

Shri G.S. Institute of Technology and Science, Indore

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 01 Aug 2020 at 12.00 PM through on platform. Following members attended the meeting:

1. Dr. R.K. Porwal	(Chairman)	2. Prof. M.R. Nandgoukar	(External Expert)
3. Prof K R Aharwal	(External Expert)	4. Prof. P K Kankar	(External Expert)
5. Shri M K Pathak	(Industry Expert)	6. Prof. S S Manepatil	(Member)
7. Dr. M .L. Jain	(Member)	8. Dr. Basant Agrawal	(Member)
9. Dr. Sudhir Tiwari	(Member)	10. Dr. B.R. Rawal	(Member)
11. Shri Vinod Parashar	(Member)	12. Dr. Vinod Pare	(Member)
13. Dr. B.S. More	(Member)	14. Dr. Manoj Chouksey	(Member)
15. Ms Swati D Chaugaonkar	(Member)	16. Shri Ashok Atulkar	(Member)
17. Shri Prabhesh Ganai	(Member)	18. Shri Dinesh Pasi	(Member)

Following items were reviewed:

Item 1: The Scheme of B Tech Mechanical was discussed and following changes are recommended.

1. Syllabus of updated course ME36xxx Power Plant and Energy Management was discussed and approved.
2. A course titled Advances in Internal Combustion Engines is recommended to rename as Internal Combustion Engine.
3. Syllabi and COs of subjects Machine Design II (3rd Year), Advanced Machine Design (Elective, 4th Year) and Mechatronics and Automation (Elective, 4th Year) were discussed and recommended.
4. The BOS discussed new subjects to be included from emerging areas, as also suggested by AICTE, and recommended to offer as elective subjects to final year students. Following subjects were recommended:
 - (a) 3D Printing and Design
 - (b) Robotics
 - (c) Artificial Intelligence
 - (d) Data ScienceSyllabus of these subjects, as proposed by AICTE Model Curriculum, were discussed and recommended.
5. Syllabus of 1st Year (Common) Fundamental of Mechanical Engineering was also reviewed and updated.

The recommended scheme, updated syllabi of subjects discussed above and syllabi of 3rd year with updated CO are enclosed.

Item 2: The Scheme and syllabi of newly approved PG course (M.Tech. in Mechanical Engineering Design) were discussed and recommended. The recommended scheme and syllabi of course is enclosed.

Rajkumar
[Signatures]

Item 3: The Scheme of M Tech Thermal Engineering Course was discussed. Rearrangement of some subjects among core and elective subject was discussed. Some non-relevant courses were recommended to remove. The recommended scheme course is enclosed.

Item 4: The PG Scheme of CAD/CAM/CAE was discussed.

1. The BOS recommended to replace the subject Engineering Material (Semester I) with subject Advanced mathematical method in engineering, which is common with other PG courses (Thermal/ Design) of department and offered by Mathematics department.
2. The list of elective I and elective II recommended as follows-

S. No.	Elective I	Elective II
1.	Computational Fluid Dynamics	Product design and development
2.	Hydraulic and Pneumatic Control	Computer aided process planning
3.	Computer Aided Design of Thermal System	Robotics
4.	Biomechanics	MEMS and NEMS

Item 5: The introduction of online courses from MOOC/Swayam/NPTEL platform in UG scheme was discussed and it was recommended that students may opt for elective subject through online platform in consultation with faculty advisor.

Signatures of members:-

1. Dr. R.K. Porwal *Raj Kumar*
3. Prof K R Aharwal
5. Shri M K Pathak
7. Dr. M .L. Jain *M. L. Jain*
9. Dr. Sudhir Tiwari *Sudhir Tiwari*
11. Shri Vinod Parashar *Vinod Parashar*
13. Dr. B.S. More *B.S. More*
15. Ms S D Chaugaonkar *S. D. Chaugaonkar*
17. Shri Prabhesh Ganai *Prabhesh Ganai*

2. Prof. M.R. Nandgoukar
4. Prof. P K Kankar
6. Prof. S S Manepatil *S. S. Manepatil*
8. Dr. Basant Agrawal *Basant Agrawal*
10. Dr. B.R. Rawal *B.R. Rawal*
12. Dr. Vinod Pare *Vinod Pare*
14. Dr. Manoj Chouksey *Manoj Chouksey*
16. Shri Ashok Atulkar *Ashok Atulkar*
18. Shri Dinesh Pasi *Dinesh Pasi*

(Signature) *(Signature)* *(Signature)* *(Signature)*

B. Tech. Mechanical Engineering (4YDC)

Semester: III

S. No.	Subject Category	Subject Code	Subject Name	Classes per Week			Credits		Max Marks				
				L	T	P	Th.	Pr.	Theory		Practical		Total
									Th.	CW	SW	Pr.	
1	PCC	ME26011	Fluid Mechanics	4	-	2	3	1	70	30	40	60	200
2	PCC	ME26002	Strength of Materials	4	-	2	3	1	70	30	40	60	200
3	BSC	MA26004	Mathematics -III	4	1	-	4	-	70	30	-	-	100
4	PCC	ME26008	Material Science	4	-	2	3	1	70	30	40	60	200
5	PCC	ME26005	Engineering Thermodynamics	4	-	2	3	1	70	30	40	60	200
6	HSMC	HU26481	Values, Humanity and Professional Ethics	-	2	-	2	-	-	100	-	-	100
Total				20	3	8	18	4	350	250	160	240	1000

Optional Subject(s)

7		OC-I	Open Category-I (Audit only)	-	-	-	-	-	-	-	-	-	-
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Semester: IV

S. No.	Subject Category	Subject Code	Subject Name	Classes per Week			Credits		Max Marks				
				L	T	P	Th.	Pr.	Theory		Practical		Total
									Th.	CW	SW	Pr.	
1	BSC	MA26556	Mathematics-IV	4	1	-	4	-	70	30	-	-	100
2	PCC	ME26551	Machine Design- I	4	-	2	3	1	70	30	40	60	200
3	PCC	ME26562	Kinematics of Machine	4	-	2	3	1	70	30	40	60	200
4	BSC	EC26563	Basic Electronics Engineering	4	-	2	3	1	70	30	40	60	200
5	PCC	IP26552	Manufacturing Processes-I	4	-	2	3	1	70	30	40	60	200
6	HSMC	HU 26507	Economics for Engineers	4	-	-	3	-	70	30	-	-	100
7	PCC	ME26881	Machine Drawing & Computer Graphics	-	-	2	-	1	-	-	40	60	100
Total				24	1	10	19	5	420	180	200	300	1100

Optional Subject(s)

7	OC	OC-II	Open Category-II (Audit only)	-	-	-	-	-	-	-	-	-	-
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SEMESTER - V

S. No.	Subject Category	Sub. Code	Subject	Classes per Week			Credit		Maximum Marks				Total
				L	T	P	Th.	Pr.	Theory		Practical		
									Th.	CW	SW	Pr.	
1	PCC	ME36001	Dynamics of Machines	4	1	2	4	1	70	30	40	60	200
2	PCC	ME36003	Measurement and Automatic Control	4	-	2	3	1	70	30	40	60	200
3	PCC	ME36006	Heat & Mass Transfer	4	-	2	3	1	70	30	40	60	200
4	PCC	ME36xxx	Power Plant and Energy Management	4	-	-	3	-	70	30	-	-	100
5	PCC	IP36562	Manufacturing Processes-II	4	-	2	3	1	70	30	40	60	200
Total				20	1	8	16	4	350	150	160	240	900

Optional Subject(s)

6	OC	OC	Open Category-III (Audit only)	-	-	-	-	-	-	-	-	-	-
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Semester VI

S. No.	Subject Category	Sub. Code	Subject	Classes per Week			Credit		Maximum Marks				Total
				L	T	P	Th.	Pr.	Theory		Practical		
									Th.	CW	SW	Pr.	
1	PCC	ME36501	Refrigeration and Air-conditioning	4	-	2	3	1	70	30	40	60	200
2	PCC	ME36xxx	Machine Design II	4	-	4	3	2	70	30	40	60	200
3	PCC	ME36506	Fluid Machinery	4	-	2	3	1	70	30	40	60	200
4	PEC	ME36509	Advances in Internal Combustion Engines	4	-	2	3	1	70	30	40	60	200
5	HSMC	IP360xx	Industrial Engineering and Production Management	4	-	-	3	-	70	30	-	-	100
6	PROJ	ME36xxx	Industrial Training/ Minor Project	-	-	4	-	2	-	-	100	-	100
Total				20	-	14	15	7	350	150	260	240	1000

Optional Subject(s)

7	OC	OC	Open Category-IV (Audit only)	-	-	-	-	-	-	-	-	-	-
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S. No.	Subject Category	Sub. Code	Subject	Class per Week			Credit		Maximum Marks				Total
				L	T	P	Th.	Pr.	Theory		Practical		
									Th.	CW	SW	Pr.	
1	PEC	ME46008	Automobile Engineering	4	-	-	3	-	70	30	-	-	100
2	PEC	ME46061	Vibration and Noise Control	4	-	2	3	1	70	30	40	60	200
3	PEC	ME46010	Computer Aided Design	4	-	2	3	1	70	30	40	60	200
4	PEC		Elective-I	4	-	-	3	-	70	30	-	-	100
5	PEC		Elective-II	4	-	-	3	-	70	30	-	-	100
7	PROJ	ME46xxx	Industrial Training	-	-	-	-	2	-	-	100	-	100
8	PROJ	ME46499	Major Project Phase-I (AB group)	-	-	8	-	4	-	-	60	90	150
9	PROJ	ME46999	Major Project Phase-II (BA Group)	-	-	8	-	4	-	-	60	90	150
		Total	For AB/BA Group	20	-	12	15	8	350	150	240	210	950

Optional Subject s)

7	OC	OC	Open Category-V (Audit only)	-	-	-	-	-	-	-	-	-	-
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List of Electives

Elective-I			Elective-II		
S. No.	Sub. Code	Subject	S. No.	Sub. Code	Subject
1	ME46xx x	Advanced Machine Design	1	ME460xx	Operational Research
2	ME460x x	Design of Air Conditioning Equipment	2	ME 46325	Hydraulic, Pneumatic & Fluidic Control
3	ME460x x	Industrial Tribology and Maintenance	3	ME460xx	Bio - Mechanics
4	ME460x x	Mechatronics and Automation	4	ME460xx	Manufacturing Automation & CAM
5	XXxxx x	Artificial Intelligence	5	XXxxxxx	Data Science

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

Optional Subject(s)

7	OC	OC	Open Category-VI (Audit only)	-	-	-	-	-	-	-	-	-	-
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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 Inspector. & Quality Control	4	ME46xxx	Gas Dynamics & Fluid Flow
5	ME46xxx	Robotics	5	ME46xxx	3D Printing and Design

Total Training/ Internship: Minimum 8 week during course

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SEMESTER - I

S. No.	Subject Code	Subject	Classes per week			Credits		Maximum Marks				Total
			L	T	P	Th.	Pr.	Theory		Practical		
								Th.	CW	SW	Pr.	
1.	ME 8XXX	Advanced Machine Design	4	-	-	3	-	70	30	-	-	100
2.	ME 8XXX	Finite Element Analysis	4	-	-	3	-	70	30	-	-	100
3.	ME 8XXX	Computer Aided Design	4	-	-	3	-	70	30	-	-	100
4.		Elective-I	4	-	-	3	-	70	30	-	-	100
5.		Elective-II	4	-	-	3	-	70	30	-	-	100
6.	ME 8XXX	Lab. - I (Machine Design)	-	-	4	-	2	-	-	40	60	100
7.	ME 8XXX	Lab. - II (Modelling and Simulation)	-	-	4	-	2	-	-	40	60	100
8.	ME 8XXX	Comprehensive Viva I	-	-	-	-	-	-	-	-	Grade	Grade
Total			20	-	8	15	4	350	150	80	120	700

SEMESTER - II

S. No.	Subject Code	Subject	Classes per week			Credits		Maximum Marks				Total
			L	T	P	Th.	Pr.	Theory		Practical		
								Th.	CW	SW	Pr.	
1.	ME 8XXX	Advanced Vibrations and Acoustics	4	-	-	3	-	70	30	-	-	100
2.	ME 8XXX	Tribology in Design	4	-	-	3	-	70	30	-	-	100
3.	ME 8XXX	Advanced Stress Analysis	4	-	-	3	-	70	30	-	-	100
4.		Elective-III	4	-	-	3	-	70	30	-	-	100
5.		Elective-III	4	-	-	3	-	70	30	-	-	100
6.	ME 8XXX	Lab. - I (Vibration and Mechatronics)	-	-	4	-	2	-	-	40	60	100
7.	ME 8XXX	Lab. - II (Tribology and Exp. Stress Analysis)	-	-	4	-	2	-	-	40	60	100
8.	ME 8XXX	Seminar-I	-	-	2	-	1	-	-	50	-	50
9.	ME 8XXX	Comprehensive Viva II	-	-	-	-	-	-	-	-	Grade	Grade
Total			20	-	10	15	5	350	150	130	120	750

List of Electives

Elective - I	Elective - II	Elective - III	Elective - IV
Advanced Mathematical Methods in Engineering	Design for Manufacturing and Assembly	Advanced Finite Element Methods	Quantitative Techniques
Advanced Engineering materials	Robotics	Condition Monitoring of Machines	Experimental Stress Analysis
Machine Tool Design	Fracture Mechanics	Mechatronics and Automation	Optimization Techniques in Design
Analysis and Synthesis of Mechanism	Hydraulic and Pneumatic Control	Mechanics of Composite Materials	Bio mechanics

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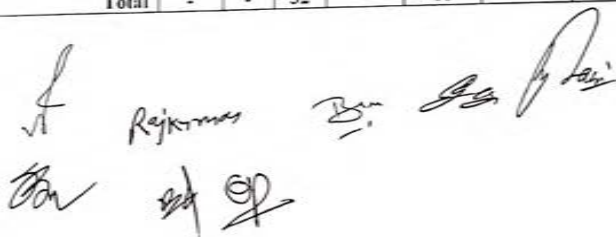
SEMESTER - III

S. No.	Subject Code	Subject	Classes per week			Credits		Maximum Marks				Total
			L	T	P	Th.	Pr.	Theory		Practical		
								Th.	CW	SW	Pr.	
1.	ME 3XXXX	Dissertation Phase - I	-	-	20	-	10	-	-	40	60	100
2.	ME 3XXXX	Seminar II	-	-	2	-	1	-	-	50	-	50
3.	XX 3XXXX	Research Methodology & IPR	2	-	-	2	-	70	30	-	-	100
Total			2	-	22	2	11	70	30	90	60	250

SEMESTER - IV

S. No.	Subject Code	Subject	Classes per week			Credits		Maximum Marks				Total
			L	T	P	Th.	Pr.	Theory		Practical		
								Th.	CW	SW	Pr.	
1.	ME 3XXXX	Dissertation Phase - II	-	-	32	-	16	-	-	80	120	200
Total			-	-	32	-	16	-	-	80	120	200

Total Credit: $19 + 20 + 13 + 16 = 68$



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Scheme of M. Tech. course in Thermal Engineering

BOS, Mechanical, 2020

SEMESTER - I

S. No.	Subject Code	Subject	Classes per week			Credits		Maximum Marks				Total Marks
			L	T	P	Th.	Pr.	Theory	CW	SW	Pr.	
1.	ME 888xx	Advanced Thermodynamics	4	-	-	3	-	70	30	-	-	100
2.	ME 888xx	Advanced Fluid Dynamics	4	-	-	3	-	70	30	-	-	100
3.	ME 888xx	Advanced Heat Transfer	4	-	-	3	-	70	30	-	-	100
4.	ME 888xx	Elective-I	4	-	-	3	-	70	30	-	-	100
5.	ME 888xx	Elective-II	4	-	-	3	-	70	30	-	-	100
6.	ME 888xx	Lab. - I (Advanced Fluid Dynamics)	-	-	4	-	2	-	-	40	60	100
7.	ME 888xx	Lab. - II (Heat transfer and thermodynamics)	-	-	4	-	2	-	-	40	60	100
8.	ME 888xx	Comprehensive Viva	-	-	-	-	-	-	-	-	Grade	Grade
Total			20	-	8	15	4	350	150	80	120	700

SEMESTER - II

S. No.	Code No.	Subject	L	T	P	Th. Credit	Pr. Credit	Maximum Marks				Total Marks
								Theory	CW	SW	Pr.	
1.	ME 888xx	Design of Solar and Wind System	4	-	-	3	-	70	30	-	-	100
2.	ME 888xx	Computational Fluid Dynamics	4	-	-	3	-	70	30	-	-	100
3.	ME 888xx	Steam Engineering	4	-	-	3	-	70	30	-	-	100
4.	ME 888xx	Elective-III	4	-	-	3	-	70	30	-	-	100
5.	ME 888xx	Elective-IV	4	-	-	3	-	70	30	-	-	100
6.	ME 888xx	Lab. - I (Solar, Wind & Thermal System)	-	-	4	-	2	-	-	40	60	100
7.	ME 888xx	Lab. - II (Computational Fluid Dynamics)	-	-	4	-	2	-	-	40	60	100
8.	ME 888xx	Seminar - I	-	-	2	-	1	-	-	50	-	50
9.	ME 888xx	Comprehensive Viva	-	-	-	-	-	-	-	-	Grade	Grade
Total			20	-	10	15	5	350	150	130	120	750

List of Electives

Elective - I	Elective - II	Elective - III	Elective - IV
Advanced Mathematical Methods in Engineering	Energy Conservation and Management	Design of Thermal System	Quantitative Techniques
Finite Element Analysis	Hydraulic and Pneumatic Control	Turbo machinery	Waste to Energy
Advance Engineering materials	Modelling of IC Engines	Air Conditioning System Design	Optimization Techniques
Refrigeration and Cryogenics	Automotive Technologies	Mechatronics and Automation	Lubrication Theory and Practice

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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	-	10	-	-	40	60	100
2.	ME 88XXX	Seminar - II	2	-	-	2	-	70	30	-	-	100
3.	XX 88XXX	Research Methodology & IPR	2	-	22	2	11	70	30	90	60	150
Total												

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	-	-	32	-	16	-	-	80	120	200
Total			-	-	32	-	16	-	-	80	120	200

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I.M.E. CAD/CAM/CAE

SEMESTER - I

S.No	Sub. Code	Subject	L	T	P	Th. Credit	Pr. Credit	MAXIMUM MARKS				
								TH	CW	SW	Pr.	Total
1	ME87001	Advance mathematical methods in engineering	4	0	0	4	0	70	30	-	-	100
2	ME87002	Advance Machine Design	4	0	0	4	0	70	30	-	-	100
3	ME87004	Finite Element Analysis	4	0	0	4	0	70	30	-	-	100
4	ME87006	Computer Aided Design	4	0	0	4	0	70	30	-	-	100
5	IP87007	Computer Aided Manufacturing	4	0	0	4	0	70	30	-	-	100
6	ME87451	CAD Lab.	0	0	4	0	4	-	-	40	60	100
7	ME87452	Advance Machine Design Lab	0	0	2	0	2	-	-	40	60	100
8	ME87453	FEM Lab	0	0	2	0	2	-	-	40	60	100
9	ME87481	Seminar I	0	0	2	0	2	-	-	100	-	100
10	ME87500	Comprehensive Viva	0	0	0	0	0	-	-	-	Grade	Grade
Total			20	0	10	20	10	350	150	220	180	900

SEMESTER - II

S. No.	Sub. Code	Subject	L	T	P	Th. Credit	Pr. Credit	Maximum Marks				
								TH	CW	SW	Pr	Total
1	ME87501	Mechatronics and Automation	4	0	0	4	0	70	30	-	-	100
2	ME87502	Optimization Techniques	4	0	0	4	0	70	30	-	-	100
3	ME87506	Rapid Prototyping and Tooling	4	0	0	4	0	70	30	-	-	100
4		Elective-I	4	0	0	4	0	70	30	-	-	100
5		Elective-II	4	0	0	4	0	70	30	-	-	100
6	ME87851	Rapid prototyping and Tooling Lab.	0	0	4	0	4	-	-	40	60	100
7	ME87852	Mechatronics and Automation Lab.	0	0	4	0	4	-	-	40	60	100
8	ME87881	Seminar II	0	0	2	0	2	-	-	100	-	100
9	ME87900	Comprehensive Viva	0	0	0	0	0	-	-	-	Grade	Grade
Total			20	0	10	20	10	350	150	180	120	800

SEMESTER -III

S.No	Sub. Code:	Subject	L	T	P	Th. Credit	Pr. Credit	MAXIMUM MARKS				
								TH	CW	SW	Pr.	Total
1	ME87901	Dissertation Phase- I	0	0	20	0	20	0	0	100	150	250
			0	0	20	0	20	0	0	100	150	250

SEMESTER -IV

S. No.	Sub. Code:	Subject	L	T	P	Th. Credit	Pr. Credit	Maximum Marks				
								TH	CW	SW	Pr.	Total
1	ME 8794	Dissertation Phase- II	0	0	30	0	30	0	0	160	240	400
		Total	0	0	30	0	30	0	0	160	240	400

(Admitted in and after 2017)

S. No.	Sub. Code	Subject	L	T	P	Th. Credit	Pr. Credit	Maximum Marks				
								TH	CW	SW	Pr.	Total
1	ME87951	Dissertation Phase- II	0	0	30	0	30	0	0	160	240	400
		Total	0	0	30	0	30	0	0	160	240	400

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