M.V.S.R Engineering College

Automobile Engineering Department

Annual Report (Academic Year 2018-2019)

Head of the Department: Dr.G.Venkata Subbaiah **Principal: Dr.G.Kanaka Durga**

About the department

B.E. program in Automobile Engineering was started in 2009 under the Department of Mechanical Engineering with an intake of 30 students. The present intake is 60 students. MVSR Engineering College is the first college to start B.E. (Automobile Engineering) in the state of Telangana. The course has been attracting good students from inception, and is becoming increasingly popular.

From the academic year 2017-18, the B.E. program in Automobile Engineering is brought under the Department of Automobile Engineering.

Over the years, the department has developed excellent laboratory facilities with state of the art equipment. Students of the program are encouraged to participate in various competitions such as SAE-BAJA, EFFICYCLE, SUPRA, GOKART, QUADBIKE etc. The students are motivated to develop new concepts and also to build working systems related to automobiles towards their final year projects.

Students possessing B.E.(Automobile Engg.) are eligible for specialization in Automobile Engineering in addition to those in Mechanical Engineering at PG level.

Vision:

To Produce Professionally Confident and Responsible Engineers with the Knowledge and Skills in Vehicle Designing, manufacturing and testing of Automobiles to meet ever changing needs of the Global Automotive Industry and the Society.

Mission:

The department strives to provide the engineering foundation as well as professional, innovative and leadership skills to the students through the following activities:

- Laying sound foundation in the areas of mechanics, design, thermal sciences and production processes, as well as allied areas.
  Enrich the undergraduate experience through experimental learning, and fostering a personalized and supportive environment that makes learning joyful and stimulating

- Provide opportunities to design mechanical engineering components and systems to meet specific needs through select courses
- Provide opportunities to develop good communication skills, and to encourage creativity and entrepreneurial
- Create awareness in professional responsibility, ethics, global impact of engineering solutions, and of the need for life-long learning.
- Providing opportunities for training in the latest automotive technologies and encourage product development.
- Providing research and intellectual resources to address contemporary and complex problems of industry and to advance research and applications.

Program Educational Objectives of B.E. (Automobile Engineering)

Automobile Engineering discipline has curriculum much in common with Mechanical Engineering and incorporates skills and expertise in the areas which are essential to most sectors of industry, and has specific orientation to the automobile industry.

Bachelors programme in Automobile Engineering in the college is aimed at preparing graduates who will

1. Establish themselves as successful professionals while working independently or in multidisciplinary teams demonstrating professional, ethical and societal responsibilities.
2. Have high levels of technical competency and problem solving skills to generate innovative solutions to engineering problems including in areas specific to automobiles.
3. Continuously enhance their skills through training, independent inquiry, professional practices and / or pursuit of higher education or research.
4. Advance in their professional careers including increased technical and managerial responsibility as well as attainment of leadership

Program Outcomes

PO1: Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2: Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3: Design / Development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4: Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO6: The engineer and society: apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO7: Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10: Communication: Communicate effectively on complex engineering activities with the engineering community and the society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO11: Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one’s own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12: Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change. PSO's Research Potential: Usage of advanced software packages commonly

PSO's

Research potential: design and manufacturer of automotive vehicles for all proposes

Environmental protection: able to apply latest technologies in electric and hybrid vehicles

List of faculty in Automobile Dept:

1	Dr. G. VenkataSubbaiah	Prof. & HOD
2	Mr. M. Pandarinath	Asst.Prof.
3	Mr.A.Gnan Reddy	Asst.Prof.
4	Mr.T.Murali Mohan Raju	Asst.Prof.
5	Mr. Manickavasagam.K	Asst.Prof.
6	Mr. Maliksab Bagawan	Asst.Prof.
7	Mr. G.Saidulu	Asst.Prof.
8	Mr.B.Ramu	Asst.Prof.
9	M.Priyanka	Asst.Prof.
10	M.Vijay	Asst.Prof.

SUPPORTING STAFF:

1.	Mr.T.Rajesh	Lab Technician –III
2.	Mr.M.Brahmendra Chary	Lab Technician –III
3	Mr.K.Raju	Lab Attender

CONFERENCE /WORK SHOP ORGANISED:

One Week Refresher Course on "Refrigeration & Automobile Air- Conditioning sponsored by AICTE-ISTE" Organized by AED 23rd-28th July 2018

Coordinator: Dr. G.Venkata Subbaiah

Co-coordinator: M.Pandarinath Asst.Professor , T.Murali Mohan Raju Asst.Professor

Alumni Reunion 2017

MVSR engineering college organized Annual Alumni meet-2017 on 16th December 2017. During the morning session, the respective departments have organized Alumni meet and in the afternoon a central Alumni meet was organized. Distinguished Alumni shared their thoughts and extended their support towards their Alma matter.10 Alumni of AED have attended.

Faculty publications in journal /books

- **MalikasabBagawan***" Emission characteristics of ci di engine using blends of biodiesel (waste cooking oil) and diesel fuel"* is published in **International Journal of Innovative Research in Science, Engineering and Technology,** ISO 3297: 2007, Vol. 6, Issue 8, August 2017, pp 1111-1118
- **B Ramu** "Analysis of Counter flow Heat Exchanger using copper as a material" IJRASET-International Journal for Research in Applied Science & amp; Engineering Technology|Volume 5,IssueVI, June 2017.pp 2298-2302.

Work shop/conference/ seminars attended by faculty:

S.No	Faculty name	Date	Place	Name of the program
Seminars				
1	G. Saidulu	02-07-2018 to 07-07-2018	Malla reddy engineering college, Secunderabad	Induction /Refresher Programme on "Engineering Drawing -An Effective Teaching Methodology
2	M.Vijay	02-07-2018 to 07-07-2018	Malla reddy engineering college, Secunderabad	Induction /Refresher Programme on "Engineering Drawing -An Effective Teaching Methodology
3	A. Gnan Reddy	23-07-2018 to 28-07-2018	MVSR engg. COLLEGE, Hyderabad	**F.D.P**. on "Refrigeration & Automobile Air-Conditioning"
4	Malikasab L. Bagawan	23-07-2018 to 28-07-2018	MVSR engg. COLLEGE, Hyderabad	**F.D.P**. on "Refrigeration & Automobile Air-Conditioning"
5	B. Ramu	23-07-2018 to 28-07-2018	MVSR engg. COLLEGE, Hyderabad	**F.D.P**. on "Refrigeration & Automobile Air-Conditioning"
6	K.gowthami	23-07-2018 to 28-07-2018	MVSR engg. COLLEGE, Hyderabad	**F.D.P**. on "Refrigeration & Automobile Air-Conditioning"
7	M.Priyanka	23-07-2018 to 28-07-2018	MVSR engg. COLLEGE, Hyderabad	**F.D.P**. on "Refrigeration & Automobile Air-Conditioning"
8	M.Vijay	JULY-OCT 2018	Online NPTEL	F.D.P. on Engineering Metrology
9	K. Manickavasagam	29-10-2018 to 03-11-2018	IIT MADRAS	Short term coures on "Advances in Experimental and Computational Fluid Mechanics"
10	K. Manickavasagam	10-12-2018 to 15-12-2018	MVSR engg. COLLEGE, Hyderabad	F.D.P. on "Recent Trends in Mechanical and Industrial Engineering"
11	B. Ramu	10-12-2018 to 15-12-2018	MVSR engg. COLLEGE, Hyderabad	F.D.P. on "Recent Trends in Mechanical and Industrial Engineering"
12	M.Vijay	10-12-2018 to 15-12-2018	MVSR engg. COLLEGE, Hyderabad	F.D.P. on "Recent Trends in Mechanical and Industrial Engineering"
13	M. Pandarinath	04-01-2019 to 09-01-2019	MVSR engg. COLLEGE,	F.D.P. on "Vibration in mechanical system"

			Hyderabad	
14	A. Gnan Reddy	04-01-2019 to 09-01-2019	MVSR engg. COLLEGE, Hyderabad	F.D.P. on "Vibration in mechanical system"
15	K. Manickavasagam	04-01-2019 to 09-01-2019	MVSR engg. COLLEGE, Hyderabad	F.D.P. on "Vibration in mechanical system"
16	Malikasab L. Bagawan	04-01-2019 to 09-01-2019	MVSR engg. COLLEGE, Hyderabad	F.D.P. on "Vibration in mechanical system"
17	G. Saidulu	04-01-2019 to 09-01-2019	MVSR engg. COLLEGE, Hyderabad	F.D.P. on "Vibration in mechanical system"
18	B. Ramu	04-01-2019 to 09-01-2019	MVSR engg. COLLEGE, Hyderabad	F.D.P. on "Vibration in mechanical system"
19	M.Vijay	04-01-2019 to 09-01-2019	MVSR engg. COLLEGE, Hyderabad	F.D.P. on "Vibration in mechanical system"
20	M.Priyanka	04-01-2019 to 09-01-2019	MVSR engg. COLLEGE, Hyderabad	F.D.P. on "Vibration in mechanical system"
Work Shop				
1	Mr. T. Murali Mohan Raju	10-10-2019 to 12-10-2019	MVSR engg. COLLEGE, Hyderabad	Three day work shop on innovations, intellectual property rights and startups
2	B. Ramu	10-10-2019 to 12-10-2019	MVSR engg. COLLEGE, Hyderabad	Three day work shop on innovations,intellectual property rights and startups
3	M.Priyanka	10-10-2019 to 12-10-2019	MVSR engg. COLLEGE, Hyderabad	Three day work shop on innovations,intellectual property rights and startups
4	M.Vijay	10-10-2019 to 12-10-2019	MVSR engg. COLLEGE, Hyderabad	Three day work shop on innovations,intellectual property rights and startups
Conference				
1	Dr. G.venkata Subbaiah	03-10-2018 to 05-10-2018	Khairatabad The Institution of engineers	International conference on "Recent Developments In Clean and Safe Nuclear Power Generation "
2	Mr. T. Murali Mohan Raju	03-10-2018 to 05-10-2018	Khairatabad The Institution of engineers	International conference on "Recent Developments In Clean and Safe Nuclear Power Generation "
3	B. Ramu	03-10-2018 to 05-10-2018	Khairatabad The Institution of engineers	International conference on "Recent Developments In Clean and Safe Nuclear Power Generation "
4	B. Ramu	13-07-2018 to 14-07-2018	MLRIT College ,Hyderabad	International conference on "Advancements in aeromechanical materials for manufacturing (ICAAMM 2018) "

Project Expo – 2018

Project Expo – 2019

Guest Lectures Organised by Department:

Mr.B. Murali, MD, hertz technologies, Chennai delivered a guest lecture on noise vibration and harshness(NVH) on 08/01/2019

List of Faculty Pursuing PhD.

S.No.	Faculty Name	Designation	University	Year of Registration	Topic
1	Mr.M.Pandarinath	Asst professor	OU	2017	Investigations on the behavior of an occupant comfort of road transport vehicles
2	T.Murali Mohan Raju	Asst professor	OU	2014	Structural design and analysis of high intensity impact simulation test facility
3	M.L.Bagawan	Asst professor	Visvesvaraya technological university	2018	An investigation on the characteristics associated with cryogenic machining of elastomers

Industrial Visit:

1. Five students from B.E III and IV year have taken internships from organization like FORTUNE FORD, MAHINDRA AND MAHINDRA LIMITED ,MERCEDES BENZandBHARATH BENZ

2. As part of curriculum students had industrial visit to Volvo construction equipment Bangalore , METRO visit at Uppal ring road , Tejaswi kinetic green energy private limited at Cherlapally

Volvo visit

Metro visit

Kinetic green visit

BHARATH BENZ

As part of curriculum of project work in IV- Year students has designed and fabricated electric-vehicle

Student National Level Competitions:

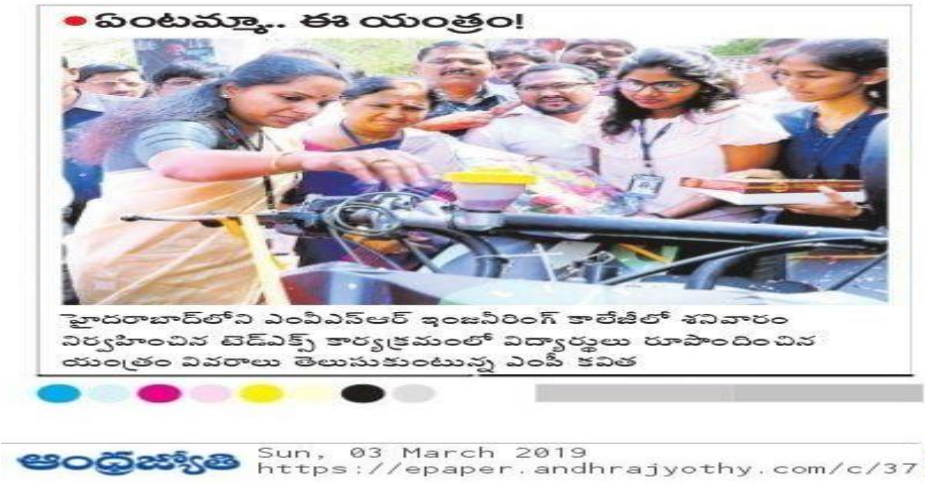
QUAD BIKE:

Quad Bike Design Challenge (QBDC) is a student level off-road ATV bike design challenge which is organized by Fraternity of Mechanical and Automobile Engineers (FMAE). QBDC is a national level design challenge where all the participating teams should have high knowledge and exposure on designing and fabricating an ATV.

We have registered our team comprising of 25 members to participate in the 4th season of this event going by the name **Team Ignitors**. All the 25 members of the team are then studying 2nd year of their engineering. The fabrication work has begun in the month of October 2018, 5 months prior to the actual event date which is in the month of March 2019.The team was divided into different subsystems (design, braking, suspension..) to cope up with the work. The complete vehicle was built by the month of February and ample time was available for proper testing of the vehicle in different terrains. The complete vehicle had costed us around **300,000/-** out of which the **college sponsored 75,000/-** and the rest was contributed by the team members.

The team performed very well at the event and could grab a couple a prizes in design and CAE (runner-up) and was one of the very few vehicles who could complete the endurance run of 4 hours. **The event ended with our team grabbing the All India 3rd prize.**

The hard work of the team members and constant support from the college and our department helped us reach this feat.



ఆంధ్రజ్యోతి Sun, 03 March 2019
https://epaper.andhrajyothy.com/c/37

GOKART 2018

The karting vehicle accentuates the engineering and designing modus operandi that is followed in the development of each subordinate system of the vehicle. It also presses the fact that the vehicle is aimed at complying all the rules specified to compete in the International Series of Karting. The team's underlying objective is to cook up a go kart vehicle which could stand itself a chance to being adjudged robust, home-free, efficient, durable, cost effective, and qualitative; yet breaching no rule penned down for the competition. All this was achieved by designing a rigid, torsion free frame with a well mounted power train.

Costing: The overall cost for fabrication of the kart was INR 1.46 lacs Planning: The team was divided into subsystems and work was allotted accordingly. Priority was given to the works that were dependent on two or more subsystems.

Design: Initial frame calculations were done subject to constraints of the rulebook. The frame was then modelled in Solidworks and tested in ANSYS with a factor of safety included.

Fabrication: The kart was fabricated according to the design. Arc and TIG welding processes were used to weld the frame. Hubs were made out of Aluminium 6082 and Bright Steel. A mild steel axle was used.

Challenges: The frame of the kart had much flexure. This was resolved by adding cross-members at vital places. Due to flexure and weak mounts, the chain was susceptible to getting slack. This was resolved by making a revolutionary tension adjuster which works by adjusting tension in a vertical direction rather than sliding the engine which is a very common sight.

Testing: The vehicle was tested for driver safety, brakes, acceleration and flexure.

Results: The vehicle participated in International series of carting (ISK 2018) under the aegis of FMSCI which is held from 26 Feb to 01 March in Visakhapatnam.

SAE BAJA 2018

TEAM RATCHET

The BAJA SAE Series® is an event for the undergraduate engineering students, organized globally by the Society of Automotive Engineers. The BAJA SAE tasks the students to design, fabricate and validate a single seater four - wheeled off road vehicle to take part in series of events spread over a course of 4 days that test the vehicle for the sound engineering practices that have gone into it, the agility of the vehicle in terms of gradeability, speed, acceleration and manoeuvrability characteristics and finally its ability to endure that back breaking durability test. A total of 388 teams have registered for the virtual round of the event and Team Ratchet was placed in 68th position

Coordinator

Mr.M.Pandarinath, Asst professor

SAE SUPRA

TEAM AMPERE MOTORSPORTS INDIA

The 6th edition of SUPRA SAEINDIA, India's biggest formula student competition is kicked off with the oath ceremony at the Formula 1 track at Buddh International Circuit in Greater Noida. The oath ceremony for the student formula competition is administered by Mr. I.V Rao, Chairman EEB, SAEINDIA and Executive Advisor, MSIL along with Mr. Deepak Sawkar, Convener SUPRA SAEINDIA 2017 and other Organising Committee Members. SUPRA is being organised annually by SAEINDIA with the support of Maruti Suzuki, the event provides a platform for students to apply their engineering skills to design and construct a Formula category vehicle as per defined performance and safety specifications. SUPRA SAEINDIA 2017 comprised of a series of Static and Dynamic events spread 01 July, 2017.

Static Events Includes:

- Marketing Presentation
- Engineering Design
- Cost Evaluation

Dynamic Events Includes:

- Acceleration Event
- Skid-Pad Event
- Autocross Event
- Endurance

Ampere Motorsports India, consisting of 24 students from Mechanical and Automobile department of our college have participated in student formula competition SAE Supra - 17 with thier formula formula vehicle RONIN V2.0. the competition was held at Buddh International Circuit, greater Noida from 26 June to 01 July 2017.

Coordinators: Mr.M.Pandarinath, Asst Professor

SAE EFFI-CYCLE

Team TRIKUT 3.0

"EFFI-CYCLE" derived from Efficient-Cycle , the objective is to provide opportunity to the students to conceive, design and fabricate a three wheel configuration vehicle powered by human-electric hybrid power and capable of seating two passengers catering to the day to day mobility needs. The vehicle must be aerodynamic, engineered for performance & safety and ergonomically designed. The objective is to promote innovation and generate consciousness amongst the young engineers towards environment friendly mobility solution.

Technologies used:

For Design & Analysis:

- Solid works
- Ansys
- Catia

For Fabrication:

- Arc welding

Applications:

- It is an eco friendly kart
- It is mostly used in high polluted areas for transportation

Courses used:

Vehicle Dynamics.

- Electrical Circuits& Machines

Results:

The vehicle secured 17th position out of 65 at SAE EFFICYCLE, sponsored by FMSCI and 2nd in Telangana.

Coordinators:

Mr.M.Pandarinath , Asst.Prof