



**BRAINWARE UNIVERSITY**  
**SCHOOL OF ENGINEERING**  
**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**

**Bachelor of Technology in Computer Science & Engineering – Artificial Intelligence & Machine Learning - 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	BAU00002	Environmental Sciences	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	BAU00004	Yoga and Sports	2	0	0	0	0	0	0	AUC
<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	BTA30101	Computer Organization and Architecture	3	1	0	40	60	100	4	PCC
4	BTA30102	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	BTA39103	Computer Organization and Architecture Lab	0	0	2	40	60	100	1	PCC
7	BTA39104	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>280</b>	<b>420</b>	<b>700</b>	<b>18</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	BTA40105	Operating Systems	3	0	0	40	60	100	3	PCC
4	BTA40106	Design and Analysis of Algorithms	3	0	0	40	60	100	3	PCC
5	BTA40107	Object Oriented Programming	3	0	0	40	60	100	3	PCC
6	BTA40108	Formal Language and Automata Theory	3	0	0	40	60	100	3	PCC
7	BTA49109	Operating Systems Lab	0	0	3	40	60	100	1.5	PCC
8	BTA49110	Design and Analysis of Algorithms Lab	0	0	3	40	60	100	1.5	PCC
9	BTA49111	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	BTA50112	Computer Networks	3	1	0	40	60	100	4	PCC
2	BTA50113	Artificial Intelligence	3	1	0	40	60	100	4	PCC
3	BTA50114	Compiler Design	3	1	0	40	60	100	4	PCC
4	BTA50115	Professional Ethics	2	0	0	40	60	100	2	PCC
5	BTA57201	Professional Elective Course – I	2	0	2	40	60	100	3	PEC
6	BTA59116	Computer Networks Lab	0	0	2	40	60	100	1	PCC
7	BTA59117	Artificial Intelligence Lab	0	0	3	40	60	100	1.5	PCC
8	BTA59118	Compiler Design Lab	0	0	3	40	60	100	1.5	PCC
<b>TOTAL</b>			<b>13</b>	<b>3</b>	<b>10</b>	<b>320</b>	<b>480</b>	<b>800</b>	<b>21</b>	

**SEMESTER – VI**

Sl. No.	Course Code	Course Name	L	T	P	Evaluation Scheme		Total Marks	Credits	Course Type
						CIA	TEE			
1	BTA60119	Machine Learning	3	1	0	40	60	100	4	PCC
2	BTA60120	Data Mining and Data Warehousing	3	0	0	40	60	100	3	PCC
3	BTA60121	Artificial Intelligence in Blockchain	3	1	0	40	60	100	4	PCC
4	BTA67202	Professional Elective Course – II	2	0	2	40	60	100	3	PEC
5	BTA60301	Open Elective Course – I	3	0	0	40	60	100	3	OEC
6	BTA69122	Machine Learning Lab	0	0	2	40	60	100	1	PCC
7	BTA69123	Data Mining and Data Warehousing Lab	0	0	3	40	60	100	1.5	PCC
<b>TOTAL</b>			<b>14</b>	<b>2</b>	<b>7</b>	<b>280</b>	<b>420</b>	<b>700</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	BTA70124	Software Engineering	3	1	0	40	60	100	4	PCC
2	BTA70125	Intelligent Embedded Systems	3	1	0	40	60	100	4	PCC
3	BTA77203	Professional Elective Course - III	2	0	2	40	60	100	3	PEC
4	BTA70302	Open Elective Course – II	3	0	0	40	60	100	3	OEC
5	BTA70303	Open Elective Course – III	3	0	0	40	60	100	3	OEC
6	BTA79126	Software Tools and Techniques Lab	0	0	2	40	60	100	1	PCC
7	BTA78101	Industrial Training	0	0	0	40	60	100	2	PROJ
8	BTA78102	Project – I	0	0	0	40	60	100	4	PROJ
<b>TOTAL</b>			<b>14</b>	<b>2</b>	<b>4</b>	<b>320</b>	<b>480</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	BTA88103	Project – II	0	0	0	40	60	100	12	PROJ
2	BTA88104	Grand Viva-Voce	0	0	0	40	60	100	4	PROJ
<b>TOTAL</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>80</b>	<b>120</b>	<b>200</b>	<b>16</b>	

**Total Credit: 162**

**Total Marks: 5700**



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<b>PROFESSIONAL ELECTIVE COURSES [PEC]</b>						
Course Code	Course Name	Hours per week			Credits	Credit Hours
		L	T	P		
	<b>PROFESSIONAL ELECTIVE COURSES [PEC - I]</b>					
BTA57201	A. Soft Computing	2	0	2	3	4
	B. Image Processing	2	0	2	3	4
	C. Cloud Computing	2	0	2	3	4
	<b>PROFESSIONAL ELECTIVE COURSES [PEC - II]</b>					
BTA67202	A. Computer Vision	2	0	2	3	4
	B. Pattern Recognition	2	0	2	3	4
	C. Optimization Techniques	2	0	2	3	4
	<b>PROFESSIONAL ELECTIVE COURSES [PEC - III]</b>					
BTA77203	A. Deep Learning	2	0	2	3	4
	B. Quantum Computing	2	0	2	3	4
	C. Cyber Threat Intelligence	2	0	2	3	4
	<b>OPEN ELECTIVE COURSES [OEC]</b>					
Course Code	Course Name	Hours per week			Credits	Credit Hours
		L	T	P		
	<b>OPEN ELECTIVE COURSES [OEC- I]</b>					
BTA60301	A. Software Project Management	3	0	0	3	3
	B. Organisational Behaviour	3	0	0	3	3
	C. MOOCs	3	0	0	3	3
	<b>OPEN ELECTIVE COURSES [OEC - II]</b>					
BTA70302	A. Entrepreneurship Basics	3	0	0	3	3
	B. Cyber Law and Ethics	3	0	0	3	3
	C. MOOCs	3	0	0	3	3
	<b>OPEN ELECTIVE COURSES [OEC - III]</b>					
BTA70303	A. Financial Management	3	0	0	3	3
	B. Engineering Economics	3	0	0	3	3
	C. MOOCs	3	0	0	3	3