BRAINWARE UNIVERSITY
SCHOOL OF ENGINEERING
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING-ARTIFICIAL INTELLIGENCE
Bachelor of Technology in Computer Science & Engineering – Artificial Intelligence & Machine Learning - 2025

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	BHS00010	Design Thinking	1	0	0	20	30	50	1	HSMC
4	BBS00005	Calculus	3	0	0	40	60	100	3	BSC
5	BBS00015	Semiconductor Physics	3	1	0	40	60	100	4	BSC
6	BES00006	Programming for Problem Solving	3	1	0	40	60	100	4	ESC
7	BBS09022	Semiconductor Physics Lab	0	0	2	40	60	100	1	BSC
8	BES09012	Programming for Problem Solving Lab	0	0	2	40	60	100	1	ESC
9	BES00022	Foundations of Artificial Intelligence	1	0	0	20	30	50	1	ESC
10	BAU00002	Environmental Sciences*	2*	0	0	0	0	0	0	AUC*
		TOTAL	16+2*	2	4	320	480	800	20.0	

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	BBS00002	Algebra and Vector Calculus	3	0	0	40	60	100	3	BSC
3	BBS00024	Applied Chemical Sciences	2	0	0	40	60	100	2	BSC
4	BTA20101	Essential Mathematics for Machine Learning	3	1	0	40	60	100	4	PCC
5	BES07010	Data Structure and Algorithms	3	0	2	40	60	100	4	ESC
6	BES07018	Essential Computing and AI Tools for Engineers	2	0	2	40	60	100	3	ESC
7	BBS09024	Applied Chemical Sciences Lab	0	0	2	40	60	100	1	BSC
8	BAU00004	Yoga and Sports*	2*	0	0	0	0	0	0	AUC*
		TOTAL	15+2*	1	8	280	420	700	20.0	

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	BTA30102	Computer Organization and Architecture	3	1	0	40	60	100	4	PCC
3	BTA30103	Database Management Systems	3	0	0	40	60	100	3	PCC
4	BTA30104	Python for Machine Learning	3	0	0	40	60	100	3	PCC
5	BTA39105	Computer Organization and Architecture Lab	0	0	2	20	30	50	1	PCC
6	BTA39106	Database Management Systems Lab	0	0	2	20	30	50	1	PCC
7	BTA39107	Python for Machine Learning Lab	0	0	2	20	30	50	1	PCC
8	BTA38101	Python Projects	0	0	0	40	60	100	4	PROJ
9	BAU00001	Constitution of India*	2*	0	0	0	0	0	0	AUC*
		TOTAL	12+2*	1	6	260	390	650	20.0	
		# MOOCs to earn additional credits for optional Honours/Minor Degree								

SEMESTER – IV

Sl. No.	Course Code	Course Name	L	T	P	Evaluation Scheme		Total Marks	Credits	Course Type
						CIA	TEE			
1	BHS00009	General Proficiency and Workplace Communication	2	0	0	50	0	50	2	HSMC
2	BTA40108	Business Intelligence	3	0	0	40	60	100	3	PCC
3	BTA40109	Operating Systems	3	0	0	40	60	100	3	PCC
4	BTA40110	Design and Analysis of Algorithms	3	0	0	40	60	100	3	PCC
5	BTA40111	Object Oriented Programming	3	0	0	40	60	100	3	PCC
6	BTA40112	Formal Language and Automata Theory	3	0	0	40	60	100	3	PCC
7	BTA49113	Operating Systems Lab	0	0	2	20	30	50	1	PCC
8	BTA49114	Design and Analysis of Algorithms Lab	0	0	2	20	30	50	1	PCC
9	BTA49115	Object Oriented Programming Lab	0	0	2	20	30	50	1	PCC
10	BTA48102	Project on Business Intelligence	0	0	0	40	60	100	4	PROJ
		TOTAL	17	0	6	350	450	800	24.0	
		# MOOCs to earn additional credits for optional Honours/Minor Degree								

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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	BTA50116	Computer Networks	3	0	0	40	60	100	3	PCC
2	BTA50117	Artificial Intelligence	3	0	0	40	60	100	3	PCC
3	BTA50118	Compiler Design	3	1	0	40	60	100	4	PCC
4	BTA57201	Professional Elective Course – I	2	0	2	40	60	100	3	PEC
5	BTA59119	Computer Networks Lab	0	0	2	20	30	50	1	PCC
6	BTA59120	Artificial Intelligence Lab	0	0	2	20	30	50	1	PCC
7	BTA59121	Compiler Design Lab	0	0	2	20	30	50	1	PCC
8	BTA58103	Project on AI	0	0	0	40	60	100	4	PROJ
		TOTAL	11	1	8	260	390	650	20.0	

 # MOOCs to earn additional credits for optional Honours/Minor Degree

SEMESTER – VI

Sl. No.	Course Code	Course Name	L	T	P	Evaluation Scheme		Total Marks	Credits	Course Type
						CIA	TEE			
1	BTA60122	Machine Learning	3	1	0	40	60	100	4	PCC
2	BTA60123	Natural Language Processing	3	0	0	40	60	100	3	PCC
3	BTA60124	Data Mining and Data Warehousing	3	0	0	40	60	100	3	PCC
4	BTA60125	Artificial Intelligence in Blockchain	3	1	0	40	60	100	4	PCC
5	BTA67202	Professional Elective Course – II	2	0	2	40	60	100	3	PEC
6	BTA60301	Open Elective Course – I	3	0	0	40	60	100	3	OEC
7	BTA69126	Machine Learning Lab	0	0	2	20	30	50	1	PCC
8	BTA68104	Internship	0	0	0	40	60	100	2	PROJ
		TOTAL	17	2	4	300	450	750	23.0	

 # MOOCs to earn additional credits for optional Honours/Minor Degree

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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	BTA70127	Software Engineering	3	1	0	40	60	100	4	PCC
2	BTA70128	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	BTA70204	Professional Elective Course - IV	3	0	0	40	60	100	3	PEC
5	BTA70302	Open Elective Course – II	3	0	0	40	60	100	3	OEC
6	BTA79129	Software Engineering Tools and Techniques Lab	0	0	2	20	30	50	1	PCC
7	BTA78105	Industrial Training	0	0	0	40	60	100	2	PROJ
TOTAL			**14**	**2**	**4**	**260**	**390**	**650**	**20.0**	

 # MOOCs to earn additional credits for optional Honours/Minor Degree

SEMESTER – VIII

Sl. No.	Course Code	Course Name	L	T	P	Evaluation Scheme		Total Marks	Credits	Course Type
						CIA	TEE			
1	BTA88106	Project	0	0	0	40	60	100	16	PROJ
2	BTA88107	Grand Viva-Voce	0	0	0	40	60	100	4	PROJ
TOTAL			**0**	**0**	**0**	**80**	**120**	**200**	**20.0**	

 # MOOCs to earn additional credits for optional Honours/Minor Degree

Additional 18-20 credits from MOOCs of SWAYAM platform are to be earned for the optional Minor/Honours degree. Students are required to register for this after completion of their first year. Evaluation of MOOCs will be as per the guidelines of the Blended Learning and MOOCs Policy

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Course Code	Course Name	Hours per week			Credits	Credit Hours
PROFESSIONAL ELECTIVE COURSES [PEC]						
		L	T	P		
	PROFESSIONAL ELECTIVE COURSES [PEC - I]					
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
	PROFESSIONAL ELECTIVE COURSES [PEC - II]					
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
	PROFESSIONAL ELECTIVE COURSES [PEC - III]					
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
	PROFESSIONAL ELECTIVE COURSES [PEC - IV]					
BTA70204	A. Internet of Things	3	0	0	3	3
	B. Full Stack Using Scripting Technologies	3	0	0	3	3
	C. Introduction to Big Data Analytics	3	0	0	3	3

Course Code	Course Name	Hours per week			Credits	Credit Hours
OPEN ELECTIVE COURSES [OEC]						
		L	T	P		
	OPEN ELECTIVE COURSES [OEC- I]					
BTA60301	A. Software Project Management	3	0	0	3	3
	B. Organisational Behaviour	3	0	0	3	3
	C. MOOC	3	0	0	3	3
	OPEN ELECTIVE COURSES [OEC - II]					
BTA70302	A. Entrepreneurship Basics	3	0	0	3	3
	B. Cyber Law and Ethics	3	0	0	3	3
	C. MOOC*	3	0	0	3	3

*MOOC/Equivalent MOOC approved by BoS Chair (Evaluation scheme as per Blended Learning and MOOCs Policy)