BRAINWARE UNIVERSITY
SCHOOL OF ENGINEERING
DEPARTMENT OF MECHANICAL ENGINEERING
B.Tech. in Mechanical Engineering – 2023

Mandatory Induction Program (Duration:1 week)

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

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

Outline of Semester I

Course Code	Course Name	Course Type	L-T-P	Credit	Total Marks
HSMCME101	Communication Skills	HSMC	3-0-0	3	100
BSCME101	Physics I	BS	3-0-0	3	100
BSCME102	Calculus & Linear Algebra	BS	4-0-0	4	100
ESCME101	Basic Electrical and Electronics Engineering	ES	3-0-0	3	100
BSCME191	Physics I Lab	BS	0-0-3	1.5	100
ESCME191	Basic Electrical and Electronics Engineering Lab	ES	0-0-3	1.5	100
ESCME192	Engineering Graphics & Design Lab	ES	0-0-3	1.5	100
AU-1	Life Skill and Mentoring I	AU	1-0-0	0	0
Total				**17.5**	**700**

Outline of Semester II

Course Code	Course Name	Course Type	L-T-P	Credit	Total Marks
HSMCME201	Professional Communication Skills	HSMC	1-0-0	1	50
HSMCME202	Economics for Engineers	HSMC	3-0-0	3	100
BSCME201	Engineering Chemistry	BS	3-0-0	3	100
BSCME202	Differential Equation and Complex Analysis	BS	4-0-0	4	100
BSCME203	Biology for Engineers	BS	2-0-0	2	50
ESCME201	Programming for Problem Solving	ES	3-0-0	3	100
HSMCME291	Professional Communication Skills Lab	HSMC	0-0-2	1	50
BSCME291	Engineering Chemistry Lab	BS	0-0-3	1.5	100
ESCME291	Programming for Problem Solving Lab	ES	0-0-3	1.5	100
ESCME292	Workshop / Manufacturing Practices	ES	0-0-3	1.5	100
AU-2	Environmental Science	AU	1-0-0	0	0
Total				**21.5**	**850**

Outline of Semester III

Course Code	Course Name	Course Type	L-T-P	Credit	Total Marks
ES-ME301	Engineering Mechanics	ES	3-1-0	4	100
PCC-ME301	Strength of Materials	PC	3-1-0	4	100
PCC-ME302	Thermodynamics	PC	3-1-0	4	100
PCC-ME303	Fluid Mechanics	PC	3-1-0	4	100
PCC-ME304	Manufacturing Processes	PC	3-1-0	4	100
PCC-ME391	Practice of Manufacturing Processes	PC	0-0-3	1.5	100
AU-3	Social and Professional Ethics	AU	1-0-0	0	0
Total				**21.5**	**600**

Outline of Semester IV

Course Code	Course Name	Course Type	L-T-P	Credit	Total Marks
PCC-ME401	Materials Engineering	PC	3-1-0	4	100
PCC-ME402	Applied Thermodynamics	PC	3-1-0	4	100
PCC-ME403	Fluid Machinery	PC	3-1-0	4	100
PCC-ME404	Kinematics & Theory of Machines	PC	3-1-0	4	100
PCC-ME405	Metrology and Instrumentation	PC	3-1-0	4	100
PCC-ME491	Metrology and Material Testing Lab	PC	0-0-3	1.5	100
PCC-ME492	Machine Drawing- I	PC	0-0-3	1.5	100
Total				**23**	**700**

Outline of Semester V

Course Code	Course Name	Course Type	L-T-P	Credit	Total Marks
PCC-ME501	Heat Transfer	PC	3-1-0	4	100
PCC-ME502	Solid Mechanics	PC	3-1-0	4	100
PCC-ME503	Design of Machine Elements	PC	3-0-0	3	100
HS-MC501	Effective Technical Communication	HS	3-0-0	3	100
PCC-ME591	Mechanical Engineering Laboratory I (Thermal)	PC	0-0-3	1.5	100
PCC-ME592	Machine Drawing-II	PC	0-0-3	1.5	100
PROJ-ME581	Project-I	PR	0-0-6	3	100
AU-4	Constitution of India	AU	1-0-0	0	0
Total				**20**	**700**

Outline of Semester VI

Course Code	Course Name	Course Type	L-T-P	Credit	Total Marks
PCC-ME601	Manufacturing Technology	PC	3-1-0	4	100
PCC-ME602	Mechatronics	PC	3-0-0	3	100
PEC-ME601	Elective-I	PE	3-0-0	3	100
PEC-ME602	Elective-II	PE	3-0-0	3	100
PCC-ME691	Mechanical Engineering Laboratory II (Design)	PC	0-0-3	1.5	100
PROJ-ME681	Project-II	PR	0-0-8	4	100
Total				**18.5**	**600**

Outline of Semester VII

Course Code	Course Name	Course Type	L-T-P	Credit	Total Marks
PCC-ME701	Advanced Manufacturing Technology	PC	3-0-0	3	100
PEC-ME701	Elective III	PE	3-0-0	3	100
PEC-ME702	Elective-IV	PE	3-0-0	3	100
OEC-ME 701	Open Elective- I	OE	3-0-0	3	100
PCC-ME791	Mechanical Engineering Laboratory III (Manufacturing)	PC	0-0-3	1.5	100
PROJ-ME781	Project-III	PR	0-0-8	4	100
PROJ-ME782	Industrial Training	PR	0-0-0	3	100
Total				**20.5**	**700**

Outline of Semester VIII

Course Code	Course Name	Course Type	L-T-P	Credit	Total Marks
PEC-ME801	Elective V	PE	3-0-0	3	100
PEC-ME802	Elective VI	PE	3-0-0	3	100
OEC-ME 801	Open Elective-II	OE	3-0-0	3	100
OEC-ME 802	Open Elective- III	OE	3-0-0	3	100
PROJ-ME881	Project-IV	PR	0-0-3	4	100
PROJ-ME882	Comprehensive viva	PR	0-0-0	1.5	100
Total				**17.5**	**600**

TOTAL   CREDIT   **=160**

List of Professional Electives and Open Electives

There are three baskets of Professional Electives in each of Semester VI, VII and VIII. Students are to choose two papers from the basket of Professional Electives corresponding to a particular Semester.

List of Professional Electives for Elective-I,

Subject Code	Subject name
Thermo-Fluid Group	
A	Refrigeration and Air Conditioning
B	Turbo Machinery
C	Fluid Power Control
Design Group	
D	Product Design & Development
Manufacturing Group	
E	Principles and Practices of Management
F	MOOC

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

List of Professional Electives for Elective-II,

Subject Code	Subject name
Thermo-Fluid Group	
A	Advanced Fluid Mechanics
B	Internal Combustion Engine and Gas Turbine

Design Group	

C	Operations Research
Manufacturing Group	
D	Robotic Fundamentals
E	MOOC

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

List of Professional Electives for Elective-III,

Subject Code	Subject name
Thermo-Fluid Group	
A	Automobile Engineering
Design Group	
B	Mechanical Vibration
Manufacturing Group	
C	Computer Integrated Manufacturing
D	MOOC

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

List of Professional Electives for Elective-IV,

Subject Code	Subject name
Thermo-Fluid Group	
A	Computational Fluid Dynamics
Design Group	
B	Finite Element Method
Manufacturing Group	
C	Quantitative Methods
D	MOOC

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

List of Professional Electives for Elective-V,

Subject Code	Subject name
Thermo-Fluid Group	
A	Theory of Combustion and Emission

Design Group	
B	Tribology
Manufacturing Group	
C	Sustainable Manufacturing

D	MOOC

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

List of Professional Electives for Elective-VI,

Subject Code	Subject name
Thermo-Fluid Group	
A	Power Plant Engineering
Design Group	
B	3D Printing and Design
Manufacturing Group	
C	Operations and Supply Chain Management
D	MOOC

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

List of Open Electives in Semester VII,

Subject Code	Subject name
A	Industrial Engineering
B	Project Management
C	Non-conventional Energy Sources
D	Water Resource Engineering
E	MOOC

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

List of Open Electives in Semester VIII,

List of Open Electives II,

Subject Code	Subject name
A	Entrepreneurship Development
B	Safety and Occupational Health

C	MOOC

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

List of Open Electives III,

Subject Code	Subject name
A	Energy Conservation and Management

B	Automation & Control
C	MOOC

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