
ST. TERESA'S COLLEGE, ERNAKULAM
(AUTONOMOUS)

Affiliated to Mahatma Gandhi University, Kottayam



CURRICULUM FOR
B.VOC PROGRAMME IN SOFTWARE
DEVELOPMENT

Under Choice Based Credit & Semester System
& Outcome Based Education

(2018 Admissions)

BVSD- B.VOC PROGRAMME IN SOFTWARE DEVELOPMENT

PROGRAM SPECIFIC OUTCOMES

PSO1: Express technical knowledge, professional skills and competencies in the field of software development and IT enabled services.

PSO2 : Interpret financial, software and business reports and communicate key findings to stakeholders effectively.

PSO3 : Appraise ethics and values in various domains such as IT governance and sustainable practices.

PSO4 : Solve real life problems using mathematical, statistical and programming tools .

PSO5 : Collaborate industry-standard project practices as a bridge to stable employment through internships.

SEMESTER I

Course Code	Course Title	Credits	Course Type
EN1A01B18	Fine Tune Your English	4	Common Course 1
VSD1G01B18	LE FRANÇAIS ÉLÉMENTAIRE	4	General
CA1B01B18	Computer Fundamentals and Digital Principles	4	General
VSD1S01B18	Financial Accounting	4	Skill
VSD1S02B18	Problem Solving Techniques	4	Skill
CA1B02B18	Methodology of Programming and C Language	3	Skill
VSD1SP01B18	S/W Lab – I (Programming in C Language)	4	Skill (Practical)
VSD1SP02B18	S/W Lab – II (MS Office/ Photoshop)	3	Skill (Practical)

SEMESTER I

COMMON COURSE I

EN1A01B18-FINE TUNE YOUR ENGLISH

Credits: 4

Total Lecture Hours: 72

Course Outcomes:

CO1. Recognize the basics of English grammar

CO2. Choose the appropriate word classes

CO3. Identify common errors in the use of English language in various contexts

CO4. Apply the rules of grammar to comprehend, speak, and write grammatically correct English

CO5. Compose materials for business communication

Mapping of Course Outcomes with Program Specific Outcomes

Mapping	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	1	2	1	1	1
CO2	1	1	1	1	1
CO3	1	3	3	1	1
CO4	2	3	3	1	1
CO5	2	3	2	1	1

Syllabus Content

Module I

(18 Hours)

The Sentence and its Structure

How to Write Effective Sentences – Phrases:What are They? – The Noun Clauses – The Adverb Clause – “If All the Trees Were Bread and Cheese” – The Relative Clause – How Clauses are Conjoined

Module II

(18 Hours)

Word-Classes and Related Topics

Understanding the Verb – Understanding Auxiliary Verbs – Understanding Adverbs –
Understanding Pronouns – The Reflexive Pronoun – The Articles I – The Articles II – The
Adjective – Phrasal Verbs – Mind your Prepositions

Module III

(18 Hours)

To Err is Human

Concord – Errors – Common and Uncommon

Spelling and Pronunciation

Pronunciation: Some Tips – More Tips on Pronunciation – An awesome Mess? – Spelling Part II

Module IV

(18 Hours)

Tense and Related Topics

‘Presentness’ and Present Tenses – The ‘Presentness’ of a Past Action – Futurity in English –
Passivisation

Interrogatives and Negatives

Negatives – How to Frame Questions – What’s What? – The Question Tag

Module V

(18 Hours)

Conversational English

Some time expressions – Is John There Please?

Miscellaneous and General Topics

Reading

Letter Writing

In addition there will be an essay question on a general topic.

SEMESTER I

GENERAL COURSE

VSD1G01B18- LE FRANÇAIS ÉLÉMENTAIRE

Credits: 4

Total Lecture Hours: 72

Course Outcomes:

CO1: Identify and use familiar everyday expressions and basic phrases.

CO2: Develop Language, vocabulary and grammar skills

CO3: Construct simple and meaningful sentences that helps to express their behaviour

CO4: Prepare conversations based on scenarios which helps while traveling

CO5: Write basic compositions in simple but complete sentences and short paragraphs about different themes.

Mapping of Course Outcomes with Program Specific Outcomes

Mapping	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	1	2	1	1	1
CO2	1	3	2	1	1
CO3	2	3	2	1	1
CO4	3	3	2	1	1
CO5	2	3	1	1	1

Syllabus Content:

Module I

(16 hours)

Bienvenue – Qui est-ce ? Les alphabets – Les sons – les accents - saluer-se présenter quelqu'un - faire connaissance avec quelqu'un –les nombres – les verbes être, s'appeler – l'article défini

Module II

(14 hours)

Ça va bien ? – correspond@nce.com Les verbes aller et avoir – l'adjectif possessif au singulier – l'article indéfini – la politesse – demander des nouvelles d'une personne – chercher un(e) correspondant(e)

Module III

(14 hours)

Trouvez l'objet – Portrait-robot Nommer, monter et situer des objets – exprimer la possession – indiquer les couleurs – les pronoms toniques – le pluriel des articles, des verbes, des adjectifs possessifs, la négation

Module IV

(14 hours)

Shopping – Le coin des artistes Caractériser un objet – faire des achats – exprimer des goûts – l'adjectif interrogatif – les adjectifs interrogatifs – l'interrogation – comprendre un texte court

Module V

(14 hours)

Appartement à louer – C'est par où ? Situer un lieu sur un plan – décrire un appartement – indiquer une direction – indiquer un moyen de transport – les prépositions – l'impératif – l'adverbe y – comprendre une annonce immobilière – présenter des informations touristiques

SEMESTER I

GENERAL COURSE

CA1B01B18 : COMPUTER FUNDAMENTALS AND DIGITAL PRINCIPLES

Credits: 4

Total Lecture Hours: 72

Course Outcomes:

CO1: Differentiate the types of computers, softwares, hardwares and input or output devices

CO2: Differentiate the Operating Systems and basics of Networks and Internet.

CO3: Illustrate the conversion between various number systems and the construction of binary code.

CO4: Design simplified logical expression for digital circuits.

CO5: Construct digital circuits of medium complexity using the working of combinational and sequential circuits.

Mapping of Course Outcomes with Program Specific Outcomes

Mapping	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	1	1	2	2
CO2	3	1	1	2	2
CO3	2	1	2	2	2
CO4	2	1	2	2	3
CO5	3	1	2	2	2

Syllabus Content:

Module I:

(12 Hours)

Introduction: Functional units of a computer system, Different types of computers, Computer Software and Hardware, Types of software-System software and Application program.

Characteristic of computers. Input Devices – Keyboard, Mouse, Optical input devices, Output devices – Monitors and Printers, Primary & Secondary Memory

Module II: (15 Hours)

Introduction to Operating Systems and Networking: Definition of an Operating System - Different types of PC Operating Systems. Computer Networks- categories of networks - LAN, WAN, MAN. The Internet - Working of Internet - Major Features of Internet.

Module III: (15 Hours)

Number Systems: Base or radix, Positional number system, Popular number systems (Decimal, Binary, Octal and Hexadecimal), Conversion-From one number system to another, Concept of binary addition and subtraction, Complements in binary number systems, 1^s Complement, 2^s Complement and their applications, Signed magnitude form, BCD numbers- concept and addition, Parity.

Module IV: (15 Hours)

Boolean Algebra and Gate Networks: Logic gates- AND, OR, NOT, NAND and NOR Truth tables and graphical representation, Basic laws of Boolean Algebra, Simplification of Expressions, De Morgan's theorems, Dual expressions, Canonical expressions, Min terms and Max terms, SOP and POS expressions, Simplification of expression using K-MAP (up to 4 variables), Representation of simplified expressions using NAND/NOR Gates, Don't care conditions, XOR and its applications, parity generator and checker.

Module V: (15 Hours)

Sequential and Combinational Logic. Flip flops- Latch, Clocked, RS, JK, T, D and Master slave, Adders-Half adder, Full adder (need and circuit diagram), Encoders, Decoders, Multiplexers and De-multiplexers (working of each with diagram), Analog to digital and digital to analog converters (Diagram and working principle), : Concept of Registers, Shift Registers, Counters.

SEMESTER I

SKILL COURSE

VSD1S01B18 – FINANCIAL ACCOUNTING

Credits: 4

Total Lecture Hours: 72

Course Outcomes:

CO1: Identify the fundamentals concepts of accounting and double entry books of accounts.

CO2: Prepare the journal accounts by applying the rules of accounting

CO3: Prepare ledger accounts and cash book by applying the principles of accounting.

CO4: Articulate the theoretical concepts of double entry system and prepare the trial balance.

CO5-: Prepare final accounts of sole trader by employing the knowledge of accounting process

Mapping of Course Outcomes with Program Specific Outcomes

Mapping	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	1	2	1	1	1
CO2	1	3	1	1	1
CO3	2	3	1	1	1
CO4	2	3	1	1	1
CO5	2	3	1	1	1

Syllabus Content:

Module-I

(20 hours)

Accounting meaning Objects- Concepts and Conventions-Double Entry Books of Accounts Book keeping and Accounting Accountancy The language of the Business World Principles of double entry Advantages of double entry.

Module-II (10 hours)

Journal- Rules of debit and credit - Kinds of Accounts Journalising .

Module-III (20 hours)

Ledger Sub divisions of ledger Account Form of an Account Posting of Journal Balancing of Accounts-Cash book (simple, triple column)-Petty Cash book.

Module-IV (10 hours)

Trail Balance Meaning Objects-Summary of Accounting Entries.

Module-V (12 hours)

Final Accounts-Trading and Profit and Loss Account Balance Sheet (without adjustments)

SEMESTER I

SKILL COURSE

VSD1S02B18 : PROBLEM SOLVING TECHNIQUES

Credits: 4

Total Lecture Hours: 72

Course Outcomes:

- CO1:** Design solutions with algorithm to solve real life problem scenarios in professional development.
- CO2:** Illustrate solutions for factoring problems using algorithmic technique.
- CO3:** Experiment the usage of array and sorting concept in sequential and linear problem solving in computer and business logics.
- CO4:** Develop the logical ability to solve merging, sorting and searching problems with algorithms applied in commercial and numerical applications.
- CO5:** Create Algorithmic model for a Case Study or Real Project to solve a problem in business and society

Mapping of Course Outcomes with Program Specific Outcomes

Mapping	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	2	2	1	2	2
CO2	3	2	1	2	2
CO3	2	2	1	3	2
CO4	3	2	1	2	2
CO5	2	2	2	3	3

Syllabus Content:

Module I: PROGRAMMING TECHNIQUES (12 hours)

Steps Involved in Computer Programming – Problem Definition – Outlining The Solution – Flow Chart – Developing Algorithms – Efficiency of Algorithms - Analysis of Algorithms, Translators, Compiler and Interpreter.

Module II: FUNDAMENTAL ALGORITHMS (12 hours)

Exchanging the Values – Counting – Summation of Set of Number – Factorial Computation – Sine Computation – Fibonacci sequence – Reversing the Digits of an Integer – Base Conversion.

Module III: FACTORING METHODS (12 hours)

Finding the Square Root of a Number – Smallest Divisor of an Integer – GCD of Two Integers – Generating Prime Numbers – Computing the Prime Factors of an Integer – Raising a Number to a Large Power.

Module IV: ARRAY TECHNIQUES (12 hours)

Array Order Reversal – Array Counting or Histogram – Finding the Maximum Number in a Set – Removal of Duplicates from an Ordered Array – Partitioning an Array – Finding the kth Smallest Element

Module V: MERGING, SORTING AND SEARCHING (12 hours)

Two Way Merge - Sorting by Selection, Exchange, Insertion, and Partitioning - Binary Search Hash Searching

SEMESTER I

SKILL COURSE

CA1B02B18 : METHODOLOGY OF PROGRAMMING AND C LANGUAGE

Credits: 3

Total Lecture Hours: 72

Course Outcomes:

CO1: Develop an algorithm/flowchart to find its solution by analysing a computational problem.

CO2: Develop legible* C programs with branching and looping statements, which uses Arithmetic, Logical, Relational or Bitwise operators.

CO3: Develop legible C programs with arrays, structure or union for storing the data to be Processed.

CO4: Construct memory efficient C programs by the application of pointers for array processing and parameter passing and files for input and output storage.

Mapping of Course Outcomes with Program Specific Outcomes

Mapping	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	1	2	3	3
CO2	2	1	2	2	2
CO3	2	1	2	2	2
CO4	2	1	2	1	2

Syllabus Content:

Module I

(12 hours)

Introduction to programming, Classification of computer languages, Language translators (Assembler, Compiler, Interpreter), Linker, Characteristics of a good programming language,

Factors for selecting a language, Subprogram, Purpose of program planning, Algorithm, Flowchart, Pseudocode, Control structures (sequence, selection, Iteration), Testing and debugging.

Module II (15 hours)

C Character Set, Delimiters, Types of Tokens, C Keywords, Identifiers, Constants, Variables, Rules for defining variables, Data types, C data types, Declaring and initialization of variables, Type modifiers, Type conversion, Operators and Expressions- Properties of operators, Priority of operators, Comma and conditional operator, Arithmetic operators, Relational operators, Assignment operators and expressions, Logical Operators, Bitwise operators.

Module III (15 hours)

Input and Output in C – Formatted functions, unformatted functions, commonly used library functions, Decision Statements If, if-else, nested if-else, if-else-if ladder, break, continue, goto, switch, nested switch, switch case and nested if. Loop control-for loops, nested for loops, while loops, do while loop.

Module IV (15 hours)

Array, initialization, array terminology, characteristics of an array, one dimensional array and operations, two dimensional arrays and operations. Strings and standard functions, Pointers, Features of Pointer, Pointer and address, Pointer declaration, void wild constant pointers, Arithmetic operations with pointers, pointer and arrays, pointers and two dimensional arrays.

Module V (15 hours)

Basics of a function, function definition, return statement, Types of functions, call by value and reference. Recursion -Types of recursion, Rules for recursive function, direct and indirect recursion, recursion vs iterations, Advantages and disadvantages of recursion. Storage class, Structure and union, Features of structures, Declaration and initialization of structures, array of structures, Pointer to structure, structure and functions, typedef, bitfields , enumerated data types, Union, Dynamic memory allocation, memory models, memory allocation functions.

SEMESTER I

SKILL PRACTICAL

VSD1SP01B18 : S/W LAB – I (PROGRAMMING IN C LANGUAGE)

Credits: 2

Total Lecture Hours: 72

Course Outcomes:

CO1: Develop an algorithm/flowchart to find its solution by analyzing a computational problem

CO2: Develop legible* C programs with branching and looping statements, which uses Arithmetic, Logical, Relational or Bitwise operators.

CO3: Develop legible C programs with arrays, structure or union for storing the data to be processed.

CO4: Construct memory efficient C programs by the application of pointers for array processing and parameter passing and files for input and output storage.

Mapping of Course Outcomes with Program Specific Outcomes

Mapping	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	1	2	3	3
CO2	2	1	2	2	2
CO3	2	1	2	2	2
CO4	2	1	2	1	2

Syllabus Content:

1. Programs to familiarize printf() and scanf() functions.
2. Programs Based on Decision statements, break, goto, continue, switch and Loop controls statements.
3. Programs Based on One dimensional and two dimensional arrays.

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4. Programs on Strings and string handling functions.
 5. Programs based on Pointers, operations on pointers, Arrays & Pointers,
 6. Programs based on functions, Call by value, Call by reference, Recursion,
 7. Programs based on structure and union, array of structures, Pointer to structure, structure and functions
 8. Simple programs using pointers and malloc().

SEMESTER I

SKILL PRACTICAL

VSD1SP02B18 – S/W LAB – II (MS OFFICE/ PHOTOSHOP)

Credits: 3

Total Lecture Hours: 54

CO1: Create professional documents and spreadsheets using MS office tools for business and/or industry report generation

CO2: Develop Presentation skills using application software tools.

CO3: Appraise the knowledge of art and design components using Photoshop software.

CO4: Create proficiency in developing multimedia presentations using various features and techniques using software tools.

Mapping of Course Outcomes with Program Specific Outcomes

Mapping	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	2	3	2	2	2
CO2	3	3	1	2	2
CO3	2	2	1	1	2
CO4	2	2	2	1	3

Syllabus Content:

Module–I:

(9 hours)

Word Basics, Work with Text, Format Documents, Work with Text Objects, Work with References, Work with Illustrations, Specialized Documents, Collaborate with Others, Web Pages.

Excel Basics, Work with Cells and Worksheets Calculate Your Data, Format your Workbook, Add

Charts and Graphics, Collaborate with Others, Analyze your Data, Work with Macros and the Web.

Module–II:

(9 hours)

PowerPoint Basics, Create Presentations, Insert and Modify Text, Work with Graphics and Media, Final Preparations, Deliver a Presentation.

INTRODUCTION TO ADOBE PHOTOSHOP CS4

About Photoshop - Navigating Photoshop - Menus and panels- Opening new files - Opening existing files-Exploring the Toolbox- The New CS4 Applications Bar & the Options Bar- Exploring Panels & Menus- Creating & Viewing a New Document- Customizing the Interface- Setting Preferences - Zooming & Panning an Image -Working with Multiple Images, Rulers, Guides & Grids -Undoing Steps with History -Adjusting Color with the New Adjustments Panel - The New Masks Panel & Vibrance Color Correction Command.

RESIZING & CROPPING IMAGES : Understanding Pixels & Resolution-The Image Size

Command-Interpolation Options-Resizing for Print & Web-Cropping & Straightening an Image- Adjusting Canvas Size & Canvas Rotation.

Module–III:

(9 hours)

WORKING WITH BASIC SELECTIONS

Selecting with the Elliptical Marquee Tool-Using the Magic Wand & Free Transform Tool- Selecting with the Regular & Polygonal Lasso Tools-Combining Selections-Using the Magnetic Lasso Tool Using the Quick Selection Tool & Refine Edge-Modifying Selections.

GETTING STARTED WITH LAYERS

Understanding the Background Layer- Creating, Selecting, Linking & Deleting Layers- Locking & Merging Layers- Copying Layers, Using Perspective & Layer Styles- Filling & Grouping Layers Introduction to Blending Modes- Blending Modes, Opacity & Fill- Creating & Modifying Text.

PAINTING IN PHOTOSHOP

Using the Brush Tool- Working with Colors & Swatches- Creating & Using Gradients- Creating & Working with Brushes- Using the Pencil & Eraser Tools-Painting with Selections.

PHOTO RETOUCHING

The Red Eye Tool-The Clone Stamp Tool-The Patch Tool & the Healing -brush Tool-The Spot Healing Brush Tool- The Color Replacement Tool-The Toning & Focus Tools-Painting with History.

Module-IV:

(9 hours)

INTRODUCTION TO COLOR CORRECTION

Color Spaces & Color Modes-The Variations Command-The Auto Commands- Adjusting Levels Adjust Curves, Non-Destructively, with Adjustment Layers.

USING QUICK MASK MODE

Quick Mask Options - Painting a Selection- Saving & Removing a Selection from the Background

WORKING WITH THE PEN TOOL

Understanding Paths & the Pen Tool-Creating Straight & Curved Paths- Creating Combo Paths
Creating a Clipping Path

CREATING SPECIAL EFFECTS

Getting Started with Photoshop Filters- Smart Filters- Creating Text Effects- Applying Gradients to Text.