VIGNAN'S
Foundation for Science, Technology & Research
UNIVERSITY
(Estd u/s 3 of UGC Act of 1956)

VIGNAN'S FOUNDATION FOR SCIENCE, TECHNOLOGY AND RESEARCH UNIVERSITY:: VADLAMUDI

School of Mechanical Engineering

B.Tech - Automobile Engineering

Minutes of Board of Studies Meeting

16th March 2013

The following members were present for the Board of Studies meeting for B.Tech in Automobile Engineering held on 16-03-2013 at AGF-04, U-Block, Vignan's University, Vadlamudi.

1. Dr. N Ramesh Babu, Prof, Mech Engg Dept., IITM, Chennai, Hyderabad (External Member)
2. Dr. K. Madhu Murthy, Professor, NIT, Warangal (External Member)
3. Dr. N Mohan Rao, Associate professor & Head, JNTUK, Vizianagaram (External Member)
4. Sri. K Suryanarayana, Academic Relations Manager, TCS, Hyderabad (External Member)
5. Dr. V. Madhusaudhan Rao, Director, DET, VU, (Internal member)
6. Dr. B. Seetha Ramanjaneyulu, Director (Academics), VU (Internal Member)
7. Dr.VidhuKampurath P., Assoc Prof & Head, School of Mech Engg, VU (Internal Member)
8. Dr.K. Phaneendra Kumar, Professor & Principal, Vignan's LARA Institute (Internal Member)
9. Dr. S. Rajasekharan, Professor, School of Mech Engg, VU (Internal Member)
10. Mr. P B G S N Murthy, Assoc Prof, School of Mech Engg, VU (Internal Member)
11. Mr. Anoop Kumar T, Assoc Prof, School of Mech Engg, VU (Internal Member)
12. Dr. D. Jagadish, Assoc Prof, School of Mech Engg, VU (Internal Member)
13. Mr. K. Venkata Rao, Assoc Prof, School of Mech Engg, VU (Internal Member)
14. Mr. D Satyanarayana, Assoc Prof, School of Mech Engg, VU (Internal Member)

Agenda of the meeting:

1. Revision in Course structure and detailed syllabus of B.Tech. Automobile Engineering
2. Assessment and required changes, if any in laboratories for concerned Programme.
3. Any other item with the permission of the chair.

The internal Faculty of Department had discussed extensively regarding modifications in syllabus and these suggestions were presented before the committee for elaborate discussions. After detailed liberations, the following points were concluded and accepted as suggestions of the BoS committee.

B.Tech Automobile Engineering.

s.no	Year &Sem	Existing subject	Revised subject	Reason for change
1	II - I	Probability & Statistics	Manufacturing Processes for Automotive Components	In line with direction from academic section
2	II - I	Kinematics of Machines	Material Science &Metallurgy	Interchanging
3	II - I	Mechanics of solids Lab	Mechanics of solids and Materials Lab	Materials Lab is incorporated with this tab
4	II - II	Metrology & Quality Control	Data Structures	Incorporation of compulsory subject
5	II - II	Manufacturing Processes for Automotive Components	Probability & Statistics	Interchanging
6	II – II	Dynamics of Machines	Fundamentals of IC Engine	Interchanging
7	II – II	Engineering Materials	Kinematics of Machine	Interchanging
8	II - II	Materials Lab	IC Engines	Materials is combined with MoS lab
9	III - I	Heat Transfer	Advanced Theory of IC Engines	Interchanging
10	III– I	Fundamentals of IC Engines	Dynamics of Machines	Interchanging
11	III - I	Automotive Chassis	Metrology and Quality Control	Interchanging
12	III - I	I.C Engines lab	Vehicle Maintenance lab	Interchanging
13	III - I	Heat Transfer lab	Automotive Transmission lab	Interchanging
14	III– II	Advanced Theory of I.C Engines	Heat Transfer	Interchanging
15	III - II	TOM	Automotive Chassis	Interchanging
16	III - II	Vehicle Maintenance lab	Mini Project	Mini Project s Compulsory in III -II
17	III - II	Automotive Transmission lab	Heat Transfer lab	Interchanging
18	III–II	Automotive Testing Lab	TRWBC lab	TRWBC is Compulsory
19	IV–I	Mionr –V	TOM Lab	As per directions
20	IV– I	Project -I	Automotive Testing Lab	As per directions

- **Syllabus Thermodynamics to be modified**
  Unit 1, 2, 3 of ME210 + New units 4, 5 to be added comprising compressors & gas turbines + Emissions& control
- **Modification regarding the course (whose present SUBJECT - TE and to be changed to TD**
  The first three units will be replaced with first 3 units of (Thermal engineering-1)
  UNIT-4 SYLLABUS-- Reciprocating compressors of + Comparison of centrifugal and axial flow compressors with reciprocating compressors with velocity diagrams
  UNIT5------Introduction to simple gas turbine cycle, classification of Gas turbine cycles, analysis of Brayton cycle, comparison of gas turbines with I.C. Engines

- **Modification regarding the syllabus of course MOS**
  Unit 2,3,4,5 of existing MoS will become unit 1,2,3,4 of the new revised MOS and the5th unit syllabus is as follows

- SYLLABUS OF UNIT 5 OF REVISED_ATICE introduction and Objectives of super charging, thermodynamic cycles(OTTO & DIESEL) with super charging, Supercharging of SI and CI engines, effects of supercharging on the thermodynamic performance of engine, Methods of supercharging, Turbo charging (Buchi system), Methods ofturbo charging

In SPV following suggestions are put forward
*Include military vehicles
*Road making vehicles,

*Civil works vehicle. Mines clearance vehicles etc. to be included.

- In FICE calibration to be included
- In ATIC dynamometer testing to be included
- In Automotive components Design needs modifications with special reference to automobiles
- In MSM Materials for automobile to be included
- In Automotive safety a unit covering safety and reliability is required
- In, Vehicle Dynamics along with vibration, shock also to be introduced
- In Vehicle Body Engineering car air conditioning to be given special reference
- The committee pointed out that getting operationally obsolete military vehicles by writing to DRDO will be advantageous for understanding the vehicle.
- The committee suggested to start SAE student chapter for making the students participate in various globally organized events.
- The committee has suggested following courses as optional for knowledge up gradation (replacing minor with core subjects)

a) Track vehicles
b) Advance welding technology
c) FMS / SIM
d) Automobile simulation

Outcomes of the Meeting:

1. BOS members approved the revised curriculum (Structure, Syllabus and regulations) of B.Tech , Automobile Engineering and it follows Choice Based Credit System . Structure is provided in Appendix I.
2. In all the courses of the revised curriculum (R13) substantial changes are made in the content. List is Provided in Appendix II
3. Stakeholders feedback is collected, analyzed and given utmost priority while designing the curriculum and their suggestions are implemented

Automobile Engineering BOS members list

S.No	Name	Designation & Organization	Signature
1	Dr. N Ramesh Babu	Professor, Mechanical Engineering Dept. IIT Madras, Chennai	
2	Dr. K. Madhu Murthy	Professor, Mechanical Engineering Dept. NIT, Warangal	
3	Dr. N. Mohan Rao	Associate Professor & Head, UCE, JNTUK, Vizianagaram	
4	Sri. K Suryanarayana	Academic Relationship Manager, TCS, Hyderabad	
5	Dr. V. Madhusaudhan Rao	Director, DET, VU	
6	Dr.C.Ranga Rao	Director (Evaluation), VU	
7	Dr. B. Seetha Ramanjaneyulu	Director (Academics), VU	
8	Dr.Vidhu Kampurath P	Assoc Prof & Head, School of Mechanical Engineering VU	
9	Dr.K. Phaneendra Kumar	Professor & Principal, Vignan's LARA Institute	
10	Dr. S. Rajasekaran	Professor, School of Mech Engg. VU	
11	Mr. P B G S N Murthy	Assoc Prof, School of Mech Engg, VU	
12	Mr. Anup Kumar T	Assoc Prof, School of Mech Engg, VU	
13	Dr. D. Jagadish	Assoc Prof, School of Mech Engg, VU	
14	Mr. K. Venkata Rao	Assoc Prof, School of Mech Engg, VU	
15	Mr. D. Satyanarayana	Assoc Prof, School of Mech Engg, VU	

Appendix I

B.Tech. I Year - Course Structure
SEMESTER - I

S.No	Subject	L	T	P	To	C
1	Fundamentals of Electrical Engineering	4	-	-	4	4
2	Engineering Mathematics	3	1	-	4	4
3	Engineering Chemistry	4	-	-	4	4
4	Environmental Studies	3	-	-	3	3
5	Engineering Materials	4	-	-	4	4
6	Professional Ethics, Values and Human Rights	2	-	-	2	-
	Practical Courses:		-	-	-	
7	Fundamentals of Electrical Engineering Lab	-	-	3	3	2
8	Engineering Chemistry Lab	-	-	3	3	2
9	Engineering Graphics Lab	1	-	2	3	3
	Total	21	1	8	30	26

B.Tech. I Year - Course Structure
SEMESTER - II

S.No	Subject	L	T	P	To	C
1	Problem Solving and Computer Programming	4	1	-	5	5
2	Engineering Physics	3	1	-	4	4
3	Technical English Communication	3	2	-	5	5
4	Engineering Mathematics - II	3	1	-	4	4
5	Engineering Mechanics	3	1	-	4	4
6	Network Security	2	-	-	2	-
	Practical Courses:	-	-	-	-	2
7	Computer Programming Lab	-	-	3	3	2
8	Engineering Physics Lab -	-	-	3	3	2
9	Workshop Practice	-	-	3	3	2
	Total	18	6	9	33	28

L= Lecture: T=Tutorial: P= Practical: To= Total: C =credits

B.Tech. II Year - Course Structure
SEMESTER - I

S.No	Subject	L	T	P	To	C
1	Manufacturing Processes for Automotive Components	4	-	-	4	4
2	Thermodynamics	3	1	-	4	4
3	Mechanics of Solids	3	1	-	4	4
4	Material Science & Metallurgy	4	-	-	4	4
5	Fluid Mechanics and Hydraulic Machines	3	1	-	4	4
6	**Minor - I**	3	1	-	4	4
7	**Seminar**	-	-	-	-	1
	Practical Courses:	-	-	-	-	
8	Fluid Mechanics and Hydraulic Machinery Lab	-	-	3	3	2
9	Mechanics of solids & Materials Lab	-	-	3	3	2
10	Thermodynamics Lab	-		3	3	2
	Total	20	4	9	33	31

B.Tech. II Year - Course Structure
SEMESTER - II

S.No	Subject	L	T	P	To	C
1	Data Structures	4	0	-	4	4
2	Probability & Statistics	3	1	-	4	4
3	Design of Machine Elements	3	1	-	4	4
4	Fundamentals of I.C Engines	3	1	-	4	4
5	Kinematics of Machines	3	1	-	4	4
6	**Minor - II**	4	0	-	4	4
7	**Seminar**	-	-	-	-	1
	Practical Courses:	-	-	-	-	
8	Soft skills Lab	-	-	3	3	2
9	Machine Drawing	-	-	3	3	2
10	I.C Engines Lab	-	-	3	3	3
		20	4	9	33	31

L= Lecture: T=Tutorial: P= Practical: To= Total: C =credits

B.Tech. III Year - Course Structure
SEMESTER - I

S.No	Subject	L	T	P	To	C
1	Advanced theory of I.C. Engines	3	1	-	4	4
2	Dynamics of Machines	3	1	-	4	4
3	Automotive components Design	3	1	-	4	4
4	Automotive Transmission	4	-	--	4	4
5	**Dept. Electives-I**	4	-	-	4	4
	Automotive Chassis			-		
	Two and Three Wheelers Technology			-		
	Metrology & Instrumentation			-		
6	**Minor - III**	4	-	-	4	4
7	**Seminar**	-	-	-	-	1
	Practical Courses:	-	-	-	-	-
8	Vehicle Evaluation & Maintenance Lab	-	-	3	3	2
9	Automotive Chassis and Transmission Lab	-	-	3	3	2
10	Two And Three Wheelers Technology Lab	-	-	3	3	2
	Total	21	3	9	33	31

B.Tech. III Year - Course Structure
SEMESTER - II

S.No	Subject	L	T	P	To	C
1	Vehicle Body Engineering	4	-	-	4	4
2	Heat Transfer	3	1	-	4	4
3	Modern Vehicle Tchnology	4	0	-	4	4
4	Vehicle Dynamics	3	1	-	4	4
5	**Dept. Electives-II**	4	-	-	4	4
	Special Purpose Vehicles					
	Electronic Engine Management System					
	Automotive Safety					
6	**Minor - IV**	4	-	-	4	4
7	**Seminar**	-	-	-	-	1
	Mini Project	-	-	3	3	2
8	**Practical Courses:**	-	-	-	-	-
9	Heat Transfer Lab	-	-	3	3	2
10	Professional Communication Lab	-	-	3	3	2
	Total	22	2	9	33	31

L= Lecture: T=Tutorial: P= Practical: To= Total: C =credits

B.Tech. IV Year - Course Structure
SEMESTER - I

S.No	Subject	L	T	P	To	C
1	Autotronics	4	-	-	4	4
2	Automotive Emission & Control	4	-	-	4	4
3	Automotive System Design	3	1	-	4	4
4	Industrial Economics & Management	4	-	-	4	4
5	**Dept. Electives-III**					4
	Automotive Aerodynamics	4	-	-	4	
	Finite Element Methods	3	1	-	4	
	Robotics	4	-	-	4	
6	**Dept. Electives-IV**					4
	Product Data Management & Collaborative Product Commerce	4	0	-	4	
	Transport Management	4	0	-	4	
	New Generation and Hybrid Vehicles	4	0	-	4	
7	Minor-V (for Internship students)	4	0	-	4	4
	Practical Courses:	-	-	-	-	
8	Automotive Testing Lab	-	-	3	3	2
9	Autotronics Lab	-	-	3	3	2
10	Design Analysis and Simulation Lab	-	-	3	3	2
	Total	26	2	9	37	34

B.Tech. IV Year - Course Structure
SEMESTER - II

S.No	Subject	L	T	P	To	C
1	Automotive Air-conditioning	3	1	-	4	4
2	Minor-V (for Project students)	4	0	-	4	4
5	**Dept. Electives-V**					
	Alternative Fuels and Energy systems	4	-	-	4	4
	Motor Sport Engineering	4	-	-	4	4
	Computational Fluid Dynamics	3	1	-	4	4
6	**Interdisciplinary Subject (Dept Elective-VI)**					
	Linear Control Systems	4	-	-	4	4
	Mechatronics	4	-	-	4	4
	Nano Technology	4	-	-	4	4
7	**Project-II**	-	-	12	12	12
	Total	14	2	12	28	28

*The courses that are highlighted are offered under CBCS.

Chairman –BoS

Appendix –II

List of New Courses in the R-13 B.Tech Automobile Engineering

S.No	Semester (Year)	Course Name
1	I Year I Semester	Fundamentals of Electrical Engineering
2	I Year I Semester	Engineering Mathematics - I
3	I Year I Semester	Engineering Chemistry
4	I Year I Semester	Environmental Studies
5	I Year I Semester	Engineering Materials
6	I Year I Semester	Professional Ethics, Values and Human Rights
7	I Year I Semester	Fundamentals of Electrical Engineering Lab
8	I Year I Semester	Engineering Chemistry Lab
9	I Year I Semester	Engineering Graphics
10	I Year II Semester	Problem Solving and Computer Programming
11	I Year II Semester	Engineering Physics
12	I Year II Semester	Technical English Communication
13	I Year II Semester	Engineering Mathematics - II
14	I Year II Semester	Engineering Mechanics
15	I Year II Semester	Network Security
16	I Year II Semester	Computer Programming Lab
17	I Year II Semester	Engineering Physics Lab
18	I Year II Semester	Workshop Practice
19	II Year I Semester	Manufacturing Processes for Automotive Components
20	II Year I Semester	Thermodynamics
21	II Year I Semester	Mechanics of Solids
22	II Year I Semester	Material Science & Metallurgy
23	II Year I Semester	Fluid Mechanics and Hydraulic Machines
24	II Year I Semester	**Seminar**
25	II Year I Semester	Fluid Mechanics and Hydraulic Machinery Lab
26	II Year I Semester	Mechanics of solids & Materials Lab
27	II Year I Semester	Thermodynamics Lab
28	II Year II Semester	Data Structures
29	II Year II Semester	Probability & Statistics
30	II Year II Semester	Design of Machine Elements
31	II Year II Semester	Fundamentals of I.C Engines
32	II Year II Semester	Kinematics of Machines
33	II Year II Semester	**Seminar**
34	II Year II Semester	Soft skills Lab
35	II Year II Semester	Machine Drawing
36	II Year II Semester	I.C Engines Lab
37	III Year I Semester	Advanced theory of I.C.Engines
38	III Year I Semester	Dynamics of Machines
39	III Year I Semester	Automotive components Design
40	III Year I Semester	Automotive Transmission
41	III Year I Semester	Automotive Chassis (Elective)
42	III Year I Semester	Two and three wheeler Technology (Elective)
43	III Year I Semester	Metrology and instrumentation (Elective)
44	III Year I Semester	**Seminar**

45	III Year I Semester	Vehicle Evaluation & Maintenance Lab
46	III Year I Semester	Automotive Chassis and Transmission Lab
47	III Year I Semester	Two And Three Wheelers Technology Lab
48	III Year II Semester	Vehicle Body Engineering
49	III Year II Semester	Heat Transfer
50	III Year II Semester	Modern Vehicle Tchnology
51	III Year II Semester	Vehicle Dynamics
52	III Year II Semester	Automotive Safety(Elective)
53	III Year II Semester	Special purpose vehicles(Elective)
54	III Year II Semester	Electronic engine management and system(Elective)
55	III Year II Semester	**Seminar**
56	III Year II Semester	Mini Project
57	III Year II Semester	Heat Transfer Lab
58	III Year II Semester	Professional Communication Lab
59	IV Year I Semester	Autotronics
60	IV Year I Semester	Automotive Emission & Control
61	IV Year I Semester	Automotive System Design
62	IV Year I Semester	Industrial Economics & Management
63	IV Year I Semester	Product Data management and collaborative product commerce (Elective)
64	IV Year I Semester	Transport management (Elective)
65	IV Year I Semester	New generation of hybrid vehicles(Elective)
66	IV Year I Semester	Automotive Aerodynamics (Elective)
67	IV Year I Semester	FEM (Elective)
68	IV Year I Semester	Robotics (Elective)
69	IV Year I Semester	Automotive Testing Lab
70	IV Year I Semester	Autotronics Lab
71	IV Year I Semester	Design Analysis and Simulation Lab
72	IV Year II Semester	Automotive Air-conditioning
73	IV Year II Semester	Alternative Fuels and energy systems (Elective)
74	IV Year II Semester	Motorsport engineering (Elective)
75	IV Year II Semester	CFD (Elective)
76	IV Year II Semester	Linear control systems (Inter disciplinary subject)
77	IV Year II Semester	Mechatronics (Inter disciplinary subject)
78	IV Year II Semester	Nanotechnology (Inter disciplinary subject)
79	IV Year II Semester	Interdisciplinary Subject
80	IV Year II Semester	Project-II

Chairman - BoS