Speech on Dec 17,1946 b. The speech by Kiran Bedi, India's first woman IPS officer on visionary leadership. c. Swami Vivekananda's speech at the World Parliament of Religions in Chicago, in which he introduced Hinduism to North America, became historical. d. Priyanka Chopra's speech at Penguin Annual Lecture, 2017 e. Greta Thunberg's Speech at The U.N. Climate Change Summit	8 hours	10 marks
Unit 2: Productive Skills: Speaking and Writing Skills	**23 hours**	**20 marks**
1. Speaking Skills: Presentation Skills Types: a. Informational/Instructional Presentation b. Persuasive Presentation c. Demonstrative Presentation	5 hours	5 marks
2. Writing Skills: Introduction to writing and types of writing Types of Writing: a. Descriptive Writing b. Narrative Writing c. Reflective Writing d. Comparative Writing e. Persuasive/Argumentative Writing	6 hours	5 marks
3. Business Correspondence Types of Letters: a. Letters of Enquiry b. Order Letters c. Letters of Complaint d. Reply to letters of Complaint	6 hours	5 marks
4. Commercial Writing Types of Commercial Writing: a. Advertisement Writing b. Product Manual c. Poster/Brochure Writing	6 hours	5 marks
Formative Assessment Activities – Discussion or guidance under experiential learning for formative assessment activities	4 hours	NA

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III Semester B.C.A., B.Sc.(FAD)- Language under AECC

for the year 2022-23 onwards

Hours-04 **Max. Marks:60+40**

CREDITS:03

Texts:

Texts book:

1. Hindi Kavitha : "Kavyaanand"

Edited by: Dr.Shekhar, Dr.Sunitha Vivek
Dr.Ramkali Sharma, Prof. Devidas Tukaram

(Printed and Published by Prasaranga, Bangalore University, Bangalore)

2. Computer Anuprayog: 1) Computer-Arth, Paribhasha, Avashyakata, Mahatva
2) Anuprayog- Shiksha, Bank, Sanchar, Chikitsa, Prashashan, Vanijya, Engineering, Vigyan, Anthariksh, E-Commerce

Reference Books: 1) Prayojanmulak Vyavaharik Hindi: Naresh Mishra, Nidhi Mishra (Radha Krishna Prakashan Delhi)

2) Prayojanmulak Hindi: Naresh Mishra (Rajpal & Sons Prakashan, Kashmiri Gate Delhi-06)

3) Prayojanmulak Hindi Ke Naye Aayam: Dr. Pandit Banne (Aman Prakashan, Kanpur)

4) Prayojanmulak Hindi Ke Vividh Roop:Dr. Rajendra Mishra, Rakesh Sharma (Takshashila Prakashan, New Delhi-02)

DIVISION OF MARKS

1. Objective type Questions		10x 1=10
2. 2 Annotations from prose	(2) out of (3)	2 x 7=14
3. 1 main question from prose	(1) out of (2)	1 x16=16
4. 1 short notes from prose	(1) out of (2)	1 x 5=05
5. Computer Anuprayog	(2) out of (4)	3 x 5=15
		Theory Total=60
		Internal Assessment Marks =40
		Total=100

III Semester-BCA/BHM & other Courses
Title: Sanskrit Drama and Dramaturgy

Semester	Ability Enhancement compulsory course(L+T)	Marks	Credits
III	a. Introduction to Sanskrit Champu literature b. Selected portions of any Classical Sanskrit Champu **Nalachampu - II Ucchvasa**	42	3
	Samskruthe Vijnanam (Introduction to Scientific Literature In Sanskrit)	18	
	Continuous Evaluation: Attendance, Assignment, Internal Test, Creative Writing, Conversation in Sanskrit	40	
	Total	100	100

Scheme of Examination

1. Multiple choice questions		1x10=10
2. Essay type questions	(1 of 2)	1x8=8
3. Short notes	(2 of 4)	2x4=8
4. Translation of Shlokas	(2 of 4)	2x4=08
5. Reference to context	(2 of 4)	2x4=08
6. Alankarashastra Itihasa a) Essay type question b) Short notes	(1 of 2) (2 of 4)	1x8=8 2x5=10

Books for study & Reference:

1. Nalachampu: Published by R.S. Vadhyar and sons
2. History of Sanskrit Literature by M.R. Kale.
3. Samkrita Sahityada Ithihasa (Kannada)-Prof. S.Ramachandra Shastry.
4.Bhasha Shastra Mattu Samskrita Sahitya Charitre (kannada) edited by Dr. Krishnamurthy,
Vidwan Ranganatha Sharma and vidwan H.K. Siddagangaiah.
5. History of Sanskrit Literature- S.Rangachar
6. History of Classical Sanskrit Literature- Krishnamachariyar
7. Samskrita Sahitya Sameekshe (Kannada) Dr. M. Shivakumara Swamy.
8. Sanskrit Mathu Vijnana: Dr. Rajaramanna, Akhila Karnataka Samskrita Parishat.
9. Science in Sanskrit - Samskrita Bharati, New Delhi.
10. Hemmeya Vijnana Parampare -Samskrita Bharati, Bangalore.
11. Science in Sanskrit in to the future with knowledge from our past-Sri. Tirunarayana Trust.
12. Ayurveda Subhashita - Dr. Leelaprakash.

CONSTITUTION OF INDIA

Ability Enhancement Compulsory Courses(AECC)
III Sem B.Com/BBA and IV Sem BA/B.SC/BCA/BHM/BSW
and other Courses

Total Contact Hours:24
No. of Teaching Hours/Week:2
Formative Assessment Marks:20

Course Credits:2
Duration of ESA/Exam: 1 Hours
Summative Assessment Marks:30+20-50

Course Objective:

The purpose of the course is to familiarize the students with the key elements of Indian constitution. The course has been designed to cover the journey of the India from its emergence as a Republic. This will enable the students to understand various political Institutions that are operationalized under the Indian Constitution.

Learning Outcomes:

After completing this course students will be able to-

- Understand the philosophy of the Constitution and its structure.
- Measure the powers and functions of various offices under the Constitution.
- Appreciate the role of Constitution in a Democracy

Contents of Course:

Unit-I **8Hours**

Chapter- 1 Making of Indian Constitution: Constituent Assembly-Composition, Objectives, Preamble and Salient features of the Indian Constitution.
Chapter-2 Fundamental Rights, Fundamental Duties, Directive Principles.

Unit-II **8Hours**

Chapter-3 Union Government-President, Prime Minister and Council of Ministers
Chapter-4 State Government-Governor, Chief Minister and Council of Ministers

Unit-III **8Hours**

Chapter-5 Judiciary-Supreme Court and High Court: Composition, Powers and Functions and Judicial Review.
Chapter-6 Electoral Process: Election Commission-Composition, Powers and Functions, Electoral Reforms.

Exercise:

- Department can debate on the role of Constitution in the country's development.
- Students can empirically evidence the effectiveness of concepts like-Freedom, Equality, Justice, Rights and Duties by conducting surveys.
- Can hold special lectures on various provisions of Constitution like working of Election Commission, Art 246, 356etc.

Kindly Note:

The Ability enhancement compulsory courses (AECC) paper - "Constitution of India" (a) -should be taught only by the Political Science/Law teachers. (b) This paper should be offered in IIIrd semester for B.Com/BBA courses. In the IVth Semester, this paper should be offered to BA/BSc/BFA/BCA/BHM/BSW and other all UG courses.

Suggested Readings:

1. DurgaDasBasu, Introductiontothe ConstitutionofIndia, Gurgaon; LexisNexis,(23rdedn.) 2018.

2. M.V.Pylee, India's Constitution, New Delhi;S.Chand Pub.,(16thedn.) 2017.

3. J.N.Pandey, The Constitutional LawofIndia, Allahabad;CentralLawAgency,(55thedn.)

4. Constitution of India (Full Text), India.gov.in., National Portal of India,
https://www.india.gov.in/sites/upload_files/npi/files/coi_part_full.pdf

5. KBMerunandan,BharatadaSamvidhanaOnduParichaya, Bangalore,MeraguPublications, 2015.

CA-C16T: SOFTWARE ENGINEERING

Total Teaching Hours: 48 No. of Hours/Week: 03

UNIT-I [12 Hours]

Introduction to Software Engineering: Evolution and impact of Software engineering, software life cycle models: Waterfall, prototyping, Evolutionary, and Spiral models. Feasibility study, Functional and Non-functional requirements, Requirements gathering, Requirements analysis and specification. Agile development Agile, Agility and cost of change; Agile Process, Extreme programming; Other agile process models.

UNIT - II [12 Hours]

Formal Modeling and verification: The cleanroom strategy; Functional specification; Cleanroom design; Cleanroom testing; Formal methods: Concepts; Applying mathematical notation for formal specification, Formal specification languages. Software Project Management: The management spectrum. The management of people, product, process and project; The W5HH Principle, Critical practices. Software testing strategies: A Strategic Approach to Software Testing, Test Strategies for Conventional Software, Test Strategies for Object-Oriented Software, Test Strategies for WebApps, System Testing, Software Testing Fundamentals, White-Box Testing, Black-Box Testing

UNIT - III [12 Hours]

Software Project Scheduling: Basic concepts and principles of project scheduling; Defining task set and task network; Scheduling; Earned value analysis. Risk Management: Reactive versus proactive.strategies; Software risks, risk identification; Risk projection, Risk refinement; Risk mitigation, monitoring and management; The RMMM plan. Maintenance and Reengineering: Software maintenance; Software supportability; Reengineering; Business process reengineering; Software reengineering; Reverse engineering; Restructuring, Forward engineering; The economics of reengineering.

UNIT - IV [12 Hours]

Software Process Improvement (SPI): Approaches to SPI; Maturity models; The SPI process; The CMMI; The People CMM; Other SPI frameworks: SPICE, Bootstrap, PSP and TSP, ISO; SPI return on investment. Software Configuration Management (SCM): Basic concepts; SCM repository; The SCM process; Configuration management for web applications; SCM standards.

Text Books:

1. Fundamentals of Software Engineering by Rajib Mall, - PHI-3rd Edition, 2009.
2. Roger S. Pressman, "Software Engineering: A Practitioner's Approach", Alternate Edition, 7th Edition, McGraw Hill, 2010.

Reference Books:

1. Software Engineering, by Ian Sommerville, Pearson Education Inc., New Delhi, (2009).
2. Software Engineering: A Practitioner's Approach", by Roger S. Pressman, McGraw-Hill. (2005).
3. Pankaj Jalote, "An Integrated Approach to Software Engineering", Narosa Publishing House Pvt Ltd, Darya Ganj, New Delhi 110002

CA-C17T: THE DESIGN AND ANALYSIS OF ALGORITHMS

Total Teaching Hours: 48 No. of Hours / Week: 03

UNIT - I [12 Hours]

Introduction: Algorithms, Fundamentals of Algorithmic Problem Solving, Important Problem Types, Fundamental Data Structures. Fundamentals of the Analysis of Algorithm Eficiency: The Analysis Framework, Asymptotic Notations and Basic Efficiency Classes, Mathematical Analysis of Non-recursive and Recursive Algorithms, Empirical Analysis of Algorithms

UNIT-II [12 Hours]

Brute Force Method: Selection Sort and Bubble Sort, Sequential Search, Brute-Force String Matching, Exhaustive Search, Depth-First Search and Breadth-First Search. Decrease and Conquer: Insertion Sort, Topological Sorting, Algorithms for Generating Combinatorial Objects, Decrease- by-a-Constant-Factor Algorithms. Divide and Conquer: Merge Sort, Quick Sort, Binary Tree Traversals and Related Properties, Strassen's Matrix Multiplication.

UNIT - III [12 Hours]

Space and Time Tradeofs: Sorting by Counting, Input Enhancement in String Matching, Hashing. Dynamic programming: Binomial Coeficient, Principle of Optimality, Optimal Binary Search Trees, Knapsack Problem and Memory Functions, Warshall's and Floyd's Algorithms. Greedy Technique: Prim's Algorithm, Kruskal's Algorithm, Dijkstra's Algorithm, Hufman Trees.

UNIT-IV [12 Hours]

Limitations of Algorithm Power: Lower-Bound Arguments, Decision Trees, P, NP and NP Complete Problems Coping with the Limitations of Algorithm Power: Back Tracking: n Queens problem, Hamiltonian Circuit Problem, Subset-Sum Problem. Branch-and-Bound: assignment Problem, Knapsack Problem, Traveling Salesman Problem.

Textbooks:

1. Anany Levitin, "Introduction to the Design and Analysis of Algorithms", 3rd Edition, Pearson, 2012.
2. Horowitz, Sahni, Rajasekaran, "Fundamentals of Computer Algorithms", 2/e, Universities Press,
2007.

Reference Books:

1. Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest, Cliford Stein, "Introduction to Algorithms", 3rd Edition, The MIT Press, 2009.
2. A.V. Aho, J.E. Hopcroft, J.D. Ullmann, "The design and analysis of Computer Algorithms", Addison Wesley Boston, 1983.
3. Jon Kleinberg, Eva Tardos, "Algorithm Design", Pearson Education, 2006.

CA-C18T: INTERNET TECHNOLOGIES

Total Teaching Hours: 48

No. of Hours/Week: 03

[12 Hours]

UNIT-I

INTERconnected NETwork: Internet: The Giant Wide Area Network, Communicating over the Internet, Accessing the Internet, Internet Organisations, Cyber Ethics, Internet Applications: Internet services, Electronic Mail(E-Mail), File Transfer, Real-Time User Communication, Remote Login, Usenet, World Wide Web: The Web, The Working Web, Web Terminology, Web Architecture, World Wide Web Challenges.

UNIT - II [12 Hours]

Hypertext Transfer Protocol (HTTP): HTTP, HTTP Version, HTTP connections, HTTP Communication, Hypertext Transfer Protocol Secure, Hypertext Transfer Protocol State Retention: Cookies, Hypertext Transfer Protocol Cache, Evolution of Web: The Generations of Web, Web 1.0, Web 2.0, Web 3.0, Big Data: A Special Discussion, Web IR: Information Retrieval on the Web: Web Information Retrieval, Web Information Retrieval Tools, Web Information Retrieval Architecture (Search Engine Architecture), Web Information Retrieval Performance Metrics, Web Information Retrieval Models, Google PageRank.

UNIT - III [12 Hours]

Web Development Basics: Elements of Web Development, Client-Side and Server-Side Scripting. Model-View-Controller Architecture for Web Application Development, Client-Side Technologies: HTML: Hypertext Markup Language, CSS: Cascading Style Sheets, JavaScript, Bootstrap Framework, AngularJS Framework, Server-Side Technologies: Server-Side Scripting, Personal Home Pages, Node.js: Server-Side JavaScript.

UNIT-IV [12 Hours]

Web Application Frameworks: Django Ruby on Rails. Web Databases: Web Database, Structured Query Language: Relational Databases, NoSQL Databases: Non-relational and Distributed Data, Understanding Popular Databases. Research Trends on the Web: Contextual Information Retrieval, Web Mining.

TEXT BOOKS:

1. Akshi Kumar, "Web Technology: Theory and Practice", CRC Press, 2019.

REFERENCE BOOKS:

1. Web Technology: A Developer's Perspective, N.P. Gopalan and J. Akilandeswari, PHI, Learning, Delhi, 2013.
2. Internetworking Technologies, An Engineering Perspective, Rahul Banerjee, PHI Learning, Delhi, 2011.

CA-C19L: Algorithms Lab

1. Write a program to implement linear search algorithm Repeat the experiment for different values of n, the number of elements in the list to be searched and plot a graph of the time taken versus n.
2. Write a program to implement binary search algorithm. Repeat the experiment for different values of n, the number of elements in the list to be searched and plot a graph of the time taken versus n.
3. Write a program to solve towers of honai problem and execute it for diferent number of disks
4. Write a Program to Sort a given set of numbers using selection sort algorithm. Repeat the experiment for diferent values of n, the number of elements in the list to be sorted and plot a graph of the time taken versus n. The elements can be read from a file or can be generated using the random number generator.
5. Write a program to find the value of an (where a and n are integers) using both brute-force based algorithm and divide and conquer based algorithm
6. Write a Program to Sort a given set of elements using quick sort algorithm. Repeat the experiment for different values of n, the number of elements in the list to be sorted and plot a graph of the time taken versus n.
7. Write a Program to find the binomial co-efficient C(n, k), [where n and k are integers and n > k] using brute force based algorithm and also dynamic programming based algorithm
8. Write a Program to implement Floyd's algorithm and find the lengths of the shortest paths from every pairs of vertices in a given weighted graph
9. Write a program to evaluate a polynomial using brute-force based algorithm and using Horner's rule and compare their performances
10. Write a Program to solve the string matching problem using Boyer-Moore approach.
11. Write a Program to solve the string matching problem using KMP algorithm
12. Write a program to implement BFS traversal algorithm
13. Write a program to find the minimum spanning tree of a given graph using Prim's algorithm
14. Write a Program to obtain the topological ordering of vertices in a given digraph. Compute the transitive closure of a given directed graph using Warshall's algorithm.
15. Write a Program to Find a subset of a given set S = {s1,s2,,sn} of n positive integers whose..... sum is equal to a given positive integer d. For example, if S= {1, 2, 5, 6, 8) and d = 9 there are two solutions {1,2,6} and (1,8).A suitable message is to be displayed if the given problem instance doesn't have a solution.

CA-C20L:INTERNET TECHNOLOGIES LAB

1. Demonstrate E-Mail working (Sending,Receiving, forward)
2. How to create, organize meeting in Zoom/GoogleMeet
3. Create a form by using various attributes of the input tags (text box, multiline textbox, option button, check box)
4. Create a simple HTML page by using some of the basic tags (hyperlink, marquee, image)
5. Create a web page with multiple types of style sheet used in a single page
6. Write a CGI sample program to send output back to the user
7. Create Time-Table using table tag
8. Creation of Frames in browser window using HTML.
9. Write a java script program to create dialogue boxes using alert, confirm and prompt methods
10. Write a java script program on Form Validations.
11. Write a java script program to perform four arithmetic operations: Addition, Subtraction, Multiplication and Division on two numbers.
12. Create a web site of our College.

Bachelor of Commerce (B.Com.)
Course Code: B.Com. 4.7.1 (OEC)
Name of the Course: Corporate Governance

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
3 Credits	3+0+0 Hrs	42 Hrs

Pedagogy: Classroom lectures, Case studies, Group discussion & Seminar etc.,

use Outcomes: On successful completion of the course, the students will be able to: Identify the importance of corporate governance.

- Know the rights, duties and responsibilities of Directors.
- Analyze the legal & regulatory framework of corporate governance.
- Outline the importance and role of board committee.
- Understand the major expert committees' Reports on corporate governance.

Syllabus

Module No 1 : CORPORATE GOVERNANCE **(10 Hrs)**

Introduction, Its importance, Principles of corporate governance, OECD Principles of corporate governance, Theories of corporate governance-Agency theory and stewardship theory, Models of corporate governance around the world, Need for good corporate governance - Evolution of Corporate Governance – Ancient and Modern Concept - Concept of Corporate Governance, Generation of Value from Performance – Principles of Corporate Governance.

Module No. 2 : CORPORATE AND BOARD MANAGEMENT **(10Hrs)**

Corporate Business Ownership Structure - Board of Directors – Role, Composition, Systems and Procedures - Fiduciary relationship – Types of Directors Promoter/Nominee/Shareholder/Independent - Rights, Duties and Responsibilities of Directors; Role of Directors and Executives – Responsibility for Leadership, Harmony between Directors and Executives -Training of Directors- need, objective, methodology - Scope and Responsibilities and competencies for directors - Executive Management Process, Executive Remuneration - Functional Committees of Board - Rights and Relationship of Shareholders and Other Stakeholders.

Module No 3 : LEGAL AND REGULATORY FRAMEWORK OF CORPORATE GOVERNANCE **(8 Hrs)**

Need for Legislation of Corporate Governance - Legislative Provisions of Corporate Governance in Companies Act 1956, Securities (Contracts and Regulations) Act, 1956 (SCRA), Depositories Act 1996, Securities and Exchange Board of India Act 1992, Listing Agreement, Banking Regulation Act, 1949 and Other Corporate Laws - Legal Provisions relating to Investor Protection.

Module No. 4 : BOARD COMMITTEES AND ROLE OF PROFESSIONALS **(14 Hrs)**

Board Committees - Audit Committee, Remuneration Committee, Shareholders' Grievance Committee, other committees - Need, Functions and Advantages of Committee Management - Constitution and Scope of Board Committees - Board Committees' Charter - Terms of Reference and Accountability and Performance Appraisals - Attendance and participation in committee meetings - Independence of Members of Board Committees - Disclosures in Annual Report; Integrity of Financial Reporting Systems - Role of Professionals in Board Committees - Role of Company Secretaries in compliance of Corporate Governance.

CORPORATE GOVERNANCE – CODES AND PRACTICES

Introduction - Major Expert Committees' Reports of India - Study of Codes of Corporate Governance - Best Practices of Corporate Governance - Value Creation through Corporate Governance - Corporate Governance Ratings.

Skill Development Activities:

- Collect the annual reports of any two companies, find out the corporate governance aspects in the reports.
- Collect any two companies Board of Directors names and find out their nature of directorship.
- Prepare report on the applicability of different models of Corporate Governance.
- Critically compare the recommendations of various corporate.

Reference Books

- Bairs N. and D Band, Winning Ways through Corporate Governance.
- Charkham J, Keeping Good Company: A Study of Corporate Governancein Five Countries, Oxford University Press,London.
- Subhash Chandra Das, Corporate Governance in India – An Evaluation(Third edition), PHI Learning Private Limited.
- Clark T. and E Monk House, Rethinking the Company, Pitman, London. • Fernando A.C, Corporate Governance,Pearson Education.
- Prentice D.D. and PRJ Holland, Contemporary Issues in Governance,Clarendon Press.
- Report of the Cadbury Committee on Financial Aspects of,London Stock Exchange, London.
- Report on Corporate Governance, Confederation of IndiaIndustries and Bombay.

Note: Latest edition of text books may be used

Bachelor of Business Management (B.B.A)
Course Code: 4.7.1 (OEC)
Name of the Course: Business Leadership Skills

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
3 Credits	3+0+0 Hrs	42 Hrs

Pedagogy: Classrooms lecture, Tutorials, und Problem Solving.

Course Outcomes: On successful completion of the course, the Students will able to:

- understand the significance of leadership skills for effective people management.
- increase the comprehension of leadership through various leadership theories.
- analyze different leadership styles, types, patterns and functions.
- demonstrate an understanding of various leadership approaches for effective management of people.
- demonstrate an awareness of ethical leadership.
- Understand the emerging trends in Leadership.

Syllabus

Module No. 1: INTRODUCTION TO BUSINESS LEADERSHIP (06 Hrs)
Introduction to business leadership, meaning & definition of leadership, evolution and growth of leadership, functions and characteristics of leadership. Importance of Leader in Organization culture, latest trends/ current scenario of business leadership. Dark traits of leadership.

Module No. 2: LEADERSHIP FROM MANAGERIAL PERSPECTIVE (10 Hrs)
Nature of leadership. Significance or importance of leadership. Top 10 Qualities of an effective leader, leader v/s manager, Leader vis Mentor authority vis leadership; formal v/s informal leadership; different roles of leadership: different levels of leadership: traits of an ethical leader.

Module No. 3: LEADERS AND TEAM DECISIONS (8 Hrs)
Team decision making: Power and influence in teams; Leadership and team empowerment; Challenges in team decision making, Role of a leader in decision making.

Module No. 4: LEADERSHIP STYLES & SKILLS (18 Hrs)
Leadership styles: a) Autocratic leadership, b) Bureaucratic leadership. e) Democratic leadership, and d) Laissez faire leadership e) Transformational Leadership. f) Charismatic Leadership.
Leadership Skills: Communications Skills, Decision Making Skills, Emotional Management Skills, Public Relation Skills, Personal Values and Ethics, Conflict Resolution Skills.
Emerging Trends In Leadership: Women & Transgender in leadership; Limitations, challenges & opportunities of a women & Transgender leadership: Role of a e-leadership.

Skill Development Activities:

- Collect information about the real time corporate leaders with different leadership
- styles & discuss their leadership styles and traits in the class room
- Leadership skills used to focus on GD
- Demonstrate the team management skills required for a leader.
- Brain storming session pertaining to leadership qualities
- Emerging trends in leadership are to be discussed with case studies and projects)

Reference Books

- Northouse, P. (2007). Leadership: Theory and Practice. Sage Publications.
- Stephen, R. P. (1988). Orgaizational Behaviour-Concepts, controversies and Appications.
- New Delhi: Printice Hall of India Ltd,
- Subba Rao. (2018). Organizational Behaviour (18th ed.). Himalaya Publishing House.
- Subba Rao. (2022) Personnel and Human Resource Management (5th ed.). Bangalore:
- Himalay Publishing House.
- Daloz Parks, S., Leadership can be taught: A Bold Approach for a Complex World, Boston:
- Harvard Business School Press.
- Drucker Foundation (Ed.). Leading Beyond the Walls, San Francisco: Jossey Bass
- Hersey, P. K., Blanchard, D., & Johnson, D. Management of Organisational Behavior
- Leading Human Resources. Pearson Education.
- Gratton, L. E. (2007). Eight ways to build collaborative teams. Harvard Business Review.
- 85 (11), 100-109.
- Katzenbach, J. R., Douglas S. K. (2001). Discipline of Teams Harvard Business
- Review.71(2).111-120

IV Semester – Generic English L	50/56 hours	Marks
Unit 1: Receptive Skills: Reading Skills and Listening Skills	**23 hours**	**40 marks**
1. Reading Skills – Novella Mother of 1084 – Mahasweta Devi	18 hours	30 marks
2. Listening Skills – Listening and Decoding 5 hours 10 marks Poems: a. "Home Coming Son" – Tsegaye Gabre - Medhin b. "Measurements" – Navakanta Barua Listen to understand TED talks: a. TED Talk 1 – Change is Life by Dr.B.M Hegde b. TED Talk 2 – How a 13 year old changed 'Impossible to I'm Possible' by Sparsh Shah	3 hours + 2 hours	10 marks
Unit 2: Productive Skills: Speaking and Writing Skills	**23 hours**	**20 marks**
1. Writing Skills: Technical Writing Types of Writing: a. Scientific Writing b. Business Writing c. Travel Writing d. Article Writing	8 hours	5 marks
2. E – Correspondence and Content writing skills E- mail: Casual and Professional a. Congratulation Letter b. Appreciation Letter 5 hours c. Promotion Letter d. Termination Letter	5 hours	5 marks
3. Social Media Content Writing Skills Types of Commercial Writing: a. Blog Writing b. Podcast Writing c. Writing on Quora	6 hours	5 marks
4. Speaking Skills: Types: a. Pechakucha Presentation b. Public Speaking	4 hours	5 marks

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SUBJECT : HINDI

IV Semester B.C.A., B.Sc.(FAD)- Language under AECC
for the year 2022-23 onwards

Max. Marks:60+40

Texts:

Edited by: Smt. Malathi A.M
Dr. Suryavanshi .D.P

1. Hindi Natak Sahitya: "Madhavi"
   (Printed and Published by Rajkamal Prakashan, New Delhi-02)

2. (a) Antarjaal: Udhbhav, Vikas Aur Vartaman, E-Magazine
   (b) Chittha Lekhan: Arth Aur Itihas

Reference Books:

1) Sanchar Madyamon Ki Bhasha Aur Nayi Hindi: Dr. Satish Sharma 'Jafaravadi' (Takshashila Prakshan, New Delhi-02))

2) Prayojanmulak Hindi Ke Vividh Roop: Dr. Rajendra Mishra, Rakesh Sharma (Takshashila Prakashan, New Delhi-02)

3) Vyavaharik Patrakarita: Sushil Upadhyay (Satyam Publishing house, New Delhi)

DIVISION OF MARKS

CREDITS-03

HOURS-04

1. Objective type Questions		10x 1=10
2. 2 Annotations from Drama	(2) out of (3)	2x7=14
3. 1 main question from Drama	(1) out of (2)	1 x16=16
4. I short notes from Drama	(1) out of (2)	1 x 5=05
5. Antarjaal Aur Chittha Lekhan	(3) out of (5)	3 x 5=15
	Theory Total	=60
	Internal Assessment Marks	=40
	Total	=100

IV Semester-BCA/BHM & other Courses
Title: Sanskrit Drama and Dramaturgy

Semester	Ability Enhancement compulsory course(L+T)	Marks	Credits
IV	Introduction to Sanskrit Drama and Dramaturgy-Origin and development of Sanskrit Drama -Dasharupakas and their lakshana. Important Dramas and Dramatists in Sanskrit Literature- Bhasa, Kalidasa, Sriharsha & Shudraka	18	3
	Mruchchakatikam of Shudraka - Act I & II	42	
	Continuous Evaluation: Attendance, Assignment, Internal Test, Creative Writing, Conversation in Sanskrit Total	40	
	Total	100	100

Scheme of Examination

1. Multiple choice questions		1x8-8
2. Essay type questions	(1 of 2)	1x8=8
3. Short notes	(2 of 4)	2x4=8
4. Translation of Shlokas	(3 of 5)	3x4=12
5. Reference to context	(2 of 4)	2x3=6
6. Dramaturgy		
a) Essay type question	(1 of 2)	1x8=8
b) Short notes	(2 of 4)	2x5=10

Books for study & Reference:

1. Mruchchakatikam: MLBD Publications.
2. Samkruta Natakam: A.R Krishna Shastri
3. History of Sanskrit Literature by M.R. Kale.
4. Samkrita Sahityada Ithihasa (Kannada) -Prof. S.Ramachandra Shastry.
5. Bhasha Shastra MattuSamskrita Sahitya Charitre (kannada) edited by Dr. Krishnamurthy. Vidwan Ranganatha Sharma and vidwan H.K. Siddagangaiah.
6. History of Sanskrit Literature- S.Rangachar
7. History of Classical Sanskrit Literature- Krishnamachariyar

Samskruta Sahitya Sameekshe (Kannada) Dr. M. Shivakumara Swamy

Editor

1. Mruchchakatikam of Shudraka- Act I & II:- Dr. Nagaratna Hegde

Sd/-

Dr. C. Shivaraju
Professor & Chairman

	Details of topic	Duration
Course-1-Azure Al (AI-900)	AI-900 pathway consists of 5 courses and 2 reading material: Fundamentals i. Introduction to Al on Azure ii. Use visual tools to create machine learning models with Azure Machine Learning iii. Explore computer vision in Microsoft Azure iv. Explore natural language processing v. Explore conversational Al vi. Tune Model Hyperparameters - Azure Machine Learning (Reading) vii. Neural Network Regression: Module Reference - Azure Machine Learning (Reading	05 hours
Practical	1. Prepare the data 2. Model the data 3. Visualize the data 4. Analyse the data 5. Deploy and maintain deliverables	13 hours
Course-2-Data Analyst Associate (DA-100)	DA-100 pathway consists of 5 courses and 2 08 hours reading material: 1. Get started with Microsoft data analytics 2. Prepare data for analysis 3. Model data in Power BI 4. Visualize data in Power BI 5. Data analysis in Power BI 6. Manage workspaces and datasets in Power BI 7. Key Influencers Visualizations Tutorial - Power BI 8. Smart Narratives Tutorial - Power BI	08 hours
Practical	Microsoft Docs 1. Describe Artificial Intelligence workloads and considerations 2. Describe fundamental principles of machine learning on Azure 3. Describe features of computer vision workloads on Azure 4. Describe features of Natural Language Processing (NLP) workloads on Azure	13 hours

Course Outcomes (COS):

- Appraise the theory of Artificial intelligence and list the significance of Al.
- Discuss the various components that are involved in solving an Al problem.
- Illustrate the working of Al Algorithms in the given contrast.
- Analyze the various knowledge representation schemes, Reasoning and Learning techniques of AL.
- Apply the Al concepts to build an expert system to solve the real-world problems.