



**BRAINWAREUNIVERSITY**  
**SCHOOL OF ENGINEERING**  
**DEPARTMENT OF COMPUTER SCIENCE& ENGINEERING**  
**Bachelor of Technology in Computer Science & Engineering– 2023**

**SEMESTER–I**

Course Code	Course Name	Course Type	Hours per Week			Credits	Total Marks
			L	T	P		
HSMCG101	Communication Skills	HS	3	0	0	3	100
BSCG101	Engineering Chemistry	BS	3	0	0	3	100
BSCG102	Calculus & Linear Algebra	BS	4	0	0	4	100
ESCG101	Programming for Problem solving	ES	3	0	0	3	100
BSCG191	Engineering Chemistry Lab	BS	0	0	3	1.5	100
ESCG191	Programming for Problem solving Lab	ES	0	0	3	1.5	100
ESCG192	Workshop/Manufacturing Practices	ES	0	0	3	1.5	100
Total						17.5	700
AUG-1	Yoga and Sports	AU	1	0	0	0	0

**Total hours:23**

**SEMESTER–II**

Course Code	Course Name	Course Type	Hours per Week			Credits	Total Marks
			L	T	P		
HSMCG201	Effective Communication Skills	HS	3	0	0	3	100
BSCG201	Semiconductor Physics	BS	3	0	0	3	100
BSCG202	Differential Equation and Complex Analysis	BS	4	0	0	4	100
BSCG203	Biology for Engineers	BS	2	0	0	2	50
ESCG201	Basic Electrical and Electronics Engineering	ES	3	0	0	3	100
HSMCG291	Effective Communication Skills Lab	HS	0	0	3	1.5	100
BSCG291	Semiconductor Physics Lab	BS	0	0	3	1.5	100
ESCG291	Basic Electrical and Electronics Engineering Lab	ES	0	0	3	1.5	100
ESCG292	Engineering Graphics & Design Lab	ES	0	0	3	1.5	100
Total						21	850
AUG-2	Environmental Science	AU	1	0	0	0	0

**Total hours:28**



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**SEMESTER–III**

Course Code	Course Name	Course Type	Hours per Week			Credits	Total Marks
			L	T	P		
BSCG301	Probability & Statistics	BS	3	0	0	3	100
ESCG301	Internet of Things	ES	3	0	0	3	100
ESCG302	Data Structure & Algorithms	ES	3	1	0	4	100
ESCG303	Introduction to Python Programming	ES	3	1	0	4	100
PCC-CSG301	Computer Organization & Architecture	PC	3	0	0	3	100
ESCG392	Data Structure & Algorithms Lab	ES	0	0	3	1.5	100
ESCG393	Introduction to Python Programming Lab	ES	0	0	3	1.5	100
PCC-CSG391	Computer Organization & Architecture Lab	PC	0	0	2	1	100
Total						21	800
AUG-3	Constitution of India	AU	1	0	0	0	0

**Total hours:25**

**SEMESTER–IV**

Course Code	Course Name	Course Type	Hours per Week			Credits	Total Marks
			L	T	P		
HSMCG401	Design Thinking for Entrepreneurship and Startups	HS	3	0	0	3	100
PCC-CSG401	Operating Systems	PC	3	0	0	3	100
PCC-CSG402	Design and Analysis of Algorithms	PC	3	0	0	3	100
PCC-CSG403	Object Oriented Programming	PC	3	0	0	3	100
PCC-CSG404	Formal Language & Automata Theory	PC	3	0	0	3	100
PCC-CSG405	Discrete Mathematics	PC	4	0	0	4	100
PCC-CSG491	Operating Systems Lab	PC	0	0	3	1.5	100
PCC-CSG492	Design and Analysis of Algorithms Lab	PC	0	0	3	1.5	100
PCC-CSG493	Object Oriented Programming Lab	PC	0	0	3	1.5	100
Total						23.5	900

**Total hours:28**



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**SEMESTER–V**

Course Code	Course Name	Course Type	Hours per Week			Credits	Total Marks
			L	T	P		
PCC-CSG501	Database Management Systems	PC	3	0	0	3	100
PCC-CSG502	Computer Networks	PC	3	0	0	3	100
PCC-CSG503	Optimization Techniques	PC	3	0	0	3	100
PCC-CSG504	Compiler Design	PC	3	0	0	3	100
PEC-CSG501	Elective-I A. Image Processing B. Artificial Intelligence C. Cloud Computing	PE	3	0	0	3	100
PCC-CSG591	Database Management Systems Lab	PC	0	0	3	1.5	100
PCC-CSG592	Computer Networks Lab	PC	0	0	3	1.5	100
PCC-CSG593	Optimization Technique Lab	PC	0	0	3	1.5	100
PEC-CSG591	Elective-I A. Image Processing Lab B. Artificial Intelligence Lab C. Cloud Computing Lab	PE	0	0	3	1.5	100
Total						21	900

**Total hours:27**



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**SEMESTER–VI**

Course Code	Course Name	Course Type	Hours per Week			Credits	Total Marks
			L	T	P		
PCC-CSG601	Machine Learning and its Applications	PC	3	0	0	3	100
PCC-CSG602	Data Mining and Data Warehousing	PC	3	0	0	3	100
PEC-CSG601	Elective-II A. Soft Computing B. Data Handling and Visualization C. Pattern Recognition	PE	3	0	0	3	100
PEC-CSG602	Elective-III A. Computer Vision B. Data Modeling and Simulation C. Speech and Natural Language Processing	PE	3	0	0	3	100
OEC-CSG601	Open Elective-I A. Software Project Management B. Digital Communication C. Operational Research D. MOOC	OE	3	0	0	3	100
PCC-CSG691	Machine Learning and its Applications Lab	PC	0	0	3	1.5	100
PCC-CSG692	Data Mining and Data Warehousing Lab	PC	0	0	3	1.5	100
PEC-CSG691	Elective-II A. Soft Computing Lab B. Data Handling and Visualization Lab C. Pattern Recognition Lab	PE	0	0	3	1.5	100
PROJ-CSG681	Technical Seminar with Modern Tool Application	PROJ	-			2	100
<b>Total</b>						<b>21.5</b>	<b>900</b>

**Total hours:24**



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**SEMESTER–VII**

Course Code	Course Name	Course Type	Hours per Week			Credits	Total Marks
			L	T	P		
PCC-CSG701	Software Engineering	PC	3	0	0	3	100
PEC-CSG701	Elective-IV A. Deep Learning B. Semantic Analysis C. Cyber Threat Intelligence	PE	3	0	0	3	100
PEC-CSG702	Elective-V A. Quantum Computing B. Distributed System C. Data and Internet Security	PE	3	0	0	3	100
OEC-CSG701	Open Elective-II A. Robotics and its Applications B. Digital Signal Processing C. Information Security and Privacy D. MOOC	OE	3	0	0	3	100
OEC-CSG702	Open Elective-III A. Soft Skills and Interpersonal Communication B. Human Resource Development and Organizational Behavior C. Cyber Law and Ethics D. MOOC	OE	3	0	0	3	100
PCC-CSG791	Software Tools and Techniques Lab	PC	0	0	2	1	50
PROJ-CSG781	Industrial Training	PROJ	-			2	100
PROJ-CSG782	Project-I	PROJ	-			4	100
<b>Total</b>						<b>22</b>	<b>750</b>

**Total hours:17**



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**SEMESTER–VIII**

Course Code	Course Name	Course Type	Hours per Week			Credits	Total Marks
			L	T	P		
OEC-CSG801	Open Elective-IV A. Research Methodologies B. MOOC	OE	3	0	0	3	100
PROJ-CSG881	Grand Viva	PROJ	-			4	100
PROJ-CSG882	Project-II	PROJ	-			6	100
Total						13	300

**Total hours:3**

**Total Credit: 160.5**

**Total Marks: 6200**