



ST. VINCENT PALLOTTI COLLEGE OF ENGINEERING & TECHNOLOGY, NAGPUR

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

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

COMPUTER ENGINEERING

GROUP 1: SEMESTER I

Sr No	Course Category	Course Code	Course Title	Hours per Week			Credits	Maximum Marks				No. of Hrs for ESE
				L	T	P		Mid-Sem Examination	Continual Assessment	End Sem Examination	Total	
1	BSC	24CE101T	Engineering Chemistry and Environmental Science	2	-	-	2	10	10	30	50	1.5
2	BSC	24CE101P	Engineering Chemistry and Environmental Science Lab	-	-	2	1	-	25	25	50	-
3	BSC	24CE102T	Linear Algebra and Calculus	3	1	-	4	20	20	60	100	3
4	ESC	24CE103T	Logic building with C	3	-	-	3	20	20	60	100	3
5	ESC	24CE103P	Logic building with C Lab	-	-	2	1	-	25	25	50	-
6	PCC	24CE104T	Concept in Computer Engineering-I	3	-	-	3	20	20	60	100	3
7	PCC	24CE105T	Competitive Programming - I	2	-	-	2	10	10	30	50	1.5
8	AEC	24CE106P	Business Communication Skills I Lab	-	-	2	1	-	25	25	50	-
9	IKS	24CE107T	Indian Knowledge Systems	2	-	-	2	10	10	30	50	1.5
10	SEC	24CE141P	Career Development - I	-	-	2	1	-	50	-	50	-
11	CC	24CE108T	Co-curricular Courses - I	2	-	-	2	-	50	-	50	-
Total				17	1	8	22	90	265	345	700	13.5

		August 2024	NEP 2.0	Applicable for 2024- 25
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COMPUTER ENGINEERING

GROUP 1: SEMESTER II

Sr No	Course Category	Course Code	Course Title	Hours per Week			Credits	Maximum Marks				No. of Hrs for ESE
				L	T	P		Mid-Sem Examination	Continual Assessment	End Semester Examination	Total	
1	BSC	24CE201T	Engineering Physics and Materials Science	2	-	-	2	10	10	30	50	1.5
2	BSC	24CE201P	Engineering Physics and Materials Science Lab	-	-	2	1	-	25	25	50	-
3	BSC	24CE202T	Statistics and Probability	3	1	-	4	20	20	60	100	3
4	ESC	24CE203T	Problem Solving with Python	3	-	-	3	20	20	60	100	3
5	ESC	24CE203P	Problem Solving with Python Lab	-	-	2	1	-	25	25	50	-
6	PCC	24CE204T	Modern Web Technologies	3	-	-	3	20	20	60	100	3
7	PCC	24CE205T	Competitive Programming – II	2	-	-	2	10	10	30	50	1.5
8	AEC	24CE206P	Business Communication Skills – II Lab	-	-	2	1	-	25	25	50	-
9	SEC	24CE241P	Career Development – II	-	-	2	1	-	50	-	50	-
10	SEC	24CE207T	Design Thinking	2	-	-	2	10	10	30	50	1.5
11	CC	24CE208T	Co-curricular Courses – II	2	-	-	2	-	50	-	50	-
Total				17	1	8	22	90	265	345	700	13.5

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SEMESTER III

Sr No	Course Category	Course Code	Course Title	Hours per Week			Credits	Maximum Marks		
				L	T	P		Continual Assessment	End Sem Examination	Total
1	PCC	23CE301T	Discrete Mathematics	3	-	-	3	30	70	100
2	PCC	23CE302T	Data Structures	3	-	-	3	30	70	100
3	PCC	23CE302P	Data Structures Lab	-	-	2	1	25	25	50
4	PCC	23CE303T	Digital Circuits and Fundamentals of Microprocessors	3	-	-	3	30	70	100
5	PCC	23CE303P	Digital Circuits and Fundamentals of Microprocessors Lab	-	-	2	1	25	25	50
6	PCC	23CE304T	Computer Architecture	3	-	-	3	30	70	100
7	PCC	23CE305P	Computer Lab-I	-	-	2	1	25	25	50
8	SEC	23CE306P	Career Development- III	-	-	2	1	50	-	50
9	VEC	23ES301T	Value Education Course- I	2	-	-	2	15	35	50
10	ELC	23CE307P	Micro Project- I*	-	-	2	1	50	-	50
11	MDM	23CE331M	MDM-I Indian Cyber Law	2	-	-	2	15	35	50
Total				16	-	10	21	325	425	750

* Field Project or Community engagement project in the major discipline

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SEMESTER IV

Sr No	Course Category	Course Code	Course Title	Hours per Week			Credits	Maximum Marks		
				L	T	P		Continual Assessment	End Sem Examination	Total
1	PCC	23CE401T	Data Communication	3	-	-	3	30	70	100
2	PCC	23CE401P	Data Communication Lab	-	-	2	1	25	25	50
3	PCC	23CE402T	Database Management Systems	3	-	-	3	30	70	100
4	PCC	23CE402P	Database Management Systems Lab	-	-	2	1	25	25	50
5	PCC	23CE403T	Object Oriented Programming	3	-	-	3	30	70	100
6	PCC	23CE403P	Object Oriented Programming Lab	-	-	2	1	25	25	50
7	OE	23CE461O	Open Elective - I	2	-	-	2	15	35	50
8	VSC	23CE404T	Technical Skill Development - I	2	-	-	2	50	-	50
9	VEC	23ES401T	Value Education Course -II	2	-	-	2	15	35	50
10	SEC	23CE405P	Career Development - IV	-	-	2	1	50	-	50
11	ELC	23CE406P	Micro Project- II*	-	-	2	1	50	-	50
12	MDM	23CE431M	Multidisciplinary Minor-II	3	-	-	3	30	70	100
Total				18	-	10	23	375	425	800

* Field Project or Community engagement project in the major discipline

Open Elective - I	
23CE461O (i)	OE-I Statistical Analysis using R
23CE461O (ii)	OE-I Python Programming-II
23CE461O (iii)	OE-I Advanced Programming in C

Multidisciplinary Minor-II	
23CE431M	Essentials of Computing Systems

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COMPUTER ENGINEERING

V Semester

Sr No	Course Code	Course Title	Hours per Week			Credits	Maximum Marks		
			L	T	P		Continual Assessment	End Sem Examination	Total
1	22CE501T	Software Engineering and Project Management	3	-	-	3	30	70	100
2	22CE501P	Software Engineering and Project Management Lab	-	-	2	1	25	25	50
3	22CE502T	Operating Systems	3	-	-	3	30	70	100
4	22CE502P	Operating Systems Lab	-	-	2	1	25	25	50
5	22CE503T	Theory of Computation	3	-	-	3	30	70	100
6	22CE504T	Professional Elective-I	3	-	-	3	30	70	100
7	22CE561O	Open Elective - I	3	-	-	3	30	70	100
8	22CE505P	Computer Lab - II	-	-	2	1	25	25	50
9	22AS501T	Economics and Management	3	-	-	3	30	70	100
10	22CE506P	Technical Skill Development - II	-	-	2	1	50	-	50
11	22CE507T	Career Development-III	2	-	-	0	Audit		
Total			20	0	8	22	305	495	800

22CE504T	Professional Elective – I
22CE504T(i)	PE-I Computer Graphics
22CE504T(ii)	PE-I Artificial Intelligence

22CE561O	Open Elective – I
22CE561O(i)	OE-I Statistical Analysis using R
22CE561O(ii)	OE-I Software Testing

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B. Tech. Scheme of Examination & Syllabus 2022-23

COMPUTER ENGINEERING

VI Semester

Sr No	Course Code	Course Title	Hours per Week			Credits	Maximum Marks		
			L	T	P		Continual Assessment	End Sem Examination	Total
1	22CE601T	Advanced Computer Networks	3	-	-	3	30	70	100
2	22CE601P	Advanced Computer Networks Lab	-	-	2	1	25	25	50
3	22CE602T	Design and Analysis of Algorithms	4	-	-	4	30	70	100
4	22CE602P	Design and Analysis of Algorithms Lab	-	-	2	1	25	25	50
5	22CE603T	Professional Elective – II	3	-	-	3	30	70	100
6	22CE604T	Professional Elective – III	3	-	-	3	30	70	100
7	22CE661O	Open Elective – II	3	-	-	3	30	70	100
8	22H104	Foundational Humanities Elective	2	-	-	-	Audit		
9	22AS502T	English for Engineers	2	-	-	2	15	35	50
10	22CE605P	Project – I	-	-	-	1	50	50	100
11	22CE606T	Career Development – IV	2	-	-	0	Audit		
12	22CE607P	Capstone Course – I **	-	-	2	1	50	0	50
Total			22		6	22	315	485	800

** Capstone Course – I (Comprehensive knowledge gained in *Computer Engineering*)

22CE603T	Professional Elective - II
22CE603T(i)	PE – II Data Warehousing and Mining
22CE603T(ii)	PE – II Mobile Application Development

22CE604T	Professional Elective - III
22CE604T(i)	PE – III Digital Image and Video Processing
22CE604T(ii)	PE – III Machine Learning

22CE661O	Open Elective - II
22CE661O(i)	OE – II Cloud Computing & Virtualization
22CE661O(ii)	OE – II Advanced Python Programming

22H104	Foundational Humanities Elective
22H104	Development of Societies
22H104(i)	Philosophy

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COMPUTER ENGINEERING

VII Semester

Sr No	Course Code	Course Title	Hours perWeek			Credits	Maximum Marks		
			L	T	P		Continual Assessment	End Sem Examination	Total
1	21CE701T	Compiler Construction	4	-	-	4	30	70	100
2	21CE701P	Compiler Construction Lab	-	-	2	1	25	25	50
3	21CE702T	Professional Elective - IV	4	-	-	4	30	70	100
4	21CE702P	Professional Elective - IV Lab	-	-	2	1	25	25	50
5	21CE703T	Professional Elective - V	4	-	-	4	30	70	100
6	21CE761O	Open Elective - III	3	-	-	3	30	70	100
7	21CE704P	Project - II	-	-	8	4	100	100	200
8	21CE705P	Summer/Winter Internship *	-	-	-	2	50	-	50
9	21CE706P	Capstone Course – II **	-	-	2	1	50	-	50
Total			15		14	24	370	430	800

* Summer / Winter Internship (Evaluation of Four weeks Internship.)

** Capstone Course – II (Comprehensive knowledge gained in Computer Engineering)

21CE702T	Professional Elective - IV
21CE702T(i)	PE-IV IOT & Its Applications
21CE702T(ii)	PE-IV Fundamentals of Virtual & Augmented Reality
21CE702T(iii)	PE-IV Cryptography & Network Security

21CE703T	Professional Elective - V
21CE703T(i)	PE- V Ad Hoc and Sensor Networks
21CE703T(ii)	PE- V Deep Learning
21CE703T(iii)	PE- V Real Time Operating System

21CE702P	Professional Elective – IV lab
21CE702P(i)	PE-IV IOT & Its Applications Lab
21CE702P(ii)	PE-IV Fundamentals of Virtual & Augmented Reality Lab
21CE702P(iii)	PE-IV Cryptography & Network Security Lab

21CE761O	Open Elective - III
21CE761O	OE-III Cyber Security and Ethics

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VIII Semester

Option A

Sr No	Course Category	Course Code	Course Title	Hours per Week			Credits	Maximum Marks		
				L	T	P		Continual Assessment	End Sem Examination	Total
1	ELC	21CE801P*	Project based on one semester internship in Industry/Research Institute/ National Laboratories/ Incubation Center	-	-	-	12	300	100	400
Total				0	0	0	12	300	100	400

*End semester examination will consist of evaluation of seminar & project report.

Option B

Sr No	Course Category	Course Code	Course Title	Hours per Week			Credits	Maximum Marks		
				L	T	P		Continual Assessment	End Sem Examination	Total
1	ELC	21CE802P	Institutional Internship ^{\$}	-	-	12	6	100	100	200
			OR							
			NPTEL courses [#]	-	-	-	6	-	-	200
2	ELC	21CE803P	Project – III	-	-	12	6	100	100	200
Total				0	0	24	12	200	200	400

Option B is available to students only after recommendation of the concerned Head of the department.

The project and internship should contribute towards career development plan of the students.

* Minimum 90 days internship in any industry and project is to be carried out during internship.

At least Two NPTEL courses as approved by the department to complete total 6 credits. Direct credit transfer will be done in such cases

\$ Institutional Internship by institute level cell(s), SVP CET.

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