

ANNEXURE – I

St. Vincent Pallotti College of Engineering & Technology, Nagpur

Department of Vocation (B. VOC)

Teaching Scheme for B.VOC Second Year 2025-26

SEMESTER III (Software Development)

Sr. No.	Course Code	Course Title	Hours per Week			Credits	Maximum Marks		
			L	T	P		Continual Assessment	End Sem. Examination	Total
General Education Component (GEC)									
1	25BV301T	Business Communication Skills – III	3			3	40	60	100
2	25BV302T	Applied Computer Skills – III	3			3	40	60	100
3	25BV301P	Business Communication Skills – III Lab			3	3	25	25	50
4	25BV302P	Applied Computer Skills – III Lab			3	3	25	25	50
Total – GEC			6		6	12	130	170	300
Skill Education Component (SEC)									
5	25SD303S	Software Testing (*)	4		8	12	50	100 (***)	150
6	25SD304S	Skill Development –III (**)			4	4	50	--	50
	25SD305S	Java Programming	2			2	50	--	50
Total – SEC			6		12	18	150	100	250
Grand Total			12		18	30	280	270	550

Assessment Competent Authority: General Education Component, 25BV301T/P, 25BV302T/P, 25SD304S, 25SD305S: by college,

(*) Software Testing:- NASSCOM QP-SSC/Q1301 Test Engineer-ITS, NOS:SSC/N1301, N1302,N1303, NOS:SSC/N9001, SSC/N9002, SSC/N9003, SSC/N9004, SSC/N9005

(**) Skill Development-III: E-Courses & skill Workshops

(***) 25SD303S Assessment by Sector Skill Council – IT-ITeS –NASSCOM

SEMESTER IV (Software Development)

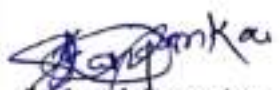
Sr. No.	Course Code	Course Title	Hours per Week			Credits	Maximum Marks		
			L	T	P		Continual Assessment	End Sem. Examination	Total
General Education Component (GEC)									
1	25BV401T	Business Communication Skills – IV	3			3	40	60	100
2	25BV402T	Employability Skills - I	3			3	40	60	100
	25BV401P	Business Communication Skills – IV Lab			3	3	25	25	50
4	25BV402P	Employability Skills - I Lab			3	3	25	25	50
Total – GEC			6		6	12	130	170	300
Skill Education Component (SEC)									
5	25SD403S	Mobile Application Development (*)	4		8	12	50	100 (***)	150
6	25SD404S	Skill Development- IV (**)			4	4	50	--	50
7	25SD405S	Android Programming	2			2	50	--	50
Total – SEC			6		12	18	150	100	250
Grand Total			10		18	30	280	270	550

Assessment Competent Authority: General Education Component, 25BV401T/P, 25BV402T/P, 25SD404S, 25SD405S: by college,

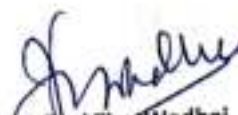
(*) Mobile Application Development: - SSC/ QP – SSC/Q8403 Application Developer – Web & Mobile, NOS: N8417, N8125, N8418, N8323, N9005

(**) Skill Development-IV: E-Courses & skill Workshops

(***) 25SD403S -Assessment by Sector Skill Council – IT-ITeS -NASSCOM


Dr. Suresh Bangankar
BOS, Chairman (B.VOC)


Dr. Promod Lanjewar
Dean (Academics)


Dr. Vijay Wadhwa
Principal



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B.VOC. Scheme of Examination & Syllabus 2024-25
SOFTWARE DEVELOPMENT, CYBER SECURITY, VIRTUAL REALITY AND AUGMENTED REALITY

FOURTH SEMESTER

COURSE CODE	COURSE NAME	TH	TU	PR	CREDITS	EVALUATION		
						CA	ESE	TOTAL
24BV401T	Business Communication Skills-IV	3	--	--	3	40	60	100

COURSE OBJECTIVES	COURSE OUTCOMES
<ul style="list-style-type: none">To provide students with the skills and knowledge of communication relevant to a business environment.To enable students to apply effective communication strategies for academic, professional, and employability-related contexts, including presentations, interviews, and business writing.	<ol style="list-style-type: none">To explain and identify grammatical rules, vocabulary usage, and sentence structures used in competitive examinations.To apply communication skills in listening, reading, summarizing, group discussions, and technical presentations.To analyze and construct effective business documents such as letters, notices, circulars, agendas, and minutes of meetings.To create professional documents like resumes, cover letters, and prepare impactful responses for interviews and corporate communication scenarios.

UNIT I: English for Competitive Exams [15 HRS]

Word Completion (Article, Preposition, Subject Verb Agreement, Adjectives, etc.), Sentence Completion, Error Identification, Passage Arrangement, Formal & Informal sentences (Idioms, Grammar, Active-Passive, Modal Auxiliaries, Jumbled Word sentences, One word substitution), Meanings (Synonyms, Antonyms)

UNIT II: Professional Communication [10 HRS]

Listening to Conversation and Summarizing, Integrated Writing – Read a short excerpt and write a response. Speaking – Group Discussion (Case studies, General, Abstract), Impactful Technical Presentation, Reading Comprehension.

UNIT III: Professional Correspondence [10 HRS]



Business Letter Writing, Circular and Notices, Agendas, Minutes of Meeting, Memos

UNIT IV: Employability Enhancement skills [10 HRS]

Cover letter, Resume, Mock Interviews, Personality Grooming for Corporate Life

TEXT/ REFERENCE BOOKS

S.N	Title	Authors	Edition	Publisher
1	Functional English for Technical Student	Dr. Pratibha Mahato and Dora Thompson	2020	Himalaya Publishing House
2.	Communication Skills for Engineer	C. Muralikrishna and Sunita Mishra	2022	Pearson
3.	Effective Technical Communication	Barun K Mitra	1	Oxford University Press
4.	Basic Business Communication	Lesikar, R. & Flatley	9	Tata McGraw Hill

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FOURTH SEMESTER

COURSE CODE	COURSE NAME	TH	TU	PR	CREDITS	EVALUATION		
						CA	ESE	TOTAL
24BV401P	Business Communication Skills-IV Lab	--	--	3	3	25	25	50

COURSE OBJECTIVES	COURSE OUTCOMES
<ul style="list-style-type: none"> • To provide students with the skills and knowledge of communication relevant to a business environment. • To enable students to apply effective communication strategies for academic, professional, and employability-related contexts, including presentations, interviews, and business writing. 	<ol style="list-style-type: none"> 1. To explain and identify grammatical rules, vocabulary usage, and sentence structures used in competitive examinations. 2. To apply communication skills in listening, reading, summarizing, group discussions, and technical presentations. 3. To analyze and construct effective business documents such as letters, notices, circulars, agendas, and minutes of meetings. 4. To create professional documents like resumes, cover letters, and prepare impactful responses for interviews and corporate communication scenarios.



List of Practicals / Activities:

<p>1. English for Competitive Exams:</p> <ol style="list-style-type: none"> a) Write 10 examples of Articles. b) Write 10 examples of MCQs of Prepositions. c) Write 10 examples of MCQs of Subject-Verb Agreement. d) Write 10 examples of MCQs of Adjectives. e) Write 10 examples of MCQs of Sentence Completion. f) Write 10 examples of MCQs of Error Identification. g) Write 10 examples of Passage Arrangement. h) Write 10 examples of MCQs of Idioms.
<p>2. Professional communication</p>
<p>3. Professional correspondence:</p> <ol style="list-style-type: none"> a) Business Letter writing b) Circular & Notices c) Agendas d) Minutes of Meeting e) Memos
<p>4. Employability Enhancement Skills.</p> <ol style="list-style-type: none"> i) Cover Letter ii) Resume iii) Mock Interviews

TEXT/ REFERENCE BOOKS

S.N	Title	Authors	Edition	Publisher
1	Functional English for Technical Student	Dr. Pratibha Mahato and Dora Thompson	2020	Himalaya Publishing House
2.	Communication Skills for Engineer	C. Muralikrishna and Sunita Mishra	2022	Pearson

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B.VOC. Scheme of Examination & Syllabus 2024-25

SOFTWARE DEVELOPMENT, CYBER SECURITY, VIRTUAL REALITY AND AUGMENTED REALITY

FOURTH SEMESTER

COURSE CODE	COURSE NAME	TH	TU	PR	CREDITS	EVALUATION		
						CA	ESE	TOTAL
24BV402T	Employability Skills-I	3	--	--	3	40	60	100

COURSE OBJECTIVES	COURSE OUTCOMES
<ul style="list-style-type: none"> To build strong foundational programming skills in C and C++ that help students solve logical and technical problems commonly asked in TCS ignite and other placement examinations. To develop the ability to design and implement structured and object-oriented solutions using C and C++, enabling students to meet industry expectations and perform well in TCS ignite coding assessments. 	<ol style="list-style-type: none"> To explain the basic concepts of C programming including data types, operators, control structures, and looping constructs. To apply arrays, strings, functions, and pointers to solve computational problems in C. To analyze and differentiate object-oriented concepts such as classes, objects, constructors, inheritance, and operator overloading in C++. To design and develop modular C and C++ programs using OOP concepts like polymorphism, overloading, overriding, and dynamic binding.

UNIT I: INTRODUCTION TO C PROGRAMMING [15 HRS]

Introduction to Computing, Overview of C, Constants, Variable and Data Types, Operators and Expressions, Control Structures, Decision Making and Branching, Decision Making and Looping.

UNIT II: INTRODUCTION TO ARRAYS AND STRINGS [15 HRS]

Arrays, Character Arrays and Strings, functions & Introduction to pointers, User-defined Functions, Pointers, Structures.

UNIT III: BASICS OF C++ [15 HRS]



OOPs Concepts, Functions, Object and Classes, Constructors & Destructors, Operator overloading

UNIT IV: FUNDAMENTALS OF C++ [15 HRS]

Inheritance, Overloading, Overriding, Pointers in C++, Polymorphism.

TEXT/ REFERENCE BOOKS

S.N	Title	Authors	Edition	Publisher
1	The complete reference C	Herbert shieldt	1	Tata McGraw Hill Publication.
2.	Object Oriented Programming in C++	Saurav Sahay	1	Oxford University Press.
3.	Object Oriented Programming in C++	Barun K Mitra	1	Techmedia Publication.
4.	Programming in ANSI C	E. Balaguruswamy	8th Edition, 2019	McGraw Hill Education
5	Let Us C	Yashavant P. Kanetkar	16th Edition, 2019	BPB Publications

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SOFTWARE DEVELOPMENT, CYBER SECURITY, VIRTUAL REALITY AND AUGMENTED REALITY

FOURTH SEMESTER

COURSE CODE	COURSE NAME	TH	TU	PR	CREDITS	EVALUATION		
						CA	ESE	TOTAL
24BV402P	Employability Skills-I -Lab	--	--	3	3	25	25	50



COURSE OBJECTIVES	COURSE OUTCOMES
<ul style="list-style-type: none">To build strong foundational programming skills in C and C++ that help students solve logical and technical problems commonly asked in TCS NQT and other placement examinations.To develop the ability to design and implement structured and object-oriented solutions using C and C++, enabling students to meet industry expectations and perform well in TCS NQT coding assessments.	<ol style="list-style-type: none">To explain the basic concepts of C programming including data types, operators, control structures, and looping constructs.To apply arrays, strings, functions, and pointers to solve computational problems in C.To analyze and differentiate object-oriented concepts such as classes, objects, constructors, inheritance, and operator overloading in C++.To design and develop modular C and C++ programs using OOP concepts like polymorphism, overloading, overriding, and dynamic binding.

List of Practicals / Activities:

1. Programming based on different operators.
2. Coding Using Control structures.
3. Programming based on Functions.
4. Programming based on arrays (1D and multi-dimensional).
5. Programming based on different functions of Strings.
6. Programming based on classes and objects, Constructors & Destructors.
7. Programming based on types of inheritances and Polymorphism.
8. Programming based on Operator Overloading, Pointers and Virtual Classes

TEXT/ REFERENCE BOOKS

S.N	Title	Authors	Edition	Publisher
1	The complete reference C	Herbert shieldt	1	Tata McGraw Hill Publication.
2.	Object Oriented Programming in C++	Saurav Sahay	1	Oxford University Press.
3.	Object Oriented Programming in C++	Barun K Mitra	1	Techmedia Publication.

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SOFTWARE DEVELOPMENT

FOURTH SEMESTER

COURSE CODE	COURSE NAME	TH	TU	PR	CREDITS	EVALUATION		
						CA	ESE	TOTAL
24SD403S	Mobile Application Development	4	--	8	12	50	100	150

COURSE OBJECTIVES	COURSE OUTCOMES
<ul style="list-style-type: none"> To introduce learners to the Android platform and development environment, enabling them to understand the structure, tools, and components required to build Android applications. To develop students' ability to design, implement, test, and publish Android applications using UI components, intents, services, layouts, and resource management. 	<ol style="list-style-type: none"> To explain the architecture of the Android platform, components of Android applications, and the role of the Android Manifest file. To apply Android components such as activities, intents, services, layouts, and animations to design functional user interfaces and application workflows. To analyze and differentiate various Android resources, permissions, intent filters, and UI design patterns to develop efficient and structured applications. To build, test, and publish Android applications by integrating UI elements, resources, preferences, and application components into a complete functioning product.

UNIT I: Introduction to Android: [15 HRS]

The Android Platform, Android SDK, Eclipse Installation, Android Installation, Building you First Android application, Understanding Anatomy of Android Application, Android Manifest file

UNIT II: Android Application Design Essentials: [15 HRS]

Anatomy of an Android applications, Android terminologies, Application Context, Activities, Services, Intents, Receiving and Broadcasting Intents, Android Manifest File and its common settings, Using Intent Filter, Permissions.

UNIT III: Android User Interface Design Essentials: [15 HRS]



User Interface Screen elements, Designing User Interfaces with Layouts, Drawing and Working with Animation.

UNIT IV: [15HRS]

Testing Android applications, Publishing Android application, Using Android preferences, Managing Application resources in a hierarchy, working with different types of resources.

TEXT BOOKS

SR NO	TITLE	AUTHORS	EDITION	PUBLISHER
1	Android Wireless Application Development	Lauren Darcey and Shane Conder	4TH	Pearson Education
2	Professional Android 2 Application Development	Reto Meier	4TH	Wiley India Pvt Ltd.
3	Beginning Android	Mark L Murphy	3 RD ,2.2	Wiley India Pvt Ltd.
4	Android Application Development All in one for Dummies	Barry Burd	3RD	John Wiley & sons

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B.VOC. Scheme of Examination & Syllabus 2024-25**SOFTWARE DEVELOPMENT, CYBER SECURITY, VIRTUAL AND AUGMENTED REALITY****FOURTH SEMESTER**

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation		
						CA	ESE	Total
24SD404S	Skill Development – IV	--	--	4	4	CA	ESE	Total
24CY404S						50	--	50
24VA404S								

Course Objectives	Course Outcomes
<ul style="list-style-type: none">To develop advanced quantitative aptitude skills by introducing learners to geometry, mensuration, logarithms, permutations, combinations, probability, and business mathematics concepts.To enhance logical and analytical reasoning abilities through structured practice in ranking, cubes & dice, inequalities, abstract reasoning, counting of figures, and data sufficiency.To prepare students thoroughly for company-specific assessments, with special focus on the TCS Ignite Exam.	<ol style="list-style-type: none">To explain mathematical principles related to geometry, mensuration, logarithms, permutations, combinations, probability, partnerships, and reasoning rules.To apply quantitative formulas and logical reasoning techniques to solve problems in mensuration, height & distance, ranking, cubes & dice, and inequalities.To analyze complex problems involving abstract reasoning, data sufficiency, order–ranking patterns, and figure counting to determine accurate solutions.To evaluate different problem-solving strategies and choose the most efficient methods to answer quantitative and reasoning questions within time constraints.

Unit I : Numerical Ability - IX**[15HRS]**

Geometric Properties, Mensuration (2D and 3D Geometry), Logarithms, Height and Distance.

Unit II : Logical Reasoning - V**[15 HRS]**

Order and Rankin, Cube and Dices, Inequalities, Counting of Figures.

Unit III : Numerical Ability - X**[15 HRS]**

Permutation and Combination, Probability, Ages, Partnerships.

Unit IV : Logical Reasoning -VI**[15 HRS]**



Abstract Reasoning, Data Sufficiency, Eligibility Test.

Text Books

S.N	Title	Authors	Edition	Publisher
1	Quantitative Aptitude	R.S Agarwal	Latest edition	S. Chand Publication
2	Quantitative Aptitude	Arun Sharma	4 th Edition	Mc Graw Hill

Reference Books

S.N	Title	Authors	Edition	Publisher
1	Quantitative aptitude and reasoning	R. Praveen	3rd	PHI
2	Objective Quantitative Aptitude	Oswal books	Latest	Oswal books

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B.VOC. Scheme of Examination & Syllabus 2024-25
SOFTWARE DEVELOPMENT

FOURTH SEMESTER

COURSE CODE	COURSE NAME	TH	TU	PR	CREDITS	EVALUATION		
						CA	ESE	TOTAL
24SD405S	Android Programming	2	--	--	2	50	--	50

COURSE OBJECTIVES	COURSE OUTCOMES
<ul style="list-style-type: none">To provide foundational knowledge of the Android platform, including its evolution, features, architecture, and application categories.To equip learners with the skills to understand and work with Android application components and development environments, enabling them to set up Android IDEs and begin building applications.	<ol style="list-style-type: none">To describe the history, features, API levels, and categories of Android applications.To apply knowledge of Android architecture—libraries, runtime, kernel, and frameworks—to explain how Android applications function internally.To analyze and differentiate Android application components such as activities, services, broadcast receivers, and content providers, along with their roles in application development.To set up and configure Android development environments using Android Studio, Eclipse IDE, and necessary SDK tools to begin creating Android applications.

UNIT I: Android - Overview

[8 HRS]

Introduction-android, Features of Android, Android Applications, Categories of Android applications, History of Android, API level.

UNIT II : Android - Architecture

[8 HRS]

Linux kernel, Libraries, Android Libraries, Android Runtime, Application Framework, Applications

UNIT III: Android - Application Components

[8 HRS]

Components & Description, Activities, Services, Broadcast Receivers, Content Providers, Additional Components



UNIT IV: Android : Android - Environment Setup

[6 HRS]

Android - Environment Setup, Android IDEs, Android studio, Eclipse IDE

TEXT BOOKS

SR NO	TITLE	AUTHORS	EDITION	PUBLISHER
1	Professional Android 2 Application Development	Reto Meier	4TH	Wiley India Pvt Ltd.
2	Beginning Android	Mark L Murphy	3 RD ,2.2	Wiley India Pvt Ltd.
3	Android Application Development All in one for Dummies	Barry Burd	3RD	John Wiley & sons

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