BANGALORE UNIVERSITY

BCA SEP SYLLABUS

(ALL SUBJECTS)

I SEMESTER

SYLLABUS

SEMESTER I

GENERAL ENGLISH – BCA

I Semester – General English Faculty of Computer Application	50/56 hours	Marks
Prose and Poetry	35	50
1. The Golden Dream - Poornachandra Tejaswi	05	
2. The Shooting of an Elephant- George Orwell	05	
3. Now I Remain for Myself - Bahinabai Chaudhari	04	
4. The Bet- Anton Chekhov	05	
5. Caste and Constitution – Dr. B R Ambedkar	05	
6. At the Railway Station- K S Narasimhaswamy	03	
7. Corpse- Bama	05	
8. Do not go Gentle into that Good Night- Dylan Thomas	03	

Language Components	21	30
1. Data Interpretation – Bar graph, Pie Chart, Tree Diagram	03	05
2. Comprehension passages	03	05
3. Listening vs hearing, Types of Listening	03	05
4. Giving instructions to do a task and to use a device, Giving directions	04	05
5. Articles, Prepositions, Tenses	08	10

A. FORMATIVE ASSESSMENT – 20 marks
B. SUMMATIVE ASSESSMENT – 80 Marks
TOTAL - 100 Marks

A. FORMATIVE ASSESSMENT – 20 marks

Formative Assessment	
Assessment Occasion/type	**Weightage in Marks**
Internal Test 1	05
Attendance	05
Internal Test 2	05
Assignment	05
Total	**20**

B. SUMMATIVE ASSESSMENT – 80 Marks

QUESTION PAPER PATTERN

I Semester BCA – General English

Time: 3 hours **Max.Marks:80**

Instruction: Answer all the questions

Section – A (Prose and Poetry)

I. Answer in one or two sentences (5 questions out of 8) 5x2=10
II. Answer in about a page. (4 questions out of 6) 4x5=20
III. Answer in about 2 – 3 pages (2 questions out of 4) 2x10=20

Section – B (Language Components)

IV. Comprehension 1x5=5
V. Data Interpretation 1x5=5
VI. Listening VS hearing (one mark questions) 1x5=5
VII. A. Giving instructions 1x3=3
B. Giving directions 1X2=2
VIII. A. Article and Prepositions 1X5=5
B. Tenses (Verbs) 1X5=5

I Semester B.C.A., B.Sc.(FAD)- All B.C.A Courses Language under SEP for the year 2024-25 and onwards

Texts: **Max. Marks:80+20**

1. Collection of Prose : "Gadya Sangam" Edited by : Dr. Pathan Hasan, Dr. Varsha Sharma

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

2: Grammar: Samanarti Shabdh, Anek Shabdon Ke Liye Ek Shabd

3. Business Terminology

Reference Books: 1) Karyalay Alekhan Aur Tippan : Prakashak- Karnatak Mahila Hindi Seva Samiti, Chamarajpet, Bangalore.

2) Prayojan Mulak Hindi Ki Nayi Bhumika : Kailash Nath Pandey, Lokabharathi Prakashan, Ilahabad

II Semester B.C.A., B.Sc.(FAD)- All B.C.A Courses Language under SEP for the year 2024-25 and onwards

Texts: **Max. Marks: 80+20**

1. Collection of Poetry: "Kavya Manjari" Edited by: Dr. Krishna Naik, Dr. Mamatha T.S

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

2. Vaignanikon Ka Parichay: 1) S. Somanth 2) G. Rangarajan 3) Dr. Homi Bhabha 4) C.N. R. Rao

3. Sankshepan

Reference Books: 1) Prayojan Mulak Hindi Ki Nayi Bhumika : Kailash Nath Pandey
2) Prasidha Vaignanik Aur Avishkar : Surjeet
3) Sugam Hindi Vyakarn : Prof. Vanshidhar & Dharmapal Shastri

DIVISION OF MARKS

I Semester B.C.A., B.Sc.(FAD)- All B.C.A Courses Language under SEP

1.	One Mark Questions		10x 1= 10
2.	2 Annotations from prose	(2) out of (3)	2 x 7= 14
3.	2 main questions from prose	(2) out of (3)	2 x15=30
4.	1 short notes from prose	(1) out of (2)	1 x 6= 06
5.	Grammar	(2) out of (3)	2 x 5= 10
6.	Terminology		10 x 1=10
			Theory Total=80
			Internal Assessment Marks =20
			Total=100

CREDITS-03 **HOURS-04**

I Semester B.C.A., B.Sc.(FAD)- All B.C.A Courses Language under SEP

1.	One Mark Questions		10x 1= 10
2.	2 Annotations from poetry	(2) out of (3)	2 x 7= 14
3.	2 main question from poetry	(2) out of (3)	1 x15=30
4.	1 short notes from poetry	(1) out of (2)	1 x06=06
5.	Vygnanikon Ka Parichaya	(1) out of (2)	1 x 10=10
6.	Sankshepan	(1 Passage)	1 x10=10
			Theory Total =80
			Internal Assessment Marks =20
			Total=100

CREDITS-03 **HOURS-04**

DEPARTMENT OF TAMIL (UG) BU

The following syllabus is prescribed for various undergraduate courses under SEP 2024 in the subject TAMIL LANGUAGE First Semester BA/BSc/BCA/B.SC(fad)/BPA/BVA/BSW
Tamil Language- Paper-1 (Part -1). (For all Arts and Science Students)
Syllabus and Text Books Under SEP, W.E.F 2024-25

Content	Hrs
Unit 1 – Poetry **1. KALITHTHOGAI-** 1.Paalaikkali - 07, 09 2.Kurinchikkali - 45, 51 3.Maruthakkali - 74 4.Mullaikkali - 115 5.Neitharkkaki -123	**10**
Unit- II – Poetry **2. MULLAIPPAATTU (FULL)**	**10**
Unit -III – Poetry **3. NAALADIYAAR-** 1.Aran Valiyuruththal - 34,36,39 2.Meimmai - 111,113,115 3.Nallinam Cherthal - 171,177,179 4.Thaalaanmai - 192,193,195 5.Periyaarai pizhaiyaamai - 164,166,169.	**10**
Unit – IV- ILAKKANAM- Eluththu Ilakkanam	**10**
Unit – V- NOVEL Keethari.	**20**

Text Books:

1.Kalithogai- As mentioned in the priscribed Syllabus/ Text Book/

2.Mullaippaattu- As mentioned in the priscribed Syllabus/ Text Book.

3. Naaladiyaar - As mentioned in the priscribed Syllabus / Text Book.

4. Illakkanam- Nannool - Eluththu Ilakkanam

5. Novel-Keethari –By Tamil Chelvi. Published by NCBH ,Chennai

References: 1.Kalithogai – Published by varthamaanan pathippagam T.Nagar, Chennai-17 2.Mullaippaattu - Published by varthamaanan pathippagam T.Nagar, Chennai-17

3. Naaladiyaar - Kazhaga publication ,Chennai -1.

4.Nannool- by Bhavananthi, Kazhaga publication ,Chennai -1.

5.History of Tamil litreture – by Dr.M.Varadarasan, published by Sahithya Academi,New Delhi.

I Semester–BCA/BHM and other course

Title: Sanskrit Poetry, Grammar and Comprehension

		Marks
Unit-I	1. Introduction to Classical Sanskrit Poetry 2. Selected Portion of a Sanskrit Poetic composition- **Mahakavya - Kiratharjuniyam Sarga-I&II**	56
Unit-II	1. Swara Sandhi 2. Padaparichaya- Grammatical Identification of Words 3. Translation from Sanskrit to Kannada / English 4. Comprehension	24
	Internal Assessment 1. Attendance 05 2. Test (Minimum 2 tests) 10 3. Assignment /Seminar / Class room Activity 05	20
	Teaching Hours / week-04	
	Credits-03	
	Total	100

Scheme of Examination

1.	Multiple choice questions		10x1=10
2.	Essay type questions	(1of 2)	1x10=10
3.	Short notes	(2of 4)	2x4=8
4.	Translation and explanation of Shlokas	(4of6)	4x4=16
5.	Reference to context	(3of 5)	3x4=12
6.	Grammar (Should be answered in Sanskrit only)		
	a) Swara Sandhi	(5of 8)	5x1=05
	b) Padaparichaya	(5of 8)	5x1=05
	c) Translation from Sanskrit to Kannada / English		04
7.	Comprehension		10

Books for study & Reference:

1. Kiratharjuniyam Sarga I&II:-Dr. R. Shobha, Published by Prasaranga, BUB
2. Kiratharjuniyam:-M.R.Kale- Mothilal Banarasidas Publishers
3. Kiratharjuniyam: By Nirnaya sagar Press, Bambay.
4. Kiratharjuniyam: Chowkamba Vidya Bhavan.

5. Kiratharjuniyam-I Canto-Prof.S.Ramachandra Shastri Prasaranga, BangaloreUniversity.

6. History of Classical Sanskrit Literature by M.Krishnamachariyar.

7. Samkruta Sahitya Ithihasa (Kannada Translation)- ಕೆ.ಚಿ.ಸಾಂಬಮೂರ್ತಿ

8. Bhasha Shastra Mattu Samskruta Sahitya Charitre (kannada) edited by Dr.K.Krishnamurthy, Vidwan Ranganatha Sharma and Vidwan H.K. Siddagangaiah.

9. History of Classical Sanskrit Literature-S.Rangachar

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

11. Higher Sanskrit Grammar-M.R.Kale.

12. Subhodha Samskrutha Vyakarana– D.N. Shanbhag.

DISCRETE STRUCTURES

Course Outcome

CO1 Apply Set theory, Relations, Functions and Mathematical Induction to solve problems

CO2 Getting familiar with counting techniques and Mathematical Logic, and apply the same to address the real-life problems

CO3 Learn different operations of a Matrix and apply them to solve real-life problems.

CO4 Apply graph theory concepts to solve the problems of real world.

UNIT – I 11 Hours

Set Theory: Fundamentals of Set theory, Set Operations, Laws of Set Theory, Counting and Venn Diagrams, Cartesian Product, Relations, Types of Relations, Functions, Types of Functions, Function Composition, Inverse Functions. Mathematical Induction.

UNIT – II 11 Hours

Logic and Counting: Fundamentals of Logic, Propositional Logic, Logical Connectives and Truth Tables, Logic Equivalence, Tautology and Contradiction. Basics of counting, Counting Principles, Pigeonhole Principle, Permutation, Combinations.

UNIT - III 11 Hours

Matrices: Basics of Matrix, Types of Matrices, Operations on Matrices, Inverse of a matrix, Solution for system of linear equations, Determinant, Properties of Determinant, Cramer's Rule, Introduction to Eigen Values and Eigen Vectors.

UNIT - IV 12 Hours

Graph Theory: Graphs: Introduction, Representing Graphs, Operations on graphs, Directed Graphs Graph Isomorphism, Paths, Cycles, Euler Graph, Hamilton Graph, Planar Graphs.
Trees: Introduction, Applications of Trees, Spanning Trees, Minimum Spanning Trees, Prim's and Kruskul's Algorithms.

Text Book

1 Ralph P. Grimaldi: Discrete and Combinatorial Mathematics, 5th Edition, Pearson Education, 2006.

2 Richard Bronson, Schaum's Outline of Matrix Operations, McGraw-Hill publications, 2nd Edition,

Reference Books

1 Gregory Hartman, Fundamentals of Matrix Algebra, Third Edition,2011.

2 Gary Haggard, John Schlipf and Sue Whitesides: Discrete Mathematics for Computer Science, (with Student Solutions Manual CD-ROM), Cengage Learning; 1st edition, 2005.

Course Articulation Matrix: Mapping of Course Outcomes (COs)with Program Outcomes(POs1-12)

Course Outcome(COs)	Program Outcomes(POs)											
	1	2	3	4	5	6	7	8	9	10	11	12
CO1	3	2				1						
CO2	2	3		1			1					
CO3	2	1						1				
CO4	1	1	1									

PROBLEM-SOLVING TECHNIQUE

Course Outcomes

Upon successful completion of the course, the student will be able:

CO1 To understand algorithmic strategies for enhancing problem-solving proficiency

CO2 Demonstrate problem-solving tools and techniques using C.

CO3 To analyze the given problems and use appropriate algorithms.

CO4 To implement sorting and searching techniques to develop programs.

UNIT –1 12 Hours

Introduction: The Role of Algorithms in computing, Algorithms as a technology, analyzing algorithms, Designing algorithms, Flow charts. Fundamental Algorithms: Exchanging the values of two variables, Counting, Summation of a set of numbers, Factorial Computation, Generating of Fibonacci sequence, Reversing the digits of an integer, Character to number conversion.

UNIT-II 11 Hours

C Programming: Getting Started, Variables, Operators and Arithmetic expressions. Input and Output: Standard input and output, formatted input and output. Selection statements: Statements and Blocks, If, If-else, if-else-if ladder, nested if, switch. Control Structure: while loop, for loop, do-while loop, break and continue, goto and labels. Pointers and Arrays: Pointers and address, Pointers and function arguments, One-Dimensional array, Two-Dimensional array, Structures and Union, Command line arguments.

UNIT - III 11 Hours

Factoring Methods: Finding the square root of a number, the smallest Divisor of an integer, the greatest common divisor of two integers, computing the prime factor of an integer, raising a number to a large power. Array Techniques: Array order reversal, Array counting, Finding the maximum number in a set, removal of duplicates from an ordered array, partitioning an array, finding the k^{th} smallest element, and multiplication of two matrices.

UNIT - IV 11 Hours

Sorting: Sorting by selection, sorting by exchange, sorting by insertion, sorting by diminishing increment, sorting by partitioning. Searching: Linear Search, Binary search. Text processing and Pattern searching: Text line length adjustment, keyboard searching in text, text line editing, linear pattern searching.

Text Book

1 R. G. Dromey, "How to Solve it by Computer", Person Education India, 2008.

2 Brain M. Kernighan and Dennis M. Ritchie, " The C Programming Language", 2nd edition, Princeton Hall Software Series, 2012.

3 Thomas H Cormen, Charles E. Leiserson, Ronald L. Rivest, Clifford Stein, "Introduction to Algorithms", 3rd Edition, The MIT Press Cambridge, Massachusetts London, England, 2008.

Reference Books

1 E. Balaguruswamy, "Programming In ANSI C", 4th edition, TMH Publications, 2007

2 Greg Perry and Dean Miller, "C programming Absolute Beginner's Guide", 3rd edition, Pearson Education, Inc, 2014.

3 Donald E. Knuth, The Art of Computer Programming", Volume 2: Seminumerical Algorithms, 3rd Edition, Addison Wesley Longman, 1998.

Course Articulation Matrix: Mapping of Course Outcomes(COs) with Program Outcomes(POs1-12)

Course Outcome(COs)	**Program Outcomes(POs)**											
	1	2	3	4	5	6	7	8	9	10	11	12
CO1	3	3	1	1	1	1	2	1	1	1	2	1
CO2	3	3	3	2	1	1	1	1	1	1	2	1
CO3	3	3	1	1	1	1	1	1	1	1	2	1
CO4	3	3	2	2	1	1	1	1	1	1	2	1

Pedagogy: Lecture with the use of ICT/ Field Study / Assignment

Formative Assessment for Theory	
Assessment Occasion Type	**Marks**
C-1 Sessional Tests	5
C-1 Seminars/ Presentations	5
C-2 Sessional Tests	5
Case Study / Assignment / Project work etc.	5
Total	**20 Marks**
Formative Assessments as per SEP guidelines are compulsory	

PROBLEM-SOLVING TECHNIQUE LAB

Write, and execute C Program for the following:

1. To read the radius of the circle and to find area and circumference.
2. To read the numbers and find the biggest of three.
3. To check whether the number is prime or not.
4. To find the root of quadratic equation.
5. To read a number, find the sum of the digits, reverse the number and check it for palindrome.
6. To read the numbers from keyboard continuously till the user presses 999 and to find the sum of only positive numbers.
7. To read percentage of marks and to display appropriate message. If a percentage is 70 and above- Distinction, 60-69 – First Class, 50-59 – Second Class, 40-49 Pass, below 40 – Fail.(Demonstrate of if-else ladder)
8. To simulate a simple calculator with addition, subtraction, multiplication, division and it should display the error message for division of zero using switch case.
9. To read marks scored by n students and find the average of mark (Demonstration of single dimensional array)
10. To remove duplicate elements in a single dimensional array.
11. To find the factorial of a number.
12. To generate Fibonacci series.
13. To demonstrate string functions. (String Length, String Copy, String Concatenate, String Comparison)
14. To find the length of the string without using built-in function.
15. To read, display and add two n x m matrices using function.
16. To read a string and to find the number of alphabets, digits, vowels, consonants, space and special characters.
17. To swap two numbers using pointers.
18. To demonstrate student structure to read & display records of n students.
19. To demonstrate the difference between structure and union for the following Student name (String), Student roll no(integer), Student mark(float)
20. To design the following pattern using nested for loop:

COMPUTER ARCHITECTURE

Course Outcome

CO1 Understand various arithmetic and logical operations on different types of numbers to design an arithmetic and logic unit.

CO2 Demonstrate Design and implement sequential logic circuits using ICs

CO3 Analyze the basics of computer organization and its design and the basic processing unit

CO4 Implement the instruction sets and to develop assembly language programming skills.

UNIT-1 [12Hours]

Number Systems: Decimal, Binary, Hexadecimal, Octal Number System Conversions, Binary Arithmetic, Complements- r's complement, (r-1)'s complement, Addition and subtraction of BCD, Octal Arithmetic, Hexadecimal Arithmetic, Binary Codes, Decimal Codes, Error detecting and correcting codes, ASCII, EBCDIC, UNICODE, Digital Logic Circuits: Digital Computers, Logic Gates, Universal Gates, Boolean algebra, Map Simplification.

UNIT-2 [11Hours]

Combinational Circuits- Half Adder and Full Adder, Flip-Flops- SR Flip- Flop, D Flip-Flop, J-K Flip-Flop, T Flip-Flop, Sequential Circuits- Flip-Flop input equations, State Table, State Diagram and problems. Digital Components: Integrated Circuits, Decoders-3-to-8-line decoder, NAND gate Decoder, Octal to Binary Encoder, Multiplexers- 4-to-1 line Multiplexer, Registers- 4 bit register with parallel load, Shift Registers- Bidirectional shift register with parallel load, Binary Counters-4-bit synchronous binary counter.

UNIT-3 [11Hours]

Basic Computer Organization and Design: Instruction Codes, Computer Registers, Computer Instructions, Timing and Control, Instruction Cycle, Memory-Reference Instructions, Input-Output Interrupt, Complete Computer Description, Design of Basic Computer, Design of Accumulator logic. Central Processing Unit: Introduction, General Register Organization, Stack Organization, Instruction Formats, Addressing Modes, Data Transfer and Manipulation, Program Control, Reduced Instruction Set Computer (RISC), CISC Vs RISC.

UNIT-4 [11Hours]

Introduction to 8085 Assembly language programming: Architecture of 8085, Pin Configuration, The 8085-programming model, Instruction classification, Instruction, data formats, and storage. How to write assemble and execute a simple program, overview of 8085 instruction set. Introduction to 8085 Instructions: Instruction classification of 8085 based on word length and functions, Data Transfer operations, Arithmetic operations, Logic Operations, Brach operations, Writing Assembly language programs, Addressing modes of 8085.

Text Book

1 M. Morris Mano- "Computer System Architecture", 3rd Edition Pearson India, 2019.

2 Ramesh Gaonkar- "Microprocessor Architecture, Programming and Applications with the 8085", 5th Edition, Penram International Publishing (India) Private Limited,2007.

3 Andrew S. Tanenbaum, Todd Austin –"Structured Computer Organization", PHI Pearson 6th, Edition,2013.

Reference Books

1 William Stallings- "Computer Organization and Architecture", Pearson/PHI, 6th Edition,2007.

2 Andrew S. Tanenbaum-" Structured Computer Organization", PHI /Pearson 4th Edition,1998.

3 M.V. Subramanyam, "Switching Theory and Logic Design", Laxmi Publications Ltd, 2011.

COMPUTER ARCHITECTURE LAB

1. Write an 8085 Program to swap two 8-bit numbers.
2. a. Write a Program to find the largest of two numbers

   b. Write an 8085 Program to find the smallest of two numbers
3. Write an 8085 Program to find whether an 8-bit number is positive, negative or zero. If positive display EE, if negative display FF, if zero display DD.
4. Write an 8085 Program to check whether 4^{th} bit of a number is zero or one. If 4^{th} bit is 1 display FF, if 4^{th} bit is 0 display DD.
5. Write an 8085 Program to calculate the sum of first ten natural numbers.
6. Write an assembly language program in 8085 microprocessors to find the sum of digits of an 8-bit number.
7. Write an 8085 Program to find the reverse of an 8-bit number
8. Write an 8085 Program to check whether 1-byte number is a palindrome or not. If it is a palindrome display FF otherwise display DD.
9. Write an 8085 Program to check whether a number is ODD or EVEN. If Even no. display DD, if odd no. display FF.
10. Write an 8085 program to count a number of ones in the given 8-bit number.
11. Write an 8085 program to find Addition & Subtraction of two 8 –bit HEX numbers.
12. Write an 8085 program to find Addition of two 16 –bit numbers.
13. Write an 8085 program to find Subtraction of two 16 –bit numbers.
14. Write an 8085 program for Swapping of two 16-bit numbers.
15. Write an 8085 program to implement 2 out of 5 codes
16. Write an 8085 program to generate Fibonacci series
17. Write an 8085 program to find the first ten terms of odd and even numbers.
18. Write an 8085 program to find 4-Digit BCD addition.
19. Write an 8085 program to find Multiplication of 2-digit BCD numbers.
20. Write an 8085 program to find division of two 8-bit umbers.

University Grants Commission

ENVIRONMENTAL STUDIES

Number hrs/week	Duration of the exam	Total hours	Credits
3 hours	3 hours	45	2
Formative assessment Marks: 20		Semester end assessment Marks:80+20=100	

COURSE OUTCOMES (COs): Students are able to	
COs 01	Define the multidisciplinary approach and nature that is for productivity of different ecosystems and ecological dynamics., sustaining of natural resources
COs 02	Explain the current status of natural resources, habitats and biodiversity
COs 03	Describe the types of environmental pollution and control measures. Environmental policies and practices
COs 04	Interpret the human development and environmental threats
COs 05	Summarize the environmental ethics, values and environmental movements in environmental conservation

Content of CC – Environmental Studies		45 hours
Unit 1:	**Introduction to Environmental Studies:** Multidisciplinary nature of environmental studies, Scope and importance; Concept of sustainability and sustainable development, SDG Goals **Ecosystem**: Structure and function of ecosystem; Energy flow in an ecosystem: food chains, food webs and ecological succession. **Terrestrial Ecosystems**: Forest ecosystem, Grassland ecosystem, Desert ecosystem, **Aquatic ecosystems**; ponds, streams, lakes, rivers, oceans, estuaries	09
Unit 2:	**Natural Resources: Renewable and Non-Renewable Resources: Land resources:** Land-use and land cover change; Land degradation, Soil erosion, and desertification. **Forest Resources:** Types and scope; Deforestation: Causes and impacts due to mining, dam building on environment, forests, biodiversity, and tribal populations. **Water Recourses**: Use and over-exploitation of surface and ground water, floods, droughts, conflicts over water (international & inter-state). **Energy resources**: Renewable and non-renewable energy sources, use of alternate energy sources, growing energy needs, case studies. **Biodiversity and Conservation:** Levels of biological diversity: Genetic, species and ecosystem diversity; Biogeographic zones of India Biodiversity patterns and global biodiversity hot spots. India as a mega-biodiversity nation; Endangered and endemic species of India. **Threats to biodiversity**: Habitat loss, poaching of wildlife, man-wildlife conflicts with case studies, biological invasions; Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.	13

Unit 3:	**Environmental pollution:** types, causes, effects and controls; Air, water, soil and noise pollution, nuclear hazards and human health risks, **Solid waste;** management and control measures of urban and industrial waste with case studies. **Environmental Policies and Practices:** Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture. Environment Laws: Environment Protection Act; Air (Prevention & Control of Pollution) Act; Water (Prevention and control of Pollution) Act; Wildlife Protection Act; Forest Conservation Act. International agreements: Montreal and Kyoto protocols and Convention on Biological Diversity (CBD). Nature reserves, tribal populations and rights, and human wildlife conflicts in Indian context.	13
Unit 4:	**Human Communities and the Environment:** Human population growth: Impacts on environment, human health and welfare. Resettlement and rehabilitation of project affected persons; case studies. **Disaster management**: floods, earthquake, cyclones and landslides with case studies. **Environmental movements**: Chipko, Silent valley, Bishnois of Rajasthan. **Environmental ethics**: Ecological, economic, social, ethical, aesthetic and Informational value. Role of Indian and other religions And cultures in environmental conservation. Environmental communication and public awareness, case studies - CNG vehicles in Delhi). **Field work –** Field report to be submitted	10

Course Articulation Matrix: mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs)/ Program Outcomes (POs)	**Program Outcomes (POs)**											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
CO 1	1	2	1	1	3	1	1	1	1	2	1	1
CO 2	1	-	1	2	2	1	3	2	1	1	1	1
CO 3	-	1	3	1	1	-	2	3	2	1	-	1
CO 4	1	1	1	2	3	2	1	-	1	1	1	1
CO 5	1	1	1	2	2	2	1	1	1	1	1	1

Pedagogy:

Teaching Strategies: Use of Digital tools and platforms for teaching, learning and field/ dissertation analysis. Inquiry-based learning, group discussions, Interactive Lectures, quiz, group work, Field –oriented studies, Study trip, case studies and debates, hands on training.

Continuous Assessment and Evaluation: Formative and Summative Assessments, Feedback and oral examinations

Formative Assessment for Theory	
Assessment type	**Marks**
Sessional Tests- 1	10
Attendance	05
Assignment/Seminar	05
Total	**20 marks**
Formative Assessment as per SEP Guidelines	

Reference

1. Bharucha, E. (2015). *Textbook of Environmental Studies*.
2. Carson, R. (2002). *Silent Spring*. Houghton Mifflin Harcourt.
3. Climate Change: Science and Politics. (2021). A *Centre for Science and Environment (CSE)*, Publication, New Delhi.
4. Gadgil, M., and Guha, R. (1993). *This Fissured Land: An Ecological History of India*. Univ. of California Press.
5. Gleeson, B. and Low, N. (eds.) (1999). *Global Ethics and Environment*, London, Routledge.
6. Groom, Martha J., Gary K. Meffe, and Carl Ronald Carroll. (2006). *Principles of Conservation Biology*. Sunderland: Sinauer Associates.
7. McCully, P. (1996). *Rivers no more: the environmental effects of dams* (pp. 29-64). Zed Books.
8. McNeill, John R. (2000). *Something New Under the Sun: An Environmental History of the Twentieth Century*.
9. Nandini, N., Sunitha N., and Sucharita Tandon. (2019). *A text book on Environmental Studies (AECC)*. Sapna Book House, Bengaluru.
10. Odum, E.P., Odum, H.T. and Andrews, J. (1971). *Fundamentals of Ecology*. Philadelphia: Saunders.
11. Pepper, I.L, Gerba, C.P. and Brusseau, M.L. (2011). Env*ironmental and Pollution Science*. Academic Press.
12. Rajit Sengupta and Kiran Pandey. (2021). *State of India's Environment 2021: In Figures*. Centre Science and Environment.
13. Raven, P.H., Hassenzahl, D.M. and Berg, L.R. (2012). *Environment*. 8th Edition. John Wiley & Sons.
14. Rosencranz, A., Divan, S., and Noble, M. L. (2001). *Environmental law and policy in India*.
15. Sengupta, R. (2003). *Ecology and economics: An approach to sustainable development*. OUP.
16. Singh, J.S., Singh, S.P. and Gupta, S.R. (2014). *Ecology, Environmental Science and Conservation*. S. Chand Publishing, New Delhi.
17. Sodhi, N.S., Gibson, L. and Raven, P.H. (Eds). (2013). Cons*ervation Biology: Voices from the Tropics*. John Wiley and Sons.
18. Wilson, E. O. (2006). *The Creation: An appeal to save life on Earth*. New York: Norton.
19. World Commission on Environment and Development. (1987). *Our Common Future*. Oxford University Press.

OFFICE AUTOMATION TOOLS LAB

S.NO	NAME OF EXPERIMENTS
	SECTION A
1	Creating the documents with Special effects like underline, bold, different size, different font and different color.
2	Creating Paragraphs Inserting Date & Time, Pictures, Bullets & Numbering , indentation etc. in MS-Word.
3	Formatting features of MS-Word.-it includes paper-size, margins, header and footer, page no. and creation of table options.(Time Table).
4	Creation of mail merge for sending the new year wish to your class group .
5	Creating Worksheets in Excel, Inserting, Deleting, Copying, Moving worksheets in Excel Usage of formulas, Built-in functions in Excel.(**Monthly income and expenditure statement.**)
6	Graph-Plotting facilities in MS Excel**.(Display student results using excel charts)**
7	Writing conditional expressions (using IF) and Using logical functions (AND, OR, NOT) Using lookup and reference functions **(Arithmetic functions, logical functions, text functions).**
8	Data Validations :Specifying a valid range of values for a cell, Specifying a list of valid values for a cell, Specifying custom validations based on formula for a cell, Sorting and Filtering Data facility in MS Excel**.(Employees of a company)**
9	Creating a presentation in PowerPoint- Inserting / Deleting slides in PowerPoint.
10	Creation of Slide transition and Editing special effects in PowerPoint.
11	Creation of Inserting sound and picture in PowerPoint.

SECTION B

1	Write the procedure to create a personal Letter.(with proper format).
2	Write the procedure to create a resume.(with proper format).
3	Write the procedure to create a letter head of a company.(with proper format).
4	Write the procedure to create a cover page of a project report.(with proper format).
5	Write the procedure to create a macros in word.
6	Create a Visiting Card of your college using page size as follows i)Page width=”3.2” ii)Page height=”2.2” And use different font styles, sizes, alignments
7	Creation of Inserting chart and organization chart in PowerPoint.(Eight salesmen sell three products for a week.)
8	Write the procedure to store the data and calculate total and percentage of the following details for 10 Students.(In Ms Access)
9	Write the procedure to store the data and calculate total and percentage of the following details for 10 Students.Generate marks card.(In Ms Access
10	Create a report containing pay details of employees of a company.(In Ms Access).
11	Creation of slides using SMARTART in PowerPoint.