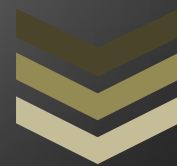


PRAGATI ENGINEERING COLLEGE (A)



ME-TIMES

JAN-JUNE 2019

DEPARTMENT
OF
MECHANICAL
ENGINEERING



2/7/2019

COLLEGE VISION

“To emerge as a premier institution for technical education in the Country through Academic Excellence and to be Recognized as a Center for Excellence in Research & Development, catering to the needs of our Country.”

COLLEGE MISSION

“To realize a strong Institution by consistently maintaining State-of-art-infrastructure and building a cohesive, World Class Team and provide need based Technical Education, Research And Development through enhanced Industry Interaction.”

ABOUT THE DEPARTMENT

The department is committed to strengthen the academic, research and functional abilities of the students, in order to enable them to stand as competent and versatile professionals after graduation. The department strives to enhance research activity in the department, thereby creating competent intellectual resources to the students.

The department conducts various events for revealing scientific, engineering, and technological advances to students. The students participate in events and national level contests, conducted by various institutes.

DEPARATMENT MISSION

The department of mechanical engineering strives.

M1: To prepare, educate and guide students by the faculty from all domains of mechanical engineering in enhancing their skills.

M2: To establish and utilize world class resources and infrastructure to impart quality education and promote Research aptitude among faculty and students to pursue higher education in diverse fields.

M3: To explore the students’ knowledge gradually through industrial interaction for increasing their placement potential to fulfil the basic needs of the society with ethical and social responsibility.

DEPARATMENT VISION

To be a globally renowned school of mechanical engineering in transforming individuals into professional engineers with world class competency and state-of-the-art research to fulfill the technological needs of the society.



FROM HOD-DESK

DEPARTMENT OF MECHANICAL ENGINEERING is publishing News Letter “ME Times” with half-yearly by student editors, Faculty members and it will be shared to all the stake holders through website.

It is with great pleasure that we bring you the First issue in VOLUME 17 of ME-TIMES, the half yearly newsletter of DEPARTMENT OF MECHANICAL ENGINEERING in Pragati ENGINEERING COLLEGE. The name of our newsletter- ME-TIMES- signifies VALUE TIME, and it very aptly sums up the prospects of our Institute. With faculty that consists of bright minds and students who are keen to leave a mark, our future is in safe hands indeed. We are thankful to our students for coming up with the name and logo of the newsletter. The current newsletter highlights the activities of our students and the achievements of faculty during the past one year. It also features visits by eminent scholars from India and abroad to PRAGATI ENGINEERING COLLEGE. This newsletter also throws light on the infrastructure that MECHANICAL DEPARTMENT in PRAGATI ENGINEERING COLLEGE has, and the facilities that it provides. The intent of ME-TIMES is to disseminate information about our Institute, and we hope that the readers find the issues informative and useful. We are thankful to the faculty and staff of PRAGATI ENGINEERING COLLEGE for their valuable inputs, and we welcome suggestions and feedback that will help us improve further. We can be reached at newsletter@pragati.ac.in.

ARTICLES BY STUDENTS

HYPERBARIC WELDING

Hyperbaric welding is the welding process at high pressure, generally underwater. Underwater welding is the installation of large patches, as well as the attachment of suitable pad-eyes presents a more complicated problem to the diver than underwater cutting. Hyperbaric welding is of two types:

1. Wet in the water itself.
2. Dry welding, at the splash zone in positive pressure enclosure. It is usually referred to as hyperbaric welding when used in dry environment and underwater welding when used in wet environment.

Applications are Repair ships, offshore oil platforms and pipelines. The most common material to be welded is steel.

The first ever underwater welding was carried out by British Admiralty-Dockyard for sealing leaking ship rivets below the water line. The special waterproof electrodes were developed in Holland by Van den Willigen in 1946. Dry welding is used in preference to wet welding when high quality welds are required because of the controlled conditions. Underwater hyperbaric welding was invented by the Russian metallurgist Konstantin Khrena in 1932.

Wet Welding: Wet welding indicates that welding is performed underwater, directly exposed to the wet environment. A special electrode is used and welding is carried out manually as like open air welding. The increased freedom of movement makes wet welding effective, efficient and economical method. Welding power supply is placed on the surface with connection to the diver via cables and hoses. Divers usually use around 300-400 amps of direct current to power their electrode. Shielded metal arc welding is most commonly used by engaging waterproof electrode. The welders instruct the surface operator to create and destroy the contact as required during welding process. The electric arc heats work piece and welding rod, and the molten metal is shifted through gas bubble around arc. The arc burns in a cavity formed inside flux covering. Slag deposition on the weld surface leads to slow the rate of cooling. Rapid cooling is one of the biggest problems in producing quality weld. The ocean acts as large heat sink and draws off the heat of electrode. It may cause blow holes.

Advantages:

1. It is less costly compared to dry welding.
2. The welder can reach portions of offshore structures that could not be welded using other methods.
3. Other benefits include the speed.

Disadvantages:

1. Poor visibility in water.

2. Hydrogen embrittlement.
3. Rapid quenching decreases impact strength and ductility.

- There is a risk to welder of electric shock. To prevent this welding equipment must be flexible to marine environment, properly insulated and the welding current must be controlled.

Dry Welding: Dry welding is carried out in chamber sealed around the structure to be welded. The chamber is filled with a gas (commonly helium containing 0.5 bar of oxygen) at prevailing pressure. The gas tungsten arc welding process is employed for dry hyperbaric welding process. The welder is sealed onto pipeline and filled with breathable mixture of helium and oxygen, the pressure maintained is at or slightly above the ambient pressure at which the welding is to take place. Dry hyperbaric welding is limited operationally to less than 400m water depth. The area under the floor of welder is open to water. Thus the welding is done in dry but at hydrostatic pressure of sea water.

Advantages:

1. Good quality weld
2. Welder safety
3. Non-destructive testing is also facilitated by dry environment.

Disadvantages:

1. It requires large quantities of complex equipment.
2. Cost is extremely high. (Depth increases, cost increases)
3. At greater depths, the arc constricts. (Become narrow)



ARTICLE BY:-

D.SRI RAMYA SUDHA-17A31A0358

III-ME-B

PEDAL CONTROLLED AND FOOT PRESSED RAMMER

ABSTRACT:

This paper has been penned to inquire about the theory of ramming in production technology and a leeway to construct an effective and eco friendly rammer that can be enforced to reduce the consumption of natural resources like fuel and electricity.

Key words:

Ramming, kinetic energy, mechanical energy, blow holes, penetration

Objective:

Construction of a pedal controlled and foot pressed rammer

Introduction:

Ramming is one of the important and widely used processes during the production of materials. It is a compaction apparatus used to mould materials like granules of sand, soil, clay etc. There are different types of rammers like dropping weight rammer, internal combustion rammer and pneumatic rammer, during which a large amount of power is consumed. Henceforth, a practical rammer which reduces the loss of power is introduced.

Theory:

In general during a ramming process, firstly the electrical energy is converted to mechanical energy, then to kinetic energy thereby increasing the pressure energy. This will be connected to the movement of the rammer and is pressed against the mould. It leads to the compaction of granular materials and the shape and size of the product produced is same as that of the moulding object. And moreover, due to the uneven pressure or air entrained in the melt from casting sand, blow holes or vacuum holes are formed. Metal penetration and physical penetration between the material, infiltrating metal and surface of the moulding cavity should be avoided. In this case, a huge amount of electrical energy is utilised. As we know that human needs are undefined and the natural resources are non-renewable, an alternative is established.

Construction:

A basic rammer is connected with an equipment of pedal system through gears. When the pedals are rotated by physical activity, the mechanical energy is converted to pressure energy. Then the rammer is moved against the mould and the final product is produced. In other case the foot pressing machine is connected to the rammer and pressed against the mould producing the product. The compaction process should be as even as possible all over the mould.



Fig (a): foot pressed rammer



fig (b): pedal controlled rammer

Conclusion:

The use of this ramming machine requires high manual power and may lead to penetration of sand particles and blow holes. But the major advantages are easy establishment and transport, less maintenance cost, environment friendly and more effective. The working of this equipment doesn't require any skilled labour and there is no power consumption.



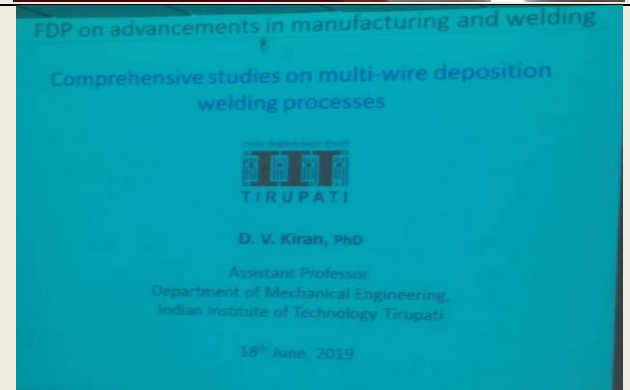
ARTICLE BY

**MAHABOOB SHAHEEN-17A31A0362-III-
ME-B**

FACULTY PUBLICATIONS

S.No	Name of the Faculty	Title of Paper/Conference/Journal	Duration	Place
1	Ms. D.Mahalakshmi	Strength Analysis of Sandwich Panels by considering the shape effect of stiffened core in the International Conference (ICRAMMES)	3-4 January , 2019	V R Siddhartha Engg College , Vijayawada
2	Mr.A.V.RamanaRao			
3	Mr.A.PhaniBhaskar			
4	Mr. D.J.Johnson	SHAKE TABLE EXPERIMENT ON REACTOR VESSEL	Jan 2019	(IJESI), ISSN (Online): 2319 – 6734, ISSN (Print): 2319 – 6726 UGC Approved List of Recommended Journal
5	Mrs. G.Lavanya Lakshmi			
6	Mr. S.Srikanth			
7	Mrs.B.AnushaSrikanta			
8	Dr.Satish	“Flow Behavior on Elbow with Various Geometries of Nozzle”	May 2019	<i>i-manager’s</i> Journal on Mechanical Engineering, Vol. 9, Issue 2, pp 43-51
9	Mr. M.Rambabu	MATERIAL OPTIMIZATION OF AUTOMOBILIE MASTER CYLINDER	May-19	ISSUE NO-2455-2585- e journal
10	Mr. Avinash.Gudimetla,	Optimization of the Francis Turbine to Get the Better Performance and To Decrease the Vibrational Effects in the Loading Conditions	May-19	ISSUENO-2235-767X- e journal
	Ms.M.Amrutha,			
	Mr.M.Sunil Raj			

FDP'S



S.No	Name of the Faculty	FDP's Name	Duration	Place
1	Mr. G.V.N.Santosh	Non conventional energy Resources	Jan –April 2019	NPTEL-AICTE Online
2	Mrs. Ch. Vasantha Lakshmi	Convective Heat Transfer	Feb – March 2019	NPTEL-AICTE Online

3	Mr. D.Johnson	Joining Technologies for Metals	Feb –April 2019	NPTEL- AICTE Online
4	Mr. M.Rambabu	Steam and Gas Power Systems	Feb –April 2019	NPTEL- AICTE Online
5	Mr. G.Avinash	Introduction to Composites	Jan –April 2019	NPTEL- AICTE Online
6	Ms. M.Amrutha			
7	Mrs. B.Anusha			
8	Mr. N.Raghuveer	IC Engines and Gas Turbines	Jan –April 2019	NPTEL- AICTE Online
9	Mr. P.Srinivasa Rao			
10	Mr. M.Vijaya Kumar			
11	Mr. Yeswanth			
12	Mr. P.Srinivasa Rao	Manufacturing Process Technology	Jan –April 2019	NPTEL- AICTE Online
13	Mr. A.Phani Bhaskar	Fundamentals of Welding Science and Technology	Jan – March 2019	NPTEL- AICTE Online
14	Ms. D.Mahalakshmi			
15	Mr. V.Nagababu	A one week FDP on Advanced Vibration Analysis and its practical Applications.	11 th – 16 th Feb 2019	JNTUK, Kakinada
16	Mr.R.Rajesh			
17	Dr. S.Sambhu Prasad	Advancements in Manufacturing & Welding	17 th – 22 nd June 2019	JNTUK, Kakinada
18	Mr. Avinash Gudimetla			
19	Mrs. Ch.Vasanth Lakshmi			
20	Mr. D.J.Johnson			
21	Mrs. Aravinda Karri	Noise, Acoustics, Vibration Control and Measurement in various Engineering Applications with hands on sessions	4 th – 15 th June 2019	JNTUK, Kakinada
22	Mr. M.Rambabu			
23	Mr. A.Phani Bhaskar	Improving teaching skills in the subject ‘Design of Machine Members-I’	02 nd – 07 th May 2019	JNTUK, Kakinada
24	Mr. V.Nagababu			
25	Mr. A.Phani Bhaskar	Improving teaching skills in the subject ‘Heat Transfer’	09 th - 14 th May 2019	JNTUK, Kakinada
26	Mr. V.Nagababu			
27	Mr. G.V.N.Santhosh	Non-conventional energy Resources	Jan –April 2019	NPTEL- AICTE Online

WORKSHOP'S

1. G.V.N.SANTHOSH had attended a Workshop of “Applied Robotic Control Labs” as part of “Indo European Skilling Centres for Mechatronics and Industrial Robotics” in AP, India by APS GmbH European Center for Mechatronics from 15th – 24th May 2019 at Aachen, Germany.



S.No	Name of the Faculty	work shop's Name	Duration	Place
2	A. Phani Bhaskar	Computational fluid Dynamics-CFD using Ansys Fluent	01 st – 3 rd Aug 2019	VSM College of Engineering, Ramachandrapuram
3	Mr. A.Yeswanth			
4	Mr. M.Rambabu	Hands on Experience in Welding Technology	12 th – 13 th July 2019	Aditya college of Engineering and technology, Surampalem

EVENTS ORGANISED BY STUDENTS/STUDENTS ACTIVITIES

JOURNAL PUBLICATIONS

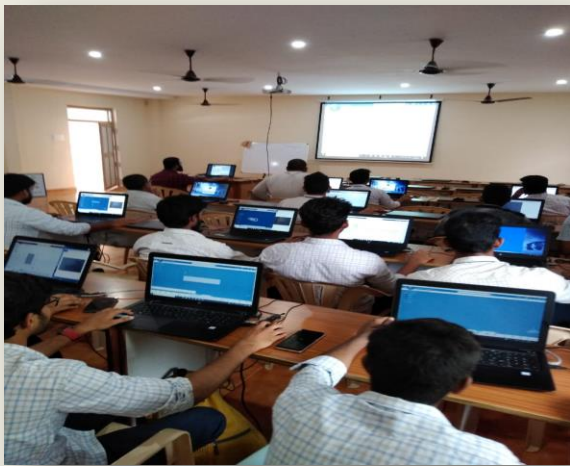
- 1 Mr.C.Jithendra sai raja bearing roll no:-17A31A0373 had published a paper entitled “**REVERSE ELECTRODIALYSIS IN POWER GENERATION**” in International Journal of Scientific and Engineering Research (IJSER) on 2nd march 2019.
- 2 Mr.Chada Jithendra Sai Raja, Ms.Dwarampudi Ramya Sudha, Ms.Mahboob Shaheen published a manuscript entitled “SIGNIFICANCE OF USING HYDRAULIC OIL AS WORKING FLUID IN HYDRAULIC HYBRID VEHICLES.

- 3 M. AKHIL YUVARAJ had published a paper on “Flow Behavior on Elbow with Various Geometries of Nozzle”, i-manager’s Journal on Mechanical Engineering, Vol. 9, Issue 2, pp 43-51, May 2019.

Certification of Participation

1. My Gov & Ministry of Skill Development & Entrepreneurship congratulate Mr. Suresh Chiringula on successfully completing the “Entrepreneurship Quiz-2019.
2. My Gov & ISRO congratulate Mr. Suresh Chiringula on successfully completing the “SPACE QUIZ”.

Certification and Training



Students of 3rd B.Tech II Semester
Students from Mechanical
Department Participated in
Mechanical-Techno Zone on
CATIA V5 From 22nd Feb. to 28th
Feb. 2019 Conducted By Andhra
Pradesh State Skill Development
Corporation (APSSDC)

Guest Lectures



Guest lecture on
 “SPECIAL
 CASTING
 METHODS” by
 Dr.P.NAGESWARA
 RAO on 22th June
 2019 .Around 150
 Mechanical students
 had participated in
 this lecture.



*Guest lecture on
 “METAL CUTTING
 & MACHINING “by
 Dr.P.VAMSI
 KRISHNA on 21st
 June 2019 .Around
 188 Mechanical
 students had
 participated in this
 lecture.*



INDUSTRIAL VISITS



Students of III year Mechanical Department had visited Dr Narla Tata Rao Thermal Power Plant or Vijayawada Power Plant located at Vijayawada in A.P on 15th June, 2019.

Company Name	Company Sector	Discipline	Level	Date (From)	Date (To)	No. Of Students
Sarvaraya Sugars Pvt Ltd	Manufacturing	ME	UG	14/02/19	14/02/19	53
Sarvaraya Sugars Pvt Ltd	Manufacturing	ME	UG	15/02/19	15/02/19	53
Sarvaraya Sugars Pvt Ltd	Manufacturing	ME	UG	15/02/19	15/02/19	54
Sarvaraya Sugars Pvt Ltd	Manufacturing	ME	UG	14/02/19	14/02/19	57
Dr. Narla Tata Rao Thermal Power Station	Power Generation	ME	UG	06/03/19	06/03/19	43

NCC



Around 60 students from Pragati engineering college had participated in 10days Combined annual training camp conducted by 9(A) air BN Andhra, Kakinada in May,2019
Events organized in this camp:-
1.Swachh Bharath campaign at Peddapuram
2. Firing range activity in camp schedule
3. Guidelines by SSB INTERVIEWRB to enter to airforce as commissioned officers.

NSS



International Yoga Day celebration was organized in Pragati Engineering college campus on 21st June, 2018 jointly by the college NSS & NCC Units .**Dr. P Krishna Rao, Chairman of the college was the Chief Guest of the occasion.**



NSS Team In Pragati Engineering College Had Organized World Blood Donors Day .The event serves to thank voluntary, unpaid blood donors for their life-saving gifts of blood and also to raise awareness of the need for regular blood donations to ensure that all individuals and communities have access to affordable and timely supplies of safe and quality-assured blood and blood products, as an integral part of universal health coverage and a key component of effective health systems.



NSS Unit of the college in organized “World Kidney Day” on 14-3-2019 in the college campus. In this connection an awareness programme was organized to the students along with NSS volunteers on “Food habits for Healthy Kidney” by Dr.Sarojini devi.Campus doctor. Sri K Satyanarayana,Vice Principal, P.Raj Shekhar Phaneendra,NSS PO, B.Sudheer Asst NSS PO were present on the occasion.

Voter Enrolment and EVM's & VVPAT's usage

The NSS Unit of the college coordinated the awareness programme on “Voter enrollment & usage of EVM's & VVPAT's” in the college campus. This programme was conducted by district administration under the supervision of MRO Gandepalli Mandal on 21-2-2019. Nearly 200 students along with the NSS Volunteers attended the awareness programme. A live demonstration was given in which students participated and understood the functioning of the EVM and VVPAT machine. Principal Dr S Sambhu Prasad Rajshekhar Phaneendra,NSS PO,Mr B.Sudheer,Asst NSS PO took part in the event.





In connection Republic day Celebrations 36 volunteers from the NSS Unit of the college attended JNTUK Kakinada March past Programme

World Youth Change Makers”(WYM)

A Workshop on “Life Education” was organized for the faculty and students in association with “World Youth Change Makers”(WYCM) on 5-2-2019 in the college campus. Mr Krishna Mohan, Mrs Lavanya and the resource persons Mr Umapati and Mr Sunil were present for the above workshop from WYCM organisation. The aim of the above workshop is to break Emotional levels of Stress, Anger, Fear & Anxiety, Increasing intelligent Quotient (IQ) and creating a deeper sense of Responsibility among Youth in today’s world.

AWARDS



On the eve of republic day awards were handed over to academic toppers

The college NSS Unit announced the NSS Awards for the volunteers for all round performance in the Year 2018-2019(Active Volunteers with good academic record)



STUDENTS CO-ORDINATORS:-

FACULTY CO-ODINATOR
 A.PHANI BHASKAR
 ASST.PROFESSOR

- P.SREENIJA------(16131A03L3)
- G.VARUN KUMAR------(16A31A0316)
- K.HIMA KALYAN------(17A31A0324)
- MUMIDI VIKAS------(18A35A0307)

HOD-ME
 Dr.B.S.V.RAMARAO
 PROFESSOR