KONGU ENGINEERING COLLEGE, PERUNDURAI, ERODE- 638 060

MINUTES OF THE MEETING OF BOARD OF STUDIES IN AUTOMOBILE ENGINEERING

MEETING No. 21

DATE : 19-06-2021

TIME : 10.00 AM (Online)

Google Meet Id: https://meet.google.com/jtu-ahjk-cyi

The following members were present for the meeting:

1.	**Dr. C. Jegadheesan** Associate Professor and Head Department of Automobile Engineering Kongu Engineering College	Chairman
2.	**Dr. M. Bharathiraja** Associate Professor & Head Department of Automobile Engineering Bannari Amman Institute of Technology Sathyamangalam - 638401	University Nominee
3.	**Dr. S. Thirumalini** Professor & Chairperson Mechanical, School of Engineering Amrita School of Engineering Ettimadai, Coimbatore - 641112	Academic Council Nominee
4.	**Dr. K. Prabu** Associate Professor Department of Automotive Engineering Vellore Institute of Technology Vellore - 632014	Academic Council Nominee
5.	**Mr. J. Ajith** Engineer Brakes India Pvt Ltd, Padi, Chennai - 600050	Alumni Representative
6.	**Dr. P. Somasundaram** Professor Department of Automobile Engineering Kongu Engineering College	Internal Member
7.	**Dr. P. C. Murugan** Associate Professor Department of Automobile Engineering Kongu Engineering College	Internal Member
8.	**Mr. K.S. Karthi Vinith** Assistant Professor Department of Automobile Engineering Kongu Engineering College	Internal Member
9.	**Mr. S. Sathiskumar** Assistant Professor Department of Automobile Engineering Kongu Engineering College	Internal Member
10.	**Mr. P. Senthil Kumar** Assistant Professor Department of Automobile Engineering Kongu Engineering College	Internal Member
11.	**Mr. N. Boopalan** Assistant Professor Department of Automobile Engineering Kongu Engineering College	Internal Member

12.	**Mr. M. Boopathi** Assistant Professor Department of Automobile Engineering Kongu Engineering College	Internal Member

The following members were present as special invitees: Nil

The following members have requested for leave of absence:

1. **Mr. R.D. Yoganand**, AGM – Product Development, Ashok Leyland Ltd, Vellivayal Chavadi, Chennai – 600103 - **Industry Representative**
2. **Mr. S. Ranjithkumar**, Assistant Professor, Department of Automobile Engineering - **Internal Member**

Meeting of the Automobile Engineering Board:

Chairman/BoS welcomed the members and briefed on the rules and regulations governing the autonomous scheme and presented the agenda points including the draft syllabi from 3rd semester to final semester under Regulation 2020 of UG Programme.

The board discussed and approved the following points as per the agenda:

Item No. 21.1: Confirmation of Minutes of the previous Board of Studies meeting

Resolved to confirm the minutes of the previous Board of Studies Meeting held on 29.08.2020.

Item No. 21.2: Ratification of the following items under R2018 as given in Appendix-I.

a. One credit courses
b. On line courses
It is resolved to ratify the above items a and b as given in Appendix – I.

Item No. 21.3. Approval of the Syllabi from 3rd semester to 8th semester BE/BTech (Automobile Engineering) under R2020 as given in Annexure-II

The members discussed the syllabi from third semester to eighth semester BE/BTech (Automobile Engineering) under R2020 as given in Annexure – II and approved the same.

Item No. 21.4. Approval for one credit courses, on-line courses with syllabi, Transfer of credits from UGC & AICTE approved institutions and Credit transfer from foreign universities under R2018 & R2020 as given in Annexure-III.

The members discussed the one credit courses, on-line courses with syllabi, Transfer of credits from UGC and AICTE approved institutions including NPTEL, SWAYAM, etc., and Credit transfer from foreign universities under R2018 & R2020 (from the year 2021-22 onwards) as given in Annexure – III and approved the same.

Item No. 21.5. Approval of Syllabus for PhD courses under R2020 as given in Annexure-IV.

The members discussed the Syllabus for PhD courses under R2020 (if any from the year 2021-22 onwards) as given in Annexure – IV and approved the same.

Item No. 21.6. To recommend the online examination system to be followed for the April/May 2021 End Semester Examinations as given in Annexure-V.

The members discussed recommend the online examination system to be followed for the April/May 2021 End Semester Examinations as given in Annexure-V

The meeting was concluded with a vote of thanks to the members.

Name & Signature (Dr. M. Bharathiraja)	Name & Signature (Dr. S. Thirumalini)
19/06/21 Name & Signature (Dr. K. Prabu)	Name & Signature (Mr. J. Ajith)
Name & Signature (Dr. P. Somasundaram)	Name & Signature (Dr. P. C. Murugan)
Name & Signature (Mr. K.S. Karthi Vinith)	Name & Signature (Mr. S. Sathiskumar)
Name & Signature (Mr. P. Senthil Kumar)	Name & Signature (Mr. N. Boopalan)
Name & Signature (Mr. M. Boopathi)	
	Name & Signature (Dr. C. Jegadheesan) Chairman/BoS

Annexure – I

Ratification items under R2018 implemented during the last academic year 2020-21

a. One credit courses

- Operational Excellence
- Programmable Logic Controller
- Solar Thermal Management
- Advanced Vehicle Technology
- Automotive Component Modelling Using AUTOCAD
- Design and Implementation of Electro Pneumatic Circuit
- Automobile Systems Modeling and Simulation Using MATLAB - SIMULINK
- Motorsports Engineering

b. On line courses

- Python for Data Science
- Introduction to Industry 4.0 and Industrial Internet of Things
- Electric Vehicles part 1
- Ergonomics in Automotive Design
- Ergonomics Workplace Analysis
- Product Design Using Value Engineering
- Cost Accounting
- Selection of Nanomaterial for Energy Harvesting and Storage Application
- Understanding Design
- Programming in C++
- Manufacturing of Composites
- Fundamentals of electric drives
- Programming, Data Structures and Algorithms using Python
- Deep Learning
- Control Systems
- Industrial Safety Engineering
- Programming in Java
- Introduction to Aerospace Engineering-Flight
- Introduction to Internet of Things
- Machine Learning for Engineering and Science Applications
- Noise Management and Control
- Farm Machinery
- Polymer Assisted Abrasive Finishing Processes
- MATLAB Programming for Numerical Computation
- Inspection and Quality Control in Manufacturing

Annexure - II

Syllabi from 3rd semester to 8th semester BE/BTech (Automobile Engineering) under R2020

B.E. AUTOMOBILE ENGINEERING CURRICULUM – R2020

SEMESTER – I

Course Code	Course Title	Hours / Week			Credit	Maximum Marks			Category
		L	T	P		CA	ESE	Total	
Theory/Theory with Practical									
20EGT11	English Language Skills	3	0	0	3	50	50	100	HS
20MAC11	Matrices and Differential Equations	3	1*	2*	4	50	50	100	BS
20PHT11	Applied Physics	3	0	0	3	50	50	100	BS
20CYT11	Applied Chemistry	3	0	0	3	50	50	100	BS
20MEC11	Engineering Drawing	2	0	2	3	50	50	100	ES
20AUT11	Statics and Dynamics	3	1	0	4	50	50	100	PC
Practical / Employability Enhancement									
20PHL11	Physical Sciences Laboratory I	0	0	2	1	50	50	100	BS
20MEL11	Engineering Practices Laboratory	0	0	2	1	50	50	100	ES
20VEC11	Yoga and Values for Holistic Development	1	0	1	1	100	0	100	HS
20MNT11	Induction Training Program	--	--	--	0	100	0	100	MC
Total Credits to be earned					23				

SEMESTER – II

Course Code	Course Title	Hours / Week			Credit	Maximum Marks			Category
		L	T	P		CA	ESE	Total	
Theory/Theory with Practical									
20EGT21	Advanced Communication Skills	3	0	0	3	50	50	100	HS
20MAC21	Multivariable Calculus and Complex Analysis	3	1*	2*	4	50	50	100	BS
20PHT22	Materials Science and Metallurgy	3	0	0	3	50	50	100	BS
20CYT22	Chemistry for Mechanical Systems	3	0	0	3	50	50	100	BS
20AUT21	Mechanics of Fluids and Hydraulic Machines	3	1	0	4	50	50	100	PC
20AUT22	Manufacturing Technology	3	0	0	3	50	50	100	ES
Practical / Employability Enhancement									
20PHL23	Physical Sciences Laboratory II	0	0	2	1	50	50	100	BS
20AUL21	Manufacturing Technology Laboratory	0	0	2	1	50	50	100	ES
Total Credits to be earned					22				

SEMESTER – III

Course Code	Course Title	Hours / Week			Credit	Maximum Marks			Category
		L	T	P		CA	ESE	Total	
Theory/Theory with Practical									
20MAC31	Mathematics III	3	1	0	4	50	50	100	BS
20	Programming 1	3	0	2	4	50	50	100	ES
20AUT31	Mechanics of Deformable Bodies	3	0	0	3	50	50	100	PC
20AUT32	Automotive Powertrain	3	0	0	3	50	50	100	PC
20AUT33	Thermodynamics	3	1	0	4	50	50	100	PC
20AUT34	Automotive Electrical Systems & Drives	3	0	2	4	50	50	100	ES
Practical / Employability Enhancement									
20AUL31	Mechanics of Deformable Bodies Laboratory	0	0	2	1	50	50	100	PC
20AUL32	Automotive Power Train Laboratory	0	0	2	1	50	50	100	PC
20	Environmental Science	2	0	0	0	100	0	100	MC
Total Credits to be earned					24				

SEMESTER – IV

Course Code	Course Title	Hours / Week			Credit	Maximum Marks			Category
		L	T	P		CA	ESE	Total	
Theory/Theory with Practical									
20MAC41	Mathematics IV	3	1	0	4	50	50	100	BS
20	Programming 2	3	0	2	4	50	50	100	ES
20AUT41	Thermal Engineering and Heat Transfer	3	0	0	3	50	50	100	PC
20AUT42	Automotive Chassis	3	0	0	3	50	50	100	PC
20AUT43	Mechanics of Machines	3	1	0	4	50	50	100	PC
Practical / Employability Enhancement									
20	English Communication Laboratory	0	0	2	1	50	50	100	HS
20AUL41	Fuels and Lubricants Laboratory	0	0	2	1	50	50	100	PC
20AUL42	Automotive Chassis Components Laboratory	0	0	2	1	50	50	100	PC
20GET41	Universal Human Values	2	0	0	2	100	0	100	MC
Total Credits to be earned					23				

SEMESTER – V

Course Code	Course Title	Hours / Week			Credit	Maximum Marks			Category
		L	T	P		CA	ESE	Total	
Theory/Theory with Practical									
20AUT51	Machine Design	3	0	0	3	50	50	100	PC
20AUT52	Automotive Sensors and Controllers	3	0	0	3	50	50	100	PC
20AUT53	Vehicle Dynamics	3	0	0	3	50	50	100	PC
	Open Elective - I	3	0	2	4	50	50	100	OE
	Professional Elective - I	3	0	0	3	50	50	100	PC
Practical / Employability Enhancement									
20AUL51	Computer Aided Design Laboratory	0	0	2	1	50	50	100	PC
20AUL52	Automotive Sensors and Controllers Laboratory	0	0	2	1	50	50	100	PC
20AUL53	Two and Three Wheeler Laboratory	0	0	2	1	50	50	100	PC
20GEL51	Professional Skills Training 1 / Industrial Training 1	--	--	--	2	100	0	100	EC
Total Credits to be earned					21				

SEMESTER – VI									
Course Code	Course Title	Hours / Week			Credit	Maximum Marks			Category
		L	T	P		CA	ESE	Total	
Theory/Theory with Practical									
20AUT61	Finite Element Method	3	0	0	3	50	50	100	PC
20AUT62	Vehicle Maintenance	3	0	0	3	50	50	100	PC
20AUT63	Automotive Embedded Systems	3	0	0	3	50	50	100	PC
	Open Elective - II	3	0	2	4	50	50	100	OE
	Professional Elective - II	3	0	0	3	50	50	100	PE
Practical / Employability Enhancement									
20AUL61	Computer Aided Analysis Laboratory	0	0	2	1	50	50	100	PC
20AUL62	Vehicle Maintenance Laboratory	0	0	2	1	50	50	100	PC
20AUL63	Automotive Embedded Systems Laboratory	0	0	2	1	50	50	100	PC
20GEL61	Professional Skills Training 2 / Industrial Training 2	--	--	--	2	100	0	100	EC
20AUP61	Project Work 1 Phase I	0	0	4	2	50	50	100	EC
Total Credits to be earned					23				

SEMESTER – VII									
Course Code	Course Title	Hours / Week			Credit	Maximum Marks			Category
		L	T	P		CA	ESE	Total	
Theory/Theory with Practical									
20MBT71	Economics and Management for Engineers	3	0	0	3	50	50	100	HS
	Open Elective - III	3	0	0	3	50	50	100	OE
	Professional Elective – III	3	0	0	3	50	50	100	PE
	Professional Elective – IV	3	0	0	3	50	50	100	PE
	Professional Elective - V	3	0	0	3	50	50	100	PE
Practical / Employability Enhancement									
20GEP71	Comprehensive Test / Viva	--	--	--	2	100	0	100	EC
20AUP71	Project Work 1 Phase II	0	0	8	4	50	50	100	EC
Total Credits to be earned					21				

SEMESTER – VIII									
Course Code	Course Title	Hours / Week			Credit	Maximum Marks			Category
		L	T	P		CA	ESE	Total	
Theory/Theory with Practical									
	Open Elective - IV	3	0	0	3	50	50	100	OE
	Professional Elective -VI	3	0	0	3	50	50	100	PE
Practical / Employability Enhancement									
18AUP81	Internship / Project work 2	--	--	12	6	50	50	100	EC
Total Credits to be earned					12				
Total					**169**				

PROFESSIONAL ELECTIVE (PE)								
S. No.	Course Code	Course Name	L	T	P	C	Sem	Domain/ Stream
		Elective – I						
1.	20AUE01	Two and Three wheeler Technology	3	0	0	3	V	AUTO
2.	20AUE02	Diesel and Electric Locomotives	3	0	0	3	V	AUTO
3.	20AUE03	Computer Integrated Manufacturing	3	0	0	3	V	MFG
4.	20AUE04	Theory of Fuels and Lubricants	3	0	0	3	VI	TF
5.	20AUE05	Automotive Control System	3	0	0	3	V	EE
6.	20AUE06	Principles of Farm Machineries	3	0	0	3	VI	DSN
		Elective – II						
7.	20AUE07	Hybrid and Electric Vehicles	3	0	0	3	VI	EE
8.	20AUE08	Micro Electro Mechanical Systems	3	0	0	3	VI	EE
9.	20AUE09	Vehicle Body Engineering	3	0	0	3	VI	AUTO
10.	20AUE10	Operations Research	3	0	0	3	VI	MFG
11.	20AUE11	Advanced Theory of IC Engines	3	0	0	3	VI	TF
12.	20AUE12	Composite Materials	3	0	0	3	VI	MFG
		Elective - III						
13.	20AUE13	CNC and Metrology	3	0	0	3	VII	MFG
14.	20AUE14	Computational Fluid Dynamics	3	0	0	3	VII	TF
15.	20AUE15	Hydraulics and Pneumatics	3	0	0	3	VII	DSN
16.	20AUE16	Automotive Pollution Control	3	0	0	3	VII	AUTO
17.	20AUE17	Total Quality Management	3	0	0	3	VII	MFG
18.	20AUE18	Fundamentals of Research	3	0	0	3	VII	GE
		Elective – IV						
19.	20AUE19	Automotive Noise, Vibration and Harshness	3	0	0	3	VII	AUTO
20.	20AUE20	Automotive HVAC	3	0	0	3	VII	TF
21.	20AUE21	Automotive Safety and Ergonomics	3	0	0	3	VII	AUTO
22.	20AUE22	Value Engineering	3	0	0	3	VII	MFG
23.	20AUE23	Design of Engine Components	3	0	0	3	VII	MFG
24.	20AUE24	Design of Chassis Components	3	0	0	3	VII	MFG

		Elective - V						
25.	20AUE25	In-Vehicle Networking	3	0	0	3	VIII	EE
26.	20AUE26	Non Destructive Evaluation Techniques	3	0	0	3	VIII	MFG
27.	20AUE27	Quality Assurance and Reliability	3	0	0	3	VIII	MFG
28.	20AUE28	Advanced Materials for Green Vehicles	3	0	0	3	VIII	MFG
29.	20AUE29	Automotive Testing	3	0	0	3	VIII	AUTO
30.	20AUE30	Alternate Energy Sources for Automobiles	3	0	0	3	VIII	TF
		Elective - VI						
31.	20AUE31	Entrepreneurship Development	3	0	0	3	VIII	GE
32.	20AUE32	Road Transport Management	3	0	0	3	VIII	AUTO
33.	20AUE33	Autonomous Vehicle Technology	3	0	0	3	VIII	EE
34.	20AUE34	Automotive Product Life Cycle Management	3	0	0	3	VIII	DSN
35.	20AUE35	Process Planning and Cost Estimation	3	0	0	3	VIII	MFG
36.	20AUE36	Lean Methods for Automobile Engineers	3	0	0	3	VIII	MFG
37.	20AUE37	Automotive Styling and Modeling	3	0	0	3	VIII	AUTO
38.	20AUE38	Non-Traditional Machining Processes	3	0	0	3	VIII	MFG
Total Credits to be earned						**18**		

* Domain/Stream Abbreviations: AUTO - Automobile, DSN - Design, EE – Electrical and Electronics, TF – Thermal and Fluid, MFG- Manufacturing, GE – General Engineering