

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 (CYBER SECURITY)

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	25CY503S	Security Analyst (*)			8	8	50	100 (**)	150
6	25CY504S	Internship			10	10	25	75	100
Total – SEC			6		18	18	75	185	250
Grand Total			6	-	24	30	205	345	550

Assessment Competent Authority: General Education Component, 25BV501T/P, 25BV502T/P, Skill Component 25CY504S: by college,

(*) Security Analyst :- SSC/QP- SSC/Q0901 Security Analyst NOS:SSC/N0906,SSC/N0907,NOS.,SSC/N9001,SSC/N9002,SSC/N9003,SSC/N9004, SSC/N9005

(**) 25CY503S Assessment by Sector Skill Council – IT-ITeS -NASSCOM

SEMESTER VI (CYBER SECURITY)

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	25CY603S	Penetration Testing (*)			8	8	50	100 (**)	150
6	25CY604S	Project			10	10	25	75	100
Total – SEC			6		18	18	75	185	250
Grand Total			6	-	24	30	205	345	550

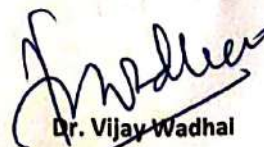
Assessment Competent Authority: General Education Component 25BV601T/P,25BV602T/P, 25CY604S: by college,

(*) Penetration Testing: SSC/QP-SSC/Q0912 Software Vulnerability Penetration Tester: NOS: SSC/N0925, SSC/N0909SSC/N0909, NOS., SSC/N9001, SSC/N9002, SSC/N9003, SSC/N9004, SSC/N9005

(**) 25CY603S Assessment by Sector Skill Council – IT-ITeS -NASSCOM


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


Dr. Promod Lanjewar
Dean(Academics)


Dr. Vijay Wadhwa
Principal





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(An autonomous institution affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)

B.VOC. Scheme of Examination & Syllabus 2023-24

CYBER SECURITY, SOFTWARE DEVELOPMENT, VIRTUAL REALITY & AUGMENTED REALITY

SIXTH SEMESTER

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation		
						CA	ESE	Total
23BV601T	Entrepreneurship skills-II	3	--	--	3	40	60	100

Course Objectives	Course Outcomes
<ul style="list-style-type: none"> To develop a comprehensive understanding of entrepreneurship, including creativity, innovation, venture creation, social entrepreneurship, family business dynamics, and funding mechanisms. To equip learners with the ability to apply entrepreneurial tools and strategies, including opportunity identification, business planning, financial assessment, resource management, and succession strategies in diverse entrepreneurial contexts. 	<ol style="list-style-type: none"> To explain key concepts of entrepreneurship, social entrepreneurship, family business systems, and various forms of business ownership and funding. To apply creativity techniques, opportunity screening methods, and financial planning principles to develop business ideas, project reports, and funding proposals. To analyze entrepreneurial challenges such as team building, leadership, succession planning, social impact assessment, and risk evaluation in new ventures. To evaluate business models, financing options, growth strategies, and sustainability approaches for commercial, social, and family-run enterprises.

Unit I : Entrepreneurship, Creativity and Innovation, Centre of Innovation, Incubation [10 HRS]

Introduction to Entrepreneurship and Its Evolution, Roles of an Entrepreneur, Idea Generation, Screening, Selection and Managing Resources, Leading and Building the team in an enterprise, Strategic Planning for Business, Forms of Ownership, Franchising - form of Business Ownership, Financing Entrepreneurial Ventures, Managing growth, expansion and winding up of business, Valuation of a new company, Corporate entrepreneurship, Entrepreneurship in the era of Globalization: Environment and Strategy, Entrepreneurship: Role of stimulating creativity, Creative teams and managerial responsibilities, Innovation and entrepreneurship: types and sources of innovation, Creativity and Innovations in Start Ups : A case of Altmat.

Unit II : Social Entrepreneurship [12 HRS]

Introduction to social entrepreneurship, Innovation and entrepreneurship in social context, Start-ups, early venture issues, Startups in India – Interviews of Founders and Supporters, Sustainability of non-profit organizations, Financing and risks in social enterprises, Business Strategies and Scaling up

Unit III : Family Business and Entrepreneurship [11HRS]

Family Business: Concept, Characteristics, and Kinds of family Business, Conflict and Conflict resolution in Firm, Managing leadership & succession planning in family business, Succession Planning, Succession and Continuity, Women entrepreneurship: issues, challenges, Women issues and encouraging change in family business: A case analysis of Wastengage pvt. Ltd.

Unit IV : Financing the Entrepreneurial Business Funding & Start up and Entrepreneurship Councils in India [12 HRS]

Arrangement of funds, Exercise on writing of project report, Entrepreneurial Financing and Risk, Appraisal of loans by financial institutions, Role of Commercial Banks in financing Business Entrepreneurs, Venture Capital, Entrepreneurship Institutions in India - A Visit to EDII

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

		Oct-2022	1	Applicable for 2023-24
Chairman - BoS	Dean – Academics	Date of Release	Version	


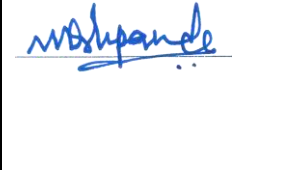


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CYBER SECURITY, SOFTWARE DEVELOPMENT, VIRTUAL REALITY & AUGMENTED REALITY

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SOFTWARE DEVELOPMENT, CYBER SECURITY , VIRTUAL REALITY & AUGMENTED REALITY

SIXTH SEMESTER

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation		
						CA	ESE	Total
23BV601P	Entrepreneurship skills-II Lab	--	--	3	3	25	25	50

Course Objectives	Course Outcomes
<ul style="list-style-type: none"> To develop a comprehensive understanding of entrepreneurship, including creativity, innovation, venture creation, social entrepreneurship, family business dynamics, and funding mechanisms. To equip learners with the ability to apply entrepreneurial tools and strategies, including opportunity identification, business planning, financial assessment, resource management, and succession strategies in diverse entrepreneurial contexts. 	<ol style="list-style-type: none"> To explain key concepts of entrepreneurship, social entrepreneurship, family business systems, and various forms of business ownership and funding. To apply creativity techniques, opportunity screening methods, and financial planning principles to develop business ideas, project reports, and funding proposals. To analyze entrepreneurial challenges such as team building, leadership, succession planning, social impact assessment, and risk evaluation in new ventures. To evaluate business models, financing options, growth strategies, and sustainability approaches for commercial, social, and family-run enterprises.

List of Practical / Activities


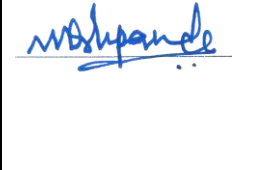
- Study of Entrepreneurial Management .
- Entrepreneurship, Creativity and Innovation, Centre of Innovation, Incubation and Entrepreneurship- An expert Interview.
- Social Entrepreneurship -Start-ups, early venture issues, Startups in India – Interviews of Founders and Supporters
- Social Entrepreneurship -Business Strategies and Scaling up.
- Family Business and Entrepreneurship -Managing leadership & succession planning in family business.
- Family Business and Entrepreneurship -Women issues and encouraging change in family business: A case analysis of Wastengage pvt. Ltd.
- Financing the Entrepreneurial Business Funding & Start up and Entrepreneurship Councils in India.- Entrepreneurial Financing and Risk
- Financing the Entrepreneurial Business Funding & Start up and Entrepreneurship Councils in India- Entrepreneurship Institutions in India - A Visit to EDII

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	Poornima M.	3rd	Pearson

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SOFTWARE DEVELOPMENT, CYBER SECURITY , VIRTUAL REALITY & AUGMENTED REALITY

Business Enterprises

Charantimath

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,SOFTWARE DEVELOPMENT, CYBER SECURITY,VIRTUAL REALITY & AUGMENTED REALITY

SIXTH SEMESTER

COURSE CODE	COURSE NAME	TH	TU	PR	CREDITS	EVALUATION		
						CA	ESE	TOTAL
23BV602T	Employability skills - III	3	..	3	3	40	60	100

COURSE OBJECTIVES	COURSE OUTCOMES
<ul style="list-style-type: none">To provide students with a strong foundation in Python programming concepts, including algorithms, data types, control structures, functions, and modules.To develop the ability to write, analyze, and debug Python programs using appropriate programming constructs and problem-solving strategies.	<ol style="list-style-type: none">To explain the fundamentals of Python programming, including program structure, syntax, variables, datatypes, and the role of interpreters and IDEs.To use Python datatypes and control statements to construct programs for solving basic computational problems.To analyze and debug Python programs by identifying errors, bugs, and logical issues in code.To design and develop modular Python programs using user-defined functions and modules.

UNIT I: Introduction to Python Programming [10 HRS]

Significance of Computer Program, Construction of Computer Program , Definition of Problem Statements, Significance of Algorithm, Introduction to Python Programming Language, Role of Interpreter in Python, Construction of Program in Python Environment, Process of User Input and Output, Errors in Python Programming, Bugs in Python Programming, Role of Variables in Python Programming, Identifiers, Objects, Keywords and Literals in Python Programming, Operators in Python Programming, Various Ide's of Python Programming

UNIT II: Datatypes in Python [10 HRS]

Fundamental Datatypes in Python, Importance of String Datatype, Concept of Unicode Values for Strings, List Datatype Basics, Tuple Datatype Basics, Set Datatype Basics, Dictionary Datatype Basics

UNIT III: Flow Control Statements in Python and Methods of Datatypes [10 HRS]

Need of Control Statements, Types of Control Statements, String Manipulation by Methods, List Methods, Tuple Methods, Set Methods, Dictionary Methods

UNIT IV: Functions and Modules in Python [10 HRS]



Need of Functions in Python, Types of Functions, Methodology of Functions, Modules in Python, Difference Between Scripts and Modules in Python, Creating Own Modules, Difference Between Library, Package and Module

TEXT BOOKS

SR NO	TITLE	AUTHORS	EDITION	PUBLISHER
1	Let Us Python	Y.Kanetkar	5 th Ed 2022	BpB

REFERENCE BOOKS

SR NO	TITLE	AUTHORS	EDITION	PUBLISHER
1	Python Programming: Problem Solving, Packages and Libraries	Anurag Gupta, G.P Biswas	1st Ed 2019	McGraw Hill
2	Core Python Programming	Dr R.Nageshwar Rao	3rd Ed 2021	DreamTech

		<p style="text-align: center;">OCT-2023</p>	<p style="text-align: center;">1.0</p>	<p style="text-align: center;">APPLICABLE 2023-24</p>
<p style="text-align: center;">CHAIRMAN- BoS</p>	<p style="text-align: center;">DEAN (ACADEMICS)</p>	<p style="text-align: center;">DATE OF RELEASE</p>	<p style="text-align: center;">VERSION</p>	



SIXTH SEMESTER

COURSE CODE	COURSE NAME	TH	PR	CREDITS	EVALUATION		
					CA	ESE	TOTAL
23BV602P	Employability Skills-III Lab	--	3	3	25	25	50



COURSE OBJECTIVES	COURSE OUTCOMES
<ul style="list-style-type: none"> To provide students with a strong foundation in Python programming concepts, including algorithms, data types, control structures, functions, and modules. To develop the ability to write, analyze, and debug Python programs using appropriate programming constructs and problem-solving strategies. 	<ol style="list-style-type: none"> To explain the fundamentals of Python programming, including program structure, syntax, variables, datatypes, and the role of interpreters and IDEs. To use Python datatypes and control statements to construct programs for solving basic computational problems. To analyze and debug Python programs by identifying errors, bugs, and logical issues in code. To design and develop modular Python programs using user-defined functions and modules.

List of Practical :

- Demonstrate about Basics of Python Programming and development of Program in Python Programming Environment.
- Demonstration of various operators used in Python with suitable example programs.
- Demonstrate the different ways of creating and accessing string, list, and tuple objects with suitable example programs.
- Demonstrate the different ways of creating and accessing Set and Dictionary objects with suitable example programs.
- Demonstrate the various Conditional statements in Python with suitable programming examples.
- Demonstrate the various Looping and Transfer statements in Python with suitable programming examples.
- Demonstrate the Need and Role of User Defined Functions in Python with suitable programming examples.
- Demonstrate regarding exploration of built-in and third-party modules in Python with suitable programming examples.

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S.N	Title	Authors	Edition	Publisher
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2.	Core python programming	Nageshwar rao	3rd	Dream tech

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B.VOC. Scheme of Examination & Syllabus 2023-24
CYBER SECURITY

SIXTH SEMESTER

COURSE CODE	COURSE NAME	TH	TU	PR	CREDITS	EVALUATION		
						CA	ESE	TOTAL
23CY603S	Penetration Testing	--	--	8	8	50	100	150

COURSE OBJECTIVES	COURSE OUTCOMES
<ul style="list-style-type: none">To introduce students to fundamental and advanced concepts of application security, including threats, vulnerabilities, secure coding practices, security testing, and compliance.To develop the skills required to analyze, design, and implement secure applications by applying threat modelling, secure SDLC practices, and modern security techniques.	<ol style="list-style-type: none">To explain common application security threats, vulnerabilities, secure coding principles, and security compliance requirements.To perform basic security testing, vulnerability assessment, and apply secure development practices within the software development lifecycle.To analyze applications for security risks using threat modelling and risk assessment techniques, identifying critical vulnerabilities and attack vectors.To design and implement secure application architectures, integrating secure authentication, authorization, encryption, and incident response strategies.
UNIT I:	[10 HRS]
Fundamentals of Application Security: Overview of Application Security, Common Application Security Threats and Vulnerabilities, Secure Coding Practices and Principles, Practical Security Testing Session, Web Application Security, Practical: Identifying and mitigating web vulnerabilities.	
UNIT II:	[10 HRS]
Threat Modelling and Risk Assessment : Principles of Threat Modelling and Risk Assessment, Practical Techniques for Identifying Security Risks, Security Requirements Analysis, Developing and Implementing Threat Models, Practical Vulnerability Assessment and Penetration Testing.	
UNIT III:	[10 HRS]
Secure Development Lifecycle : Secure software development lifecycle (SDLC), Secure design and architecture principles, Code review and testing techniques, Security testing tools and techniques, Integration of security testing into the SDLC, Secure software deployment.	
UNIT IV:	[10 HRS]
Advanced topics in Application Theory : Secure authentication and authorization techniques, Secure communication protocols and encryption, Security compliance and regulations (e.g., GDPR, HIPAA), Incident response and management, Secure mobile application development, Cloud application security.	

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