



M.V.S.R Engineering College

Department Of Mechanical Engineering

Annual Report (Academic Year 2016-2017)

Head of the Department: Dr. J.Kandasamy

Principal: Dr. V.Chandra Sekhar

About the Department

The Department of Mechanical Engineering was started in 1981, the year of establishment of college. Currently the department offers one UG programme B.E (Mechanical) with an intake of 120 and one PG programme M.E (CAD/CAM) with 18 intake.

Vision:

To impart education of highest standards that will prepare students for productive careers as competent professionals in Mechanical Engineering, and for higher studies and research.

Mission:

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

M1. Lay sound foundation in the areas of mechanics, design, thermal sciences and production processes, as well as allied engineering areas.

M2. Enrich the undergraduate experience through experimental learning, and fostering a personalized and supportive environment that makes learning joyful and stimulating

M3. Encourage design and development of mechanical engineering components and systems to meet specific needs.

M4. Provide opportunities to develop good communication skills, and to encourage creativity and entrepreneurial skills

M5. Create awareness in professional responsibility, ethics, global impact of engineering solutions, and of the need for life-long learning.

M6. Provide research and intellectual resources to address contemporary and complex problems of industry and to advance research and applications.

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

Mechanical Engineering is a broad discipline that incorporates skills and expertise in the areas which are essential to most sectors of industry.

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

PEO1: Establish themselves as successful professionals while working independently or in multidisciplinary teams demonstrating professional, ethical and societal responsibilities

PEO2: Have high levels of technical competency and problem solving skills to generate innovative solutions to engineering problems.

PEO3: Continuously enhance their skills through training, independent inquiry, professional practices and / or pursuit of higher education or research.

PEO4: Advance in their careers through increased technical and managerial responsibility as well as attainment of leadership positions.

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 used in industry for modeling, assembly and to carry out multiphysics analysis.

Competent areas: Design and build components and systems related to mechanical and allied disciplines, using various manufacturing methods.

Faculty Strength:

Professors - 03

Associate Professors - 07

Assistant Professors - 20

Supporting Staff- 25

Student Strength:

BE II Mech 1 - 72

BE III Mech 2 - 73

BE III Mech 1 - 69

BE III Mech 2 - 69

BE IV Mech 1 - 67

BE IV Mech 2 – 69

1. Departmental Activities:

1. Two week training programme on “Design, Modeling and Analysis aspects of Mechanical and Automobile Components”

The Department of Mechanical engineering organised a Two week training programme on “Design, Modeling and Analysis aspects of Mechanical and Automobile Components” from 27th June 2016 to 9th Aug 2016.





2. Welding Workshop

Department of Mechanical Engineering organized a 30 Hours Workshop entitled “Welding Techniques – Hands-on-Experience” from 10.09.2016 to 26.10.2016.

Highlights:

1. The workshop is **organized after regular working hours**, (4.15 pm to 6.15 pm on weekdays and from 9.30am to 4.15pm on Holidays like Saturdays, Sundays, and Rain Holidays, without affecting the regular classwork.
2. 15 Hours of Lectures on Basics of Welding by Dr J Kandasamy, Convenor & Resource Person of the workshop.
3. 15 Hours of Hands on Training on Industry oriented welding **exercises that helps students in SAE BAJA, Efficycle, Supra, like competitions** in advanced welding machines like TIG, MIG.
4. Guest Lecture by **Mr. Suresh Meshram Scientist E DMRL Kanchanbagh on Friction Stir Welding and Processing**
5. Expert Lecture on **Welding Transformer design and Control** by **Dr. D. Venu Madhava Chary, Professor & Head, EEED**
6. Expert Lecture by **Mr. G. Prakasam, Assistant Professor, MED on Cold Metal Transfer Welding**
7. An Industrial visit to **ASRA Electrodes, Jeedimetla**, (Welding Electrodes Manufacturing Company for ISRO) Hyderabad
8. Technical Expertise and Training on TIG and MIG machines by **Mr. Kranthi, IIW Certified Welder, DRDL, BrahMos, Hyderabad.**
9. A Valedictory Talk by Mr Ashwini Kumar, Associate Professor, ITD & Coordinator EDC, MVSREC on **Welding Opportunities for Entrepreneurs**. (Select Alumni attended the Talk)
10. As an outcome of this Workshop for the third consecutive year, It is proposed to start **Students Chapter, Indian Institute of Welding in MVSREC Campus**. (To be the first of its kind in India). It is also proposed to organize the course from next year onwards from IIW Students Chapter MVSREC for inhouse and Outside Students.
11. An overwhelming response of 42 Students enrolled and were benefitted in the course.



3. National seminar on “Turbo Machinery & Electrical Equipment”

The Department of Mechanical Engineering and Department of Electrical Engineering conducted a National seminar on “Turbo Machinery and Electrical Equipment” on 21st and 22nd Dec 2016



4. Teachers and Engineering day celebrations

The Department of Mechanical engineering organized Teachers day and Engineers day celebration under MESA on 17th Sep 2016.



5. Departmental Associations:

The Department is associated with SAE, ISTE, FIAAP, and Renewable Energy Club.

6. Guest Lectures Organised by Department:

Academic Year	Target Audience	Date of Lecture	Details of the Resource Person with Designation	Place of Work	Topic of the Lecture
2016-17	3/4 & 4/4 Mech-I & II	19-10-2016	Mr.R.Santhanam "Scientist-E"	DRDL, Hyderabad	Design, Analysis and Testing of Flight Structures- An overview
	3/4 & 4/4 Mech-I & II	22-02-2017	Dr. Hari Shyam Sunder Simha "Senior Principal Scientist"	Design and Engineering Department, CSIR-IICT, Hyderabad	Pressure vessel Design and Process Plant Engineering

7. Academic and other important activities & events in the department

S.No.	Date	Particulars
4	27-06-2016 To 09-07-2016	Two week training programme on "Design, Modeling and Analysis Aspects of Mechanical and Automobile Components".
5	22-07-2016	B.E.3/4 (AE & Mech.) students participated in SAE BAJA -2016 event
6	04-07-2016 To 09-07-2016	B.E.4/4 (AE & Mech.) students attended SAE supra 2016 national level competition at New Delhi
7	17-09-2016	Teachers Day / Engineers Day celebration
8	19-09-2016 To 05-11-2016	Welding workshop is being organized (30 hours of training program after regular college hours.)
9	21 st & 22 nd Dec, 2016	National seminar on "Turbo Machinery & Electrical Equipment"
10	9 th & 10 th Feb, 2017	Autocognizance-2017
11	17 th & 18 th Feb, 2017	A team of 12 Students designed fabricated and participated as "Team Matrusri" in Gokart event organized at Bhopal, Madhya Pradesh and obtained 18 th position out of 168 teams.
12	27-02-2017	Mr. P. Venugopal 2003 passed out Alumini working as Technology Architect in Infosys addressed 3 rd year students of Mech.1 & 2 on "Recent Developments in IT Industry" and Requirements for Mechanical Engineers in IT Industry and motivated the students (1hour lecture).
13	March, 2017	A minor research project grant to the tune of Rs.3,05,000/- is sanctioned by UGC to Dr. J. Kandasamy, Assoc. Prof., for the project titled "Experimental and computational investigations on Superplastic forming of Aluminium coated magnesium alloys.
14	20 th to 23 rd March, 2017	"Team Initia" with 18 Students designed fabricated and participated in Gokart event organized at Bengaluru, Karnataka and bagged the Outstanding team spirit award out of the 60 participated teams.

8. Research Publications by faculty: the number of publications in journals and presentations in National and International conferences by faculty:

Dept.	Journals	Conferences	Papers presented in National & International conferences	Attended workshops, seminars, conferences etc.
Mech.	18	25	25	27

9. List of Faculty Pursuing PhD

S.No.	Faculty Name	Designation	University	Year of Registration	Topic
1.	Mr. N. Veman Reddy	Asst. Prof.	JNTUH	2016	Multipass welding using GTAW on SS316LN for estimation of residual stress and distortion in nuclear applications.
2.	Mr. M. Bhargava Chandra	Asst. Prof.	JNTUH	2016	Enhancement of heat transfer rate in heat exchangers using Nano fluids.
3.	Mr. R. Ravi Kumar	Asst. Prof.	OU	2016	Tar decomposition from biomass gasification equipment by using char as catalyst.
4.	Mr. V. Suman Raju	Asst. Prof.	OU	2016	Thermal analysis and optimization of cogeneration system with steam turbine by utilizing heat sources.
5.	Mr. B. Suresh Kumar Reddy	Asst. Prof.	OU	2016	Studies on Aluminum alloy (6061 series) analysis on mechanical properties, machinability modeling and optimization of process parameters.
6.	Mr. M. Ravi Kumar	Asst. Prof.	JNTUK	2015	Performance investigation and optimization of refrigeration system using blends of environment friendly alternative refrigerant.
7.	Mrs. C. Sumalatha	Asst. Prof.	JNTUK	2015	Tribological properties under fatigue loading for Al Si cast alloys.
8.	Mr. A. Syam Prasad	Asst. Prof.	JNTUK	2015	Prediction of ageing of visco-elastic materials.
9.	Mr. G. Prakasham	Asst. Prof.	OU	2013	Effective simulation of welded joint by using FEA.
10.	Mr. D. Siva Kumar	Assoc. Prof.	JNTUH	2012	Experimental study of tool geometry and optimization of process parameters in friction stir welding.
11.	Mr. K.V.R.K. Subrahmanyam	Assoc. Prof.	JNTUH	2012	Optimization of processing parameters for light weight castable alloy shapes using semi-solid forging route.
12.	Mr. S.V. Narasimha Rao	Asst. Prof.	JNTUH	2012	Experimental investigations and characterization of semi-solid processed Aluminum alloys.
13.	Mr. B. Ravi Kumar	Asst. Prof.	JNTUH	2012	Some studies on metal spinning modeling analysis and optimization.
14.	Mr. S. Srinivas	Asst. Prof.	JNTUH	2012	Gas pressure super plastic forming of light alloys.
15.	Mr. G. Srinivas Sharma	Assoc. Prof.	OU	2001	Experimental investigations of BIG/GT for power generation.

10. Staff achievements:

1. Dr. C.V. Kameswara Rao, Prof., chaired technical session on 7th April, 2017 forenoon at International conference on “Recent Engineering & Technology held at Matrusri Engineering College, Saidabad.
2. Dr. P.A.Sastry, Prof., chaired technical session from 8-10th Dec, 2016 at ICAMM 2016 “Advances in foundry and forming technologies” jointly organised by OU & DRDO, Hyderabad.
3. Dr. M.Madhavi, Prof., co-chaired technical session from 8-10th Dec, 2016 at ICAMM 2016 “Composite materials processing” jointly organised by OU & DRDO, Hyderabad.
4. Dr. S. Gajanana, Prof., co-chaired technical session from 8-10th Dec, 2016 at ICAMM 2016 “Advanced manufacturing processes” jointly organised by OU & DRDO, Hyderabad.
5. Dr. J. Kandasamy, Assoc. Prof. & HOD - Ph.D examiner to Annamalai University on 23rd Dec 2016.

11. Faculty paper presentations:

1. Dr. J. Kandasamy, Assoc. Prof. & HOD and Mr. G. Prakasham presented a paper titled “Buckling analysis of composite shell” in 7th International conference on “Recent Engineering & Technology 2017” organized by Organization of Science & Innovative Engineering and Technology, Chennai, in association with Matrusri Engineering College, Hyderabad on 7th April, 2017.
2. Dr. M. Madhavi, Prof., and Mr. K. Karthik Rajashekar presented a paper titled “Study on structural and thermal analysis on disc brake” in 7th International conference on “Recent Engineering & Technology 2017” organized by Organization of Science & Innovative Engineering and Technology, Chennai, in association with Matrusri Engineering College, Hyderabad on 7th April, 2017
3. Mr. S. Srinivas, Asst. Prof., presented a paper titled “Experimental investigations of hemispherical cup formation using superplastic blow formation of light alloys” in 7th International conference on “Recent Engineering & Technology 2017” organized by Organization of Science & Innovative Engineering and Technology, Chennai, in association with Matrusri Engineering College, Hyderabad on 7th April, 2017.
4. Mrs. C. Sumalatha, presented a paper titled “Fatigue analysis of a shaft subjected to combined bending and twisting moment” in 7th International conference on “Recent Engineering & Technology 2017” organized by Organization of Science & Innovative Engineering and Technology, Chennai, in association with Matrusri Engineering College, Hyderabad on 7th April, 2017.

12. Research projects granted by University Grants Commission

1. Minor research project titled “**Experimental and computational investigations on super plastic forming of Aluminium coated Magnesium alloys**” to Dr.J.Kandasamy, Associate Professor, MED.

13. Consultancy, R & D

S.No	Organization	Name of the Project	Cost in Rs.	Duration	Name of the Coordinator
1	M/S.HNPCL, Vishakapattanam	Commissioning of Cw pump-BFV system after major failure and incorporation of safety measurement	---	September 2016	Dr.C.V.Kameshwara rao, MED
2	M/S.HNPCL, Vishakapattanam	Commissioning of CW &ACW pumps condenser system overcoming operational problems	---	December 2016	Dr.C.V.Kameshwara rao, MED
3	M/S. Shalin composites india pvt ltd, Mumbai.	Design and analysis of FRP filament wound pressure vessel. SCIPL/MVSREC/4-17/1	30,000	April 2017	Dr. M. Madhavi, MED

Student Activities

1. 54 Students from B.E II, III, and IV Year have taken internships from organizations like BHEL, NTPC, NFC, DRDO, ASL, Stallion tyres, South Central Railways, SABOO, RKS, Motor Pvt.Ltd, Hyundai, RCI, ECIL, TSGENCO, and BDL.
2. As a part of curriculum students had industrial visit to Vizag Steel Plant, NTPC, Kadevi Industries.
3. **Student awards:** SAE Collegiate Club got 10 awards in SAE southern section organized at Kongu Engineering College, Tamilnadu and Mr. Darshan Mehta was elected as Student Executive Council Chairman, 2016-17.

4. Mechanical Engineers Students Associations (MESA)

MESA is a body controlled and run by the students of Mechanical Engineering under the guidance of the faculty. Various events are conducted every year to prepare them for future environment.

MESA divides its functions into five wings,

- 1) Personality development wing
- 2) Arts and cultural wing
- 3) Sports wing
- 4) Social Networking and publicity wing
- 5) Event organization wing



5. Auto Cognizance

Auto Cognizance is a technical fest organized by the Mechanical Engineering department. It has wide collection of events which geared up the enthusiasm among the students.

Major events of Auto Cognizance 2017 are

- 1) Auto Expo
- 2) Under the Hood
- 3) Troubleshooting
- 4) Model Presentation
- 5) Auto Quiz
- 6) Poster/Paper Presentation
- 7) Business Planning

6) Athlema

Athlema, MVSREC is an intercollegiate sports meet conducted by M.V.S.R Engineering College every year.

The following events are conducted

- 1) Basketball
- 2) Cricket
- 3) Football
- 4) Throw ball
- 5) Carooms
- 6) Chess
- 7) Table Tennis

7) Academic Achievements

University Ranks:

A.N.Sravya Lakshmi - B.E (4/4) - 2451-13-736-076 Osmania University III Rank

Class Toppers:

- G.Sriram – B.E (1/4) - 2451-16-736-062
- M.V.Krishna - B.E (2/4) - 2451-15-736-060
- D.Nithin Kumar Guptha - B.E(3/4) - 2451-14-736-063
- A.N.Sravya Lakshmi - B.E (4/4) - 2451-13-736-076

Student National Level Competitions:

EFFICYCLE 2016

TEAM TRIKUT

About Event:-

SAE NIS EFFI-CYCLE is an intercollegiate design competition for the undergraduate engineering students where team of 6-10 students have to design and fabricate an energy efficient Hybrid human powered three wheeled electric vehicle.

“EFFI-CYCLE” derived from Efficient-Cycle promote the objective of providing 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.



Team Members:

K.Sai Kiran	V.Abhishek
N.Sai Krishna	U.Aparna
P.Nithin Guptha	G.Prashanth
S.Srinath	A.Gopi Krishna
B.Harika	N.Joyce

Number of Teams Participated -150

Overall Position – 31

SAE BAJA 2016

TEAM RATCHET

About Event:-

The BAJA SAE Series® is an event for the undergraduate engineering students, organized globally by the Society of Automotive Engineers, USA. The event originated in the name of Mini - BAJA, in the year 1976 at University of Carolina. Since then, the event has spanned across six countries – USA, Mexico, South Africa, Korea, Brazil and India. 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 3 days that test the vehicle for the sound engineering practices that have gone into it, the agility of the vehicle in terms of gradability, speed, acceleration and maneuverability characteristics and finally its ability to endure that back breaking durability test.



Team Members:

N.SaiKrishna B.Srihitha Shashank GopiKrishna M.Vamshi R.Srihitha A.Mahesh
Dinesh Reddy Nagendra Babu Shouri Reddy R.Venkata Sai Teja
N.Vamshi Lalith Mohan Phaneendra Avinash G.Sandeep D.Achyuth
Sai Kiran Shivanand G.Sruthi V.Manjari Manasa Kamal

Overall Position - 66

Number of Teams Participated – 419

INTERNATIONAL SERIES OF KARTING

TEAM INITIA

About Event:

International Series of Karting is an initiative taken by Mean Metal Motors to increase India's impact on world of Motorsport engineering. 100 teams from around the world will be competing to make their own Go-Karts according to FIA-CIK regulations and race it on the tracks. This season will also see a mix of national racers, experts and design enthusiasts joining our community to increase the scale of the event and collectively help us achieve our dream to make India a force in the world of motor-sport engineering.

Participating teams are supposed to design and fabricate their own go-kart according to the rules prescribed by organizers. The final race will held after the series of Inspection of the student fabricated karts.



Team Members:

Mir Farhan Karan rao Mohd Shakir Ekamruth Sharma Rakshak Bharath
Damu Mahendra Talha Adil Ravi Shankar Nikhil Parki Dasarai Poojith
Sai rohith Achyuth Kaparathi Srikanth Reddy Abdul Shakoor Abhinav Krishna Abdul Ahad
Gulzar Ahmed Santosh Kumar Kishore V Lavanya Yaghnya Reddy Mayank Neel Vokkalkar
Sindhura Reddy SriVatsasa

SAE SUPRA

TEAM Ampere Sports

About Event:

The 6th edition of SUPRA SAEINDIA, India's biggest formula student competition was kicked off with the Oath ceremony at the Formula 1 track at Buddh International Circuit in Greater Noida on 26th June, 2017. The oath ceremony for the student formula competition was 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 over five days, concluding with a final Endurance run and a valedictory function on July 1st, 2017.

Static Events Includes:

- Marketing Presentation
- Engineering Design
- Cost Evaluation

Dynamic Events Includes:

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



Team Members:

Pavan Kumar Darshan Prithvi Gaurav Anvesh Abhiram Nikhil Akhil Dheeraj Vishu
Uday Revanth Aditya jettipalle Talha Samyuktha Manogna Dinesh Murali Indra Ammar
Sree Krishna Vinoothna Ranadheer Siddharth Revanth

SAE National Student Convention

SAE India organized 11th National student convention at Kongu Engineering College on 25th and 26th February 2017 at Erode, Tamilnadu. Total 2400 students were participated from 88 different colleges. From SAE MVSR Collegiate club 38 students were participated in student convention and secured 10 awards in various events among them 4 first prizes. Our college stood at first position from Andhra & Telangana states and secured 3rd place in national wide.



List of students who participated in tier events

R.Ram Sachindra Sai Nitish A.L.Leonard P.R Vikas Reddy C. Sindhu Manaswin
Naushad Feroz K Abhishek S.K Gulzar Ahmed V Kishore Sai Teja M.A Ahad
M Sainath Goutham Reddy T. Prashanth K. Avinash L Praveen Goutham Kalyan
S Srikanth V Abhishek SriGhana M V S S Saicharan V Preetham S Phaneendhra
K Sai Rohith G Vilas Raj Purvesh G Lokesh Babu Farhan D Nithin Kumar Guptha
P Nithin Guptha C Lahari Sahith G Prashanth G Vivek T Nikhit G Rajesh D Rakesh
Ch Sruthi S Jyothsna R Sindhura