



Graphic Era (Deemed to be University) B.Tech. in Computer Science and Engineering (Cyber Security) 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 Hr.	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	Fundamentals 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
Total				20								1000

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 Hr.	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
Total				21								1100

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
TCS324	Information Security Foundations	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
PCS324	Information Security Foundations 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
Total				23								1100



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
** List of minor/ specialization courses is mentioned on page no. 34-39									

DISCIPLINE SPECIFIC ELECTIVE-I

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

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

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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
TCS426	Information Security Risk Management	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
PCS426	Information Security Risk Management 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
Total				25								1200

Mandatory Non-Graded Course

	Indian Constitution	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
** List of minor/ specialization courses is mentioned on page no. 34-39									

DISCIPLINE SPECIFIC ELECTIVE-II

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

AUDIT COURSE: TOC 401: COMPETITIVE PROGRAMMING**NOTE:**

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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									
TCS597	Computer System Security	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
TCS511	Computer Networks	DSC	PCC	3	3	-	-	3	25	25	50	100
	Discipline Specific Elective-III	DSE	PEC	3	3	1	-	4	25	25	50	100
PCS597	Computer System Security Lab	DSC	LC	1	-	-	2	2	25	25	50	100
PCS503	DBMS Lab	DSC	LC	1	-	-	2	2	25	25	50	100
PCS511(S)	OS and CN Lab	DSC	LC	1	-	-	2	2	25	25	50	100
XCS501	Career Skills-III	AEC	AEC	2	2	-	-	2	25	25	50	100
Total				20								900

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
** List of minor/ specialization courses is mentioned on page no. 34-39									

DISCIPLINE SPECIFIC ELECTIVE- III

COURSE CODE	COURSE NAME
TCS592	Blockchain Technology and its Application
TCS595	Security and Auditing
TCS584	Foundation of Quantum Computing
TCS552	Cloud Based Application Development and Management
TCS571	Bigdata Visualization
TCS531	Communication models and protocols
TCS509	Machine learning
TCS521	User Interface Design
TCS586	*Parallel Computer Architecture (Through Swayam)

AUDIT COURSE: TOC 501: FOUNDATIONS OF DATA SCIENCE**NOTE:**

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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
TCS679	Network and System Security	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
PCS679	Network and System Security 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
Total				21								1000



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. 34-39									

DISCIPLINE SPECIFIC ELECTIVE-IV

COURSE CODE	COURSE NAME
TCS695	Database security, identity and access management
TCS692	Blockchain Platforms
TCS685	Quantum Cryptography
TCS665(E)	Generative Adversarial Networks (GANs)
TCS666(E)	Transformer Models and Applications
TCS645	AI in Creative Fields
TCS688	Quantum Machine Learning
TCS691	Image Processing and Computer Vision
TCS651	Devops on cloud
TCS671	Big Data storage and processing
TCS631	*Network programming and wireless technologies (Through Swayam)
TCS641	*Virtual Reality (Through Swayam)
TCS661	*Computer Graphics (Through Swayam)

AUDIT COURSE: TOC601: 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



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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									
TCS791	Internet Security	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
Total				22								700



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
** List of minor/ specialization courses is mentioned on page no. 34-39									

DISCIPLINE SPECIFIC ELECTIVE-V

Course Code	Course Name
TCS788	Information Security Audit and Monitoring
TCS793	Cloud Security
TCS785	Generative AI and Prompt Engineering
TCS765(E)	Large Language Models (LLMs)
TCS766(E)	Multimodal AI
TCS745	Advanced GANs
TCS737	UI/UX Design
TCS738	Object-Oriented Analysis and Design
TCS750	Cloud orchestration and Load Balancing
TCS731	Computer Forensics
TCS761	Cloud Infrastructure Services
TCS726(E)	Business Intelligence
TCS756	Human computer interaction
TCS723	Distributed Systems
TCS799	Software Verification, Validation and Testing
TCS781	Deep Learning
TCS734	Robotic Process Automation Design and Development
TCS795	Cryptography and Network Security
TCS741	*Reinforcement Learning (Through Swayam)
TCS771	*Natural Language Processing (Through Swayam)
TCS722	*Data warehousing and data mining (Through Swayam)
TCS732	*Web 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
Total				17								600



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
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DISCIPLINE SPECIFIC ELECTIVE – VI

Course Code	Course name
TCS893	Privacy and Security in Online Social Media
TCS894	E-Privacy: Privacy and Trust in the Electronic Society
TCS895	Crypto Assets and Crypto Economy
TCS881	Advanced Computer Vision
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
TCS821	*Soft Computing (Through Swayam)
TCS825	*Computational Geometry (Through Swayam)

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