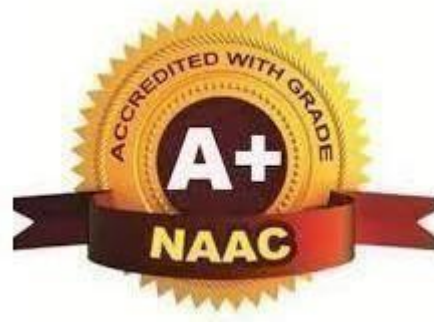




**TULSIRAMJI GAIKWAD-PATIL**  
**College of Engineering & Technology**

Mohgaon, Wardha Road, Nagpur - 441 108

**An Autonomous Institute**



Department  
of

**Computer Science & Engineering B.Tech.**  
**Computer Science & Engineering**

**Teaching Scheme**

Considering

**National Education**  
**Policy 2020**

From

**Academic Year 2026-27**

## **Vision of Institute**

To emerge as a learning Center of Excellence in the National Ethos in domains of Science, Technology and Management.

## **Mission of Institute**

1. To strive for rearing standard and stature of the students by practicing high standards of professional ethics, transparency and accountability.
2. To provide facilities and services to meet the challenges of Industry and Society.
3. To facilitate socially responsive research, innovation and entrepreneurship.
4. To ascertain holistic development of the students and staff members by inculcating knowledge and profession as work practices.

## **Vision of the Department**

“To become a centre of excellence for nurturing the quality Computer Science & Engineering professionals to cater the needs of industry and society.”

## **Mission of the Department**

- To achieve academic excellence by imparting in-depth knowledge to the students through effective pedagogies and hands on experience on latest tools and technologies.
- Inculcating professional behavior, strong ethical values, innovative research capabilities and leadership abilities in graduates.
- To trained the graduates with the knowledge and skills required to enable them to be industry ready.
- To strengthen the Industry-Institute Interaction for stakeholders to become successful entrepreneurs.

## Program Education Objectives (PEO)

- PEO 1: Apply mathematical knowledge mathematics and logical programming to frame engineering solutions in the computing domain.
- PEO 2: Analyze the real life problems and apply latest tools for developing software solutions.
- PEO 3: Apply emerging technology by communicating effectively as a team.
- PEO 4: Enhance the quality, security, privacy, cost utility, etiquette and ethics by their computing abilities.
- PEO5: Adapt emerging technology and advances in careers for fulfilling the societal needs to protect the environment for lifelong learning.

## Program Outcomes (PO)

- PO1: Engineering Knowledge:** Apply knowledge of mathematics, natural science, computing, engineering fundamentals and an engineering specialization as specified in WK1 to WK4 respectively to develop to the solution of complex engineering problems.
- PO2: Problem Analysis:** Identify, formulate, review research literature and analyze complex engineering problems reaching substantiated conclusions with consideration for sustainable development. (WK1 to WK4)
- PO3: Design/Development of Solutions:** Design creative solutions for complex engineering problems and design/develop systems/ components/ processes to meet identified needs with consideration for the public health and safety, whole-life cost, net zero carbon, culture, society and environment as required. (WK5)
- PO4: Conduct Investigations of Complex Problems:** Conduct investigations of complex engineering problems using research-based knowledge including design of experiments, modelling, analysis & interpretation of data to provide valid conclusions. (WK8).

**PO5: Engineering Tool Usage:** Create, select and apply appropriate techniques, resources and modern engineering & IT tools, including prediction and modelling recognizing their limitations to solve complex engineering problems. (WK2 and WK6)

**PO6: The Engineer and The World:** Analyze and evaluate societal and environmental aspects while solving complex engineering problems for its impact on sustainability with reference to economy, health, safety, legal framework, culture and environment. (WK1, WK5, and WK7).

**PO7: Ethics:** Apply ethical principles and commit to professional ethics, human values, diversity and inclusion; adhere to national & international laws. (WK9)

**PO8: Individual and Collaborative Team work:** Function effectively as an individual, and as a member or leader in diverse/multi-disciplinary teams.

**PO9: Communication:** Communicate effectively and inclusively within the engineering community and society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations considering cultural, language, and learning differences

**PO10: Project Management and Finance:** Apply knowledge and understanding of engineering management principles and economic decision-making and apply these to one's own work, as a member and leader in a team, and to manage projects and in multidisciplinary environments.

**PO11: Life-Long Learning:** Recognize the need for, and have the preparation and ability for  
i) independent and life-long learning ii) adaptability to new and emerging technologies and iii) critical thinking in the broadest context of technological change. (WK8)

### **Program Specific Outcomes (PSO)**

PSO 1:	Basic Fundamental: Analyse fundamental knowledge of computer science to analyze complex problem and design effective solution.
PSO 2:	Design and Implementation: Apply modern tool to solve engineering, societal problem and communicate effectively as team member in software project management.
PSO 3:	Higher Studies and Entrepreneur: The ability to use modern computer technologies to create career paths for higher studies and entrepreneurship, also inculcate moral values and ethics for lifelong learning.



# TULSIRAMJI GAIKWAD-PATIL COLLEGE OF ENGINEERING & TECHNOLOGY

Wardha Road, Nagpur - 441108  
Accredited with NAAC A+ Grade & NBA Accredited (EE, ME, CE & ECE)  
Approved by AICTE, New Delhi, Govt. of Maharashtra



(An Autonomous Institution Affiliated to Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur)

## Department of Basic Sciences and Humanities

### Scheme of Instruction for First Year of B. Tech. (UG) Programme Group-A Semester – I (AIML/CSE/DS/IT)

SN	Sem	Type	BoS/ Dept.	Sub. Code	Subject	TP	Contact Hours				Credits	% Weightage			ESE Duration Hours	
							L	P	SL	Hrs		CT/A	CA	ESI		TOTAL
<b>FIRST SEMESTER (GROUP-A)</b>																
1	1	BSC	S&H	BSH41101	Linear Algebra and Calculus	T	4	0	2	6	4	30	10	60	100	3
2	1	BSC	S&H	BSH41102	Quantum, Optics & Computing	T	3	0	2	5	3	30	10	60	100	3
3	1	BSC	S&H	BSH41103	Quantum, Optics & Computing -Lab	P	0	2	-	2	1	25	-	25	50	-
4	1	ESC	ECE	BEC41101	Digital Circuits and Design	T	3	0	2	5	3	30	10	60	100	3
5	1	ESC	ECE	BEC41102	Digital Circuits and Design -Lab	P	0	2	-	2	1	25	-	25	50	-
6	1	ESC	CSE	BCS41101	Programming for Problem Solving	T	2	0	2	4	2	15	5	30	50	1
7	1	VSEC	CSE	BCS41102	Programming for Problem Solving-Lab	P	0	2	-	2	1	25	-	25	50	-
8	1	VSEC	S&H	BSH41105	Professional Etiquette	P	0	2	-	2	1	25	-	-	25	-
9	1	ESC	CSE	BCS41103	Elements of AI -Lab	P	0	2	2	4	1	25	-	25	50	-
10	1	AEC	S&H	BSH41104	Digital Wellness & Basic Communication Lab	P	0	4	-	4	2	50	-	-	50	-
11	1	CC	S&H	BSH41X01	Liberal Learning Module-I	P	0	4	-	4	2	50	-	-	50	-
<b>TOTAL FIRST SEM</b>							12	18	10	40	21	330	35	310	675	10

<b>SECOND SEMESTER (GROUP-A)</b>																
1	2	BSC	S&H	BSH41201	Differential Equation and Statistics	T	4	0	2	6	4	30	10	60	100	3
2	2	BSC	S&H	BSH41202	Advance Material	T	3	0	2	5	3	30	10	60	100	3
3	2	BSC	S&H	BSH41203	Advance Material -Lab	P	0	2	-	2	1	25	-	25	50	-
4	2	ESC	IT	BIT41201	Logic Development and Programming Design	T	3	0	2	5	3	30	10	60	100	3
5	2	ESC	IT	BIT41202	Logic Development and Programming Design-Lab	P	0	2	-	2	1	25	-	25	50	-
6	2	IKS	S&H	BSH41204	Indian Ancient Technology	T	2	0	2	4	2	15	5	30	50	1
7	2	ESC	ME	BME41201	Idea& Innovation -Lab	P	0	4	-	4	2	50	-	-	50	-
8	2	VSEC	IT	BIT41203	Web Designing-Lab	P	0	2	-	2	1	25	-	25	50	-
9	2	VSEC	S&H	BSH41205	Social Internship	P	0	2	-	2	1	25	-	-	25	-
10	2	PCC	IT	BIT41204	Python Programing-Lab	P	0	4	-	4	2	25	-	25	50	-
11	2	CC	S&H	BSH41Y01	Liberal Learning Module-II	P	0	4	-	4	2	50	-	-	50	-
<b>TOTAL SECOND SEM</b>							12	20	08	40	22	330	35	310	675	10

Course Category	BSC/ESC (Basic Science Course/ Engineering Science Course.)	PCC (Programme Corecourses)	Multidisciplinary courses	VSEC (Skill Course)	Social Science & Management		Experiential Learning Courses	CC (Co-Curricular Courses)
					AEC(Ability Enhancement Course)	IKS (Indian Knowledge System)		
Credits SEM-I	08 / 07	--	--	02	02	--	--	02
Credits SEM-II	08 / 06	02	--	02	--	02	--	02
Cumulative Sum	16 / 13	02	--	04	02	02	--	04

PROGRESSIVE TOTAL CREDITS: 21 +22=43

				July, 2025	4.00	Applicable for AY 2025-26 Onwards
Chairperson	Dean Academics	Vice Principal	Principal	Date of Release	Version	

**TULSIRAMJI GAIKWAD-PATIL COLLEGE OF ENGINEERING & TECHNOLOGY**

Wardha Road, Nagpur - 441108

Accredited with NAAC A+ Grade &amp; NBA Accredited (EE, ME, CE &amp; ECE)

Approved by AICTE, New Delhi, Govt. of Maharashtra

(An Autonomous Institution Affiliated to Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur)

**Department of Basic Sciences and Humanities****Scheme of Instruction for First Year of B. Tech. (UG) Programme  
Group-A (AIML/CSE/DS/IT)****Liberal Learning Modules for SEM-I**

SN	Sem	Type	BoS/ Dept.	Sub. Code	Subject	TP	Contact Hours			Credits	Weightage		
							L	P	Hrs		INT (1-Certificate)	ESE (MCQ)	External Practical
1	1	CC	S&H	BSH41X01	Art of Theater	P	2	2	4	2	25	-	25
2	1	CC	S&H	BSH41X02	Fundamental of Music	P	2	2	4	2	25	-	25
3	1	CC	S&H	BSH41X03	CPD (Communication for Personality Development)	P	2	2	4	2	25	-	25
4	1	CC	S&H	BSH41X04	EBCD (Every Body Can Dance)	P	2	2	4	2	25	-	25
5	1	CC	S&H	BSH41X05	Yoga Practices & NSS	P	2	2	4	2	25	-	25
6	1	CC	S&H	BSH41X06	Interactive English (Level-1)	P	2	2	4	2	25	25	-
7	1	CC	S&H	BSH41X07	Gateway to Competitive Exams (Level-1)	P	2	2	4	2	25	25	-
8	1	CC	S&H	BSH41X08	Foreign Language -French (Level-1)	P	2	2	4	2	25	25	-
9	1	CC	S&H	BSH41X09	Foreign Language -German (Level-1)	P	2	2	4	2	25	25	-
10	1	CC	S&H	BSH41X10	Foreign Language -Japanese (Level-1)	P	2	2	4	2	25	25	-

**Liberal Learning Modules for SEM-II**

SN	Sem	Type	BoS/ Dept.	Sub. Code	Subject	TP	Contact Hours			Credits	Weightage		
							L	P	Hrs		INT (1-Certificate)	ESE (MCQ)	External Practical
1	2	CC	S&H	BSH42Y01	Art & Craft	P	2	2	4	2	25	-	25
2	2	CC	S&H	BSH42Y02	Poster & Video Design	P	2	2	4	2	25	-	25
3	2	CC	S&H	BSH42Y03	IPD (Integrated of Personality Development)	P	2	2	4	2	25	25	-
4	2	CC	S&H	BSH42Y04	Sports (Outdoor & Indoor)	P	2	2	4	2	25	-	25
5	2	CC	S&H	BSH42Y05	Indian Cuisine	P	2	2	4	2	25	-	25
6	2	CC	S&H	BSH42Y06	Interactive English (Level-2)	P	2	2	4	2	25	25	-
7	2	CC	S&H	BSH42Y07	Gateway to Competitive Exams (Level-2)	P	2	2	4	2	25	25	-
8	2	CC	S&H	BSH42Y08	Foreign Language -French (Level-2)	P	2	2	4	2	25	25	-
9	2	CC	S&H	BSH42Y09	Foreign Language -German (Level-2)	P	2	2	4	2	25	25	-
10	2	CC	S&H	BSH42Y010	Foreign Language -Japanese (Level-2)	P	2	2	4	2	25	25	-

				July, 2025	4.00	Applicable for AY 2025-26 Onwards
Chairperson	Dean Academics	Vice Principal	Principal	Date of Release	Version	



# Tulsiramji Gaikwad-Patil College of Engineering & Technology, Nagpur

(An Autonomous Institution Affiliated to RTM Nagpur University, Nagpur)

SCHEME OF INSTRUCTIONS & SYLLABI

Programme: Computer Science & Engineering

Scheme of Instructions: Second Year B.Tech. in Computer Science & Engineering

Semester--III



Sr. No.	Course Category	Course Code	Course Title	T/P	Contact Hours				Credits	Exam Scheme			ESE Duration (Hours)	Total Marks
					L	P	SL	Hrs.		CT/IA	CA	ESE		
1	PCC	BCS42301	Advance Object Oriented Programming	T	2	-	-	2	2	14	06	30	2	50
2	PCC	BCS42302	Data Structure	T	3	-	-	3	3	30	10	60	3	100
3	MDM	BSH32305	Mathematical Transform & Signal Series	T	2	-	-	2	2	14	6	30	2	50
4	OEC	BCS42303	OE – I Object Oriented Programming	T	4	-	-	4	4	30	10	60	3	100
5	HSSM	BBA42307	Human Resource Management	T	2	-	-	2	2	14	6	30	2	50
6	VEC	BCE42309	Sustainable Development Goal	T	2	-	-	2	2	14	6	30	2	50
7	PCC	BCS42304	Advance Object Oriented Programming - Lab	P	-	2	-	2	1	-	25	25	2	50
8	PCC	BCS42305	Data Structure - Lab	P	-	2	-	2	1	-	25	25	2	50
9	CEP	BCS42306	Micro Project	P	-	2	-	2	1	-	25	25	2	50
10	AEC	BSH423XX	Liberal Learning Module-III	P	-	2	-	2	1	50	-	-	2	50
<b>Total</b>				-	<b>15</b>	<b>08</b>		<b>23</b>	<b>19</b>	<b>166</b>	<b>119</b>	<b>315</b>	<b>22</b>	<b>600</b>

Course Category	BSC/ESC (Basic Science Course/Engineering Science Course.)	PCC (Programme Core courses)	PEC (Programme Elective courses)	OEC (Open Elective Course)	Multi-disciplinary courses	VSEC (Skill Course)	VEC (Value Education Courses)	Humanities Social Science & Management		Experiential Learning Courses
								AEC (Ability Enhancement Course)	IKS (Indian Knowledge System)	
Credits	-	10	-	4	2	-	2	1		2
Cumulative Sum	16/13	12	-	4	2	4	2	5		2

**PROGRESSIVE TOTAL CREDITS: 43+19=62**

				June, 2026	1.00	Applicable for AY 2026-27
Chairperson HOD	Director Academics / Vice-Principal <b>Director Academics</b>	Director Administration	Principal <b>Dr. Premnand Naktode</b>	Date of Release	Version	

Computer Science & Engineering  
Tulsiramji Gaikwad-Patil College of Engineering  
and Technology, Nagpur

TGPCET, Nagpur



# Tulsiramji Gaikwad-Patil College of Engineering & Technology, Nagpur

(An Autonomous Institution Affiliated to RTM Nagpur University, Nagpur)

## SCHEME OF INSTRUCTIONS & SYLLABI

Programme: Computer Science & Engineering

Scheme of Instructions: Second Year B.Tech. in Computer Science & Engineering

Semester-IV



Sr. No.	Course Category	Course Code	Course Title	T/P	Contact Hours			Credits	Exam Scheme			ESE Duration (Hours)	Total Marks
					L	P	Hrs.		CT/IA	CA	ESE		
1	PCC	BCS42401	Operating Systems	T	3	-	3	3	30	10	60	3	100
2	PCC	BCS42402	Database Technologies	T	3	-	3	3	30	10	60	3	100
3	PCC	BCS42403	Theoretical Foundations of Computer Science	T	3	-	3	3	30	10	60	3	100
4	MDM	BSH32401	Discrete Mathematics & Graph Theory	T	2	-	2	2	14	6	30	2	50
5	OEC	BCS42404	OE-II – Database Management System	T	2	-	2	2	14	6	30	2	50
6	VSEC	BCS42405	Introduction to Data Science	P	-	4	4	2	-	50	50	2	100
7	HSSM	BBA42408	Business Economics & Entrepreneurship	T	2	-	2	2	14	6	30	2	50
8	VEC	BSH424XX	Intellectual Property Rights	T	2	-	2	2	14	6	30	2	50
9	PCC	BCS42406	Operating Systems - Lab	P	-	2	2	1	-	25	25	2	50
10	PCC	BCS42407	Database Technologies - Lab	P	-	2	2	1	-	25	25	2	50
11	AEC	BSH424XX	Liberal Learning Module-IV	P	-	2	2	1	50	-	-	-	50
<b>Total</b>				-	<b>17</b>	<b>10</b>	<b>27</b>	<b>22</b>	<b>196</b>	<b>154</b>	<b>400</b>	<b>23</b>	<b>750</b>

Course Category	BSC/ESC (Basic Science Course/Engineering Science Course.)	PCC (Programme Core courses)	PEC (Programme Elective courses)	OEC (Open Elective Course)	Multi-disciplinary courses	VSEC (Skill Course)	VEC (Value Education Courses)	Humanities Social Science & Management		Experiential Learning Courses	VAC (Value added Course)
								AEC (Ability Enhancement Course)	IKS (Indian Knowledge System)		
Credits		8	-	2	2	2	-	1		-	-
Cumulative Sum	16/13	20	-	6	4	6	2	6		2	2

**PROGRESSIVE TOTAL CREDITS: 62+22=84**

				June, 2026	1.00	Applicable for AY 2026-27
Chairperson HOD	Director Academics / Vice-Principal Director Academics	Director Administration	Principal	Date of Release	Version	

Computer Science & Engineering  
Tulsiramji Gaikwad-Patil College of Engineering and Technology, Nagpur

Premchand Naktode  
Principal  
TGPCET, Nagpur



# Tulsiramji Gaikwad-Patil College of Engineering & Technology, Nagpur

(An Autonomous Institution Affiliated to RTM Nagpur University, Nagpur)

SCHEME OF INSTRUCTIONS & SYLLABI

Programme: Computer Science & Engineering

Scheme of Instructions: Third Year B.Tech. in Computer Science & Engineering

Semester-V



Sr. No.	Course Category	Course Code	Course Title	T/P	Contact Hours			Credits	Exam Scheme			ESE Duration (Hours)	Total Marks
					L	P	Hrs.		CT/IA	CA	ESE		
1	PCC	BCS43501	Design and Analysis of Algorithms	T	3	-	3	3	30	10	60	3	100
2	PCC	BCS43502	Computer Network	T	3	-	3	3	30	10	60	3	100
3	PEC	BCS43507-09	Program Elective-I	T	4	-	4	4	30	10	60	3	100
4	MDM	BEC43611	Microprocessor and Micro Controller	T	4	-	4	4	30	10	60	3	100
5	OEC	BCS43503	OE-III Fundamental of Data Science	T	2	-	2	2	14	06	30	2	50
6	PCC	BCS43504	Design and Analysis of Algorithms - Lab	P	-	2	2	1	-	25	25	2	50
7	PCC	BCS43505	Computer Network - Lab	P	-	2	2	1	-	25	25	2	50
8	PCC	BCS43506	Mobile Application Development Lab	P	-	4	4	2	-	50	50	2	100
<b>Total</b>				-	<b>16</b>	<b>8</b>	<b>24</b>	<b>20</b>	<b>134</b>	<b>146</b>	<b>370</b>	<b>20</b>	<b>650</b>

Course Category	BSC/ESC (Basic Science Course/Engineering Science Course.)	PCC (Program Core courses)	PEC (Programme Elective courses)	OEC (Open Elective Course)	Multi-disciplinary courses	VSEC (Skill Course)	VEC (Value Education Courses)	Humanities Social Science & Management		Experiential Learning Courses	CC (Liberal Learning Courses)	VAC (Value added Course)
								AEC (Ability Enhancement Course)	IKS (Indian Knowledge System)			
Credits	-	12	4	2	4	-	-	-	-	1	-	-
Cumulative Sum	16/13	32	4	8	8	6	2	10	3	4	2	

**PROGRESSIVE TOTAL CREDITS: 85+22=107**

				June, 2026	1.00	Applicable for AY 2026-27
Chairperson HOD	Director Academics / Vice-Principal Director Academics	Director Administration	Principal	Date of Release	Version	

Computer Science & Engineering  
Tulsiramji Gaikwad-Patil College of Engineering and Technology, Nagpur

Dr. Premnand Naktode  
Principal  
TGPCET, Nagpur



# Tulsiramji Gaikwad-Patil College of Engineering & Technology, Nagpur

(An Autonomous Institution Affiliated to RTM Nagpur University, Nagpur)

SCHEME OF INSTRUCTIONS & SYLLABI

Programme: Computer Science & Engineering

Scheme of Instructions: Third Year B.Tech. in Computer Science & Engineering

Semester-VI



Sr. No.	Course Category	Course Code	Course Title	T/P	Contact Hours			Credits	Exam Scheme			ESE Duration (Hours)	Total Marks
					L	P	Hrs.		CT/IA	CA	ESE		
1	PCC	BCS43601	Data Science and Analytics	T	3	-	3	3	30	10	60	3	100
2	PCC	BCS43602	Compiler Design	T	4	-	4	4	30	10	60	3	100
3	MDM	BEC43614	Embedded System	T	2	-	2	2	14	06	30	2	50
4	PCC	BCS43603	Data Science and Analytics – Lab	P	-	2	2	1	-	25	25	2	50
5	PCC	BCS43604	Cloud Computing – Lab	P	-	2	2	1	-	25	25	2	50
6	VSEC	BCS43605	Internet of Things (IoT) with Sensors – Lab (Idea Lab)	P	-	4	4	2	-	50	50	2	100
7	Project	BCS43606	Mini Project	P	-	4	4	2	-	50	50	2	100
8	PEC	BCS43607-09	Professional Elective-II	T	4	-	4	4	30	10	60	3	100
9	PEC	BCS43610-12	Professional Elective-III	T	4	-	4	4	30	10	60	3	100
<b>Total</b>				-	<b>17</b>	<b>12</b>	<b>29</b>	<b>23</b>	<b>134</b>	<b>196</b>	<b>420</b>	<b>22</b>	<b>750</b>

Course Category	BSC/ESC (Basic Science Course/Engineering Science Course.)	PCC (Programme Core courses)	PEC (Programme Elective courses)	OEC (Open Elective Course)	Multi-disciplinary courses	VSEC (Skill Course)	VEC (Value Education Courses)	Humanities Social Science & Management		Experiential Learning Courses	CC (Liberal Learning Courses)	VAC (Value added Course)
								AEC (Ability Enhancement Course)	IKS (Indian Knowledge System)			
Credits	-	8	8	-	2	2	-	-	-	-	-	-
Cumulative Sum	16/13	41	12	8	10	8	2	10	3	4	2	

**PROGRESSIVE TOTAL CREDITS: 107+23=130**

				June, 2026	1.00	Applicable for AY 2026-27
Chairperson HOD	Director Academics / Vice-Principal <b>Director Academics</b> Tulsiramji Gaikwad-Patil College Of Engineering And Technology, Nagpur	Director Administration Dr. Premnandhi Naktode Principal TGPCET, Nagpur	Principal	Date of Release	Version	



# Tulsiramji Gaikwad-Patil College of Engineering & Technology, Nagpur

(An Autonomous Institution Affiliated to RTM Nagpur University, Nagpur)

**SCHEME OF INSTRUCTIONS & SYLLABI**

**Programme: Computer Science & Engineering**

**Scheme of Instructions: Final Year B.Tech. in Computer Science & Engineering**

**Semester-VII**



Sr. No.	Course Category	Course Code	Course Title	T/P	Contact Hours			Credits	Exam Scheme			ESE Duration (Hours)	Total Marks
					L	P	Hrs.		CT/IA	CA	ESE		
1	PCC	BCS44701	Cyber Security & Digital Protection	T	4	-	4	4	30	10	60	3	100
2	PCC	BCS44702	Distributed Computing System	T	4	-	4	4	30	10	60	3	100
3	PEC	BCS44704-06	Professional Elective - IV	T	4	-	4	4	30	10	60	3	100
4	PEC	BCS44707-09	Professional Elective - V	T	4	-	4	4	30	10	60	3	100
5	Project	BCS44703	Major Project	P	-	6	6	3	-	50	50	2	100
6	MDM	BEC44713	Digital Signal Processing	T	3	-	3	3	30	10	60	3	100
7	MDM	BEC44714	Digital Signal Processing - Lab	p	-	2	2	1	-	25	25	2	50
<b>Total</b>				-	<b>19</b>	<b>8</b>	<b>27</b>	<b>23</b>	<b>150</b>	<b>125</b>	<b>375</b>	<b>19</b>	<b>650</b>

Course Category	BSC/ESC (Basic Science Course/Engineering Science Course.)	PCC (Program Core courses)	PEC (Programme Elective courses)	OEC (Open Elective Course)	Multi-disciplinary courses	VSEC (Skill Course)	VEC (Value Education Courses)	Humanities Social Science & Management		Experiential Learning Courses	CC (Liberal Learning Courses)	VAC (Value added Course)
								AEC (Ability Enhancement Course)	IKS (Indian Knowledge System)			
Credits	-	8	8	-	4	-	-	-	-	4	-	-
Cumulative Sum	16/13	49	20	8	14	8	2	10	7	4	4	2

**PROGRESSIVE TOTAL CREDITS: 127+23=150**

				June, 2026	1.00	Applicable for AY 2026-27
Chairperson HOD	Director Academics / Vice-Principal <b>Director Academics</b>	Director Administration Dr.	Principal <b>Dr. Premnand Naktode</b>	Date of Release	Version	

Computer Science & Engineering  
Tulsiramji Gaikwad-Patil College of Engineering and Technology, Nagpur

Principal  
TGPCET, Nagpur



# Tulsiramji Gaikwad-Patil College of Engineering & Technology, Nagpur

(An Autonomous Institution Affiliated to RTM Nagpur University, Nagpur)

SCHEME OF INSTRUCTIONS & SYLLABI

Programme: Computer Science Engineering

Scheme of Instructions: Final Year B.Tech. in Computer Science Engineering

Semester-VIII



Sr. No.	Course Category	Course Code	Course Title	T/P	Contact Hours			Credits	Exam Scheme			ESE Duration (Hours)	Total Marks
					L	P	Hrs.		CT/IA	CA	ESE		
1	<b>PCC</b>	BCS44801	Research Methodology	T	4	-	4	4	-	25	75	3	100
2	<b>Project</b>	BCS44802	Internship /On Job Training	P	-	24	24	12	-	150	150	3	300
<b>Total</b>				-	<b>4</b>	<b>24</b>	<b>28</b>	<b>16</b>	-	<b>175</b>	<b>225</b>	<b>6</b>	<b>400</b>

Course Category	BSC/ESC (Basic Science Course/Engineering Science Course.)	PCC (Programme Core courses)	PEC (Programme Elective courses)	OEC (Open Elective Course)	Multi-disciplinary courses	VSEC (Skill Course)	VEC (Value Education Courses)	Humanities Social Science & Management		Experiential Learning Courses	CC (Liberal Learning Courses)	VAC (Value added Course)
								AEC (Ability Enhancement Course)	IKS (Indian Knowledge System)			
Credits		4	-	-	-	-	-	-	-	12	-	-
Cumulative Sum	16/13	53	20	8	14	8	2	10	10	19	4	2

**PROGRESSIVE TOTAL CREDITS: 150+16=166**

				June, 2026	1.00	Applicable for AY 2026-27
Chairperson HOD	Director Academics / Vice-Principal <b>Director Academics</b> Tulsiramji Gaikwad-Patil College Of Engineering And Technology, Nagpur	Director Administration Dr.	Premnand Naktode Principal TGPCET, Nagpur	Date of Release	Version	



# Tulsiramji Gaikwad-Patil College of Engineering & Technology, Nagpur

(An Autonomous Institution Affiliated to RTM Nagpur University, Nagpur)

SCHEME OF INSTRUCTIONS & SYLLABI

Program: Computer Science & Engineering

List of Electives offered by  
Computer Science & Engineering



Track Name	Course Code	Professional Elective- I	Course Code	Professional Elective- II	Course Code	Professional Elective- III
		Semester V		Semester VI		Semester VI
Artificial Intelligence /Data	BCS43507	Data Mining & Data Warehousing	BCS43607	Machine Learning	BCS43610	Data Visualization
Systems	BCS43508	Web Development	BCS43608	Cloud Computing	BCS43611	DevOps
Emerging Tech and Security	BCS43509	Software Engineering & Agile	BCS43609	Ethical Hacking	BCS43612	Cryptography

Course Code	Professional Elective- IV	Course Code	Professional Elective-V
	Semester VII		Semester VII
BCS44704	Deep Learning	BCS44707	Natural Language Processing
BCS44705	Parallel Computing Architecture	BCS44708	Cloud Security
BCS44706	Digital Forensics	BCS44709	Cyber Threat Intelligence

## List of Open Electives offered by Computer Science & Engineering

Course Code	Subject
BCS42303 (OE-I)	Object Oriented Programming
BCS42404 (OE-II)	Database Management System
BCS43503 (OE-III)	Fundamentals of Data Science

				June, 2026	1.00	Applicable for AY 2026-27
Chairperson HOD	Director Academics / Vice-Principal Director Academics	Director Administration	Principal	Date of Release	Version	

Computer Science & Engineering  
Tulsiramji Gaikwad-Patil  
College Of Engineering  
And Technology, Nagpur

TGPCET, Nagpur