



NEWS LETTER 2019

J.B. INSTITUTE OF ENGINEERING AND TECHNOLOGY
(UGC Autonomous)

Accredited to NAAC, Approved by AICTE & Permanently Affiliated to JNTUH

DEPARTMENT OF MECHANICAL ENGINEERING

ABOUT DEPARTMENT

The Department offers a four year UG degree course, Bachelor of Technology in Mechanical Engineering and a two year PG degree course, M. Tech in CAD / CAM. The course of B. Tech, in Mechanical Engineering was started in 1998-99, with an intake of 60. Subsequently the intake increased to 120 in the year 2007-08. The M.Tech., in I E & M course was started in the year 2004-05 with an intake of 18. Later in the year I E & M course was replaced by CAD / CAM. Sixteen batches of UG and ten batches of PG have successfully completed their course and in the year 2013-14. About 60% of the students have been placed in various MNCs through campus interviews, 30 % of the students have applied and pursuing higher education in reputed Institutes and Universities of India and abroad. We proudly announce that students of our department have established and

emerging as successful entrepreneurs. The department is well established with excellent laboratory facilities and well qualified competent Faculty (3-Ph.Ds, 6-Pursuing Ph.Ds and 17 M.Techs) & senior technical staff. The BOS of the Mechanical engineering department considers inputs from Industrial and academic members to design curriculum to train the students to meet the expectations of the present industry. The Department primly concentrates to impart high Quality Technical & Professional education with the state of art of Infrastructure, state of art of laboratories, state of art of curriculum and high quality teaching in the areas of design, development using modern tools, composite materials and digitization process to cater the needs of stake holders.

VISION AND MISSION OF DEPARTMENT

Vision:

To nurture excellence in the field of Mechanical engineering by imparting technical core values and instruction to the learners and to mold the department into a centre for academic excellence through promoting higher education and advanced research to provide technical services at global competence.

Mission:

1. To impart highest quality education to the students to build their capacity and enhancing their skills to make them globally competitive mechanical engineers and maintain state of art research facilities to provide collaborative environment that stimulates faculty, staff and students with opportunities to create, analyze, apply and disseminate knowledge.
2. To develop alliances with national level R&D organizations, educational institutions, industry and alumni for excellence in teaching, research and placements.

3. To provide the students with academic environment of excellence, leadership, ethical, social guidelines and lifelong learning needed for a long self employment career.

KNOWLEDGE AND SKILL ENRICHMENT PROGRAMS

Training on AutoCAD

A one week FDP program on engineering drawing using AUTOCAD has been conducted from 28/6/18 to 4/7/18 for the entire faculty.

AutoCAD is computer aided design (CAD) software that architects, engineers and constructional professionals rely on to create precise 2D and 3D drawings.

At the earliest stages of a design project, mechanical engineers can use AutoCAD to start sketching ideas and analyzing them to determine the best solution for a given problem. The software makes the process quick and easy; it

eliminates the need to draw new blueprints for each version of an idea and simplifies redesigns. So the Mechanical Engineer should have knowledge of AutoCAD so that the work at industry becomes easy and hence learning Auto CAD facilities the students Industry ready.



Training on Solar Technology

A one week workshop has been conducted on SOLAR PV GRID CONNECTED POWER PLANT at National Training Center for Solar Technology, Karnataka from 2/7/18 to 7/7/18 attended by Mr. Nandkishore Singh Thakur.

National Training Centre for Solar Technology, established by Karnataka Power Corporation Limited, (A Government of Karnataka Enterprise), in collaboration with Ministry of New and Renewable Energy, Government of India, New Delhi. It is National Level an education cum R & D Training Centre.





Grid-connected solar power generation is a new concept in the country. Very few grid-connected solar PV power plants have been set up so far. Moreover, experienced manpower to design, construct, manage and maintain grid-connected solar power plants is not available in the country. Hence training and education, including hands-on training in these aspects, is necessary to be imparted. This training program is set up jointly by Karnataka Power Corporation Limited and Ministry of New & Renewable Energy, New Delhi with an objective to fulfill the need for trained manpower in grid connected power plants



Faculty Training as Part of ICT Program

A one week workshop has been conducted on Introduction to Autodesk in AUTOCAD at AVN institute of engineering and technology from 9/7/18 to 13/7/18 attended by Mr. Md Rafeeq Ur Rahman and Mrs. Shahin Shaikh.



Autodesk became best known for AutoCAD, but now develops a broad range of software for design, engineering, entertainment and for software consumers.

The company makes educational versions of its software available at no cost to qualified students and faculty through the Autodesk Education Community, and also as a donation to eligible nonprofits through Tech Soup Global. The manufacturing industry uses Autodesk's digital prototyping software-including Autodesk Inventor, Fusion 360, and the Autodesk Product Design Suite-to visualize, simulate, and analyze real-world performance using a digital model in the design process.

The company's Revit line of software for building information modeling is designed to let users explore the planning, construction, and management of a building virtually before it is built.



Training on Engineering Services: Mechanical, Electrical and Plumbing(MEP)

A one day workshop on connect engineers to MEP industry has been conducted at JNTU Hyderabad on 15/9/18 attended by Dr. R.S. Uma Maheshwar Rao and Mr. V.Srinivas Rao.



Mechanical Engineering:

Our mechanical design engineers work closely with the building requirements and other key team members in determining appropriate sizing and load calculations for heating, cooling, and ventilation systems. Our team designs HVAC systems and

routings that optimize the overall building performance.

Electrical Engineering:

Our electrical design engineers work with the key team members during the integration process of the building. Our engineers will address power systems, lighting, communications, alarms systems, protection systems, grounding, and controls

Plumbing engineering:

Our plumbing engineers work closely to support the team in the design for the plumbing systems. Some areas our engineers specialize in are storm water, domestic water, sewer, natural gas, fire suppression water, and any other special water and waste management systems

Training on Revit software as part of ICT

A one week workshop has been conducted on Faculty development program on product design engineering using fusion 360 at CMR institute of engineering and technology from 19/11/18 to

24/11/18 and has been attended by Mr. Md Rafeeq Ur Rahman and Mrs. Shahin Shaikh.



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company's Revit line of software for building information modeling is designed to let users explore the planning, construction, and management of a building virtually before it is built.



Faculty Induction Program

A one month faculty development program that is 2nd orientation program under PANDIT MADAN MOHAN MALVIYA NATIONAL MISSION ON TEACHERS AND TEACHING (PMMMNMTT) has been conducted and it has been attended by



Mr.P.Divakara Rao. Chairman of MGNCRE, MHRD issued a certificate on completion of this one month faculty development program from 3/12/18 to 31/12/18.

The Government will set up 50 Centers of Excellence for Curriculum and Pedagogy with necessary emphasis on Mathematics and Science; under the newly launched Scheme PANDIT MADAN MOHAN MALVIYA NATIONAL MISSION ON TEACHERS AND TEACHING (PMMMNMTT). The Mission will provide an integrated platform for building synergies among all the existing initiatives, providing oversight to the existing activities and also carry out new activities aimed at gap filling so that a comprehensive vehicle for Teacher/Faculty related programs and schemes is created. Ongoing programs will also be revitalized through this Mission on Teachers and Teaching. PMMMNMTT is mandated to ensure a coordinated

approach so as to holistically address the various shortcomings relating to teachers and teaching across the educational spectrum ranging from school education to higher education including technical education; using the best international practices for excellence. It will also empower teachers and faculty through training, re-training, refresher and orientation program in generic skills, pedagogic skills, discipline specific content up-gradation, ICT and Technology enabled training and other appropriate interventions. The various components of PMMMNMTT, such as, setting up 30 Schools of Education, 50 Centers of Excellence for Curriculum and Pedagogy, two Inter University Centers, National Resource Centre, five Centers of Academic Leadership and Educational Management, Subject Based Networks and Workshops and Seminars, which will strengthen teachers, are, in fact aimed at improving the understanding of the

students to grasp basic concepts and help them learn better.



THE SAE JBIET COLLEGIATE CLUB

SAE INDIA started in 2009 with 170 students as members of the club. Student members have been participating through this club in various national level events competing with students from prestigious colleges Like IITs, NITs, Universities. Main objectives of the club are:

- To enhance the knowledgebase of the students
- To provide access to SAE programs and services to the students across the globe
- To develop technical and Scientific reports
- To provide a forum for exchange of views

- To Design and Develop GOKARTING, ATVs and other automobile vehicles.
- To provide placements to the student members in reputed automobile companies

Students have participated in many competitions and some of them are, BAJA SAE ASIA 2010(Team AFICIONADOZ), BAJA SAE INDIA 2011(Team VULCANS), EFFICYCLE 2011, SAE INDIA BAJA 2012, , Virtual BAJA SAE INDIA 2017, SAE BAJA 2019. Nearly 2000 students have been benefitted through this club.



The mechanical Autodidacts BAJA Team (virtual round of BAJA of SAEINDIA) at Chitkara University , Punjab from 12/7/18 to 18/7/18 has been attended by students.

PARAMETERS	VALUES
OVERALL LENGTH	82 IN
TRACK WIDTH	Front - 54 IN Rear - 55 IN
WHEEL BASE	58 IN
MAX WIDTH	62 IN
KERB WEIGHT	138kg
GROUND CLEARANCE	10.5 IN
CG HEIGHT	17.715 IN
MAXIMUM SPEED	55kmph
STOPPING DISTANCE	3.984m
MAXIMUM ACCELERATION	2.826m/s ²
WHEELS(Front&Rear)	24 IN
CHASSIS MATERIAL	AISI 1018
ENGINE	B&S 305cc
TRANSMISSION	MANUAL GEAR BOX
BRAKES	DISC BRAKES ON 4W

Students have participated in SAE (Society of Automotive Engineers) TIER-II event conducted at CMRCET from 3/10/18 to 6/10/18



Students have participated in Pro-kart championship organized at JNTUK, Kakinada from 12/3/19 to 16/3/19



Students have participated in SAE BAJA 2019 held at IIT Ropar, Punjab from 3/3/19 to 16/3/19.



A one day industrial visit for IV year at body building unit TSRTC has been organized on 27th September 2018.

ENTREPRENEURSHIP ORIENTATION

The Problem of unemployment is becoming a colossal in all of the developing nations. There is enormous increase in the population. Every year India adds to her population afresh. More than this every year about 5 million people become eligible for securing jobs. The remedial measures for reducing unemployment are to lay greater emphasis on creation of opportunities for self-employment, augmentation of productivity and income levels of the working poor, shift in emphasis from creation of relief type of employment to the building up of durable productive assets in the country.

In order to inculcate a desire to become entrepreneur among the students NSIC has devised a unique "Entrepreneurship Orientation

Programme" (EOP). The program is specially designed for the students, who are still pursuing their studies in Schools/Colleges/Institutions and do not have any idea about Entrepreneurship.

Purpose of EOP is to create awareness among the students for setting up of new Enterprise after completion of their studies instead of searching for jobs only. This program makes participants familiar about role and importance of MSMEs in Indian Economy, process of setting up of Enterprise, preparing Project Reports, Identifying marketing possibilities as well as with the issues regarding various statutory requirements such as Income Tax, VAT etc.

A one day Entrepreneurship orientation program has been conducted at JBIET 28/07/18 for Students.



A one day Entrepreneurship Boot camp has been conducted at JBIET on 2/07/18 has been attended by students



RESEARCH AND INNOVATION

Department is enhancing its research activities at rapid speed. There are 3 doctorates and another 6 faculty members who are pursuing their Ph.D. are involved in promoting and inculcating research culture in the department. Nearly 80 students were made part of the research during last 3 years. Faculty has published nearly 100 research papers in reputed journals during last five years.

Publications in the academic year 2018-19

Name of the author	Title of the paper	Name of the journal
P.Divakara Rao	Modeling elastic constants of Keratin based Hair fiber composite using Response surface Method and Optimization using Grey Taguchi Method	The international conference on “Advanced Engineering Optimization Through Intelligent Techniques (AEOTIT-2018)”, Held during 03-05, August 2018, NIT Surat.
Dr. Md Israr Eqbal	A Review and Reflection on Part Quality Improvement of Fused Deposition Modeled Parts	IOP Conf. Series: Materials Science and Engineering
Dr. Md Israr Eqbal	Optimization of Hot Forging Parameters Using Taguchi Method and Grey Relational Analysis for AISI 1035 Steel	International Journal of Microstructure and Materials Properties
Dr. Md Israr Eqbal	A Full Factorial Design Based Desirability Function Approach for Optimization of Hot Forging of Vanadium Micro-Alloyed Steel	Metallographic, Microstructure, and Analysis
Dr. Md Israr Eqbal	Effect of Temperature and Strain rate of the Hot Deformation of V Micro alloyed Steel	International Journal of Materials Forming and Machining Processes
Dr. Md Israr Eqbal	PCA-based desirability method for dimensional improvement of part extruded by fused deposition modeling technology	Progress in Additive Manufacturing
P.Divakara Rao	Dynamic response analysis of centrifugal blower with different materials	International journal of innovative research in science, engineering and technology
K.Srinivas	Optimization of process parameters of abrasive water jet machining on H13 hot die tool steel by grey relational analysis	International journal of modern studies in mechanical engineering.
P.Seema Rani	Severe plastic deformation of metals	International journal of engineering science and research
Shahin Shaikh	Mini drilling machine	International journal of engineering science and

		research
Shahin Shaikh	Rescue ceiling fan	International journal of engineering science and research
Shahin Shaikh	Fabrication of mechanical device for lifting child from bore well	International journal of engineering science and research
Shahin Shaikh	Impact analysis of damper and fascia of heavy load carried vehicles	International journal of technical innovation in modern engineering and science
Shahin Shaikh	Study of AI2024 reinforced with SIC and fly ash	International journal of management, science and engineering
MG.Mahesh	Dynamic response analysis of centrifugal blower with different materials	International journal of innovative research in science, engineering and technology

Research Potential

➤ Short human hair is a renewable waste by-product which is abundantly available across the globe. Exploring its recycling opportunities not only solves environmental issues but also create job opportunities. **Mr. P.Divakara Rao**, Associate professor of the department has done research on utilization of this waste human hair as reinforcement in composites and studied its suitability in composite

industry. **He has submitted Ph.D. on this topic at JNTUH.**

- **Dr. ACS Kumar** has submitted his Ph.D thesis on “**STUDY ON THE REDRESS LIFE OF THE GRINDING WHEEL AND OPTIMIZATION OF THE WET SURFACE GRINDING PROCESS**” at IIT, Delhi.
- **Dr.R.S.Uma Maheshwar Rao** has submitted his Ph.D thesis on “**PREPARATION AND CHARACTERIZATION OF CHITIN REINFORCED PHENOL FORMALDEHYDE**

NANOCOMPOSITES” at JNTUH in view of improving the properties of the composites materials researchers have been working on noble materials to utilize the advantage of those composite properties for the social advantage and its development.

- **Dr.Md.Israr Equbal** has submitted his Ph.D thesis on **“STUDIES ON PARAMETRIC OPTIMIZATION OF ALLOY STEEL FORGING”** to improve the performance of the steels with additional strength or hardness by using other alternative strengthening mechanisms
- **Mr. G. Gopinath** is pursuing his Ph.D on **“OPTIMIZATION OF PROCESS PARAMETRS IN ABRASIVE WATER JET MACHINING OF H11 TOOL STEEL BY GREY RELATIONAL ANALYSIS AND RESPONSE SURFACE METHODOLOGY”** AWJM of

AISI H11 hot work tool steel is considered for the study

- **Mr.Nandkishore Singh Thakur** is pursuing his Ph.D on **“DEVELOPMENT OF SOLAR CELL USING PEROVSKITE MATERIAL WHICH CAN BE TUNED FOR VARIABLE BAND GAP LIMITS AND OPTIMIZE ITS EFFICIENCY”**.
- **Mr. A. Sai Kumar** is pursuing his Ph.D on **“AN ACCESSIBLE APPROACH FOR TOLERANCE ANALYSIS OF ASSEMBLIES SUBJECT TO GENERAL LOADING EFFECTS-DESIGN OPTIMIZATION WITH CAD/E TOOLS”** by Identifying Key Product Characteristics
- **Mr.K.Srinivas** is pursuing his Ph.D on **“OPTIMIZATION OF ABRASIVE WATER JET MACHINING”** by using optimization techniques.
- **Mr. Sanjay Kumar** is pursuing his Ph.D. on **“EXPERIMENTAL**

INVESTIGATION OF EFFECT OF EGR ON ENGINE CHARACTERISTICS OF LHR DIESEL ENGINE FUELED WITH ACID BIODIESEL UTILIZING ADDED SUBSTANCES” by applying low heat rejection principle.

Student Innovations

Students of Mechanical Engineering are known for innovation. The department has rich culture in bringing out the hidden talents of students and converting them into innovations. Every year, final year students come out with creative thoughts, converting them into innovative products through their major projects. Some of the thrust areas focussed by student for transformation of innovative ideas into the end products through

adoption of various techniques of engineering and technology are:

- Research projects in development of advanced composite materials.
- Creative projects in the field of renewable energy applications.
- Innovative ideas helping agriculture sector to reduce human efforts.
- Implementation of advanced techniques for enhancing the performance of automobile and its safety.
- Optimization techniques of material processing.
- Design, analysis and simulation techniques for developments of various engineering products.



ACADAMIC RESULTS

Results of academic year
2017-18 pass out students

Total number of students appeared	100
First class with distinction	24
First class	73
Second class	3

PLACEMENT DETAILS

Information of the students placed in MNCs and other companies in the years 2017-18 and 2018 – 19 (as of now) is:



Year	Company name	Students placed
2019	Cyient	2
	Go Speedy Go	13
	West line	4
	Eleation	2
	Q Spiders	1
	Dispatch Track	1
2018	Westline	1
	Cyient Ltd	7
	Hinduja Global Solutions	9
	IKEA	2
	ICICI	4
	Asahi India Glass Ltd	1
	Aliens Group	1
	Grieco Technology	6
	Qspiders	1
	Aliens Group	3
ON Campus		58
OFF Campus		5
Total		63
