Dr. AIT/Mech/308/13/06/16

09.06.2016

To
The Principal
Dr.AIT
Bangalore -560056

Respected Sir,

Sub: List of BOS members for the ensuing academic year – Regarding

With reference to the above subject please find the list of Board of Studies members for the department of mechanical engineering for the year 2016-17.

Thanking You,

Yours Sincerely,

9/6

Dr. Ambedkar Institute of Technology
Bangalore - 560 056

Copy to: Dean (Academic) for kind information

Dean(A)
9/3/16

Dr. Shrishail B Kakkeri	skaks0167@yahoo.co.in	98442 10534
Dr. J M Mallikarjuna	jmallikarjun@iitm.ac.in	094449 31941
Dr. Joel Hemanth	joelhemanth@hotmail.com	94805 42335
Dr. S M Murugendrappa	smm@nitk.ac.in	9343889072
Dr. B M Rajaprakash	bmruvce@yahoo.co.in	94488 56163
Dr. H K Rangavittala	hkrv.bmsce@gmail.com	94814 52552
Mr. Srilal Sreedhar	sreelal@gtre.drdo.in	99800 16442
Mr. Manjunath	manjunathp@nal.res.in	94490 81634
Mr. Vinayak Swadi	vinayak.swadi@gmail.com	92434 44540
Mr. Raja Hussain	rajahussain.me.et@msruas.ac.in	99012 93640

Department of Mechanical Engineering, Dr.Ambedkar Institute of Technology, Bangalore - 560 056

BOARD OF STUDIES MEMBERS

Academic Year: 2016-17

Department	Chairman (HOD)	External subject experts	VTU nominee	Industry representative	Alumni with PG degree	Internal faculty members with various specialisations (UG)	Total
Mechanical	Dr. L Chandrasagar	Dr.J M Mallikarjun, IITM-Chennai	Dr.Shrishail B Kakkeri, SVCE-Bangalore	Dr.Srilal Sreedhar, GTRE-Bangalore	Mr.Raja Hussain, MSRUAS-Bangalore	Dr.B Ravindra	
		Dr.Joel Hemanth, HMSIT-Tumkur		Dr.Manjunath, NAL-Bangalore		Dr.K M Purushothama	
		Dr.Murugendrappa, NITK, Surathkal		Mr.Vinayak Swadi, TCS-Bangalore		Dr.K M Narayanappa	
		Dr.B M Rajaprakash UVCE-Bangalore				Prof.S K Jagadeesh	
		Dr.H K Rangavittala, BMSCE-Bangalore (co-opted member)				Prof.N.Shashikanth	
						Dr.T N Raju	
	1	**4+1**	**1**	**3**	**1**	**6**	**16+1**
honararium	2000	2000	2000	2000	2000	1500	11500
TA	nil	first class train	nil	nil	nil	nil	0
DA	250	1000	250	750	250	1500	4000
Sub-Total	2250	9000	2250	6750	2250	10500	**33000**

Dr. AIT/Mech/364/01/07/16

Submitted w/c. Dean

Please find enclosed Copy of BOS proceedings, Curriculam design, Scheme and Syllabus for the year 2016-17 from Mechanical Engineering Department.

30/6

Professor & Head
Department of Mechanical Engineering
Dr. Ambedkar Institute of Technology
Bangalore - 560 056

MECHANICAL ENGINEERING DEPARTMENT

Dr.Ambedkar Institute of Technology, Bangalore – 560056

BOARD OF STUDIES MEETING (UG) HELD ON 20th JUNE 2016

RESOLUTIONS

After detailed deliberations suggested changes were incorporated in the curriculum design, scheme and syllabus for the ensuing academic year 2016-17.

1.	Curriculum Design	-	04 years (1st to 8th semester)	-	04 sheets
2.	Scheme & Syllabus	-	01st year	-	Pages 001 to 008
3.	Scheme & Syllabus	-	02nd year	-	Pages 009 to 044
4.	Scheme & Syllabus	-	03rd year	-	Pages 045 to 087
5.	Scheme & Syllabus	-	04th year	-	Pages 088 to 146
6.	Institutional Electives	-	odd/even semester	-	Pages 147 to 156

VISION AND MISSION OF THE INSTITUTE

VISION

To create Dynamic, Resourceful, Adept and Innovative Technical professionals for meeting global challenges.

MISSION

- To offer state-of-the-art undergraduate, postgraduate and doctoral programmes in the fields of Engineering, Technology and Management.
- To generate new knowledge by engaging faculty and students in research, development and innovation.
- To provide strong theoretical foundation to students, supported by extensive practical training to meet the industry requirements.
- To instill moral and ethical values with social and professional commitment.

VISION AND MISSION OF THE DEPARTMENT

VISION

To provide quality technical education in mechanical engineering with emphasis on research, sustainable technologies and entrepreneurship for the global requirement.

MISSION

- To impart in-depth knowledge in basic and applied areas of Mechanical Engineering with professional values to have a successful career.
- To provide state-of-the-art infrastructure and laboratories for academics and promoting research and development.
- To make collaboration with industries and research organizations for funded projects and consultancy with a main focus on industry-institute interactions and joint research.
- To impart moral and ethical values with an awareness of societal impact through co-curricular activities.

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

PEO 1: Graduates to have a sound comprehensive knowledge to pursue successful career in Mechanical Engineering.

PEO 2: Graduates to have sufficient knowledge in specialized areas of Mechanical Engineering such as Materials, Design, Manufacturing and Thermal engineering topromote research and development through innovation.

PEO 3: Graduates to have a better ability to solve mechanical engineering problems related to the industrial requirements through extensive practical training.

PEO 4: Graduates to have moral and ethical values with societal commitment and engage in independent and life-long learningthrough membership to professional societies.

GRADUATE ATTRIBUTES (GAs) as defined by NBA

1. Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization for the solution of complexengineering problems

2. Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles ofmathematics, natural sciences and engineering sciences.

3. Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs withappropriate

consideration for public health and safety, and cultural,societal, and environmental considerations.

4. Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation ofdata, and synthesis of the information to provide valid conclusions.

5. Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling to complexengineering activities, with an understanding of the limitations.

6. The engineer and society: Apply reasoning informed by the contextual knowledge to assess Societal, health, safety, legal and cultural issues and the consequentresponsibilities relevant to the professional engineering practice.

7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate theknowledge of, and need for sustainable development.

8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. Communication: Communicate effectively on complex engineering activities with the engineering community and with the society at large, such as, being able tocomprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work,as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context oftechnological change.

PROGRAMME OBJECTIVES (POs)

At the end of the programme, the graduates will be able to:

a. Apply the knowledge of basic sciences and engineering specialization to solve mechanical engineering problems.

b. Analyze complex mechanical engineering problems by using first principles of mathematics and engineering sciences.

c. Design mechanical components and develop solutions for complex engineering problems to meet the specific needs by considering the issues of safety, culture, societyand environment.

d. Use research-based knowledge and research methods to conduct investigations of complex mechanical engineering problems and provide valid conclusions.

e. Use modern engineering techniques, skills and tools to model and predict various mechanical engineering activities.

f. Understand the responsibilities of professional engineering practice to assess the issues related to society, health, safety, law and culture.

g. Consider the impact of engineering solutions on environment and the need for sustainable development.

h. Follow the norms of engineering practice and commit to professional ethics and responsibilities.

i. Work as an individual and as a team member or leader in a team of diverse knowledge and in multidiscipline areas of mechanical engineering.

j. Communicate effectively with his/her colleagues in the engineering community and also with the society at large.

k. Apply the principles of engineering, management and finance to manage projects in various disciplines of mechanical engineering.

l. Engage in independent and life-long learning as a consequence of changes in technology.

Dr.J M Mallikarjun IITM-Chennai	Dr.Murugendrappa S M NITK, Surathkal	Dr.B M Rajaprakash UVCE-Bangalore
Dr.H K Rangavittala BMSCE-Bangalore	Dr.Joel Hemanth, HMSIT-Tumkur	Dr.Shrishail B Kakkeri SVCE-Bangalore
Dr.Srilal Sreedhar GTRE-Bangalore	Dr.Manjunath NAL-Bangalore	Mr.Vinayak Swadi TCS-Bangalore
Dr.B Ravindra (Machine Design stream)	Dr.K M Purushothama (Machine Design stream)	Dr.K M Narayanappa (Manufacturing stream)
Prof.S K Jagadeesh (Thermal stream)	Prof.N.Shashikanth (Allied stream)	Dr.T N Raju (Manufacturing stream)

Dr. L Chandrasagar
Chairman, BOS (UG)

Dr. M N Hegde
Dean (Academic)

Dr. C NanjundaSwamy
Principal

B.O.S. Meeting.

30/06/2016.

Dr. L. Chandrasagar HOD. MED. cordially invited all the members for the B.O.S meeting.

1) Vinayak Sirsadi External B.O.S member requested to include Servomotors & linear guideways to be included in EME (ME14).

2) The corrections needed for all the subjects were noted down. & the same should be incorporated in the final final points (Syllabus copy).

3) The course objectives, course outcome must be carefully defined with respect to the vision-mission of the department and Institute.

4) The subject Operations Research must be included as core subject for mechanical department students & Hydraulics & pneumatics must be considered as Elective subject.

5) The committee revived the entire syllubi's from 1st year to fin year and the final syllubus (curriculam, syllubus, cos & POs & PE must be submitted immediately after the meeting.

Members present.

1) Dr. L. Chandrasagar.	SIGN	12) Dr. T.N. Raju.
2) Dr. B. Ravindra.		13) Vinayak Sirsadi (Alumini @ BIT) MED
3) Dr. Munigendrappa.	28/6/16	14) Manjunath P. (NAL) Head, Propulsion div. NAL, B'lore-17
4) Dr. Shaeshail Kakkeri	20/6/16	
5) Dr. V. Arun kumar.	27/6/16	15) Dr. Rajaprakash Prof. MED UVCE
6) Dr. K.N. Narayanappa.	20/6/16	
7) Dr. K.M. Purushothama.		
8) N.S Jayaram.		
9) N. Bhagirathi		
10) T. Sairam.		
11) S.K. Jagadeesh		

SCHEME AND SYLLABUS FOR ADMISSION BATCH 2016-17

		FOR 2016 BATCH - 1st SEMESTER CHEMISTRY CYCLE	L	T	P	C
1	MA11*	ENGINEERING MATHEMATICS – I *	3	2	0	4.0
2	CH12	ENGINEERING CHEMISTRY	4	0	0	4.0
3	CS13	COMPUTER CONCEPTS &PROGRAMMING	4	0	0	4.0
4	**ME14 / ME24**	**ELEMENTS OF MECHANICAL ENGINEERING**	4	0	0	**4.0**
5	EC15	BASIC ELECTRONICS	4	0	0	4.0
6	CSL16	COMPUTER CONCEPTS & PROGRAMMING LABORATORY	0	0	2	1.0
7	CHL17	ENGINEERING CHEMISTRY LABORATORY	0	0	2	1.0
8	CV18	ENVIRONMENTAL SCIENCE	2	0	0	2.0
9	EN19	FUNCTIONAL ENGLISH	2	0	0	2.0
		FIRST SEMESTER TOTAL CREDITS				**26.0**

		FOR 2016 BATCH - 1st SEMESTER PHYSICS CYCLE	L	T	P	C
1	MA11*	ENGINEERING MATHEMATICS – I	3	2	0	4.0
2	PH12	ENGINEERING PHYSICS	4	0	0	4.0
3	CV13	ELEMENTS OF CIVIL ENGINEERING	4	0	0	4.0
4	**MEL14 / MEL24**	**COMPUTER AIDED ENGINEERING DRAWING**	2	0	4	**4.0**
5	EE15	BASIC ELECTRICAL ENGINEERING	4	0	0	4.0
6	**MEL16 / MEL26**	**WORKSHOP PRACTICE**	0	0	2	**1.0**
7	PHL17	ENGINEERING PHYSICS LABORATORY	0	0	2	1.0
8	CI18	CONSTITUTION OF INDIA& PROFESSIONAL ETHICS	2	0	0	2.0
9	KA19	KANNADA	2	0	0	0.0
		FIRST SEMESTER TOTAL CREDITS				**24.0**
		FIRST YEAR TOTAL CREDITS				**50.0**

SCHEME AND SYLLABUS FOR ADMISSION BATCH 2015-16						
FOR 2015 BATCH - 3rd SEMESTER			**L**	**T**	**P**	**C**
1	MA31*	ENGINEERING MATHEMATICS – III *	3	2	0	4.0
2	ME31	FLUID MECHANICS	4	0	0	4.0
3	ME32	BASIC THERMODYNAMICS	4	0	0	4.0
4	ME33	MECHANICS OF MATERIALS	4	0	0	4.0
5	ME34	MANUFACTURING PROCESS – I	4	0	0	4.0
6	ME35	METROLOGY & MEASUREMENTS	3	0	0	3.0
7	MEL36	COMPUTER AIDED MACHINE DRAWING	2	0	4	4.0
8	MEL37	MANUFACTURING PROCESS LABORATORY – I	0	0	2	1.0
9	MEL38	METROLOGY & MEASUREMENTS LABORATORY	0	0	2	1.0
		THIRD SEMESTER TOTAL CREDITS				**29.0**
FOR 2016 BATCH - 3rd SEMESTER (lateral entry)						
1	MADIP31*	ADVANCED MATHEMATICS – I	4	0	0	4.0

FOR 2015 BATCH - 4th SEMESTER			**L**	**T**	**P**	**C**
1	MA41*	ENGINEERING MATHEMATICS – IV	3	2	0	4.0
2	ME41	TURBO MACHINES	4	0	0	4.0
3	ME42	APPLIED THERMODYNAMICS	4	0	0	4.0
4	ME43	KINEMATICS OF MACHINES	4	0	0	4.0
5	ME44	MANUFACTURING PROCESS - II	4	0	0	4.0
6	ME45	MATERIAL SCIENCE & METALLURGY	3	0	0	3.0
7	MEL46	MATERIAL TESTING LABORATORY	0	0	2	1.0
8	MEL47	MANUFACTURING PROCESS LABORATORY -II	0	0	2	1.0
9	MEL48	FLUID MECHANICS & MACHINERY LABORATORY	0	0	2	1.0
		FOURTH SEMESTER TOTAL CREDITS				**26.0**
		SECOND YEAR TOTAL CREDITS				**55.0**
		CUMULATIVE CREDITS				**105.0**
FOR 2016 BATCH – 4th SEMESTER (lateral entry)						
1	MADIP41*	ADVANCED MATHEMATICS – II	4	0	0	4.0

SCHEME AND SYLLABUS FOR ADMISSION BATCH 2014-15						
FOR 2014 BATCH - 5th SEMESTER			L	T	P	C
1	HS03**	MANAGEMENT & ENTREPRENEURSHIP	4	0	0	4.0
2	ME51	DESIGN OF MACHINE ELEMENTS- I	4	0	0	4.0
3	ME52	DYNAMICS OF MACHINES	4	0	0	4.0
4	ME53	HEAT TRANSFER	4	0	0	4.0
5	ME54	COMPUTER AIDED DESIGN &MANUFACTURING	4	0	0	4.0
6	ME551	EXPERIMENTAL STRESS ANALYSIS	3	0	0	3.0
	ME552	ADVANCED MACHINING PROCESSES	3	0	0	3.0
	ME553	POWER PLANT ENGINEERING	3	0	0	3.0
7	MEL56	HEAT TRANSFER LABORATORY	0	0	2	1.0
8	MEL57	FUEL TESTING & INTERNAL COMBUSTION ENGINES LABORATORY	0	0	2	1.0
		FIFTH SEMESTER TOTAL CREDITS				25.0

FOR 2014 BATCH - 6th SEMESTER			L	T	P	C
1	IDE	INTER-DEPARTMENTAL ELECTIVE	4	0	0	4.0
2	ME61	DESIGN OF MACHINE ELEMENTS-II	4	0	0	4.0
3	ME62	FINITE ELEMENT METHOD	4	0	0	4.0
4	ME63	MECHANICAL VIBRATIONS	4	0	0	4.0
5	ME64	OPERATIONS RESEARCH	4	0	0	4.0
6	ME651	THEORY OF ELASTICITY	3	0	0	3.0
	ME652	COMPOSITE MATERIALS AND MANUFACTURING	3	0	0	3.0
	ME653	HEATING, VENTILATION & AIR CONDITIONING	3	0	0	3.0
7	MEL66	COMPUTER INTEGRATED MANUFACTURING LABORATORY	0	0	2	1.0
8	MEL67	DESIGN LABORATORY	0	0	2	1.0
9	MEP68	MINI PROJECT WORK	0	0	4	2.0
		SIXTH SEMESTER TOTAL CREDITS				27.0
		THIRD YEAR TOTAL CREDITS				52.0
		CUMULATIVE CREDITS				152.0

SCHEME AND SYLLABUS FOR ADMISSION BATCH 2013-14						
FOR 2013 BATCH - 7th SEMESTER			L	T	P	C
1	HS05**	INTELLECTUAL PROPERTY RIGHTS	2	0	0	2.0
2	IDE	INTER-DEPARTMENT ELECTIVE	4	0	0	4.0
3	ME71	CONTROL ENGINEERING	4	0	0	4.0
4	ME721	THEORY OF PLASTICITY	3	0	0	3.0
	ME722	PRODUCT DESIGN & MANUFACTURING	3	0	0	3.0
	ME723	AUTOMOTIVE ENGINEERING	3	0	0	3.0
5	ME731	FRACTURE MECHANICS	3	0	0	3.0
	ME732	ADVANCED WELDING PROCESSES	3	0	0	3.0
	ME733	ADVANCED HEAT TRANSFER	3	0	0	3.0
6	ME741	ENGINEERING TRIBOLOGY	3	0	0	3.0
	ME742	INDUSTRIAL ROBOTICS	3	0	0	3.0
	ME743	SOLAR ENERGY ENGINEERING	3	0	0	3.0
7	MEL75	CAMA LABORATORY	2	0	0	1.0
8	MEP76	PROJECT WORK PHASE-I	2	0	0	0.0
SEVENTH SEMESTER TOTAL CREDITS						20.0

FOR 2013 BATCH - 8th SEMESTER			L	T	P	C
1	IDE	INTER-DEPARTMENTAL ELECTIVE	4	0	0	4.0
2	ME81	HYDRAULICS & PNEUMATICS	4	0	0	4.0
3	ME821	ENGINEERING DESIGN	3	0	0	3.0
	ME822	FOUNDRY TECHNOLOGY	3	0	0	3.0
	ME823	BIOMASS ENERGY SYSTEMS	3	0	0	3.0
4	ME831	OPERATIONS RESEARCH	3	0	0	3.0
	ME832	NANO TECHNOLOGY	3	0	0	3.0
	ME833	COMPUTATIONAL FLUID DYNAMICS	3	0	0	3.0
5	ME841	ENGINEERING SYSTEM DESIGN	3	0	0	3.0
	ME842	COMPOSITE MATERIALS AND MANUFACTURING	3	0	0	3.0
	ME843	INTERNAL COMBUSTION ENGINES	3	0	0	3.0
6	ME851	DESIGN FOR MANUFACTURING & ASSEMBLY	3	0	0	3.0
	ME852	INSPECTION & QUALITY CONTROL	3	0	0	3.0
	ME853	HEAT TRANSFER IN ELECTRONIC EQUIPMENT	3	0	0	3.0
7	MES86	SUBJECT SEMINAR	0	0	4	2.0
8	MEP87	PROJECT WORK PHASE-II	0	0	16	8.0 (12)
EIGHTH SEMESTER TOTAL CREDITS						30.0
FOURTH YEAR TOTAL CREDITS						50.0
CUMULATIVE CREDITS						200.0

Dr. Ambedkar Institute of Technology
Department of Mechanical Engineering

BOARD OF STUDIES MEETING

To

Date: 30.05.2017

The Dean (Academic)
Dr. AIT, Bangalore
Dear Madam,

Sub: Minutes of BOS meeting

The Board of studies [BOS] **was** held in the seminar hall of Mechanical Engineering Department on 22 march2017. Meeting was begun at 10.00 A.M by welcoming the members. Draft Copies of the syllabus was circulated to members for scrutiny and discussion. After scrutiny and discussion of the curriculum and syllabus the following points were also discussed the same is placed before the academic council for discussion and approval.

1. The problems focused by those students who joined over college in the 3rd, 5th, 7th semester from other colleges have to get 200 credits, where as some of the students after completing their course (i.e. after completion of the 8th semester) They are getting 198, 199, 197 credits. These students should get the remaining credits by doing some project/work shop/ on industries. Regarding these problems. The members discussed all factors and they give their advice that these students should go to the industry and undergo an intensive training for at least 2 weeks or as prof. sheshadri of Bombay IIT said the students should do literature survey on one of the specified subject and he must submit a report and present a culture on the same subject:
2. External BOS member Sri Gurumurthy has suggested that the students should take small study project and analyse and execute those project through PERT and CPM.

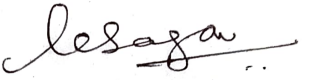
The following members were present during the meeting:

1. Dr. U. S. Mallik
   Professor and Head - Mechanical Engineering, Siddaganga Institute of Technology, Tumkur.
2. Dr. Shreedhar Sheshadri
   Professor in Mechanical Engineering, Indian Institute of Technology, Powai, Mumbai.
3. Dr. Paul Vizhyian
   Professor, Mechanical Engineering Department, UVCE., Bangalore
4. Dr. Raju Rajendran, Scientist G and Group Director, Materials Technology Group, Gas Turbine Research Establishment, Bangalore.

5. Mr. Nikil R B, Director, Anvesha Fab Industries Pvt Ltd. Bangalore.
6. Mr. Ragunath Preetham, Group Chief Executive Officer Sansera Engineering Pvt Ltd, Bangalore
7. Sri. G. Gurumurthy, Vice President, Design Led Manufacturing Cyient Limited, Infotech IT park, Plot No 110A & 110B,Phase I, Electronic City Hosur Road, Bangalore.
8. Dr. B. Ravindra ,Professor, Dr.AIT, Bangalore
9. Dr. K. M. Narayanappa Professor, Dr.AIT, Bangalore
10. Dr. K. M Purushothama Associate Professor, Dr.AIT, Bangalore
11. Dr. B. GangadharShetty Professor, Dr.AIT, Bangalore
12. Dr. T. N. Raju Assistant Professor, Dr.AIT, Bangalore
13. Dr. S. Sathish Assistant Professor, Dr.AIT, Bangalore
14. Dr. H. M Somashekar Assistant Professor, Dr.AIT, Bangalore
15. Dr. N. Gangadhar Assistant Professor, Dr.AIT, Bangalore

Thanking You.

Yours Sincerely



(Dr. L. Chandrasagar)
Prof. & Head - Chairman BOS
Dept of Mech Engg.
Dr. AIT, Bangalore – 560056

PROFESSOR AND HEAD
Mechanical Engineering Department
Dr. Ambedkar Institute of Technology
BANGALORE - 560 056

DEPARTMENT OF MECHANICAL ENGINEERING

Dr.Ambedkar Institute of Technology, Bengaluru-560056

BOARD OF STUDIES MEETING at 10.00am on 22nd JUNE 2018

All the enclosed suggestions in the courses listed are ratified with modifications for the forth coming academic year.

Name	Signature
VTU NOMINEE(01)	
Dr. U S Mallik	
EXTERNAL SUBJECT EXPERTS	
Dr. Sreedhara Sheshadri	
Dr. Rudra Naik	22/6
Dr. S Paul Vizhiyan	22/6/18
Dr. P L S Murthy	22nd June 18
INDUSTRY REPRESENTATIVES	
Dr. Rajendran	
Mr.RenilPadmanabhan	
Mr.Gurumurthy G	
ALUMNI WITH PG DEGREE	
Mr.Nikhil R B	
INTERNAL FACULTY	
DESIGN	
Dr. K M Purushothama	
Mr. A S Jayaram	
MANUFACTURING	
Dr. K M Narayanappa	
Dr. B G Shetty	
THERMAL	
Mr. N Shashikantha	
Mr. S K Jagadeesh	
MATERIALS	
Dr. T N Raju	
Dr. S Sathish	
CHAIRMAN	
Dr. B Ravindra	

PROFESSOR AND H
Mechanical Engineering D
Dr. Ambedkar Institute of
BANGALORE - 560

B.O.S. Meeting.

22-06-2018

Agenda:

1) First & Second semester syllubus & Scheeme for 2018-2019 batch students.
2) (Syllubus) & scheeme for 3rd to 8th semester students & 2018-2019 batch.
2) Third & 4th semester scheeme & Syllubus for 2017-2018 batch.
3) Fifth & Sixth semester of 2016-2017 batch scheeme & Syllubus.
4) Syllubu & scheeme for 2015-2016 batch. students of Sweenth & Eight semester.

Professor & HOD Sri. B. ravindra, chairman of B.O.S meeting cohole heartedly invited all the external & internal B.O.S members for the meeting. The following resolution were made.

Resolutions:

1. It was resolved to incorporate the delibrations, corrections, addition, delition made by the external BOS members & internal B.O.S members made after detail dissussion. made by the members

2. P.G. Syllabus of Machine Design (M.Tech) has been throughly reviewed and few suggestions/have/are made incorporated.

NIKHIL R.B

G. Guruswamy

Dr. U.S. Mallikarjun

22.06.18

Dr. J.L. Srinivasa Murthy

22nd June 18

Dr. Rudra Naik

22/6/18

N. Shashikanth

Dr. K.M. Narayanappa

22/6/18

Dr. SATISH J

Dr B G Shetty
Dr K M. Dhanalakshmi
T. N. Raju
Dr. Paul Vizhnan S.
Sk Jagadeesh

22/6/18

1. It's better to Print SEE marks as 50 both in Syllabus book as well as question Paper (SEE)

2. It's requested to Provide the Provisional Syllabus in advance (at least 1 month) So that Corrections such as addition, deletion can be suggested in advance.

(Dr. P. L. Srivi. Murty)

22nd June 18

FINAL B.O.S. Meeting. 03-06-2019.

Prof & H.O.D. Dr. B. Ravindra. whole heartedly welcomed all the external and internal B.O.S members for the Final B.O.S ~~members~~ meeting.

(i) prof has requested all the External as well as internal B.O.S members to go through the curriculam & Syllubus & to approve the Syllubus & scheeme for 2018-19 batch onwards.

(ii) proposed scheeme for P.G machine design.

(iii)

(iv)

(v) Ratification of equivalent courses

(vi) approval B.E honors & BE minor.

The following External & internal B.O.S members were present.

(i) Dr Madhu. Prof & HOD. Govt. Boys college. Ramanagara.

(ii) Dr. Dibakar Sen. prof IISc. & 03/6/19

(iii) Dr. P.R. Venkatesh. prof RVCE. 03/6/19

(iv) Dr. Rajeswarkadadewarmath. prof SIT. Tumkur.

(v) Dr. Sharana Basavaraja. prof BMSCE

(vi) Mr. Alexander Divakaran. Director Texcelead.

(vii) Dr. K. Ramananda Rao. C.O.O. Eskay Heat Transfer Pvt Ltd.

(viii) Mr. Madhusudan. Director. Diagnostic Engineer.

(ix) Dr. K.M. Narayanappa.

(x) Dr. B.G. Shetty.

(xi) N. Shashikanth.

(xii) Dr. K.M. Purushottama.

(xiii) A.S. Jayaram

(xiv) H. A. Shivappa. 3/6/19

(xv) S.K. Jagadeesh.

(xvi) K.C. Byregowda. 3/6/19

(xvii) Anurag Singh. 3/6/19

(xviii) DR. B. Ravindra. 3/6

The following points are mentioned by the external members

1. Engineering mathematics.
   1st sem. calculus & linear algebra.
   IInd sem. Differential equations & complex variables.
   Advanced calculus & Numerical methods.
2. 18ME31, Material science & metallurgy; title can be changed as Material science.
3. 18ME32 & 34 — Tutorial classes to be increased.
4. Metal Forming to be added in MP1/MP11.
5. CFD, Advanced subjects to be incorporated. Hybrid system (Rotatory m/c, noise & vibration subjects.)
6. Internship to be made compulsory. (weekly 1st four days in Eighth semester - last 2 days are meant for classes)
7. 18ME15/25. conventional & non conventional energy sources to be included in EME. (18ME25)
   + Importance of units such as stress-strain, diagrams & units to be included.
8. Turning m/c to changed to m/c tools. 18ME25.
   Unit 3 & 4 to be interchanged.
   UNIT I - pumps & valves to be included.
   *** Ref. books to be changed with world standard books.
9. 18MEL14. In CAED - include History of engg. drawing, introduce Basic m/c parts before projection of Solids.
10. Material science - Include polymers, composites in unit 5, give updated Std Ref. books.
    Add titanium alloys, duplex materials.
11. MP1: Metal casting & welding to be changed as Manufacturing process. Automated handling of materials to be added.
12. BTD. Industrial application to be added.
13. CAMD:- Assembly add 3 more modules.

14. MTL → ASTM → change to BIS.

15. Mechanical measurement · New title
Cold - title - Metrology & measurement)
Add. accelerators, data acquisition systems & sampli

16. FM/ — ATD. - Air std cycle & gas turbines must be in Ist unit, combustion Thermodyn & I-C engine must be in 2nd unit,

17. ~~Material~~ machining.
KOM - case studies to be added.

*** External BOS members and Prof Dr Ramesh Jeffre requested the dept Head to send the detailed curriculam & syllubus to all the members at least 2 weeks before the BOS meeting so that they can go through the entire syllubus & curriculam in detail & they can come well prepared for the meeting & can have a meaningfull discussion during BOS meetin

Staff members present.

1. T. N. Raju — 3/5/19
2. Dr. Thanniyalap. R — 3/5/19
3. Ranjith. V — 3/5/19 3.5.19.
4. Pavan Tejasvi. T — 03/05/19
5. Rathika. M.
6. Venkateshe Reddy 3/5/19

Dr Ambedkar Institute of Technology
Department of Mechanical Engineering,
Bengaluru – 560 056

MINUTES OF THE BOARD OF STUDIES MEETING

Board of Studies (BOS) meeting of Mechanical Engineering (UG and PG) was held on 14-08-2020 at 10:00 A.M. Dr Ambedkar Institute of Technology, Bengaluru via Google meet App. The following membersware present:

Sl. No.	Members present		
1	Dr. T.N. Raju	Head, Department of Mechanical Engineering, Dr. AIT	Chairperson
2	Dr. Dibakar Sen	Professor, Centre for Product Design and Manufacturing, Indian Institute of Science, Bangalore	External subject expert
3	Dr. D. Madhu	Professor & Head, Mechanical Engineering Department, Government Engineering College, Ramanagara	VTU nominee
4	Dr. J. SharanaBasavaraja	Associate Professor, Mechanical Engineering Department, B M S College of Engineering, Bangalore	External subject expert
5	Dr. P. R. Venkatesh	Professor, Mechanical Engineering Department, R V College of Engineering, Bangalore	External subject expert
6	Dr. Rajeswar Kandaswamy	Professor, Industrial Engineering Department, Siddaganga Institute of Technology, Tumkur	External subject expert
7	Mr. Satyanarayana Murthy R	Senior Deputy Manager (D & E SS INS – 1), Bharath Electronics Limited, Bengaluru	Industry representative
8	Mr. Alexander Divakaran	Director, Texsteel, Bangalore	Industry representative
9	Dr. K. Ramanandra Rao	Chief operating officer, Eskay Heat Transfers Pvt Ltd, Bengaluru	Industry representative
10	Mr.Madhusudan N	Diagnostic Engineers, Bengaluru	Alumnus
11	Mr. Nitesh Kumar Dixit	Head of Mechanical Engineering Department,Institute of Engineering and Technology, Dr Rammanoharl.ohia Awadh University, Awadhya	Mentee Institution member
12	Dr. K. M. Narayanappa	Professor,Department of Mechanical Engineering, Dr. AIT	Internal member

13	Dr.B.Gangadhara Shetty	Professor, Department of Mechanical Engineering, Dr.AIT	Internal member **Convener**
14	Dr.K.M.Purushothama	Professor, Department of Mechanical Engineering, Dr.AIT	Internal member
15	Mr. N.Shashikanth	Associate Professor, Department of Mechanical Engineering, Dr.AIT	Internal member
16	Mr.S. K. Jagadeesh	Associate Professor, Department of Mechanical Engineering, Dr.AIT	Internal member
17	Mr. K.C.Byre Gowda	Assistant Professor, Department of Mechanical Engineering, Dr.AIT	Internal member
18	Dr.A. S. Prashanth	Assistant Professor, Department of Mechanical Engineering, Dr.AIT	Internal member (P G)

Member absent			
01	Mr.H. A. Shivappa	Assistant Professor, Department of Mechanical Engineering, Dr.AIT	Internal member

The chairman welcomed the members of the committee and requested the convener to put the following agenda for discussion:

(A) Proposed scheme and syllabus of B. E, Mechanical Engineering (UG), for the current academic year 2020-21 and its approval.

YEAR	SEMESTER	BATCH	CREDITS
FIRST	1st and 2nd	2020-21	175
SECOND	3rd and 4th	2019-20	175
THIRD	5th and 6th	2018-19	175
FOURTH	7th and 8th	2017-18	200

After elaborate discussion of the agendas the boardgiven following suggestions:

I. BE in Mechanical Engineering (UG)

1. The Board considered and approved the proposed B.E 1st and 2nd Semester Syllabus (Syllabus are discussed in the previous year BOS also in detail).
2. The Board considered and approved the proposed B.E 3rd and 4th Semester Scheme and Syllabus (Scheme and syllabus are discussed in the previous year BOS also in detail).
3. The Board considered and approved the proposed B.E 5th and 6th Semester Scheme and Syllabus with following modifications.

(i) The institution is suggested to conduct online classes in the month of September of this academic year. Hence board suggested to ensure proper internet facility between the faculty and students for conducting online classes. Further, suggested to make video recording of the contents to send across the students. This mayhelp more, for the students for discussion and clarifying doubts.

(ii) Suggested to shift heat transfer theory course and heat transfer laboratory from fifth semester to sixth semester. In turn, suggested to shift turbo machines theory course and Computer Aided Manufacturing Laboratoryfrom sixth semester to fifth semester.

(iii) Suggested to include Finite Element Method as one of the core courseinstead of elective course. Because it is most desired course for modelling and analysis in industries. Moreover, conducting Computer Aided Modelling and Analysis Laboratory without the knowledge of Finite Element Method is difficult. However Dr K M Purushothama, Professor defended it, saying that Mechanical vibration courseis more important for Mechanical Engineers and hence, it is decided include Finite Element Method as professional elective, and not as a core course.

(iv) Condensation, boiling and compact heat exchangerstopics shall be incorporated in heat transfer course.

(v) In the course of Computer Aided Design and Manufacturing, the board, suggested to change unit II title from computer graphics to geometric modelling, and change the topic of "topology of geometry modelling" to "elements of geometric modelling" in Unit II.

(vi) Board suggested to change the titles of units1, 2, 3 and 4inComposite Materials & Manufacturing course.

(vii) Board suggested to shift Fluid Mechanics and Machines Laboratory from sixth to fifth semester. But this laboratory consists of basic experiments on fluid flow which will be studying in fluid mechanics course of fourth semester and experiments on turbines and pumps which will be studying in turbo machines course of fifth semester. Hence it is decided to keep this laboratory in sixth semester after studying all topics.

(viii) Board suggested to include working of various sensors used in automobile systems in Automobile Engineering course.

(ix) Board suggested to havepractical exposure to students in Mechanical Vibration course and how new concepts helps in reducing vibrations by inviting experts from indusrty.

(x) Board suggested to include numericals in both Advanced Welding Technology and Production and Operations Management course.

4. The Board considered and approved the proposedB.E 7th and 8th Semester Scheme and Syllabus(Syllabus are discussed in the previous year BOS also in detail).

II.M Tech in Machine Design (PG)

(B) Proposed scheme and syllabus of M Tech in Machine Design (PG), for the current academic year 2020-22 and its approval.

YEAR	SEMESTER	BATCH	CREDITS
FIRST and SECOND	1st to 4th	2020-21	88

(1) The Board considered and approved the M Tech 1st and 2nd Semester Scheme and Syllabus with following modifications.

i. Incorporate laboratory components in course, Advanced Theory of Vibrations such as FFT analyser.
ii. Suggested to incorporate problem based topics in unit - II of Advanced Design of Mechanism course.
iii. Suggested to change subject title of the course from Experimental Mechanics to Experimental Methods as per contents of the syllabus.
iv. Suggested to change course title of Robust Design to Design of Additive manufacturing as per contents of the syllabus.
v. Incorporate topics of Robots in Material Handling Equipment Design course to impart modern outlook in next academic year.
vi. Suggested to change subject title of Acoustics and Noise Control Engineering course to Technical Acoustics as per contents of the syllabus.
vii. Suggested to change course title of Advanced Machine Design to Design for Fatigue Loading as per contents of the syllabus.
viii. Suggested to change course title of Tribology & Bearing Design to tribology & Bearing Technology as per contents of the syllabus.

2. The Board considered and approved the M Tech 3rd and 4th Semester Scheme and Syllabus with following modifications.

1. Board suggested that student should select a subject for Self-Study – Massive Open Online Course (MOOC) with at least 16 weeks content which is confined to his core specialization.

(C) Vision and Mission, PEO and PO of the department are revised, as suggested by the recent NBA visit to the department. Your kind approval for the same is sought.

Department Vision

To create Dynamic, Resourceful, Adept and Innovative Technical professionals to meet global challenges in Mechanical engineering discipline and other interdisciplinary requirements.

Department Mission

- To impart state of the art knowledge in basic and applied areas of Mechanical Engineering - vis-a- vis the development in industries at an affordable cost.
- To provide state-of-the-art infrastructure & laboratories as necessitated from academics, to promote futuristic research in the areas of design, materials, thermal, manufacturing engineering, managerial skills and related interdisciplinary areas
- To facilitate faculty development through quality improvement programs.
- To strengthen interaction with industries and research organizations from internship and joint research perspectives.
- To instill moral and ethical values with social and professional commitment.

Program Education Objectives

PEO1: Post Graduates to have sufficient knowledge in specialized areas of machine design and to promote state of the art societal/industrial research and developments leading to Innovations

PEO2: Post Graduates to have a sound comprehensive skills related to problem identification and problem solution in area of machine design in particular and interdisciplinary areas in general

PEO3: Post Graduates to have moral and ethical values with societal commitments along with communication skills and engage in independent and lifelong learning along with knowledge dissemination.

Program Outcomes

PO1: An ability to independently carry out research /investigation and development work to solve practical problems
PO2: An ability to write and present a substantial technical report/document

PO3: Students should be able to demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program

PO4: An ability to identify futuristic research requirements

Dr.K. M. Narayanappa	Dr.K.M. Purushothama	Mr. N. Shashikanth	Mr.S. K. Jagadeesh
Mr.K. C. Byre Gowda	Mr. H. A. Shivappa	Dr. A. S. Prashanth	Dr. Dibakar Sen
Dr. D. Madhu	Dr. J. Sharana Basavaraja	Dr. P. R. Venkatesh	Dr. Rajeswar Kadadevarmutt
Mr. Sathyanarayana Murthy R	Mr. Alexander Divakaran	Dr. K. Ramananda Rao	Mr. Madhusudan N
Mr. Nitesh Kumar Dixit	Dr. B. Gangadhara Shetty		Dr. T. N. Raju

Department of Mechanical Engineering

NEW TOPICS ADDED (2020-21)

Sub Code	Subjects	New topics added
18ME31	Material Science And Metallurgy	Biomaterials: Introduction, Materials used as biomaterials, advantages, disadvantages and applications.
18ME33	Manufacturing Processes - I	Forging, Rolling, Die-design, residual stresses in forging
18ME34	Basic Thermodynamics	Availability and irreversibility, Ideal gases and mixtures
18MEL38	Fitting And Forging Workshop	New Lab
18ME42	Fluid Mechanics	Introduction to CFD
18ME43	Manufacturing Processes - Ii	Hobbing
18ME44	Applied Thermodynamics	Stirling cycle; Combustion in IC engines; Alternate Fuels, Steam nozzles
18ME52	Dynamics of Machines	
18ME53	Turbomachines	Thermodynamics of fluid flow
18ME54	Computer Aided Design and Manufacturing	Hardware for CAD, Topology of the geometry modelling, Operational features of CNC machine, Canned Cycles
18ME552	Composite Materials and Manufacturing	Recycling of Metal Matrix Composites, Nanocomposites, Polymer Nano Composites, 3D Printing of Composites
18ME553	Automobile Engineering	Sensors used in automobile systems
18ME554	Mechatronics and Microprocessor	**New subject**
18ME555	Principles of Metal Forming	**New subject**
18ME556	Experimental Stress Analysis	Analysis of plane polariscope by Jones calculus
18ME62	Heat Transfer	Variable thermal conductivity, Critical thickness of insulation, Boiling and condensation, Compact heat exchangers,
18ME642	Advanced Welding Processes	Plasma arc welding, Welding of Cu, Al, Ti and Ni alloys – processes
18ME644	Production And Operations Management	**New subject**
18ME645	Finite Element Method	Thermal Analysis, Steady state Heat Transfer, One Dimensional Heat Conduction – Governing Equation – Boundary Condition. Temperature Gradient & B matrix functional approach to Heat Conduction – Element Conductivity Matrix. Assembly & Boundary Conditions, Heat Flux

		Boundary Conditions, Forced and Natural Boundary Conditions – Numerical problems.
ME71	Control Engineering	Positive Feedback systems
ME811	Computer Integrated Manufacturing	Flexible Manufacturing Systems, Additive Manufacturing Systems, Future of Automated Factory
MEE03	Power Plant Engineering	Pulverising of fuels and burning Fuel burning principles
MEE05	Composite Materials Technology	Recycling of Metal Matrix Composites, Nanocomposites, Polymer Nano Composites, 3D Printing of Composites