

Department of Mechanical Engineering

Board of Studies Meeting-Held on 26th July 2019

Minutes of Meeting

The following members were present in BoS Meeting.

1. Dr. S. N. Satapathy, HOD, SOME, GU, Chairperson *Sat*
2. Prof. Pradeep Kumar, Pro Vice Chancellor, GU, Special Invitee
3. Dr. Arvind Gupta, YMCA Faridabad, External Expert *Arvind*
4. Mr. Sanjeev Gupta, Honda Siel, Industry Expert *Sanjeev*
5. Dr. P. K. S. Nain, Professor, SOME, GU, Member. *P. Nain*
6. Dr. B. P. Agarwal, Prof., SOME, GU, Member *B. Agarwal*
7. Dr. P. Mathiyalagan, Prof, SOME, GU, Member *P. Mathiyalagan*
8. Dr. Harshdeep Sharma, Prof, SOME, GU, Member *Harshdeep*
9. Dr. P. Tamilchilvan, Prof, SOME, GU, Member *Tamilchilvan*
10. Dr. P. Suresh, Prof., SOME, GU, Member *P. Suresh*
11. Dr. Sudhir Kumar Singh, Asso Prof, SOME, GU, Member *Sudhir*
12. Dr. Swet Chandan, Asso Prof, SOME, GU, Member *Swet Chandan*
13. Dr. S. Kennedy, Asso Professor, SOME, GU, Member *S. Kennedy*
14. Dr. M. Maniraj, Asso Professor, SOME, GU, Member *Maniraj*
15. Dr. Gagnesh Sharma, AP, SOCH, GU, Member *Gagnesh*
16. Mr. Trinath Mahala, AP, SOME, GU, Member *Trinath*
17. Mr. S. Anivel AP, SOME, GU, Member *Anivel*
18. Mr. Kaushalendra Kumar Dubey AP, SOME, GU, Member *Kaushalendra*

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The Following changes were recommended by the Industry and Academic external experts:

Specific suggestions regarding Program:

In order to promote higher order thinking in the students, it has been decided at university level that the activity-based learning needs to be strongly promoted in the UG and PG curriculum, for this the activity-based learning should be linked to research based topics which pertains to recants developments in course area should be included as a new unit in every course. the very basic foundation and general engineering courses can be omitted in this case.this additional content should be labeled as unit 6 in each course and it should be approximately of 7-8 hours of duration. the evaluation if this activity-based learning should be mapped to new blooms taxonomy level 5 and 6. The presentation of the activity-based learning should also be part of evaluation

Specific suggestions for running courses (In B. TECH ME)

- 1) BTME2012 (Mechanics of Materials laboratory) include New experiments and 40% experiments should be performed in VLAB Mode.
- 2) BTME3001(Applied Thermodynamics I) course include the topic effect of temperature on standard heat of reaction, heat of formation, Adiabatic flame temperature. Chemical equilibrium and equilibrium composition calculations using free energy in unit II
- 3) BTME3002 (Kinematics of Machines) include Kennedy Theorem, Klein's Construction; Shaping machine mechanism, Approximate analytical expression for displacement, velocity and acceleration of piston of reciprocating engine mechanism. in unit II.
- 4) In BTME3067 (Refrigeration and Air Conditioning), include Primary and secondary refrigerants, Designation of Refrigerants,Desirable properties of refrigerants including solubility in water and lubricating oil, material compatibility, toxicity, flammability leak detection, cost, environment and performance issue in unit I.
- 5) In BTME3008 (Dynamics of Machines) include in course Short shoe brakes, Pivoted shoe brakes, Long shoe brakes,Band brakes, Different types of Dynamometers.in the unit II .
- 6) BTME3013 (Machine Design (PBL)) add the Design complex component by using highly advanced software and analytical tools. design of wind mill, Analyze the engineering problems critically and apply the knowledge of engineering to get the solutions.in PBL-5.
- 7) BTME4001 (Energy system and Technologies) add the topic Solar thermal – Flat plate and concentrating collectors –Solar heating and cooling techniques –Solar desalination – Solar Pond ,Solar cooker in unit 5.

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- 8) BTME 4005 (Optimization Techniques and Application) include -Response surface methods in optimization, orthogonal arrays, stochastic optimization methods, Evolutionary algorithms in optimization-genetic algorithm in the unit IV syllabus.
- 9) BTME4003 (Energy System Lab) New experiments and 30% experiments should be performed in VLAB Mode
- 10) BTME3009(CAM and Automation) include Process Planning: Basic concepts of process planning, computer aided process planning (CAPP), Retrieval or variant and generative approach of CAPP, Implementation consideration of CAPP in unit V.
- 11) BTME3051(Automobile engineering) include Steering mechanisms, types of brakes and brake actuation mechanisms in unit IV.
- 12) BTME2009(Fluid mechanics)in PBL mode.
- 13) BTME2005(Machine Drawing Laboratory) (in PBL mode)
- 14) BTME3022(Sensors and transducer) include Amplification – Filtering – Sample and Hold circuits – Data Acquisition: Single channel and multichannel data acquisition – Data logging – applications – Automobile, Aerospace, Home appliances, Manufacturing, Environmental monitoring in unit II.
- 15) BTME3003(Heat and mass transfer) remove the topics mixed convection, dimensional analysis, boundary layer theory, inclined and horizontal surface from unit III.

Specific suggestions for running courses (In B.TECH AUTO)

- 16) BTME2005(Machine Drawing Laboratory) (in PBL mode)
- 17) BTME2009(Fluid mechanics)PBL mode
- 18) BTME3022(Sensors and transducer) include include Amplification – Filtering – Sample and Hold circuits – Data Acquisition: Single channel and multichannel data acquisition – Data logging – applications – Automobile, Aerospace, Home appliances, Manufacturing, Environmental monitoring in unit II.
- 19) BAUT3001(Automotive Engines) include Wankel engine and variable compression engine and remove thermodynamics of engine from unit 1.
- 20) BAUT3002(Heat Engineering) include surging, choking and stalling within Axial Flow compressors
- 21) BAUT3004(Automotive Chassis and Body Engineering) course, include factors influencing operation of brakes and remove Ackermann steering mechanism from unit 3





- 22) In BTME3008 (Dynamics of Machines) course include Short shoe brakes, Pivoted shoe brakes, Long shoe brakes, Band brakes, Different types of Dynamometers. in the unit II .
- 23) BAUT3005(Automotive Transmission Systems) course include modern electric drive for buses; performance characteristics.
- 24) BAUT4001(CAD/CAM) include CAM and Industry 4.0
- 25) BTME 4005 (Optimization Techniques and Application) include include -Response surface methods in optimization, orthogonal arrays, stochastic optimization methods, Evolutionary algorithms in optimization-genetic algorithm in the unit IV syllabus.
- 26) BAUT4006(Pollution control and Lubrication Engineering) include the pollution control using catalyst in automobiles.
- 27) BAUT4004(CAD/CAM Laboratory) include 20% experiments VLAB MODE .
- 28) BTME3007(Machine Design) include Design of wind mill in unit IV.
- 29) BTME3002 (Kinematics of Machines) include Kennedy Theorem, Klein's Construction; Shaping machine mechanism, Approximate analytical expression for displacement, velocity and acceleration of piston of reciprocating engine mechanism. in unit II.
- 30) BTME3021(Applied Thermodynamics I)course include the topic effect of temperature on standard heat of reaction, heat of formation, Adiabatic flame temperature. Chemical equilibrium and equilibrium composition calculations using free energy in unit II

Specific suggestions for running courses(In M.TECH AUTO)

- 31) MAUE5001(Automotive Engine & Emission) include Simulation of automotive emission control systems in unit V.
- 32) MAUE5005(Automotive Vehicle Dynamics) include Curvature response & Directional stability, jack-knifing in articulated vehicle, loading of automobile chassis due to road irregularities, comfort criteria, load transferred while braking and cornering, equivalent weight of vehicle in unit IV.
- 33) MAUE5004(Chassis and body engineering) include Metal sheets (Steel, Aluminum etc.), plastics, timber, GRP, FRP, Insulating materials, adhesives and sealants. Wind screen, Back light & window Glasses and regulations for glasses. Selection of paint and painting process in unit II.
- 34) MCDM5006(FEM)include Piece-wise Continuous trail functions

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- 35) MAUE5008(Computational Fluid Dynamics) include The basic structure of a CFD code: Pre-processor, solver and Postprocessor, User-defined subroutines, Solution to some basic problems in heat transfer and fluid flow in unit III.
- 36) MAUE5007(Combustion Engineering)include Policy Considerations for Combustion Engineering in unit I.

Specific suggestions for running courses(In M.TECH CAD/CAM)

- 37) MCDM5004(Product Design and Life Cycle Management) include topics Key Management Issues around Product Data and Product Workflow, The PLM Strategy, Principles for PLM strategy, Developing a PLM strategy, Strategy identification and selection, Change Management for PLM in unit V.
- 38) MCDM5007(Computer Integrated Manufacturing) include topics Logical Design of a Process Planning - Implementation considerations - manufacturing system components, production Volume, No. of production families - CAM-I, CAPP, MIPLAN, APPAS,AUTOPLAN and PRO, CPPP in unit IV.
- 39) MCDM5005 (Advanced Computer Aided Design)IncludeMathematical representation surfaces, Surface model, Surface entities surface representation, parametric representation of surfaces, plane surface in unit V.
- 40) MCDM5003(Advanced Manufacturing Technology) Include ECDM- its principle, Mechanism of material removal in ECDM, triplex hybridization in unit IV.
- 41) MCDM5002(Advanced Materials and Processing) include super Alloys; Alloy design, Microstructure and Properties in unit V.
- 42) MCDM5006(FEM) include Piece-wise Continuous trail functions in unit IV.

Introduction of new courses and contents:

- 43) A course like Basic Mechanical Engineering should be designed (that include the key topics of mechanical engineering courses like engineering mechanics, Materials, thermodynamics etc) and should be offered to all engineering branches student as a compulsory course.
- 44) New courses skill/Entrepreneurship/ Employability based should be offer to students either core courses or elective one.
- 45) A course on “Electric Vehicles” should be introduced either core or elective as per new market trend in automobile sector.


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List of New courses Introduced-

S. No.	Program	Course Name	Course Code
1	B.Tech/B.Tech (Hons) Mechanical Engineering	Professional Communication Lab	BHS251
2	B.Tech/B.Tech (Hons) Mechanical Engineering	Design and Innovation	BOC253
3	B.Tech/B.Tech (Hons) Mechanical Engineering	Artificial Intelligence and Applications	BTME2021
4	B.Tech/B.Tech (Hons) Mechanical Engineering	Excel, PPT Training and Hobby class	BTME2023
5	B.Tech/B.Tech (Hons) Mechanical Engineering	Mechatronics	BTME3016
6	B.Tech/B.Tech (Hons) Automobile Engineering	Professional Communication Lab	BHS251
7	B.Tech/B.Tech (Hons) Automobile Engineering	Design and Innovation	BOC253
8	B.Tech/B.Tech (Hons) Automobile Engineering	Artificial Intelligence and Applications	BTME2021
9	B.Tech/B.Tech (Hons) Automobile Engineering	Excel, PPT Training and Hobby class	BTME2023

The syllabi and curriculum for All Program has been discussed and same has been approved for the Scheme (2019-20).

The syllabi and curriculum of scheme (2019-20) for First year has been discussed and same has been approved by Dean First year.

The meeting ended with vote of thanks by the chair, BOS.


HOD/Incharge
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