ANNEXURE – I

St. Vincent Pallotti College of Engineering & Technology, Nagpur

Department of Vocation (B. VOC)

Teaching Scheme for B.VOC Third Year 2025-26

SEMESTER V (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	25BV501T	Entrepreneurship Skills - I	3			3	40	60	100
2	25BV502T	Employability Skills - II	3			3	40	60	100
3	25BV501P	Entrepreneurship Skills – I Lab			3	3	25	25	50
4	25BV502P	Employability Skills - II Lab			3	3	25	25	50
		Total – GEC	**6**		**6**	**12**	**130**	**170**	**300**
Skill Education Component (SEC)									
5	25SD503S	Software Developer (*)			8	8	50	100 (**)	150
6	25SD504S	Internship			10	10	25	75	100
		Total – SEC	**6**		**12**	**18**	**75**	**175**	**250**
		Grand Total	**12**	**-**	**18**	**30**	**205**	**345**	**550**

Assessment Competent Authority: General Education Component, 25BV501T/P, 25BV502T/P, Skill Component 25SD504S: by college,

(*) Software Developer:- SSC/QP- SSC/Q0501 Software Developer-IT Services,

NOS:SSC/N0501,SSC/N0502,NOS-,SSC/N9001,SSC/N9002,SSC/N9003,SSC/N9004, SSC/N9005 **(**)** 25SD503S Assessment by Sector Skill Council – IT-ITeS - NASSCOM 25SD504S-By college

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SEMESTER VI (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	25BV601T	Entrepreneurship Skills - II	3			3	40	60	100
2	25BV602T	Employability Skills - III	3			3	40	60	100
3	25BV601P	Entrepreneurship Skills – II Lab			3	3	25	25	50
4	25BV602P	Employability Skills - III Lab			3	3	25	25	50
		Total – GEC	**6**		**6**	**12**	**130**	**170**	**300**
Skill Education Component (SEC)									
5	25SD603S	User Development (*)			8	8	50	100 (**)	150
6	25SD604S	Project			10	10	25	75	100
		Total – SEC	**6**		**18**	**18**	**75**	**175**	**250**
		Grand Total	**12**	**-**	**24**	**30**	**205**	**345**	**550**

Assessment Competent Authority: General Education Component 25BV601T/P, 25BV602T/P: by college,

(*) User Development:-SSC/QP – SSC/Q8404 User Experience Designer, SSC/N8419 TO SSC/N8429, SSC/N9005, SSC/N9006,SSC/N9010, SSC/N9012

(**) 25SD603S Assessment by Sector Skill Council – IT-ITeS -NASSCOM 25SD604S- by college

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

Dr. Promod Lanjewar
Dean(Academics)

Dr. Vijay Wadhai
Principal

FIFTH SEMESTER

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation		
						CA	ESE	Total
25BV501T	Entrepreneurship Skills-I	3			3	40	60	100

Course Objectives	Course Outcomes
1. To empower an entrepreneurial mindset and business skills to enhance job prospects and develop entrepreneurship skills. 2. To introduce the necessary skills to develop ventures beyond the idea/prototype stage.	1. Develop an entrepreneurial mindset by applying the five effectuation principles –Bird in hand Affordable Loss, Lemonade, Patchwork Quilt or Crazy Quilt, and Pilot-in-the-Plane. 2. Create your own business model using the Lean Canvas template

Unit I : Self Discovery:	**[10 hrs.]**
Self Discovery: Find your flow (passion), Principles of Effectuation, Selecting Venture Team, Opportunity Discovery: Identifying problem worth solving.	
Unit II : Design Thinking	**[10 hrs.]**
Design Thinking, Look for Solutions. Customer & Solution: Customers & Markets, Value Proposition Canvas, Basics of Business Model and Lean Approach, Craft your Business Model.	
Unit III : Case Study 1	**[8 hrs.]**
Verloop Case Study: Genesis of the idea, problem statement, market selection, Market segments, strategy implemented. Desi Hangover Case Study : Genesis of the idea, problem statement, market selection, market opportunists , Market segment, demand validation.	
Unit IV : Case Study 2	**[8 hrs.]**
Honey Twigs Case Study: Genesis of the idea, problem statement, market selection, market opportunists, categorize the problem, demand validation. Inzpira Case Study : Genesis of the idea, problem statement, market selection, product features comparison like Product Benefits - UVP,Price, Branding, Market Review, key competitive advantages, 2*2 matrix on Create,Enhance,Reduce,Eliminate NUOS Home Automation Case Study: Problem Identification,identify the type of Business Model,estimating the market size, Create the Lean Canvas	

Text Books

S.N	Title	Authors	Edition	Publisher
1	Entrepreneurial Development	S.S.Khanka	2011	S. Chand
2	Entrepreneurial Development	E. Gordon, K. Natrajan	6th revised	Himalaya Publishing House

FIFTH SEMESTER

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation		
						CA	ESE	Total
25BV501P	Entrepreneurship skills-II Lab			3	3	25	25	50

Course Objectives	Course Outcomes
To develop entrepreneurial abilities by providing background information about support systems , skill sets , financial and risk covering institutions and other for building an enterprise so that future budding entrepreneurs can make right decisions for starting and running a venture.	1. To build foundation of Entrepreneurship Development and its theories. 2. To explore entrepreneurial skills and management function. 3. To identify the type of entrepreneur and the steps involved in an entrepreneurial venture. 4. To understand various steps involved in starting a venture and to explore marketing methods & new trends in entrepreneurship.

List of Practical / Activities

1. Identify problem worth solving
2. Propose solution based on Design Thinking - Desirability, Feasibility and viability
3. Identify customer segments and early adopters
4. Propose Unique Value Proposition
5. Elaborate channels of reaching out to the customers
6. Enlist and explain in brief the cost segment
7. Enlist and explain revenue segment
8. Sketch Lean canvas and list 7 key elements

Text Books

S.N	Title	Authors	Edition	Publisher
1	Entrepreneurial Development	Khanka S.S.	Revised	S. Chand
2	Entrepreneurship Development	Sangeeta Sharma	2nd	PHI

Reference Books

S.N	Title	Authors	Edition	Publisher
1	Entrepreneurship Development and Small Business Enterprises	Poornima M. Charantimath	3rd	Pearson

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ST. VINCENT PALLOTTI COLLEGE OF ENGINEERING & TECHNOLOGY, NAGPUR
(An autonomous institution affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)
B.VOC. Scheme of Examination & Syllabus 2025-26
SOFTWARE DEVELOPMENT

FIFTH SEMESTER

COURSE CODE	COURSE NAME	TH	PR	CREDITS	EVALUATION		
					CA	ESE	TOTAL
25BV502T	Employability Skills-II	3		3	40	60	100

COURSE OBJECTIVES	COURSE OUTCOMES
• To understand Data Structures & Algorithms • Develop proficiency in key aptitude areas, such as quantitative aptitude, logical reasoning, and verbal ability.	**At the end of the course, students will be able to:** **CO1.** Understand Data Structures & Algorithms **CO2.** Understand Linked Lists & searching techniques **CO3.** Understand Structures sorting **CO4:** Understand Graph and Tree Data Structure

UNIT I: Data Structures & Algorithms [10 HRS]

Overview, Algorithms Basics, Programming, Data Structures & Algorithm Basic Concepts, Data Structures and Types, Data Structures and Algorithms – Arrays.

UNIT II: Linked Lists & searching techniques [15 HRS]

Introduction to stack & Queue, Linked List basics, Doubly linked list, Circular Linked list, Stack & Queue, Searching Techniques, Linear search, Binary Search, Interpolation Search, Hash table

UNIT III: Data Structure Sorting [10 HRS]

Sorting Techniques, Algorithms ,Bubble Sort, Insertion sort, Selection Sort,Merge Sort, Shell Sort, Quick Sort.

UNIT IV: Graph and Tree Data Structure [15 HRS]

Depth First Traversal, Breadth first Traversal, Tree Data Structure ,Tree Traversal, Binary Search tree, AVL tree, B tree, Spanning tree, Tries, Heap.

TEXT/ REFERENCE BOOKS

S.N	Title	Authors	Edition	Publisher
1	Introduction to Algorithms	Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest and Clifford Stein.	3rd	PHI
2.	Data strctures & Algorithms made easy	Narsimha Karumanchi	1st	Career monk
3.	Data Structure & algorithms	Prof. Dippanita Mondal	1st	Everest publishing house

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FIFTH SEMESTER

COURSE CODE	COURSE NAME	TH	PR	CREDITS	EVALUATION		
					CA	ESE	TOTAL
25BV502P	Employability Skills-II Lab		3	3	25	25	50

COURSE OBJECTIVES	COURSE OUTCOMES
• To understand Data Structures & Algorithms • To learn a practical approach of Data structures. .	**At the end of the course, students will be able to:** **CO1.** Understand Data Structures & Algorithms **CO2.** Understand Linked Lists & searching techniques **CO3.** Understand Structures sorting **CO4:** Understand Graph and Tree Data Structure

List of Practical :

1.Write a program using data structure arrays for Insertion in an array element
   a) At the beginning
   b) At the end
   c) At any given index of an array.
2.Write a program using data structure arrays for deletion in an array element
   a) At the beginning
   b) At the end
3. Write a function that will concatenate two circularly linked lists,producing one circularly liked list.
4. Write a class that implements Bubble sorting algorithm on a set of 25 numbers.
5. Write a template class for sorting method. Using this class write a test program for sorting using different datatypes.
6.Implement the following Tree class member function Bool empty () const;
7. Program on Tree traversal.
8. Program on linear search and Binary search.

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FIFTH SEMESTER

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation		
						CA	ESE	Total
25SD503S	Software Developer			8		50	100	150

Course Objectives	Course Outcomes
1. Implement appropriate standards to assist in performing software construction as per specifications. 2. Analyse software designs for already built products or services 3. Identify best practices to maintain an inclusive, environmentally sustainable workplace.	1. Design algorithms to solve problems and execute test cases to convert them into code. 2. Identify software development needs and changes. 3. Demonstrate effective communication and collaboration with colleagues. 4. Use different approaches to effectively manage and share data and information *Exam by sector skill council.

Unit I : Programming & algorithms **[10 Hrs]**

Introduction to programming & algorithms, Searching (linear search, binary search.),Sorting(Bubble sort, selection sort, insertion sort, merge sort.), Divide and conquer technique., Dynamic programming.

Unit II : Application Development. **[10 Hrs]**

Analysis and design of software applications. , Application development process, Self management,Work management.

Unit III TeamWork & Communication **[10 Hrs]**

Teamwork & organization, Why teamwork works, The team and it's members, The business and communication., Communication channel, Forms of communication (cases),Managing health & safety in organization, Importance of safety, Categories and workspace accidents, Working hazards and its examples, Major health related problems in organization, Who are involved in safety and health problems.

Unit IV Data & information management **[15 Hrs]**

To understand what is data, To understand what is information ,To differentiate between data & information,Data relationships,· Conceptual models, Database models,Single user/multi user database systems,Centralized vs distributed databases, General vs Special purpose databases, DBA & functions of DBA, Learning and self development,Do's & Dont's in self developement

Text Books

S.N	Title	Authors	Edition	Publisher
1	Distributed Databases – Principles and Systems	Stefano Ceri, Guiseppe Pelagatti	1985	Tata McGraw Hill
2	Database Systems- Design, Implementation and Management	Peter Rob, Carlos Coronnel;	2000	Course Technology
3	Team Dynamics	Dr. Prashant Kshirsagar, Prof. Vivek N Katare		Thakur Publications
4	Principles of Management	Pravin Durai	2nd	Pearson

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