# Syllabus Book

## B. Sc (IT)

(Offered under School of Sciences)

**P P Savani University**

Host Institute: School of Engineering

Effective From: 2021-22

Authored by: P P Savani University

# CONTENT

# FIRST YEAR B. SC. (IT)

**P P SAVANI UNIVERSITY**

**SCHOOL OF ENGINEERING**

**TEACHING & EXAMINATION SCHEME FOR FIRST YEAR B. SC. (IT) PROGRAMME**

| Sem. | Course Code | Course Name | Teaching Scheme | | | | | Examination Scheme | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Contact Hours | | | | Credit | Theory | | Practical | | Tutorial | | Total |
| | | | Theory | Practical | Tutorial | Total | | CE | ESE | CE | ESE | CE | ESE | |
| 1 | SESH1040 | Mathematics for Computer Applications | 3 | 0 | 2 | 5 | 5 | 40 | 60 | 0 | 0 | 50 | 0 | 150 |
| | SSIT1010 | Introduction to Computer Programming | 3 | 4 | 0 | 7 | 5 | 40 | 60 | 40 | 60 | 0 | 0 | 200 |
| | SSIT1020 | Web Application Design | 1 | 2 | 0 | 3 | 2 | 50 | 0 | 50 | 0 | 0 | 0 | 100 |
| | SSIT1030 | Computer Applications | 2 | 2 | 0 | 4 | 3 | 50 | 0 | 50 | 0 | 0 | 0 | 100 |
| | SEHV1010 | Universal Human Values - 1 | 2 | 0 | 0 | 2 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 100 |
| | | | | | | **Total** | **15** | | | | | | | **650** |
| 2 | SESH1061 | Discrete Mathematics for Computer Applications | 3 | 0 | 2 | 5 | 5 | 40 | 60 | 0 | 0 | 50 | 0 | 150 |
| | SSIT1040 | Data Structures | 3 | 2 | 0 | 5 | 4 | 40 | 60 | 20 | 30 | 0 | 0 | 150 |
| | SSIT1061 | Web Application Development | 1 | 2 | 0 | 3 | 2 | 50 | 0 | 50 | 0 | 0 | 0 | 100 |
| | SSIT1071 | Object Oriented Programming with JAVA | 3 | 4 | 0 | 7 | 5 | 40 | 60 | 40 | 60 | 0 | 0 | 200 |
| | CFLS1010 | Linguistic Proficiency | 2 | 0 | 0 | 2 | 2 | 40 | 60 | 0 | 0 | 0 | 0 | 100 |
| | | | | | | **Total** | **18** | | | | | | | **700** |

**P P Savani University**
**School of Sciences**

## Department of Computer Application

Course Code: SSIT1010
Course Name: Introduction to Computer Programming
Prerequisite Course(s): --

**Teaching & Examination Scheme:**

| Teaching Scheme (Hours/Week) | | | | Examination Scheme (Marks) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Theory | Practical | Tutorial | Credit | Theory | | Practical | | Tutorial | | Total |
| | | | | CE | ESE | CE | ESE | CE | ESE | |
| 03 | 04 | 00 | 05 | 40 | 60 | 40 | 60 | 00 | 00 | 200 |

CE: Continuous Evaluation, ESE: End Semester Exam

**Objective(s) of the Course:**
To help learners to

- understand how programming can help to solve real time problems.
- identify appropriate approach to computational problems.
- develop logic building and problem-solving skills.

**Course Content:**

| **Section I** | | | |
|---|---|---|---|
| Module No. | Content | Hours | Weightage in % |
| 1. | **Introduction to Computer Programming**<br>Introduction to programs, its significance, classification of programming language, Selection of a programming language. | 02 | 04 |
| 2. | **Introduction to C Programming**<br>Features of C language, structure of C Program, Development of program, Algorithm and flowchart, Types of errors, debugging, tracing/stepwise execution of program, watching variables values in memory. | 07 | 16 |
| 3. | **Constants, Variables and Data Types**<br>Character Set, C tokens, Keywords, Constants and Variables, Data types in C programming, typedef, enum, basic input and output operations. | 06 | 15 |
| 4. | **Operators and Expression and Managing I/O Operations**<br>Introduction to Operators and its types, Evaluation of expressions, Precedence of arithmetic operators, Type conversions in expressions, Operator precedence and associatively. Input and output of different types of data in C language, a character, formatted input, formatted output. | 07 | 15 |

| Section II | | | |
|---|---|---|---|
| Module No. | Content | Hours | Weightage in % |
| 1. | **Conditional Statements and Branching**<br>Decision Making & branching: Decision making with if &if ... else statements, if - else statements (Nested Ladder), The Switch & go-to statements, The turnary (? :) Operator Looping: The while statement, The break statement & The Do. While loop, The FOR loop, Jump within loops - Programs. | 06 | 16 |
| 2. | **Arrays and Strings**<br>Introduction to array, One dimensional array, Two dimensional arrays, Declaring and initializing string variables, Arithmetic operations on Characters, Putting strings together, Comparison of two strings, Basic String Handling Functions. | 06 | 15 |
| 3. | **User-Defined Functions, Structure and Union**<br>Concepts of user defined functions, prototypes, definition of function, parameters, parameter passing, calling a function, recursive function, Structure definition, declaring and initializing Structure variables, Accessing Structure members, Union. | 06 | 15 |
| 4. | **Pointers**<br>Introduction to pointers, Declaration, Initialization, Pointer to pointer, Pointer and array. | 05 | 04 |

**List of Practical:**

| Sr No | Name of Practical | Hours |
|---|---|---|
| 1. | Introduction to Basic Unix Commands-I | 02 |
| 2. | Introduction to Basic Unix Commands-II | 02 |
| 3. | Implement Basic C Programs using scanf() and printf() | 02 |
| 4. | Implement Basic C Programs to demonstrate different types of operators | 02 |
| 5. | Implementation in C for conditional statement: if()...else{} | 02 |
| 6. | Implementation in C for conditional statement: Nested if()....else{} | 02 |
| 7. | Implementation in C for conditional statement: if()...else if().....else{} | 02 |
| 8. | Implementation in C for conditional statement using switch()....case{} | 02 |
| 9. | Implementation in C for branching using goto | 02 |
| 10. | Implement C program using while and do….while loop | 06 |
| 11. | Implement C program using for loop for different problems | 04 |
| 12. | Implement C program using loops to print different types of patterns | 04 |
| 13. | Implement C program using for loop for series problems | 04 |
| 14. | Implementation in C using 1D Array and 2D Array | 08 |
| 15. | Write a C program to find length of a string without using in-built functions | 02 |
| 16. | Implement String programs in C to copy, concatenate and compare given strings | 04 |
| 17. | Implement a program to demonstrate user defined functions | 02 |

| | | |
|---|---|---|
| 18. | Implement a program to demonstrate recursive solution for factorial problem | 04 |
| 19. | Implementation in C Structures and Unions | 04 |

**Text Book(s):**

| Title | Author/s | Publication |
|---|---|---|
| Programming in ANSI C | E. Balagurusamy | Tata McGraw Hill |
| Introduction to Computer Science | ITL Education Solutions Limited | Pearson Education |

**Reference Book(s):**

| Title | Author/s | Publication |
|---|---|---|
| Programming in C | Ashok Kamthane | Pearson |
| Let Us C | Yashavant P. Kanetkar | Tata McGraw Hill |
| Introduction to C Programming | Reema Thareja | Oxford Higher Education |

**Web Material Link(s):**

- https://www.javatpoint.com/c-programming-language-tutorial
- https://nptel.ac.in/courses/106105085/4
- https://fresh2refresh.com/c-programming/

**Course Evaluation:**

**Theory:**

- Continuous Evaluation consists of two tests each of 30 marks and 1 Hour of duration, which will be converted to 30 marks.
- Faculty evaluation consists of 10 marks as per
- guidelines provided by the course coordinator.
- End Semester Examination consists of 60 marks.

**Practical:**

- Continuous Evaluation consists of the performance of practical, which will be evaluated out of 10 per each practical. At the end of the semester, the average of the entire practical will be converted to 20 marks.
- Internal viva consists of 20 marks.
- Practical performance/quiz/test consists of 30 marks.
- External viva consists of 30 marks.

**Course Outcome(s):**

After completion of the course, the student will be able to

- learn the fundamentals of programming.
- develop efficient programs with their own logic & capabilities.
- understand the syntax and semantics of the 'C' language.

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## Department of Computer Application

Course Code: SSIT1020
Course Name: Web Application Design
Prerequisite Course(s): --

**Teaching & Examination Scheme:**

| Teaching Scheme (Hours/Week) | | | | Examination Scheme (Marks) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Theory | Practical | Tutorial | Credit | Theory | | Practical | | Tutorial | | Total |
| | | | | CE | ESE | CE | ESE | CE | ESE | |
| 01 | 02 | 00 | 03 | 50 | 00 | 50 | 00 | 00 | 00 | 100 |

CE: Continuous Evaluation, ESE: End Semester Exam

**Objective(s) of the Course:**
To help learners to

- understand basic components of internet.
- learn basic web technologies such as HTML, JavaScript and CSS.
- develop basic knowledge of website designing.

**Course Content:**

| **Section I** | | | |
|---|---|---|---|
| Module No. | Content | Hours | Weightage in % |
| 1. | **Introduction**<br>World Wide Web, Web Server, Website, Website design principles, planning the website, navigation | 05 | 10 |
| 2. | **HTML**<br>HTML Basics, HTML Attributes, HTML Headings, HTML Paragraphs, HTML Styles, HTML Text Formatting, HTML Links, HTML Images | 05 | 20 |
| 3. | **CSS**<br>CSS Syntax, CSS Colors, CSS Background, CSS Border, CSS Margin, CSS Box Model, CSS Text, CSS Fonts. | 05 | 20 |
| **Section II** | | | |
| Module No. | Content | Hours | Weightage in % |
| 1. | **JavaScript**<br>Syntax of JavaScript, external file, folder, URL, JavaScript Statements, JavaScript Variables, JavaScript Arithmetic, JavaScript String Concatenation, JavaScript Datatypes, JavaScript Functions, JavaScript different methods. | 08 | 25 |

| | | | |
|---|---|---|---|
| 2. | **Bootstrap CSS**<br>Introduction to Bootstrap CSS, Content Delivery Network, Bootstrap classes. | 07 | 25 |

**List of Practical:**

| Sr. No | Name of Practical | Hours |
|---|---|---|
| 1. | Implement HTML Attributes, HTML Headings and HTML Paragraphs. | 04 |
| 2. | Implement HTML Styles and HTML Text Formatting. | 02 |
| 3. | Implement code to add Links in HTML. | 02 |
| 4. | Implement code to add Images in HTML. | 02 |
| 5. | Implement code to create different types of frame using HTML. | 04 |
| 6. | Create a static web page using HTML to display P P Savani University information. | 04 |
| 7. | Write JavaScript program to show the implementation of JavaScript inside head, body, external file, folder, URL. | 02 |
| 8. | Write a program to perform arithmetic operations in JavaScript. | 02 |
| 9. | Write a program to concatenate two Strings in JavaScript. | 02 |
| 10. | Write a program to show the use of functions in JavaScript. | 02 |
| 11. | Write a JavaScript function to check whether a string is blank or not. | 04 |
| 12. | Write a program to show the use of math functions in JavaScript. | 02 |
| 13. | Write a program to show the use of random function in JavaScript. | 02 |
| 14. | Write a program to implement arrays in JavaScript. | 04 |
| 15. | Write a program to implement CSS Colors, CSS Background, CSS Border and CSS Margin. | 04 |
| 16. | Write a program to show the use of CSS Box Model. | 04 |
| 17. | Write a program to implement CSS Text colors and size. | 02 |
| 18. | Write a program to implement CSS Fonts styles. | 02 |
| 19. | Write a program to implement Bootstrap classes. | 02 |
| 20. | Create a website as a mini project in this subject. | 08 |

**Reference Book (s):**

| Title | Author/s | Publication |
|---|---|---|
| HTML Black Book | Steven Holzner | Dreamtech Press |
| JavaScript by Examples | Dani Akash | Packt |
| HTML & CSS: Design and Build Web Sites | Jon Duckett | Wiley |
| Step by Step Bootstrap 3: A Quick Guide to Responsive Web Development Using Bootstrap 3 | Riwanto Megosinarso | Kindle Edition |

**Web Material Link(s):**

- https://www.w3schools.com/
- https://www.guru99.com/interactive-javascript-tutorials.html
- https://htmldog.com/guides/javascript/

**Course Evaluation:**

**Theory:**

- Continuous Evaluation consists of two tests each of 30 marks and 1 Hour of duration, which will be converted to 30 marks.
- Faculty evaluation consists of 10 marks as per the guidelines provided by the course coordinator.
- End Semester Examination consists of 60 marks.

**Practical:**

- Continuous Evaluation consists of the performance of practical, which will be evaluated out of 10 marks per each practical. At the end of the semester, the average of the entire practical will be converted to 20 marks.
- Internal viva consists of 20 marks.
- Practical performance/quiz/test consists of 30 marks.
- External viva consists of 30 marks.

**Course Outcome(s):**

After completion of the course, the student will be able to

- learn the fundamentals of Website designing.
- apply knowledge of HTML, CSS, and JavaScript to build static and dynamic websites.

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## Department of Computer Application

Course Code: SSIT1030
Course Name: Computer Applications
Prerequisite Course(s): --

**Teaching & Examination Scheme:**

| Teaching Scheme (Hours/Week) | | | | Examination Scheme (Marks) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Theory | Practical | Tutorial | Credit | Theory | | Practical | | Tutorial | | Total |
| | | | | CE | ESE | CE | ESE | CE | ESE | |
| 02 | 02 | 00 | 03 | 50 | 00 | 50 | 00 | 00 | 00 | 100 |

CE: Continuous Evaluation, ESE: End Semester Exam

**Objective(s) of the Course:**
To help the learners to

- understand various components of a computer.
- learn assembling and dissembling of computer hardware.
- learn and apply various office automation tools.

**Course Content:**

| **Section I** | | | |
|---|---|---|---|
| Module No. | Content | Hours | Weightage in % |
| 1. | **Introduction to Computer and its Architecture**<br>Introduction and Characteristics, Generation, Classification, Applications, Introduction to various components of computer hardware, input / output peripherals, Central Processing Unit, Communication between various units, processor speed. | 05 | 15 |
| 2. | **Memory**<br>Introduction to Memory, Memory hierarchy, Primary memory and its type, Secondary memory, Classification of Secondary memory, Various secondary storage devices and their functioning, their merits and demerits, Concept of Main memory, Auxiliary Memory, Associative Memory, Cache Memory and Virtual Memory. | 05 | 20 |
| 3. | **Software**<br>Introduction of different types of software and its installations. | 05 | 15 |
| **Section II** | | | |
| Module No. | Content | Hours | Weightage in % |
| 1. | **Device Drivers, Dual booting and virtualization** | 03 | 10 |

| | | | |
|---|---|---|---|
| | Installation of device drivers and other required software, need and method of backup, introduction to dual booting, its significance, concept of virtualization. | | |
| 2. | **Internet and Security Issues**<br>Computer network, topology, LAN, MAN, WAN, Advantages, Basic security issues: Computer viruses, malware, trojan horse etc. | 03 | 15 |
| 3. | **Various Processing Tools**<br>Various word processing tools: spreadsheet, presentation etc., various development tools: flow, animation, website development tools etc. | 09 | 25 |

**List of Practical:**

| Sr. No | Name of Practical | Hours |
|---|---|---|
| 1. | Introduction to different hardware components of PC and Assembling of PC. | 01 |
| 2. | Installation of OS and other Softwares. and understanding Dual Booting. | 01 |
| 3. | Understanding LAN connections. | 01 |
| 4. | Understanding how to create bootable pen drive. | 01 |
| 5. | Working with browsers, internet, email, google drive etc. | 01 |
| 6. | Working with Microsoft Word to create simple document and applying various types of font formatting features. | 01 |
| 7. | Working with Microsoft Word to insert different objects like pictures, links, files and other objects in a document. | 04 |
| 8. | Create a Flier using Microsoft Word. | 02 |
| 9. | Working with Microsoft Excel to understand basic features like creating numerical database, applying simple formulas using =. | 04 |
| 10. | Create a Grade sheet in Microsoft Excel. | 02 |
| 11. | Create a Pivot table and Pivot chart for the given data: Order ID, Product, Category, Amount, Date and Country. | 02 |
| 12. | Creating presentation template using Microsoft Presentation. | 04 |
| 13. | Create a presentation including features like Master Slide, animation, rehearse time, custom animation and other suitable features | 02 |
| 14. | Create a presentation for celebration of any event in your college. | 02 |
| 15. | Draw a Flowchart for any C program using Flowchart Development Tool (For example: Edraw) | 01 |
| 16. | Learning Virtualization using VMware | 01 |

**Text Book(s):**

| Title | Author/s | Publication |
|---|---|---|
| Structured Computer Organization | Andrew S. Tanenbaum | Pearson |
| Computer Network Fundamentals & Application | R. S. Rajesh, K. S. Easwarakumar, R. Balasubramanian | Vikas |
| Computer Science | ITL Education Solutions Limited | Pearson |
| Upgrading and repairing PCs | Scott Mueller | Pearson Education |

**Reference Book(s):**

| Title | Author/s | Publication |
|---|---|---|
| The Complete PC upgrade and Maintenance guide | Mark Minasi | Sybex |
| Computer Hardware: installation, interfacing, troubleshooting, and maintenance | James, K. L. | PHI Learning |
| Computer Architecture and Organization | John P. Hayes | McGraw Hill |

**Course Evaluation:**

**Theory:**

- Continuous Evaluation consists of two tests of 30 marks and 1 hour of duration and average of the same will be converted to 30 marks.
- Faculty evaluation consists of 20 marks as per the guidelines provided by Course Coordinator.

**Practical:**

- Continuous Evaluation consists of the performance of practical, which will be evaluated out of 10 per each practical. At the end of the semester, the average of the entire practical will be converted to 25 marks.
- Internal viva and performance consists of 25 marks.

**Course Outcome(s):**

After completion of the course, the student will be able to

- design assemble and disassemble computer components.
- install various software and hardware.
- apply and design various office automation applications.

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## Department of Computer Application

Course Code: SSIT1040
Course Name: Data Structures
Prerequisite Course(s): --

**Teaching & Examination Scheme:**

| Teaching Scheme (Hours/Week) | | | | Examination Scheme (Marks) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Theory | Practical | Tutorial | Credit | Theory | | Practical | | Tutorial | | Total |
| | | | | CE | ESE | CE | ESE | CE | ESE | |
| 03 | 02 | 00 | 04 | 40 | 60 | 20 | 30 | 00 | 00 | 150 |

CE: Continuous Evaluation, ESE: End Semester Exam

**Objective(s) of the Course:**
To help learners to

- understand linear and non-linear data structures and its applications.
- analyze various searching and sorting algorithms and its impacts on data structures.
- develop logic building and problem-solving skills.

**Course Content:**

| **Section I** | | | |
|---|---|---|---|
| Module No. | Content | Hours | Weightage in % |
| 1. | **Introduction**<br>Object and Instance, Object Oriented Concepts, Data types, Types of Data Structure, Abstract Data Types. | 04 | 10 |
| 2. | **Array**<br>Array Representation, Array as an Abstract Data Type, Programming Array in C, Sparse Matrices, Sparse Representations and its Advantages, Row-measure Order and Column-measure Order representation. | 05 | 10 |
| 3. | **Searching and Sorting**<br>Linear Search, Binary Search, Bubble Sort, Insertion Sort, Selection Sort, Radix sort. | 05 | 10 |
| 4. | **Stack and Queue**<br>Stack Definition and concepts, Operations on stack, Programming Stack using Array in C, Prefix and Postfix Notations and their Compilation, Recursion, Tower of Hanoi, Representation of Queue, Operation on Queue, Programming Queue using Array in C. Types of Queue, Applications of Stack & Queue. | 08 | 20 |

| Section II | | | |
|---|---|---|---|
| Module No. | Content | Hours | Weightage in % |
| 1. | **Linked List-Part I**<br>Dynamic Memory Allocation, Structure in C, Singly Linked List, Doubly Linked List, circular linked list. | 06 | 14 |
| 2. | **Linked List-II and Applications of Linked List**<br>Linked implementation of Stack, Linked implementation of Queue, Applications of Linked List. | 06 | 14 |
| 3. | **Trees**<br>Tree Definition, concepts and Representation. Binary Tree, Binary Tree Traversals, conversion from general to binary Tree. Threaded Binary Tree, Heap, Binary Search Tree, 2-3 Tree, AVL tree. | 07 | 15 |
| 4. | **Graphs**<br>Graph Definition, Concepts and Representation, Types of Graphs | 04 | 07 |

**List of Practical:**

| Sr No | Name of Practical | Hours |
|---|---|---|
| 1. | Introduction to Dynamic Memory Allocation | 02 |
| 2. | Revision of Structures in C | 02 |
| 3. | Write a program to perform Insertion sort. | 02 |
| 4. | Write a program to perform Selection sort. | 02 |
| 5. | Write a program to perform Insertion sort. | 02 |
| 6. | Write a program to perform Bubble sort. | 02 |
| 7. | Write a program to perform Linear Search sort. | 02 |
| 8. | Write a program to perform Binary Search sort. | 02 |
| 9. | Write a program to implement stack and perform push, pop operation. | 02 |
| 10. | Write a program to perform the following operations in linear queue – Addition, Deletion and Traversing. | 02 |
| 11. | Write a program to perform the following operations in circular queue – Addition, Deletion, and Traversing. | 02 |
| 12. | Write a program to perform the following operations in singly linked list – Creation, Insertion, and Deletion. | 02 |
| 13. | Write a program to perform the following operations in doubly linked list – Creation, Insertion, and Deletion. | 02 |
| 14. | Write a program to create a binary tree and perform – Insertion, Deletion, and Traversal. | 02 |
| 15. | Write a program to create a binary search tree and perform – Insertion, Deletion, and Traversal. | 02 |

**Text Book (s):**

| Title | Author/s | Publication |
|---|---|---|
| An Introduction to Data Structures with Applications | Jean-Paul Tremblay, Paul G. Sorenson | Tata McGraw Hill |

**Reference Book(s):**

| Title | Author/s | Publication |
|---|---|---|
| Data Structures using C & C++ | Tanenbaum | Prenctice-Hall |
| Fundamentals of Computer Algorithms | E. Horowitz, Sahni, and S. Rajsekaran | Galgotia Publication |
| Data Structures: A Pseudo-code approach with C | Gilberg&Forouzan | Thomson Learning |
| Data & File Structure | Rohit Khurana | Vikas Publication |
| C & Data Structures | P S Deshpande, O. G. Kakde | CharlesRiverMedia |

**Web Material Link(s):**

- https://www.coursera.org/learn/data-structures
- https://nptel.ac.in/courses/106102064/
- https://nptel.ac.in/courses/106106127/

**Course Evaluation:**

**Theory:**

- Continuous Evaluation consists of two tests each of 30 marks and 1 Hour of duration, which will be converted to 30 marks.
- Faculty evaluation consists of 10 marks as per the guidelines provided by the course coordinator.
- End Semester Examination consists of 60 marks.

**Practical:**

- Continuous Evaluation consists of the performance of practical, which will be evaluated out of 10 per each practical. At the end of the semester, the average of the entire practical will be converted to 10 marks.
- Internal viva consists of 10 marks.
- Practical performance/quiz/test consists of 15 marks.
- External viva consists of 15 marks.

**Course Outcome(s):**

After completion of the course, the student will be able to

- differentiate primitive and non-primitive structures.
- design and apply appropriate data structures for solving computing problems.
- implement different data structures.
- apply sorting and searching algorithms to the small and large data sets.
- analyze algorithms for specific problems.

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## Department of Computer Application

Course Code: SSIT1061
Course Name: Web Application Development
Prerequisite Course(s): Web Application Design (SSIT1020)

**Teaching & Examination Scheme:**

| Teaching Scheme (Hours/Week) | | | | Examination Scheme (Marks) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Theory | Practical | Tutorial | Credit | Theory | | Practical | | Tutorial | | Total |
| | | | | CE | ESE | CE | ESE | CE | ESE | |
| 01 | 02 | 00 | 02 | 50 | 00 | 50 | 00 | 00 | 00 | 100 |

CE: Continuous Evaluation, ESE: End Semester Exam

**Objective(s) of the Course:**
To help learners to

- gain the PHP programming skills needed to successfully build interactive, data-driven sites.
- understand how server-side programming works on the web.
- connect to any modern database and perform hands on practice with a MySQL database to create database-driven HTML forms and reports.

**Course Content:**

| **Section I** | | | |
|---|---|---|---|
| Module No. | Content | Hours | Weightage in % |
| 1. | **Introduction to PHP**<br>Loosely typed language vs. Strongly Typed Language<br>What is PHP? - Basic PHP Syntax, Comments in PHP, Error Management | 01 | 05 |
| 2. | **Constants, Variables and data Types:**<br>Keyword, Constants and Variables, Data types - Declaration and initialization, basic input and output operations, symbolic constants | 01 | 10 |
| 3. | **Operators and Expression**<br>Arithmetic Operator, Increment and Decrement Operator, Assignment Operator, String Operator | 02 | 10 |
| 4. | **Conditional statement and branching:**<br>Decision Making & branching: Decision making with If & If ... Else statements, If - Else statements (Nested Ladder) and Looping: The while statement, The break statement & The Do. While loop, The FOR loop, FOREACH, break and continue | 03 | 25 |

| Section II | | | |
|---|---|---|---|
| Module No. | Content | Hours | Weightage in % |
| 1. | **User-Defined Functions**<br>prototypes, definition of function, parameters, parameter passing, calling a function, recursive function, in-built functions | 01 | 10 |
| 2. | **Arrays and Strings:**<br>Introduction to array, Numeric Array, Associative Array and Multi-dimensional Array, in-built string functions | 02 | 10 |
| 3. | **PHP Forms**<br>$_GET and $_POST function | 02 | 10 |
| 4. | **Data-base connectivity in PHP** | 03 | 20 |

**List of Practical:**

| Sr. No. | Name of Practical | Hours |
|---|---|---|
| 1. | Hello World Example, finding errors present in the program, Insert Comments in Program, PHP Variable Example, Global and locally-scoped variables – Example, Constant string Example, PHP Example to calculate the area of the circle | 2 |
| 2. | Static Keyword in PHP – Example, ECHO and PRINT statements in PHP – Example, strlen() and strpos() functions – Example | 2 |
| 3. | Example on Arithmetic Operators, Increment and Decrement Operators, Assignment Operators and String Operators | 2 |
| 4. | Example on Conditional Statements (if, if…else Statement, if…elseif…else and Switch) | 2 |
| 5. | Example on branching Statements (For loop, Declaring multiple variables in for loop, While loop and Do While loop), Example on break and Continue Statement | 2 |
| 6. | User Defined Function Example (How to Adding parameters and How to Return values?). Date () and time() function in PHP – Example | 2 |
| 7. | Array in PHP<br>Numeric array in PHP – Example<br>Associative array in PHP – Example<br>Loop through an Associative array<br>Multidimensional array in PHP – Example | 4 |
| 8. | PHP Forms<br>The $_GET Function - Example<br>The $_POST Function – Example<br>PHP Global Variables – Superglobals<br>$_GLOBALS – Example<br>$_SERVER – Example | 4 |
| 9. | How to connect to MYSQL database using PHP<br>-The functions used to connect web form to the MYSQL database<br>-Display the data from MYSQL database in web form<br>-Insert the data into MYSQL database using web form<br>-Update the data present in MYSQL database using web form | 6 |

| | | |
|---|---|---|
| | -Delete the data from MYSQL database using web form<br>-Using Cookies with PHP | |
| 10. | A simple GUI based web-application development using PHP<br>-Finalization of topic<br>-Analysis of problem<br>-Design of GUI<br>-PHP Implementation<br>-Testing<br>-Final Evaluation | 4 |

**Text Book(s):**

| Title | Author/s | Publication |
|---|---|---|
| Learning PHP, MySQL | Michele Davis, Jon Phillips | 'O' riley Press |

**Reference Book(s):**

| Title | Author/s | Publication |
|---|---|---|
| The Complete Reference PHP | Steven Holzner | TMH |
| Web Technologies Black Book | Kogent Learning Solutions Inc. | Dreamtech PRESS |

**Web Material Link(s):**

- https://www.w3schools.com/php/
- http://www.nptelvideos.com/php/php_video_tutorials.php

**Course Evaluation:**

**Practical:**

- Continuous Evaluation consists of the performance of practical, which will be evaluated out of 10 per each practical. At the end of the semester, the average of the entire practical will be converted to 20 marks.
- Submission of project developed as per the guidelines of the course coordinator at the end of the semester consists of 30 marks.

**Course Outcome(s):**

After completion of the course, the student will be able to

- understand structure of open-source technologies.
- learn advance web technology concepts.
- prepare industry ready professionals in the field of web technology.

**P P Savani University**
**School of Sciences**

## Department of Computer Application

Course Code: SSIT1071
Course Name: Object Oriented Programming with Java
Prerequisite Course(s): Introduction to Computer Programming (SSIT1010)

**Teaching & Examination Scheme:**

| Teaching Scheme (Hours/Week) | | | | Examination Scheme (Marks) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Theory | Practical | Tutorial | Credit | Theory | | Practical | | Tutorial | | Total |
| | | | | CE | ESE | CE | ESE | CE | ESE | |
| 03 | 04 | 00 | 05 | 40 | 60 | 40 | 60 | 00 | 00 | 200 |

CE: Continuous Evaluation, ESE: End Semester Exam

**Objective(s) of the Course:**
To help learners to
- understand basics of object-oriented programming.
- identify appropriate approach to computational problems.
- develop logic building and problem-solving skills.

**Course Content:**

| **Section I** | | | |
|---|---|---|---|
| Module No. | Content | Hours | Weightage in % |
| 1. | **Introduction**<br>Programming language Types and Paradigms, Flavors of Java, Java Designing Goal, Features of Java Language, JVM –The heart of Java, Java's Magic Byte code. | 03 | 05 |
| 2. | **Object Oriented Programming Fundamentals**<br>Class Fundamentals, Object and Object reference, Object Life time and Garbage Collection, Constructor and initialization code block, Access Control, Modifiers, Nested class, Inner Class, Anonymous Classes, Abstract Class and Interfaces, Defining Methods, Method Overloading, Dealing with Static Members, Use of "this" reference, Use of Modifiers with Classes & Methods, Generic Class Types. | 06 | 15 |
| 3. | **Java Environment and Data Types**<br>The Java Environment: Java Program Development, Java Source File Structure, Compilation, Executions, Identifiers, Keywords, Literals, Comments, Primitive Data-types, Operators. | 05 | 10 |
| 4. | **Class and Inheritance**<br>Use and Benefits of Inheritance in OOP, Types of Inheritance in Java, Inheriting Data Members and Methods, Role of | 07 | 15 |

| | | | |
|---|---|---|---|
| | Constructors in inheritance, Overriding Super Class Methods, Use of "super", Polymorphism in inheritance, Type Compatibility and Conversion. | | |
| 5. | **Java Packages**<br>Organizing Classes and Interfaces in Packages, Package as Access Protection, Defining Package, CLASSPATH Setting for Packages, Making JAR Files for Library Packages, Import and Static Import, Naming Convention for Packages. | 02 | 05 |
| | **Section II** | | |
| Module No. | Content | Hours | Weightage in % |
| 1. | **Array and String Concepts**<br>Defining an Array, Initializing & Accessing Array, Multi – Dimensional Array, Operation on String, Using Collection Bases Loop for String, tokenizing a String, Creating Strings using String Buffer. | 04 | 10 |
| 2. | **Exception Handling**<br>The Idea behind Exception, Exceptions & Errors, Types of Exception, Control Flow in Exceptions, JVM reaction to Exceptions, Use of try, catch, finally, throw, throws in Exception Handling, In-built and User Defined Exceptions, Checked and Un-Checked Exceptions. | 05 | 10 |
| 3. | **Thread**<br>Understanding Threads, Needs of Multi-Threaded Programming, Thread Life-Cycle, Thread Priorities, Synchronizing Threads, Inter Communication of Threads. | 06 | 15 |
| 4. | **Applet**<br>Applet & Application, Applet Architecture, Parameters to Applet. | 03 | 5 |
| 5. | **Input Output Operations in Java**<br>Streams and the new I/O Capabilities, Understanding Streams, The Classes for Input and Output, The Standard Streams, Working with File Object, File I/O Basics, Reading and Writing to Files, Buffer and Buffer Management, Read/Write Operations with File, Channel, Serializing Objects. | 05 | 10 |

**List of Practical:**

| Sr. No | Name of Practical | Hours |
|---|---|---|
| 1. | Introduction to Java Environment and Netbeans. | 02 |
| 2. | Implementation of java programs with classes and objects. | 04 |
| 3. | Implement java programs to showing usage of overloading and overriding. | 02 |
| 4. | Implementation of java programs to demonstrate different access specifiers. | 04 |
| 5. | Implementation of java programs using concept of inner classes. | 04 |
| 6. | Implementation of java programs for variables, data types, operator. | 04 |

| | | |
|---|---|---|
| 7. | Implement of java programs for inheritance (single, multilevel, hierarchical). | 04 |
| 8. | Implementation of java programs to demonstrate use of super keyword. | 02 |
| 9. | Implementation of java programs for anonymous and abstract classes. | 02 |
| 10. | Implementation of java programs for Interface. | 02 |
| 11. | Implementation of java programs to demonstrate java packages. | 02 |
| 12. | Implementation of java programs to use arrays and string. | 06 |
| 13. | Implementation of java programs for exception handling using all keywords. | 04 |
| 14. | Implementation of java programs to demonstrate life cycle of thread. | 02 |
| 15. | Implementation of java programs for the concepts of thread priority, synchronization, inter- thread communication. | 06 |
| 16. | Implementation of Applets, AWT and Web Servers. | 06 |
| 17. | Implementation of file handling operations. | 04 |

**Text Book(s):**

| Title | Author/s | Publication |
|---|---|---|
| Core Java Volume I – Fundamentals | Cay Horstmann and Gray Cornell | Pearson |

**Reference Book(s):**

| Title | Author/s | Publication |
|---|---|---|
| Thinking in Java | Bruce Eckel | Pearson |
| Learning Java | Patrick Niemeyer and Jonathan Knudsen | O'reilly Media |

**Web Material Link(s):**

- https://www.programiz.com/java-programming
- https://www.tutorialspoint.com/java
- https://www.geeksforgeeks.org/java-programming-basics/
- https://nptel.ac.in/noc/individual_course.php?id=noc19-cs07

**Course Evaluation:**

**Theory:**

- Continuous Evaluation consists of two tests each of 30 marks and 1 Hour of duration, which will be converted to 30 marks.
- Faculty evaluation consists of 10 marks as per the guidelines provided by the course coordinator.
- End Semester Examination consists of 60 marks.

**Practical:**

- Continuous Evaluation consists of the performance of practical, which will be evaluated out of 10 per each practical. At the end of the semester, the average of the entire practical will be converted to 20 marks.
- Internal viva consists of 20 marks.
- Practical performance/quiz/test consists of 30 marks.
- External viva consists of 30 marks.

**Course Outcome(s):**

After completion of the course, the student will be able to

- learn the fundamentals of object-oriented programming.
- develop efficient programs with their own logic & capabilities.
- understand the syntax and semantics of the 'Java' language.

**P P Savani University**
**School of Sciences**

## Department of Science & Humanities

Course Code: SESH1040
Course Name: Mathematics for Computer Applications
Prerequisite Course(s): --

**Teaching & Examination Scheme:**

| Teaching Scheme (Hours/Week) | | | | Examination Scheme (Marks) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Theory | Practical | Tutorial | Credit | Theory | | Practical | | Tutorial | | Total |
| | | | | CE | ESE | CE | ESE | CE | ESE | |
| 03 | 00 | 02 | 02 | 40 | 60 | 00 | 00 | 50 | 00 | 150 |

CE: Continuous Evaluation, ESE: End Semester Exam

**Objective(s) of the Course:**
To help the learners to

- provide foundation of data representation, logical implementation of data.
- educate mathematical concepts to recognize their applications in computer domain.
- demonstrate a basic understanding of a function, its inverse, composition, and notation.
- model and analyze computational processes using analytic and combinatorial methods.

**Course Content:**

| **Section I** | | | |
|---|---|---|---|
| Module No. | Content | Hours | Weightage in % |
| 1. | **Number System**<br>Introduction to Number System, Base, Types of Number Systems, Conversion Between Number Bases, Arithmetic Operations-Addition, Subtraction, Multiplication and Division for Binary, Octal, Hexadecimal Systems, Signed Unsigned Numbers, Binary Coding-BCD, ASCII, EBCDIC, Floating Point Representation of Numbers and Arithmetic Operation with Normalized Floating-Point Numbers. | 08 | 18 |
| 2. | **Mathematical Logic**<br>Propositional Logic, Propositional Equivalences, Predicates and Quantifiers, Nested Quantifiers. | 07 | 16 |
| 3. | **Set, Relation and Function**<br>Basics of Set Theory, Operations on Sets, Relation, Properties of Relation, Equivalence Relation, Hasse Diagram, Introduction to Function, Types of Functions, Exponentials, Logarithms, Rational Functions, Composition of function, Inverse function. | 07 | 16 |

| Section II | | | |
|---|---|---|---|
| Module No. | Content | Hours | Weightage in % |
| 1. | **Elementary Combinatorics**<br>Introduction, Basic Counting Principles, Permutation and Combination, Mathematical Induction. | 06 | 14 |
| 2. | **Determinants**<br>Formation of Determinants, Minors and Cofactors of the Elements of a Determinant, Properties of Determinants, Application of Determinants in Computer Science, Cramer's Rule. | 08 | 17 |
| 3. | **Analytical Geometry**<br>Introduction to Cartesian coordinate system, Straight line, Slope of Straight line, Intersection of two straight lines, Equation of circle, Centre and Radius, Tangent, Equation of Parabola, Hyperbola and Ellipse. | 09 | 19 |

**List of Tutorial(s):**

| Sr. No. | Name of Tutorial | Hours |
|---|---|---|
| 1. | Number System-1 | 2 |
| 2. | Number System-2 | 4 |
| 3. | Mathematical Logic | 4 |
| 4. | Set, Relation and Function-1 | 2 |
| 5. | Set, Relation and Function-2 | 4 |
| 6. | Elementary Combinatorics | 4 |
| 7. | Determinants-1 | 2 |
| 8. | Determinants-2 | 4 |
| 9. | Analytical Geometry-1 | 2 |
| 10. | Analytical Geometry-2 | 2 |

**Text Book (s):**

| Title | Author/s | Publication |
|---|---|---|
| Discrete Mathematics | T. Veerarajan | Tata McGraw Hill |

**Reference Book(s):**

| Title | Author/s | Publication |
|---|---|---|
| Discrete Mathematics and its Applications | Kenneth H. Rosen | Tata McGraw Hill |
| Analytical Geometry: 2D and 3D | P R Vittal | Pearson |
| Discrete Mathematical Structures with Applications to Computer Science | J. P. Tremblay, R. Manohar | Tata McGraw Hill |
| Introduction to Computer Science | ITL ESL | Pearson |

**Web Material Link(s):**

- http://nptel.ac.in/courses/106106094/
- http://nptel.ac.in/courses/117103064/4
- http://nptel.ac.in/courses/122107036/17

**Course Evaluation:**

**Theory:**

- Continuous Evaluation consists of two tests each of 30 marks and 1 Hour of duration, which will be converted to 30 marks.
- Faculty evaluation consists of 10 marks as per the guidelines provided by the course coordinator.
- End Semester Examination consists of 60 marks.

**Tutorial:**

- Continuous evaluation consists of performance of tutorial which will be evaluated out of 10 marks for each tutorial and average of the same will be converted to 30 marks.
- MCQ examination/Application based small project report writing of 10 marks.
- Internal viva consists of 10 marks.

**Course Outcome(s):**

After completion of the course, the student will be able to

- convert decimal to binary, hexadecimal and 2's complement data representation; perform arithmetic operations like addition, subtraction, division and multiplication.
- use concepts of set theory for understanding & fetching data from database using query.
- apply permutations and combinations on given set of data.

**P P Savani University**
**School of Sciences**

## Department of Science & Humanities

Course Code: SESH1061
Course Name: Discrete Mathematics for Computer Applications
Prerequisite Course(s): Mathematics for Computer Applications (SESH1040)

**Teaching & Examination Scheme:**

| Teaching Scheme (Hours/Week) | | | | Examination Scheme (Marks) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Theory | Practical | Tutorial | Credit | Theory | | Practical | | Tutorial | | Total |
| | | | | CE | ESE | CE | ESE | CE | ESE | |
| 03 | 00 | 02 | 05 | 40 | 60 | 00 | 00 | 50 | 00 | 150 |

CE: Continuous Evaluation, ESE: End Semester Exam

**Objective(s) of the Course:**
To help learners to

- to extend concepts of set theory by study of lattice and group.
- to apply knowledge of discrete mathematics for problem solving skills necessary to succeed in design and analysis of algorithms, database management, software engineering and computer networks.

**Course Content:**

| **Section I** | | | |
|---|---|---|---|
| Module No. | Content | Hours | Weightage in % |
| 1. | **Matrix Algebra**<br>Introduction, Types of Matrices, Operations of Matrices, Adjoint Matrices, Solution of System of Equations by Matrix Inversion Method, Applications of Matrix. | 07 | 18 |
| 2. | **Lattices**<br>Definition & properties of Lattice, Lattices as Algebraic System, Sublattices, Types of lattices, Distributive lattices, Modular lattices, Complemented lattices, Bounded lattices, Complete lattices. | 07 | 16 |
| 3. | **Group Theory**<br>Binary operations, Properties of Group, Groupoid, semigroup & monoid, Abelian group, Subgroup, Cosets, Normal subgroup, Lagrange's theorem, Cyclic group, Permutation group, Homomorphism & Isomorphism of groups. | 08 | 16 |

| Section II | | | |
|---|---|---|---|
| Module No. | Content | Hours | Weightage in % |
| 1. | **Tree**<br>Introduction to trees, Properties of tree, Distance and centre in tree, Rooted tree, Binary tree, Tree Traversal. | 07 | 14 |
| 2. | **Spanning Tree**<br>Introduction to Spanning tree, DFS, BFS Algorithm, Minimum Spanning Tree, Prim's and Kruskal's Algorithm, Application of Spanning Trees. | 07 | 18 |
| 3. | **Graph Theory**<br>Formation of graph, Basic terminologies of directed and undirected graphs, Matrix representation of graphs (Adjacency Matrix and Incidence Matrix), Isomorphism, Walk, Path, Circuit, Euler Path and Circuit, Hamilton Path and Circuit, Shortest path problem, Dijkstra's Algorithm. | 09 | 18 |

**List of Tutorial(s):**

| Sr. No. | Name of Tutorial | Hours |
|---|---|---|
| 1. | Matrix Algebra-1 | 02 |
| 2. | Matrix Algebra-2 | 04 |
| 3. | Lattices | 04 |
| 4. | Group Theory -1 | 02 |
| 5. | Group Theory -2 | 04 |
| 6. | Tree | 04 |
| 7. | Spanning Tree-1 | 02 |
| 8. | Spanning Tree-2 | 02 |
| 9. | Graph Theory-1 | 04 |
| 10. | Graph Theory-2 | 02 |

**Text Book (s):**

| Title | Author/s | Publication |
|---|---|---|
| Discrete Mathematics | T. Veerarajan | Tata McGraw Hill. |

**Reference Book(s):**

| Title | Author/s | Publication |
|---|---|---|
| Discrete Mathematics and its Applications | Kenneth H. Rosen | Tata McGraw Hill |
| Discrete Mathematical Structures with Applications to Computer Science | J. P. Tremblay<br>R. Manohar | Tata McGraw Hill |

**Web Material Link(s):**

- http://nptel.ac.in/courses/106106094/
- http://nptel.ac.in/downloads/111104026/

**Course Evaluation:**

**Theory:**

- Continuous Evaluation consists of two tests each of 30 marks and 1 Hour of duration, which will be converted to 30 marks.
- Faculty evaluation consists of 10 marks as per the guidelines provided by the course coordinator.
- End Semester Examination consists of 60 marks.

**Tutorial:**

- Continuous evaluation consists of performance of tutorial which will be evaluated out of 10 marks for each tutorial and average of the same will be converted to 30 marks.
- MCQ examination/Application based small project report writing of 10 marks.
- Internal Viva consists of 10 marks.

**Course Outcome(s):**

After completion of the course, the students will be able to

- determine need of matrices in image processing, computer graphics and cryptography.
- apply knowledge of group theory for data encryption.
- design and use foundational concepts of notations and results of graph theory in information storage and retrieval.
- apply the basic concepts of spanning tree algorithm namely DFA, BFS, prim's and Kruskal's in design of network.

**P P Savani University**
**Centre for Language Studies**

Course Code: CFLS1010
Course Name: Linguistic Proficiency **(A2 Elementary)**
Prerequisite Course(s): --

**Teaching & Examination Scheme:**

| Teaching Scheme (Hours/Week) | | | | Examination Scheme (Marks) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Theory | Practical | Tutorial | Credit | Theory | | Practical | | Tutorial | | Total |
| | | | | CE | ESE | CE | ESE | CE | ESE | |
| 2 | 0 | 0 | 2 | 40 | 60 | 0 | 0 | 0 | 0 | 100 |

CE: Continuous Evaluation, ESE: End Semester Exam

**Objective(s) of the Course:**
To help learners to

- raise, or ask questions about surrounded information and give answers about themselves and family.
- understand very simple and daily routine information.
- read and understand the very simple texts.
- form simple sentences.
- identify the usage of grammar and vocabulary.

**Course Content:**

| Module No. | Content | Hours | Weightage in % |
|---|---|---|---|
| 1. | **Grammar & Vocabulary**<br>**Grammar**<br>• Present Tense (Simple, Continue, Perfect)<br>• Past Tenses (Simple, to be)<br>• Future (Simple)<br>• Modals (Can, could, may, might, must, should, would)<br>• -ing and the infinitive (Verbs + to + infinitive and verbs + -ing)<br>• Identification of parts of speech there and it<br>• Questions and word Order<br>• **Vocabulary**<br>• Numbers (cardinal/ordinal) and money • Countries, nationalities and languages • Times • Days, dates, months, years and seasons • Shops and places • Interests, sports and activities • Jobs • Rooms and furniture • Colours • Size and weight • Body parts and appearance • Food, meals, cooking • Weather • Transport • Health • Feelings and emotions • Street directions • Clothes (any 4 of these) | 09 | 20 |
| 2. | **Listening**<br>• Listening to my last holiday<br>• Listening to my family, | 04 | 20 |

| | | | |
|---|---|---|---|
| | • Listening to my flat,<br>• Listening to daily routine<br>• Listening to shopping habits | | |
| 3. | **Speaking**<br>• Giving and taking introductions, personal information and family, getting to know each other, greetings, asking for directions and giving directions<br>• Raising or asking and answering simple questions | 06 | 20 |
| 4. | **Reading**<br>• Reading of the content of the simpler texts like labels, posters, catalogs, ads, menus, schedules, and guess the unknown words on a contextual basis.<br>• Reading of information around us such as announcements, simple advertising, places and activities, job vacancies, etc. | 04 | 20 |
| 5. | **Writing**<br>• Write about themselves<br>• Form basic sentences<br>• Write about hobbies<br>• Writing short personal letters | 07 | 20 |

**Course Evaluation:**

**Theory:**

- Continuous Evaluation consists 20 marks of Speaking and 20 marks of Listening Test.
- End Semester Examination consists of 60 marks.

**Text Book (s):**

| Title | Author/s | Publication |
|---|---|---|
| Basic English Grammar | Murphy Raymond | Cambridge University Press |

**Reference Book (s):**

| Title | Author/s | Publication |
|---|---|---|
| English Vocabulary in Use Pre-Intermediate and Intermediate | Stuart Redman | Cambridge University Press |
| Technical Communication (2nd Edition, 2011) | Meenakshi Raman, Sangeet Sharma | Oxford University Press |

**Course outcome(s):**

After completion of the course, the student will be able to

- understands familiar words and phrases that are directly related to everyday communication situations (family, shopping, home, work), when people speak slowly and clearly.
- understands short, simple texts and personal messages, can find information from simple daily texts (labels, posters, directories, ads, job offers, menus, schedules).
- can ask questions about others and answer questions on themselves, can communicate in a simple language, if a partner helps her/him, can describe her/his family and other people, living conditions, education and work in a very simple way.
- can write a very simple personal message or sentences.

**P P Savani University**
**Centre for Language Studies**

Course Code: CFLS1010
Course Name: Linguistic Proficiency **(A2)**
Prerequisite Course(s): --

**Teaching & Examination Scheme:**

| Teaching Scheme (Hours/Week) | | | | Examination Scheme (Marks) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Theory | Practical | Tutorial | Credit | Theory | | Practical | | Tutorial | | Total |
| | | | | CE | ESE | CE | ESE | CE | ESE | |
| 2 | 0 | 0 | 2 | 40 | 60 | 0 | 0 | 0 | 0 | 100 |

CE: Continuous Evaluation, ESE: End Semester Exam

**Objective(s) of the Course:**
To help learners to

- communicate in simple and routine tasks requiring a simple and direct exchange of information on familiar topics and activities.
- handle very short social exchanges.
- read and understand the main ideas of simple texts.
- structure ideas logically in writing.
- develop accuracy in the usage of grammar and vocabulary.

**Course Content:**

| Module No. | Content | Hours | Weightage in % |
|---|---|---|---|
| 1. | **Grammar & Vocabulary**<br>**Grammar**<br>• Asking Questions—Question forms<br>• Present simple vs present continuous<br>• Past simple—Form and use<br>• However, although, because, so, and time connectors<br>• Will vs be going to—future<br>• Present perfect or past simple?<br>• Much, many, little, few, some, any—quantifiers<br>• Subject and object pronouns, possessive pronouns and adjectives<br>• Prepositions of movement<br>**Vocabulary**<br>• Families, Restaurants and leisure venues, Personality, Biographical information, Buildings and monuments, Weather, Clothes and accessories, large numbers, Hobbies, sports and interests, Education, Life changes and events, Animals, Descriptions of people, health, fitness, and illnesses (any 4 of these) | 09 | 20 |

| | | | |
|---|---|---|---|
| 2. | **Listening**<br>• Listening to factual information<br>• Listening to the weather forecast<br>• Listening to the content of guidelines<br>• Listening to everyday communication situation of the family, shopping, home, work.<br>• Listening to simple pair or group talks. | 04 | 20 |
| 3. | **Speaking**<br>• Giving and taking introductions, personal information and family, getting to know each other, simpler personal information, greetings, asking for directions and giving directions, accommodation establishments, booking a room, describing weather, seasons, birds, animals, plants,<br>• Descriptions of Food and drink including Cafes, restaurants, and other catering establishments; booking a table, ordering, etc. | 06 | 20 |
| 4. | **Reading**<br>• Reading of the content of the simpler texts like labels, posters, catalogs, ads, menus, job offers, schedules, and guess the unknown words on a contextual basis.<br>• Reading of information around us such as announcements, advertising, places and activities, job vacancies, etc. | 04 | 20 |
| 5. | **Writing**<br>• Description of the day<br>• Writing messages & experiences<br>• Writing on familiar topics<br>• Writing short personal letters | 07 | 20 |

**Course Evaluation:**

**Theory:**

- Continuous Evaluation consists 20 marks of Speaking and 20 marks of Listening Test.
- End Semester Examination consists of 60 marks.

**Text Book (s):**

| Title | Author/s | Publication |
|---|---|---|
| Basic English Grammar | Murphy Raymond | Cambridge University Press |

**Reference Book (s):**

| Title | Author/s | Publication |
|---|---|---|
| English Vocabulary in Use Pre-Intermediate and Intermediate | Stuart Redman | Cambridge University Press |
| Technical Communication (2nd Edition, 2011) | Meenakshi Raman, Sangeet Sharma | Oxford University Press |

**Course outcome(s):**

After completion of the course, the student will be able to

- understand main points or phrases or ideas on everyday communication situations.
- understand common, basic or job-related language, events, short simple texts, personal letters and can find information from simple daily texts.
- can handle everyday typical communication tasks, can take and give introductions, can contribute to the conversation, and can describe themselves, their family, other people, food & drink.
- can write short messages, notes, & personal letters and can also write on simply about familiar topics.
- show an adequate degree of grammatical control and do not make major mistakes and show an understanding of sufficient vocabulary to conduct routine, everyday communications involving used to situations and topics.

**P P Savani University**
**Centre for Language Studies**

Course Code: CFLS1010
Course Name: Linguistic Proficiency **(B1)**
Prerequisite Course(s): --

**Teaching & Examination Scheme:**

| Teaching Scheme (Hours/Week) | | | | Examination Scheme (Marks) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Theory | Practical | Tutorial | Credit | Theory | | Practical | | Tutorial | | Total |
| | | | | CE | ESE | CE | ESE | CE | ESE | |
| 02 | 0 | 0 | 02 | 40 | 60 | 00 | 0 | 0 | 0 | 100 |

CE: Continuous Evaluation, ESE: End Semester Exam

**Objective(s) of the Course:**
To help learners to

- demonstrate a greater knowledge of linguistic styles and norms.
- read and understand the main ideas of a variety of texts.
- structure ideas logically in writing.
- write clearly and in detail about a wide range of subjects.
- develop accuracy in the usage of grammar and vocabulary.

**Course Content:**

| Module No. | Content | Hours | Weightage in % |
|---|---|---|---|
| 1. | **Grammar & Vocabulary**<br>**Grammar**<br>• Functional use of parts of speech<br>• Questions—different types<br>• Auxiliary verbs<br>• Comparatives using the…the…<br>• Narrative tenses—all past tenses<br>• Position of adverbs and adverb phrases<br>• Gerund or infinitive—verb patterns<br>**Vocabulary**<br>• Buildings, Appliances, Clothes, Education, Entertainment, Environment, Food and drink, Nature, Personal Feelings, Technology, Weather, Sport (any 3 of these) | 09 | 20 |
| 2. | **Listening Skills**<br>• Note Taking & Making<br>• Audio Comprehension<br>• Movie Clips, News, documentaries | 04 | 20 |
| 3. | **Speaking Skills**<br>• Speaking in various contexts: | 06 | 20 |

| | | | |
|---|---|---|---|
| | • Expressing Result, talking about People/Place/Thing in Relation to Something, Expressing Manner of an Action, Making Supposition about an Action, Describing the process, Connecting Information, Offering Suggestion/Advice, Expressing Choice and Alternative Choice | | |
| 4. | **Reading Skills**<br>• Reading Newspaper, Books<br>• Summarizing<br>• Paraphrasing | 04 | 20 |
| 5. | **Writing Skills**<br>• Technical Writing: Application, Report Writing, Dialogue Writing, Movie Review, Book Review, Letter Writing | 07 | 20 |

**Course Evaluation:**

**Theory:**

- Continuous Evaluation consists 20 marks of Speaking and 20 marks of Listening Test.
- End Semester Examination consists of 60 marks.

**Text Book (s):**

| Title | Author/s | Publication |
|---|---|---|
| Basic English Grammar | Murphy Raymond | Cambridge University Press |

**Reference Book (s):**

| Title | Author/s | Publication |
|---|---|---|
| English Vocabulary in Use Pre-Intermediate and Intermediate | Stuart Redman | Cambridge University Press |
| Technical Communication (2nd Edition, 2011) | Meenakshi Raman, Sangeet Sharma | Oxford University Press |

**Course Outcome(s):**

After completion of the course, the student will be able to

- speak confidently and discuss the familiar topics with native speakers in brief.
- understand lengthy speech and lectures and follow complex arguments of the familiar topic.
- understand most TV news, the majority of films and current affairs programs in common accents.
- read articles and reports about common topics, read literature in English.
- write clearly and in detail about a wide range of subjects as well as essays, reports, and letters.

Course Code: CFLS1010
Course Name: Linguistic Proficiency **(B2)**
Prerequisite Course(s): --

**Teaching & Examination Scheme:**

| Teaching Scheme (Hours/Week) | | | | Examination Scheme (Marks) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Theory | Practical | Tutorial | Credit | Theory | | Practical | | Tutorial | | Total |
| | | | | CE | ESE | CE | ESE | CE | ESE | |
| 02 | 0 | 0 | 02 | 40 | 60 | 00 | 0 | 0 | 0 | 100 |

CE: Continuous Evaluation, ESE: End Semester Exam

**Objective(s) of the Course:**

To help learners to

- Demonstrate a greater knowledge of linguistic styles and norms.
- Read and understand the main ideas of a variety of texts.
- Structure ideas logically in writing.
- Write clearly and in detail about a wide range of subjects.
- Develop accuracy in the usage of grammar and vocabulary.

**Course Content:**

| Module No. | Content | Hours | Weightage in % |
|---|---|---|---|
| 1. | **Grammar & Vocabulary**<br>**Grammar**<br>• Clauses of contrast, purpose, reason, and result<br>• Reflexive and reciprocal pronouns<br>• 'There and it' – preparatory subjects<br>• Speculation and deduction – modal verbs and expressions<br>• Conditionals<br>• Gerunds and infinitives<br>• Functions<br>**Vocabulary**<br>Travel and Tourism, Health and Medicine, Crime and Law, Education, Personality Adjectives, Collocations and Phrases (any 3 of these) | 09 | 20 |
| 2. | **Listening Skills**<br>• Understanding the difference between Hearing and Listening and Critical Listening.<br>• Understanding the various texts in the context of the tone and emotion they portray.<br>• Exploring domain-general audio clips and deriving an understanding of the embedded message.<br>• Developing the ability to understand the context of a given situation in a conversation/audio clip. | 04 | 20 |

| | | | |
|---|---|---|---|
| 3. | **Speaking Skills**<br>• Exploration of various forms of speech like extempore, elocution, short speech, etc.<br>• Conversational Role Plays and Skits.<br>• Elocution to express one's opinion on various subjects given by the Teacher.<br>• Collaborative discussion to generate different opinions and responses.<br>• Sustaining an interaction; exchanging ideas, expressing and justifying opinions, agreeing and/or disagreeing, suggesting, speculating, evaluating, reaching a decision through negotiation, etc. | 06 | 20 |
| 4. | **Reading Skills**<br>• Introduction to Reading Vs Critical Reading.<br>• Reading and discussion of Short Prose with different writing styles.<br>• Understanding vivid descriptions of texts.<br>• Description of genres and writing styles that showcase the varying tones and features.<br>• Develop an understanding to read between the lines. | 04 | 20 |
| 5. | **Writing Skills**<br>• Summarizing vs. Paraphrasing<br>• Understanding the various texts in the context of the tone and emotion they portray.<br>• Understanding the various forms of written documentation like reports and summary.<br>• Writing activities that assist students in expressing their emotions and feelings.<br>• Writing tasks to generate contrasting ideas, letters for suggestions, letters for the recommendation, essays. | 07 | 20 |

**Course Evaluation:**

**Theory:**

- Continuous Evaluation consists 20 marks of Speaking and 20 marks of Listening Test.
- End Semester Examination consists of 60 marks.

**Text Book (s):**

| Title | Author/s | Publication |
|---|---|---|
| Basic English Grammar | Murphy Raymond | Cambridge University Press |

**Reference Book (s):**

| Title | Author/s | Publication |
|---|---|---|
| English Vocabulary in Use Pre-Intermediate and Intermediate | Stuart Redman | Cambridge University Press |

| | | |
|---|---|---|
| Technical Communication (2nd Edition, 2011) | Meenakshi Raman, Sangeet Sharma | Oxford University Press |

**Course Outcome(s):**

After completion of the course, the student will be able to

- developing an understanding of specific information, text organization features, tone, and text structure.
- develop an ability to write regular/common/casual text types such as an article, an essay, a letter, an email, a report, a review, or a short story, with a focus on advising, apologizing, comparing, describing, explaining, expressing opinions, recommending, suggesting.
- demonstrate an understanding of attitude, detail, function, genre, gist, main idea, opinion, place, purpose, situation, specific information, relationship, topic, agreement, etc.
- ability to develop and respond to questions and to interact in conversational English.

**P P Savani University**
**School of Engineering**

Course Code: SEHV1010
Course Name: Universal Human Values I
Prerequisite Course (s): --

**Teaching & Examination Scheme:**

| Teaching Scheme (Hours/Week) | | | | Examination Scheme (Marks) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Theory | Practical | Tutorial | Credit | Theory | | Practical | | Tutorial | | Total |
| | | | | CE | ESE | CE | ESE | CE | ESE | |
| 02 | 00 | 00 | 00 | 100 | 00 | 00 | 00 | 00 | 00 | 100 |

CE: Continuous Evaluation, ESE: End Semester Exam

**Objective(s) of the Course:**
To help learners to

- become familiar with the ethos and culture of the new surroundings.
- develop bond with peers, seniors, faculty and staff.
- provide an exposure to a holistic vision of life
- develop healthy lifestyle and ethical professional discipline
- connect and appreciate the diversity of cultures.

**Course Content:**

| **Section I** | | | |
|---|---|---|---|
| Module No. | Content | Hours | Weightage in % |
| 1. | **Introduction to UHV I**<br>• Getting to know each other<br>• Aspiration and Concerns | 02 | 13 |
| 2. | **Self-Management**<br>• Self-confidence, peer pressure<br>• Time management, anger/stress management<br>• Personality development, self-improvement<br>• Fixing one's goals | 06 | 25 |
| 3. | **Health**<br>• Health issues<br>• Healthy diet<br>• Healthy lifestyle<br>• Hostel life | 02 | 12 |
| **Section II** | | | |
| 4. | **Relationships & Society**<br>• Home sickness<br>• Gratitude towards parents, teachers and others<br>• Ragging and interaction<br>• Competition and cooperation<br>• Participation in society | 06 | 24 |

| | | | |
|---|---|---|---|
| 5. | **Natural Environment and Self Evaluation**<br>• Participation in nature<br>• Review role of education<br>• Need for holistic perspective<br>• Sharing and feedback | 04 | 26 |

**Reference Link(s):**

- https://www.youtube.com/watch?v=OgdNx0X923I&list=PLYwzG2fd7hzer-n_sVjmtFnuSs_Mph4Bi
- https://fdp-si.aicte-india.org/3dayUHV_download.php

**Course Evaluation:**

**Theory:**

- Continuous Evaluation consists of 100 marks as per the guidelines provided by Course Coordinator.

**Course Outcome(s):**

After completion of the course, the student will be able to

- understand possibility to reach to their full potential as a human being.
- develop holistic perspective of life.
- sensitise about the scope of life – individual, family, society and nature.
- develop more confidence and commitment to understand, learn and act accordingly.