

**School of Mechanical and Construction
Department of Automobile Engineering
Stakeholders feedback & its Implementation in BoS (2016-17 to 2020-21)**

Program Code	Programme Name	Academic Year	Course Code	Course Name	Action Taken from Stakeholder feedback	Implementation Status in BoS
UEAU	B.TECH AUTOMOBILE ENGINEERING	2016-17	1152AU112	Microprocessor and microcontroller	Alumni Suggested to include Application of microprocessor and microcontroller in automobile to enhance latest knowledge in the field of electronics. It has included in 28th BOS	Application of microprocessor and microcontroller in automobile were added.
UEAU	B.TECH AUTOMOBILE ENGINEERING	2016-17	1151AU214	Automotive Chassis	Alumni have Suggested to include Brake by wire to enhance knowledge in latest technology. It has included in 28th BOS	"Brake by wire" has been included in unit 5.
UEAU	B.TECH AUTOMOBILE ENGINEERING	2016-17	1152AU120	Automotive Component Manufacturing	Based on feedback, sintering and compacting process were included in the syllabus	Sintering and Compacting process" has been included in unit-2
UEAU	B.TECH AUTOMOBILE ENGINEERING	2016-17	1151AU318	Engine performance and emission testing lab	Industrial expert has suggested to add automatic transmission and CV joint to enhance knowledge in the latest technology. It has included in 28th BOS	Study of automatic transmission experiment is to be added to the content
UEAU	B.TECH AUTOMOBILE ENGINEERING	2016-17	1152AU110	Automotive Aerodynamics	Industrial Expert- Suggested to include Lift and body styling to enhance knowledge in latest technology.	In Unit II lift and body styling were added to the contents.
UEAU	B.TECH AUTOMOBILE ENGINEERING	2016-17	1151AU214	Automotive Chassis	Industrial Expert- Suggested to include Electronic steering system to enhance knowledge in latest technology	"Electronic steering system" to be added in unit-2
UEAU	B.TECH AUTOMOBILE ENGINEERING	2016-17	1154AU107	Engine Components Laboratory	Academic Expert- Suggested to include Electronic steering system to enhance knowledge in latest technology.	Study of electronic carburettor topic will be included in the syllabus
UEAU	B.TECH AUTOMOBILE ENGINEERING	2016-17	1151AU217	Vehicle Evaluation and Maintenance	Industrial expert has suggested to include on board diagnostics, this is done to apply the real time application during servicing the vehicle.	In laboratory, it has been recommended to include "On Board Diagnostics" as an experiment if the required equipment is procured.
UEAU	B.TECH AUTOMOBILE ENGINEERING	2017-18	1151AU104	Manufacturing Technology	Since the most content of the unit four is on welding and machining processes the title of the chapter is changed as Special Welding and Machining Process	Unit-4 title has been renamed as "Special Welding and Machining Process" and in the content "CNC Machining Processes – Case Study" has been included in unit-4
UEAU	B.TECH AUTOMOBILE ENGINEERING	2018-19	1153AU101	IC Engines	Faculty have suggested to include Advancement fuel systems in S.I and C.I engines to enhance knowledge in latest technology.	Advancement fuel systems in SI and CI engines topic added in unit-II

UEAU	B.TECH AUTOMOBILE ENGINEERING	2018-19	1152AU136	Sustainable Fuel for Non-Conventional Engine	Faculty members suggested to exclude the topics 'A/F ratio, volumetric efficiency and stoichiometric condition'	The topics 'A/F ratio, volumetric efficiency and stoichiometric condition' has been added in unit 1
UEAU	B.TECH AUTOMOBILE ENGINEERING	2018-19	1152AU135	Optimization in Gear Train Design	Faculty recommended to have separate units for 'design of bevel gear and design of worm gear' as unit 3 and unit 4 respectively and also suggested to include 'Lewis equation and hertz method in unit-3	Separate units for 'design of bevel gear and design of worm gear' as unit 3 and unit 4 respectively and also suggested to include 'Lewis equation and hertz methods'.
UEAU	B.TECH AUTOMOBILE ENGINEERING	2018-19	1152AU133	Hydrogen Engines	The faculty member have to be offered a new course under the category of program elective for B.Tech Automobile Engineering as per requirement of student's demand.	Experts accepted the proposed course
UEAU	B.TECH AUTOMOBILE ENGINEERING	2018-19	1152AU134	Homogeneous Charge Compression Ignition Engine	As per student requisition removal of content "injection pressure sensor, measurement of torque, data acquisition system and smoke meter" done in the HCCI engine.	Removed injection pressure sensor, measurement of torque, data acquisition system and smoke meter
UEAU	B.TECH AUTOMOBILE ENGINEERING	2018-19	1151AU104	Manufacturing Technology	Since the most content of the unit four is on welding and machining processes the title of the chapter is changed as Special Welding and Machining Process	Unit-4 title has been renamed as "Special Welding and Machining Process" and in the content "CNC Machining Processes – Case Study" has been included in unit-4
UEAU	B.TECH AUTOMOBILE ENGINEERING	2018-19	1151AU107	IC Engines	Alumni- Recommended to add this topic to enhance the student to get basic knowledge on Engine cycle. It has included in 31st BOS	"Air standard cycles-otto, diesel and dual" to be added in unit-1
UEAU	B.TECH AUTOMOBILE ENGINEERING	2019-20		Electric Vehicles and Mobility Steam Power Engineering Manufacturing Automation Economics and Policies in a Biobased Economy Introduction to battery-management systems	Based on the employer feedback, the department suggested that the student can enrol the courses under Independent Learning category for B.Tech Automobile Engineering as per VTU R15.	It has implemented in 35th BOS. Courses offered in Edx.org and MOOC online platform
UEAU	B.TECH AUTOMOBILE ENGINEERING	2019-20		Composite Materials – for Automotive Applications	Alumni suggested that under graduate students should have acquire knowledge in automotive materials. For that, department offered specialized courses to be offered under Sec 7.2.8.3 Industry/ Higher Learning Institute Interaction	Alumni suggested that under graduate students should have acquire knowledge in automotive materials. For that, department offered specialized courses to be offered under Sec 7.2.8.3 Industry/ Higher Learning Institute Interaction

UEAU	B.TECH AUTOMOBILE ENGINEERING	2020-21		Electric Car - Introduction Electric Car - Business Solar Energy	Based on Alumni feedback, department have offered new courses under Independent Learning VTU R15 Sec. 7.2.7.1 Self Learning Course. New courses contain the application of solar powered vehicle and business in electric car. It has included in 36th BOS	Based on Alumni feedback, department have offered new courses under Independent Learning VTU R15 Sec. 7.2.7.1 Self Learning Course. New courses contain the application of solar powered vehicle and business in electric car.
UEAU	B.TECH AUTOMOBILE ENGINEERING	2020-21	1151AU216	Automotive Fuels, Lubricants and Coolants	Alumni have suggested to add measurement of sulphur content, because he considers its essential to for the students to gain knowledge about the topic. It has implemented in 36 BOS	Measurement of sulphur content is to be added to unit I
UEAU	B.TECH AUTOMOBILE ENGINEERING	2020-21	1153AU201	Electric Two-Wheeler Technology	The faculty member proposed course with 6 credits offered under Allied Elective category to B.Tech Students in School of Mechanical and Construction except students of Automobile Engineering as per VTU R15.	Highly appreciated for framing a course with 6 credits (Theory + Demo Lab + Project) and 135periods (45 + 30 + 60).
UEAU	B.TECH AUTOMOBILE ENGINEERING	2020-21	1152AU137	Biofuels for IC Engines	It was implemented in 36th BOS meeting.	The faculty member proposed course with 3 credits offered under programme Elective category to B.Tech Students in Automobile Engineering as per VTU R15.
UEAU	B.TECH AUTOMOBILE ENGINEERING	2020-21	1152AU137	Biofuels for IC Engines	Both the parent and faculty feedback, the two new courses were introduced in the academic year 2020-21.	It was included in the 36th BOS


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**Minutes of
35th Meeting
of
Board of Studies**

**DEPARTMENT OF AUTOMOBILE ENGINEERING
SCHOOL OF MECHANICAL AND CONSTRUCTION**

Date: 08/06/19

Time: 09.00 am

Venue: Alfred Nobel Hive

S. No.	Name	Designation
1	Dr.M.Amala Justus Selvam Chairman	Professor and Head, Department of Automobile Engineering, Vel Tech Rangarajan Dr.Sagunthala R&D Institute of Science and Technology, Chennai.
2	Dr. K.Annamalai, External Academic Expert	Professor, Department of Automobile Engineering, MIT campus, Anna University, Chennai – 44
3	Mr.A.Senthil Kumar, Industry Expert	Deputy General Manager, Greaves-Cotton Limited, Ranipet - 632403
4	Dr.Yogesh K Bhateshvar, Industry Expert	Assistant Faculty – II, ARAI Academy, ARAI, Pune.
5	Dr.S.Jaichandar Member	Professor, Department of Automobile Engineering, Vel Tech Rangarajan Dr.Sagunthala R&D Institute of Science and Technology, Chennai.
6	Dr.S.Padmanabhan Member	Associate Professor, Department of Automobile Engineering, Vel Tech Rangarajan Dr.Sagunthala R&D Institute of Science and Technology, Chennai.
7	Dr.M.Parthasarathy Member	Assistant Professor, Department of Automobile Engineering, Vel Tech Rangarajan Dr.Sagunthala R&D Institute of Science and Technology, Chennai.
8	Dr.S.Ramkumar Member	Assistant Professor, Department of Automobile Engineering, Vel Tech Rangarajan Dr.Sagunthala R&D Institute of Science and Technology, Chennai.
9	Mr.D. Samuelraj Member	Assistant Professor, Department of Automobile Engineering, Vel Tech Rangarajan Dr.Sagunthala R&D Institute of Science and Technology, Chennai.

Minutes of Meeting

The 35th Board of Studies (BOS) meeting was held on 08th June 2019. The Chairman welcomed all the members to the 35th BOS meeting. The Chairman introduced the External BOS members. The agenda items of the meeting are,

Item for Confirmation

35 BoS 01 To confirm the minutes of meeting of the 34th Board of Studies held on 12/12/18.

Items for Discussion

35 BoS 02 Proposal of new PG Programme – Review of Curriculum & Syllabus for M.Tech Automobile Engineering with Specialization in Powertrain Engineering/Electric & Hybrid Vehicles.

35 BoS 03 New courses proposed under Allied Elective.

- Electric Two Wheeler Technology

35 BoS 04 Courses to be offered under Independent Learning VTU R15 Sec. 7.2.7.1 Self Learning Course.

35 BoS 05 Specialized courses to be offered under Sec 7.2.8.3 Industry/ Higher Learning Institute Interaction.

35 BoS 06 End Semester Examination Result 2018-19 ODD Semester.

35 BoS 07 Experts name for question paper setting and external examination.

35 BoS 08 Any other items with the permission of chair.

Items for Reporting

35 BoS 09 Students Exchanged under International Students Exchange Program – credit mapping.

Item for Confirmation

35 BoS 01 To confirm the minutes of meeting of the 34th Board of Studies held on 12/12/18

DISCUSSION: The Chair presented minutes of the 34th Board of Studies to the board members for confirmation.

ACTION: BOS members have noted and confirmed the minutes of 34th BOS meeting.

Items for Discussion

35 BoS 02 Proposal of new PG Programme – Review of Curriculum & Syllabus for M.Tech Automobile Engineering with Specialization in Powertrain Engineering/Electric & Hybrid Vehicles.

DISCUSSION: The Chair presented the Program Structure of M.Tech Automobile Engineering with Specialization in Powertrain Engineering / Electric and Hybrid Vehicles as per MTECHR16.

Program Structure

Category	No. of Credits
Foundation Course	04
Program core (No. of courses -6)	21
Specialization Core 18/Elective 12	30
Independent Learning	25
Total Credits	80

Foundation Course

Sl. No	Course Code	Course Name	L	T	P	C
1	2160MA201	Applied Statistics and Numerical Methods	3	0	2	4

Program Core

Sl.No	Course Code	Course Name	L	T	P	C
1	2161AU201	Prime Movers and Transmission	3	0	4	5
2	2161AU111	Automotive Mechatronics	3	0	0	3
3	2161AU202	Electric and Hybrid Vehicles	3	0	2	4
4	2161AU112	Two and Three-wheeler Technology	3	0	0	3
5	2161AU113	Automobile Chassis and Body Engineering	3	0	0	3
6	2161AU114	Powertrain Management Systems	3	0	0	3
Total Credits to be earned						21

Powertrain Engineering Specialization						
Specialization Core						
Sl. No	Course Code	Course Name	L	T	P	C
1	2161AU203	Engine Combustion and Simulation	3	0	2	4
2	2161AU115	Engine Design and Development	3	0	0	3
3	2161AU116	Powertrain NVH	3	0	0	3
4	2161AU204	Automobile Fuels and Emission	3	0	2	4
5	2161AU205	Engine Testing and Certification	3	0	2	4
No. of credits						18
Specialization Electives						
Sl. No	Course Code	Course Name	L	T	P	C
1	2162AU111	Automotive HVAC	3	0	0	3
2	2162AU112	Hydrogen and Fuel Cell	3	0	0	3
3	2162AU113	Supercharging and Turbocharging	3	0	0	3
4	2162AU114	Experimental Methods and Optimization Technique	3	0	0	3
5	2162AU115	Vehicle Dynamics	3	0	0	3
6	2162AU116	Engine Materials and Manufacturing	3	0	0	3
7	2162AU117	Tribology	3	0	0	3
8	2162AU118	Materials for Automobile	3	0	0	3
9	2162AU119	Automotive Electrical and Electronics Systems	3	0	0	3
10	2162AU201	Finite Element Analysis	3	0	2	4
	2162AU202	Computational Fluid Dynamics	3	0	2	4
No. of credits						12
Total Credits to be earned under Specialization – 30						
Electric and Hybrid Vehicles Specialization						
Specialization Core						
Sl. No	Course Code	Course Name	L	T	P	C
1	2161AU117	Vehicle Mechanics	3	0	0	3
2	2161AU206	Power Electronics for Automobile	3	0	2	4
3	2161AU207	Modelling and Simulation of EHV	3	0	2	4
4	2161AU208	Energy Storage and Management Systems	3	0	2	4
5	2161AU209	Computer Aided Engineering	2	0	2	3
No. of credits						18
Specialization Electives						
Sl. No	Course Code	Course Name	L	T	P	C
1	2162AU119	Automotive Electrical and Electronic Systems	3	0	0	3
2	2162AU120	Automotive Embedded System	3	0	0	3
3	2162AU121	Automotive Thermal Systems	2	2	0	3
4	2162AU122	Electric Drives and Control	3	0	0	3
5	2162AU123	Automotive Diagnostics	3	0	0	3
6	2162AU124	Micro Electro Mechanical Systems	3	0	0	3

7	2162AU125	In Vehicle Networking	3	0	0	3
8	2162AU126	Intelligent Transport System	3	0	0	3
9	2162AU127	Automotive Safety	3	0	0	3
10	2162AU128	Plug-in Electric Vehicles in Smart Grid	3	0	0	3
11	2162AU203	Testing and Certification of Electric and Hybrid Vehicles	3	0	2	4
No. of credits						12
Total Credits to be earned under Specialization - 30						
Independent Learning						
Sl. No	Course Code	Course Name	L	T	P	C
1	2163AU405	Project Management/ Online Courses				2
2	2164AU602	Mini Project	0	0	10	5
3	2164AU702	Project	0	0	36	18
Total Credits to be earned						25
Complimentary Course: (No Credit) 1. Industrial Interaction /Conference/ Publishing Articles - Faculty members who have framed the syllabus for the above courses had presented the course content of their respective courses in the BOS. M.Tech Automobile Engineering with Specialization in Powertrain Engineering / Electric and Hybrid Vehicles Recommended suggestions: Foundation Course 1. Applied Statistics and Numerical Methods - Experts accepted the proposed integrated course (Theory + Lab) - Highly appreciated for framing an integrated course in mathematics with MAT Lab. Program Core 2. Prime Movers and Transmission - In Unit -1, Dr.K.Annamalai suggested to include Turbocharger and Mr.A.Senthil Kumar suggested to include the emission performance in elaborate. - In Unit -2, Dr.K.Annamalai suggested to replace the ignition system with some advanced topics and add Static Injection Timing. Mr.A.Senthil Kumar suggested to add Advanced Induction Systems. - And all experts suggested to rename the Unit 02 title as “Air Induction and Fuel Injection System” instead of “Air-Fuel Induction Systems And Ignition System” - In Unit -5, Dr.K.Annamalai suggested to rename the Unit title as “Advanced Powertrain Technology” instead of “Alternate Powertrain Technology”.						

3. Electric and Hybrid Vehicles

- In Unit 1, Mr.A.Senthil Kumar suggested to add an introduction about Safety Consideration, Manufacturing and Service system.
- In Unit 2, Dr.K.Annamalai suggested to add Testing of Motors/Generators to find Capacity, Rating, Power and other parameters. Mr.A.Senthil Kumar and Dr.Yogesh K Bhatesvar suggested to add Selection of motors under variable parameters.
- In Unit 4, Dr.K.Annamalai suggested to add Matching of Battery and Engine, Motor and Wheels, Synchronizing of Conventional and Electric Control System, Testing of entire system/motor and Dynamometer to test various Hybrid vehicle Engines.
- In Unit 4, Dr.Yogesh K Bhatesvar suggested to add Layout, Operation modes and Architecture.
- In Unit 5, Dr.K.Annamalai suggested to add Testing of Fuel cells and types of Fuel cells.

4. Two and Three-wheeler Technology

- In Unit 2, Dr.K.Annamalai suggested to add more content/topics and elaborate. Mr.A.Senthil Kumar suggested to add types of loads acting and Challenges in Cooling System.
- In Unit 3, Dr.K.Annamalai advised to remove Ackermann's steering system and add Automotive transmission, Air Suspension and rename Mono Shock to Mono Suspension. Mr.A.Senthil Kumar suggested to add Gas Filled Shock Absorber and Dr.Yogesh K Bhatesvar suggested to add ABS and its types/Channels.
- In Unit 4, Dr.K.Annamalai suggested to elaborate the liquid Cooling system and Mr.A.Senthil Kumar recommend to elaborate reservoirs and coolant oils used in cooling system.
- In Unit 5, Dr.Justus suggested to add Layout for two and three wheeler.
- In General Mr.A.Senthil Kumar advised to add following in appropriate Unit s, Data Acquisition of two wheelers, Strain Gauging – Procedure and Exposure, One practical experiment on Strain gauging in shock absorber/anywhere, FEA Experiments. Dr.K.Annamalai Also suggested to add three Wheeler NVH and New methodology in NVH.

5. Automobile Chassis and Body Engineering

- In Unit 1, Dr.K.Annamalai suggested to add different types of Crumble Zones and accident zones, Effect of crashes with dummy models. Mr.A.Senthil Kumar recommended to add the following: Chassis NVH, Cabin Noise, Dashboard, Vehicle Noise, Failure of drives, Passenger Experiences in Premium/Medium/Low segment vehicles.

6. Powertrain Management Systems

- In Unit 2, Dr.K.Annamalai strongly recommended to include all types of Motronics (K, L, LE, LU, LH, M, ME, MED)
- In Unit 3, Dr.K.Annamalai suggested to replace the carburettor, Manifold injection or Direct Injection with MPFI or MPI. Mr.A.Senthil Kumar suggested to add SCR injection & Control System, Closed loop with Engine and SCR control System.
- In Unit 5, Dr.K.Annamalai advised to remove VVT, CVT, Camless.

Specialization Core for Powertrain Engineering

7. Engine Combustion and Simulation

- Dr.K.Annamalai suggested to add Combustion Analysis Software and analysis P-Θ Diagram.
- Mr.A.Senthilkumar suggested to add 1-D Analysis and recommended to add Design of Automotive Engines by Kolchine and Demidov as Reference book.

8. Engine Design and Development

- In Unit 2, Mr.A.Senthil Kumar suggested to add Design and Balancing of Crankshafts for Single and Multi Cylinder Engines. Dr.K.Annamalai suggested to add balancing technologies and any two types.
- In Unit 5, Mr.A.Senthil Kumar suggested to add P-Θ for various Intake system, Carburettor, etc., Dr.K.Annamalai advised to remove MPFI, GDI, CRDI system or change as Design Consideration of MPFI, GDI, CRDI system.

9. Powertrain NVH

- In Unit 5, Dr.K.Annamalai suggested to add Technique to measure the inlet and exhaust system NVH; Measurement instruments.

10. Automobile Fuels and Emission

- In Unit 1, Dr.K.Annamalai suggested to add Lubricants and change the Unit title as “Liquid Fuels and Lubricants”
- In Unit 5, Mr.A.Senthil Kumar suggested to add Emission norms in Different geometry, Test cycles, BS I – BS IV.

11. Engine Testing and Certification

- Dr.K.Annamalai advised to remove the word “Engine” from all Unit titles.

12. Vehicle Mechanics

- Experts accepted the proposed course

13. Power Electronics for Automobile

- Dr.Yogesh K Bhatesvar suggested to modify the basic/Fundamentals contents with new and advanced contents.

14. Modelling and Simulation of EHV

- Experts accepted the proposed course

15. Energy Storage and Management Systems

- Experts accepted the proposed course and advised to ensure the lab facilities.

16. Computer Aided Engineering

- Experts accepted the proposed course

Program Elective

17. Automotive Electrical and Electronics Systems

- In Unit -1, all Experts members suggested to add the correlation between sensors, actuators, micro controller, micro processor, and also the types of actuators in elaborate.

- In Unit -2, all Experts members suggested to add advanced or new technologies in starting system.
- In Unit -2, Dr.K.Annamalai suggested to add recent technologies in Ignition Systems like Laser Ignition system.
- In Unit -4, Dr.K.Annamalai suggested to add advanced technologies in lighting systems like floating beam light .
- In Unit -5, Dr.K.Annamalai suggested to add new technologies “Vehicle to vehicle connectivity”, “Vehicle to vehicle technology” and advised to change the Unit title as “Chassis Electrical Systems and Auxiliaries” to “Electrical Systems and Auxiliaries”
- Mr.A.Senthilkumar suggested to add safety systems in Unit 5. Also recommend to arrange Industry visit especially for this course.

ACTION:

The suggestions and recommendations given by the expert members were considered and the course content was revised. Resolved that the proposed changes in the courses under all categories are recommended.

35 BoS 03 New courses proposed under Allied Elective

DISCUSSION: The members discussed the new proposed course with 6 credits offered under Allied Elective category to B.Tech Students in School of Mechanical and Construction except students of Automobile Engineering as per VTU R15.

Electric Two Wheeler Technology

- Experts accepted the proposed course under allied elective category.
- Highly appreciated for framing a course with 6 credits (Theory + Demo Lab + Project) and 135periods (45 + 30 + 60)

ACTION:

The suggestions and recommendations given by the expert members were considered and the course content was revised. Resolved that the proposed changes in the courses under all categories are recommended

35 BoS 04 Courses to be offered under Independent Learning VTU R15 Sec. 7.2.7.1 Self Learning Course

DISCUSSION: The members discussed Massive Open Online Courses (MOOCs) offered under Independent Learning to B.Tech Automobile Engineering as per VTU R15. The following courses were recommended by experts.

Sl. No	Platform	Course Name	Starting Date	Link	No of Hours	Credits
1	Edx.org	Biobased Products for a	June 19, 2019	https://www.edx.org/course/biobased1x	42	2

		Sustainable (Bio)economy				
2	Edx.org	Innovation and Creativity Management	July 10, 2019	https://www.edx.org/course/innovation-creativity-management-0	48	3
3	Edx.org	Project Management Life Cycle	Jul 15, 2019	https://www.edx.org/course/project-management-life-cycle-2	80	3
4	Edx.org	From Fossil Resources to Biomass: A Chemistry Perspective	August 6, 2019	https://www.edx.org/course/from-fossil-resources-to-biomass-a-chemistry-perspective-2	99	3
5	Edx.org	Economics and Policies in a Biobased Economy	August 6, 2019	https://www.edx.org/course/economics-and-policies-in-a-biobased-economy-2	48	3
6	MOOC	Advanced Manufacturing Process Analysis	June 10, 2019	https://www.mooc-list.com/course/advanced-manufacturing-process-analysis-coursera	16	1
7	MOOC	Electric Vehicles and Mobility	June 10, 2019	https://www.mooc-list.com/course/electric-vehicles-and-mobility-coursera	18	1
8	SWAYAM	Steam Power Engineering	Aug 26, 2019	https://swayam.gov.in/nd1_noc19_me63/preview	30	2
9	SWAYAM	Robotics	Jul 29, 2019	https://swayam.gov.in/nd1_noc19_me74/preview	30	2
10	SWAYAM	Manufacturing Automation	Jul 29, 2019	https://swayam.gov.in/nd1_noc19_me78/preview	16	1

ACTION: The BOS experts recommended the above courses to include under Independent Learning category for B.Tech Automobile Engineering as per VTU R15. Resolved that the proposed online courses given as above are recommended for the students.

35 BoS 05 Specialized courses to be offered under Sec 7.2.8.3 Industry/ Higher Learning Institute Interaction

DISCUSSION: The chair presented the specialized course offered under the Industry/Higher Learning Institute Interaction and the course detail and expert details is mentioned below

S. No.	Course Name	Expert Name	Industry
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1	Composite Materials – for Automotive Applications	Mr.R.Vagesh Shangar, Senior Engineer	Mahindra Research Valley
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ACTION: Expert members appreciated the efforts taken by the department.

35 BoS 06 End Semester Examination Result 2018-19 ODD Semester

DISCUSSION: The chair presented the end semester examination result of 2018-19 ODD semester for B.Tech Automobile Engineering.

ACTION: The BOS members were satisfied with the overall result however in Engineering Thermodynamics student pass percentage was average. Experts suggested identifying the weak students and focusing more on them to improve their performance.

35 BoS 07 Experts name for question paper setting and external examination.

DISCUSSION: Discussed the experts name for examination and question paper setting as enclosed in Annexure-I.

ACTION: The expert's names were chosen and it was approved by BOS experts

35 BoS 08 Any other items with the permission of chair.

No other item was reported.

Items for Reporting

34 BoS 09 Students Exchanged under International Students Exchange Program – credit mapping.

DISCUSSION: The Chair presented credit mapping of INSA France and ESTACA France students admitted under International Students Exchange Program in 1st semester M.Tech Automobile Engineering programme during the academic year 2019-20 (Summer semester).

ACTION: BOS experts accepted the mapping of courses and recommended to adhere the same for the students admitted under International Students Exchange Program.

The BOS resolved to recommend to Academic Council for the approval proposed by the committee members.

Meeting ended with vote of thanks by the Chair.



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(Deemed to be University Estd. u/s of UGC Act, 1956)

(Chairman-BOS)

Annexure – I
Name list of examiners for practical exams and paper setters for theory exams

S.No	Faculty Name	Designation	Institution Name	Area of Specialization
1	Dr. P. Asokan	Professor	National Institute of Technology, Trichy	Operation Management, Optimization
2	Dr. R.Narayanasamy	Professor	National Institute of Technology, Trichy	CAD/CAM in extrusion
3	Dr. T. Ramesh	Assistant Professor	National Institute of Technology, Trichy	Machine Design, Kinematics, FEM, MEMS
4	Dr. N. Selvaraj	Professor	National Institute of Technology, Warangal	Simulation, FMS, CNC machines, Pull Systems,
5	Dr. T. Suthakar	Professor	National Institute of Technology, Trichy	Turbomachines, Automobile Engineering
6	Dr.G.Devaradjane	Professor	Madras Institute of Technology, Chrompet, Chennai	Alternative Fuels, Automotive Transmission
7	Dr.R.Kesavan	Professor	Madras Institute of Technology, Chrompet, Chennai-	Industrial Engineering, Operations Research
8	Dr.R.Sivaramakrishnan	Associate Professor	Madras Institute of Technology, Chrompet, Chennai	Composites, CIM and Robotics
9	<u>Dr.K.Arunachalam</u>	Associate Professor	Madras Institute of Technology, Chrompet, Chennai	Suspension, Automotive Electronics
10	<u>Dr.M.Senthilkumar</u>	Associate Professor	Madras Institute of Technology, Chrompet, Chennai	IC Engines
11	<u>Dr.K.Annamalai</u>	Associate Professor	Madras Institute of Technology, Chrompet, Chennai	IC Engines, Automotive Chassis
12	Dr.S.Jayaraj	Associate Professor	Madras Institute of Technology, Chrompet, Chennai	Alternative Fuels

13	Dr.G.B.Bhaskar	Associate Professor	Madras Institute of Technology, Chrompet, Chennai	Composite Materials, Manufacturing.
14	Dr.P.Senthilkumar	Assistant Professor	Madras Institute of Technology, Chrompet, Chennai	Automotive Pollution Control, Alternative Fuels
15	Mr.G.Anandkumar	Assistant Professor	Madras Institute of Technology, Chrompet, Chennai	IC Engines
16	Dr.Edwin Geo	Professor	Department of Automobile Engineering, SRM University, Chennai	IC Engines
17	Mr.K.Mathi	Associate Professor	Anna University, Kancheepuram	Manufacturing, Materials
18	Mr.N.Ganesh kumar	Associate Professor	Department of Automobile Engineering, SRM University, Chennai	Automobile Engineering, Alternative fuels
19	Mrs.B.Sharmila	Associate Professor	Department of Mechanical Engineering, Velammal Engineering College, Chennai	Design, Automotive Pollution
20	Mr.Motilal	Associate Professor	Department of Mechanical Engineering, TJS Engineering College, Chennai	Machine Design, Materials
21	Dr.A.R.Pradeep kumar	Prof & Head	Department of Mechanical Engineering, Dhanalakshmi Engineering College	Design, Alternative Fuels
22	Dr.V.Jaiganesh	Professor	Department of Mechanical Engineering, SA Engineering College	Composite Materials, Manufacturing.



Vel Tech
Rangarajan Dr. Sagunthala
R&D Institute of Science and Technology
(Deemed to be University Estd. u/s 3 of UGC Act, 1956)

**Minutes of
36th Meeting
of
Board of Studies**

**DEPARTMENT OF AUTOMOBILE ENGINEERING
SCHOOL OF MECHANICAL AND CONSTRUCTION**

Date: 17/07/2020

Time: 10.30 am

Venue: Online mode

Minutes of Meeting

The 36th Board of Studies (BOS) meeting was held on 17th July 2020. The Chairman welcomed all the members to the 36th BOS meeting. The Chairman introduced the External BOS members. The agenda items of the meeting were,

Item for Confirmation

- 36 BoS 01 To confirm the action taken on the recommendations of the 35th Board of Studies held on 08th June 2019
- 36 BoS 02 To confirm the minutes of the meeting of the 35th Board of Studies held on 08th June 2019.
- 36 BoS 03 To record the leave of absence of members

Items for Consideration and Approval

- 36 BoS 04 To review the Curriculum & Syllabus of M.Tech Automobile Engineering Programme with Specialization in Powertrain Engineering/Electric & Hybrid Vehicles.
- 36 BoS 05 To review the Curriculum & Syllabus of B.Tech Automobile Engineering Programme
- 36 BoS 06 New courses proposed for B.Tech – Automobile Engineering, Programme under Programme Elective as per VTU R15.
 - Course Name – Biofuels for IC Engine
- 36 BoS 07 Changes in the Expert name list for question paper setting and end semester examination.

Items for Discussion and Ratification

- 36 BoS 08 Online Courses to be offered in the academic year 2020-21 -under Independent Learning as per VTU R15 Sec. 7.2.7.1

Items for Reporting

- 36 BoS 09 Academic initiatives taken and carried out by the department to handle the COVID-19 pandemic
 - Online Class
 - Online Internal Assessment
 - Online Major Project Viva Voce
 - Extrapolation of internal marks for the end semester
 - Value Education Elective
- 36 BoS 10 Curriculum revision-Module based curriculum
- 36 BoS 11 To discuss the end semester examination results
 - 2018-19 Winter Semester
 - 2019-20 Summer semester
- 36 BoS 12 Credits awarded for students under Independent Learning – Seminar as per VTU R15 Sec. 7.2.7.2 (a)

- 36 BoS 13 Online Courses offered - under Independent Learning as per VTU R15 Sec. 7.2.7.1
- 36 BoS 14 Students Exchanged under International Students Exchange Program – credit mapping.
- 36 BoS 15 Specialized courses offered under Sec 7.2.8.3 Industry/ Higher Learning Institute Interaction.
- 36 BoS 16 Student achievements from various competitions
- 36 BoS 17 Any other items with the permission of chair.

Vote of Thanks

Members Present

S.No	Members	Affiliation
1	Dr.K.Annamalai (Academic expert member)	Associate Professor, Department of Automobile Engineering, Anna University, MIT-Campus, Chrompet, Chennai-44.
2	Mr.A.Senthilkumar (Industry expert member)	Research and Development Head, Engine design and Vehicle Integration, Panther Motor Corporation, Chennai.
3	Dr.M.Amala Justus Selvam (BOS Chairman)	Professor & Head, Department of Automobile Engineering, Vel Tech Rangarajan Dr.Sagunthala R&D Institute of Science and Technology, Avadi, Chennai-62
4	Dr.S.Jaichander (Member)	Professor, Department of Automobile Engineering, Vel Tech Rangarajan Dr.Sagunthala R&D Institute of Science and Technology, Avadi, Chennai-62
5	Dr.S.Padmanabhan (Member)	Associate Professor, Department of Automobile Engineering, Vel Tech Rangarajan Dr.Sagunthala R&D Institute of Science and Technology, Avadi, Chennai-62
6	Dr.M.Parthasarathy (Member)	Assistant Professor, Department of Automobile Engineering, Vel Tech Rangarajan Dr.Sagunthala R&D Institute of Science and Technology, Avadi, Chennai-62
7	Mr.M.Rajesh Kumar (Member)	Assistant Professor, Department of Automobile Engineering, Vel Tech Rangarajan Dr.Sagunthala R&D Institute of Science and Technology, Avadi, Chennai-62
8	Mr.D.Samuel Raj (Member)	Assistant Professor, Department of Automobile Engineering, Vel Tech Rangarajan Dr.Sagunthala R&D Institute of Science and Technology, Avadi, Chennai-62
9	Dr.V.Harish (Special invitee)	Assistant Professor, Department of Automobile Engineering, Vel Tech Rangarajan Dr.Sagunthala R&D Institute of Science and Technology,

Minutes of Board of Studies Meeting

Item for Confirmation

36 BoS 01 To confirm the action taken of 35th Board of Studies held on 08th June 2019

DISCUSSION: The Chair presented the implementation of suggestions recommended by expert members in the 35th Board of Studies to the board members for confirmation.

ACTION: BOS members were satisfied on the action taken report of the 35th BOS meeting expert recommendations and its fulfillment..

36 BoS 02 To confirm the minutes of the meeting of the 35th Board of Studies held on 08th June 2019.

DISCUSSION: The Chair presented minutes of the 35th Board of Studies to the board members for confirmation.

ACTION: BOS members have noted and confirmed the minutes of the 35th BOS meeting.

36 BoS 03 To record leave of Absence of members

DISCUSSION: The chair confirmed the presence of all members of the board of studies.

ACTION: BOS members have noted and confirmed the presence of the board of members.

Items for Consideration and Approval

36 BoS 04 To review the Curriculum & Syllabus of M.Tech Automobile Engineering Programme with Specialization in Powertrain Engineering/Electric & Hybrid Vehicles.

DISCUSSION: The Chair presented the curriculum and syllabus of M.Tech Automobile Engineering Programme with Specialization in Powertrain Engineering / Electric and Hybrid Vehicles.

ACTION: The curriculum and syllabus are reviewed and the expert members are satisfied with the existing curriculum and syllabus for the Academic year 2020-2021.

36 BoS 05 To review of Curriculum & Syllabus for B.Tech Automobile Engineering Programme

DISCUSSION: The Chair presented the curriculum and syllabus of B.Tech Automobile Engineering Programme - VTU R15.

ACTION: The curriculum and syllabus are reviewed and the expert members are satisfied with the existing curriculum and syllabus for the Academic year 2020-2021.

36 BoS 06 New courses proposed for B.Tech – Automobile Engineering under Programme Elective as per VTU R15.

DISCUSSION: The Chair presented the new course to be offered under the category of program elective for B.Tech Automobile Engineering as per VTU R15.

Course Name – Biofuels for IC Engine

Dr.V.Harish Assistant Professor, who framed the syllabus for the above course had presented the course content to the BOS.

Expert members scrutinized the syllabus and recommended the following suggestions for the improvement of course.

Biofuels for IC Engine

In unit-1, Mr. Senthilkumar suggested to provide Standards for fuel testing methods.

In unit-1, Dr.K.Annamalai recommended to include storage and handling of biofuel.

ACTION: As per expert members recommendations, the proposed course content was enriched and it was recommended to offer as Program elective course in B.Tech Automobile Engineering Programme..

36 BoS 07 Changes in the Expert name list for question paper setting and end semester examination.

DISCUSSION: Discussed the experts name list for examination and question paper setting as enclosed in Annexure-I.

ACTION: The experts name list was not changed and it was approved by BOS experts.

Items for Discussion and Ratification

36 BoS 08 Online Courses to be offered in academic year 2020-21 -under Independent Learning VTU R15 Sec. 7.2.7.1

DISCUSSION: The members discussed Massive Open Online Courses (MOOCs) offered under Independent Learning to B.Tech Automobile Engineering Programme as per VTU R15.

The following courses were recommended by experts.

Course Name	Outcome	Hrs	Offered By	Web link
Introduction to Self-Driving Cars (Program Elective)	This course will introduce you to the terminology, design considerations and safety assessment of self-driving cars. Understand commonly used hardware used for self-driving cars - Identify the main components of the self-driving software stack - Program vehicle modelling and control - Analyze the safety frameworks and current industry practices for vehicle development	45 hrs	University of Toronto	https://www.coursera.org/learn/intro-self-driving-cars
Introduction to battery-management systems	List the major functions provided by a battery-management system and state their purpose - Match battery terminology to a list of definitions - Identify the major components of a lithium-ion cell and their purpose	30 hrs	University of Colorado System	https://www.coursera.org/learn/battery-management-systems?specialization=algorithms-for-battery-management-systems
Fundamentals of Fluid Power	Fluid power has the highest power density of all conventional power-transmission technologies. Learn the benefits and limitations of fluid power, how to analyze fluid power components and circuits, and how to design and simulate fluid power circuits for applications.	17 hrs	University of Minnesota	https://www.coursera.org/learn/fluid-power
Electric Vehicles and Mobility	The course focuses on electric vehicles and mobility.	17 hrs	École des Ponts ParisTech	https://www.coursera.org/learn/electric-vehicles-mobility
Introduction to Sustainability (Allied Elective)	The course focuses on key knowledge areas of sustainability theory and practice, including population, ecosystems, global change, energy, agriculture, water, environmental economics and policy, ethics, and cultural history.	38 hrs	University of Illinois at Urbana-Champaign	https://www.coursera.org/learn/sustainability#enroll
Energy, Environment and Everyday Life	This course teaches you everything you need to know about energy, the environment, and at least a number of things in everyday life. It starts by talking about energy itself and where it comes from.	45 hrs	University of Illinois at Urbana-Champaign	https://www.coursera.org/learn/energy-environment-life
The Finite Element Method for Problems in Physics	This course is an introduction to the finite element method as applicable to a range of problems in physics and engineering sciences.	45 hrs	University of Michigan	https://www.coursera.org/learn/finite-element-method

ACTION: The BOS experts recommended the above courses to include under the Independent Learning category for B.Tech Automobile Engineering as per VTU R15. Resolved that the proposed online courses given as above are recommended for the students.

Items for Reporting

36 BoS 09 Academic initiatives taken and carried out by the department to handle the COVID-19 pandemic

- **Online Class**
- **Online Internal Assessment**
- **Online Major Project Viva Voce**
- **Extrapolation of internal marks for the end semester**
- **Value Education Elective**

DISCUSSION:

Online Class

- The chair presented the online class conducted for the UG Programme in the category program core, program elective, allied elective, and institute elective. The minimum percentage of the online class conducted and the maximum percentage of online class conduction was in the range from 10% to 50%.
- The chair presented the online class conducted for PG Programme in the category specialization core and specialization elective. The minimum percentage of the online class conducted and the maximum percentage of online class conduction was in the range from 45% to 67%.

Online Internal Assessment

- The chair presented the details of course outcomes, mode of the test, question pattern, no of questions and total marks for unit test II and midterm test II.

	Unit test II	Midterm test II
Covered CO	CO3	CO3, CO4 and CO5
Mode of test	Online Vlearn platform	Online Vlearn platform
Question pattern	Objective type	Descriptive type
No. of questions	40	3 (Answer any two)
Total Marks	10	20

Online Major Project Viva Voce

- The chair presented the number of project teams for online project viva voce and external member details to the experts.
- No of project teams for online project viva voce - 13
- External member - Dr. M. Prem Ananth, Professor, Department of Mechanical Engineering, Sri Venkateswara College of Engineering, Chennai.

Extrapolation of internal marks for the end semester

- The chair presented the concept of Extrapolation of internal marks for the end semester for theory courses.

Value Education Elective

- The chair presented the value-added elective courses offered by courseera.org for earning two credits for even semester in the academic year 2019-2020. Those students who have registered for 28 credits can also do these value-added electives.

ACTION: The BOS experts appreciated the efforts taken in the online class, assessment and project viva voce. They also accepted the concept of extrapolation of internal marks and courses in value-added electives.

36 BoS 10 Curriculum Revision-Module based curriculum

DISCUSSION: The chair presented that the proposed implementation of Module based curriculum will be postponed to the next academic year 2021-22. Due to the Covid-19 pandemic in India, he expressed the inability to implement the Module based curriculum in the academic year 2020-21.

ACTION: Expert members agreed to postpone the module-based curriculum to the next academic year 2021-22 because of the Covid-19.

36 BoS 11 To discuss the end semester examination results

DISCUSSION: The chair presented the end semester examination result of the 2018-19 Winter semester and 2019-20 Summer semester for B.Tech Automobile Engineering.

ACTION: The BOS members were satisfied with the overall results. However, the students pass percentage in courses such as Strength of Materials and Mechanics of machinery was 67.6% and 63.4% respectively in the academic year 2018-19 Winter semester. It was lower than the previous year's result. For which, the experts suggested to identify the weak students and to focus more on them to improve their performance.

36 BoS 12 Credits awarded for students under Independent Learning – Seminar as per VTU R15 Sec. 7.2.7.2 (a)

DISCUSSION: The chair presented the number of students awarded credits for seminar 1 and seminar 2.

Seminar 1

Number of students awarded=6

Seminar 2

Number of students awarded=40

ACTION: Expert members accepted the credit earned by the students in seminar1 and seminar 2.

36 BoS 13 Online Courses offered -under Independent Learning VTU R15 Sec. 7.2.7.1

DISCUSSION: The members discussed Massive Open Online Courses (MOOCs) offered under Independent Learning to B.Tech Automobile Engineering as per VTU R15.

ACTION: Expert members appreciated the efforts taken by the department to develop the self-learning ability of the students.

S. No.	VTU No.	Name	Course Name	Platform	Hrs	Credits	Grade
1	6784	ABHISHEK ABHIDATTA	Biobased1x: Biobased Products for a Sustainable (Bio)economy	edx	50	2	S
2	6801	ABHISHEK D	Biobased1x: Biobased Products for a Sustainable (Bio)economy	edx	50	2	S
3	6793	AKASHRANGAM L R	I4.0x Industry 4.0: How to Revolutionize your Business	edx	50	2	S
4	6828	AVINASH E	Biobased1x: Biobased Products for a Sustainable (Bio)economy	edx	50	2	S
5	8360	BANLAMBHA SHILLA	Manufacturing guidelines for Product design	NPTEL	40	2	S
6	7967	BOINAPALLY ARAVIND KUMAR	ET3034x: Solar energy	edx	50	2	S
7	6798	BYRARAPU TEJA	Biobased1x: Biobased Products for a Sustainable (Bio)economy	edx	50	2	S
8	8436	DHAN BAHADUR CHAUDHARY	Manufacturing guidelines for Product design	NPTEL	40	2	S
9	6786	DHANUSH KODI V	I4.0x Industry 4.0: How to Revolutionize your Business	edx	50	2	S
10	6795	JITENDRA HARSHA S	ET3034x: Solar energy	edx	40	2	S

11	6803	KARTHIKEYAN K	I4.0x Industry 4.0: How to Revolutionize your Business	edx	50	2	S
12	6809	MOHAMMED JAMALDEEN P	I4.0x Industry 4.0: How to Revolutionize your Business	edx	50	2	S
13	6817	MYNAMPATI VIJAY REDDY	ET3034x: Solar energy	edx	40	2	S
14	8323	LAKSHMI GANESH R	I4.0x Industry 4.0: How to Revolutionize your Business	edx	50	2	S
15	8470	OMER AHMED KHAN	Manufacturing guidelines for Product design	NPTEL	40	2	S
16	6826	PATNANA SAI DURGA	Biobased1x: Biobased Products for a Sustainable (Bio)economy	edx	50	2	S
17	6821	PRAVEEN KUMAR U	I4.0x Industry 4.0: How to Revolutionize your Business	edx	50	2	S
18	6814	RAJ KIRAN V	I4.0x Industry 4.0: How to Revolutionize your Business	edx	50	2	S
19	6811	RAJEEV REDDY E	ET3034x: Solar energy	edx	50	2	S
20	6815	RUBA LINGAM S	I4.0x Industry 4.0: How to Revolutionize your Business	edx	50	2	S
21	6794	SHAIK RIYAZ ALI	Biobased1x: Biobased Products for a Sustainable (Bio)economy	edx	50	2	S
22	6785	SURA SAI PRASAD REDDY	Biobased1x: Biobased Products for a Sustainable (Bio)economy	edx	50	2	S
23	6805	VIGNESH P	Biobased1x: Biobased Products for a Sustainable (Bio)economy	edx	50	2	S
24	7930	VINTHYEN A	I4.0x Industry 4.0: How to Revolutionize your Business	edx	50	2	S

36 BoS 14 Students Exchanged under International Students Exchange Program – credit mapping.

DISCUSSION: The Chair presented credit mapping of INSA France and ESTACA France students admitted under the International Students Exchange Program in 1st semester of M.Tech Automobile Engineering programme during the academic year 2019-20 (Summer semester).

ACTION: BOS experts accepted the mapping of courses and recommended to adhere the same for the students admitted under the International Students Exchange Program. Course mapping and students details have enclosed in Annexure-II.

36 BoS 15 Specialized courses offered under Sec 7.2.8.3 Industry/ Higher Learning Institute Interaction.

DISCUSSION: The Chair presented the courses offered by the Department under specialized courses. Experts from Industries and professors from international universities delivered the following courses.

Sl No	Course code & Name	Expert Details	Industry / Institute Name	Date	No of Students Registered	No of Students Eligible	No of Students Pass	Pass %
1	1157AU907 Modelling and Simulation of Hybrid and Electric Vehicles	Prof.Dr.Shuvra Das, Department of Mechanical Engineering	University Of Detroit Mercy, USA	27.01.20 to 31.01.20	50	48	48	100
2	1157AU905 Composite Materials for Automotive Applications	Mr.R.Vagesh Shangar, Senior Research Engineer, Mahendra Research Valley, Chennai.	Mahendra Research Valley, Chennai	12-9-2019,14-10-2019 and 15-10-2019	35	32	32	100
3	1157AU906 BATTERY TECHNOLOGY	Mr. S. Jeyakumar, R&D Head, AMCO Batteries, Maraimalai nagar, Chennai.	AMCO Batteries, Maraimalai nagar, Chennai.	10-08-2019, 16-10-2019 & 25-10-2019	38	33	33	100
4	1157AU908 Adavnced Emission technology and features	Mr.R Vagesh Shangar, Senior Research Engineer, Mahendra Research Valley, Chennai	Mahindra Research valley Chennai	14-4-2020 to 17-4-2020	32	32	32	100

ACTION: Expert members appreciated the efforts taken by the department.

36 BoS 16 Student achievements from various competitions

DISCUSSION: The chair presented the students achievement in competitions such as go-kart, ATV, BAJA for the academic year 2019-20.

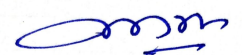
ACTION: Expert members appreciated students and faculty advisor and motivated them to get more prizes and awards in the next academic year.

36 BoS 17 Any other items with the permission of chair.

No other item was reported.

The BOS resolved to recommend to Academic Council for the approval proposed by the committee members.

Meeting ended with a vote of thanks by the Chairman.



Dr. Amala Justus Selvam
Head of the Department
Automobile Engineering
Vel Tech
Rangarajan Dr. Sagunthala
R&D Institute of Science and Technology
(Deemed to be University) Estd. in 2 of UGC Act, 1956

(Chairman-BOS)

Annexure - I

Name list of examiners for practical exams and paper setters for theory exams

S.No	Faculty Name	Designation	Institution Name	Area of Specialization
1	Dr. P. Asokan	Professor	National Institute of Technology, Trichy	Operation Management, Optimization
2	Dr. R.Narayanasamy	Professor	National Institute of Technology, Trichy	CAD/CAM in extrusion
3	Dr. T. Ramesh	Assistant Professor	National Institute of Technology, Trichy	Machine Design, Kinematics, FEM,MEMS
4	Dr. N. Selvaraj	Professor	National Institute of Technology, Warangal	Simulation, FMS, CNC machines, Pull Systems,
5	Dr. T. Suthakar	Professor	National Institute of Technology, Trichy	Turbomachines, Automobile Engineering
6	Dr.G.Devaradjane	Professor	Madras Institute of Technology, Chrompet, Chennai	Alternative Fuels, Automotive Transmission
7	Dr.R.Kesavan	Professor	Madras Institute of Technology, Chrompet, Chennai-	Industrial Engineering, Operations Research
8	Dr.R.Sivaramakrishnan	Associate Professor	Madras Institute of Technology, Chrompet, Chennai	Composites, CIM and Robotics
9	<u>Dr.K.Arunachalam</u>	Associate Professor	Madras Institute of Technology, Chrompet, Chennai	Suspension, Automotive Electronics
10	<u>Dr.M.Senthilkumar</u>	Associate Professor	Madras Institute of Technology, Chrompet, Chennai	IC Engines
11	<u>Dr.K.Annamalai</u>	Associate Professor	Madras Institute of Technology, Chrompet, Chennai	IC Engines, Automotive Chassis
12	Dr.S.Jayaraj	Associate Professor	Madras Institute of Technology, Chrompet, Chennai	Alternative Fuels
13	Dr.G.B.Bhaskar	Associate Professor	Madras Institute of Technology, Chrompet, Chennai	Composite Materials, Manufacturing

14	Dr.P.Senthilkumar	Assistant Professor	Madras Institute of Technology, Chrompet, Chennai	Automotive Pollution Control, Alternative Fuels
15	Mr.G.Anandkumar	Assistant Professor	Madras Institute of Technology, Chrompet, Chennai	IC Engines
16	Dr.Edwin Geo	Professor	Department of Automobile Engineering, SRM University, Chennai	IC Engines
17	Mr.K.Mathi	Associate Professor	Anna University, Kancheepuram	Manufacturing, Materials
18	Mr.N.Ganesh kumar	Associate Professor	Department of Automobile Engineering, SRM University, Chennai	Automobile Engineering, Alternative fuels
19	Mrs.B.Sharmila	Associate Professor	Department of Mechanical Engineering, Velammal Engineering College, Chennai	Design, Automotive Pollution
20	Mr.Motilal	Associate Professor	Department of Mechanical Engineering, TJS Engineering College, Chennai	Machine Design, Materials
21	Dr.A.R.Pradeep kumar	Prof & Head	Department of Mechanical Engineering, Dhanalakshmi Engineering College	Design, Alternative Fuels
22	Dr.V.Jaiganesh	Professor	Department of Mechanical Engineering, SA Engineering College	Composite Materials, Manufacturing.

Annexure - II

Foreign students course mapping

SAP Incoming
Ins A 9/2019-20/16
08/10/19 SS
8/05/19



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Directorate of International Relations

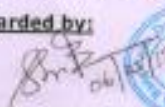
Approval for Incoming Student Exchange

Student's Personal Data

Name of the Student		Mr. Lorian Keven KERVELLA	
DoB	28/09/1998	Passport No.	14DTS7543
Home University & Country		INSA Centre Val de Loire, France	
Programme Details at Home University		Master Level - Industrial System Engineering	
Gender		Male	
Nationality		France	

(Please refer the application from the candidate for more details)

Forwarded by:

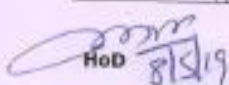



Director - International Relations

Send course syllabus to participant of school in France!

Details of the Proposed Exchange at Vel Tech

Purpose of Exchange	Project-Work / Course Work	
Department Applied for	Automobile Engineering	
Programme	M.Tech - Automobile Engineering	
Semester	Summer Semester 2019 - 20 (Aug to Jan)	
Course Details	Course Name	Credits
	Applied Statistics and Quality Control	4
	Prime Movers and Transmission	5
	Automotive Electrical and Electronics	3
	Two and Three-wheeler Technology	3
	Automobile Chassis and Body Engineering	3
	Engine Combustion and Simulation or Power Electronics for Automobile	4
	Online-Course	2
	Total credits: A.T. Ravichandran	24



HoD
Dr. Amala Justus Salvam
Head of the Department
Automobile Engineering



Dean-SOMC
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Dean Institute of Science and Technology
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Director - Academics
Prof. Dr. P. J. Jeyarajagan
Director Academics



Vel Tech
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Vice Chancellor
9/5



Vel Tech
Rangarajan Dr. Sagunthala
R&D Institute of Science and Technology
Approved by the University Grants Commission (UGC) Act, 1956

SAP Incoming Insa21
2019-20/19

08/10/2019



Vel Tech
Rangarajan Dr. Suganthala
Vellore Institute of Science and Technology
Chennai - 600 127, India

Directorate of International Relations

Approval for Incoming Student Exchange

Student's Personal Data

Name of the Student	Mr. Clement Pierre Emile CHEDEMAIL		
DoB	02/02/1998	Passport No.	Passport Applied
Home University & Country	INSA Centre Val de Lorie, France		
Programme Details at Home University	Master Level - Industrial System Engineering		
Gender	Male		
Nationality	France		

(Please refer the application from the candidate for more details)

Forwarded by:

[Signature]



Director - International Relations

Details of the Proposed Exchange at Vel Tech

Purpose of Exchange	Project-Work / Course Work	
Department Applied for	Automobile Engineering	
Programme	M.Tech - Automobile Engineering	
Semester	Summer Semester 2019 - 20 (Aug to Jan)	
Course Details	Course Name	Credits
	Applied Statistics and Quality Control	4
	Prime Movers and Transmission	5
	Automotive Electrical and Electronics	3
	Two and Three-wheeler Technology	3
	Automobile Chassis and Body Engineering	3
	Engine Combustion and Simulation or Power Electronics for Automobile	4
	Online Course / ~~Completed~~	2
Total credits		24

[Signature]
HoD

Dr. Anshu Justus Selvaraj
Head of the Department
Automobile Engineering
Vel Tech
Rangarajan Dr. Suganthala
Vellore Institute of Science and Technology
Chennai - 600 127, India

[Signature]
Dean - SOMC

Vel Tech
Rangarajan Dr. Suganthala
Vellore Institute of Science and Technology
Chennai - 600 127, India
OFFICE OF THE
VICE CHANCELLOR

[Signature]
Director - Academics
Prof. Dr. Techn. Koteswara Rao Anne
Director Academics

Vel Tech
Rangarajan Dr. Suganthala
Vellore Institute of Science and Technology
Chennai - 600 127, India

SAP Incoming
 Intd 3/2019 - 20/15
 09/10/19
 06/05/19



Vel Tech
 Rangarajan Dr. Sagunthala
 RSD Institute of Science and Technology
 (Approved by the Council for Higher Education, India)

Directorate of International Relations

Approval for Incoming Student Exchange

Student's Personal Data

Name of the Student	Mr. Hugo Louis Marius BELLARD		
DoB	24/04/1998	Passport No.	16AV24281
Home University & Country	INSA Centre Val de Lorie, France		
Programme Details at Home University	Master Level - Industrial System Engineering		
Gender	Male		
Nationality	France		

(Please refer the application from the candidate for more details)

Forwarded by:

[Signature]
 06/05/19



Director - International Relations

Details of the Proposed Exchange at Vel Tech

Purpose of Exchange	Project-Work / Course Work	
Department Applied for	Automobile Engineering	
Programme	M.Tech - Automobile Engineering	
Semester	Summer Semester 2019 - 20 (Aug to Jan)	
Course Details	Course Name	Credits
	Applied Statistics and Quality Control	4
	Prime Movers and Transmission	5
	Automotive Electrical and Electronics	3
	Two and Three-wheeler Technology	3
	Automobile Chassis and Body Engineering	3
	Engine Combustion and Simulation or Power Electronics for Automobile	4
	Online Course ~~Project~~ <i>Assignment</i>	2
	Total credits	24

[Signature]
 05/19

Dr. Amala Justin Selvam
 Head of the Department
 Automobile Engineering

Vel Tech
 Rangarajan Dr. Sagunthala
 RSD Institute of Science and Technology
 (Approved by the Council for Higher Education, India)

Vel Tech
 Rangarajan Dr. Sagunthala
 RSD Institute of Science and Technology
 (Approved by the Council for Higher Education, India)



Director - Academics

[Signature]
Prof. Dr. techn. Koteswara Rao Annam
 Director Academics

Vel Tech
 Rangarajan Dr. Sagunthala
 RSD Institute of Science and Technology
 (Approved by the Council for Higher Education, India)

SAP Incoming
INSA/2019-20/15
24/09/19
8/05/2019



Vel Tech
Rangarajan Dr. Suganthula
HSD Institute of Science and Technology
(Approved by University Grants Commission, India, UGC, 1972)

Directorate of International Relations

Approval for Incoming Student Exchange

Student's Personal Data

Name of the Student	Mr. Pierre Ange GOLLINUCCT		
DoB	07/01/1998	Passport No.	15AK25740
Home University & Country	INSA Centre Val de Lorie, France		
Programme Details at Home University	Master Level - Industrial System Engineering		
Gender	Male		
Nationality	France		

(Please refer the application from the candidate for more details)

Forwarded by:

[Signature]
06/05/19



Director - International Relations

Details of the Proposed Exchange at Vel Tech

Purpose of Exchange	Project Work / Course Work	
Department Applied for	Automobile Engineering	
Programme	M.Tech - Automobile Engineering	
Semester	Summer Semester 2019 - 20 (Aug to Jan)	
Course Details	Course Name	Credits
	Applied Statistics and Quality Control	4
	Prime Movers and Transmission	5
	Automotive Electrical and Electronics	3
	Two and Three-wheeler Technology	3
	Automobile Chassis and Body Engineering	3
	Engine Combustion and Simulation or Power Electronics for Automobile	4
	Online Course	2
	Total credits	24

[Signature]
HoD
8/5/19

Dr. Anala Justus Selvam
Head of the Department
Automobile Engineering
Vel Tech
Rangarajan Dr. Suganthula
HSD Institute of Science and Technology
(Approved by University Grants Commission, India, UGC, 1972)

Vel Tech
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HSD Institute of Science and Technology
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[Signature]
Vice Chancellor

[Signature]
Director - Academics

Vel Tech
Rangarajan Dr. Suganthula
HSD Institute of Science and Technology
(Approved by University Grants Commission, India, UGC, 1972)

SAP Training E37414/2019-20/12
2/12



Vel Tech
Rangarajan Dr. Sugunthala
Vellore Institute of Science and Technology
Vellore - 620 015, Tamil Nadu, India

Directorate of International Relations

Approval for Incoming Student Exchange

Student's Personal Data

Name of the Student		Mr. Romeo Coletti	
DoB	10/05/1997	Passport No.	18EH26843
Home University & Country		Ecole Supérieure des Techniques Aéronautiques et de Construction Automobile (ESTACA), France	
Programme Details at Home University		M1 (Masters) - Automobile Engineering	
Gender		Male	
Nationality		France	

(Please refer the application from the candidate for more details)

Forwarded by:

8/2/2020



Director - International Relations

Details of the Proposed Exchange at Vel Tech

Purpose of Exchange	Project-Work / Course Work	
Department Applied for	Automobile Engineering	
Programme	M.Tech - Automobile Engineering	
Semester	Summer Semester 2019 - 20 (Aug to Jan)	
Course Details	Course Name	Credits
	Prime Movers and Transmission	5
	Automotive Electrical and Electronics	3
	Two and Three-wheeler Technology	3
	Automobile Chassis and Body Engineering	3
	Engine Combustion and Simulation	4
	Total credits	18

Course not to be approved from 18/09

(Learning Agreement is attached)

25/4/19
HoD

Dr. Anala Justus Selvam
Head of the Department
Automobile Engineering
Vel Tech
Rangarajan Dr. Sugunthala
Vellore Institute of Science and Technology
Vellore - 620 015, Tamil Nadu, India

2/12/19
Dean - SOMC
Dr. S. S. S. S. S.
Dean SOMC

Vel Tech
Rangarajan Dr. Sugunthala
Vellore Institute of Science and Technology
Vellore - 620 015, Tamil Nadu, India
Vice Chancellor

2/12/19
Director - Academics
Dr. S. S. S. S. S.
Director Academics

Vel Tech
Rangarajan Dr. Sugunthala
Vellore Institute of Science and Technology
Vellore - 620 015, Tamil Nadu, India