



**MOOGAMBIGAI CHARITABLE AND EDUCATIONAL TRUST**

# **Rajarajeswari College of Engineering**

(An Autonomous Institution under Visvesvaraya Technological University, Belagavi)

#14, Ramohalli Cross, Kumbalagodu, Mysore Road, Bengaluru-560074



## **Bachelor of Computer Applications**

Scheme and Syllabus of I Semester

(2025 Scheme)

## **VISION**

To empower young minds through technology, research and innovation, to produce technically competent and socially responsible professionals in higher education.

## **MISSION**

1. To deliver excellence in education through innovative teaching, impactful research, and continuous skill development, preparing students to meet global challenges with technical expertise and ethical responsibility.
2. To foster a transformative learning environment that integrates technology, research and practical experience, empowering students to become skilled professionals and socially conscious leaders.
3. To cultivate a culture of lifelong learning and professional excellence by encouraging creativity, research, and community engagement, equipping students with the skills to thrive in a dynamic world.
4. To provide a holistic educational experience that combines advanced technology, hands-on research, and community-focused learning, shaping students into competent, ethical professionals who contribute positively to society.

## **QUALITY POLICY**

Rajarajeswari College of Engineering is committed to imparting quality technical education that nurtures competent, ethical professionals with global relevance. We ensure academic excellence through a dynamic, outcome-based curriculum, experienced faculty, and cutting-edge infrastructure. Continuous improvement is driven by innovation, research and strong industry collaboration. We foster holistic development and a progressive environment that supports lifelong learning, teamwork, and professional growth.

## **CORE VALUES**

Academic Excellence, Integrity, Innovation, Global Competence, Continuous Improvement.

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**MOOGAMBIGAI CHARITABLE AND EDUCATIONAL TRUST**  
**Rajarajeswari College of Engineering**

(An Autonomous Institution under Visvesvaraya Technological University, Belagavi)

**Bachelor of Computer Applications**

Scheme of Teaching and Examinations – 2025

Outcome Based Education (OBE) and Choice Based Credit System (CBCS)

**(Effective from the Academic Year 2025-26)**

**Semester: I**

| S. No                                                                                                                                                                             | Course Category and Course Code |            | Course Title                        | TD/PSB     | Teaching Hours/ Week |                |                     |           | Examination           |            |            |             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|------------|-------------------------------------|------------|----------------------|----------------|---------------------|-----------|-----------------------|------------|------------|-------------|
|                                                                                                                                                                                   |                                 |            |                                     |            | Lecture              | Tutorial / SDA | Practical / Seminar | Credits   | SEE Duration in Hours | CIE Marks  | SEE Marks  | Total Marks |
|                                                                                                                                                                                   |                                 |            |                                     |            | L                    | T/S            | P                   |           |                       |            |            |             |
| 1.                                                                                                                                                                                | PCC                             | B25BCA101  | Problem solving using C Programming | BCA        | 3                    | 0              | 0                   | 3         | 3                     | 50         | 50         | 100         |
| 2.                                                                                                                                                                                | PCC                             | B25BCA102  | Computer Essentials                 | BCA        | 3                    | 0              | 0                   | 3         | 3                     | 50         | 50         | 100         |
| 3.                                                                                                                                                                                | PCC                             | B25BCA103A | Fundamentals of Mathematics         | BCA        | 3                    | 0              | 0                   | 3         | 3                     | 50         | 50         | 100         |
|                                                                                                                                                                                   |                                 | B25BCA103B | Fundamentals of Accountancy         |            |                      |                |                     |           |                       |            |            |             |
| 4.                                                                                                                                                                                | AEC                             | B25BCA104  | Indian Knowledge System(MCQ)        | BCA        | 2                    | 0              | 0                   | 2         | 1                     | 50         | 50         | 100         |
| 5.                                                                                                                                                                                | AEC                             | B25BCA105A | Samskrutika Kannada(MCQ)            | Humanities | 2                    | 0              | 0                   | 2         | 1                     | 50         | 50         | 100         |
|                                                                                                                                                                                   |                                 | B25BCA105B | Balake Kannada(MCQ)                 |            |                      |                |                     |           |                       |            |            |             |
| 6.                                                                                                                                                                                | AEC                             | B25BCA106  | Professional Communication Skills   | Humanities | 2                    | 0              | 0                   | 2         | 1                     | 50         | 50         | 100         |
| 7.                                                                                                                                                                                | PCCL                            | B25BCAL107 | Programming in C Laboratory         | BCA        | 1                    | 0              | 2                   | 2         | 3                     | 50         | 50         | 100         |
| 8.                                                                                                                                                                                | PCCL                            | B25BCAL108 | Essentials of Computer Laboratory   | BCA        | 1                    | 0              | 2                   | 2         | 3                     | 50         | 50         | 100         |
| 9.                                                                                                                                                                                | VAC                             | B25BCA109  | Environmental Studies (MCQ)         | Che/Civil  | 0                    | 2              | 0                   | 1         | 1                     | 50         | 50         | 100         |
| <b>TOTAL</b>                                                                                                                                                                      |                                 |            |                                     |            |                      |                |                     | <b>20</b> |                       | <b>450</b> | <b>450</b> | <b>900</b>  |
| Note: AEC-Ability Enhancement Courses, PCC – Professional Core Courses, PCCL – Professional Core Course Laboratory, VAC – Value Added Courses. SDA- Skill Development Activities. |                                 |            |                                     |            |                      |                |                     |           |                       |            |            |             |

**HoD**

**Dean-Academics**

**Principal**



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**Department of Bachelor of Computer Applications**

| SEMESTER-I                          |   |           |              |   |           |
|-------------------------------------|---|-----------|--------------|---|-----------|
| PROBLEM SOLVING USING C PROGRAMMING |   |           |              |   |           |
| Category: PCC                       |   |           |              |   |           |
| Course Code                         | : | B25BCA101 | CIE          | : | 50 Marks  |
| Teaching Hours L:T:P                | : | 3:0:0     | SEE          | : | 50 Marks  |
| Total Hours                         | : | 45        | Total        | : | 100 Marks |
| Credits                             | : | 3         | SEE Duration | : | 3 Hrs     |

| Course Objectives |                                                                        |
|-------------------|------------------------------------------------------------------------|
| 1.                | To develop skills in solving problem.                                  |
| 2.                | To obtain knowledge about the structure of the programming language C. |
| 3.                | To develop the program writing and logical thinking skill.             |

| Module – 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | No. of Hours |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| <b>Problem Solving techniques:</b> Introduction, Problem solving procedure, Algorithm: Steps involved in algorithm development. Algorithms for simple problems: To find largest of three numbers, factorial of number, check for prime number, check for palindrome, Count no. of odd, even and zeros in list of integers.<br><b>Flowcharts:</b> Definition, advantages, Symbols used in flow charts. Flowcharts for simple problems mentioned in algorithms. Pseudo code.                                                                                                                                                                                                          | 9            |
| Module – 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | No. of Hours |
| <b>Introduction to C:</b> Overview of C Program, Importance of C Program, Basic structure of a C program, Execution of C Program.<br><b>Constants, Variables &amp; Data types:</b> Character set, C token, Keywords & identifiers, Constants, Variables, data types, Declaration of variables, assigning values to variables, defining symbolic constants.<br><b>Operators and Expression:</b> Arithmetic, Relational, logical, assignment, increment & decrement, conditional, bit wise & special operators, evaluation of expressions, Precedence of arithmetic operators, type conversions in expressions, operator precedence & Associativity, built in mathematical functions. | 9            |
| Module – 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | No. of Hours |
| <b>Managing Input and Output operations:</b> Reading & writing a character, formatted input and output.<br><b>Decision Making and Branching:</b> Decision making with if statement, simple if statement, the if else statement, nesting of if ... else statements, the else if ladder, the switch statement, the ?: operator, the goto statement.<br><b>Decision making and looping:</b> The while statement, the do statement, for statement, exit, break, jumps in loops                                                                                                                                                                                                          | 9            |
| Module – 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | No. of Hours |
| <b>Arrays:</b> Declaration, initialization & access of one dimensional & two-dimensional array. Programs using one- and two-dimensional arrays- sorting and searching arrays<br><b>Handling of Strings:</b> Declaring & initializing string variables, reading strings from terminal, writing strings to screen, Arithmetic operations on characters, String Handling functions, table of strings<br><b>User defined functions:</b> Need for user defined functions, Declaring, defining and calling C functions return values & their types<br><b>Categories of functions:</b> With/without arguments, with/without return values. Nesting of functions                            | 9            |
| Module – 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | No. of Hours |
| <b>Structures, union and Pointers:</b> Structure definition, giving values to members, structure initialization, comparison of structure variables, arrays of structures, arrays within structures, Structure and functions, structures within structures. <b>Unions.</b><br><b>Pointers:</b> Understanding pointers, accessing the address of a variable, declaring & initializing pointers, accessing a variable through its pointer, pointer expression, pointer increments & scale factor, passing pointer variables as function arguments.                                                                                                                                     | 9            |



|                                                                                |                                                                                                                      |
|--------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| <b>Course Outcomes:</b> At the end of the course, the students will be able to |                                                                                                                      |
| CO1                                                                            | Describe the C Programming language which includes the structure of a C program, Tokens, Expressions, Operators etc. |
| CO2                                                                            | Demonstrate conditional and iterative statements to write C programs.                                                |
| CO3                                                                            | Construct the C programs that use pointers to access arrays and strings.                                             |
| CO4                                                                            | Illustrate the user defined functions to solve real time problems.                                                   |

|                   |                                                                                                                               |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------|
| <b>Text Books</b> |                                                                                                                               |
| 1.                | Balagurusamy E, 2017, Programming in ANSI C, 7 <sup>th</sup> edition, Tata McGraw –Hill Education Private Limited, New Delhi. |
| 2.                | Computer Fundamentals and Programming in C – ReemaThareja, 2nd Edition, Oxford University, 2017.                              |
| 3.                | Brian W. Kernighan and Dennis M. Ritchie, the ‘C’ Programming Language, Prentice Hall of India                                |
| 4.                | YashavanthKanetkar, Let us C, Authentic Guide to C Programming Language, bpb publisher, 17 <sup>th</sup> Edition, 2020        |

|                             |                                                                                                       |
|-----------------------------|-------------------------------------------------------------------------------------------------------|
| <b>Reference Text Books</b> |                                                                                                       |
| 1.                          | Byron S. Gottfried, 2010. Programming with C, 3rd edition, Tata McGraw – Hill Publications, NewDelhi. |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Web links and Video lectures (e-Resources)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |
| <ul style="list-style-type: none"><li>• <a href="http://people.scs.carleton.ca/~mjhinek/W13/COMP2401/notes/Arrays_and_Pointers.pdf">http://people.scs.carleton.ca/~mjhinek/W13/COMP2401/notes/Arrays_and_Pointers.pdf</a></li><li>• <a href="https://www.tutorialspoint.com/cprogramming/c_functions.htm">https://www.tutorialspoint.com/cprogramming/c_functions.htm</a></li><li>• <a href="http://www.circuitstoday.com/control-structures-in-c-and-cpp">http://www.circuitstoday.com/control-structures-in-c-and-cpp</a></li></ul> |  |

**ASSESSMENT STRUCTURE:**

The assessment in each course is divided equally between Continuous Internal Evaluation (CIE) and the Semester End Examination (SEE), with each carrying 50% weightage. To qualify and become eligible to appear for SEE, in the CIE, a student must score at least 40% of 50 marks, i.e., 20 marks. To pass the SEE, a student must score at least 35% of 50 marks, i.e., 18 marks. Notwithstanding the above, a student is considered to have passed the course, provided the combined total of CIE and SEE is at least 40 out of 100 marks.

**CONTINUOUS INTERNAL EVALUATION (CIE):**

| Component   | Type of Assessment       | Max. Marks | weightage                                               | Total Marks |
|-------------|--------------------------|------------|---------------------------------------------------------|-------------|
| Theory      | Internal Assessment1     | 50         | Average of Best two Assessments,<br>scale down to<br>40 | 50          |
|             | Internal Assessment2     | 50         |                                                         |             |
|             | Internal Assessment3     | 50         |                                                         |             |
| CCA         | Two Assignments          | 20         | 10                                                      |             |
| SEE         | Semester End Examination | 100        | 50                                                      | 50          |
| Grand Total |                          |            |                                                         | 100         |

**SEMESTER END EXAMINATION (SEE):**

1. The Question paper for each course contains two parts, Part – A and Part – B.
2. Part – A consists of **Short Answer Questions** (2 Marks/1 mark) for 20 marks covering the complete syllabus and it is compulsory. Multiple Choice Questions are allowed.
3. Part – B consists of 10 questions, two questions of 16 marks (with max. of 3 sub questions) from each module with internal choice. Students shall answer five full questions, selecting one full question from each module.



**CO-PO Mapping:**

| PO \ CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|
| CO1     | 3   | 3   | 2   | -   | 3   | -   | 1   | -   | 1   | -    | -    |
| CO2     | 3   | 3   | 3   | -   | 2   | -   | 2   | -   | 1   | -    | -    |
| CO3     | 3   | 2   | 2   | -   | 3   | -   | 1   | -   | -   | 2    | -    |
| CO4     | 3   | 3   | 3   | -   | 2   | -   | 2   | -   | 1   | -    | -    |

Level 3 - High, Level 2 - Moderate, Level 1 - Low



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| SEMESTER-I           |   |           |              |   |           |
|----------------------|---|-----------|--------------|---|-----------|
| COMPUTER ESSENTIALS  |   |           |              |   |           |
| Category: PCC        |   |           |              |   |           |
| Course Code          | : | B25BCA102 | CIE          | : | 50 Marks  |
| Teaching Hours L:T:P | : | 3:0:0     | SEE          | : | 50 Marks  |
| Total Hours          | : | 45        | Total        | : | 100 Marks |
| Credits              | : | 3         | SEE Duration | : | 3 Hrs     |

| Course Objectives |                                                                                                                            |
|-------------------|----------------------------------------------------------------------------------------------------------------------------|
| 1.                | To provide foundational knowledge of computer systems, including their history, architecture, and essential operations.    |
| 2.                | To equip students with practical skills in operating systems, networking, office applications, and file system management. |

| Module – 1                                                                                                                                                                                                                                                                                                    | No. of Hours |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| <b>Introduction to computers:</b> History of Computing, Data Storage: Bits and Their Storage, Main Memory, Mass Storage, Representing Information as Bit Patterns, The Binary System.<br><b>Data Manipulation:</b> Computer Architecture, Machine Language, Program Execution Arithmetic/Logic Instructions.  | 9            |
| Module – 2                                                                                                                                                                                                                                                                                                    | No. of Hours |
| <b>Operating System Fundamentals:</b> The History of Operating Systems, Operating System Architecture, Types of Operating System, Coordinating the Machine's Activities, Handling Competition Among Processes, Security.                                                                                      | 9            |
| Module – 3                                                                                                                                                                                                                                                                                                    | No. of Hours |
| <b>Data Communications &amp; Computer Networks:</b> Components, Data Representation, Data Flow, Network Criteria, Physical Structures, network types, internet history.                                                                                                                                       | 9            |
| Module – 4                                                                                                                                                                                                                                                                                                    | No. of Hours |
| <b>Office Tools:</b> Using office tools, Creating, Saving, Closing, and Opening Office Files, Working with Files, Using the Ribbon, Tabs, and Quick Access Toolbar, Using Context Menus, the Mini Toolbar, and Keyboard Shortcuts, Organizing and Customizing Folders and Files. <b>Usage of office tools</b> | 9            |
| Module – 5                                                                                                                                                                                                                                                                                                    | No. of Hours |
| <b>File-System Interface:</b> File Concept, Access Methods, Directory and Disk Structure, File System Mounting, File Sharing, Protection, File-System Structure, File-System Implementation, Directory Implementation, Allocation Methods, Free-Space Management, Efficiency and Performance, Recovery.       | 9            |

| Course Outcomes: At the end of the course, the students will be able to |                                                                                                                               |
|-------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| CO1                                                                     | Understand basic computer concepts including history, data storage, and data manipulation techniques.                         |
| CO2                                                                     | Learn the fundamentals of operating systems and their role in managing computer resources and security.                       |
| CO3                                                                     | Gain knowledge of data communication principles and computer networking basics.                                               |
| CO4                                                                     | Develop proficiency in using office tools for document creation, data management, and presentation.                           |
| CO5                                                                     | Explore the structure and management of file systems including file operations, directory structures, and storage management. |

| Text Books |                                                                                                              |
|------------|--------------------------------------------------------------------------------------------------------------|
| 1.         | J. Glenn Brookshear, "Computer Science: An Overview", Addison-Wesley, 12 <sup>th</sup> Edition, 2014         |
| 2.         | Silberschatz A, Gagne G, Galvin PB. Operating system concepts. 9 <sup>th</sup> Edition, Wiley; 2012.         |
| 3.         | Cobbaut P. Linux Fundamentals. Samurai Media Limited; 2016.                                                  |
| 4.         | Silberschatz A, Korth HF, Sudarshan S. Database system concepts. 6 <sup>th</sup> Edition, McGraw Hill; 2010. |

| Reference Text Books |                                                                                                                                                                                               |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.                   | Microsoft Office 365: In Practice, 2019 Edition, 1 <sup>st</sup> Edition ISBN10: 1260079902   ISBN13: 9781260079906, By Randy Nordell, Kathleen Stewart, Annette Easton and Pat Graves © 2020 |

**ASSESSMENT STRUCTURE:**

The assessment in each course is divided equally between Continuous Internal Evaluation (CIE) and the Semester End Examination (SEE), with each carrying 50% weightage. To qualify and become eligible to appear for SEE, in the CIE, a student must score at least 40% of 50 marks, i.e., 20 marks. To pass the SEE, a student must score at least 35% of 50 marks, i.e., 18 marks. Notwithstanding the above, a student is considered to have passed the course, provided the combined total of CIE and SEE is at least 40 out of 100 marks.

**CONTINUOUS INTERNAL EVALUATION (CIE):**

| Component   | Type of Assessment       | Max. Marks | weightage                                               | Total Marks |
|-------------|--------------------------|------------|---------------------------------------------------------|-------------|
| Theory      | Internal Assessment1     | 50         | Average of Best two Assessments,<br>scale down to<br>40 | 50          |
|             | Internal Assessment2     | 50         |                                                         |             |
|             | Internal Assessment3     | 50         |                                                         |             |
| CCA         | Two Assignments          | 20         | 10                                                      |             |
| SEE         | Semester End Examination | 100        | 50                                                      | 50          |
| Grand Total |                          |            |                                                         | 100         |

**SEMESTER END EXAMINATION (SEE):**

1. The Question paper for each course contains two parts, Part – A and Part – B.
2. Part – A consists of **Short Answer Questions** (2 Marks/1 mark) for 20 marks covering the complete syllabus and it is compulsory. Multiple Choice Questions are allowed.
3. Part – B consists of 10 questions, two questions of 16 marks (with max. of 3 sub questions) from each module with internal choice. Students shall answer five full questions, selecting one full question from each module.

**CO-PO Mapping:**

| PO \ CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|
| CO1     | 1   | 2   | 1   | 2   | -   | 2   | -   | -   | -   | -    | -    |
| CO2     | 1   | 3   | 1   | 1   | -   | -   | -   | -   | -   | -    | -    |
| CO3     | 2   | 2   | 2   | 2   | 1   | -   | -   | 2   | -   | -    | -    |
| CO4     | 3   | 1   | 2   | 2   | 2   | -   | 2   | 2   | -   | -    | -    |
| CO5     | 2   | 2   | 2   | 2   | 1   | 2   | -   | -   | -   | -    | -    |

Level 3 - High, Level 2 - Moderate, Level 1 - Low



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| <b>SEMESTER-I</b>                  |   |            |              |   |           |
|------------------------------------|---|------------|--------------|---|-----------|
| <b>FUNDAMENTALS OF MATHEMATICS</b> |   |            |              |   |           |
| <b>Category: PCC</b>               |   |            |              |   |           |
| Course Code                        | : | B25BCA103A | CIE          | : | 50 Marks  |
| Teaching Hours L:T:P               | : | 3:0:0      | SEE          | : | 50 Marks  |
| Total Hours                        | : | 45         | Total        | : | 100 Marks |
| Credits                            | : | 3          | SEE Duration | : | 3 Hrs     |

| <b>Course Objectives</b> |                                                                                                                                                        |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.                       | The Curriculum supports the prerequisites to enhance their Mathematical knowledge towards understanding mathematical Concepts in the concerned fields. |
| 2.                       | Enhance problem-solving skills using mathematical models and algorithms.                                                                               |
| 3.                       | Develop logical reasoning and analytical thinking.                                                                                                     |
| 4.                       | Understand the mathematical foundations of computer science, including discrete mathematics and graph theory.                                          |
| 5.                       | Apply mathematical concepts to computer science problems, such as algorithm design and analysis.                                                       |

| <b>Module – 1</b>                                                                                                                                                                                                                | <b>No. of Hours</b> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| <b>Introduction to Number System:</b> Overview of number systems: Binary numbers, Number based conversion, Octal and hexadecimal numbers, Complements.                                                                           | 9                   |
| <b>Module – 2</b>                                                                                                                                                                                                                | <b>No. of Hours</b> |
| <b>Propositional Logics:</b> Mathematical logic introduction-statements Connectives-negation, conjunction, disjunction- statement formulas and truth tables- conditional and bi Conditional statements- tautology contradiction. | 9                   |
| <b>Module – 3</b>                                                                                                                                                                                                                | <b>No. of Hours</b> |
| <b>Set Theory:</b> Operations on sets, power set, Venn diagram, Cartesian product, relations, functions- types of functions - composition of functions.                                                                          | 9                   |
| <b>Module – 4</b>                                                                                                                                                                                                                | <b>No. of Hours</b> |
| <b>Matrix algebra:</b> Introduction, Types of matrices-matrix operations, transpose of a matrix, determinant of matrix, inverse of a matrix, Cramer's rule.                                                                      | 9                   |
| <b>Module – 5</b>                                                                                                                                                                                                                | <b>No. of Hours</b> |
| <b>Differential calculus:</b> Functions and limits - Simple Differentiation of Algebraic Functions – Evaluation of First and Second Order Derivatives – Maxima and Minima.                                                       | 9                   |

| <b>Course Outcomes:</b> At the end of the course, the students will be able to |                                                                                 |
|--------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| CO1                                                                            | Understand and convert between binary, octal, and hexadecimal number systems.   |
| CO2                                                                            | Apply propositional logic to create and interpret truth tables.                 |
| CO3                                                                            | Perform operations on sets and analyze functions using Venn diagrams.           |
| CO4                                                                            | Conduct matrix operations and solve linear equations using matrices.            |
| CO5                                                                            | Differentiate algebraic functions and apply calculus to find maxima and minima. |

| <b>Text Books</b> |                                                                                                                      |
|-------------------|----------------------------------------------------------------------------------------------------------------------|
| 1.                | Digital Logic and Computer Design, M. MORRIS MANO Professor of Engineering California State University, Los Angeles. |
| 2.                | Discrete mathematics and its applications / Kenneth H. Rosen, Monmouth University (And formerly AT&T Laboratories).  |

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**CONTINUOUS INTERNAL EVALUATION (CIE):**

| Component   | Type of Assessment       | Max. Marks | weightage                                               | Total Marks |
|-------------|--------------------------|------------|---------------------------------------------------------|-------------|
| Theory      | Internal Assessment1     | 50         | Average of Best two Assessments,<br>scale down to<br>40 | 50          |
|             | Internal Assessment2     | 50         |                                                         |             |
|             | Internal Assessment3     | 50         |                                                         |             |
| CCA         | Two Assignments          | 20         | 10                                                      |             |
| SEE         | Semester End Examination | 100        | 50                                                      | 50          |
| Grand Total |                          |            |                                                         | 100         |

**SEMESTER END EXAMINATION (SEE):**

1. The Question paper for each course contains two parts, Part – A and Part – B.
2. Part – A consists of **Short Answer Questions** (2 Marks/1 mark) for 20 marks covering the complete syllabus and it is compulsory. Multiple Choice Questions are allowed.
3. Part – B consists of 10 questions, two questions of 16 marks (with max. of 3 sub questions) from each module with internal choice. Students shall answer five full questions, selecting one full question from each module.

**CO-PO Mapping:**

| PO \ CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|
| CO1     | 1   | 1   | 1   | 2   | 1   | 2   | 1   | 1   | 1   | -    | -    |
| CO2     | 2   | 2   | 2   | 1   | 1   | 3   | 1   | 1   | 1   | -    | -    |
| CO3     | 1   | 1   | 1   | 1   | 2   | 3   | 1   | 2   | -   | -    | -    |
| CO4     | 1   | 2   | 2   | 2   | 1   | 3   | -   | -   | -   | -    | -    |
| CO5     | 2   | 2   | 2   | 1   | 2   | 1   | -   | 1   | 1   | 1    | -    |

Level 3 - High, Level 2 - Moderate, Level 1 - Low



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| <b>SEMESTER-I</b>                  |   |            |              |   |           |
|------------------------------------|---|------------|--------------|---|-----------|
| <b>FUNDAMENTALS OF ACCOUNTANCY</b> |   |            |              |   |           |
| <b>Category: PCC</b>               |   |            |              |   |           |
| Course Code                        | : | B25BCA103B | CIE          | : | 50 Marks  |
| Teaching Hours L:T:P               | : | 3:0:0      | SEE          | : | 50 Marks  |
| Total Hours                        | : | 45         | Total        | : | 100 Marks |
| Credits                            | : | 3          | SEE Duration | : | 3 Hrs     |

| <b>Course Objectives</b> |                                                                                                                                                                                                                                 |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.                       | Understand Core Accounting Concepts: Equip students with foundational knowledge of accounting principles, processes, and standards, enabling them to accurately record and report financial transactions.                       |
| 2.                       | Apply Practical Accounting Skills: Develop students' ability to manage various accounting tasks, such as journalizing, ledger posting, and bank reconciliation, ensuring they can effectively handle real-world financial data. |

| <b>Module – 1</b>                                                                                                                                                                                                                                                                                                                                                        | <b>No. of Hours</b> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| <b>Meaning and Scope of Accounting:</b> History and Development of Accounting, Meaning, Objectives and functions of Accounting, Book keeping V/s Accounting, Users of accounting data, systems of book keeping and accounting, branches of accounting, advantages and limitations of accounting.                                                                         | 9                   |
| <b>Module – 2</b>                                                                                                                                                                                                                                                                                                                                                        | <b>No. of Hours</b> |
| <b>Accounting Principles:</b> Meaning of accounting principles, accounting concepts, account conventions, accounting principles and the institute of chartered accounts of India, Statements of accounting standards.                                                                                                                                                    | 9                   |
| <b>Module – 3</b>                                                                                                                                                                                                                                                                                                                                                        | <b>No. of Hours</b> |
| <b>Financial Accounting Process:</b> Journalizing transactions: Journals, Rules of Debit and Credit, Compound Journal Entry, Opening Entry. Ledger posting and trial balance: Ledger, Posting, Relationship between journal and ledger, Rules regarding posting, Trial Balance.                                                                                          | 9                   |
| <b>Module – 4</b>                                                                                                                                                                                                                                                                                                                                                        | <b>No. of Hours</b> |
| <b>Sub-division of journals:</b> Cash Journal, Petty Cash Book, Purchase Journal, Sales Journal, Sales Return Journal.<br><b>Negotiable Instruments:</b> Promissory Note, Specimen of Promissory note, Bill of Exchange, Cheque, Some Important Terms, Accounting Entries, Billes sent for collection, Accommodation Bills, Bills receivable and payable books.          | 9                   |
| <b>Module – 5</b>                                                                                                                                                                                                                                                                                                                                                        | <b>No. of Hours</b> |
| <b>Bank Reconciliation Statement:</b> Advantages of keeping a bank account, causes of difference, Meaning and Objectives of bank reconciliation statement, Importance of bank reconciliation statement, Technique of preparing bank reconciliation statement, where cash book balance has to be adjusted, Where the abstract from the Cash Book and Pass Book are given. | 9                   |

| <b>Course Outcomes:</b> At the end of the course, the students will be able to |                                                                                                   |
|--------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| CO1                                                                            | Explain the key functions of accounting and differentiate between bookkeeping and accounting.     |
| CO2                                                                            | Describe core accounting principles and apply relevant accounting standards.                      |
| CO3                                                                            | Record transactions in journals and post them to ledgers accurately.                              |
| CO4                                                                            | Manage different types of journals and understand the accounting of negotiable instruments.       |
| CO5                                                                            | Prepare a bank reconciliation statement and identify discrepancies between bank and cash records. |

| <b>Text Books</b> |                                                                                                                                             |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| 1.                | Dr S N Maheshwari, CA Sharad K Maheshwari&DrSuneel K Maheshwari, An Introduction to Accountancy, 12 <sup>th</sup> edition Vikas Publishing. |

| <b>Reference Text Books</b> |                                                                                                                                    |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| 1.                          | Fundamentals of Financial Accounting" by Ashok Banerjee Publisher: Excel Books                                                     |
| 2.                          | Accounting for Management: Text and Cases, 3 <sup>rd</sup> edition, S K Bhattacharyya, John Dearden& S Venkatesh, Vikas Publishing |



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**ASSESSMENT STRUCTURE:**

The assessment in each course is divided equally between Continuous Internal Evaluation (CIE) and the Semester End Examination (SEE), with each carrying 50% weightage. To qualify and become eligible to appear for SEE, in the CIE, a student must score at least 40% of 50 marks, i.e., 20 marks. To pass the SEE, a student must score at least 35% of 50 marks, i.e., 18 marks. Notwithstanding the above, a student is considered to have passed the course, provided the combined total of CIE and SEE is at least 40 out of 100 marks.

**CONTINUOUS INTERNAL EVALUATION (CIE):**

| Component   | Type of Assessment       | Max. Marks | weightage                                               | Total Marks |
|-------------|--------------------------|------------|---------------------------------------------------------|-------------|
| Theory      | Internal Assessment1     | 50         | Average of Best two Assessments,<br>scale down to<br>40 | 50          |
|             | Internal Assessment2     | 50         |                                                         |             |
|             | Internal Assessment3     | 50         |                                                         |             |
| CCA         | Two Assignments          | 20         | 10                                                      |             |
| SEE         | Semester End Examination | 100        | 50                                                      | 50          |
| Grand Total |                          |            |                                                         | 100         |

**SEMESTER END EXAMINATION (SEE):**

1. The Question paper for each course contains two parts, Part – A and Part – B.
2. Part – A consists of **Short Answer Questions** (2 Marks/1 mark) for 20 marks covering the complete syllabus and it is compulsory. Multiple Choice Questions are allowed.
3. Part – B consists of 10 questions, two questions of 16 marks (with max. of 3 sub questions) from each module with internal choice. Students shall answer five full questions, selecting one full question from each module.

**CO-PO Mapping:**

| PO \ CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|
| CO1     | 1   | 1   | 1   | 2   | 1   | 3   | 1   | 1   | -   | -    | -    |
| CO2     | 2   | 2   | 2   | 3   | 1   | 1   | 1   | 1   | -   | -    | -    |
| CO3     | 3   | 1   | 1   | 2   | 2   | 1   | 1   | -   | -   | -    | -    |
| CO4     | 1   | 2   | 1   | 3   | 1   | 2   | -   | -   | -   | -    | -    |
| CO5     | 2   | 2   | 3   | 1   | 3   | 1   | 2   | 1   | -   | -    | -    |

Level 3 - High, Level 2 - Moderate, Level 1 - Low



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| SEMESTER-I              |   |           |              |   |           |
|-------------------------|---|-----------|--------------|---|-----------|
| INDIAN KNOWLEDGE SYSTEM |   |           |              |   |           |
| Category: AEC           |   |           |              |   |           |
| Course Code             | : | B25BCA104 | CIE          | : | 50 Marks  |
| Teaching Hours L:T:P    | : | 2:0:0     | SEE          | : | 50 Marks  |
| Total Hours             | : | 30        | Total        | : | 100 Marks |
| Credits                 | : | 2         | SEE Duration | : | 1 Hr      |

| Course Objectives |                                                                                                                                                       |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.                | To facilitate the students with the concepts of Indian traditional knowledge and to make them understand the Importance of roots of knowledge system. |
| 2.                | To make the students understand the traditional knowledge and analyze it and apply it to their day-to-day life.                                       |

| Module – 1                                                                                                                                                                                                                                   | No. of Hours |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| <b>Introduction to Indian Knowledge Systems (IKS):</b> Overview, Vedic Corpus, Philosophy, Character scope and importance, traditional knowledge vis-a-vis indigenous knowledge, traditional knowledge vs. western knowledge.                | 10           |
| Module – 2                                                                                                                                                                                                                                   | No. of Hours |
| <b>Traditional Knowledge in Humanities and Sciences:</b> Linguistics, Number and measurements Mathematics, Chemistry, Physics, Art, Astronomy, Astrology, Crafts and Trade in India and Engineering and Technology                           | 10           |
| Module – 3                                                                                                                                                                                                                                   | No. of Hours |
| <b>Traditional Knowledge in Professional domain:</b> Town planning and architecture Construction, Health, wellness and Psychology-Medicine, Agriculture, Governance and public administration, United Nations Sustainable development goals. | 10           |

| Course Outcomes: At the end of the course, the students will be able to |                                                                                       |
|-------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| CO1                                                                     | Provide an overview of the concept of the Indian Knowledge System and its importance. |
| CO2                                                                     | Appreciate the need and importance of protecting traditional knowledge.               |
| CO3                                                                     | Recognize the relevance of Traditional knowledge in different domains.                |
| CO4                                                                     | Establish the significance of Indian Knowledge systems in the contemporary world.     |

| Text Books |                                                                                                                                                                               |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.         | Introduction to Indian Knowledge System- concepts and applications, B Mahadevan, VinayakRajatBhat, NagendraPavana R N, 2022, PHI Learning Private Ltd, ISBN-978-93-91818-21-0 |
| 2.         | Traditional Knowledge System in India, AmitJha, 2009, Atlantic Publishers and Distributors (P) Ltd., ISBN-13: 978-8126912230                                                  |
| 3.         | Knowledge Traditions and Practices of India, KapilKapoor, Avadesh Kumar Singh, Vol1, 2005, DK Print World (P) Ltd., ISBN 81-246-0334                                          |

| Web links and Video lectures (e-Resources) |                                                                                                                                                                                                                                                                                                 |
|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| •                                          | <a href="https://www.youtube.com/watch?v=LZP1StpYEPm">https://www.youtube.com/watch?v=LZP1StpYEPm</a>                                                                                                                                                                                           |
| •                                          | <a href="http://nptel.ac.in/courses/121106003/">http://nptel.ac.in/courses/121106003/</a>                                                                                                                                                                                                       |
| •                                          | <a href="https://unctad.org/system/files/official-document/ditcted10_en.pdf">https://unctad.org/system/files/official-document/ditcted10_en.pdf</a>                                                                                                                                             |
| •                                          | <a href="http://nbaindia.org/uploaded/docs/traditionalknowledge_190707.pdf">http://nbaindia.org/uploaded/docs/traditionalknowledge_190707.pdf</a>                                                                                                                                               |
| •                                          | <a href="https://unfoundation.org/what-we-do/issues/sustainable-developmentgoals/?gclid=EAIaIQobChMIInp-Jtb_p8gIVTeN3Ch27LAmPEAAAYASAAEgIm1vD_BwE">https://unfoundation.org/what-we-do/issues/sustainable-developmentgoals/?gclid=EAIaIQobChMIInp-Jtb_p8gIVTeN3Ch27LAmPEAAAYASAAEgIm1vD_BwE</a> |

**ASSESSMENT STRUCTURE:**

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 40% of the maximum marks (20 marks out of 50). The minimum passing mark for the SEE is 35% of the maximum marks (18 marks out of 50). A student shall secure a minimum of 40% (40 marks out of 100) in the total of CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

**CONTINUOUS INTERNAL EVALUATION (CIE):**

| Component   | Type of Assessment          | Max. Marks | weightage                                         | Total Marks |
|-------------|-----------------------------|------------|---------------------------------------------------|-------------|
| Theory      | Internal Assessment1 (MCQs) | 50         | Average of Best two Assessments, scale down to 40 | 50          |
|             | Internal Assessment2 (MCQs) | 50         |                                                   |             |
|             | Internal Assessment3 (MCQs) | 50         |                                                   |             |
| C C A       | Two Assignments             | 20         | 10                                                |             |
| SEE         | Semester End Examination    | 100        | 50                                                | 50          |
| Grand Total |                             |            |                                                   | 100         |

**SEMESTER END EXAMINATION (SEE):**

SEE paper shall be set for 50 questions, each question carries 01 mark. The pattern of the question paper is MCQ (Multiple Choice Questions). The time allotted for SEE is 01 hour.

**CO-PO Mapping:**

| PO \ CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|
| CO1     | 2   | 1   | 1   | 2   | 3   | 2   | 1   | -   | -   | -    | 1    |
| CO2     | 3   | 3   | 3   | 1   | 1   | 3   | 1   | 2   | -   | -    | 1    |
| CO3     | 2   | 2   | 2   | 2   | 1   | 3   | 1   | -   | -   | -    | 1    |
| CO4     | 1   | 3   | 3   | 2   | 3   | 1   | -   | 1   | -   | -    | 1    |

Level 3 - High, Level 2 - Moderate, Level 1 - Low



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| SEMESTER-I           |   |            |              |   |           |
|----------------------|---|------------|--------------|---|-----------|
| SAMSKRUTIKA KANNADA  |   |            |              |   |           |
| Category: AEC        |   |            |              |   |           |
| Course Code          | : | B25BCA105A | CIE          | : | 50 Marks  |
| Teaching Hours L:T:P | : | 2:0:0      | SEE          | : | 50 Marks  |
| Total Hours          | : | 30         | Total        | : | 100 Marks |
| Credits              | : | 2          | SEE Duration | : | 1 Hr      |

| Course Objectives |                                                                            |
|-------------------|----------------------------------------------------------------------------|
| 1.                | ಪದವಿವಿದ್ಯಾರ್ಥಿಗಳಾಗಿರುವುದರಂದಕನ್ನಡಭಾಷೆ, ಸಹಿತಾಮತ್ತುಸಂಸ್ಕೃತಿಯಪರಚಯಮಾಡಿಕೊಡುವುದು. |
| 2.                | ಕನ್ನಡಸಹಿತಾದಪರಧಾನ್ಯಾಗವಾದಆಧುನಿಕಪೂವಿಮತ್ತುಆಧುನಿಕಕ್ಷವಾಗಳನ್ನನಪರಚಯಿಸುವುದು.        |
| 3.                | ವಿದ್ಯಾರ್ಥಿಗಳಲಿಲಸಹಿತಾಮತ್ತುಸಂಸ್ಕೃತಿಯಬಗ್ಗೆಲರವುಹಾಗೂಆಸ್ತುಯನ್ನನಮೂಡಿಸುವುದು.       |
| 4.                | ತಾಂತಿರಕವಾಕ್ಯಗಳಪರಚಯವನ್ನನಹಾಗೂಅವರುಗಳಸಧಿಸಿದವಿಷಯಗಳನ್ನನಪರಚಯಿಸುವುದು.              |
| 5.                | ಸಾಂಸ್ಕೃತಿಕ, ಜನ್ಮದಹಾಗೂಪರವಾಸ್ಥಥನ್ನಗಳಪರಚಯಮಾಡಿಕೊಡುವುದು.                        |

| Module – 1: ಕನ್ನಡಸಂಸ್ಕೃತಿಮತ್ತುಭಾಷೆಕುರತದಲೇಖನಗಳ                                                                                                                                                                                             | No. of Hours |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| 1. ಕನಾಟ್ಕಸಂಸ್ಕೃತಿ - ಹಂಪನಾಗರಾಜಯಾ<br>2. ಕನಾಟ್ಕದಏಕೋಕರಣ: ಒಂದುಅಪೂವಿಚರತ್ರರ - ಜಿ. ವಾಂಕಟ್ಟುಬಬಯಾ<br>3. ಆಡಳಿತಭಾಷೆಯಾಗಿರನ್ನಡ - ಡಾ. ಎಲ್. ತಿಮ್ಮೋಶಮತ್ತುಪ್ರೋ. ವಿ. ಕೇಶವಮೂರ್ತಿ                                                                              | 6            |
| Module – 2: ಆಧುನಿಕಪೂವಿದಕ್ಷವಾಭಾಗ                                                                                                                                                                                                           | No. of Hours |
| 1. ವಚನಗಳು :ಬಸ್ವಣ, ಅಕಕಮಹಾದೇವಿ, ಅಲ್ಲಮಪರಭು, ಆಯದತ್ತಕಮಾರಯಾ , ಜೇಡರದ್ಯಸಿಮಯಾ ,<br>ಆಯದತ್ತಕಲ್ಯಕಮಮ<br>2. ಕೋತಿನೆಗಳು : ಅದರಾಂದೇನ್ನಫಲ್ಇದರಾಂದೇನ್ನಫಲ್ – ಪುರಂದರದ್ಯಸ್ತುತಲ್ಲಣಿಸ್ಥಿರುಕಂಡಾತಳುಮನ್ನೇ - ಕನ್ನದ್ಯಸ್ತು<br>3. ತತವಪದಗಳು : ಸವಿರಕೊಡಗಳಸುಟ್ಟಟ - ಶಿಶುನಾಳಶರೋಫ | 6            |
| Module – 3: ಆಧುನಿಕಕ್ಷವಾಭಾಗ                                                                                                                                                                                                                | No. of Hours |
| 1. ಡಿವಿಚಿರವರಮಂಕುತಿಮಮನ್ನಗದಿಂದಅಯದಕ್ಕಲ್ಪಭಾಗಗಳು<br>2. ಕುರುಡುಕ್ಷಾಂಚಾಣ :ದ್ಯ.ರಾ. ಬಾಂದ್ರ<br>3. ಹೊನ್ನೆಳ್ಳಿನೋತ್ರ : ಕುವಾಂಪು<br>4. ಮಬ್ಬಬನಿಂದಮಬ್ಬಬಗೆ : ಜಿಎಸ್ಸಿವರುದರಪಪ<br>5. ಚೋಮನ್ನಕಕಳಹಾಡು : ಸಿದದಲಿಂಗಯಾ                                                 | 6            |
| Module – 4: ತಾಂತಿರಕವಾಕ್ಯಗಳಪರಚಯ                                                                                                                                                                                                            | No. of Hours |
| 1. ಡಾ. ಸ್ಕ. ಎಂ. ವಿಶ್ವೋಶವರಯಾ :ವಾಕ್ಯಮತ್ತುಐತಿಹಾ - ಎ. ಎನ್. ಮೂರ್ತಿರಾವ್<br>2. ಕರಕುಶಲ್ಪಲೆಗಳುಮತ್ತುಪರಂಪರೆಯವಿಜ್ಞಾನ್ : ಕರೋಗೌಡಬೋಚನ್ನಿ                                                                                                                 | 6            |
| Module – 5: ಸಾಂಸ್ಕೃತಿಕ, ಜನ್ಮದಕಥೆಮತ್ತುಪರವಾಸ್ಥಥನ್                                                                                                                                                                                           | No. of Hours |
| 1. ಯುಗಾದಿ : ವಸುಧಾಂದರ<br>2. ಮ್ಲಾನೆವಾಂಬಗಿರಜನ್ನವಿತ : ಹಿ.ಚಿ. ಬೋರಲಿಂಗಯಾ                                                                                                                                                                        | 6            |



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|                                                                                |                                                                                                                   |
|--------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Course Outcomes:</b> At the end of the course, the students will be able to |                                                                                                                   |
| CO1                                                                            | ಕನ್ನಡಭಾಷೆ, ಸಹಿತಾಮತ್ತುಕನ್ನಡದಸಂಸ್ಕೃತಿಯಕುರತ್ತಲರವುಮೂಡಿರುತ್ತದೆ.                                                        |
| CO2                                                                            | ಕನ್ನಡಸಹಿತಾದಲಭನಿಕಪೂವಿಮತ್ತುಲಭನಿಕಕ್ಷವಾಗಳನ್ನನಸಾಂಕೇತಿಕವಾಗಿಕಲಿತಹರ್ಚಿನ್‌ಡಿಗಿ<br>ಮತ್ತುಜ್ಞಾನ್ಯ ಕನ್ನಡಪತ್ರಿಮೂಡುತ್ತದೆ.        |
| CO3                                                                            | ವಿದ್ಯಾರ್ಥಿಗಳಲಿಲಸಹಿತಾಮತ್ತುಸಂಸ್ಕೃತಿಯಬಗ್ಗೆಲರವುಹಾಗೂಲಸ್ತುಯನ್ನನಹೆಚ್ಚುಗುರುತು.                                            |
| CO4                                                                            | ತಾಂತ್ರಿಕವಾಕ್ಯಗಳಪರಚಯಹಾಗೂಲವರುಗಳಸಧಿಸಿದವಿಷಯಗಳನ್ನನತಿಳಿದುಕೊಂಡುನಾಡಿನಿನ್ನತರ<br>ವಾಕ್ಯಗಳಬಗ್ಗೆತಿಳಿದುಕೊಳ್ಳಲುಕೌತ್ಸರತೃಪ್ತಗುರುತು |
| CO5                                                                            | ಸಾಂಸ್ಕೃತಿಕ, ಜನ್ಮದಹಾಗೂಪರವಾಸ್ಥಥನ್ನಳಪರಚಯಮಾಡಿಕೊಡುವುದು                                                                 |

|                   |                                                                                                                             |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------|
| <b>Text Books</b> |                                                                                                                             |
| 1.                | ಪರ್ವಾಪುಸ್ತಕ :ಸಾಂಸ್ಕೃತಿಕಕನ್ನಡದಾ. ಹಿ.ಚ.ಬೋರಲಿಂಗಯಾಮತ್ತುದಾ. ಎಲ್. ತಿಮ್ಮೋಶ, ಪರಸರಾಂಗಿ,<br>ವಿಶ್ವೇಶವರಯಾತಾಂತ್ರಿಕವಿಶವವಿದ್ಯಾಲಯ, ಬೆಳಗಾವಿ. |
| 2.                | ವಿಶೇಷಪಠನ :<br>1. ಮೇಲಿನಪರ್ವಾಕರಮಕ್ಕಕನೋಮಿತವಾಗಿಲಾಂತಿಮಪರೋಕ್ಷಾಯಪರಶ್ವಪತಿರಕ್ಕಿರುತ್ತದೆ.                                              |

**ASSESSMENT STRUCTURE:**

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 40% of the maximum marks (20 marks out of 50). The minimum passing mark for the SEE is 35% of the maximum marks (18 marks out of 50). A student shall secure a minimum of 40% (40 marks out of 100) in the total of CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

**CONTINUOUS INTERNAL EVALUATION (CIE):**

| Component   | Type of Assessment          | Max. Marks | weightage                                               | Total Marks |
|-------------|-----------------------------|------------|---------------------------------------------------------|-------------|
| Theory      | Internal Assessment1 (MCQs) | 50         | Average of Best two<br>Assessments, scale down to<br>40 | 50          |
|             | Internal Assessment2 (MCQs) | 50         |                                                         |             |
|             | Internal Assessment3 (MCQs) | 50         |                                                         |             |
| C C A       | Two Assignments             | 20         | 10                                                      |             |
| SEE         | Semester End Examination    | 100        | 50                                                      | 50          |
| Grand Total |                             |            |                                                         | 100         |

**SEMESTER END EXAMINATION (SEE):**

SEE paper shall be set for 50 questions, each question carries 01 mark. The pattern of the question paper is MCQ (Multiple Choice Questions). The time allotted for SEE is 01 hour.

**CO-PO Mapping:**

| PO \ CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|
| CO1     | 2   | 1   | 1   | 2   | 1   | 2   | 1   | -   | -   | -    | -    |
| CO2     | 1   | 3   | 1   | 1   | 1   | 1   | 1   | 2   | -   | -    | -    |
| CO3     | 2   | 2   | 2   | 2   | 1   | 1   | 1   | -   | -   | -    | -    |
| CO4     | 1   | 3   | 1   | 1   | 1   | 1   | -   | 1   | -   | -    | -    |
| CO5     | 2   | 1   | 2   | 2   | 2   | 2   | -   | -   | 1   | 1    | -    |

Level 3 - High, Level 2 - Moderate, Level 1 - Low



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| SEMESTER-I           |   |            |              |   |           |
|----------------------|---|------------|--------------|---|-----------|
| BALAKE KANNADA       |   |            |              |   |           |
| Category: AEC        |   |            |              |   |           |
| Course Code          | : | B25BCA105B | CIE          | : | 50 Marks  |
| Teaching Hours L:T:P | : | 2:0:0      | SEE          | : | 50 Marks  |
| Total Hours          | : | 30         | Total        | : | 100 Marks |
| Credits              | : | 2          | SEE Duration | : | 1 Hr      |

| Course Objectives |                                                                                                              |
|-------------------|--------------------------------------------------------------------------------------------------------------|
| 1.                | To Create the awareness regarding the necessity of learning local language for comfortable and healthy life. |
| 2.                | To enable learners to Listen and understand the Kannada language properly.                                   |
| 3.                | To speak, read and write Kannada language as per requirement.                                                |
| 4.                | To train the learners for correct and polite conversation.                                                   |
| 5.                | To know about Karnataka state and its language, literature and General information about this state.         |

| Module – 1                                                                                                                                                                                                                                                                                                                                                                            | No. of Hours |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| 1. Introduction, Necessity of learning a local language. Methods to learn the Kannada language.<br>2. Easy learning of a Kannada Language: A few tips. Hints for correct and polite conversation, Listening and Speaking Activities, Key to Transcription<br>3. ವೈಯಕ್ತಿಕ, ಸಾಮ್ಯಸೂಚಕ/ಸಂಬಂಧಿತಸಾರ್ವನಾಮಗಳುಮತ್ತುಪ್ರಶ್ನಾರ್ಥಕಪದಗಳು- Personal Pronouns, Possessive Forms, Interrogative words | 6            |
| Module – 2                                                                                                                                                                                                                                                                                                                                                                            | No. of Hours |
| 1. ನಾಮಪದಗಳಸಂಬಂಧಾರ್ಕರೂಪಗಳು, ಸಂದೇಹಾಸ್ಪದಪ್ರಶ್ನೆಗಳುಮತ್ತಸಂಬಂಧವಾಚಕ ನಾಮಪದಗಳು - Possessive forms of nouns, dubitive question and Relative nouns<br>2. ಗುಣ, ಪರಮಾಣಮತ್ತತವಣ್ಣಣವಿಶೇಷಣಗಳು, ಸಂಖ್ಯಾವಾಚಕಗಳು Qualitative, Quantitative and Colour Adjectives, Numerals<br>3. ಕಾರಕರೂಪಗಳುಮತ್ತುವಿಭಕ್ತಿಪ್ರತ್ಯಯಗಳು -ಸಪ್ತಮಿವಿಭಕ್ತಿಪ್ರತ್ಯಯ - (ಆ, ಅದು, ಅವು, ಅಲ್ಲಿ) - Predictive Forms, Locative Case            | 6            |
| Module – 3                                                                                                                                                                                                                                                                                                                                                                            | No. of Hours |
| 1. ಚತುರ್ಥಿವಿಭಕ್ತಿಪ್ರತ್ಯಯದಬಳಕೆಮತ್ತುಸಂಖ್ಯಾವಾಚಕಗಳು - Dative Cases, and Numerals<br>2. ಸಂಖ್ಯಾಗುಣವಾಚಕಗಳುಮತ್ತುಬಹುವಚನನಾಮರೂಪಗಳು -Ordinal numerals and Plural markers<br>3. ನ್ಯೂನ/ನಿಷೇಧಾರ್ಥಕಕ್ರಿಯಾಪದಗಳು&ವರ್ಣಗುಣವಾಚಕಗಳು - Defective/Negative Verbs & Colour Adjectives.                                                                                                                         | 6            |
| Module – 4                                                                                                                                                                                                                                                                                                                                                                            | No. of Hours |
| 1. ಅಪ್ಪಣೆ/ಒಪ್ಪಿಗೆ, ನಿರ್ದೇಶನ, ಪ್ರೋತ್ಸಾಹಮತ್ತುಒತ್ತಾಯಾರ್ಥರೂಪಪದಗಳುಮತ್ತುವಾಕ್ಯಗಳು Permission, Commands, encouraging and Urging words (Imperative words and sentences)<br>2. ಸಾಮಾನ್ಯಸಂಭಾಷಣೆಗಳಲ್ಲಿದ್ದೀತೀಯವಿಭಕ್ತಿಪ್ರತ್ಯಯಗಳುಮತ್ತುಸಂಭವನೀಯಪ್ರಕಾರಗಳು Accusative Cases and Potential Forms used in General Communication                                                                             | 6            |
| Module – 5                                                                                                                                                                                                                                                                                                                                                                            | No. of Hours |
| 1. ಕಾಲಮತ್ತುಸಮಯದಹಾಗೂಕ್ರಿಯಾಪದಗಳವಿವಿಧಪ್ರಕಾರಗಳು - Different types of Tense, Time and Verbs<br>2. ದ್, ತ್, ತು, ಇತು, ಆಗಿ, ಅಲ್ಲ, ಗ್, ಕ್, ಇದೆ. ಕ್ರಿಯಾಪ್ರತ್ಯಯಗಳೊಂದಿಗೆಭೂತ, ಭವಿಷ್ಯತ್ಪ್ರತ್ಯಯವಾಚಕಪದಗಳು - Formation of Past, Future and Present Tense Sentences with Verb Forms<br>3. Kannada Vocabulary List :ಸಂಭಾಷಣೆಯಲ್ಲಿದಿನೋಪಯೋಗಿಕವಾಕ್ಯಪದಗಳು -Kannada Words in Conversation                       | 6            |

| Course Outcomes: At the end of the course, the students will be able to |                                                                                 |
|-------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| CO1                                                                     | To understand the necessity of learning of local language for comfortable life. |



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|     |                                                                                          |
|-----|------------------------------------------------------------------------------------------|
| CO2 | To speak, read and write Kannada language as per requirement.                            |
| CO3 | To communicate (converse) in Kannada language in their daily life with kannada speakers. |
| CO4 | To Listen and understand the Kannada language properly.                                  |
| CO5 | To speak in polite conversation.                                                         |

| Text Books |                                                                             |
|------------|-----------------------------------------------------------------------------|
| 1.         | ಪ್ರದರ್ಶಿತಗಾಗಿ ನಿಗದಿಪಡಿಸಿದ ಪಠ್ಯಪುಸ್ತಕ-(Prescribed Textbook to Learn Kannada) |

**ASSESSMENT STRUCTURE:**

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 40% of the maximum marks (20 marks out of 50). The minimum passing mark for the SEE is 35% of the maximum marks (18 marks out of 50). A student shall secure a minimum of 40% (40 marks out of 100) in the total of CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

**CONTINUOUS INTERNAL EVALUATION (CIE):**

| Component   | Type of Assessment          | Max. Marks | weightage                                         | Total Marks |
|-------------|-----------------------------|------------|---------------------------------------------------|-------------|
| Theory      | Internal Assessment1 (MCQs) | 50         | Average of Best two Assessments, scale down to 40 | 50          |
|             | Internal Assessment2 (MCQs) | 50         |                                                   |             |
|             | Internal Assessment3 (MCQs) | 50         |                                                   |             |
| C C A       | Two Assignments             | 20         | 10                                                |             |
| SEE         | Semester End Examination    | 100        | 50                                                | 50          |
| Grand Total |                             |            |                                                   | 100         |

**SEMESTER END EXAMINATION (SEE):**

SEE paper shall be set for 50 questions, each question carries 01 mark. The pattern of the question paper is MCQ (Multiple Choice Questions). The time allotted for SEE is 01 hour.

**CO-PO Mapping:**

| PO \ CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|
| CO1     | 2   | 1   | 1   | 2   | 1   | 2   | 1   | -   | -   | -    | -    |
| CO2     | 1   | 3   | 1   | 1   | 1   | 1   | 1   | 2   | -   | -    | -    |
| CO3     | 2   | 2   | 2   | 2   | 1   | 1   | 1   | -   | -   | -    | -    |
| CO4     | 1   | 3   | 1   | 1   | 1   | 1   | -   | 1   | -   | -    | -    |
| CO5     | 2   | 1   | 2   | 2   | 2   | 2   | -   | -   | 1   | 1    | -    |

Level 3 - High, Level 2 - Moderate, Level 1 - Low 1



| SEMESTER-I                        |   |           |              |   |           |
|-----------------------------------|---|-----------|--------------|---|-----------|
| PROFESSIONAL COMMUNICATION SKILLS |   |           |              |   |           |
| Category: AEC                     |   |           |              |   |           |
| Course Code                       | : | B25BCA106 | CIE          | : | 50 Marks  |
| Teaching Hours L:T:P              | : | 2:0:0     | SEE          | : | 50 Marks  |
| Total Hours                       | : | 30        | Total        | : | 100 Marks |
| Credits                           | : | 2         | SEE Duration | : | 1 Hr      |

| Course Objectives                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| 1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | To enable the students to understand the skills required for effective communication at different levels of an organization. |
| 2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | To enhance listening, note and presentation skills.                                                                          |
| 3.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | To build communication skills among the students required for Digital Platforms.                                             |
| 4.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | To build Business Correspondence Skills among the students.                                                                  |
| Module – 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                              |
| <b>Fundamentals of Communication Skills:</b> Introduction - Meaning of Communication; Objectives of Communication; Process of Communication; Principles of Communication; Effective Communication v/s perfect Communication; Barriers to Effective Communication; Types of Communication (Meaning & Features) Interpersonal, Intrapersonal, Upward, Downward, Internal, External, Lateral, One-way, Two-way. (Communication in an organization) Cross Cultural Communication; Meaning; Scope of cross-cultural communication skills; Limitations of Communication skills in business. Verbal and Non-Verbal, Formal & Informal communication Skills                                                                                                                                                                     | <b>No. of Hours</b><br><br>6                                                                                                 |
| Module – 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                              |
| <b>Communication Skills:</b> Listening skills: Meaning; Importance of Listening; Types of listening (Meaning & Benefits of types of Listening) –Comprehension, Critical, Attentive, Reflective, Discriminative, Biased, Evaluative; Listening Process; Barriers to listening skills; Overcoming from barriers to listening. Reading skills – Meaning; Importance of Reading Skills; Reading comprehension skills –Inferential, Literal, Evaluative, Types of Reading Techniques: Skimming, Scanning, Intensive, Extensive and Guidelines for improving good Reading Skills. Note-taking skills: Meaning; Importance of note taking; Methods of note making. Presentation skill: Presentation skills & its importance in Business Communication; Types.                                                                  | <b>No. of Hours</b><br><br>6                                                                                                 |
| Module – 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                              |
| <b>Communication Media and Platforms:</b> Communication Media/Channel: Meaning Importance of Communication Channels; Types of Communication Medium / channels: (a) Physical Media – Meaning & its Types. (b) Mechanical Media – Meaning & its Types. (c) Push and Pull Channels – Meaning and its Features. Communication Platform: Internal & External Platforms – Meaning and importance Internal communication Platforms – Intranet, Blogosphere, Portals, You tube, Google Hangouts, Skype, Webcasts and zoom. External Communication Platforms: Corporate Website, Face book, Twitter, LinkedIn, You tube Accounts, Corporate Blog. (Each of the types only Meaning and Importance to be discussed) Technology in Business Communication: Introduction, Advantages & disadvantages of technology in communication. | <b>No. of Hours</b><br><br>6                                                                                                 |
| Module – 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                              |
| <b>Communication Skills &amp; Ethics:</b> Introduction - Meaning; Importance of ethical communication; Ethical Communication & Business. Ethical perspectives – Utilitarian, Universalistic, Religious, Economic, Legal, Humanistic, Dialogic, Situational perspectives in relation to business. Ethical issues in business communication – Respect, Honesty, Sensitivity to Cultural Differences. Ethical dilemmas involved in business communication – Whistle blowing, Rumors & Gossip, Secrecy, Ambiguity, Lying.                                                                                                                                                                                                                                                                                                   | <b>No. of Hours</b><br><br>6                                                                                                 |
| Module – 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                              |
| <b>Business Correspondence:</b> Writing Skills - Art of Condensation (Precis writing), Essay writing – Types of essays, features of an essay, Paragraph writing – structure of paragraph writing. Business Letters – Meaning; Importance and Advantages of Business Letters; Letter components and Layout. Different Types of Business Letters. (a) Letters of Inquiries (b) Replies to Inquiries (c) Orders (d) Complaints & Adjustment Letters (e) Collection Letters & etc.                                                                                                                                                                                                                                                                                                                                          | <b>No. of Hours</b><br><br>6                                                                                                 |



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|                                                                                |                                                                                                    |
|--------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| <b>Course Outcomes:</b> At the end of the course, the students will be able to |                                                                                                    |
| CO1                                                                            | Understand the skills required for effective communication at different levels of an organization. |
| CO2                                                                            | Enhance themselves with good listening, note taking and presentation skills                        |
| CO3                                                                            | Build good communication skills among the students required for Digital Platforms.                 |
| CO4                                                                            | Efficiently Manage with Business Correspondence Skills among the students                          |

|                   |                                                                                      |
|-------------------|--------------------------------------------------------------------------------------|
| <b>Text Books</b> |                                                                                      |
| 1.                | Communication Skills, Fillip Learning - FL.                                          |
| 2.                | Taylor, Shirley, Communication for Business: A Practical Approach, Pearson Education |
| 3.                | C.S. Raydu, Corporate Communication, HPH                                             |

|                            |                                                                                           |
|----------------------------|-------------------------------------------------------------------------------------------|
| <b>Reference Text Book</b> |                                                                                           |
| 1.                         | Rai&Rai, Business Communication, HPH                                                      |
| 2.                         | S.P. Sharman, Bhavani.H, Corporate Communication, VBH                                     |
| 3.                         | K. Venkataramana, Corporate Communication, SHBP                                           |
| 4.                         | Rajkumar, Basic Business Communication: Concepts, Applications and Skills, Excel Books    |
| 5.                         | Peter URS Bender, Robert. A.Traez, Secrets of Face to Face Communication, Macmillan India |

**ASSESSMENT STRUCTURE:**

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 40% of the maximum marks (20 marks out of 50). The minimum passing mark for the SEE is 35% of the maximum marks (18 marks out of 50). A student shall secure a minimum of 40% (40 marks out of 100) in the total of CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

**CONTINUOUS INTERNAL EVALUATION (CIE):**

| Component   | Type of Assessment          | Max. Marks | weightage                                         | Total Marks |
|-------------|-----------------------------|------------|---------------------------------------------------|-------------|
| Theory      | Internal Assessment1 (MCQs) | 50         | Average of Best two Assessments, scale down to 40 | 50          |
|             | Internal Assessment2 (MCQs) | 50         |                                                   |             |
|             | Internal Assessment3 (MCQs) | 50         |                                                   |             |
| C C A       | Two Assignments             | 20         | 10                                                |             |
| SEE         | Semester End Examination    | 100        | 50                                                | 50          |
| Grand Total |                             |            |                                                   | 100         |

**SEMESTER END EXAMINATION (SEE):**

SEE paper shall be set for 50 questions, each question carries 01 mark. The pattern of the question paper is MCQ (Multiple Choice Questions). The time allotted for SEE is 01 hour.

**CO-PO Mapping:**

| PO \ CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|
| CO1     | 1   | 3   | 1   | 2   | 1   | 2   | -   | -   | -   | -    | -    |
| CO2     | 2   | 1   | 1   | 1   | 2   | 1   | -   | -   | -   | -    | -    |
| CO3     | 1   | 2   | 1   | 1   | 2   | 2   | -   | -   | -   | 1    | -    |
| CO4     | 2   | 2   | 1   | 1   | 2   | 1   | -   | -   | -   | -    | -    |

Level 3 - High, Level 2 - Moderate, Level 1 - Low



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| SEMESTER-I                  |   |            |              |   |           |
|-----------------------------|---|------------|--------------|---|-----------|
| PROGRAMMING IN C LABORATORY |   |            |              |   |           |
| Category: PCCL              |   |            |              |   |           |
| Course Code                 | : | B25BCAL107 | CIE          | : | 50 Marks  |
| Teaching Hours L:T:P        | : | 1:0:2      | SEE          | : | 50 Marks  |
| Total Hours                 | : | 30         | Total        | : | 100 Marks |
| Credits                     | : | 2          | SEE Duration | : | 3 Hrs     |

| Course Objectives |                                                                                                                                                               |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.                | Write C programs to perform basic operations such as calculations, comparisons, and data manipulation.                                                        |
| 2.                | Implement and demonstrate control structures like loops, conditionals, and switch-case statements in C.                                                       |
| 3.                | Manipulate arrays and strings, including operations like finding duplicates, reversing, and applying string functions.                                        |
| 4.                | Demonstrate the use of pointers for advanced operations like swapping numbers and matrix manipulation, and work with structures to manage complex data types. |

| Sl. No. | Experiments                                                                                                                                                                          |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PART-A  |                                                                                                                                                                                      |
| 1.      | Print the value of y for given x=2 & z=4 and analyze the output.<br>a. y = x++ + ++x;<br>b. y= ++x + ++x;<br>c. y= ++x + ++x + ++x;<br>d. y = x>z;<br>e. y= x>z? x:z;<br>f. y = x&z; |
| 2.      | Program to read two numbers and find the largest (demonstration on if else).                                                                                                         |
| 3.      | Program to read percentage of marks and to display appropriate message (demonstration of switch case statement).                                                                     |
| 4.      | Program to read numbers from keyboard continuously till the user presses 999 and to find the sum of only positive numbers (demonstration of do-while loop).                          |
| 5.      | Write a program to print sums of even numbers and sum of odd numbers from array of positive integers (demonstration of 1D array).                                                    |
| 6.      | Program to implement built-in string functions.                                                                                                                                      |
| 7.      | Program to demonstrate call by value and call by reference.                                                                                                                          |
| PART-B  |                                                                                                                                                                                      |
| 1.      | Program to demonstrate library functions in math.h (demonstration of built-in functions).                                                                                            |
| 2.      | Program to find the roots of quadratic equation (demonstration of else-if ladder)..                                                                                                  |
| 3.      | Program to read a number, find the sum of the digits, reverse the number and check it for palindrome (demonstration of while loop).                                                  |
| 4.      | Program to generate n Fibonacci sequence (demonstration of for loop).                                                                                                                |
| 5.      | Program to perform addition and subtraction of Matrices (demonstration of 2D array).                                                                                                 |



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|    |                                                                                                                                                                                                                    |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6. | Program to check a number for prime by defining <b>isprime( )</b> function (demonstration of user-defined function).                                                                                               |
| 7. | Program to accept USN, Student Name, marks of any 6 Subjects and calculate total marks, Percentage, grade and print the all the details in marks card format of a particular student (demonstration of structure). |

|                                                                                |                                                                                                        |
|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| <b>Course Outcomes:</b> At the end of the course, the students will be able to |                                                                                                        |
| CO1                                                                            | Develop the C Program which includes the structure of a C program, Tokens, Expressions, Operators etc. |
| CO2                                                                            | Demonstrate conditional and iterative statements to write C programs.                                  |
| CO3                                                                            | Construct C programs that use arrays and strings.                                                      |
| CO4                                                                            | Design user defined functions to solve real time problems.                                             |
| CO5                                                                            | Demonstration of Structure concepts & Pointers.                                                        |

**ASSESSMENT STRUCTURE FOR LABORATORY:**

- The assessment for each course is equally divided between Continuous Internal Evaluation (CIE) and the Semester End Examination (SEE), with each component carrying 50% weightage.
- For both CIE and SEE, the student is required to conduct one experiment each from both Part A and Part B.
- To qualify and become eligible to appear for SEE, in the CIE component, a student must secure a minimum of 40% of 50 marks, i.e., 20 marks.
- In SEE component, Part A must be evaluating as 40% and Part B will be evaluating as 60%.
- To pass the SEE component, a student must secure a minimum of 35% of 50 marks, i.e., 18 marks. A student is deemed to have successfully completed the course if the combined total of CIE and SEE is at least 40 out of 100 marks.

| Component          | Type of Assessment          | Max. Marks                         | weightage | Total Marks |
|--------------------|-----------------------------|------------------------------------|-----------|-------------|
| Laboratory         | Lab Record & Observation    | Evaluating each expt. for 10 marks | 15        | 50          |
|                    | Laboratory Test 1: Part - A | 50                                 | 15        |             |
|                    | Laboratory Test 2: part - B | 50                                 | 20        |             |
| SEE                | Semester End Examination    | 100                                | 50        | 50          |
| <b>Grand Total</b> |                             |                                    |           | <b>100</b>  |

**CO-PO Mapping:**

| PO \ CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|
| CO1     | 3   | 3   | 3   | 2   | 3   | -   | -   | -   | -   | -    | 1    |
| CO2     | 3   | 2   | 3   | 2   | 2   | -   | -   | -   | -   | -    | 1    |
| CO3     | 2   | 2   | 3   | 2   | 2   | -   | -   | -   | -   | -    | 1    |
| CO4     | 3   | 2   | 3   | 2   | 3   | -   | -   | -   | -   | -    | 1    |
| CO5     | 2   | 3   | 3   | 3   | 3   | -   | -   | -   | -   | -    | 1    |

Level 3 - High, Level 2 - Moderate, Level 1 - Low



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| SEMESTER-I                        |   |            |              |   |           |
|-----------------------------------|---|------------|--------------|---|-----------|
| ESSENTIALS OF COMPUTER LABORATORY |   |            |              |   |           |
| Category: PCCL                    |   |            |              |   |           |
| Course Code                       | : | B25BCAL108 | CIE          | : | 50 Marks  |
| Teaching Hours L:T:P              | : | 1:0:2      | SEE          | : | 50 Marks  |
| Total Hours                       | : | 30         | Total        | : | 100 Marks |
| Credits                           | : | 2          | SEE Duration | : | 3 Hrs     |

| Course Objectives |                                                                                                                                    |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------|
| 1.                | Learn to identify computer peripherals and components, assemble and disassemble them, and troubleshoot basic hardware issues.      |
| 2.                | Gain skills in installing various operating systems, configuring system settings, and maintaining the system using built-in tools. |
| 3.                | Develop proficiency in using word processors, spreadsheets, presentation software, and internet browsers for various tasks.        |
| 4.                | Acquire the ability to edit multimedia content and create flowcharts using Flow algorithm software for basic programming tasks.    |

| Sl. No. | Experiments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |              |       |       |            |       |            |       |  |  |  |  |  |  |  |  |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------------|-------|-------|------------|-------|------------|-------|--|--|--|--|--|--|--|--|
| 1.      | Word Processor assignment to demonstrate usage of Page Setup, Page Background and Paragraph option of Page Layout tab by writing the description about Computer and its characteristics.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |              |       |       |            |       |            |       |  |  |  |  |  |  |  |  |
| 2.      | Word Processor assignment to demonstrate Bullets and Numbering, Headers and footers                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |       |              |       |       |            |       |            |       |  |  |  |  |  |  |  |  |
| 3.      | Word Processor assignment to demonstrate usage of mail merge by creating a letter to invite your parents for the annual day event. Prepare at least 5 letters                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |       |              |       |       |            |       |            |       |  |  |  |  |  |  |  |  |
| 4.      | Word Processor assignment to demonstrate usage of tables and encryption by preparing the timetable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |       |              |       |       |            |       |            |       |  |  |  |  |  |  |  |  |
| 5.      | <div>Demonstrate usage of formulas and charts in spreadsheet as directed below:<div>a. Create a spreadsheet with following components:<table><tr><th>SL No</th><th>Student Name</th><th>Sub 1</th><th>Sub 2</th><th>Sub 3</th><th>Total</th><th>Percentage</th><th>Grade</th></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table></div><div>b. Insert the name and marks of 3 subjects of 5 or more students.</div><div>c. Calculate total marks obtained and percentage.</div><div>d. Calculate the grade by applying following criteria:<div>i. If percentage <math>\geq 90</math>, then grade A</div><div>ii. If percentage <math>\geq 75</math> and <math>&lt; 90</math>, then grade B</div><div>iii. If percentage <math>\geq 60</math> and <math>&lt; 75</math>, then grade C</div><div>iv. If percentage <math>\geq 50</math> and <math>&lt; 60</math>, then grade D</div><div>v. If percentage <math>&lt; 50</math>, then grade E</div></div><div>d. Insert column charts for various subjects</div><div>e. Insert pie chart for one student depicting composition of 3 subject marks.</div></div> | SL No | Student Name | Sub 1 | Sub 2 | Sub 3      | Total | Percentage | Grade |  |  |  |  |  |  |  |  |
| SL No   | Student Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Sub 1 | Sub 2        | Sub 3 | Total | Percentage | Grade |            |       |  |  |  |  |  |  |  |  |
|         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |       |              |       |       |            |       |            |       |  |  |  |  |  |  |  |  |
| 6.      | <div>Demonstrate usage of data validation in the spreadsheet as directed below:<div>a. Create a spreadsheet with following components:</div></div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |       |              |       |       |            |       |            |       |  |  |  |  |  |  |  |  |



| Emp No | Emp Name | Gender | Designation | DOB | Age | Basic Salary | DA | HRA | Gross Salary | Deduction | Net Salary |
|--------|----------|--------|-------------|-----|-----|--------------|----|-----|--------------|-----------|------------|
|        |          |        |             |     |     |              |    |     |              |           |            |
|        |          |        |             |     |     |              |    |     |              |           |            |

Insert 5 employee details in the columns Emp No., Emp Name, DOB, Basic Salary.

- Add drop-down data validation for Gender and Designation columns
- Add a formula to calculate Age based on DOB
- Add the formula to calculate
  - DA as 35% of Basic salary,
  - HRA as 25% of Basic salary
  - Deduction as 10% of Basic salary
- Add the formula to calculate Gross Salary and Net Salary

7. Demonstrate conditional formatting in spreadsheet as directed below:

- Create an attendance spreadsheet for 10 students.

| USN | Name | Date 1 | Date 2 | Date 3 | - | Date N | No. of Classes Attended | Attendance Percentage |
|-----|------|--------|--------|--------|---|--------|-------------------------|-----------------------|
|     |      |        |        |        |   |        |                         |                       |

- Mark P for present and A for absent for respective dates.
- Apply formula to calculate “No. of classes attended” and “Attendance Percentage” columns.
- Apply conditional formatting to highlight a student if “Attendance Percentage” is less than 85%.

8. Create a power-point presentation to demonstrate the following:

- Layout option
- Insertion of date, time and slide numbers
- Insertion of Symbols

9. Create a power-point presentation to demonstrate the following:

- Themes
- Transitions
- Animation

10. Create a power-point presentation to demonstrate the following:

- Rehearse Timings
- Narrations
- Slide Sorter.

| Course Outcomes: At the end of the course, the students will be able to |                                                                                                                                                                                                                       |
|-------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CO1                                                                     | Understand the identification, assembly language, disassembly and basic troubleshooting of computer hardware components, including peripherals, CPUs and system hardware                                              |
| CO2                                                                     | Gain hands on experience with networking basics including LAN and Wifi setup and configurations                                                                                                                       |
| CO3                                                                     | Develop practical skills in installing and configuring various operating system including windows Unix/Linux and dual booting along with system maintenance using BIOS setting, Registry Editor and third party tools |
| CO4                                                                     | Enhance proficiency in using office productivity software including word processors spreadsheets presentation tools and multimedia editing software                                                                   |
| CO5                                                                     | Apply logical thinking to create flowcharts and perform tasks using flowgarithms software for arithmetic operations shape calculations and understanding arrays and recursion                                         |



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**ASSESSMENT STRUCTURE FOR LABORATORY:**

- The assessment for each course is equally divided between Continuous Internal Evaluation (CIE) and the Semester End Examination (SEE), with each component carrying 50% weightage.
- For both CIE and SEE, the student is required to conduct one experiment each from both Part A and Part B.
- To qualify and become eligible to appear for SEE, in the CIE component, a student must secure a minimum of 40% of 50 marks, i.e., 20 marks.
- In SEE component, Part A must be evaluating as 40% and Part B will be evaluating as 60%.
- To pass the SEE component, a student must secure a minimum of 35% of 50 marks, i.e., 18 marks. A student is deemed to have successfully completed the course if the combined total of CIE and SEE is at least 40 out of 100 marks.

| Component   | Type of Assessment          | Max. Marks                         | weightage | Total Marks |
|-------------|-----------------------------|------------------------------------|-----------|-------------|
| Laboratory  | Lab Record & Observation    | Evaluating each expt. for 10 marks | 15        | 50          |
|             | Laboratory Test 1: Part - A | 50                                 | 15        |             |
|             | Laboratory Test 2: part - B | 50                                 | 20        |             |
| SEE         | Semester End Examination    | 100                                | 50        | 50          |
| Grand Total |                             |                                    |           | 100         |

**CO-PO Mapping:**

| PO \ CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|
| CO1     | 3   | 1   | 3   | 1   | 3   | -   | -   | -   | -   | -    | 1    |
| CO2     | 1   | 2   | 3   | 2   | 2   | -   | -   | -   | -   | -    | 1    |
| CO3     | 2   | 2   | 3   | 1   | 2   | -   | -   | -   | -   | -    | 1    |
| CO4     | 1   | 2   | 3   | 2   | 2   | -   | -   | -   | -   | -    | 1    |
| CO5     | 2   | 1   | 3   | 1   | 2   | -   | -   | -   | -   | -    | 1    |

Level 3 - High, Level 2 - Moderate, Level 1 - Low



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| SEMESTER-I            |   |           |              |   |           |
|-----------------------|---|-----------|--------------|---|-----------|
| ENVIRONMENTAL STUDIES |   |           |              |   |           |
| Category: VAC         |   |           |              |   |           |
| Course Code           | : | B25BCA109 | CIE          | : | 50 Marks  |
| Teaching Hours L:T:P  | : | 0:2:0     | SEE          | : | 50 Marks  |
| Total Hours           | : | 15        | Total        | : | 100 Marks |
| Credits               | : | 1         | SEE Duration | : | 1 Hr      |

| Course Objectives |                                                                                                                           |
|-------------------|---------------------------------------------------------------------------------------------------------------------------|
| 1.                | To explore methods for the sustainable use and conservation of resources such as water, soil, minerals, and biodiversity. |
| 2.                | To explore the social, economic, and ethical dimensions of environmental issues.                                          |

| Module – 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | No. of Hours |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| <b>Introduction to Environmental Studies:</b> Multidisciplinary nature of environmental studies. Scope and importance; Concept of sustainability and sustainable development.<br><b>Ecosystems:</b> What is an ecosystem? Structure and function of ecosystem; Energy flow in an ecosystem: food chains, food webs and ecological succession. Case studies of the following ecosystems:<br>a) Forest ecosystem<br>b) Grassland ecosystem<br>c) Desert ecosystem<br>d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)<br><b>Natural Resources:</b> Renewable and Non-Renewable Resources<br>a) Land resources and land-use change; Land degradation, soil erosion and desertification.<br>b) Deforestation: Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations.<br>c) Water: Use and over-exploitation of surface and ground water, floods, droughts, conflicts over water (International & Inter-state).<br>d) Energy resources: Renewable and non-renewable energy sources, use of alternate energy sources, growing energy needs, case studies. | 3            |
| Module – 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | No. of Hours |
| <b>Biodiversity and Conservation</b><br>a) Levels of biological diversity: Genetic, species and ecosystem diversity; Biogeographic zones of India; Biodiversity patterns and global biodiversity hotspots.<br>b) India as a mega-biodiversity nation; Endangered and endemic species of India.<br>c) Threats to biodiversity: Habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions; Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.<br>d) Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 3            |
| Module – 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | No. of Hours |
| <b>Environmental Pollution</b><br>a) Environmental Pollution: Types, causes, effects and controls; Air, water, soil and noise pollution.<br>b) Nuclear hazards and human health risks.<br>c) Solid waste management, Control measures of urban and industrial waste.<br>d) Pollution case study system; Banking complaints and Ombudsman                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 3            |
| Module – 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | No. of Hours |
| <b>Environmental Policies and Practices</b><br>a) Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture.<br>b) Environment Laws: Environment Protection Act; Air (Prevention & Control of Pollution) Act; Water (Prevention and Control of Pollution) Act; Wildlife (Protection) Act; Forest Conservation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 3            |



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|                                                                                                           |                     |
|-----------------------------------------------------------------------------------------------------------|---------------------|
| Act. International agreements: Montreal and Kyoto protocols and Convention on Biological Diversity (CBD). |                     |
| c) Nature reserves, tribal populations and rights, and human wildlife conflicts in Indian context.        |                     |
| <b>Module – 5</b>                                                                                         | <b>No. of Hours</b> |
| <b>Human Communities and the Environment</b>                                                              |                     |
| a) Human population growth: Impacts on environment, human health and welfare.                             |                     |
| b) Resettlement and rehabilitation of project affected persons; case studies.                             |                     |
| c) Disaster management: Floods, Earthquake, Cyclones and Landslides.                                      |                     |
| d) Environmental movements: Chipko, Silent valley, Bishnois of Rajasthan.                                 |                     |
| e) Environmental ethics: Role of Indian and other religions and cultures in environmental conservation.   |                     |
| f) Environmental communication and public awareness, case studies (e.g., CNG vehicles in cities).         |                     |
|                                                                                                           | 3                   |

|                                                                                |                                                                                                                                                |
|--------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Course Outcomes:</b> At the end of the course, the students will be able to |                                                                                                                                                |
| CO1                                                                            | To understand the roles and responsibilities of various stakeholders in environmental management and policy-making.                            |
| CO2                                                                            | To teach the principles and practices of natural resource conservation and management.                                                         |
| CO3                                                                            | To provide an understanding of the structure and function of natural ecosystems and the relationships between organisms and their environment. |
| CO4                                                                            | To analyze the impact of human activities on the environment, including urbanization, industrialization, deforestation, and climate change.    |

|                   |                                                                                                              |
|-------------------|--------------------------------------------------------------------------------------------------------------|
| <b>Text Books</b> |                                                                                                              |
| 1.                | Bharucha, E. (2015). Textbook of Environmental Studies.                                                      |
| 2.                | Carson, R. (2002). Silent Spring. Houghton Mifflin Harcourt.                                                 |
| 3.                | Climate Change: Science and Politics. (2021). Centre Science and Environment, New Delhi                      |
| 4.                | Gadgil, M., & Guha, R. (1993). This Fissured Land: An Ecological History of India. Univ. of California Press |

**ASSESSMENT STRUCTURE:**

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 40% of the maximum marks (20 marks out of 50). The minimum passing mark for the SEE is 35% of the maximum marks (18 marks out of 50). A student shall secure a minimum of 40% (40 marks out of 100) in the total of CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

**CONTINUOUS INTERNAL EVALUATION (CIE):**

| Component   | Type of Assessment          | Max. Marks | weightage                                         | Total Marks |
|-------------|-----------------------------|------------|---------------------------------------------------|-------------|
| Theory      | Internal Assessment1 (MCQs) | 50         | Average of Best two Assessments, scale down to 40 | 50          |
|             | Internal Assessment2 (MCQs) | 50         |                                                   |             |
|             | Internal Assessment3 (MCQs) | 50         |                                                   |             |
| C C A       | Two Assignments             | 20         | 10                                                |             |
| SEE         | Semester End Examination    | 100        | 50                                                | 50          |
| Grand Total |                             |            |                                                   | 100         |

**SEMESTER END EXAMINATION (SEE):**

SEE paper shall be set for 50 questions, each question carries 01 mark. The pattern of the question paper is MCQ (Multiple Choice Questions). The time allotted for SEE is 01 hour.



**CO-PO Mapping:**

| PO \ CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|
| CO1     | 3   | 3   | 1   | 1   | 3   | -   | -   | -   | -   | -    | -    |
| CO2     | 3   | 2   | 1   | 2   | 1   | 1   | -   | -   | -   | -    | -    |
| CO3     | 1   | 1   | 1   | 1   | 2   | 1   | -   | -   | -   | -    | -    |
| CO4     | 1   | 3   | 1   | 1   | 2   | 1   | -   | -   | -   | -    | -    |

Level 3 - High, Level 2 - Moderate, Level 1 - Low