

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
7	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
3	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, N9006

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

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


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


Dr. Pramod Lanjekar
Dean(Academics)


Dr. Vijay Wadhwa
Principal



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B.VOC. Scheme of Examination & Syllabus 2025-26

SOFTWARE DEVELOPMENT, CYBER SECURITY

THIRD SEMESTER

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation		
						CA	ESE	Total
25BV301T	Business Communication Skills-III	3	--	--	3	40	60	100

Course Objectives	Course Outcomes
<ul style="list-style-type: none"> To strengthen students' proficiency in English grammar and develop effective writing skills for academic and professional communication. To enhance comprehension, interpretation, and communication abilities required for real-life and corporate interactions. 	<ul style="list-style-type: none"> Apply grammatical concepts such as sentence formation, conditionals, clauses, and reported speech accurately in communication. Develop structured writing skills including paragraph writing, paraphrasing, report writing, and dialogue creation. Interpret and transform information between verbal and non-verbal forms, and demonstrate comprehension through summarization and expansion. Demonstrate effective communication skills in professional contexts through role plays, meetings, situational conversations, and short presentations.
Unit I	[10 HRS]
Revisiting Grammar: Forming sentences, using conditionals, question tags, Direct-Indirect Speech, Clauses	
Unit II	[10 HRS]
Writing Skills: Paragraph Writing, Paraphrasing, Newspaper Reports and Articles, Dialogue Writing	
Unit III	[10HRS]
Comprehension Skills: Converting Verbal Information to non-verbal and Vice versa, Reproducing Stories and Paragraphs, Expansion of passages. Interpretation of Visuals: Graphs, Charts, Diagrams, Tables.	
Unit IV	[15 HRS]
Communication Skills 3.0: Situational Conversation, Corporate Role Plays, Corporate Meetings, Etiquette and Mannerism, Short Talks.	

Text Books

S.N	Title	Authors	Edition	Publisher
1	Merchant English for Practical purpose	Z. N.Patil, B. S.Valke, Ashok Thorat	Revised	Macmillan
2	Foundation English	Dwivedi & Kumar	Student	Macmillan
3	Grant English Conversational Practice	Taylor	First	Tata McGraw-Hill
4	Bhaskaran & Horsburgh	Strengthen your English	2020	Oxford University Press (1 November 1997)

		Oct-2022	1	Applicable for 2026-27
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B. VOC. Scheme of Examination & Syllabus 2025-26**SOFTWARE DEVELOPMENT, CYBER SECURITY**

ARISE & SHINE

THIRD SEMESTER

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation		
						CA	ESE	Total
25BV301P	Business Communication Skills-III Lab	--	--	3	3	25	25	50

Course Objectives	Course Outcomes
<ul style="list-style-type: none"> To strengthen students' proficiency in English grammar and develop effective writing skills for academic and professional communication. To enhance comprehension, interpretation, and communication abilities required for real-life and corporate interactions. 	<ul style="list-style-type: none"> Apply grammatical concepts such as sentence formation, conditionals, clauses, and reported speech accurately in communication. Develop structured writing skills including paragraph writing, paraphrasing, report writing, and dialogue creation. Interpret and transform information between verbal and non-verbal forms, and demonstrate comprehension through summarization and expansion. Demonstrate effective communication skills in professional contexts through role plays, meetings, situational conversations, and short presentations.

Practical No	Title of the Practical
1	Sentence Formations (Use Conditionals, Question Tags and Direct & Indirect Speech)
2	Paraphrasing - Take 3 Online Articles on any subject and pick paragraphs from them and Paraphrase them in your own words.
3	Write 2 News Articles, one for an Accident you witnessed and one for an Event that was celebrated in your college (Word Limit 300 Words) Use Inverse Pyramid.
4	Write a Dialogue between two people who have just joined a new college and are facing trouble adjusting to new environment.
5	Take 2 Stories of your choice from any source (Online/books) write these stories in your own words.
6	Design a Situational Conversation between an Executive and a Manager (Sales Team).
7	Corporate Meetings - Discuss how a Corporate meeting is conducted. And discuss the Etiquette and Manners you need to know during a Meeting.
8	Explain Visual Representation. Take 1 chart, 1 table and 1 diagram from any source and explain what it depicts in your own words.

Text Books

S.N	Title	Authors	Edition	Publisher
1	Merchant English for Practical purpose	Z. N. Patil, B. S. Valke, Ashok Thorat	Revised	Macmillan
2	Foundation English	Dwivedi & Kumar	Student	Macmillan
3	Grant English Conversational Practice	Taylor	First	Tata McGraw-Hill
4	Bhaskaran & Horsburgh	Strengthen your English	2020	Oxford University Press (1 November 1997)

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THIRD SEMESTER

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation		
						CA	ESE	Total
25BV302T	Applied Computer skills-III	3	--	--	3	40	60	100

Course Objectives	Course Outcomes
<ul style="list-style-type: none"> To introduce students to fundamental system concepts and Management Information Systems (MIS) for understanding organizational information flow and decision-making processes. To design system To develop the ability to analyze, design, and model information systems using standard system development life cycle concepts and modeling tools. 	<ul style="list-style-type: none"> Explain systems concepts, types of systems, and components of MIS in the context of organizational operations. Identify and compare various information systems such as MIS, TPS, DSS, OAS, and KWS, and explain their role in managerial decision-making. Apply System Development Life Cycle (SDLC) phases to analyze business problems and propose appropriate system solutions. Develop and interpret system models using tools such as E-R diagrams, ELHs, ECDs, and input-output models from a user perspective.

Unit I	[10 Hrs]
MIS – Systems Concepts – Systems approach, characteristics, Types of systems; Elements input, Output, environment, Boundary Interface, Feedback & Control	
Unit II	[12 Hrs]
Systems Life cycle: MIS, TPS, OAS, DSS, KWS, Value of information, information life cycle, data vs information, Components of MIS, Characteristics of MIS.	
Unit III	[11Hrs]
System Analysis & Design : System development life cycle, modeling the required system.	
Unit IV	[12 Hrs]
E-R diagrams, ELHs, ECDs, user view of processing, modeling input output data.	

Text Books

S.N	Title	Authors	Edition	Publisher
1	Microsoft office – 2008	Gini Courter, Annelte Marquis	1	BPB Publications
2	An Introduction To Database Management System	Bipin C. Desai	1	Galgotia Pub
3	Database Management Design	CSV Murthy	1	Himalaya
4	Management Information System	Goyal. Jawdekar	1	TMH Publications

Reference Books

S.N	Title	Authors	Edition	Publisher
1	Information Technology Today	S.Jaiswal	4 th edition	Galgotia Pub
2	A First Course in Computer	Sanjay Saxena	2003	Vikas publishing house
3	First Text Book On Information Technology	Srikant Patnaik	1st	Dhanpat Rai & Co. (P) Ltd (Publisher)
4	Guide to Microsoft Access	Carl Townsend	1st	Independently published

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B. VOC. Scheme of Examination & Syllabus 2025-26 SOFTWARE DEVELOPMENT, CYBER SECURITY

ARISE & SHINE

THIRD SEMESTER

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation		
						CA	ESE	Total
25BV302P	Applied Computer Skills-III Lab	--	--	3	3	25	25	50

Course Objectives	Course Outcomes
<ul style="list-style-type: none"> To introduce students to fundamental system concepts and Management Information Systems (MIS) for understanding organizational information flow and decision-making processes. To design system To develop the ability to analyze, design, and model information systems using standard system development life cycle concepts and modeling tools. 	<ul style="list-style-type: none"> Explain systems concepts, types of systems, and components of MIS in the context of organizational operations. Identify and compare various information systems such as MIS, TPS, DSS, OAS, and KWS, and explain their role in managerial decision-making. Apply System Development Life Cycle (SDLC) phases to analyze business problems and propose appropriate system solutions. Develop and interpret system models using tools such as E-R diagrams, ELHs, ECDs, and input-output models from a user perspective.



Practical No	Title of the Practical
1	Study of MIS (Management Information system) using cloud CRM.
2	Understanding database concept inserting, creating, imposing key.
3	Understanding inner join in SQL.
4	Understanding left outer join, right outer join, full outer join in SQL.
5	Understanding the class diagram of banking system.
6	Study of use case diagram.
7	To study the sequence diagram of ATM.
8	To study the ER diagram with the help of library management system.

Text Books

S.N	Title	Authors	Edition	Publisher
1	Microsoft office – 2008	Gini Courter, Annelte Marquis	1st Edition	BPB Publications
2	An Introduction To Database Management System	Bipin C. Desai	1st Edition	Galgotia Pub
3	Database Management Design	CSV Murthy	1st Edition	Himalaya
4	Management Information System	Goyal. Jawdekar	1st Edition	TMH Publications

Reference Books

S.N	Title	Authors	Edition	Publisher
1	Information Technology Today	S.Jaiswal	4 th edition	Galgotia Pub
2	A First Course in Computer	Sanjay Saxena	2003	Vikas publishing house
3	First Text Book On Information Technology	Srikant Patnaik	1st Edition	McGraw-Hill Education
4	Guide to Microsoft Access	Carl Townsend	1st Edition	BPB Publications

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THIRD SEMESTER

COURSE CODE	COURSE NAME	TH	TU	PR	CREDITS	EVALUATION		
						CA	ESE	TOTAL
25SD303S, 25CY303S	Software Testing	4	--	8	12	50	100	150

COURSE OBJECTIVES	COURSE OUTCOMES
<ul style="list-style-type: none"> To provide a comprehensive understanding of software testing principles, processes, and methodologies across different stages of the software development lifecycle. To develop the ability to design, apply, and manage effective testing strategies, techniques, and defect management processes for ensuring software quality. 	<ul style="list-style-type: none"> Understand fundamental concepts of software testing, including testing principles, life cycle, defect management, and the role of testing in quality assurance. Analyze different software development models and apply appropriate test levels, test types, and maintenance testing strategies. Apply static testing techniques and review processes to identify defects early in the software development lifecycle. Design and implement test cases using black-box, white-box, and experience-based testing techniques, and manage testing activities including test planning and defect tracking.
UNIT I:	[25 HRS]
What is testing, Typical Objectives of Testing, Testing and Debugging, Why is Testing Necessary?, Testing's Contributions to Success, Quality Assurance and Testing, Errors, Defects, and Failures, Defects, Root Causes and Effects, Seven Testing Principles, Software Testing life cycle, Test Process in Context, Test Activities and Tasks, The Psychology of Testing, Human Psychology and Testing, Tester's and Developer's Mind sets	
UNIT II:	[25 HRS]
Software Engineering Concepts, Software Development Lifecycle, Software Development and Software Testing Software Development Lifecycle Models, Test Levels, Component Testing, Integration Testing, System Testing, Acceptance Testing, Test Types, Functional Testing, Non-functional Testing, White-box Testing, Change-related Testing, Test Types and Test Levels, Maintenance Testing, Triggers for Maintenance, Impact Analysis for Maintenance.	
UNIT III:	[25 HRS]
Static Testing Basics, Work Products that Can Be Examined by Static Testing, Benefits of Static Testing, Differences between Static and Dynamic Testing, Review Process, Work Product Review Process, Roles and responsibilities in a formal review, Review Types, Applying Review Techniques.	
UNIT IV:	[30 HRS]
Black-box Test Techniques, Equivalence Partitioning, Boundary Value Analysis, Decision Table Testing, State Transition Testing, Use Case Testing, White-box Test Techniques, Statement Testing and Coverage, Decision Testing and Coverage, The Value of Statement and Decision Testing, Experience-based Test Techniques, Error Guessing, Exploratory Testing, Smoke and sanity testing, Positive and negative testing, Regression testing and Re-testing, End to End testing, How to choose which testing technique is best.	
UNIT V:	[15 HRS]
Test Organization, Independent Testing, Tasks of a Test Manager and Tester, Test Plan, Defect Management, Types of Defects, Defect/Bug Life Cycle, Defect Severity and Defect Priority, Types of Defect Severity and Defect Priority	

TEXT BOOKS

SR NO	TITLE	AUTHORS	EDITION	PUBLISHER
1	Software Testing Principles and practice	Shrinivasan , Gopalswamy	2006	Pearson
2	Software Testing	Ron Patton	2006	Pearson
3	Introduction to Software Testing	Paul, Jeff	2008	Cambridge
4	Software Testing & Quality Assurance	Kshirsagar, Priyadarshini	1st	Wiley

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B.VOC. Scheme of Examination & Syllabus 2025-26**SOFTWARE DEVELOPMENT, CYBER SECURITY****THIRD SEMESTER**

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation		
						CA	ESE	Total
25SD404S, 24CY404S	Skill Development – III	--	--	4	4	50	--	50



Course Objectives	Course Outcomes
<ol style="list-style-type: none">To categorize, apply and use thought process to distinguish between concepts of Quantitative methods.To prepare and explain the fundamentals related to various possibilities and probabilities related to quantitative aptitude.To prepare students for TCS Ignite Exam	Students will be able to: <ol style="list-style-type: none">Use their logical thinking and analytical abilities to solve Quantitative aptitude questions from company specific and other competitive tests.Demonstrate principles of mathematical problem solvingReduce time taken to perform job functionsUnderstand and solve puzzle related questions from specific and other competitive tests
Unit I : Numerical Ability -VIII	[12 Hrs]
Speed Distance time (Trains, Boats and streams)	
Unit II: Basic Logical Reasoning- II	[10 Hrs]
Syllogisms, Sitting arrangements, Blood Relations	
Unit III : Data Handling	[11Hrs]
Data Interpretation, Statistics.	
Unit IV : Basic Logical Reasoning- III	[12 Hrs]
Set theory, Venn Diagram.	

Text Books

S.N	Title	Authors	Edition	Publisher
1	Quantitative aptitude	R S Agarwal	1st	S Chand Publications
2	Verbal and non-verbal Reasoning	R S Agarwal	1st	S Chand Publications

Reference Books

S.N	Title	Authors	Edition	Publisher
1	Quantitative Aptitude	Ananta Ashisha	Revised	Arihant publications

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B.VOC. Scheme of Examination & Syllabus 2025-26

SOFTWARE DEVELOPMENT

THIRD SEMESTER

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation		
						CA	ESE	Total
25SD305S	JAVA Programming	2	--	--	2	50	--	50

Course Objectives	Course Outcomes
<ul style="list-style-type: none"> To introduce fundamental concepts of Java programming, including object-oriented principles, syntax, and program structure. To develop problem-solving skills by implementing Java programs using classes, inheritance, polymorphism, strings, and exception handling. 	<ul style="list-style-type: none"> Understand and apply basic Java programming concepts, including data types, control structures, arrays, and program structure. Design and implement object-oriented programs using classes, objects, constructors, inheritance, polymorphism, and packages. Apply string handling techniques and built-in methods to manipulate and process textual data in Java. Implement exception handling mechanisms, including user-defined exceptions, to develop robust and error-free Java applications.

Unit I [8 HRS]

Features of java ,JDK Environment & tools like(java, javac) ,OOPs Concepts Class, Abstraction , Encapsulation, Inheritance, Polymorphism, Difference between C++ and JAVA, Structure of java program ,Data types ,Variables ,Operators , Keywords ,Naming Convention ,Decision Making (if, switch), Looping(for, while),Type Casting, Array ,Creating an array , Types of Array,- One Dimensional arrays , Two Dimensional array, String - Arrays .

Unit II [8 HRS]

Creating Classes and objects ,Memory allocation for objects ,Constructor ,implementation of Inheritance , Simple, Multilevel, Interfaces, Abstract classes and methods, Implementation of Polymorphism, Method Overloading, Method, Modifiers and Access Control, Packages ,Packages Concept ,Creating user defined packages Java Built in packages, Date, hashtable ,Wrapper classes.

Unit III [7HRS]

String, Java String compare, Substring, string classes, Java String Methods.

Unit IV [7 HRS]

(Exception types, Using Catch and Multiple Catch, Nested Try and throw , finally)Creating user defined exception.

Text Books

S.N	Title	Authors	Edition	Publisher
1	Core Java -an Integrated approach	R. Nageswara Rao	2008	Kogent Solutions
2	Effective Java	Joshua Bloch	2nd	Pearson
3	Introduction to Java Programming	K. Somasundaram	2013	Jaico Publishing House
4	Head first Java	Kathy Seirra & Bert Bates	2005	O'Reilly Media Inc

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