

## Department of Mechanical Engineering

## Minutes of Meeting of Board of studies in Mechanical Engineering Department

A meeting of Board of studies in Mechanical Engineering was held on 28 May 2019 at 11.00am in conference room Mechanical Engineering Department. Following members attend the meeting:

1. Dr. R.K. Porwal	(Chairman)	2. Dr. M.R. Nandgaonkar	(Special Invitee)
3. Dr. Ashesh Tiwari	(External Expert)	4. Dr. M.L. Jain	(Member)
5. Dr. Basant Agrawal	(Member)	6. Dr. Sudhir Tiwari	(Member)
7. Dr. B.R. Rawal	(Member)	8. Dr. Vinod Pare	(Member)
9. Dr. B.S. More	(Member)	10. Dr. Manoj Chouksey	(Member)
11. Shri Pranbhash Ganai	(Member)	12. Shri Ashok Atulkar	(Member)
13. Shri Dinesh Pasi	(Member)	14. Shri Ravi Jatola	(Invitee)
15. Shri Anil Mulewa	(Invitee)	16. Shri Gangaram Mourya	(Invitee)

Prof U. K. Joshi (External Expert) could not attend the meeting

Following items were discussed:-

**Item 1:** The Scheme of II, III and IV B. Tech. (Mechanical) is discussed and suggested changes have been included. The recommended scheme is enclosed. A new subject "Industrial Engineering and Production Management (IP 36xxx) subject has been introduced in VI semester.

**Item 2:** Minor changes are proposed in some of the UG syllabi to accommodate the syllabus of GATE Engineering Services Exam and syllabi are enclosed. The COs of some of the UG subjects are modified.

**Item 3:** In elective III and elective IV of VIII semester, MOOC/Swayam/NPTEL Course have been added. Students may opt elective subjects in consultation with faculty advisor.

**Item 4:** The Scheme and syllabus of newly approved PG course (M.Tech. in Thermal Engineering) is discussed and approved. The recommended scheme and syllabi of Thermal Engineering is enclosed.

**Item 5:** Change of name of PG course from Tribology and Maintenance Engineering to Mechanical Engineering Design is proposed and if approved, recommended scheme and syllabus of (M.Tech. in Mechanical Engineering Design) is enclosed.

Meeting ended with vote of thanks.

The signature of BOS members:-

Name	Signature	Name	Signature
1. Dr. R.K. Porwal	Raikumar	2. Dr. M.R. Nandgaonkar	
3. Dr. Ashesh Tiwari	Ashesh Tiwari 28/5/2019	4. Dr. M.L. Jain	M.L. Jain 31/5/19
5. Dr. Basant Agrawal	Basant Agrawal	6. Dr. Sudhir Tiwari	Sudhir Tiwari
7. Dr. B.R. Rawal	B.R. Rawal	8. Dr. Vinod Pare	Vinod Pare
9. Dr. B.S. More	B.S. More	10. Dr. Manoj Chouksey	Manoj Chouksey
11. Shri Pranbhash Ganai	Pranbhash Ganai	12. Shri Ashok Atulkar	Ashok Atulkar
13. Shri Dinesh Pasi	Dinesh Pasi	14. Shri Ravi Jatola	Ravi Jatola
15. Shri Anil Mulewa	Anil Mulewa	16. Shri Gangaram Mourya	Gangaram Mourya

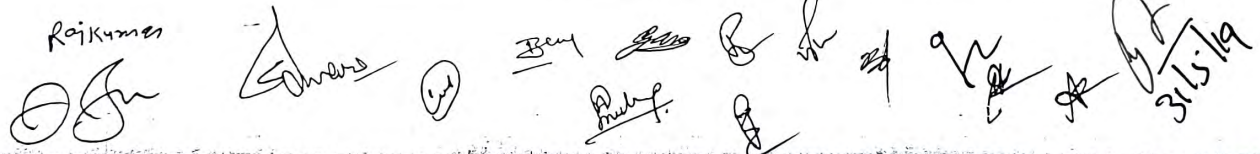
**Semester: III**

S. No.	Subject Code	Subject Name	Hours per Week			Credits		Max Marks				
			L	T	P	Th	Pr	Theory		Practical		Total
								Th.	CW	SW	Pr.	
1	ME26001	Fluid Mechanics	3	1	2	4	1	70	30	40	60	200
2	ME26002	Strength of Materials	3	1	2	4	1	70	30	40	60	200
3	MA26004	Mathematics -III	3	1	-	4	-	70	30	-	-	100
4	ME26008	Material Science	3	-	2	3	1	70	30	40	60	200
5	ME26xxx	Engineering Thermodynamics	3	-	2	3	1	70	30	40	60	200
6	HU26010	Values, Humanity and Professional Ethics	-	-	4	-	2	-	-	100	-	100
		<b>Total</b>	15	3	12	18	6	350	150	260	240	1000

**Semester: IV**

S. No.	Subject Code	Subject Name	Hours per Week			Credits		Max Marks				
			L	T	-P	Th	Pr	Theory		Practical		Total
								Th.	CW	SW	Pr.	
1	MA26555	Mathematics-IV	3	1	-	4	-	70	30	-	-	100
2	ME26xxx	Machine Design- I	3	-	2	3	1	70	30	40	60	200
3	ME26562	Kinematics of Machine	3	1	2	4	1	70	30	40	60	200
4	EC26563	Basic Electronics Engineering	3	-	2	3	1	70	30	40	60	200
5	IP26009	Manufacturing Processes-I	3	-	2	3	1	70	30	40	60	200
6	ME26xxx	Machine Drawing & Computer Graphics	-	-	4	-	2	-	-	40	60	100
		<b>Total</b>	15	2	12	17	6	350	150	200	300	1000

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**SEMESTER - VI**

S. No.	Sub. Code	Subject	Hours per Week			Credit		Maximum Marks				Total
			L	T	P	Th.	Pr.	Theory		Practical		
								Th.	CW	SW	Pr.	
1	ME36001	Dynamics of Machines	3	1	2	4	1	70	30	40	60	200
2	ME36003	Measurement and Automatic Control	3	-	2	3	1	70	30	40	60	200
3	ME36006	Heat & Mass Transfer	3	1	2	4	1	70	30	40	60	200
4	ME36xxx	Power Plant and Energy Management	3	-	-	3	-	70	30	-	-	100
5	IP36xxx	Manufacturing Processes-II	3	-	2	3	1	70	30	40	60	200
6	ME36451	Industrial Training/ Seminar	-	-	2	-	1	-	-	50	-	50
15	2	10	17	5	350	150	210	240	950			

**Semester VI**

S. No.	Sub. Code	Subject	Hours per Week			Credit		Maximum Marks				Total
			L	T	P	Th.	Pr.	Theory		Practical		
								Th.	CW	SW	Pr.	
1	ME36501	Refrigeration and Air-conditioning	3	1	2	4	1	70	30	40	60	200
2	ME36xxx	Machine Design II	3	-	4	3	2	70	30	40	60	200
3	ME36506	Fluid Machinery	3	-	2	3	1	70	30	40	60	200
4	ME36xxx	Advances in Internal Combustion Engines	3	-	2	3	1	70	30	40	60	200
5	IP360xx	Industrial Engineering and Production Management	3	-	-	3	-	70	30	-	-	100
6	ME36592	Minor Project	-	-	4	-	2	-	-	60	90	150
<b>Total</b>			15	1	14	16	7	350	150	220	330	1050

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S. No.	Sub. Code	Subject	Hours per Week			Credit		Maximum Marks				Total
			L	T	P	Th.	Pr.	Theory		Practical		
								Th.	CW	SW	Pr.	
1	ME46008	Automobile Engineering	3	-	2	3	1	70	30	40	60	200
2	ME46061	Vibration and Noise Control	3	-	2	3	1	70	30	40	60	200
3	ME46010	Computer Aided Design	3	-	2	3	1	70	30	40	60	200
4	ME460xx	Elective-I	3	1	-	4	-	70	30	-	-	100
5	ME460xx	Elective-II	3	1	-	4	-	70	30	-	-	100
7	ME46xxx	Industrial Training/ Seminar	-	-	2	-	1	-	-	50	-	50
8	ME46499	Major Project Phase-I ( AB group)	-	-	6	-	3	-	-	60	90	150
9	ME46999	Major Project Phase-II (BA Group)	-	-	6	-	3	-	-	60	90	150
	<b>Total</b>	<b>For AB/BA Group</b>	15	2	14	17	7	350	150	230	270	1000

List of Electives

Elective-I			Elective-II		
S.No.	Sub. Code	Subject	S.No.	Sub. Code	Subject
1	ME46xxx	Advanced Machine Design	1	ME460xx	Operational Research
2	ME460xx	Design of Air Conditioning Equipment	2	ME 46325	Hydraulic, Pneumatic & Fluidic Control
3	ME460xx	Industrial Tribology and Maintenance	3	ME460xx	Bio - Mechanics
4	ME460xx	Mechatronics & Robotics	4	PE460xx	Manufacturing Automation & CAM

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### SEMESTER - VIII

S. No.	Sub. Code	Subject	Hours per Week			Credit		Maximum Marks				Total
			L	T	P	Th.	Pr.	Theory		Practical		
								Th.	CW	SW	Pr.	
1	ME46XXX	Elective III	3	1	-	4	-	70	30	-	-	100
2	ME46XXX	Elective IV	3	1	-	4	-	70	30	-	-	100
3	ME46881	Industrial Training /Internship/ Seminar	-	-	-	-	8	-	-	100	-	100
4	ME46999	Major Project Phase- II (AB Group)	-	-	6	-	3	-	-	60	90	150
5	ME46499	Major Project Phase-I ( BA group)	-	-	6	-	3	-	-	60	90	150
	<b>Total</b>	<b>For AB/ BA Group</b>	<b>6</b>	<b>2</b>	<b>6</b>	<b>8</b>	<b>11</b>	<b>140</b>	<b>60</b>	<b>160</b>	<b>90</b>	<b>450</b>

#### List of Electives

Elective-III			Elective-IV		
S.No.	Sub. Code	Subject	S.No.	Sub. Code	Subject
1	ME46xxx	Composite Materials	1	ME46xxx	Engineering Optimization
2	ME46xxx	Renewable Energy Sources	2	ME460xx	Computational Fluid Dynamics
3	ME46xxx	Finite Element Methods	3	ME46301	Design of Thermal System
4	ME46xxx	Industrial Inspection & Quality Control	4	ME46xxx	Gas Dynamics & Fluid Flow
5		MOOCs/ Swayam/NPTEL Courses	5		MOOCs/ Swayam/NPTEL Courses

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**SEMESTER - I**

S. No.	Subject Code	Subject	L	T	P	Th. Credit	Pr. Credit	Maximum Marks				Total Marks
								Theory	CW	SW	Pr.	
1.	ME 88XXX	Advanced Thermodynamics	4	-	-	4	-	70	30	-	-	100
2.	ME 88XXX	Advanced Fluid Dynamics	4	-	-	4	-	70	30	-	-	100
3.	ME 88XXX	Advanced Heat Transfer	4	-	-	4	-	70	30	-	-	100
4.	ME 88XXX	Advanced Mathematical Methods in Engineering	4	-	-	4	-	70	30	-	-	100
5.	ME 88XXX	Elective-I	-	-	4	-	4	-	-	40	60	100
6.	ME 88XXX	Lab - I (Advanced Fluid Dynamics)	-	-	4	-	4	-	-	40	60	100
7.	ME 88XXX	Lab. - II (Heat transfer and thermodynamics)	-	-	-	-	-	50	-	-	-	50
8.	XX XXXX	Research Methodology & IPR	-	-	-	-	-	-	-	-	Grade	Grade
9.	ME 88XXX	Comprehensive Viva	-	-	-	-	-	-	-	-	Grade	Grade
Total			22	-	8	22	10	400	150	80	120	750

**SEMESTER - II**

S. No.	Code No.	Subject	L	T	P	Th. Credit	Pr. Credit	Maximum Marks				Total Marks
								Theory	CW	SW	Pr.	
1.	ME 88XXX	Energy Conservation and Management	4	-	-	4	-	70	30	-	-	100
2.	ME 88XXX	Computational Fluid Dynamics	4	-	-	4	-	70	30	-	-	100
3.	ME 88XXX	Design of Thermal System	4	-	-	4	-	70	30	-	-	100
4.	ME 88XXX	Elective-II	4	-	-	4	-	70	30	-	-	100
5.	ME 88XXX	Elective-III	4	-	-	4	-	70	30	-	-	100
6.	ME 88XXX	Lab. - I (Energy Conservation & Thermal System)	-	-	4	-	4	-	-	40	60	100
7.	ME 88XXX	Lab. - II (Computational Fluid Dynamics)	-	-	4	-	4	-	-	40	60	100
8.	ME 88XXX	Seminar - II	-	-	2	-	2	-	-	50	-	50
9.	ME 88XXX	Comprehensive Viva	-	-	-	-	-	-	-	-	Grade	Grade
Total			20	-	10	20	10	150	350	130	120	750

**List of Electives**

Elective - I	Elective - II	Elective - III
Design of Solar and Wind System	Air Conditioning System Design	Operations Research
Design of Heat Exchanger	Gas Turbines	Waste to Energy
Design For Manufacturing and Assembly	Advance Engineering materials	Composite Materials
Steam Engineering	Multi-Body Dynamics	Optimization Techniques in Design
Refrigeration and cryogenics	Modelling of IC Engines	

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SEMESTER - III

S. No.	Subject Code	Subject	L	T	P	Th. Credit	Pr. Credit	Maximum Marks				Total Marks
								Theory	CW	SW	Pr.	
1.	ME 88XXX	Dissertation Phase - I	-	-	20	-	20	-	-	100	150	250
Total			-	-	20	-	20	-	-	100	150	250

SEMESTER - IV

S. No.	Subject Code	Subject	L	T	P	Th. Credit	Pr. Credit	Maximum Marks				Total Marks
								Theory	CW	SW	Pr.	
1.	ME 88XXX	Dissertation Phase - II	-	-	30	-	30	-	-	160	240	400
Total			-	-	30	-	30	-	-	160	240	400

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### SEMESTER - I

S. No.	Subject Code	Subject	L	T	P	Th. Credit	Pr. Credit	Maximum Marks				Total Marks
								Theory	CW	SW	Pr.	
1.	ME 89XXX	Computer Aided Design	4	-	-	4	-	70	30	-	-	100
2.	ME 89XXX	Advanced Vibration and Acoustics	4	-	-	4	-	70	30	-	-	100
3.	ME 89XXX	Finite Element Methods	4	-	-	4	-	70	30	-	-	100
4.	ME 89XXX	Advanced Mathematical Methods in Engineering	4	-	-	4	-	70	30	-	-	100
5.	ME 89XXX	Elective-I	-	-	4	-	4	-	-	40	60	100
6.	ME 89XXX	Lab. - I (Vibration and Acoustics)	-	-	4	-	4	-	-	40	60	100
7.	ME 89XXX	Lab. - II (FEM & CAD)	2	-	-	2	2	50	-	-	-	50
8.	ME 89XXX	Research Methodology & IPR	-	-	-	-	-	-	-	-	Grade	Grade
9.	ME 89XXX	Comprehensive Viva I	22	-	8	22	10	400	150	80	120	750
Total												

### SEMESTER - II

S. No.	Code No.	Subject	L	T	P	Th. Credit	Pr. Credit	Maximum Marks				Total Marks
								Theory	CW	SW	Pr.	
1.	ME 89XXX	Advanced Machine Design	4	-	-	4	-	70	30	-	-	100
2.	ME 89XXX	Tribology in Design	4	-	-	4	-	70	30	-	-	100
3.	ME 89XXX	Advanced Stress Analysis	4	-	-	4	-	70	30	-	-	100
4.	ME 89XXX	Elective-II	4	-	-	4	-	70	30	-	-	100
5.	ME 89XXX	Elective-III	-	-	4	-	4	-	-	40	60	100
6.	ME 89XXX	Lab. - I (Advance Machine Design)	-	-	4	-	4	-	-	40	60	100
7.	ME 89XXX	Lab. - II (Tribology and Exp. Stress Analysis)	-	-	2	-	2	-	-	50	-	50
8.	ME 89XXX	Seminar	-	-	-	-	-	-	-	-	Grade	Grade
9.	ME 89XXX	Comprehensive Viva II	20	-	10	20	10	150	350	130	120	750
Total												

#### List of Electives

Elective - I	Elective - II	Elective - III
Mechatronics and Robotics	Advance Engineering Material	Operation Research
Design for Manufacturing and Assembly	Analysis and Synthesis of Mechanism	Composite Materials
Bio mechanics	Advanced Finite Element Methods	Engineering Optimization
Fracture Mechanics	Condition Monitoring of Machines	Waste to Energy

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SEMESTER - III

S. No.	Subject Code	Subject	L	T	P	Th. Credit	Pr. Credit	Maximum Marks				Total Marks
								Theory	CW	SW	Pr.	
1.	ME 89xxx	Dissertation Phase - I	-	-	20	-	20	-	-	100	150	250
Total			-	-	20	-	20	-	-	100	150	250

SEMESTER - IV

S. No.	Subject Code	Subject	L	T	P	Th. Credit	Pr. Credit	Maximum Marks				Total Marks
								Theory	CW	SW	Pr.	
1.	ME 89xxx	Dissertation Phase - II	-	-	30	-	30	-	-	160	240	400
Total			-	-	30	-	30	-	-	160	240	400

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