



KLE Technological
University
Creating Value
Leveraging Knowledge

Earlier known as
B. V. B. College of Engineering & Technology

School of Mechanical Engineering

BOS Meeting Details for the Last Five Years



Department of Mechanical Engineering

11/07/2015

Minutes of the BOS Meeting in Mechanical Engineering

The meeting of the BOS in Mechanical Engineering was held on 11th July 2015 at 11.00am in the Placement Boardroom, KLE Technological University, Hubballi.

The meeting began with the Chairman welcoming the members of the BOS and other invited faculty members. The Chairman also briefed about the emergence of B V B College of Engineering & Technology as KLE Technological University and the associated developments necessitating the holding of BOS in a span of three months time again. The following agenda points were taken up for discussion.

Agenda 1:

Finalization of the Syllabus of 'Basic Mechanical Engineering' and 'Computer Aided Engineering Drawing' courses for students admitted to First Year Engineering of KLE Tech during 2015-16.

Resolution 1:

The proposed syllabi were approved. The content on Prime movers of 'Basic Mechanical Engineering' course should be modified by adding a Introduction to steam and its applications. The course 'Computer Aided Engineering Drawing' should be continued with the existing syllabus.

Agenda 2:

Discussion of the Curriculum Scheme and Structure (from III to VIII sem.) for students admitted to UG program in Mechanical Engineering of KLE Tech during 2015-16.

Resolution 2:

The proposed curriculum scheme was approved. The structure would be relooked and be taken up for discussion again in the next meeting.

Agenda 3:

Finalization of the Curriculum Structure and Syllabus for students admitted to PG programs in Energy Systems Engineering, Production Management and Machine Design programs of KLE Tech during 2015-16.

- a. Curriculum Structure from I to IV semesters
- b. Syllabus for I and II semesters

Resolution 3:

- a. The proposed curriculum scheme and structure for PG programs from I sem. To IV sem. approved. The course on 'Non-convention Energy Systems (15EESC701)' should be renamed as 'Renewable Energy Systems' in Energy Systems Engineering program.
- b. The proposed syllabus for I sem. and II sem. were approved. The common syllabus on 'Research Methodology' would be prepared and presented during the next meeting.

Agenda 4:

Any other matter with the permission of the chair.

Resolution 4:

No resolutions were made.

The board empowered the chairman to revise/modify the curriculum structure and syllabus wherever required, if the circumstances so demand and the same could be ratified in the next meeting.

The meeting was concluded with vote of thanks by the Chairman.

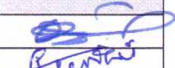
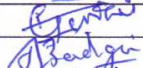
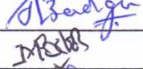



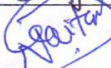
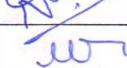
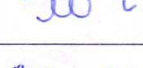
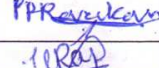
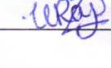
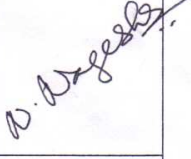
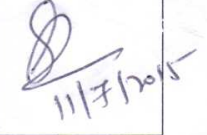

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Department of Mechanical Engineering

Board of Studies in Mechanical Engg., KLE Tech. (2015-16)

Members present during the Meeting on 11th July 2015

S. No.	Nomination of the Committee	Name of the Person	Signature
1	Chairperson	Dr. B B Kotturshettar, HOD	
2	Invitee	Dr. P G Tewari, Principal, BVBCET	
3	Members	Dr. Anil Badiger, Professor	
		J M Patil, Associate Professor	
		Dr. S B Burli, Associate Professor	
		Dr. G U Raju, Associate Professor	
		V N Sanagoudar, Associate Professor	
4	Members	Dr. V N Gaitonde, Professor, PG-Production Management	
		Dr. N R Banapurmath, Professor, Cluster-Materials Science	
		Dr. P P Revankar, Associate Professor, PG-Energy Engineering	
		Dr. K G Kodancha, Professor, PG-Machine Design	
5	Members	Dr. Nagesha N. Professor, Department of studies in Industrial and Production Engineering, University B D T College of Engineering, Davangere - 577 004 M:9480177168 nnvebs@rediffmail.com	
		Dr. Somashekhar Hiremath Associate Professor, Indian Institute of Technology, Madras Chennai - 600 036, M:09445265688 somashekhar@iitm.ac.in	
6	Members	Satyanarayana H.N. Principal Engineer, QuEST Global Engineering, Belgaum- 591245 M:9970411765 satyanarayana.hn@quest-global.com	
		K.N.S. Acharya Vice President - Head Learning & Development, KPIT Technologies, Bangalore M:9945225104 Sriranga.Acharya@kpit.com	
	Co-opted Member	Dr. Ravi Guttal Vice President, India Program Management & Manufacturing Strategy, John Deere India Pvt. Ltd., Tower-XV, Cybercity, Mangapatta City, Hadapsar, Pune-411013, M:9923800242 guttalravi@johndeere.com	
7	Member	Dr. V. K. Basalalli Director, Sir M. Visvesvaraya Institute of Technology, Hunasamaranahalli, Bellary Road, Bangalore - 562157 M: 98454 61212 vireshkb@rediffmail.com	

Department of Mechanical Engineering

Discussion Details

Agenda 1: Finalization of the Syllabus of 'Basic Mechanical Engineering' and 'Computer Aided Engineering Drawing' courses for students admitted to First Year Engineering of KLE Technological University during 2015-16.

Discussions:

The overall first year curriculum structure designed at the central level was presented. Dr. V K Basalalli opined that the workshop practice exercises should be included at least at the second year level of Mechanical Engineering program as Workshop Practice course didnot figure in the 1st year structure.

The syllabus of 'Basic Mechanical Engineering' was presented. The modifications that were introduced to the previous content, the new credit distribution structure of 2-1-0 and the delivery planning were discussed.

Dr. N Nagesha expressed that the chapter on Prime movers would begin with an introduction to steam as a working substance. Other members agreed to the suggestions made.

The syllabus on 'Computer Aided Engineering Drawing' course was also discussed.

Agenda 2:

Discussion of the Curriculum Scheme (from III to VIII sem.) for students admitted to UG program in Mechanical Engineering during 2015-16.

Discussions:

The proposed curriculum scheme and structure for Mechanical Engineering students from III sem. To VIII sem. was presented.

The philosophy behind the development of scheme was elaborated. The total number of credits should be 176. The first year UG students would earn 44 credits and the remaining credits would be earned during higher semesters at an average of 22 credits per semester considering the guidelines on breakup of credits for core, elective courses, project work, basic sciences, engineering sciences and humanities and social sciences. There were not more than five theory courses in a semester and at least two tutorials from III sem. to VI sem. ensured.

The members had a detailed discussion on each of the courses, the flow of the courses from semester to semester and the representation of courses vertical wise. However, Dr. V K Basalalli and Dr. N Nagesha opined that courses on Heat & Mass Transfer, Management Theory, Quantitative Techniques and Quality Control/Assurance should explicitly figure in the scheme. Further, the students should also undergo a course on Entrepreneurship.

Agenda 3:

Finalization of the Curriculum Structure and Syllabus for students admitted to PG programs in Energy Systems Engineering, Production Management and Machine Design programs during 2015-16.

- a. Curriculum Structure from I to IV semesters
- b. Syllabus for I and II semesters

Discussions:



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The proposed curriculum scheme, structure for PG programs from I sem. To IV sem. and syllabus for I sem. and II sem. were presented.

The philosophy behind the development of scheme was elaborated. The total number of credits should be 88. The first year PG students would earn 50 credits and the remaining credits would be earned during higher semesters.

The members had a detailed discussion on each of the courses and the flow of the courses from semester to semester. However, the members suggested having more tutorials in the theory courses and exploring the possibility of having common syllabus for the course on Research Methodology for all the three programs. Dr. N Nagesha opined that the course on 'Non-convention Energy Systems (15EESC701)' might be renamed as 'Renewable Energy Systems' in Energy Systems Engineering program.

Agenda 4: Any other matter with the permission of the chair.

Discussions:

No other matters were discussed.


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9/4/2016

Minutes of the BOS Meeting in Mechanical Engineering

The meeting of the BOS in Mechanical Engineering was held on 9th April 2016 at 11.00am in the Placement Boardroom, KLE Technological University, Hubballi.

The meeting began with the Chairman welcoming the members of the BOS and other invited faculty members. The following agenda points were taken up for discussion.

Agenda 1:

Review of Actions initiated in the last meeting.

Resolution 1:

The actions initiated were reviewed and the minutes of the last meeting were confirmed. Further, the Chairman shared the constitution of the Industry Advisory Board with an objective to update the School with the contemporary developments on the industrial front and the associated expectations from the graduating engineers.

Agenda 2:

Discussion on the syllabus for students admitted to UG program of first year engineering during 2016-17

Resolution 2:

The syllabus of the courses 'Basic Mechanical Engineering' and 'Computer Aided Engineering Drafting' offered to students admitted to UG program of first year engineering during 2016-17 was approved with no changes.

Agenda 3:

Discussion of the Curriculum Scheme (from III to VIII sem.) for students admitted to UG program in Mechanical Engineering 2016-20

Resolution 3:

The curriculum scheme (from III to VIII sem.) for students admitted to UG program in Mechanical Engineering 2016-20 was presented. Dr. V K Basalalli asked to explore the possibility of offering courses on Industrial Management and Entrepreneurship. The curriculum scheme (from III to VIII sem.) for students admitted to UG program in Mechanical Engineering 2016-20 was approved.

Agenda 4:

Discussion of the Curriculum Scheme (from III to VIII sem.) and Syllabus (III and IV sem.) for students admitted to UG program in Mechanical Engineering 2015-19

Resolution 4:

The curriculum scheme (from III to VIII sem.) and Syllabus (III and IV sem.) for students admitted to UG program in Mechanical Engineering 2015-19 was presented. It was suggested to swap the chapters 5 and chapter 6 for better continuity and flow in the course on 'Engineering Materials'. The 'Engineering Design' course could be renamed as 'Engineering Design Practice' as it is termed as practice course. Further, a chapter on 'cams' was to be relooked for its relevance in the course on 'Machines and Mechanisms'. The curriculum scheme (from III to VIII sem.) for students admitted to UG program in Mechanical Engineering 2016-20 was approved.



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Agenda 5:

Discussion of the Curriculum Structure and Syllabus for students admitted to PG programs in Energy Systems Engineering, Machine Design and Production Management programs

- a. Curriculum Structure from I to IV semesters and Syllabus for I and II semesters 2016-18
- b. Syllabus for III and IV semesters 2015-17

Resolution 5:

The Curriculum Structures and Syllabi for students admitted to PG programs in Energy Systems Engineering, Machine Design and Production Management programs was presented.

- a. The Curriculum Structures for students admitted to PG program in Machine Design from I to IV semesters and Syllabi for I and II semesters 2016-18 were approved after deliberations and following changes are suggested

In **Theory of Vibrations with Application** course contents are modified by brining nonlinear vibrations and continuous systems. As part of bridge course review of mechanical vibrations is introduced as 1st chapter.

In **Design lab** online inspection of spindle bearing health monitoring is introduced.

In **Machine tool design** course power and force requirement calculations are introduced in first chapter.

- b. The Curriculum Structures for students admitted to PG programs in Energy Systems Engineering from I to IV semesters and Syllabi for I and II semesters 2016-18 were approved after deliberations and following changes are suggested

Research Methodology course is proposed as a substitute to Technical Report writing course. The course has orientation towards research practice covering research methodology and statistical tools. The change has been appreciated and approved by BoS members.

- c. The Curriculum Structures for students admitted to PG program in Production Management programs from I to IV semesters and Syllabi for I and II semesters 2016-18 were approved after deliberations.

The course on **Analysis of Forming Processes** requires additional tutorial component to facilitate analytical skills in Metal forming Processes. The BoS members have appreciated the proposed changes and approved it.

The Syllabi for students admitted to PG programs in Energy Systems Engineering, Machine Design and Production Management programs III and IV semesters 2015-17 were approved after deliberations.

Agenda 6:

Assessment of student performance – OBE framework

Resolution 6:

The student assessment for program outcomes' attainment using computer assisted assessment system was presented. The members appreciated the initiative and opined that it would help the faculty members to understand the student competency level in various attributes quicker and improve on course delivery method.

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Agenda 7:

Research initiatives

Resolution 7:

The strategic plan of the School of Mechanical Engineering for the research for 2015-20 was presented. The board approved the initiatives and expressed that progress was to be reviewed in the next meeting.

Agenda 8:

Any other matter with the permission of the chair

Resolution 8:

There were no other points for discussion.

The board empowered the chairman to revise/modify the curriculum structure and syllabus wherever required, if the circumstances so demand and the same could be ratified in the next meeting.

The meeting was concluded with vote of thanks by the Chairman.

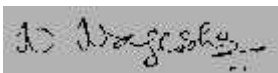
The following members were present.

B B Kotturshettar -

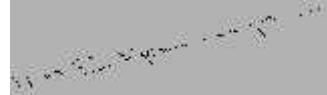
V K Basalalli -



N Nagesha -



Satyanarayana H N -



V N Gaitonde -

N R Banapurmath -

Anil Badiger-

P P Revankar -

K G Kodancha -

J M Patil

S B Burli -

G U Raju -

V N Sanagoudar

A C Giriyapur (Invitee) -




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Discussion Details

1. Confirmation of the Action taken report of the previous BOS meeting.
2. Er. Satyanarayana sought clarity on the manual drafting component in the Engineering Drawing course prescribed for 1st Year (Freshman level)
3. Is the structure of courses at Freshman level-(Physics/ Mathematics/ Chemistry/Electronics/ Computer Programming/ Workshop) uniform to all schools? If not how is cross migration between the schools permitted for a student if he wishes to opt for? - A decision taken at University level.
4. Dr. Basalalli viewed the syllabus of Engineering Mathematics and suggested the delivery of course to be more tuned to enhance the understanding of Mechanical Engineering graduates- Physical relevance to be brought out in the explanation of concepts.
5. Er. Satyanarayana suggested the richness in the content of statistical approaches taught by the Indian statistical Institute in their courses and to explore the possibility of developing and delivering the curriculum the similar way.
6. Mechanics of Materials –course at 3rd sem level: Dr. KGK and Dr. GUR explained the changes brought in the course: 3-0-0 structure to 3-1-0 structure, MD Solids App (Open source) to be used in order to better visualize the deformations in structures under different loading conditions to be dealt during tutorials. The course content was made extensive by inclusion of discussion on “Compound stresses”,

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Emphasis on application oriented problems as presented in the prescribed text book. Er. Satyanarayana indicated to include live examples like Hinge of the door,....

7. Manufacturing Processes: Explained by Dr. VNG and Dr. Burli on how the earlier two courses (MP-I and MP-II) have been combined into one course by removal of obsolete concepts. The Manufacturing lab course to augment to the theory learnt on Machining, Foundry Practices,... The CNC programming is part of the manufacturing lab – Simulation of the tool path / machining of the component drawing by writing the CNC programme using G and M codes. Er. Satyanarayan opined that the student should be able to write CNC Programme for the specified geometry of the component and should not be restricted to only simulation. He suggested the exploration on NC Simula/ Vericut , Uni-graphics(UG) would be a good tool for modeling.

8. Engineering materials: Heat treatment of materials (Chapter 5) and Ferrous and Non-Ferrous materials (Chapter 6) were suggested to be swapped as Chapter 6 and Chapter 5 respectively. Renaming of the Lab course “Engineering materials Lab” as “Engineering Material Testing Lab” was suggested

9. Engineering Design course: The Chairman briefed on the changes sought in the earlier existing theory course into a course with lab status with credit structure 0-1.5-1.5 for which the ESA would have a weight of 20% and ISA would contribute 80% weight. Discussions happened on how this course would be different from course “Engineering Exploration” prescribed at freshman level. The Chairman explained through the example of Washing machine how the conceptualization of Re-engineering is taught in this course. Er. Satyanarayana asked the mode of teaching “Reverse Engineering” in Engineering Design course- was it restricted only to borrowing the concept of a product or beyond? He opined that Re-engineering in true sense is realization of the product through an existing product by “reconciliation of design” by way of adding features that enhance the utility of existing product rather than mere copying of concept used in the product. Dr. Burli responded to the query by Dr. Nagesh as to: why the course should not be titled as “Product Design”? – The course does not include the aspects of Ergonomics and Aesthetics that are integral parts of Product Design and these concepts are not covered in this course. Er. Satyanarayana opined that the students should be given exposure to more than two tools for drafting and the entire Design process should be made “Software-tool Independent”- Move away from tool dependency and enable the student to become proficient in any tool given at his disposal. The committee found that the course could be renamed as “Engineering Design Practices” as it would mislead the relevance of subsequent course on Machine design and more over the course does not encompass the structural design aspects in its ambit.

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10. Discussions on 4th Semester: Engineering Thermodynamics/ Machine Design were reviewed without major remarks. The course on Machines and Mechanisms drew the attention of Er. Satyanarayan who questioned the inclusion of 'cams' for a 6 hour discussion in the said course. He questioned if the practical utility of cam as mechanism is still used in practice. Different members in the group shared their interpretations on cam as a mechanism for transmitting motion: Pr. C.N.S had to opine that cams are gradually being replaced by electronic control systems that perform a similar function but not using the mechanical linkages as a follower and cam but through electronic firing circuits. Pr. ACG expressed that cam is still relevant though it is gradually replaced by its electronics counterpart to perform the function of transmitting motion. Er. Satyanarayana strongly opined that the traditional cam mechanism has been superseded by the CNC technology and hence the curriculum could be redefined to have a basic understanding on different follower motions through "S-theta diagram" only sparing the extra hours for other recent trends.

11. Instrumentation and Control : Pr. CNS explained the evolution of this course through combination of Instrumentation and Control Engineering without sacrificing the relevance of each area by using MATLAB/Simulink/LABVIEW tools to substitute the manual plotting of BODE/ NYQUIST or other plots. ARDUINO is replacing 8051 processor ...Discussion on the Mechatronics lab was also made to highlight why CAM profile is relevant to mechatronics (possibly remove it as per the discussion made a short while ago). Dr. Basalalli sought for the clarification between Exercises and Structured Enquiry in relation to Mechatronics Lab - The Chairman clarified on the point. Dr. Basalalli also opined to have more number of Management related courses in the curriculum: Quality concept missing....

12. PG Programme (ESE/MD/PM) curricula were reviewed with only one observation made on correctness of title provided to the course Sustainable Building Design (Elective course-III sem 2015-17 and 2016-18 batch). The PG Co-ordinator explained the relevance of the course and it was suggested that the course title be changed to "Green building technologies" or " Application of sustainability concepts to building" or "Zero emission buildings".....The team also enquired on the placement opportunities to PG students

13. The Chairman briefed on the initiatives taken by the University in the field of promoting Computer assisted evaluation under the framework of OBE. The details on Departmental Research groups and Clusters with defined objectives and goals were also given as part of the Mechanical Engineering School Research initiatives. Dr. Basalalli opined that students who have registered under VTU Research centre should also be brought in the ambit of research activities.



15/4/2017

Minutes of the BOS Meeting in Mechanical Engineering

The meeting of the BOS in Mechanical Engineering was held on 15th April 2017 at 10.30am in the Senate Hall, KLE Technological University, Hubballi.

The meeting began with the Chairman welcoming the members of the BOS and other invited faculty and student members. The following agenda points were taken up for discussion.

Agenda 1:

Review of Actions initiated in the last meeting.

Resolution 1:

The actions initiated were reviewed and the minutes of the last meeting were confirmed. The Chairman shared the details of the discussions and action points arrived at during the meeting of the Industry Advisory Board held on 18-03-2017.

Agenda 2:

Discussion on the syllabus for students admitting to UG program of first year engineering during 2017-18

Resolution 2:

The syllabus of the courses 'Basic Mechanical Engineering' and 'Computer Aided Engineering Drafting' offered to students to be admitted to UG program of first year engineering during 2017-18 was discussed and approved with no changes.

Agenda 3:

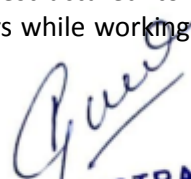
Discussion of the Curriculum Scheme (from III to VIII Sem.) and Syllabus (from III to VI Sem.) for students admitting to respective semesters of UG program in Mechanical Engineering during 2017-18

Resolution 3:

The curriculum schemes (from III to VIII Sem.) and Syllabus (from III to VI Sem.) for students to be admitted to respective semesters of UG program in Mechanical Engineering during 2017-18 was presented. The proposed changes in the credit structure to make laboratory as an integral part of a course wherever possible was elaborated. The chairman informed that the existing 'Mechatronics and Control Engg. Lab' at IV Sem. would be divided into 'Instrumentation and Control Engg. Lab' to be offered at III Sem. along with the theory course and the 'Mechatronics Lab' to be offered at the IV Sem. The change was necessary to have enhanced focus and help students adopt the concepts in their mini projects at the V Sem. Dr. S V Prabhu suggested to focus on building the experimental set-up by students themselves given the required material and the conceptual background knowledge, in these labs. He also suggested number of reputed text/reference books on Instrumentation and Control Engineering course. The change was appreciated and approved with a suggestion to modify the credit structure for the 'Mechatronics Lab' from 0-0-3 to 1-0-2 with course name as 'Mechatronics'. The curriculum schemes (from III to VIII Sem.) and Syllabus (from III to VI Sem.) for students to be admitted to respective semesters of the UG program in Mechanical Engineering 2017-18 was approved after detailed discussions.

The revised 'Engineering Design' syllabus was presented. The course was restructured to ensure students get enough time for interactions with users, experts and manufacturers while working on the




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design phase of product development cycle – identify, formulate and solve and also realize the product. The members from industry were in agreement with the modification while Mr. Veeresh Vastrad suggested to introduce a session on scheduling and resource allocation. This would help students realize the importance that the industry attaches to timeline and resources. Mr. S B Menon opined that appropriate templates might be designed and shared among students during the delivery to enhance the effectiveness of learning. 'Introduction of rubrics for assessment of students for having attained the competence in these design skills would be quite handy', added Mr. Prasanna Bhat.

Further, it was resolved to authorize the chairman to bring to the notice of the Dean (Academics) about the implications of revised credit structure for courses combining theory and laboratory courses and the printing of the corresponding details in the grade card to help understand better the employers and the institutes admitting for higher studies.

Agenda 4:

Review of PG programs and discussion of the Curriculum Structure and Syllabus for students admitting to PG programs in Energy Systems Engineering, Production Management and Machine Design programs during 2017-18

- a. Curriculum Structure from I to IV semesters
- b. Syllabus for I to IV semester

Resolution 4:

The curriculum and syllabus (from I to IV Sem) for students to be admitted to respective semesters of PG programs in Machine Design during 2017-18 were reviewed and approved after deliberations.

The suggestions to validate Finite Element results of few components using available closed form empirical relations or through available literature in **Modeling and Finite Element Analysis Lab** and in **fracture mechanics** a separate module on Dynamic and Time-Dependent fracture is introduced in place of non-destructive testing. Course contents are revamped in **research methodology** course in view of research writings. A separate module on advanced materials with macro mechanics of lamina is introduced in **Mechanical Behavior of Materials**.

The curriculum schemes (III and IV Sem.) and the syllabus (III and IV Sem.) for students to be admitted PG programs in Energy Systems Engineering for III and IV Sem. during 2017-18 were reviewed and approved after discussions.

New courses **Sustainable Building Design** and **Instrumentation and Control in Energy Systems** were suggested for inclusion in the 1st semester in view changes in renewable energy sector. Another new course **Economics and Planning of Energy conversion** proposed for 3rd semester highlight the latest aspects of energy conversion. The proposal was supported by external BoS member from Industry, S.B.Menon. The BoS approved the new courses suggested.

The Theme based **Mini-projects** are proposed to strengthen practice in Renewable Energy (Mini Project - 1) and Energy conservation (Mini Project -2). These courses ensure exposure to emerging trends in the discipline. The BoS members appreciated the initiatives for their unique learning opportunity to students and hence approved for implementation.

The curriculum schemes (III and IV Sem.) and the syllabus (III and IV Sem.) for students to be admitted PG programs in Production Management for III and IV Sem. during 2017-18 were reviewed and approved after discussions.

In view of changing Industrial scenario, a complete overhaul of Programme is proposed with focus being shifted to **'Manufacturing Technology and Automation'**. In view of this 15 new courses are proposed to align with the new proposed theme.




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The BoS members provided necessary inputs and approved the changes sought.

It was also resolved to authorize the chairman to communicate to the Dean (Academics) about the following two issues raised by the members to help strengthen the learning of students.

- a. Introduction of one core course on mathematics at the I semester
- b. The major project should be of one year duration (spread over both III and IV semesters)

Agenda 5:

Discussion on industry assisted elective on 'Fundamentals of Gas Turbines'

Resolution 5:

The syllabus of the elective course on 'Fundamentals of Gas Turbines' was deliberated on and approved for offer to students of 7th Sem. A reputed company 'QuEST GLOBAL SERVICES PTE LTD' – *a pioneering leader in mechatronic engineering services and solutions* was to assist the department in offering the course by engaging about 25% of classes focusing industry perspective and relevance.

Agenda 6:

Discussion on a minor in 'Automotive Engineering' – a program to be offered from Even Sem. of 2017-18

Resolution 6:

The increasing growth and potential in the automotive sector and the support by the central government to the automobile manufacture industry are expected to generate more opportunities for students both in the areas of research and the employment. In order to prepare the students of Mechanical engineering to make the best use of this opportunity, it was proposed to offer a minor program in Automotive Engineering. It would be a 15 credit program to be offered to students as they enter into IV Sem. and to be completed before they join VII Sem. It would be an extensive hands-on program with students from any engineering discipline in the University were eligible to register for the program. The concerned faculty team offering the program would decide the criteria for student registration. The Board appreciated the opportunity that was being created to students and recommended to extend the benefits of this program to the current IV Sem. batch (2016-17) itself by offering two courses in the summer semester instead of one course as a special case.

Agenda 7:

Review of OBE framework

Resolution 7:

The status of OBE implementation was reviewed. The Vision, Mission, Program Educational Objectives (PEO) and Program Outcomes (PO) were also reviewed for their relevance. The school came up with revised Vision, Mission and PEOs as it was necessary to align the same with the University Vision and Mission. And PEOs were to be aligned with the revised Vision and Mission of the school. The Chairman presented the revised Vision, Mission and PEO statements of the school (*Annexure 1*), which were prepared after several rounds of discussion with the faculty members. The industry and alumni inputs were also taken before revising the Vision, Mission and PEOs. The Board appreciated the whole exercise and approved.

Agenda 8:

Student Performance




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School of Mechanical Engineering

Resolution 8:

The results of I and II semester students in the courses offered by the School were presented. Also the results of 3rd semester students were presented. The grade distribution was deliberated. The Board opined that the student performance in individual courses at the III semester was satisfactory (>85%) but the overall result (66% pass) was an area of concern and the efforts should be made to identify the causes and suitable actions.

The placement data for the erstwhile BVBCET batch was presented. The members expressed the satisfaction over the no. of students getting on-campus placement, however informed the challenges and efforts to be made to place more no. of students in the new University structure.

Agenda 9:

Research progress

Resolution 9:

The research progress in the last one year was presented. The research candidates, being the first batch under the University were engaged in the course work during the year.

Agenda 10:

Any other matter with the permission of the chair

Resolution 10:

There were no other points for discussion.

The board empowered the chairman to revise/modify the curriculum structure and syllabus wherever required, if the circumstances so demand and the same could be ratified in the next meeting.

The meeting was concluded with vote of thanks by the Chairman.

Annexure I

Vision of the School

KLE Tech -School of Mechanical Engineering will be a national leader in mechanical engineering education -recognized for innovative culture, outstanding research and societal outreach.

Mission of the School



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School of Mechanical Engineering

- To offer programs in an engaging and experiential learning environment, preparing students for success in their lives and professional careers.
- To engage in disciplinary and inter-disciplinary research that is aligned to areas of national importance and priority.
- To contribute to socio-economic development of the region for enhanced quality of life.

KLETech School of Mechanical Engineering shall accomplish its mission by working in a team, with the spirit of collaboration and partnership.

Program Educational Objectives

The program educational objectives of the Mechanical Engineering program describe accomplishments that graduates are expected to attain after 3 to 5 years of graduation.






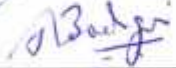








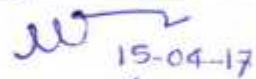

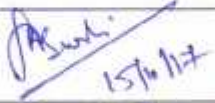

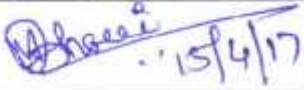



1. Graduates will demonstrate technical competence in mechanical engineering domain as they apply problem solving skills to conceive, analyze, design and develop products, processes and systems.
2. Graduates will actively embrace leadership roles and strive hard to achieve professional and organizational goals with adherence to professional and ethical values, team expectations and sensitivities of cultural diversity.
3. Graduates will be committed to practice of engineering in industry and government organizations meeting the growing expectations of stake holders and also contribute to the societal development.
4. Graduates will actively participate in on-going professional development opportunities, engage in continuous updating and adapting core knowledge and abilities to compete in the ever-changing global enterprise and pursue new career opportunities.

The following members were present.


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School of Mechanical Engineering

B B Kotturshettar, Chairman - 	
Members	
N Nagesha -	P P Revankar - 
S V Prabhu - 	V N Gaitonde - 
S M Murigendrappa - 	Anil Badiger - 
Somashekhar Hiremath -  15/4/2017	K G Kodancha -  15/4/2017
Veeresh Vastrad - 	Ravi Guttal - 
Prasanna Bhat -  15/4/17	Shrinidhi S Kamat - 
S B Menon -  15/4/17	Pavan M Desai - 
N R Banapurmath -  15-04-17	Vishnu Naik -  Nayak Naik
S B Burli -  15/4/17	Malagouda Patil -  M.S. Patil
P M Bhovi -  15/4/17	Sushruth Halewadimath -  (Sushruth S. Halewadimath)
V N Sanagoudar 	Aditya Deshpande - 




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07-04-2018

Minutes of the BOS Meeting in School of Mechanical Engineering

The meeting of the BOS in Mechanical Engineering was held on 7th April 2018 at 10.30am in the Office room of the School Head, Mechanical Engineering, KLE Technological University, Hubballi.

The meeting began with the Chairman welcoming the members of the BOS and other invited faculty and student members. The following agenda points were taken up for discussion.

Agenda 1:

Review of actions initiated in the last meeting.

Resolution 1:

The actions initiated in the previous BOS held on 15th April 2017 were reviewed and minutes of the last meeting were confirmed.

The action taken report was presented. The Chairman indicated that the M. Tech - Program Curriculum structure inhibited from utilizing the complete 3rd and 4th semester duration for Major Project on account of AICTE requirement of compulsory courses during 3rd semester of the PG Programme.

The Chairman presented the key discussion points and the following action identified from the meeting of the Industry Advisory Board held on 17-03-2018.

Agenda 2:

Discussion of Curriculum Scheme and Syllabus of VII & VIII sem. to be offered during 2018-19

Resolution 2:

The Programme Elective *Computational Fluid Dynamics* course content to be reframed to focus on software tool usage rather than focus on code generation for solution of Fluid flow problems. The prescribed books also to be relooked into.

The course titled *Thermal Management of Electronic Equipment* to be changed to *Heat Transfer Augmentation* to enhance its scope to applications in Compact Heat exchanger and Gas turbine blade cooling apart from electronic gadgets. The suggested authors for the course material included *R L Webb, Ekart and Goldwinto* provide better insights in the domain.

Inclusion of basic concepts of *Automatic Motor Transmission* in Automotive System Design course was indicated in view of recent Automotives adopting this new technology.

The courses *Project Life Cycle Management (PLM)* and *Advanced Computer Aided Engineering (CAE)* introduced as niche verticals in view of employment potential in engineering services sector was highly appreciated and approved for implementation.

The inclusion of basic thermodynamic concepts in the Open Elective course- *Engine Management System* was suggested to give a clarity to students on constraints in Engine design.


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School of Mechanical Engineering

The new courses *Turbo Machines* suggested by Prashant Marikatti and *Modern Trends in Manufacturing* suggested by N Nagesh were discussed at length and introduced in Thermal and manufacturing verticals respectively in view of employment potential. Inclusion of standards Occupational Health and Safety Management (OHSAS)-ISO 18001 and Environmental Management Certification-ISO 14001 in *Modern Trends in Manufacturing* course suggested.

To adopt analytical approach in delivery of course content wherever possible would help students get better insights in the concepts taught.

Agenda 3:

Review of Syllabus of lower semesters

Resolution 3:

The Chairman presented the revised structure of **Minor Project**. The revision was necessitated based on the feedbacks received from the Students, Alumni and teachers. The highlights of the change were: Increased emphasis on usage of modern tool by enhancing hands-on experience with due focus on selection and application of various techniques and resources to solve the stated problem that would help students understand the strengths and limitations of such tools. An approach of Design-Build-Control introduced would help students understand the integration challenges (Hardware and software) of both – interrelated steps and the different technologies in realizing product as a system. It would also address awareness among students on engineer's role to identify and solve several societal issues demonstrated through selection of appropriate socially relevant problem statement for their project courses.

The allotment of two additional credits (0-0-2) for **Product Realization course** (offered in even sem 2017) – a second phase of *Engineering Design* course at 3rd semester was approved. The *CAD Modelling* course laid foundation to subsequent courses on *PLM* and *CAE* that were designed to foster better employability in engineering services sector. All these courses were appreciated and approved for implementation.

Agenda 4:

Review of Syllabus of PG programs

Resolution 4:

The 3rd and 4th semester course content M.Tech (*Machine Design, Production Management, Energy Systems Engineering*) of 2017-19 batch were approved for implementation.

1st to 4th semester Curriculum Structure of PG Programmes of 2018-20 batch was presented for discussion

Machine Design Program Curriculum has introduced **CAD Modelling Lab** (0-0-5) in 1st semester and **Computer Aided Engineering Lab** (0-0-3) in 2nd semester to improve student employability. These changes were approved for implementation.

The *Energy Systems Engineering* Programme curriculum structure was approved for the changes introduced in view of promoting experiential learning and student employability.

School of Mechanical Engineering

The courses **Renewable Energy Systems** and **Energy Management** (1st semester) are revised to bring into practical aspects associated in renewable energy systems. In light of growing importance to carbon credit, a new chapter on Carbon trading has been introduced in Energy Management course.

The four new lab courses **Energy System Lab / Industrial Instrumentation and Control Lab** (1st semester) and **Modelling and Simulation Lab / IoT based Living space Lab** (2nd semester) were introduced to develop research competence and Industry readiness to enhance employability. The course on *Energy Audit Practices* introduced with emphasis to make it practice intensive.

All the changes were ratified with due appreciation to the initiatives by external BoS members.

The Curriculum Structure of *Production Management* was revamped for extensive focus on **Product Lifecycle Management (PLM) and Enterprise Resource Planning (ERP)** to facilitate better student employability in Engineering Services Industry. The total of **17 new courses** were proposed to align with present Industry needs and to enhance employment readiness to meet the expectations of potential Industry partners. The changes made were approved by the BoS members

Agenda 5:

Status of Minor Programs

Resolution 5:

The status of *Innovation and Product Development, Automotive Engineering*- Minor Programs was reviewed and endorsed by the BOS.

The Curriculum structure of the Minor Program - *Bio-Engineering*, was discussed and ratified with following observations.

Physiology and Anatomy course syllabi may be designed in the following perspective:

Pure Biological concepts (50% weight) + Bio-Engineering (25% weight) + Linking through lab (25% weight)

The Curriculum structure of the proposed Minor in *Advanced Manufacturing for Aerospace Applications* was discussed and endorsed with following observations.

Appreciation to KLETU Management for purchasing *DMG Mori 3-Axis Vertical Machining Centre* worth Rs.1.10 crore to support the Minor in *Advanced Manufacturing for Aerospace Applications*.

Agenda 6:

Student Performance

Resolution 6:

The student performance in UG and PG Programmes were discussed and approved

Agenda 7:

Research progress



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Resolution 7:

The performance of research scholars under KLETU Research Centre were reviewed and approved. It was suggested to actively continue research initiatives taken by the School.

Agenda 8:

Review of OBE framework of the School

Resolution 8:

The Outcome Based Education initiatives and the attainment of Program Outcomes along with Program Specific Program outcomes were closely reviewed and appreciated. The PEOs and POs were also reviewed for their relevance and approved for continuation.

Agenda 9:

Any other matter with the permission of the chair- The social connect initiative by the faculty of School of Mechanical Engineering

Resolution 9:

Biomass Energy And CONservation(BEACON)- *a strategic initiative to utilise the biomass to generate energy, and improve livelihoods* undertaken by Faculty of the School was appreciated as a good move towards contributing to a social cause and uplift of farming community.

The board empowered the chairman to revise/modify the curriculum structure and syllabus wherever required, if the circumstances so demand and the same could be ratified in the next meeting.

The meeting was concluded with vote of thanks by the Chairman.

The following members were present.



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School of Mechanical Engineering

B B Kotturshettar, Chairman - 

Members


N Nagesha - 


P P Revankar - 

S V Prabhu - 


V N Gaitonde - 

Prashant Marikatti - 

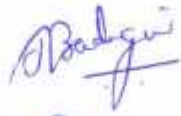
S B Burli - 

Prasanna Bhat - 

P M Bhovi - 

N R Banapurmath - 


Ravi Guttal -


Anil Badiger - 

Shrinidhi S Kamat - 

K G Kodancha - 

Jyotiba Ashok Jadhav - 

V N Sanagoudar - 

Sameeksha Shetty - 

Ashwini Hiremath -

Manohar Pattar - 

Sushruth Halewadimath -




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13-04-2019

Minutes of the BOS Meeting in School of Mechanical Engineering

The meeting of the BOS in Mechanical Engineering was held on 13th April 2019 at 10.00am in the Office of the School Head, Mechanical Engineering, KLE Technological University, Hubballi.

The meeting began with the Chairman welcoming members of the BOS and other invited faculty and student members. The following agenda points were taken up for discussion.

Agenda 1:

Review of actions initiated in the last meeting.

Resolution 1:

The actions initiated in the previous BOS held on 7th April 2018 were reviewed and minutes of the last meeting were confirmed.

The action taken report presented to the board was approved by the members.

The Chairman informed the members about the Industry Advisory Board meeting held on 23rd March 2019 and presented the salient features which would be considered during the meeting.

Agenda 2:

Review of Syllabus of UG program

Resolution 2:

The School Head presented the curriculum changes for UG program.

Board reviewed and appreciated the Program syllabi for its flexibility with respect to student learning and enhancing employability prospects. The Mechatronics and Control Engineering courses were suggested revisions in terms of re-allotment in number of teaching hours and suitable pedagogical interventions in delivery.

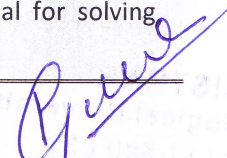
The study on sensor - 1st order/2nd order/steady/transient response to be investigated in detail while electronic concepts related to interface design may be restricted to introductory level. Electro-mechanical actuators can be given more emphasis, selection of AC/DC drives, Pneumatics can be part of Control/ Mechatronics study.

Revisions were also suggested in the course on 'Finite Element Methods'. Revisions to the existing curriculum were focused on post processing techniques in software tools and data acquisition for experimental validation. To cover the case studies pertaining to industrial field issues, numerous examples were included in the curriculum. The associated lab introduced with complex engineering challenges as exercises. Further, the students were expected to publish papers on their laboratory work.

The course CAD Modelling and PLM (2-0-2) introduced with 15hr/week hands-on immersive training experience, with a focus on Exposure to system building from components/sub-systems. Emphasis on 2D, 3D drafting, generation of BOM, GD&T, exploded view and rendering features was increased. Also, included Product development and Reverse Engineering as an extension to create industry-like learning environment through virtual Projects (Mini Project).

The experts from Mathematics suggested modifications in 'Numerical Methods and Partial Differential Equation' course: Python programming was introduced as a tutorial for solving engineering problems to help students get better insight.




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The courses Machine Drawing and Manufacturing Processes II were introduced in place of Engineering Design & Product Realization which was to become the theme of Minor Project. The members approved the change.

The courses *Advanced Statistics and Machine Learning* and *Machine Learning Applications* introduced as niche verticals in view of job prospects in engineering services sector was highly appreciated and approved for implementation.

The verticals on E-Mobility elective were introduced after consultations with experts from Altair - *Vehicle Structure and Design Optimization* and *Dynamics & Durability of Vehicles*. The external members both from academia and industry were in alignment in approving the courses for implementation as the field is upcoming both for entrepreneurship potential and employability.

Another elective course on Applications of Vibrations and acoustics was introduced after extensive interaction with M/s Josts – a leading company in the field of NVH. The BOS approved the course for implementation.

The Industry internship/project during 8th sem to ensure a longer duration Industrial contact for students leading to their employability was approved for implementation.

The scheme and curriculum from 1st sem to 8th sem for respective admission batches was approved.

Agenda 3:

Review of Syllabus of PG program

Resolution 3:

The Machine Design/Production Management/Energy Systems Engineering M.Tech. Programs were provisioned longer industry stay for students with entire 3rd sem for Industrial training/project got BOS approval.

The course **Computational Methods in Engineering Analysis** for MD /ESE Programmes was approved with suggestions to have concepts of statistics, probability and random events.

In Machine Design Programme, Thermal stress module has been introduced in **Mechanics of solids** course to focus on thermo elastic stress-strain relations of thin circular disk, long circular cylinder, and straight beams.

The Energy Systems Engineering Programme proposed a new course titled **Economic aspects of Energy conversion** to cover economic aspects of energy conversion. The changes were approved with suggestion to give due stress on analytical aspects.

The Production Management Programme proposed a course on **Research Methodology** with orientation towards research practice covering research techniques and statistical tools. The change has been appreciated and approved by BoS members.

To enhance employment opportunities to graduating students a thorough hands-on experience on PLM/ERP tools is essential, therefore Mini Project course was introduced at the 2nd semester.

The practice oriented initiative was duly appreciated and approved.

The curriculum scheme and structure from 1st sem to 4th sem for respective admission batches was approved.

Agenda 4:

New initiatives

Resolution 4:

The initiatives to help student learn and acquire niche skill sets in *Product Lifecycle Management (PLM)* (6 credit, 2 elective, 160 hr), *Advanced CAE* (6 credit, 2 elective, 160 hrs) and minor program

Handwritten signature

– *Advanced Manufacturing for Aerospace Applications* (15 credit, 5 course, 320 hrs + Project at AEQUS campus), were three verticals that resulted in 45 student placements. (Recruitment orders expected by last week of May 2019).

Employment Initiatives for Production Management PG program through revamped curriculum with focus on PLM and ERP to facilitate student employability in Engineering Services Industry.

The School is working on other potential verticals for UG program in *Machine Learning*, *E-mobility* and *Digital Twin*, the detailed syllabi will be shared with BOS members through email for approval.

The collaborative efforts being made by the School with the Dassault Systems, Altair, Bosch and AEQUS in designing the niche verticals was appreciated by the members.

The new initiatives and the efforts by the faculty members were encouraged.

Agenda 5:

Status of Minor Programs

Resolution 5:

The status of all four minor programs - *Innovation and Product Development*, *Automotive Engineering*, *Bio-Engineering* and *Advanced Manufacturing for Aerospace Applications* was presented.

The status of Minor Programs was reviewed and endorsed by the BOS.

Agenda 6:

Student Performance

Resolution 6:

The student achievements in curricular, co-curricular and extra-curricular activities were presented. The experiential and contextualized learning opportunities created by the School in various courses helped students perform consistently in their regular academics and acquire the relevant technical and professional skills. Students' engagement in research was visible through their active participation in REU course leading to many publications, one of which has won 1st prize in an international conference. A team of students has won prestigious All India National Meritorious Invention Award for their product 'Smart FOB' under the category 'National Budding Innovators' organized by NRDC and Ministry of Science & Technology, successively second time with a prize money of Rs. 1,00,000/-. The Motor Sports club participated in SAE India E-BAJA, M-BAJA and SUPRA competitions and won no. of awards. A team of aeroKLE – an aero modelling club participated first time in National level SAE India Aero Design Challenge 2018 competition and got All India 8th Rank.

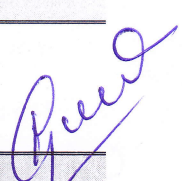
The overall student performance in UG and PG Programmes were discussed and approved.

Agenda 7:

Review of Research progress

Resolution 7:

The on-going research activities in the School, publication and citation details and patents filed by the faculty were discussed. The initiative at KLETU Research Centre to promote an inclusive


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research through SRG, ERG and ERS group was presented with special focus on REU and REEF courses.

The members reviewed and approved the proposed initiatives with suggestion to actively continue research.

Agenda 8:

Review of OBE framework of the School

Resolution 8:

The OBE initiatives and attainment of Program Outcomes along with Program Specific Program outcomes were closely reviewed and appreciated.

The PEOs and POs were also reviewed for their relevance and approved for continuation.

Agenda 9:

Initiative for attainment of key results

Resolution 9:

The School initiatives in alignment with University guidelines to enhance operational efficiency were presented.

The four objectives and the key results (OKRs) were approved with due appreciation to the efforts made.

Agenda 10:

Any other matter with the permission of the chair

Resolution 10:

The changing placement scenario for mechanical engineering students was discussed in the backdrop of IT companies not hiring non-IT graduates from the current year. The expectation of niche skill sets by core companies has prompted the school to identify industry relevant verticals to get the students employed. In the process a dilemma in curriculum design arises that should imbibe niche skill sets without compromise on fundamental concepts. The members cited similar experiences and suggested incremental mode of growth was relevant in present context as practiced by the school. At no point of time, emphasis on fundamental core courses should be diluted, the members opined.

The board empowered the chairman to revise/modify curriculum structure and syllabus wherever required, if circumstances so demand and the same could be ratified in the next meeting.

The meeting was concluded with vote of thanks by the Chairman.

Enclosed:

1. UG Program – Structure and Syllabus

- i. 2016 - 2020 batch
- ii. 2017 - 2021 batch
- iii. 2018 - 2022 batch
- iv. 2019 - 2023 batch


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2. PG Program – Structure and Syllabus

- i. Production Management
 - a. 2018 – 2020 batch
 - b. 2019 – 2021 batch
- ii. Energy Systems Engineering
 - a. 2018 – 2020 batch
 - b. 2019 – 2021 batch
- iii. Machine Design
 - a. 2018 – 2020 batch
 - b. 2019 – 2021 batch

3. Minor Program

- i. Innovation and Product Development
- ii. Automotive Engineering
- iii. Bio-engineering
- iv. Advanced Manufacturing for Aerospace Applications

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Members of BOS in Mechanical Engineering

S.No.	Name	Profession	Full Postal Address	Position	Signature
1.	B B Kotturshettar	Professor & Head of the School/ Department	Professor & Head, Mechanical Engineering	Chairman	
2.	N R Banapurmath	Professor, Dean's nominee	Professor, Mechanical Engineering	Member	
3.	S B Burli	Associate Professor Dean's nominee	Associate Professor, Mechanical Engineering	Member	
4.	P M Bhovi	Assistant Professor Dean's nominee	Assistant Professor, Mechanical Engineering	Member	
5.	Dr. Nagesha N.	Subject expert from outside the college nominated by the Vice-Chancellor	Professor, Department of studies in Industrial and Production Engineering, University B D T College of Engineering, Davangere	Member	
6.	Dr. S V Prabhu	Subject expert from outside the college nominated by the Vice-Chancellor	Professor Department of Mechanical Engineering, Indian Institute of Technology, Bombay. Professor, Indian Institute of Technology, Dharwad	Member	 13/4/19
7.	Veeresh Vastpad Bashant Marikatti	Representative from industry corporate sector/ allied area relating to placement nominated by the Vice-Chancellor	Principal Engineer Quest Global, Belgaum	Member	 13/04/19
8.	Dr. Prasanna G Bhat	Representative from industry corporate sector/ allied area relating to placement nominated by the Vice-Chancellor	General Manager, Powertrain Engineering, The Automotive Research Association of India, S.No. 102, Vetal Hills, Off Paud, Kothrud, Pune	Member	 13/04/19

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S.No.	Name	Profession	Full Postal Address	Position	Signature
9.	S B Menon	Post-graduate meritorious alumnus nominated by the Vice-Chancellor	CEO Unique Circle Group, Pimpri Chinchwad, Pune	Member	
10.	<i>Student Representatives</i>	Student Member representing each of the program offered by the Department/ School/ Center	<i>Program Details</i>	Student Member	
	Manjunath Hlremath		UG		
	Shravya M.Sanu		UG		
	Girish Karikatti		PG-MD		
	Ashwini Hlremath		PG_ESE		
	Faraz Mueen Mulla		PG-PM		
	Sushruth Halewadimath		Ph.D		
11.	P P Revankar	ONE Senior faculty member nominated by the concerned Head of the Department/ School/ Center	Associate Professor, PG-Energy Engineering	Member Secretary	
12.	Dr. Murigendrappa	Invitee	Associate Professor, National Institute of Technology Karnataka, Surathkal	Member	
13.	Dr. Anand Ramani	Invitee	Subject Matter Expert and Head of CAE KPIT Technologies Ltd., Bangalore F-016 Gopalan Habitat Splendour Brooke fields, Kundalahalli	Member	
14.	Vijaykumar R	Invitee	General Manager, Mechanical Engineering Robert Bosch Engineering and Business Solutions Pvt. Ltd., Campus 1B, Ecospace, Bangalore	Member	
15.	Prof. S. Gopalakrishnan	Invitee	Assistant Professor Dept. of Mechanical Engineering Indian Institute of Technology Bombay	Member	



S.No.	Name	Profession	Full Postal Address	Position	Signature
16.	K G Kodancha,	Invitee	Professor, PG-Machine Design	Member	
17.	V N Gaitonde	Invitee	Professor, PG-Production Management	Member	
18.	V N Sanagoudar	Invitee	Associate Professor, Mechanical Engineering	Member	

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