



**BRAINWARE UNIVERSITY**  
**SCHOOL OF ENGINEERING**  
**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**  
**Bachelor of Technology in Computer Science & Engineering – Cyber Security - 2024**

**Mandatory Induction Program (Duration: 3 weeks)**

- Physical activity
- Creative Arts
- Universal Human Values
- Literary
- Proficiency Modules
- Lectures by Eminent People
- Visits to local Areas
- Familiarization to Department/Branch & Innovations

**SEMESTER – I**

Sl. No.	Course Code	Course Name	L	T	P	Evaluation Scheme		Total Marks	Credits	Course Type
						CIA	TEE			
1	BHS00001	English for Technical Communication	3	0	0	40	60	100	3	HSMC
2	BHS00004	Understanding Harmony and Ethical Human Conduct	2	0	0	40	60	100	2	HSMC
3	BBS00015	Semiconductor Physics	3	1	0	40	60	100	4	BSC
4	BBS00005	Calculus	3	0	0	40	60	100	3	BSC
5	BES00002	Basic Electrical and Electronics Engineering	3	1	0	40	60	100	4	ESC
6	BBS09022	Semiconductor Physics Lab	0	0	2	40	60	100	1	BSC
7	BES09008	Basic Electrical and Electronics Engineering Lab	0	0	2	40	60	100	1	ESC
8	BES09014	Engineering Graphics and Design Lab	0	0	3	40	60	100	1.5	ESC
9	BAU00004	Yoga and Sports	2	0	0	0	0	0	0	AUC
<b>TOTAL</b>			<b>16</b>	<b>2</b>	<b>7</b>	<b>320</b>	<b>480</b>	<b>800</b>	<b>19.5</b>	

**SEMESTER – II**

Sl. No.	Course Code	Course Name	L	T	P	Evaluation Scheme		Total Marks	Credits	Course Type
						CIA	TEE			
1	BHS07008	Effective Communication and Soft Skills	2	0	2	40	60	100	3	HSMC
2	BBS00010	Engineering Chemistry	3	1	0	40	60	100	4	BSC
3	BBS00002	Algebra and Vector Calculus	3	0	0	40	60	100	3	BSC
4	BES00006	Programming for Problem Solving	3	1	0	40	60	100	4	ESC
5	BES07010	Data Structure and Algorithms	3	0	2	40	60	100	4	ESC
6	BBS09020	Engineering Chemistry Lab	0	0	2	40	60	100	1	BSC
7	BES09012	Programming for Problem Solving Lab	0	0	2	40	60	100	1	ESC
8	BES09015	Workshop and Manufacturing Practices	0	0	3	40	60	100	1.5	ESC
9	BAU00002	Environmental Sciences	2	0	0	0	0	0	0	AU
<b>TOTAL</b>			<b>16</b>	<b>2</b>	<b>11</b>	<b>320</b>	<b>480</b>	<b>800</b>	<b>21.5</b>	



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**SEMESTER – III**

Sl. No.	Course Code	Course Name	L	T	P	Evaluation Scheme		Total Marks	Credits	Course Type
						CIA	TEE			
1	BBS00008	Discrete Mathematics	3	0	0	40	60	100	3	BSC
2	BES00007	Python Programming	3	1	0	40	60	100	4	ESC
3	BTY30101	Computer Organization and Architecture	3	1	0	40	60	100	4	PCC
4	BTY30102	Database Management Systems	3	1	0	40	60	100	4	PCC
5	BES09013	Python Programming Lab	0	0	2	40	60	100	1	ESC
6	BTY39103	Computer Organization and Architecture Lab	0	0	2	40	60	100	1	PCC
7	BTY39104	Database Management Systems Lab	0	0	2	40	60	100	1	PCC
8	BAU00001	Constitution of India	2	0	0	0	0	0	0	AUC
<b>TOTAL</b>			<b>14</b>	<b>3</b>	<b>6</b>	<b>320</b>	<b>480</b>	<b>700</b>	<b>18.0</b>	

**SEMESTER – IV**

Sl. No.	Course Code	Course Name	L	T	P	Evaluation Scheme		Total Marks	Credits	Course Type
						CIA	TEE			
1	BHS00005	Design Thinking for Entrepreneurship and Startups	3	0	0	40	60	100	3	HSMC
2	BBS00014	Probability and Statistics	3	0	0	40	60	100	3	BSC
3	BTY40105	Operating Systems	3	0	0	40	60	100	3	PCC
4	BTY40106	Design and Analysis of Algorithms	3	0	0	40	60	100	3	PCC
5	BTY40107	Object Oriented Programming	3	0	0	40	60	100	3	PCC
6	BTY40108	Formal Language and Automata Theory	3	0	0	40	60	100	3	PCC
7	BTY49109	Operating Systems Lab	0	0	3	40	60	100	1.5	PCC
8	BTY49110	Design and Analysis of Algorithms Lab	0	0	3	40	60	100	1.5	PCC
9	BTY49111	Object Oriented Programming Lab	0	0	3	40	60	100	1.5	PCC
<b>TOTAL</b>			<b>18</b>	<b>0</b>	<b>9</b>	<b>360</b>	<b>540</b>	<b>900</b>	<b>22.5</b>	



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**SEMESTER – V**

Sl. No.	Course Code	Course Name	L	T	P	Evaluation Scheme		Total Marks	Credits	Course Type
						CIA	TEE			
1	BTY50112	Network Fundamentals and Practical Applications	3	1	0	40	60	100	4	PCC
2	BTY50113	Vulnerability Analysis and Penetration Testing	3	1	0	40	60	100	4	PCC
3	BTY50114	Linux System Administration	3	0	0	40	60	100	3	PCC
4	BTY50115	Professional Ethics	2	0	0	40	60	100	2	PCC
5	BTY50201	Professional Elective Course - I	3	0	0	40	60	100	3	PEC
6	BTY59116	Network Fundamentals and Practical Applications Lab	0	0	3	40	60	100	1.5	PCC
7	BTY59117	Vulnerability Analysis and Penetration Testing Lab	0	0	3	40	60	100	1.5	PCC
8	BTY59118	Linux System Administration Lab	0	0	4	40	60	100	2	PCC
<b>TOTAL</b>			<b>14</b>	<b>2</b>	<b>10</b>	<b>320</b>	<b>480</b>	<b>800</b>	<b>21.0</b>	

**SEMESTER – VI**

Sl. No.	Course Code	Course Name	L	T	P	Evaluation Scheme		Total Marks	Credits	Course Type
						CIA	TEE			
1	BTY60119	Web Application Penetration Testing	3	0	0	40	60	100	3	PCC
2	BTY60120	Security Operations Centre Management	3	0	0	40	60	100	3	PCC
3	BTY60121	Artificial Intelligence and Machine Learning	3	0	0	40	60	100	3	PCC
4	BTY69122	Scripting Languages Lab	0	0	3	40	60	100	1.5	PCC
5	BTY67202	Professional Elective Course - II	2	0	2	40	60	100	3	PEC
6	BTY60301	Open Elective Course - I	3	0	0	40	60	100	3	OEC
7	BTY69123	Web Application Penetration Testing Lab	0	0	3	40	60	100	1.5	PCC
8	BTY69124	Security Operations Centre Management Lab	0	0	3	40	60	100	1.5	PCC
<b>TOTAL</b>			<b>14</b>	<b>0</b>	<b>11</b>	<b>320</b>	<b>480</b>	<b>800</b>	<b>19.5</b>	



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**SEMESTER – VII**

Sl. No.	Course Code	Course Name	L	T	P	Evaluation Scheme		Total Marks	Credits	Course Type
						CIA	TEE			
1	BTY70125	Network Penetration Testing	3	1	0	40	60	100	4	PCC
2	BTY70126	Active Directory Penetration Testing	3	1	0	40	60	100	4	PCC
3	BTY77203	Professional Elective Course - III	2	0	2	40	60	100	3	PEC
4	BTY70302	Open Elective Course - II	3	0	0	40	60	100	3	OEC
5	BTY70303	Open Elective Course - III	3	0	0	40	60	100	3	OEC
6	BTY79127	Network Penetration Testing Lab	0	0	2	40	60	100	1	PCC
7	BTY78101	Industrial Training	0	0	0	0	100	100	2	PROJ
8	BTY78102	Project - I	0	0	0	40	60	100	4	PROJ
<b>TOTAL</b>			<b>14</b>	<b>2</b>	<b>4</b>	<b>280</b>	<b>520</b>	<b>800</b>	<b>24.0</b>	

**SEMESTER – VIII**

Sl. No.	Course Code	Course Name	L	T	P	Evaluation Scheme		Total Marks	Credits	Course Type
						CIA	TEE			
1	BTY88103	Project-II	0	0	0	40	60	100	12	PROJ
2	BTY88104	Grand Viva - Voce	0	0	0	0	100	100	4	PROJ
<b>TOTAL</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>40</b>	<b>160</b>	<b>200</b>	<b>16.0</b>	



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<b>PROFESSIONAL ELECTIVE COURSES [PEC]</b>							
Sl. No	Course Code	Course Name	Hours per week			Credits	Credit Hours
			L	T	P		
<b>Cryptography</b>							
1	BTY50201	A. Steganography and Digital Watermarking	3	0	0	3	3
2		B. Blockchain Technology	3	0	0	3	3
3		C. Cryptography and Network Security	3	0	0	3	3
<b>Computer Forensics</b>							
1	BTY67202	A. Reverse Engineering	2	0	2	3	4
2		B. Digital Forensic	2	0	2	3	4
3		C. Malware Analysis	2	0	2	3	4
<b>Threat Intelligence</b>							
1	BTY77203	A. Network Security Essentials	2	0	2	3	4
2		B. Cloud Security	2	0	2	3	4
3		C. Security Incident Handling	2	0	2	3	4
<b>OPEN ELECTIVE COURSES [OEC]</b>							
Sl. No	Course Code	Course Name	Hours per week			Credits	Credit Hours
			L	T	P		
<b>Software Engineering Management</b>							
1	BTY60301	A. Software Project Management	3	0	0	3	3
2		B. Organisational Behaviour	3	0	0	3	3
3		C. MOOCs	3	0	0	3	3
<b>Technology Entrepreneurship and Legal Compliance</b>							
1	BTY70302	A. Entrepreneurship Basics	3	0	0	3	3
2		B. Cyber Law and Ethics	3	0	0	3	3
3		C. MOOCs	3	0	0	3	3
<b>Engineering Economics and Financial Analysis</b>							
1	BTY70303	A. Financial Management	3	0	0	3	3
2		B. Engineering Economics	3	0	0	3	3
3		C. MOOCs	3	0	0	3	3