



Graphic Era (Deemed to be University)													
B.Tech. in Computer Science and Engineering													
Scheme of Teaching and Evaluation 2025													
Outcome-Based Education (OBE) and Choice-Based Credit System (CBCS) as per NEP 2020													
(Effective from the academic year 2025-26)													
Semester I													
COURSE MODULE					TEACHING PERIODS				WEIGHTAGE : EVALUATION				
Physics/ Chemistry Group													
COURSE					Credits	L	T	P	Contact	CIE	MSE	ESE	Total
Code	Title	NEP Component	AICTE Component										
TPH101/201	Engineering Physics	DSC	BSC	3	3	-	-	3	25	25	50	100	
TMA101	Engineering Mathematics-I	DSC	BSC	3	2	1	-	3	25	25	50	100	
TEE101/201	Basic Electrical Engineering	DSC	ESC	2	2	-	-	2	25	25	50	100	
TCS101	Fundamental of Computer & Introduction to Programming	DSC	ESC	3	3	-	-	3	25	25	50	100	
PPH151/251	Physics Lab	DSC	LC	1	-	-	2	2	25	25	50	100	
PEE151/251	Electrical Engineering Lab	DSC	LC	1	-	-	2	2	25	25	50	100	
PCS151	Computer Lab-I	DSC	LC	2	-	-	4	4	25	25	50	100	
PME151/251	Workshop And Manufacturing Practices	SEC	LC	2	-	-	4	4	25	25	50	100	
THU101	Professional Communication	AEC	HSMC	2	2	-	-	2	25	25	50	100	
HSMC 101/201	Design Thinking	VAC	HSMC	1	-	-	2	2	25	25	50	100	
<b>Total</b>				<b>20</b>								<b>1000</b>	

Mandatory Non-Graded Course												
THF101/201	Healthy Living & Fitness	MNG	MC	2	2	-	-	2	-	-	100	100
										Qualified/ Non-Qualified		



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Semester II													
COURSE MODULE Physics/Chemistry Group					TEACHING PERIODS				WEIGHTAGE : EVALUATION				
COURSE					Credits	L	T	P	Contact	CIE	MSE	ESE	Total
Code	Title	NEP Component	AICTE Component										
TCH101 /201	Engineering Chemistry	DSC	BSC	3	3	-	-	3	25	25	50	100	
TMA201	Engineering Mathematics-II	DSC	BSC	3	2	1	-	3	25	25	50	100	
TCS201	Programming for Problem Solving	DSC	ESC	3	3	-	-	3	25	25	50	100	
TEC101 /201	Basic Electronics Engineering	DSC	ESC	2	2	-	-	2	25	25	50	100	
PCH151 /251	Chemistry Lab	DSC	LC	1	-	-	2	2	25	25	50	100	
PCS251	Computer Lab - II	DSC	LC	2	-	-	4	4	25	25	50	100	
PEC151 /251	Electronics Engineering Lab	DSC	LC	1	-	-	2	2	25	25	50	100	
PME153 /253	Engineering Graphics and Design Lab	SEC	LC	2	-	-	4	4	25	25	50	100	
PCE151 /251	Basic Civil Engg Lab	DSC	LC	1	-	-	2	2	25	25	50	100	
THU201	Advanced Professional Communication	AEC	HSMC	2	2	-	-	2	25	25	50	100	
GP201	General Proficiency-I	SEC	SEC	1	-	-	-	-	100	-	-	100	
<b>Total</b>				<b>21</b>								<b>1100</b>	

Mandatory Non-Graded Course												
TEV101/201	Environmental Science	MNG	MC	2	2	-	-	2	-	-	100	100
										Qualified/ Non-Qualified		



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Semester III													
COURSE MODULE					TEACHING PERIODS				WEIGHTAGE : EVALUATION				
COURSE					Credits	L	T	P	Contact Hr.	CIE	MSE	ESE	Total
Code	Title	NEP Component	AICTE Component										
TCS308	Logic Design and Computer Organization	DSC	PCC	3	3	-	-	3	25	25	50	100	
TCS302	Data Structures with C	DSC	PCC	3	3	-	-	3	25	25	50	100	
TCS307	Object Oriented Programming with C++	DSC	PCC	3	3	-	-	3	25	25	50	100	
TMA316	Discrete Structures and Combinatorics	DSC	PCC	3	3	-	-	3	25	25	50	100	
	Discipline Specific Elective-I	DSE	PEC	3	3	1	-	4	25	25	50	100	
PCS308	Logic Design and Computer Organization Lab	DSC	LC	1	-	-	2	2	25	25	50	100	
PCS302	Data Structures Lab	DSC	LC	1	-	-	2	2	25	25	50	100	
PCS307	OOPS with C++ Lab	DSC	LC	1	-	-	2	2	25	25	50	100	
XCS301	Career Skills-I	AEC	AEC	2	2	-	-	2	25	25	50	100	
UHV301	UHV-II	VAC	VAC	2	2	-	-	2	25	25	50	100	
<b>Total</b>				<b>22</b>								<b>1000</b>	



Optional									
	Credits	TEACHING PERIODS				WEIGHTAGE: EVALUATION			
		L	T	P	Contact Hr.	CIE	MSE	ESE	Total
**Minor-I/Specialization-I	3	3	-	-	3	25	25	50	100
<i>** List of minor/ specialization courses is mentioned on page no. 31-37</i>									

**DISCIPLINE SPECIFIC ELECTIVE-I**

COURSE CODE	COURSE NAME
TCS351	Fundamental of Cloud Computing and Big Data
TCS392	Introduction to Cryptography
TCS331	Fundamentals of IoT
TCS346	Python Programming
TCS332	Fundamentals of Information Security and Blockchain
TCS361	*Joy of Computing using Python (Through Swayam)

**AUDIT COURSE:** TOC301 PROBABILITY AND STATISTICS**NOTE:**

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2. General Proficiency shall be assessed based on the participation in NCC, NSS, Conferences (Research paper Publication (Journal/ Conference)), Organizing events, competitions (Inter-University, State, National, International level), including Music, Debate, Sports, Hackathon and so on.
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Semester IV													
COURSE MODULE					TEACHING PERIODS				WEIGHTAGE : EVALUATION				
COURSE					Credits	L	T	P	Contact Hr.	CIE	MSE	ESE	Total
Code	Title	NEP Component	AICTE Component										
TCS408	Programming in Java	DSC	PCC	3	3	-	-	3	25	25	50	100	
TCS402	Finite Automata and Formal Languages	DSC	PCC	3	3	-	-	3	25	25	50	100	
TCS403	Microprocessors	DSC	PCC	3	3	-	-	3	25	25	50	100	
TCS409	Design and Analysis of Algorithms	DSC	PCC	3	3	-	-	3	25	25	50	100	
	Discipline Specific Elective-II	DSE	PEC	3	3	1	-	4	25	25	50	100	
PCS408	Java Programming Lab	DSC	LC	1	-	-	2	2	25	25	50	100	
PCS403	Microprocessors Lab	DSC	LC	1	-	-	2	2	25	25	50	100	
PCS409	DAA Lab	DSC	LC	1	-	-	2	2	25	25	50	100	
XCS401	Career Skills-II	AEC	AEC	2	2	-	-	2	25	25	50	100	
GP401	General Proficiency-II	SEC	SEC	1	-	-	-	-	100	-	-	100	
<b>Total</b>				<b>21</b>								<b>1000</b>	

Mandatory Non-Graded Course												
HSS203	Constitution of India	MNG	MC	2	2	-	-	2	-	-	100	100
										Qualified/ Non-Qualified		



Optional									
	Credits	TEACHING PERIODS				WEIGHTAGE : EVALUATION			
		L	T	P	Contact Hr.	CIE	MSE	ESE	Total
**Minor-II/Specialization-II	3	3	-	-	3	25	25	50	100
<i>** List of minor/ specialization courses is mentioned on page no. 31-37</i>									

**DISCIPLINE SPECIFIC ELECTIVE-II**

COURSE CODE	COURSE NAME
TCS451	Virtualization and Cloud Computing
TCS471	Statistical Data Analysis with R
TCS431	Microcontroller and Its Interfacing
TCS495	Foundation of Cyber Security
TCS421	Fundamentals of Statistics and AI
TCS433	*Blockchain and its Applications (Through Swayam)
TCS465	*Linear Algebra (Through Swayam)

**AUDIT COURSE:** TOC401: COMPETITIVE PROGRAMMING

**NOTE:**

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2. General Proficiency shall be assessed based on the participation in NCC, NSS, Conferences (Research paper Publication (Journal/ Conference)), Organizing events, competitions (Inter University, State, National, International level), including Music, Debate, Sports, Hackathon and so on.
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Semester V													
COURSE MODULE					TEACHING PERIODS				WEIGHTAGE : EVALUATION				
COURSE					Credits	L	T	P	Contact Hr.	CIE	MSE	ESE	Total
Code	Title	NEP Component	AICTE Component										
TCS501	System Software	DSC	PCC	3	3	-	-	3	25	25	50	100	
TCS502	Operating Systems	DSC	PCC	3	3	-	-	3	25	25	50	100	
TCS503	Database Management Systems	DSC	PCC	3	3	-	-	3	25	25	50	100	
TCS514	Computer Networks-I	DSC	PCC	3	3	-	-	3	25	25	50	100	
	Discipline Specific Elective-III	DSE	PEC	3	3	1	-	4	25	25	50	100	
PCS502	Operating Systems Lab	DSC	LC	1	-	-	2	2	25	25	50	100	
PCS503	DBMS Lab	DSC	LC	1	-	-	2	2	25	25	50	100	
PCS514	Computer Networks Lab	DSC	LC	1	-	-	2	2	25	25	50	100	
XCS501	Career Skills-III	AEC	AEC	2	2	-	-	2	25	25	50	100	
<b>Total</b>				<b>20</b>								<b>900</b>	

Mandatory Non-Graded Course												
HSS304	Indian Knowledge System	MNG	MC	2	2	-	-	2	-	-	100	100
										Qualified/ Non-Qualified		



Optional									
	Credits	TEACHING PERIODS				WEIGHTAGE : EVALUATION			
		L	T	P	Contact Hr.	CIE	MSE	ESE	Total
**Minor-III/Specialization-III	3	3	-	-	3	25	25	50	100
<i>** List of minor/ specialization courses is mentioned on page no. 31-37</i>									

### DISCIPLINE SPECIFIC ELECTIVE- III

COURSE CODE	COURSE NAME
TCS584	Foundation of Quantum Computing
TCS595	Security and Auditing
TCS552	Cloud Based Application Development and Management
TCS571	Bigdata Visualization
TCS597(E)	Computer System Security
TCS509	Machine learning
TCS521	User Interface Design
TMA502	Computer Based Numerical and Statistical Techniques
TCS586	*Parallel Computer Architecture (Through Swayam)

**AUDIT COURSE:** TOC501: FOUNDATION OF DATA SCIENCE

**NOTE:**

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**Scheme of Teaching and Evaluation 2025**

Outcome-Based Education (OBE) and Choice-Based Credit System (CBCS) as per NEP 2020

(Effective from the academic year 2025-26)

**Semester VI**

COURSE MODULE					TEACHING PERIODS				WEIGHTAGE : EVALUATION				
COURSE					Credits	L	T	P	Contact Hr.	CIE	MSE	ESE	Total
Code	Title	NEP Component	AICTE Component										
TCS601	Compiler Design	DSC	PCC	3	3	-	-	3	25	25	50	100	
TCS611	Software Engineering	DSC	PCC	3	3	-	-	3	25	25	50	100	
TCS614	Computer Networks-II	DSC	PCC	3	3	-	-	3	25	25	50	100	
TCS693	Full Stack Web Development	DSC	PCC	3	3	-	-	3	25	25	50	100	
	Discipline Specific Elective-IV	DSE	PEC	3	3	1	-	4	25	25	50	100	
PCS601	Compiler Design Lab	DSC	LC	1	-	-	2	2	25	25	50	100	
PCS611	Software Engineering Lab	DSC	LC	1	-	-	2	2	25	25	50	100	
PCS693	Web Development Lab	DSC	LC	1	-	-	2	2	25	25	50	100	
XCS601	Career Skills-IV	AEC	AEC	2	2	-	-	2	25	25	50	100	
GP601	General Proficiency-III	SEC	SEC	1	-	-	-	-	100	-	-	100	
<b>Total</b>				<b>21</b>								<b>1000</b>	



Optional									
	Credits	TEACHING PERIODS				WEIGHTAGE : EVALUATION			
		L	T	P	Contact Hr.	CIE	MSE	ESE	Total
**Minor-IV/Specialization-IV	3	3	-	-	3	25	25	50	100

**\*\* List of minor/ specialization courses is mentioned on page no. 31-37**

**DISCIPLINE SPECIFIC ELECTIVE-IV**

COURSE CODE	COURSE NAME
TCS645	AI in Creative Fields
TCS688	Quantum Machine Learning
TCS685	Quantum Cryptography
TCS695	Database Security, Identity and Access Management
TCS691	Image processing and Computer Vision
TCS651	Devops on Cloud
TCS671	Big Data Storage and Processing
TCS679(E)	Network and System Security
TCS641	*Virtual Reality (Through Swayam)
TCS631	*Network programming and wireless technologies (Through Swayam)
TCS661	*Computer Graphics (Through Swayam)

**AUDIT COURSE: TOC601: COMPETITIVE PROGRAMMING**

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2. General Proficiency shall be assessed based on the participation in NCC, NSS, Conferences (Research paper Publication (Journal/ Conference)), Organizing events, competitions (Inter University, State, National, International level) including Music, Debate, Sports, Hackathon and so on.
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Semester VII													
COURSE MODULE					TEACHING PERIODS				WEIGHTAGE : EVALUATION				
COURSE					Credits	L	T	P	Contact Hr.	CIE	MSE	ESE	Total
Code	Title	NEP Component	AICTE Component										
TCS726	Business Intelligence	DSC	PCC	3	3	-	-	3	25	25	50	100	
TCS704	Advanced Computer Architecture	DSC	PCC	3	3	-	-	3	25	25	50	100	
TRM701	Research Methodology and IPR	DSC	PCC	3	3	-	-	3	25	25	50	100	
	Discipline Specific Elective-V	DSE	PEC	3	3	1	-	4	25	25	50	100	
	Generic Elective-I	UOE	OEC	3	3	-	-	3	25	25	50	100	
SCS701	Seminar on Industrial Interaction	PROJ	PROJ	4	-	-	-	-	-	-	100	100	
CSP701	Major Project Phase I	PROJ	PROJ	3	-	-	6	6	50	-	50	100	
<b>Total</b>				<b>22</b>								<b>700</b>	



Optional									
	Credits	TEACHING PERIODS				WEIGHTAGE : EVALUATION			
		L	T	P	Contact Hr.	CIE	MSE	ESE	Total
**Minor-V/Specialization-V	3	3	-	-	3	25	25	50	100
<i>** List of minor/ specialization courses is mentioned on page no. 31-37</i>									

**DISCIPLINE SPECIFIC ELECTIVE-V**

Course Code	Course Name
TCS785	Generative AI and Prompt Engineering
TCS781	Deep Learning
TCS737	UI/UX Design
TCS738	Object-Oriented Analysis and Design
TCS734	Robotic Process Automation Design and Development
TCS750	Cloud Orchestration and Load Balancing
TCS731	Computer Forensics
TCS761	Cloud Infrastructure Services
TCS756	Human computer interaction
TCS723	Distributed Systems
TCS799	Software Verification, Validation and Testing
TCS795	Cryptography and Network Security
TCS732	*Web Mining (Through Swayam)
TCS771	*Natural Language Processing (Through Swayam)
TCS722	*Data warehousing and data mining (Through Swayam)

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Semester VIII													
COURSE MODULE					TEACHING PERIODS				WEIGHTAGE : EVALUATION				
COURSE					Credits	L	T	P	Contact Hr.	CIE	MSE	ESE	Total
Code	Title	NEP Component	AICTE Component										
DM001	Disaster Management	VAC	VAC	2	2	-	-	2	25	25	50	100	
	Discipline Specific Elective-VI	DSE	PEC	3	3	1	-	4	25	25	50	100	
	Generic Elective-II	UOE	OEC	3	3	-	-	3	25	25	50	100	
CSP801	Major Project Phase II	PROJ	PROJ	6	-	-	12	12	-	-	100	100	
CSC801	Comprehensive Viva-Voce	PROJ	PROJ	2	-	-	-	-	-	-	100	100	
GP801	General Proficiency-IV	SEC	SEC	1	-	-	-	-	100	-	-	100	
<b>Total</b>				<b>17</b>								<b>600</b>	



Optional									
	Credits	TEACHING PERIODS				WEIGHTAGE : EVALUATION			
		L	T	P	Contact Hr.	CIE	MSE	ESE	Total
**Minor-VI/Specialization-VI	3	3	-	-	3	25	25	50	100

*\*\* List of minor/ specialization courses is mentioned on page no. 31-37*

**DISCIPLINE SPECIFIC ELECTIVE - VI**

Course Code	Course name
TCS881	Advance Computer Vision
TCS859	Service oriented cloud architecture
TCS801	Mobile Computing
TCS822	Mobile Applications Development
TCS823	Multimedia Systems and Data Compression
TCS826	Unix Systems Programming
TCS851	Storage Networks
TCS852	Pattern Recognition
TCS855	Agile Software Engineering
TCS857	Game Theory
TCS884	Mobile Ad-Hoc Network
TCS821	*Soft Computing (Through Swayam)
TCS825	*Computational Geometry (Through Swayam)

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