BACHELOR OF TECHNOLOGY
IN
MECHANICAL ENGINEERING
(Applicable from the academic session 2018-2019)

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Haringhata-741249, Nadia, West Bengal, INDIA

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
BACHELOR OF TECHNOLOGY IN MECHANICAL ENGINEERING
(Effective from academic session 2018-19)
Curriculum Structure

Sl No.	Category	Subject Code	Subject Name	Total No. of contact hours			Credits
First Year First Semester							
Mandatory Induction Program- 3 weeks duration							
				L	T	P	
Theory							
1	Basic Science course	BS-PH101	Physics-I	3	1	0	4
2	Basic Science course	BS-M102	Mathematics –IB	3	1	0	4
3	Engineering Science Courses	ES-EE101	Basic Electrical Engineering	3	1	0	4
		Total Theory		**9**	**3**	**0**	**12**
Practical							
1	Basic Science course	BS-PH191	Physics-I Laboratory	0	0	3	1.5
2	Engineering Science Courses	ES-EE191	Basic Electrical Engineering Laboratory	0	0	2	1
3	Engineering Science Courses	ES-ME192	Workshop/Manufacturing Practices	1	0	4	3
		Total Practical		**1**	**0**	**9**	**5.5**
			Total of First Semester	**10**	**3**	**9**	**17.5**

Sl No.	Category	Subject Code	Subject Name	Total No. of contact hours			Credits
First Year Second Semester							
				L	T	P	
Theory							
1	Basic Science course	BS-CH201	Chemistry-I (Gr-A)	3	1	0	4
2	Basic Science course	BS-M202	Mathematics –IIB	3	1	0	4
3	Engineering Science Courses	ES-CS201	Programming for Problem Solving	3	0	0	3
4	Humanities and Social Sciences including Management courses	HM-HU201	English	2	0	0	2
		Total Theory		**11**	**2**	**0**	**13**
Practical							
1	Basic Science course	BS-CH291	Chemistry-I Laboratory	0	0	3	1.5
2	Engineering Science Courses	ES-CS291	Programming for Problem Solving	0	0	4	2
3	Engineering Science Courses	ES-ME291	Engineering Graphics & Design (Gr-A)	1	0	4	3
4	Humanities and Social Sciences including Management courses	HM-HU291	Language Laboratory	0	0	2	1
		Total Practical		**1**	**0**	**13**	**7.5**
			Total of Second Semester	**12**	**2**	**13**	**20.5**

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
BACHELOR OF TECHNOLOGY IN MECHANICAL ENGINEERING
(Effective from academic session 2018-19)
<u>Curriculum Structure</u>

Sl No.	Category	Subject Code	Subject Name	L	T	P	Credits
Second Year Third Semester							
				Total No. of contact hours			**Credits**
Theory							
1	Basic Science course	BS-M301	Mathematics III	3	1	0	4
2	Basic Science course	BS-BIO301	Biology	3	0	0	3
3	Engineering Science Courses	ES-ECE301	Basic Electronics Engineering	3	0	0	3
4	Engineering Science Courses	ES-ME301	Engineering Mechanics	3	1	0	4
5	Professional Core courses	PC-ME301	Thermodynamics	3	1	0	4
6	Professional Core courses	PC-ME302	Manufacturing Processes	4	0	0	4
			Total Theory	**19**	**3**	**0**	**22**
Practical							
1	Professional Core courses	PC-ME391	Practice of Manufacturing Processes	0	0	3	1.5
			Total Practical	**0**	**0**	**3**	**1.5**
			Total of Third Semester	**19**	**3**	**3**	**23.5**

Sl No.	Category	Subject Code	Subject Name	L	T	P	Credits
Second Year Fourth Semester							
				Total No. of contact hours			**Credits**
Theory							
1	Engineering Science Courses	ES-ME401	Materials Engineering	3	0	0	3
2	Professional Core courses	PC-ME401	Applied Thermodynamics	3	1	0	4
3	Professional Core courses	PC-ME402	Fluid Mechanics & Fluid Machines	3	1	0	4
4	Professional Core courses	PC-ME403	Strength of Materials	3	1	0	4
5	Professional Core courses	PC-ME404	Metrology andInstrumentation	3	1	0	4
			Total Theory	**15**	**4**	**0**	**19**
Practical							
1	Professional Core courses	PC-ME491	Practice of Manufacturing Processes and Systems Laboratory	0	0	3	1.5
2	Professional Core courses	PC-ME492	Machine Drawing- I	0	0	3	1.5
3	Mandatory courses	MC 481	Environmental Science	-	-	2	0
			Total Practical	**0**	**0**	**8**	**3**
			Total of Fourth Semester	**15**	**4**	**8**	**22**

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
BACHELOR OF TECHNOLOGY IN MECHANICAL ENGINEERING
(Effective from academic session 2018-19)
Curriculum Structure

Third Year Fifth Semester							
Sl No.	Category	Subject Code	Subject Name	Total No. of contact hours			Credits
				L	T	P	
Theory							
1	Professional Core courses	PC-ME501	Heat Transfer	3	1	0	4
2	Professional Core courses	PC-ME502	Solid Mechanics	3	1	0	4
3	Professional Core courses	PC-ME503	Kinematics & Theory of Machines	3	1	0	4
4	Humanities and Social Sciences including Management courses	HM-HU501	Effective Technical Communication	3	0	0	3
5	Mandatory courses	MC501	Essence of Indian Knowledge Tradition	-	2	-	0
	Total Theory			**12**	**5**	**0**	**15**
Practical/ Sessional							
1	Professional Core courses	PC-ME591	Mechanical Engineering Laboratory I (Thermal)	0	0	3	1.5
2	Professional Core courses	PC-ME592	Machine Drawing-II	0	0	3	1.5
3	Project (Summer internship)	PW-ME581	Project-I (30 hrs. Total)	0	0	2	1
	Total Practical			**0**	**0**	**8**	**4**
			Total of Fifth Semester	**12**	**5**	**8**	**19**

Third Year Sixth Semester							
Sl No.	Category	Subject Code	Subject Name	Total No. of contact hours			Credits
				L	T	P	
Theory							
1	Professional Core courses	PC-ME601	Manufacturing Technology	4	0	0	4
2	Professional Core courses	PC-ME602	Design of Machine Elements	3	1	0	4
3	Professional Elective courses	PE-ME601	Elective-I	3	0	0	3
4	Professional Elective courses	PE-ME602	Elective-II	3	0	0	3
5	Humanities and Social Sciences including Management courses	HM-HU601	Operations Research	3	0	0	3
6	Mandatory courses	MC601	Constitution of India	-	2	-	0
	Total Theory			**16**	**3**	**0**	**17**
Practical/ Sessional							
1	Professional Core courses	PC-ME691	Mechanical Engineering Laboratory II (Design)	0	0	3	1.5
2	Project (or Summer internship)	PW-ME681	Project-II (90 hrs. Total)	0	0	4	2
	Total Practical			**0**	**0**	**7**	**3.5**
			Total of Sixth Semester	**16**	**3**	**7**	**20.5**

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
BACHELOR OF TECHNOLOGY IN MECHANICAL ENGINEERING
(Effective from academic session 2018-19)
<u>Curriculum Structure</u>

Sl No.	Category	Subject Code	Subject Name	Total No. of contact hours			Credits
				Fourth Year Seventh Semester			
				L	T	P	
Theory							
1	Professional Core courses	PC-ME701	Advanced Manufacturing Technology	3	0	0	3
2	Professional Elective courses	PE-ME701	Elective III	3	0	0	3
3	Professional Elective courses	PE-ME702	Elective-IV	3	0	0	3
4	Open Elective courses	OE-ME 701	Open Elective- I	3	0	0	3
5	Humanities and Social Sciences including Management courses	HM-HU701	Economics for Engineers	2	0	0	2
		Total Theory		**14**	**0**	**0**	**14**
Practical/ Sessional							
1	Professional Core courses	PC-ME791	Mechanical Engineering Laboratory III (Manufacturing)	0	0	3	1.5
2	Project	PW-ME781	Project-III	0	0	6	3
		Total Practical		**0**	**0**	**9**	**4.5**
			Total of Seventh Semester	**14**	**0**	**9**	**18.5**

Sl No.	Category	Subject Code	Subject Name	Total No. of contact hours			Credits
				Fourth Year Eighth Semester			
				L	T	P	
Theory							
1	Professional Elective courses	PE-ME801	Elective V	3	0	0	3
2	Professional Elective courses	PE-ME802	Elective VI	3	0	0	3
3	Open Elective courses	OE-ME 801	Open Elective-II	3	0	0	3
4	Open Elective courses	OE-ME 802	Open Elective- III	3	0	0	3
		Total Theory		**12**	**0**	**0**	**12**
Practical/ Sessional							
1	Project	PW-ME881	Project-IV	0	0	10	5
2	Professional Core courses	PW-ME882	Comprehensive viva	0	0	0	1.5
		Total Practical		**0**	**0**	**10**	**6.5**
			Total of Eighth Semester	**12**	**0**	**10**	**18.5**
		Total Credit					**160**

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
BACHELOR OF TECHNOLOGY IN MECHANICAL ENGINEERING
(Effective from academic session 2018-19)
Curriculum Structure

List of Professional Electives

There are six Professional Elective Course Papers in Semester VI, VII and VIII as follows:
(Elective-I) PE-ME601, (Elective-II) PE-ME602, (Elective-III) PE-ME701, (Elective-IV) PE-ME702, (Elective-V) PE-ME801 and (Elective VI) PE-ME802.

Students are to choose one paper for each of the Professional Elective Courses specified in the curriculum structure of a Semester from the following list of Professional Elective Papers. Selection of a paper should be non-repetitive. If a student chooses the paper, **Internal Combustion Engines and Gas Turbines (Code: A1)** as a **Professional Elective I in Semester VI**, its paper code will be **PE-ME601A1**. Similarly, in case **Mechanical Vibration (Code: B3)** is chosen by one in **Semester VII as Professional Elective-IV**, its paper Code will be **PE-ME702B3**.

Subject Code	Subject name
Thermo-Fluid Group	
A1	Internal Combustion Engines and Gas Turbines
A2	Automobile Engineering
A3	Gas Dynamics and Jet Propulsion
A4	Refrigeration and Air Conditioning
A5	Turbo Machinery
A6	Fluid Power Control
A7	Advanced Fluid Mechanics
A8	Analysis and Performance of Fluid Machines
A9	Computational Fluid Dynamics
A10	Power Plant Engineering
A11	Cryogenics
A12	Introduction to Wind Engineering
A13	Elements of Atmospheric Fluid Dynamics
Design Group	
B1	Composite Materials
B2	Selection and Testing of Materials
B3	Mechanical Vibration
B4	Tribology
B5	Finite Element Analysis
B6	Mechatronics
Manufacturing Group	
C1	Advanced Welding Technology
C2	Quantity Production Methods
C3	3D Printing and Design
C4	Micro and Nano Manufacturing
C5	CAD/CAM
C6	Robotics
C7	Material Handling
C8	Principles and Practices of Management
C9	Process Planning and Cost Estimation
C10	Maintenance Engineering

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
BACHELOR OF TECHNOLOGY IN MECHANICAL ENGINEERING
(Effective from academic session 2018-19)
Curriculum Structure

List of Open Electives

There are three Open Elective Course Papers in Semester VII and VIII as follows:
(Open Elective-I) OE-ME701, (Open Elective-II) OE-ME801, and (Open Elective-III) OE-ME802.

Students are to choose one paper for each of the Open Elective Courses specified in the curriculum structure of a Semester from the following list of Open Elective Papers. Selection of a paper should be non-repetitive. If a student chooses the paper, **Industrial Engineering (Code: A)** as an **Open Elective-I in Semester VII**, its paper code will be **OE-ME701A**. Similarly, in case **Safety and Occupational Health (Code: F)** is chosen by one in **Semester VIII as Open Elective-III**, its paper Code will be **OE-ME802F**.

Subject Code	Subject Name
A	Industrial Engineering
B	Total Quality Management
C	Project Management
D	Entrepreneurship Development
E	Introduction to Product Design and Development
F	Safety and Occupational Health
G	Industrial Pollution and Control
H	Energy Conservation and Management
I	Non-conventional Energy Sources
J	Waste to Energy- An Overview
K	Biomechanics and Biomaterials
L	Computational Methods in Engineering
M	Automation & Control
N	Internet of Things (IoT)
O	Artificial Intelligence (AI)
P	Block Chain
Q	Cyber Security
R	Quantum Computing
S	Data Sciences
T	Machine Learning
U	Virtual Reality (VR)
V	Water Resource Engineering