

**FOUR YEAR UNDERGRADUATE PROGRAM (2024 – 28)**  
**DEPARTMENT OF COMPUTER APPLICATION**  
**COURSE CURRICULUM**

| <b>PART- A: Introduction</b>   |                                |  |  |
|--|--------------------------------|--|--|
| Program: Bachelor in Computer Application<br>(Certificate / Diploma / Degree/Honors) |                                | Semester -II   | Session: 2024-2025                         |
| 1  | Course Code                    | CASC-04  |  |
| 2  | Course Title                   | Digital Electronics  |  |
| 3  | Course Type                    | DSC (Discipline Specific Course)   |  |
| 4  | Prerequisite                   | As per program   |  |
| 5  | Course Learning Outcomes (CLO) | At the end of this course, the students will be able: <ul style="list-style-type: none"> <li>To understand the fundamental concepts and techniques used in digital electronics.</li> <li>Understand how the computer system identifies the data inside.</li> <li>To understand and examine the structure of various number systems and its application in digital design.</li> <li>To Perform basic arithmetic calculations in binary, decimal and hexadecimal;</li> <li>The ability to understand, analyze and design various combinational and sequential circuits.</li> <li>To identify the basic requirements according to the specification for a newly customized digital circuit and design it in a cost effective manner.</li> </ul> |  |
| 6  | Credit Value                   | 4 Credits  | Credit = 15 Hours - Learning & Observation |
| 7  | Total Marks                    | Max. Marks: 100  | Min Passing Marks: 40                      |

**PART -B: Content of the Course**

Total No. of Teaching-learning Periods (01 Hr. per period) – 60 Periods (60 Hours)

| Unit | Topics (Course contents)   | No. of Period |
|------|--|---------------|
| I    | <b>NUMBER SYSTEM AND DATA REPRESENTATION</b> :Introduction of number system (binary, decimal, octal, hexadecimal etc. ), inter-conversion between the number systems, arithmetic operations, complements in the number system, representation of numeric data(binary representation of integers, fixed point and floating point data representation),codes and its classification(weighted code and its types like NBCD etc. , non-weighted code like (Excess-3 code Gray code etc. ) , alphanumeric code like (ASCII, UNICODE, EBCDIC etc.), Error detecting code like (parity bit coding technique, etc.),Error correcting codes like (hamming code etc.)) | 15            |
| II   | <b>BOOLEAN ALGEBRA</b> : Boolean algebra and basic operations, sum of product, product of sum, simplification of Boolean expression using simplification techniques: Boolean laws and K-Map.<br><b>FUNDAMENTALS OF DIGITAL CIRCUIT DESIGN</b> : Digital logic families and its properties, Logic gate and its types, Construction of basic digital circuits using fundamental gates as well as Universal gates, simplification of digital circuit. Types of digital circuits (combinational circuit, sequential circuits).   | 15            |
| III  | <b>COMBINATIONAL CIRCUIT</b> : Adder (half adder, full adder, N bit adder), Subtractor (half subtractor, full subtractor, N bit subtractor), Decoder, Encoder, Multiplexer, De-multiplexer, Comparator, Code Convertor<br><b>SEQUENTIAL CIRCUIT</b> : Multivibrators/Latch, Flip- flop and its types (S R flip flop, D Flip Flop, J K Flip Flop, T Flip Flop, Master Slave Flip Flop), Register and its types, Counters and its types.   | 15            |
| IV   | <b>MICROPROCESSORS</b> : Introduction of microprocessor, evolution of microprocessor, basic components in microprocessor, basic microprocessor instruction, addressing modes, designing of eight-bit microprocessor (8085 microprocessor), designing of 16-bit microprocessor (8086 microprocessor).   | 15            |

Dr. H.S.Hota  
 Chairman  
 Sushil Kumar Sahas  
 Dr. K.B. Dubey  
 Dr. S.K. Saha  
 Dr. S. Jain  
 Dr. Anil Sharma  
 S. Thakur  
 R. Khundley  
 Anurag  
 Dr. H.S.Hota



**FOUR YEAR UNDERGRADUATE PROGRAM (2024 – 28)**  
**DEPARTMENT OF COMPUTER APPLICATION**  
**COURSE CURRICULUM**

| <b>PART- A: Introduction</b>   |                                       |   |   |
|--|---------------------------------------|---|---|
| <b>Program: Bachelor in Computer Application</b><br><i>(Certificate / Diploma / Degree/Honors)</i> |                                       | <b>Semester - II</b>  | <b>Session: 2021-2025</b>                             |
| 1  | <b>Course Code</b>                    | <b>CASC-05T</b>   |   |
| 2  | <b>Course Title</b>                   | <b>Programming in C++</b>   |   |
| 3  | <b>Course Type</b>                    | <b>DSC (Discipline Specific Course)</b>   |   |
| 4  | <b>Prerequisite</b>                   | <i>As per program</i>   |   |
| 5  | <b>Course Learning Outcomes (CLO)</b> | At the end of this course, the students will be able to: <ul style="list-style-type: none"> <li>• Understand the fundamentals of object oriented programming.</li> <li>• Write programs related to concept of object oriented program</li> <li>• Define functions, class and to create own Libraries.</li> <li>• Write programs for file handling.</li> <li>• Develop small programs to solve real world problems.</li> </ul> |   |
| 6  | <b>Credit Value</b>                   | <b>3 Credits</b>  | <b>Credit = 15 Hours - Learning &amp; Observation</b> |
| 7  | <b>Total Marks</b>                    | <b>Max. Marks: 100</b>  | <b>Min Passing Marks: 40</b>                          |

**PART -B: Content of the Course**

**Total No. of Teaching-Learning Periods (01 Hr. per period) - 45 Periods (45 Hours)**

| Unit            | Topics (Course contents)   | No. of Period |
|-----------------|--|---------------|
| <b>I</b>        | <b>Introduction and Programming Concepts :</b> Definition of Program, Source file, Object file, Executable file, Header file, Language Translator- Assembler, Interpreter, Compiler, Testing, Debugging, Linker and Loader, Algorithms, Flow Charts, History of C language, Structure of C program , C Tokens : Identifiers, Keywords, Constants, Variables, Operators, Data Types, Control structure: Conditional and looping statements, Operator Precedence and Associativity, Array and its types, Pointer, Functions : Standard Library and User defined functions, function prototype, Call by value and Call by reference, recursive functions, String functions. | <b>12</b>     |
| <b>II</b>       | <b>Introduction to Object Oriented Programming:</b> Concept of object oriented programming, Features of C++, Structure of C++ program, Data types, structure, class and objects, Access Specifiers: Private, Public, Protected, inline functions, static data and static functions. <b>Constructor:</b> Default constructor, Copy constructor, Parameterized constructor, Destructor.  | <b>11</b>     |
| <b>III</b>      | <b>Inheritance and Polymorphism:</b> Definition, Concept of base and derived class, Types of Inheritance: Single, Multilevel, Multiple, Hierarchical and Hybrid Inheritance. Polymorphism: Definition, Compile time polymorphism: Function overloading, Operator overloading, constructor overloading, Runtime polymorphism: Virtual Function, pure virtual function. Inline function, friend function, friend class.  | <b>11</b>     |
| <b>IV</b>       | <b>Input-Output and File Handling :</b> I/O classes, File and Stream classes, Char I/O, String I/O, Object I/O, File Pointer, Opening and Closing file.<br><b>Exception Handling and Standard Template Library:</b> Definition, Exception basics, try, catch and throws keywords, Template.  | <b>11</b>     |
| <b>Keywords</b> | <i>Token, Identifier, Keyword, Array, Function, Class, Object, Polymorphism, Inheritance, Constructor, Template.</i>   |               |

**Name and Signature of Convener & Members of CBoS:**

*Dr. H.S. Hota* (Chairman) *Dr. K.B. Dubey* *Dr. Anil Sharma* *Dr. S. Jain* *R. Khurdey*  
*Sushil Kumar Sobti* *Dr. Anil Sharma* *Dr. Anil Sharma* *Dr. Anil Sharma* *Dr. Anil Sharma*  
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**ANJEETA KUMAR**

## **PART-C: Learning Resources**

### **Text Books, Reference Books and Others**

#### ***Text Books Recommended:***

- Peter Juliff, Program Design, PHI Publications.
- Yashwant Kanetkar, Let us C: BPB Publications.
- E. Balaguruswamy, Programming in ANSI C, Tata McGraw Hill

#### ***Reference Books Recommended:***

- Y. Kanetkar, Let us C++, B.P.B Publication .
- E. Balaguruswamy, Programming in C++, Tata McGraw Hill.
- R. Kumar, Object Oriented Programming with C++, Prakhar Publication(Hindi)
- Dhupiya, Lakhyani , C++ Programming Alka Publications, Ajmer (Paperback, Dhupiya, Lakhyani)(Hindi)

#### ***Online Resources:***

- Introduction to C and C++ from SWAYAM/NPTEL  
[https://onlinecourses.nptel.ac.in/noc22\\_cs103/preview](https://onlinecourses.nptel.ac.in/noc22_cs103/preview)  
<https://www.youtube.com/watch?v=KG4hjVDw-p8&list=PLmp4yIk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=2>
- Constant and Inline Function through NPTEL:  
<https://www.youtube.com/watch?v=pX6LufLso2M&list=PLmp4yIk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=10>
- Pointer and Reference NPTEL  
<https://www.youtube.com/watch?v=GtsBZ5e1-cE&list=PLmp4yIk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=12>
- Function Overloading NPTEL  
<https://www.youtube.com/watch?v=uJGmGAShHeU&list=PLmp4yIk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=13>
- Operator Overloading NPTEL  
<https://www.youtube.com/watch?v=0jpOwe4d-FE&list=PLmp4yIk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=17>
- Dynamic Memory Management NPTEL  
<https://www.youtube.com/watch?v=lkFK2X6qIc0&list=PLmp4yIk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=18>
- Class and Object NPTEL  
[https://www.youtube.com/watch?v=wtuks\\_f3vP4&list=PLmp4yIk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=24](https://www.youtube.com/watch?v=wtuks_f3vP4&list=PLmp4yIk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=24)
- Access Specifiers NPTEL  
[https://www.youtube.com/watch?v=6ki\\_W7cXdM0&list=PLmp4yIk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=22](https://www.youtube.com/watch?v=6ki_W7cXdM0&list=PLmp4yIk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=22)
- Constructor and Destructor NPTEL  
[https://www.youtube.com/watch?v=wtuks\\_f3vP4&list=PLmp4yIk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=24](https://www.youtube.com/watch?v=wtuks_f3vP4&list=PLmp4yIk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=24)
- C++ different topics from W3School  
<https://www.w3schools.com/Cpp/default.asp>
- C++ different topics from Javatpoint  
<https://www.javatpoint.com/cpp-tutorial>



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| <b>PART- A: Introduction</b>  |   |  |  |
|---|---|--|--|
| Program: Bachelor in Computer Application<br>(Certificate / Diploma / Degree) |   | Semester - II  | Session: 2024-2025                                     |
| 1   | Course Code   | CASC-05P   |  |
| 2   | Course Title  | Lab 3: Programming in C++  |  |
| 3   | Course Type   | Practical  |  |
| 4   | Prerequisite  | As per program   |  |
| 5   | Course Learning Outcomes (CLO)  | At the end of this course, the students will be able to: <ul style="list-style-type: none"> <li>• Understand the fundamental programming concepts and methodologies which are essential to create good C++ programs.</li> <li>• Code, test, and implement a well-structured, robust computer program using the C++ programming language.</li> <li>• Write reusable modules (collections of functions).</li> <li>• Understand design/implementation issues involved with variable allocation and binding, control flow, types, subroutines, parameter passing.</li> <li>• Develop an in-depth understanding of functional, logic, and object-oriented programming paradigms.</li> </ul> |  |
| 6   | Credit Value  | 1 Credits  | Credit =30 Hours Laboratory or Field Learning/Training |
| 7   | Total Marks   | Max. Marks: 50   | Min Passing Marks: 20                                  |
| <b>PART -B: Content of the Course</b>   |   |  |  |
| Total No. of learning-Training/performance Periods: 30 Periods (30 Hours)     |   |  |  |
| Module  | Topics (Course contents)  |  | No. of Period  |
| List of Practical Experiments.  | <ol style="list-style-type: none"> <li>1. Write a program in C++ for addition of two numbers using float data type.</li> <li>2. Write a program in C++ to find the biggest number between two numbers.</li> <li>3. Write a program in C++ to find the factorial value of any entered number using do – while loop.</li> <li>4. Write a program in C++ for various arithmetic operations using switch case statements.</li> <li>5. Write a program in C++ for Multiplication of two 3X3 matrices.</li> <li>6. Write a program in C++ to store five books of information using structure.</li> <li>7. Write a program in C++ to store six employee information using union.</li> <li>8. Write a program in C++ to calculate simple interest using call by value and call by reference method.</li> <li>9. Write a program in C++ to find the sum and average of five numbers using class and objects.</li> <li>10. Write a program in C++ to multiply two numbers using private and public member functions.</li> <li>11. Write a program in C++ to print structure like this using scope resolution operator<br/>               1<br/>               1 2<br/>               1 2 3<br/>               1 2 3 4<br/>               1 2 3 4 5</li> <li>12. Write a program in C++ for constructor and Destructor.</li> </ol> |  | 30   |

13. Write a program in C++ for multiple inheritance.
14. Write a program in C++ for operator overloading.
15. Write a program in C++ for friend class and friend function.
16. Write a program in C++ for virtual function and virtual class.
17. Write a program in C++ for Exception Handling.
18. Write a program in C++ to open and close a file using file Handling.
19. Given two ordered arrays of integers, write a program to merge the two-arrays to get an ordered array.
20. WAP to display Fibonacci series (i) using recursion, (ii) using iteration
21. WAP to calculate Factorial of a number (i) using recursion, (ii) using iteration
22. WAP to calculate GCD of two numbers (i) with recursion (ii) without recursion.
23. Create a Matrix class using templates. Write a menu-driven program to perform following Matrix Operations (2-D array implementation): a) Sum b) Difference c) Product d) Transpose
22. Create the Person class. Create some objects of this class (by taking information from the user). Inherit the class Person to create two classes Teacher and Student class. Maintain the respective information in the classes and create, display and delete objects of these two classes (Use Runtime Polymorphism).
24. Create a class Triangle. Include overloaded functions for calculating area. Overload assignment operator and equality operator.
25. Create a class Box containing length, breadth and height. Include following methods in it: a) Calculate surface Area b) Calculate Volume c) Increment, Overload ++ operator (both prefix & postfix) d) Decrement, Overload -- operator (both prefix & postfix) e) Overload operator == (to check equality of two boxes), as a friend function f) Overload Assignment operator g) Check if it is a Cube or cuboid
26. Create a structure Student containing fields for Roll No., Name, Class, Year and Total Marks. Create 10 students and store them in a file.
27. Write a program to retrieve the student information from the file created in the previous question and print it in the following format: Roll No. Name Marks
28. Copy the contents of one text file to another file, after removing all whitespaces.
29. Write a program for exception handling.
30. Write a program to insert data into file and to display it.

**Note:** Concerned teacher can add additional experiment as per requirement.

**Keywords** Array, Function, Structure, union, matrix, constructor, destructor, inheritance.

**Name and Signature of Convener & Members of CBOS:**

~~Dr. H.S. Hota~~ *Chairman*  
 Dr. K.B. Dubey  
 Dr. S.K. Saha  
 Dr. Anil Chandra  
 Dr. S. Sain  
 R. Khuntia  
 Dr. Ar.

**PART-C: Learning Resources**

**Text Books, Reference Books and Others**

(Sushil Kumar Saha)  
 Shailendra  
 Anjan  
 ANJETA KURUR

**Text Books Recommended:**

- Peter Juliff, Program Design, PHI Publications.
- Yashwant Kanetkar, Let us C: BPB Publications.
- E. Balaguruswamy, Programming in ANSI C, Tata McGraw Hill

**Reference Books Recommended:**

- Y. Kanetkar, Let us C++, B.P.B Publication .
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| <b>PART- A: Introduction</b>   |                                       |   |   |
|--|---------------------------------------|---|---|
| <b>Program:</b> Bachelor in Computer Application<br><i>(Certificate / Diploma / Degree/Honors)</i> |                                       | <b>Semester – II</b>  | <b>Session:</b> 2024-2025                             |
| 1  | <b>Course Code</b>                    | <b>CASC -06T</b>  |   |
| 2  | <b>Course Title</b>                   | <b>Data Structure</b>   |   |
| 3  | <b>Course Type</b>                    | <b>DSC (Discipline Specific Course)</b>   |   |
| 4  | <b>Prerequisite (if, any)</b>         | <i>As per program</i>   |   |
| 5  | <b>Course Learning Outcomes (CLO)</b> | At the end of this course, the students will be able to: <ul style="list-style-type: none"> <li>• Understand the fundamentals and applications of data structure.</li> <li>• Utilize various algorithms for real world problem solving.</li> <li>• Understanding about data management in computer memory.</li> <li>• Apply stack, Queue, Lists, Trees and Graphs for real world application.</li> <li>• Understand how various data structures can be used to implement through any programming language.</li> </ul> |   |
| 6  | <b>Credit Value</b>                   | <b>3 Credits</b>  | <i>Credit = 15 Hours - Learning &amp; Observation</i> |
| 7  | <b>Total Marks</b>                    | <b>Max. Marks: 100</b>  | <b>Min Passing Marks: 40</b>                          |

**PART -B: Content of the Course**

**Total No. of Teaching–Learning Periods (01 Hr. per period) - 45 Periods (45 Hours)**

| Unit            | Topics (Course contents)  | No. of Period |
|-----------------|---|---------------|
| <b>I</b>        | <b>Introduction and Basic Concepts:</b> Introduction, Fundamentals of Algorithms, Data types: Primitive, Non-Primitive Absent Data Type (ADT), Classification of Data Structure: Linear and Nonlinear Data Structure. <b>Array:</b> Arrays and its types, Memory allocation and address calculations of Array, Sparse Array. <b>Linked List:</b> Types of Linked List and various Operations Like INSERT, DELETE, TRAVERSE. Introduction and Application of Stack and Queue.  | 12            |
| <b>II</b>       | <b>Stack:</b> Definition, Operations PUSH, POP, Implementations using Array and Linked list, Applications of Stack: Infix, Prefix, Postfix representation and conversion using Stack, Postfix expression evaluation using Stack, Recursion using Stack.<br><b>Queue:</b> Definition, Types of Queues: Priority Queue, Circular queue, Double Ended Queue, operations of Queue INSERT, DELETE, TRAVERSE, Implementation Queue using Array and Linked list, Applications of Queue.  | 11            |
| <b>III</b>      | <b>Tree:</b> Definition of Trees and their types, Binary trees, Properties of Binary trees and operations Insertion, deletion, searching and traversal algorithm: preorder, post order, in-order traversal, Binary Search Trees, Implementations, AVL Trees.<br><b>Graph:</b> Definition of Graph and their types, Adjacency and Incident (matrix & linked list) Representation of graphs, Graph Traversal – Breadth first Traversal, Depth first Traversal, Connectivity of Graphs; Weighted Graphs, Shortest Path Algorithm, Spanning Tree, Minimum Spanning Tree, Kruskal’s and Prim’s Algorithms. | 11            |
| <b>IV</b>       | <b>Sorting Methods:</b> Types of Sorting Selection Sort, Insertion Sort, Bubble Sort, Quick Sort, Merge Sort, Radix Sort. <b>Searching:</b> Linear search, Binary search.   | 11            |
| <b>Keywords</b> | <i>Data, ADT, Array, Linked List, Stack, Queue, Tree, Graph, Searching, Sorting.</i>  |               |

**Name and Signature of Convener & Members of CBoS:**

Dr. A.S. Hota  
 Chairman  
 (Sushil Kumar Behu)

Dr. K.B. Dubey  
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Dr. S. J. Jain  
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Dr. Khurshid  
 (Dr. Khurshid)

Dr. Suresh Kumar  
 (Dr. Suresh Kumar)

Dr. Shalini Rani  
 (Dr. Shalini Rani)



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| <b>PART- A: Introduction</b>  |  |  |  |
|---|--|--|--|
| Program: Bachelor in Computer Application<br>(Certificate / Diploma / Degree) |  | Semester – II  | Session: 2024-2025                                     |
| 1   | Course Code  | CASC-06P   |  |
| 2   | Course Title   | Lab 4: Data Structure Using C++  |  |
| 3   | Course Type  | Practical  |  |
| 4   | Prerequisite (if, any)   | As per program   |  |
| 5   | Course Learning Outcomes (CLO)   | At the end of this course, the students will be able to: <ul style="list-style-type: none"> <li>• Understand how the concept of data structure can be implemented programmatically.</li> <li>• Implement the fundamentals data structure through C and C++</li> <li>• Understand the functioning of Array and linked list programmatically.</li> <li>• Understand the applications of array, linked list stack, queue, tree and graph programmatic.</li> <li>• Write programs for various data structures for real world application.</li> </ul> |  |
| 6   | Credit Value   | 1 Credits  | Credit =30 Hours Laboratory or Field Learning/Training |
| 7   | Total Marks  | Max. Marks: 50   | Min Passing Marks: 20                                  |
| <b>PART -B: Content of the Course</b>   |  |  |  |
| Total No. of learning-Training/performance Periods: 30 Periods (30 Hours)     |  |  |  |
| Module  | Topics (Course contents)   |  | No. of Period  |
| Lab./Field Training/ Experiment   | <ol style="list-style-type: none"> <li>1. Write a program to create a square matrix, fill the data inside and print the diagonal elements.</li> <li>2. Write a program to perform addition and subtraction on two matrices.</li> <li>3. Write a program to perform multiplication on two matrices.</li> <li>4. Write a program to perform insertion, deletion of nodes from the end in singly linked list.</li> <li>5. Write a program to perform insertion and deletion of nodes from the end in singly linked list.</li> <li>6. Write a program to perform insertion and deletion of nodes from the end in circular doubly linked list.</li> <li>7. Write a program to perform push and pop operations in stack, where stack should be created using array.</li> <li>8. Write a program to perform push and pop operation in stack, where stack should be created linked list.</li> <li>9. Write a program to calculate factorial of given number using stack.</li> <li>10. Write a program to perform insertion and deletion of data items in queue, queue should be implemented by using a linked list.</li> <li>11. Write a program to perform insertion and deletion of data items in queue, queue should be implemented by using arrays.</li> <li>12. Write a program to demonstrate functioning of a double ended queue.</li> <li>13. Write a program to read the postfix arithmetic expression and evaluate its value using the stack.</li> <li>14. Write a program to show how to handle the overflow and underflow situation in stack.</li> <li>15. Write a program to convert infix notation-based expression into the postfix notation-based expression using the stack.</li> <li>16. Write a program to implement the concept of priority-based element</li> </ol> |  | <b>30</b>  |



- NPTEL YouTube Channel: Queues and linked list  
<https://www.youtube.com/watch?v=PGWZUgzDMYI&list=PLBF3763AF2E1C572F&index=3>
- NPTEL YouTube Channel: Trees  
<https://www.youtube.com/watch?v=tORLeHHtazM&list=PLBF3763AF2E1C572F&index=6>
- NPTEL YouTube Channel: Graphs  
<https://www.youtube.com/watch?v=9zpSs845wf8&list=PLBF3763AF2E1C572F&index=24>
- W3schools Data Structure Reference: [DSA Tutorial \(w3schools.com\)](http://www.w3schools.com)

### PART -D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:

Maximum Marks: 50 Marks

Continuous Internal Assessment (CIA): 15 Marks

End Semester Exam (ESE): 35 Marks

|  |   |   |  |
|--|---|---|--|
| Continuous Internal Assessment (CIA):<br>(By Course Teacher) | Internal Test / Quiz-(2): 10 & 10   | Better marks out of the two Test / Quiz + obtained marks in Assignment shall be considered against 15 Marks |  |
|  | Assignment/Seminar + Attendance - 05<br>Total Marks - 15  |   |  |
| End Semester Exam (ESE):                                     | Laboratory / Field Skill Performance: On spot Assessment  |   | Managed by Course teacher as per lab. status |
|  | A. Performed the Task based on lab. work - 20 Marks   |   |  |
|  | B. Spotting based on tools & technology (written) - 10 Marks<br>C. Viva-voce (based on principle/technology) - 05 Marks |   |  |

Name and Signature of Convener & Members of CBoS:

Dr. H.S. Hota *Hota*  
 Chairman (Dr. K.B. Dubey) *Dubey* (Dr. S. Saty) *Saty* *Kotnig* *Anil Sharma* *Dr. S. Jain*  
*Sunil* *Suresh Thakur* *R. Khuntia*  
 (Sushil Kumar Sahu) *Sahu* *Shree Anand* *Anjeeta Kujur* *A.S. Swain*  
*Secretary* *Kumar* *An*

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**DEPARTMENT OF GEOGRAPHY**  
**COURSE CURRICULUM**

| <b>PART-A: Introduction</b>  |                               |   |   |
|--|-------------------------------|---|---|
| Program: Bachelor in Arts<br>(Certificate / Diploma / Degree/Honors) |                               | Semester - II   | Session: 2024-2025                        |
| 1  | Course Code                   | GO - 02 T   |   |
| 2  | Course Title                  | Fundamental of Human Geography  |   |
| 3  | Course Type                   | DSC   |   |
| 4  | Pre-requisite(if, any)        | As per the program  |   |
| 5  | Course Learning Outcomes(CLO) | At the end of this course the student will e have an ability to<br>1- Gain knowledge about major themes of human Geography.<br>2- Acquire knowledge on the history and evolution of humans.<br>3- Understand the approaches and processes of Human Geography as well as the diverse patterns of habitat and adaptations.<br>4- Ability to develop an idea about space and society<br>5- Understand the evolution of varied types of economic activities.<br>6- Assess the varied aspects of development and regional disparity, in order to formulate measures of balanced development and sustainable development. |   |
| 6  | Credit Value                  | 3 Credits   | Credit = 15 Hours -learning & Observation |
| 7  | Total Marks                   | Max. Marks: 100   | Min Passing Marks:40                      |

**PART -B: Content of the Course**

Total No. of Teaching-learning Periods(01 Hr. per period) - 45 Periods (45 Hours)

| Unit            | Topics (Course contents)  | No. of Period |
|-----------------|---|---------------|
| <b>I</b>        | <b>Introduction to Human Geography</b><br>Definition, nature and scope. Fundamental concept in Human Geography .<br>Understanding of man- nature relationship:- Determinism, Possibilism and Neo-determinism. Classification of Human Occupation  | 12            |
| <b>II</b>       | <b>Population and Settlement -</b><br>Growth of population, distribution and density of the world.<br>Socio- economic Pattern of Population – Literacy, Migration:- Causes, and types .Occupational Structure.<br>Theory and Model of population growth:-Concept of Optimum Population, Over Population and Under population. | 10            |
| <b>III</b>      | <b>Human Settlement and Races-</b> Types and characteristics of human settlement- Rural settlement and Urban Settlement.<br>Human Races- Basis of Racial Classification, world distribution.<br>Habitat and economy of selected communities (Gond, Eskimo, Bushmen).  | 12            |
| <b>IV</b>       | <b>Geography and Development-</b> Indicators and measures of Regional development ,. Global pattern of development:- inter-regional variations, HDI. Concept of Sustainable Development.  | 11            |
| <b>Keywords</b> | Determinism, Possibilism, Occupational Structure. Optimum Population, Racial  |               |

**Signature of Convener, Members of CBoS :**

Dr. B. L. Sar

Dr. B. K. Thakur

M. S. SAHU

Dr. C. P. NAH

③  
⑥  
⑦  
⑧  
⑨

10. Dr. S. Yadav  
Dr. Chandra Shekhar

12

13 Dr. Sophia Ambale - Dorka

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## PART-C: Learning Resources

### Text Books, Reference Books and Others

#### Text Books Recommended –

- 10- James, M. Robenstein, *An Introduction to Human Geography*, Prentice Hall, New Jersey, 2001
- 11- Michael, Can, *New Patterns: Process and Change in Human Geography* Nelson, 1997
- 12- Hussain Mazid- *Human Geography*, (Hindi & English Both) Rawat Publication Jaipur
- 13- Garg H.S. *Manav Bhoogol*, SBPD Publication, Agra.
- 14- Haroon Mohammad, *Manav Bhoogol*, Wisdom Publication
- 15- Kausik S.D. *Manav avam Arthik Bhoogol*, Rastogi publication Meerut.
- 16- Maurya, S.D. *Manav Bhoogol*, Sharda Pustak Bhavan, Prayagraj.2009
- 17- Khullar, D. R. *Human Geography*, ( In Hindi) Kalyani Publishers, Ludhiyana, 2016
- 18- Prasad, Gayatri, *Cultural Geography*, ( In Hindi) Sharda Pustak Bhavan . Prayagraj.

#### Reference books:

- 5- Bergwan, Edward E., *Human Geography: Culture. Connections and Landscape*, Prentice Hall, New Jersey. 1995
- 6- Carr, M., *Patterns, Process and change in Human Geography*, MacMillan Education, London, 1987.
- 7- Daniels Peter, Bradshaw Michael, Shaw Devil and Side way James, *Human Geography: Issues for the Twenty First Century*, Prentice Hall, New Jersey, 2001
- 8- Clarke, J I , *Population Geography of Developing Country*, Pergamon press ,Oxford, 1971

#### E-Books

- <https://web.ung.edu/media/university-press/human-geography.pdf>
- <https://www.drishtiiias.com/hindi/images/pdf/NCERT-Hindi-Class-12-Geography-Part-1.pdf>
- <http://assets.vmou.ac.in/GE05.pdf>-Human Geography
- <https://open.umn.edu/opentextbooks/textbooks/870>

#### OnlineResources–(e-Resources/e-books and e-learning portals)

- [www.ignou.ac.in](http://www.ignou.ac.in)
- [www.egyankosh.ac.in](http://www.egyankosh.ac.in)
- [www.iitm.ac.in](http://www.iitm.ac.in)
- [www.eskillindia.org](http://www.eskillindia.org)
- [www.eshiksha.mp.gov.in](http://www.eshiksha.mp.gov.in)
- [www.vlab.co.in](http://www.vlab.co.in)
- [www.swayam.ac.in](http://www.swayam.ac.in)
- [www.internshala.com](http://www.internshala.com)

## PART-D: Assessment and Evaluation

### Suggested Continuous Evaluation Methods:

Maximum Marks: 100 Marks

Continuous Internal Assessment(CIA):30 Marks

End Semester Exam (ESE):70 Marks

|  |   |  |
|--|---|--|
| Continuous Internal Assessment (CIA):<br>(By Course Teacher) | Internal Test / Quiz-(2): 20 +20<br>Assignment/Seminar- 10<br>Total Marks -30   | Better marks out of the two Test / Quiz+<br>obtained marks in Assignment shall be<br>considered against 30 Marks |
| End Semester Exam (ESE):                                     | Two section – A & B<br>Section A: Q1. Objective – 10 x1= 10 Mark; Q2. Short answer type- 5x4 =20Marks<br>Section B: Descriptive answer type qts., 1out of 2 from each unit-4x10=40Marks |  |

Signature of Convener, Members of CBoS :

(1) Dr. S. S. ...  
 (2) ...  
 (3) ...  
 (4) ...  
 (5) ...  
 (6) ...  
 (7) ...  
 (8) ...  
 (9) ...  
 (10) ...  
 Dr. Sophie Ambrele - Sophie

**FOUR YEAR UNDERGRADUATE PROGRAM (2024 – 28)**  
**DEPARTMENT OF GEOGRAPHY**  
**COURSE CURRICULUM**

| <b>PART- A: Introduction</b>  |                                |   |  |
|---|--------------------------------|---|--|
| <b>Program: Bachelor in Arts</b><br><i>(Certificate / Diploma / Degree/ Honors)</i> |                                | <b>Semester -II</b>   | <b>Session: 2024-2025</b>                              |
| 1   | Course Code                    | GO – 02 P   |  |
| 2   | Course Title                   | Practical 2 - Scale and Representation of Relief  |  |
| 3   | Course Type                    | Practical   |  |
| 4   | Pre-requisite (if, any)        | As per program  |  |
| 5   | Course Learning Outcomes (CLO) | At the end of the this course the student will be able to<br>1- Understand and prepare different kinds of Scales and comprehend the concept of scales .<br>2- Identify the features of the land form through counters<br>3- Developed the Relief Map Making skills.<br>4- Gain in-depth knowledge on Drawing of Contour Features. |  |
| 6   | Credit Value                   | 1 Credits   | Credit =30 Hours Laboratory or Field learning/Training |
| 7   | Total Marks                    | Max. Marks: 50  | Min Passing Marks: 20                                  |

| <b>PART -B: Content of the Course</b>                                     |  |               |
|---|--|---------------|
| Total No. of learning-Training/performance Periods: 30 Periods (30 Hours) |  |               |
| Module  | Topics (Course contents)   | No. of Period |
| Lab./Field Training/ Experiment Contents of Course                        | 1- Scale- Methods of representing Scale, Conversion of Scale Type of Linear Scale- Simple Scale, Time Scale, Comparative Scale, Diagonal Scale<br>2- Representing of Relief- Pictorial, Mathematical and Combine Methods.<br>3- Contours-Land forms Representing By Contours- Hill, Ridge, Plateau, V shaped Valley, U shaped Valley, Waterfall, | 30            |
| Keywords  | Scale, Diagonal ,Relief , V shaped Valley, Ridge   |               |

**Signature of Convener, Members of CBoS:**

Dr. B. L. Sinha  
 Dr. B. H. Thakur  
 M. S. S. H. V. -  
 Dr. C. P. N. M.

1. Dr. S. Yadav  
 2. Dr. S. Chandra  
 3. Dr. S. Chandra  
 4. Dr. S. Chandra  
 5. Dr. S. Chandra  
 6. Dr. S. Chandra  
 7. Dr. S. Chandra  
 8. Dr. S. Chandra  
 9. Dr. S. Chandra  
 10. Dr. S. Chandra  
 11. Dr. S. Chandra  
 12. Dr. S. Chandra  
 13. Dr. Sophie Ambrelo  
 14. Dr. S. Chandra

10/06/24

## PART-C: Learning Resources

### Text Books, Reference Books and Others

#### Text Books-

1. Sarkar, A.K. (1997): Practical Geography : A Systematic Approach. Orient Publication ,Kolkata.
2. Sharma, J.P. (2001): Prayogik Bhugol., Rastogi Publication, Meerut .
3. Singh, R.L. and Singh, Rana P.B. (1993): Elements of Practical Geography. (Hindi and English editions). Kalyani Publishers, New Delhi.
4. Singh, L.R. (2006) : Fundamentals of Practical Geography, Sharda Pustak Bhawan,
5. Haroon, M. , Practical Geography, Mishra Trading Corporation, Varanasi,2010
6. Chauhan, P R. 2005, Practical Geography, Vasundhara Prakashan, Gorakhpur
7. Istiyak.M. 1989,A Textbook of Practical Geography,Heritage Publication New Delhi
8. Mishra R.N. ,P K Sharma, Prayogik Bhoogol Rawat Publication, Jaipur ,2019
9. Khullar , D.R., Prayogatmak Bhoogol, Kalyani Publishers, Ludhiyana.

#### E books-

- 1- <https://www.slideshare.net/NisarKhand/instrumental-surveying-practical-plane-table-survey>
- 2- <https://bbsbec.edu.in/wp-content/uploads/2020/01/com.pdf>
- 3- <https://surveyofindia.gov.in/documents/soichapter-v.pdf>

## PART -D: Assessment and Evaluation

### Suggested Continuous Evaluation Methods:

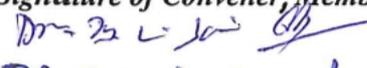
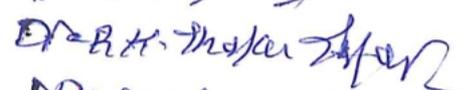
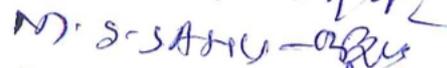
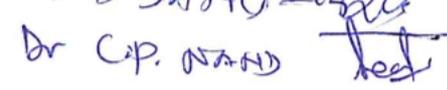
Maximum Marks: 50 Marks

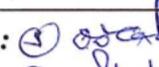
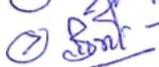
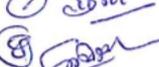
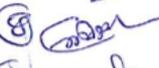
Continuous Internal Assessment (CIA): 15 Marks

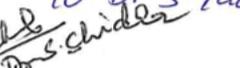
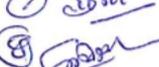
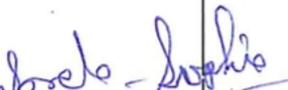
End Semester Exam (ESE): 35 Marks

|   |  |   |
|---|--|---|
| Continuous Internal Assessment (CIA): (By Course Teacher) | Internal Test / Quiz-(2): 10 & 10                            | Better marks out of the two Test / Quiz + obtained marks in Assignment shall be considered against 15 Marks |
|   | Assignment/Seminar +Attendance - 05<br>Total Marks - 15      |   |
| End Semester Exam (ESE):                                  | Laboratory / Field Skill Performance: On spot Assessment     | Managed by Course teacher as per lab. status  |
|   | A. Performed the Task based on lab. work - 20 Marks          |   |
|   | B. Spotting based on tools & technology (written) – 10 Marks |   |
|   | C. Viva-voce (based on principle/technology) - 05 Marks      |   |

### Signature of Convener, Members of CBoS :

Dr. S. L. Jais   
 Dr. R. H. Thakur   
 M. S. SATHI   
 Dr. C. P. NAND 

④   
 ⑤   
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 ⑦   
 ⑧   
 ⑨ 

10. Dr. S. Yadav   
 Mrs. Chidambaram   
 12.   
 13. Dr. Sophie Ambrose   


FOUR YEAR UNDERGRADUATE PROGRAM - (2024-28)

DEPARTMENT OF HINDI

COURSE CURRICULUM

| PART -A : Introduction   |                               |  |   |
|--|-------------------------------|--|---|
| Program: Bachelor in Arts<br>Certificate/Diploma/Degree/Honors |                               | Semester - I   | Session: 2024-25                                |
| 1  | Course Code                   | AEC-03   |   |
| 2  | Course Title                  | हिन्दी भाषा-1  |   |
| 3  | Course Type                   | Ability Enhancement Course   |   |
| 4  | Pre-requisite ( if any)       | As per requirement   |   |
| 5  | Course Learning Outcome (CLO) | 1. विद्यार्थी हिन्दी भाषा एवं व्याकरण संबंधी ज्ञान से समृद्ध होंगे।<br>2. भाषा ज्ञान के माध्यम से भारतीय संस्कृति एवं भावनात्मक एकता के महत्व को समझने की क्षमता विकसित हो सकेगी।<br>3. मुहावरे एवं लोकोक्तियों का महत्व समझ सकेंगे।<br>4. व्यंग्य, निबंध एवं कविता विधा से परिचित होंगे।<br>5. निबंध लेखन एवं अपठित गद्यांश के माध्यम से विद्यार्थियों का बौद्धिक विकास हो सकेगा। |   |
| 6  | Credit Value                  | 2 Credits  | (01 Credit = 15 Hours - learning & Observation) |
| 7  | Total Marks                   | Maximum Marks : 50   | Minimum Passing Marks : 20                      |

**PART -B : Content of the Course**

Total No. of Teaching-Learning Periods (01 Hr. Per Period) - 30 Periods (30 Hours)

| Unit     | Topics (Course Contents)   | No. of Period |
|----------|--|---------------|
| I        | रचनाएं<br>भारत वंदना – सूर्यकांत त्रिपाठी 'निराला' (कविता) भोलाराम का<br>जीव – हरिशंकर परसाई (व्यंग्य)<br>चोरी और प्रायश्चित – महात्मा गांधी (निबंध) | 8             |
| II       | हिन्दी व्याकरण एवं शब्द रचना उपसर्ग,<br>प्रत्यय, संधि, समास<br>पर्यायवाची शब्द, विलोम शब्द, अनेकार्थी शब्द, समश्रुत शब्द, अनेक शब्दों के लिए एक शब्द | 7             |
| III      | हिन्दी व्याकरण एवं रचना पक्ष<br>मुहावरे एवं लोकोक्तियां<br>पारिभाषिक शब्दावली एवं हिन्दी में पदनाम, शब्द शुद्धि, वाक्य शुद्धि                        | 8             |
| IV       | रचनात्मक लेखन<br>निबंध लेखन<br>अपठित गद्यांश<br>(नोट विद्यार्थी को किसी एक विषय पर निबंध व प्रदत्त गद्यांश का शीर्षक तथा सारांश लिखना होगा।)         | 7             |
| Keywords |  |               |

Signature of Convener & members (CBoS):

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| <b>PART -C : Learning Resource</b>  |
|---|
| <b>Text Books, Reference Books and Others</b>   |
| 1. भारतीयता के अमर स्वर – डॉ. धनंजय वर्मा, मध्यप्रदेश हिन्दी अकादमी<br>2. आधुनिक हिन्दी व्याकरण और रचना – डॉ. वासुदेव नंदन<br>3. हिन्दी भाषा और व्यवहार – डॉ. गंगा चरण त्रिपाठी<br>4. हिन्दी व्याकरण माला – डॉ. के.आर. गहिया, डॉ. विमलेश शर्मा<br>5. हिन्दी व्याकरण – कामता प्रसाद गुरु |
| <b>Online Resources -</b>   |
| 1 www.bookspace.in<br>2 https://libgmm.com<br>3 https://www.gkexams.com   |

| <b>PART -D : Assessment And Evaluation</b>   |   |  |
|--|---|--|
| Suggested Continuous Evaluation Methods :<br>Maximum Marks : 50 Marks<br>Continuous Internal Assessment (CIA) : 15 Marks<br>End Semester Exam (ESE) : 35 Marks |   |  |
| Continuous Internal Assessment : (CIA) :<br>(By Course Teacher)  | Internal Test/Quiz-(2) : 10 & 10<br>Marks<br>Assignment/Seminar+Attendan<br>ce - 05<br>Total Marks 15   | Better marks out of the two<br>Text/Quiz<br>obtained marks in assignment shall<br>be considered against 15 Marks |
| End Semester Exam (ESE) :  | Two Section - A&B<br>Section A : Q1 Objective - 05X1=05 Marks<br>Section A : Q2 Short Answer Type - 5X2=10 Marks<br>Section B : Descriptive Answer Type Qts. 1 out of 2<br>From Each Unit - 4X5=20 Marks<br>Total =35 Marks |  |

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**FOUR YEAR UNDER GRADUATE PROGRAM(2024-25)**  
**DEPARTMENT OF MATHEMATICS**  
**COURSE CURRICULUM**

| <b>Part A: Introduction</b>  |                               |   |  |
|--|-------------------------------|---|--|
| <b>Program: Bachelor in Science</b><br>(Certificate/Diploma/Degree/Honors) |                               | Class: B.Sc. II/IV/V/VI<br>Semester   | Session: 2024-2025   |
| 1  | Course Code                   | <b>MASEC-2</b>  |  |
| 2  | Course Title                  | <b>Python</b>   |  |
| 3  | Course Type                   | <b>Skill Enhancement Course (SEC)</b>   |  |
| 4  | Pre-requisite (if, any)       | Basic understanding of programming concepts, familiarity with syntax.   |  |
| 5  | Course Learning Outcome (CLO) | <p><b>This Course will enable the students to:</b></p> <ul style="list-style-type: none"> <li>➤ To write python programs , develop a small application .and logic for problem solving.</li> <li>➤ To be familiar about the basic constructs of programming such as data, operations, conditions, loops, functions etc.</li> <li>➤ To be familiar with string and its operation.</li> <li>➤ To develop basic concepts of function and terminology.</li> <li>➤ To determine the methods to create and develop Python programs by</li> <li>➤ Utilizing the data structures like lists and tuples.</li> </ul> |  |
| 6  | Credit Value                  | 2 Credits<br>(1C + 1C)  | <i>Credit = 15 Hours – Theoretical learning and<br/>= 30 Hours Laboratory or Field learning/Training</i> |
| 7  | Total Marks                   | Max. Marks: 50  | Min Passing Marks: 20  |

**Part B: Content of the Course**

| UNI<br>T | Topics  | No. of<br>Hours |
|----------|---|-----------------|
| <b>I</b> | <p><b>(A) Python Basic and IDE :-</b><br/>Introduction of Python, Installing Python, Running Simple Program, Removing Keys, Traversing a Dictionary .<br/>Basic of Python :-Data type of Python., Variable declaration rule, Python Identifier and reserved words, Input Output Function<br/>Operator of Python, Advanced Python operator(Membership and identity), Comments in Python, Line and Indentation,</p> <p><b>(B) Conditional structure :-</b> if Statements, if -else and statement, Nested if , if-elif-else ladder Loop Control Structure, While loop, For loop, Nested loop, Break Statement, Continue Statement, Pass Statement - Practical 6 ,7&amp; 8</p> <p><b>(C) String and Function</b><br/>String Basics, Accessing and updating String, Built-in String Methods<br/>Function in Python, Declaration and Calling function, Function Argument, Anonymous Functions<br/>Python Lists, Accessing and updating List, Basic List Operation, Built-in List Methods,<br/>Python Tuple, Accessing and updating tuple, Basic tuple operation, Built-in tuple Method.</p> | <b>15</b>       |

|           |  |           |
|-----------|--|-----------|
| <b>II</b> | <p><b>List of practicals based on Python :-</b></p> <ul style="list-style-type: none"> <li>▪ Practical 1 - Write a Python program that asks the user for their name and age, then prints a message greeting the user with their name and mentioning their age.</li> <li>▪ Practical 2 - Define a list with at least three elements of different data types and print the list.</li> <li>▪ Practical 3 - Write a program that takes two numbers and prints the sum of these numbers.</li> <li>▪ Practical 4 - Write a program to check whether the input number is even or odd.</li> <li>▪ Practical 5 - Write a program to compare three numbers and print the largest one.</li> <li>▪ Practical 6 - Write a program to print factors of a given number.</li> <li>▪ Practical 7 - Write a program to print table using while loop.</li> <li>▪ Practical 8 - Write a program to create the following pattern</li> <li>▪ Practical 9 - Write a Python program that takes a lowercase string from the user and converts it to uppercase.</li> <li>▪ Practical 10 - Write a function that takes a string input and checks if it is a palindrome or not.</li> <li>▪ Practical 11 - Write a Python program that defines a function to calculate the sum of two numbers.</li> <li>▪ Practical 12 - Create a tuple representing the days of the week and update the last element with "Sunday". Print the updated tuple.</li> <li>▪ Practical 13 - Write a Python program that concatenates two tuples and prints the concatenated tuple.</li> <li>▪ Practical 14 - WAP to create a list of numbers and sort the list in ascending order.</li> <li>▪ Practical 15 - Write a list function to convert a string into a list, as in list (-abc) gives [a, b, c].</li> </ul> | <b>30</b> |
|-----------|--|-----------|

|  |
|--|
| <b>Part C - Learning Resource</b>  |
| <b>Text Books, Reference Books, Other Resources</b>  |
| <p><b>Text Books Recommended-</b></p> <ol style="list-style-type: none"> <li>1. Fundamentals of Python first programs, 2nd Edition, Kenneth A. Lambert.</li> <li>2. Beginning Python from Novice to Professional, Third Edition, Magnus Lie Hetland</li> </ol>   |
| <p><b>Reference Books Recommended-</b></p> <ol style="list-style-type: none"> <li>3. Python for Science and Engineering, Hans-Petter Halvorsen.</li> <li>4. Python Programming: An Introduction to Computer Science, Third Edition, John Zelle.</li> <li>5. Introduction to Scientific Computing in Python, Continuum Analytics and Robert Johansson.</li> </ol> |
| <p><b>E-Recourses:</b></p> <p><a href="https://onlinecourses.nptel.ac.in">https://onlinecourses.nptel.ac.in</a><br/> <a href="https://epgp.inflibnet.aci.in">https://epgp.inflibnet.aci.in</a><br/> <a href="https://swayam.gov.in">https://swayam.gov.in</a><br/> <a href="https://www.mooc.org">https://www.mooc.org</a></p>                                   |

|  |                |          |                                       |          |                          |          |
|--|----------------|----------|---------------------------------------|----------|--------------------------|----------|
| <b>PART -D: Assessment and Evaluation</b>  |                |          |                                       |          |                          |          |
| <p>Suggested Continuous Evaluation Methods:</p> <table style="width: 100%;"> <tr> <td>Maximum Marks:</td> <td style="text-align: right;">50 Marks</td> </tr> <tr> <td>Continuous Internal Assessment (CIA):</td> <td style="text-align: right;">15 Marks</td> </tr> <tr> <td>End Semester Exam (ESE):</td> <td style="text-align: right;">35 Marks</td> </tr> </table> | Maximum Marks: | 50 Marks | Continuous Internal Assessment (CIA): | 15 Marks | End Semester Exam (ESE): | 35 Marks |
| Maximum Marks:   | 50 Marks       |          |                                       |          |                          |          |
| Continuous Internal Assessment (CIA):  | 15 Marks       |          |                                       |          |                          |          |
| End Semester Exam (ESE):   | 35 Marks       |          |                                       |          |                          |          |

*(Dr. P. K. Sahu)*

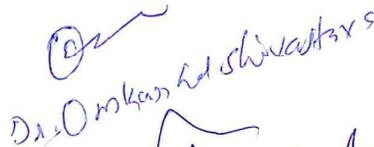
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|--|---|---|
| Continuous Internal Assessment (CIA):<br>(By Course Coordinator) | Internal Test / Quiz-(2): 10 & 10<br>Assignment/Seminar +Attendance - 05<br>Total Marks - 15  | Better marks out of the two Test / Quiz + obtained marks in Assignment shall be considered against 15 Marks |
| End Semester Exam (ESE):   | Laboratory / Field Skill Performance: On spot Assessment<br>A. Performed the Task based on learned skill - 20 Marks<br>B. Spotting based on tools (written) - 10 Marks<br>C. Viva-voce (based on principle/technology) - 05 Marks | Managed by Coordinator as per skilling  |

**Name and signature of convener & members of CBOS-**

  
 Dr. S. Dashputra

  
 Dr. Omkar

  
 Dr. P. K. Sahu





