



Hindusthan

College of Engineering and Technology
Coimbatore-641032

DEPARTMENT OF AUTOMOBILE ENGINEERING

Date:02.06.2023

ELEVENTH BOS MEETING MINUTES

The Eleventh BOS meeting of regulation R2022 and R2019 for the academic year 2023-2024 was conducted on 02.06.2023 in hybrid mode (online using Google Meet) and offline in Automobile department seminar hall). The objective of the meeting was to discuss the curriculum and syllabi for R2022 for Thirdsemester and R2019 with all professional elective courses, open 2elective courses and newly added courses.

Note: Google meeting link: <https://meet.google.com/qpi-vznp-ngo>

The following members were present

| S.No. | Name of the Expert | Affiliation | Nomination |
|-------|-----------------------|--|--------------------|
| 1 | Dr Sabarinathan C | Professor and Head / Automobile Engineering, Hindusthan College of Engineering and Technology | Chairman |
| 2 | Dr Periyasamy S | Associate Professor, Department of Mechanical Engineering, Government College of Technology, Coimbatore | University Nominee |
| 3 | Dr Somasundaram P | Professor and Head, Department of Automobile Engineering,Kongu Engineering College, Erode. | Subject Expert |
| 4 | Dr Bharathi Mohan M P | Assistant Professor (SG), Department of Automobile Engineering,PSG College of Technology, Coimbatore. | Subject Expert |
| 5 | Mr Manikandan G | Senior Manager - Controlling, Daimler India Commercial Vehicles, Chennai | Industry Expert |

| | | | |
|----|--|--|--------------------------------------|
| 6 | Mr Sivakumar P K | Regional Training Manager, Volvo Eicher Commercial vehicles Pvt. Ltd. | Industry Expert – Special Invitee |
| 7 | Mr Arun R | Senior Section Manager, Sales and marketing, John Deere tractors Pvt. Ltd, Kanchipuram | Alumni Expert |
| 8 | Mr Dharmaraj N (F/o Praveen Sri Raam, IV Yr) | Lab Instructor, Department of Mechanical Engineering, PSG College of Technology, Coimbatore | Parent |
| 9 | Mrs Anitha Kumari P (M/o Ambadi A, III yr) | Teacher, - Govt Town UP school Kayamkulam, Alappuzha district, Kerala. | Parent |
| 10 | Mrs. Mekalai R (M/o. Siddharth S M, II yr) | Headmistress - Lisieux CMI International School, Coimbatore – 641 011 | Parent |
| 11 | Dr Jeyalakshmi P | Professor / Automobile Engg. | Member |
| 12 | Dr. Sankar Ganesh R | Asso. Professor / Automobile Engg. | Member |
| 13 | Mr Dhayanathan N | Asst. Professor / Automobile Engg. | Member |
| 14 | Mr Yogaraja J | Asst. Professor / Automobile Engg. | Member |
| 15 | Mr Krishnaraj J | Asst. Professor / Automobile Engg. | Member |
| 16 | M Samuel Gensprim M | Asst. Professor / Automobile Engg. | Member |
| 17 | Mr Ragu S | Asst. Professor / Automobile Engg. | Member |
| 18 | Mr Naveen Raj D | Asst. Professor / Automobile Engg. | Member |
| 19 | Mr Mujiburrahman K | Asst. Professor / Automobile Engg. | Member |
| 20 | Mr Prabhu G | Asst. Professor / Automobile Engg. | Member |
| 21 | Mr Satheesh Kumar K | Asst. Professor / Automobile Engg. | Member |
| 22 | Mr Prakash R S | Asst. Professor / Automobile Engg. | Member |
| 23 | Mr Barathkannan P | Asst. Professor / Automobile Engg. | Member |
| 24 | Mr. Sasi | Final Year Automobile Engineering | Student Member |
| 25 | Mr Gowtham T | Third Year Automobile Engineering | Student Member |
| 26 | Mr Balaji C | Second Year Automobile Engineering | Student Member |

The chairman of the BOS, welcomed all the dignitaries for the meeting. He has presented the department vision and mission statements to the forum. Also, he has given an outline of the institution and department and salient features of the new Regulation 2022 Curriculum and Syllabi.

Followed by he has also presented the suggestions given by the experts and the action taken during the Tenth BOS meeting which was held during 17.02.2023 and action taken report on the suggestions.

The chairman has presented the curriculum and syllabus of R2019 and curriculum of R2022 with syllabus of III semester courses.

Comments given by BoS members:

Dr Periyasamy S (Subject Expert):

- He suggested to add more topics on Hybrid vehicle in “Fundamentals of Electric and Hybrid Vehicles”
- He suggested incorporating the topic “beams” as a single unit in Mechanics of Materials.
- He suggested including a few more subjects in the BE Honors verticals, allowing students to choose six courses of their choice.
- He suggested to strengthen Unit 5 - Psychrometry in Fundamentals of Thermodynamics.
- He suggested to add topics like Calculating the tolerance in “Engineering Drawing”.
- Furthermore, he suggested to change the course title 'Race Electronics and Control Systems' to something more relevant to the syllabus."

Dr Bharathi Mohan M P (Subject Expert):

- He suggested to change course title from “Intelligent vehicular systems” to “Intelligent vehicular Technology”
- He suggested that the course 'Battery Technology' is too generic and recommended framing it in a more specific manner. Additionally, he suggested including courses like 'Automotive Drives and Control'."

Mr Manikandan G (Industry Expert):

- He has suggested to add the 'Flex-fuel engines' and 'Hydrogen fuel cells' technologies in alternate fuels-based courses.
- He has also recommended to showcase the recent and future skill requirements for automobile engineers.

Mr Siva P K (Industry Expert):

- He has suggested to add the latest and upcoming emission norms and technology in any of the suitable courses.
- He also suggested to add 'Liquified Natural Gas' and 'Compressed Natural Gas' technology in any of suitable courses.

Mr.Arun R (Alumni):

- He found that many areas in the fundamental courses are basic and obsolete. He as requested to modernize the respective topics.

Mr.Gowtham T (Student Member):

- He has suggested to add latest emerging technologies to the courses wherever possible.

Recommendations by BoS members (Subject Related)

The following points were summarized by chairman as per the suggestions of BoS members and stakeholders

In R2022:

- The following practical courses are approved for I semester

22MA1101 - Matrices and Calculus

22ME1201 - Engineering Drawing

22HE1151 - English for Engineers

22PH1151 - Physics for non-circuit engineering

22IT1151 - Python Programming and Practices

22HE1071 - UHV

22HE1072 - Entrepreneurship & Innovation

22MC1091 / 22MC1092 - அறிவியல்தமிழ்/ Indian Constitution

- The following practical courses are approved for II semester

22MA2101 - Differential equations and complex analysis

22PH2101 - Basics of material science

22CY2101 - Environmental science

22ME2101 - Engineering Mechanics

22CY2152 - Applied Chemistry

22HE2151 - Effective Technical Communication

22ME2001 - Engineering Practices

22HE2071 - Design Thinking

22HE2072 - Soft Skills -1

22MC2091 / 22MC2092 - தமிழர்மரபு / Essence of Indian Traditional Knowledge

22MC2191 - NCC */NSS / YRC / Sports / Clubs / Society Service - Enrollment (Common)

- The following courses are approved for III semester

22MA3104 - Fourier analysis and numerical techniques

22AU3201 - Fundamentals of Automotive Engines

22AU3202 - Fundamentals of Thermodynamics

22AU3203 - Mechanics of Materials

22AU3251 - Manufacturing Technology

22AU3001 - Automotive Components Lab

22AU3002 - Mechanics of Materials Lab

22HE3071 - Soft Skills -2

22AU3072 - Machine Drawing

22MC3092 - Essence of Indian Traditional Knowledge

In R2019:

As per the directions of Anna University,

- B E (Hons),
- B E (Hons) with specialization and
- B E with minor degree

Are approved for the academic batch (2021 - 2025) admitted in the academic year 2021 – 2022 under Regulation 2019.

For the same, three specialization verticals for B E (Hons) degree and one vertical for B E with Automobile Engineering minor degree are approved by the Board of Studies.

Verticals for B E (Hons) in Automobile Engineering

| Semester in which courses are offered | Vertical I Electric and hybrid vehicledvelopment | Vertical II Motorsport Engineering | Vertical III Vehicle Development and Validation |
|---------------------------------------|--|--|---|
| Semester V | Fundamentals of Electric and Hybrid Vehicles | Composite Structure | Automotive Product Design and Development |

| | | | |
|---------------|---|--|---------------------------------|
| Semester VI | Battery Technology | High performance engine design | Noise, Vibration and Harshness |
| Semester VI | Automotive Embedded Systems | Motorsports Electric Vehicle | Automotive Instrumentation |
| Semester VII | Advanced Automotive Safety Systems | Motorsports Vehicle Body Engineering | Testing and Measurement Systems |
| Semester VII | Special Purpose Electric Vehicle | Motorsports Race Electronics and Control Systems | Homologation |
| Semester VIII | Electric Vehicles and its Sustainable Development | | Automotive Prototyping |

Verticals for B E with minor degree

| Semester in which courses are offered | Vertical offered by Automobile Engineering | Verticals common to all departments | | |
|---------------------------------------|--|---|--|--|
| | | Vertical I Fintech and Block Chain | Vertical II Entrepreneurship | Vertical III Environment and Sustainability |
| Semester V | Automotive Engines | Financial Management | Foundations of Entrepreneurship | Sustainable infrastructure Development |
| Semester VI | Automotive Chassis | Fundamentals of Investment | Team Building & Leadership Management for Business | Sustainable Agriculture and Environmental Management |
| Semester VI | Automotive Transmission | Banking, Financial Services and Insurance | Creativity & Innovation in Entrepreneurship | Sustainable Bio Materials |
| Semester VII | Automotive Electronics | Introduction to Blockchain and its Applications | Principles of Marketing Management for Business | Materials for Energy Sustainability |
| Semester VII | Intelligent vehicular systems | Fintech Personal Finance and Payments | Human Resource Management for Entrepreneurs | Green Technology |
| Semester VIII | Electric and Hybrid vehicles | Introduction to Fintech | Financing New Business Ventures | Environmental Quality Monitoring and Analysis |

The following resolutions were made in the Board of Studies meeting,

- Department Vision and Mission -The vision and mission statements of the department were found to be good and accepted without any changes.
- In almost all the courses, changes have been done as per the current needs.
- The curriculum and syllabus of Regulation 2022 for the I& II semester subjects were passed by the Science and Humanities board and permitted to move on Academic Council by the BoS members of Automobile Engineering for the students admitted during the academic year 2022-2023 and onwards.

- As per the suggestion of CDC, the Honors degree verticals such as 'Electric and hybrid vehicle development', 'Motorsport Engineering', 'Vehicle research and validation' and minor degree vertical of Automobile Engineering are to be added to the R2019 regulation students admitted during the academic year 2021 - 2022.
- Also, the minor degree program and honors degree program to be added to the regulation of students admitted during the academic year 2021 - 2022.
- The Chairman conveyed that; the Suggestions given by the Board of Studies members are to be incorporated in all years of R2019 curriculum.
- Chairman conveyed that, the Suggestions given by the Previous Board of Studies members are ratified and resolved.

With these words the chairman thanked the gathering for their presence in the BOS meeting.

Overall Percentage of New Concepts Introduced – 25%


CHAIRMAN
Dr.C.Sabarinathan



Hindusthan

College of Engineering and Technology
Coimbatore-641032

DEPARTMENT OF AUTOMOBILE ENGINEERING

Date: 14.12.2023

TWELFTH BOS MEETING MINUTES

The Twelfth BOS meeting of regulation R2022 and R2019R for the academic year 2023-2024 (Even Semester) was conducted on 13.12.2023 in hybrid mode (online using Google Meet) and offline in Automobile department seminar hall). The objective of the meeting was to discuss the curriculum and syllabi for R2022 (Fourth Semester) and R2019 (Sixth Semester) with all professional elective courses minor and honor degree courses, open elective courses and newly added courses.

Note: Google meeting link: <http://meet.google.com/gxs-ruct-nqc?hs=224>

The following members were present

| S.No. | Name of the Expert | Affiliation | Nomination |
|-------|-----------------------|--|--------------------|
| 1 | Dr Sabarinathan C | Professor and Head / Automobile Engineering, Hindusthan College of Engineering and Technology | Chairman |
| 2 | Dr Periyasamy S | Associate Professor, Department of Mechanical Engineering, Government College of Technology, Coimbatore | University Nominee |
| 3 | Dr Somasundaram P | Professor and Head, Department of Automobile Engineering, Kongu Engineering College, Erode. | Subject Expert |
| 4 | Dr Bharathi Mohan M P | Assistant Professor (SG), Department of Automobile Engineering, PSG College of Technology, Coimbatore. | Subject Expert |
| 5 | Mr Manikandan G | Senior Manager - Controlling, Daimler India Commercials Vehicles, Chennai | Industry Expert |

| | | | |
|----|--|--|--------------------------------------|
| 6 | Mr Sivakumar P K | Regional Training Manager, Volvo Eicher Commercial vehicles Pvt. Ltd. | Industry Expert – Special Invitee |
| 7 | Mr Arun R | Senior Section Manager, Sales and marketing, John Deere tractors Pvt. Ltd, Kanchipuram | Alumni Expert |
| 8 | Prof Udhayakumar S | Asso. Professor and Head, Department of Automobile Engineering, Hindusthan Institute of Technology, Coimbatore. | Special Invitee |
| 9 | Mrs Anitha Kumari P (M/o Ambadi A, IV yr) | Teacher, - Govt Town UP school Kayamkulam, Alappuzha district, Kerala. | Parent |
| 10 | Mrs. Mekalai R (M/o. Siddharth S M, III yr) | Headmistress - Lisieux CMI International School, Coimbatore – 641 011 | Parent |
| 11 | Mrs. Fathima banu (M/o) Aneesh Akthar, II Yr | Accountant – PPS & Co, Kurichi Pirivu, Coimbatore - 641023 | Parent |
| 12 | Dr.Sankar Ganesh R | Asso.Professor / Automobile Engg. | Member |
| 13 | Mr Yogaraja J | Asst.Professor / Automobile Engg. | Member |
| 14 | Dr Krishnaraj J | Asst.Professor / Automobile Engg. | Member |
| 15 | Mr Ragu S | Asst.Professor / Automobile Engg. | Member |
| 16 | Mr Mujiburrahman K | Asst.Professor / Automobile Engg. | Member |
| 17 | Mr Prabhu G | Asst.Professor / Automobile Engg. | Member |
| 18 | Mr Satheesh Kumar K | Asst.Professor / Automobile Engg. | Member |
| 19 | Mr Prakash R S | Asst.Professor / Automobile Engg. | Member |
| 20 | Mr Gowtham T | Final Year Automobile Engineering | Student Member |
| 21 | Mr Balaji C | Third Year Automobile Engineering | Student Member |
| 22 | Mr. Aneesh Akthar | Second Year Automobile Engineering | Student Member |

The chairman of the BOS, welcomed all the dignitaries for the meeting. He has presented the department vision and mission statements to the forum. Also, he has given an outline of the institution and department and salient features of the new Regulation 2022 Curriculum and Syllabi.

Followed by he has also presented the suggestions given by the experts and the action taken during the Eleventh BOS meeting which was held during 02.06.2023 and action taken report on the suggestions.

The chairman has presented the curriculum and syllabus of R2019 with Minor and Honor Degree courses, and curriculum of R2022 with syllabus of IV semester courses.

Comments given by BoS members:

Dr Periyasamy S (University Nominee):

- He suggested to incorporate case studies like Autonomous vehicle systems in order to get idea in current trend in Electric and Autonomous vehicles in “Advanced Electrical and Electronics system”.
- He suggested to incorporate the topics “Brakes” in “Mechanism of Machines” to get an clear view of Application of friction in Unit IV.
- He suggested to compare the syllabus of all courses with Anna University Syllabus since the Entrance Exams for Higher studies and Recruitments were based on Anna university Syllabus.
- He suggested to add the content on “Pneumatic Machines” in “Fluid and Pneumatic systems”
- He suggested to change the title of the course “Fluid and Pneumatic systems” to “Fluid Mechanics and Actuation systems”
- He suggested to update the Test book and reference books with new editions.

Dr Bharathi Mohan M P (Subject Expert):

- He suggested to include more Electrical system design related to motor sports in “Motorsports Electric Vehicle”
- He suggested to included simpler problems in “Fluid and Pneumatic systems”

Mr Manikandan G (Industry Expert):

- He suggested to change the Title of “Advanced Electrical and Electronics System” to “Automotive Electrical and Electronics system”.
- He has also recommended to showcase the recent and future skill requirements for automobile engineers.
- He has suggested to add the ‘Flex-fuel engines’ and ‘Hydrogen fuel cells’ technologies in alternate fuels-based courses.

Mr Siva P K (Industry Expert):

- He has suggested to add the latest and upcoming emission norms and technology in any of the suitable courses.

Mr.Arun R (Alumni):

- He suggested syllabus could include opportunities for networking with alumni and industry professionals. Guest lectures, workshops, or alumni-led seminars would allow students to connect with successful graduates and gain valuable insights into different career paths.

Mr.Gowtham T (Student Member):

- He has suggested that exposure to cutting-edge tools and techniques would give students a competitive advantage in the job market.

Recommendations by BoS members (Subject Related)

The following points were summarized by chairman as per the suggestions of BoS members and stakeholders

In R2022:

- The following courses are approved for II semester
 - 22MA2101 Differential equations and complex analysis
 - 22PH2101 Basics of material science
 - 22CY2101 Environmental science
 - 22ME2101 Engineering Mechanics
 - 22HE2151 Effective Technical Communication
 - 22CY2152 Applied Chemistry
 - 22ME2001 Engineering Practices
 - 22MC2094/ தமிழரும் தொழில் நுட்பமும்
 - 22MC2093 NCC */NSS / YRC / Sports / Clubs / Society Service → Enrollment (Common)
- The following courses are approved for IV semester
 - 22HE4101 IPR and Start-ups
 - 22AU4201 Automotive Chassis components Design
 - 22AU4202 Automotive Electricals and Electronics systems
 - 22AU4203 Mechanics of Machines
 - 22AU4204 Fluid mechanics and Actuating Systems
 - 22AU4251 Fundamentals of Heat Transfer
 - 22AU4001 Automotive Electricals and Electronics Laboratory
 - 22AU4002 Computer Aided Engine components design Laboratory
 - 22HE4071 Soft Skills -III
- The following courses are approved for VI semester
 - 21AU6201 Total Quality Management^s
 - 21AU6202 Vehicle Dynamics and Control Systems^{**s}
 - 21AU6203 Finite Element Analysis
 - 21AU6251 Automotive Vehicle Body and Aerodynamics*
 - 21AU6001 Finite Element Analysis Lab^{##}
 - 21AU6701 Internship Training / In plant Training
 - 21HE6071 Soft Skill-II
 - 21HE6072 Intellectual Property Rights (IPR)

- 21AU6301 Automotive Airconditioning
- 21AU6302 Fuel Cell Technology
- 21AU6303 Ergonomics in Automotive Design
- 21AU6304 Additive Manufacturing
- 21AU6305 Robotics

In R2019:

As per the directions of Anna University,

- B E (Hons),

| Honors Degree - Electric and hybrid vehicle development | | |
|---|-------------|--------------------------------|
| S.No | Course Code | Course Name |
| 1 | 21AU6204 | Battery Technology |
| 2 | 21AU6205 | Automotive Embedded Systems |
| Honors Degree - Motorsport Engineering | | |
| S.No | Course Code | Course Name |
| 3 | 21AU6206 | High performance engine design |
| 4 | 21AU6207 | Motorsports Electric Vehicle |
| Honors Degree - Vehicle Development and Validation | | |
| S.No | Course Code | Course Name |
| 5 | 21AU6208 | Noise, Vibration and Harshness |
| 6 | 21AU6209 | Automotive Instrumentation |

- B E with minor degree

| Minor Degree - Automotive Vehicle Technology (Offered by Automobile Engineering) | | |
|--|-------------|-------------------------|
| S.No | Course Code | Course Name |
| 1 | 21AU6601 | Automotive Chassis |
| 2 | 21AU6602 | Automotive Transmission |

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For the same, three specialization verticals for B E (Hons) degree and one vertical for B E with Automobile Engineering minor degree are approved by the Board of Studies.

Verticals for B E (Hons) in Automobile Engineering

| Semester in which courses are offered | Vertical I Electric and hybrid vehicle development | Vertical II Motorsport Engineering | Vertical III Vehicle Development and Validation |
|--|---|---|--|
| Semester V | Fundamentals of Electric and Hybrid Vehicles | Composite Structure | Automotive Product Design and Development |
| Semester VI | Battery Technology | High performance engine design | Noise, Vibration and Harshness |
| Semester VI | Automotive Embedded Systems | Motorsports Electric Vehicle | Automotive Instrumentation |
| Semester VII | Advanced Automotive Safety Systems | Motorsports Vehicle Body Engineering | Testing and Measurement Systems |
| Semester VII | Special Purpose Electric Vehicle | Motorsports Race Electronics and Control Systems | Homologation |
| Semester VIII | Electric Vehicles and its Sustainable Development | Motorsports racing circuits and Design | Automotive Prototyping |

Verticals for B E with minor degree

| Semester in which courses are offered | Vertical offered by Automobile Engineering | Verticals common to all departments | | |
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| | | Vertical I Fintech and Block Chain | Vertical II Entrepreneurship | Vertical III Environment and Sustainability |
| Semester V | Automotive Engines | Financial Management | Foundations of Entrepreneurship | Sustainable infrastructure Development |
| Semester VI | Automotive Chassis | Fundamentals of Investment | Team Building & Leadership Management for Business | Sustainable Agriculture and Environmental Management |
| Semester VI | Automotive Transmission | Banking, Financial Services and Insurance | Creativity & Innovation in Entrepreneurship | Sustainable Bio Materials |
| Semester VII | Automotive Electronics | Introduction to Blockchain and its Applications | Principles of Marketing Management for Business | Materials for Energy Sustainability |
| Semester VII | Intelligent vehicular systems | Fintech Personal Finance and Payments | Human Resource Management for Entrepreneurs | Green Technology |
| Semester VIII | Electric and Hybrid vehicles | Introduction to Fintech | Financing New Business Ventures | Environmental Quality Monitoring and Analysis |

The following resolutions were made in the Board of Studies meeting,

- Department Vision and Mission - The vision and mission statements of the department were found to be good and accepted without any changes.
- In almost all the courses, changes have been done as per the current needs.
- The curriculum and syllabus of Regulation 2022 for the I & II semester subjects were passed by the Science and Humanities board and permitted to move on Academic Council by the BoS members of Automobile Engineering for the students admitted during the academic year 2023-2024 and onwards.

- As per the suggestion of CDC, the Honors degree verticals such as 'Electric and hybrid vehicle development', 'Motorsport Engineering', 'Motorsports racing circuits and Design' 'Vehicle research and validation' and minor degree vertical of Automobile Engineering are to be added to the R2019 regulation students admitted during the academic year 2021 - 2022.
- Also, the minor degree program and honors degree program to be added to the regulation of students admitted during the academic year 2021 - 2022.
- The Chairman conveyed that; the Suggestions given by the Board of Studies members are to be incorporated in all years of R2019 and R2022 curriculum.
- Chairman conveyed that, the Suggestions given by the Previous Board of Studies members are ratified and resolved.

With these words the chairman thanked the gathering for their presence in the BOS meeting.

Overall Percentage of New Concepts Introduced – 15%


CHAIRMAN
Dr. C. Sabarinathan
Chairman - BoS
AUTO - HiCET