BRAINWARE UNIVERSITY
SCHOOL OF ENGINEERING
DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING
DIPLOMA IN ROBOTICS & AUTOMATION 2022

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 Dept./Branch & Innovations

Different components of the Mandatory Induction Program will be implemented as per the Guidelines of Regulatory Bodies.

SEMESTER – I

Course Code	Course Name	Course Type	Hours per week			Credit(s)	Total Marks
			L	T	P		
HS101	Communication Skills in English	HS	2	0	0	2	50
BS101	Applied Chemistry	BS	3	0	0	3	100
BS102	Mathematics-I	BS	3	0	0	3	100
ES101	Introduction to IT Systems	ES	3	0	0	3	100
ES102	Engineering Mechanics	ES	3	0	0	3	100
HS191	Communication Skills in English Lab	HS	0	0	2	1	50
BS191	Applied Chemistry Lab	BS	0	0	3	1.5	100
ES191	Introduction to IT Systems Lab	ES	0	0	2	1	50
ES192	Engineering Mechanics Lab	ES	0	0	2	1	50
ES193	Engineering Workshop Practice	ES	0	0	3	1.5	100
TOTAL						**20**	**800**
AU-1	Yoga & Sports	**MC**	0	0	1	**0**	**0**

Total Hours: 27

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SEMESTER – II

Course Code	Course Name	Course Type	Hours per week			Credit(s)	Total Marks
			L	T	P		
BS201	Applied Physics	BS	3	0	0	3	100
BS202	Mathematics-II	BS	3	1	0	4	100
ES201	Fundamentals of Electrical & Electronics Engineering	ES	3	0	0	3	100
ES202	Computer Programming	ES	3	0	0	3	100
BS291	Applied Physics Lab	BS	0	0	3	1.5	100
ES291	Fundamentals of Electrical & Electronics Engineering Lab	ES	0	0	2	1	50
ES292	Computer Programming Lab	ES	0	0	2	1	50
ES293	Engineering Graphics	ES	0	0	3	1.5	100
TOTAL						**18**	**700**
AU-2	Environmental Science	MC	2	0	0	0	0

Total Hours: 25

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SEMESTER – III

Course Code	Course Name	Course Type	Hours per week			Credit(s)	Total Marks
			L	T	P		
ECPC301	Principles of Electronic Communication	PC	3	0	0	3	100
ECPC302	Electronic Devices and Circuits	PC	3	0	0	3	100
ECPC303	Digital Electronics	PC	3	0	0	3	100
ECPC304	Electric circuits and network	PC	3	0	0	3	100
ECPC305	Electronic Measurements and Instrumentation	PC	3	0	0	3	100
ECPC391	Principles of Electronic Communication Lab	PC	0	0	2	1	50
ECPC392	Electronic Devices and Circuits Lab	PC	0	0	2	1	50
ECPC393	Digital Electronics Lab	PC	0	0	2	1	50
ECPC394	Electronics System Design using Tinkercad Lab	PC	0	0	2	1	50
ECPC395	Electronic Measurements and Instrumentation Lab	PC	0	0	2	1	50
TOTAL						**20**	**750**

Total Hours: 25

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SEMESTER – IV

Course Code	Course Name	Course Type	Hours per week			Credit(s)	Total Marks
			L	T	P		
ECPC401	Microprocessor and Microcontroller	PC	3	0	0	3	100
ECPC402	Robotic Fundamentals	PC	3	0	0	3	100
ECPC403	Robotic Control System	PC	3	0	0	3	100
ECPE401	**Elective I:** A. Signal and System B. Renewable Energy	PE	3	0	0	3	100
ECPE402	**Elective II:** A. Electromagnetic Waves B. Optical Communication and Networking C. AI in Robotics	PE	3	0	0	3	100
ECOE401	**Open Elective I:** A. Java Programing B. Python Programming C. Object oriented programming using C++	OE	3	0	0	3	100
ECPC491	Microprocessor and Microcontroller Lab	PC	0	0	2	1	50
ECPC492	Robotics Lab	PC	0	0	2	1	50
ECOE491	**Open Elective I Lab:** A. Java Programing Lab B. Python Programming Lab C. Object oriented programming using C++ Lab	OE	0	0	2	1	50
ECPROJ481	Industrial training	TR	----------			2	100
TOTAL						**23**	**850**
AU -3	Essence of Indian Knowledge and Tradition	MC	1	0	0	0	0

Total Hours: 25

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SEMESTER – V

Course Code	Course Name	Course Type	Hours per week			Credit(s)	Total Marks
			L	T	P		
ECPC501	Embedded System	PC	3	0	0	3	100
ECPC502	Industrial Robotics and Automation	PC	3	0	0	3	100
ECPC503	Sensor and Actuator Devices for Robotics	PC	3	0	0	3	100
ECPE501	**Elective III:** A. Wireless Communication and 5G Technology for Robotics B. Introduction to IOT	PE	3	0	0	3	100
ECOE501	**Open Elective II:** A. Mechatronics B. Privacy and Security in IoT	OE	3	0	0	3	100
ECPC591	Embedded System Lab	PC	0	0	2	1	50
ECPROJ581	Project Stage I	PR	----------			2	100
TOTAL						**18**	**650**
AU-4	Technical Grooming	MC	1	0	0	0	0

Total Hours: 18

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SEMESTER – VI

Course Code	Course Name	Course Type	Hours per week			Credits	Total Marks
			L	T	P		
HS601	Entrepreneurship and Startups	HS	3	1	0	4	100
ECPC601	Industrial Electronics	PC	3	0	0	3	100
ECPE601	**Elective IV:** A. Medical Robotics B. Mobile Robotics	PE	3	0	0	3	100
ECOE601	**Open Elective III:** A. Mobile Application Development for IOT B. Programming for IOT	OE	3	0	0	3	100
ECPC691	Industrial Electronics Lab	PC	0	0	2	1	50
ECPROJ681	Technical Seminar	PR	----------			2	100
ECPROJ682	Project Stage II	PR	----------			4	100
ECPROJ683	Grand Viva	PR	----------			2	100
TOTAL						**22**	**750**
AU-5	Constitution of India	MC	1	0	0	0	0

Total Hours: 16

Total Credits: 121
Total Marks: 4500

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Semester	Course Category							Total Credit(s)	Total Marks	Total Hours per week
	HSMC	BS	ES	PC	PE	OE	PR			
I	3	7.5	9.5					**20**	800	27
II	0	8.5	9.5					**18**	700	25
III				20				**20**	750	25
IV				11	6	4	2	**23**	850	25
V				10	3	3	2	**18**	650	18
VI	4			4	3	3	8	**22**	750	16
Total	**7**	**16**	**19**	**45**	**12**	**10**	**12**	**121**	**4500**	
Percentage	**5.79%**	**13.22%**	**15.70%**	**37.19%**	**9.92%**	**8.26%**	**9.92%**			