

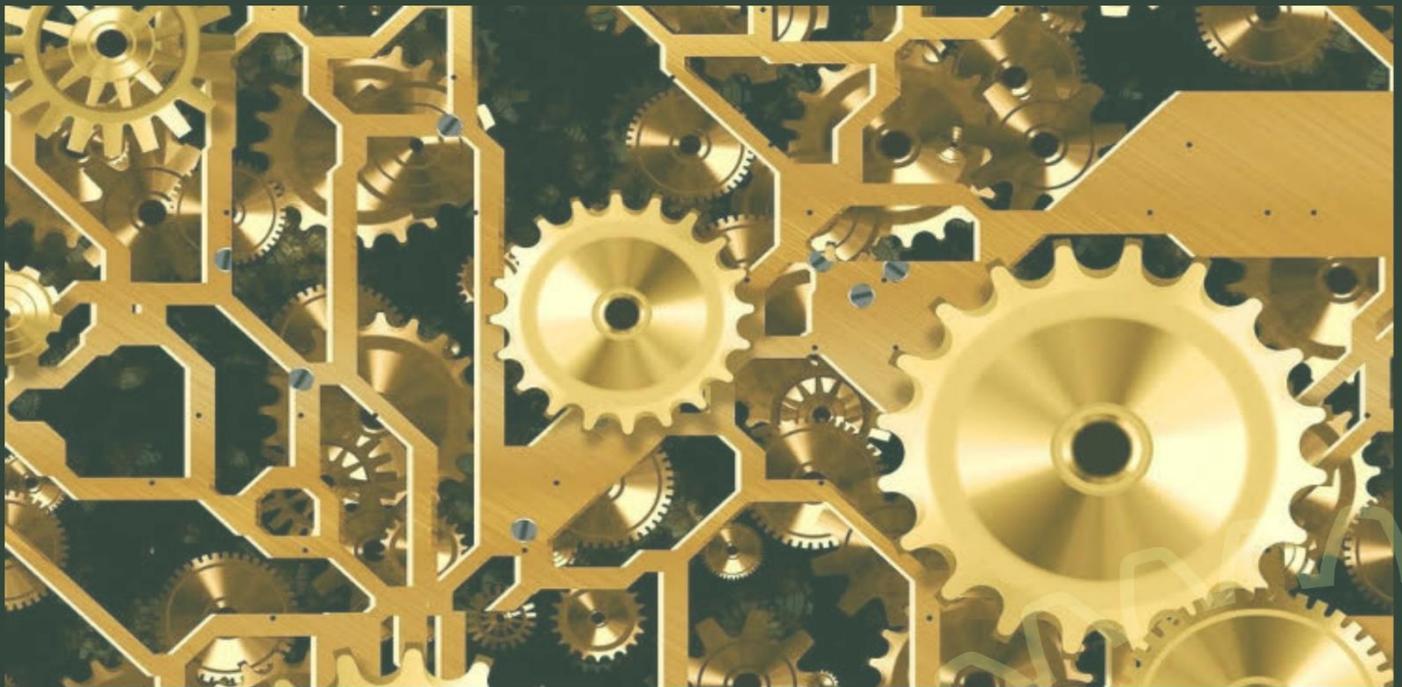


Aditya College of Engineering & Technology

*Department of Mechanical
Engineering*

IGNITO MAGAZINE

June-November 2021



Editorial Board

Dr. CH V V M J Satish, Asst. Professor

Mr. B Jagadish , Asst. Professor

Mr. Lokesh Nagala (Student)

Mr. Veera babu Pilli (Student)

Mr. M S Sai Kumar (Student)

Mr. CH Devi Prasad (Student)

Chairman's Message



Dr. N.SESHA REDDY
CHAIRMAN

I believe in the philosophy of thought, word and deed as eternal which made Aditya what it is today. My thought to set a high bar to the institutions I setup by rising to the challenges of the educational field and get prepared for a life dedicated to the pursuit of knowledge, my word which always reflected my vision and gained the conviction of the heads of the institutes and parents, and my deed which makes my home and workplace as extensions of each other by considering the staff and students as the members of my extended family shaped Aditya

I know the value of a good education, more so because I did not have the benefit of the facilities that make the learning process smooth. I began my career as a lecturer, giving up my desire of qualifying in the Service Commission Examination. Out of my despair was born a strong determination which took the shape of Aditya Educational Institutions. The present-day job market poses fresh challenges that need to be managed innovatively. Global business Incubation centre, Microsoft Innovation Centre, Technical Skill Development Institute, T-hub, Training and Placement Cell, GATE coaching etc., act as perfect vehicles for this.

Vice- Chairman's Message

As a direct product of Aditya, I know how hard my father worked to put Aditya on the academic map of the country during its many stages of expansion, even in the most trying conditions. My master's degree from UTS Australia, the continent's premier university, has given me a better grasp of the educational system. Aditya technical campus in Surampalem was constructed in the aftermath to provide professional education in engineering, technology, management, and pharmacy, with the underlying principle of excellence and quality. The campus has made rapid growth since its beginning in 2001 by upholding its unwavering dedication to advance knowledge and educate students in science and technology. The campus' main goal is to make teaching and research more relevant to the real world. The ultimate aim of Aditya is to make the campus the 'first stop' for companies in the recruitment process. Keeping in view the demands of the work environment which is beyond just knowledge and marks, a lot of emphasis is laid on the overall personality development of the students.



Dr. N SATHISH REDDY
VICE-CHAIRMAN

Principal's Message



Dr. T. K. Rama Krishna Rao
PRINCIPAL

The major issues we confront can't be handled at the same level of reasoning that we used to create them." Albert Einstein is credited with coining the phrase "theory of relativity." Man can only achieve immortality through knowledge. To stay relevant, knowledge must extend or grow. The road to excellence is the world's toughest, roughest, and steepest. Only quality is required and rewarded in our world. To develop new knowledge, available information must be directed by wisdom and intellect. Education's new duty is to promote creativity. The only way to address current and future problems and discover dynamic answers is to think creatively. Technology should be used to aid in the eradication of poverty around the world. In truth, India is home to 40% of the world's poor. Capacity is a result of confidence.

Miracles are the result of one's faith in oneself. At ACET, education aims to develop character, strengthen the mind, broaden the intellect, and foster a culture of problem-solving. The student is placed through rigorous training so that when he leaves the Institute, he can stand on his own two feet.

HOD Message



Dr. Puli Danaiah, HOD

Mechanical engineering is one of the oldest and broadest engineering discipline, and plays a significant role in enhancing safety, economic vitality, enjoyment and overall quality of life throughout the world.

Mechanical engineers develop state-of-the-art technologies and exhilarating solutions for the mankind. We attempt to provide our students with a cheerful, productive and satisfying experience at all levels of their program of studies to explore the amazing world of mechanical engineering.

Our department has a team of highly qualified and experienced faculty, good infra structure and lab facilities. We are striving hard continuously to improve upon the quality of education and to maintain its position of leadership in engineering and

Department of Mechanical Engineering

The Department of Mechanical Engineering is a pioneer department since the establishment of college in 2011. The department has extensive facilities in terms of faculty, infrastructure & equipment. The department is recognised as a research centre by JNTUK, Kakinada for pursuing Ph.D. programme in Mechanical Engineering. The department has spacious laboratories and well equipped with experimental set-ups as per the requirement of the curriculum. The faculty are very active and encourage the students in fabricating real models viz., Go-kart, Robots, Solar based vehicles and other working models, which are very useful in day-to-day life and teach students with live examples.

The department has an entrepreneurship cell through which it organises lectures by successful entrepreneurs, bank officers, MSME officials to nurture them as successful entrepreneurs in future. To nurture the students to gain all-round development, the department has many clubs like, 'cultural club', "We can talk" to improve soft skills and improve their intra and inter-personal skills, interactive skills to make them leaders of tomorrow. The faculty encourages students to participate in competitions like Go-kart at National level and present technical papers in conferences and publish papers in journals



Department Vision

To be a center of excellence in Mechanical Engineering education and research

Department Mission

- *To promote trainings with institutional association*
- *To achieve learning centric infra-structure.*
- *To provide skill-based education with focus on Automotive*
- *To promote innovative ideas through creativity and leadership quality*

PSO'S

PSO1 Mechanical Engineers must be able to analyze, design and evaluate mechanical components and systems using cutting edge software tools as required by the industries from time to time.

PSO2The ability to work in manufacturing and other sectors operations and maintenance plants.

PSO3 As part of a team or individually, plan and manage activities in micro, small, medium and large enterprise.

Article**Biodiesel**

Biodiesel refers to a vegetable oil – or animal fat-based diesel fuel consisting of long-chain alkyl (methyl, ethyl, or propyl) esters. Biodiesel can be used as a pure fuel or blended with petroleum in any percentage. Much of the world uses a system known as the "B" factor to state the amount of biodiesel in any fuel mix:

- 1) 100% biodiesel is referred to as B100
- 2) 20% biodiesel, 80% petrodiesel is labeled B20
- 3) 5% biodiesel, 95% petrodiesel is labeled B5
- 4) 2% biodiesel, 98% petrodiesel is labeled B2
- 5) Blends of 20% biodiesel and lower can be used in diesel equipment with no, or only minor modifications.

Benefits of Biodiesel

- a) Produced from Renewable Resources.
- b) Can be Used in existing Diesel Engines.
- c) Grown, Produced and Distributed Locally.
- d) Biodegradable and Non-Toxic.
- e) Better Fuel Economy.
- f) Reductions in greenhouse gas emissions, deforestation, pollution and the rate of biodegradation.



Mr. K. Kalki Bhagvan
Student IV Mechanical

Student Training Programmes

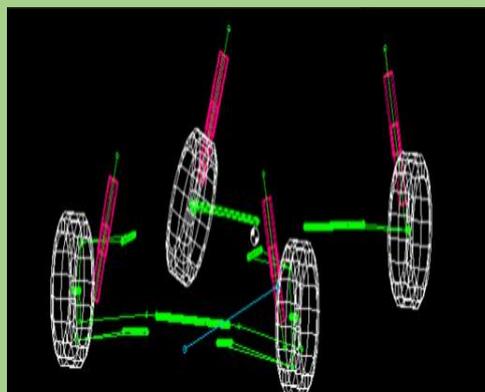
Student hands on training session has been conducted on Design and simulation using Ansys workbench



Student Technical Events

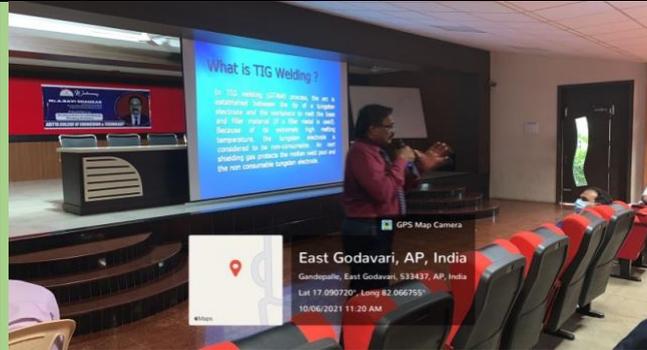
SAE BAJA 2021-2022:

In this event totally 25 students from Mechanical, Electrical and Electronics, Electronics and communications Engineering with two faculty advisors from Mechanical are registered. This event has three phases, virtual round for scrutinizing the participants, virtual dynamic through IPG Car maker and Physical Dynamic Event in which have to participate with Fabricated ATV. Students are preparing for preliminary round, which is a qualifier of further rounds.

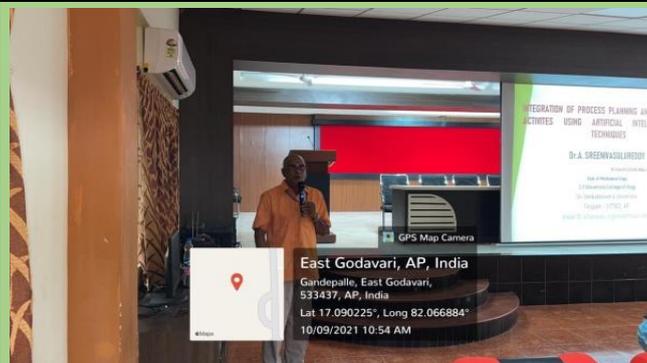


Guest lectures

The Mechanical Engineering Department has organized one day guest lecture (06-10-2021) on Welding Process and Repairs by A.Ravishankar, G.Manager, MTS ,Mech, Vizag steel Plant ,Hon'Secretary IIW ,Vizag Chapter



The Mechanical Engineering Department has organized one day guest lecture (09-10-2021) on **Process Planning** by A.Srinivasulu Reddy, Assoc.Prof, SV University college of Engineering



Faculty Achievements

Faculty Publications

Dr. Nitla Stanley Ebenezer has published in scopus indexed journal, a paper entitled **Effect of Heat Treatment on the Corrosion Behaviour of Nickel Surface-Deposited Agro-Reinforced Metal Matrix Composites**.345–35(2021). Institution of Engineers (India): Series DOI <https://doi.org/10.1007/s40033-021-00266-1>



Dr. Pramod Kumar, Dr. M Murugan and Dr. Akilesh Kumar Singh has published a paper entitled **Effect of welding current in TIG welding 304L steel on temperature distribution, microstructure and mechanical properties** in the Journal of the Brazilian Society of Mechanical Sciences and Engineering volume



Dr. Akilesh Kumar and Dr. Pramod Kumar, has published in SCI Journal entitled **Use of backing mediums increase penetration during TIG welding of P91 steel** in the journal of sadhana



Faculty as Resource person

Dr M Murugan acted as resource person for 5 Day FDP on advances of solar energy conducted by Bharath Institute of higher education and research, Tambaram



NPTEL Certifications

Mechanical Engineering department faculty has been completed NPTEL certified courses to gain knowledge in advanced subjects of Mechanical engineering to strengthen teaching and research skills

<div style="text-align: center;"> <p>Elite NPTEL Online Certification <small>(Funded by the Ministry of HRD, Govt. of India)</small></p> <p>TOPPER</p> <p>This certificate is awarded to PRAMOD KUMAR for successfully completing the course</p> <p>Theory of Production Processes</p> <p>with a consolidated score of 70 %</p> <table border="1" style="margin: auto;"> <tr> <td>Online Assignments</td> <td>20.94/25</td> <td>Proctored Exam</td> <td>49.5/75</td> </tr> </table> <p>Total number of candidates certified in this course: 71</p> <div style="display: flex; justify-content: space-between; font-size: small;"> <div style="text-align: left;"> Prof. V. C. Srivastava <small>Coordinator, Continuing Education Centre IT Roorkee</small> </div> <div style="text-align: center;"> <p>Jul-Oct 2021 (12 week course)</p> </div> <div style="text-align: right;"> Prof. Priti Maheshwari <small>NPTEL, Coordinator IT Roorkee</small> </div> </div> <div style="display: flex; justify-content: space-between; align-items: center; font-size: x-small;"> <p>Indian Institute of Technology Roorkee</p> </div> <p style="font-size: x-small;">Roll No: NPTEL21ME8854410218 To validate and check scores: https://nptel.ac.in/noc</p> </div>	Online Assignments	20.94/25	Proctored Exam	49.5/75	<div style="text-align: center;"> <p>Elite NPTEL Online Certification <small>(Funded by the Ministry of HRD, Govt. of India)</small></p> <p>This certificate is awarded to V V M J SATISH CHEMBULY for successfully completing the course</p> <p>Mechanics and Control of Robotic Manipulators</p> <p>with a consolidated score of 68 %</p> <table border="1" style="margin: auto;"> <tr> <td>Online Assignments</td> <td>21.67/25</td> <td>Proctored Exam</td> <td>46.5/75</td> </tr> </table> <p>Total number of candidates certified in this course: 73</p> <div style="display: flex; justify-content: space-between; font-size: small;"> <div style="text-align: left;"> Dr. Piyush P. Kurur <small>Chairman, Centre for Continuing Education IT Palakkad</small> </div> <div style="text-align: center;"> <p>Aug-Oct 2021 (8 week course)</p> </div> <div style="text-align: right;"> Prof. Andrew Thangaraj <small>NPTEL, Coordinator IT Madras</small> </div> </div> <div style="display: flex; justify-content: space-between; align-items: center; font-size: x-small;"> <p>Indian Institute of Technology Palakkad</p> </div> <p style="font-size: x-small;">Roll No: NPTEL21ME75514410134 To validate and check scores: https://nptel.ac.in/noc</p> </div>	Online Assignments	21.67/25	Proctored Exam	46.5/75
Online Assignments	20.94/25	Proctored Exam	49.5/75						
Online Assignments	21.67/25	Proctored Exam	46.5/75						
<div style="text-align: center;"> <p>Elite NPTEL Online Certification <small>(Funded by the Ministry of HRD, Govt. of India)</small></p> <p>This certificate is awarded to BODDETI JAGADISH for successfully completing the course</p> <p>Biomechanics of Joints and Orthopaedic Implants</p> <p>with a consolidated score of 67 %</p> <table border="1" style="margin: auto;"> <tr> <td>Online Assignments</td> <td>17.75/25</td> <td>Proctored Exam</td> <td>49.5/75</td> </tr> </table> <p>Total number of candidates certified in this course: 177</p> <div style="display: flex; justify-content: space-between; font-size: small;"> <div style="text-align: left;"> Prof. G P Raja Sekhar <small>Dean, Continuing Education IT Kharagpur</small> </div> <div style="text-align: center;"> <p>Aug-Oct 2021 (8 week course)</p> </div> <div style="text-align: right;"> Prof. Debjani Chakraborty <small>Coordinator, NPTEL IT Kharagpur</small> </div> </div> <div style="display: flex; justify-content: space-between; align-items: center; font-size: x-small;"> <p>Indian Institute of Technology Kharagpur</p> </div> <p style="font-size: x-small;">Roll No: NPTEL21ME13054410527 To validate and check scores: https://nptel.ac.in/noc</p> </div>	Online Assignments	17.75/25	Proctored Exam	49.5/75	<div style="text-align: center;"> <p>Elite NPTEL Online Certification <small>(Funded by the Ministry of HRD, Govt. of India)</small></p> <p>This certificate is awarded to DR DANAIHA PULI for successfully completing the course</p> <p>Fluid Machines</p> <p>with a consolidated score of 52 %</p> <table border="1" style="margin: auto;"> <tr> <td>Online Assignments</td> <td>21.79/25</td> <td>Proctored Exam</td> <td>30/75</td> </tr> </table> <p>Total number of candidates certified in this course: 89</p> <div style="display: flex; justify-content: space-between; font-size: small;"> <div style="text-align: left;"> Prof. G P Raja Sekhar <small>Dean, Continuing Education IT Kharagpur</small> </div> <div style="text-align: center;"> <p>Aug-Oct 2021 (8 week course)</p> </div> <div style="text-align: right;"> Prof. Debjani Chakraborty <small>Coordinator, NPTEL IT Kharagpur</small> </div> </div> <div style="display: flex; justify-content: space-between; align-items: center; font-size: x-small;"> <p>Indian Institute of Technology Kharagpur</p> </div> <p style="font-size: x-small;">Roll No: NPTEL21ME75514410134 To validate and check scores: https://nptel.ac.in/noc</p> </div>	Online Assignments	21.79/25	Proctored Exam	30/75
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Sports and Games



Sports and Games



విజేతలకు బహుమతులు అందజేస్తున్న ఆదిత్య యాజమాన్యం

ఆదిత్యలో ఇంటర్నేషనల్ స్టూడెంట్స్ డే

ప్రజాశక్తి - గండేపల్లి అడ్మినిస్ట్రేషన్ ఆఫీసర్ వేణుగోపాల్ తెలిపారు. ఇంటర్నేషనల్ స్టూడెంట్స్ డే సందర్భంగా సూరంపాలెం ఆదిత్య ఇంజనీరింగ్ కళాశాలలో ఆటల పోటీలు నిర్వహించారు. బాలురకు కబడ్డీ, వాలీబాల్, బాలికలకు కబడ్డీ, త్రో ఫిజికల్ డ్రైరెక్టర్స్ విద్యార్థులు తదితరులు బాల్ పోటీలు నిర్వహించినట్లు కళాశాల పాల్గొన్నారు.

Fri, 19 November 2021
epaper.prajasakti.com/c/64430268



Article**UNDER WATER WELDING**

Underwater welding began during World War 1 when the British Navy used it to make temporary repairs on ships. These repairs consisted of welding around leaking rivets of ship hulls. Underwater welding was also restricted to salvage operations and emergency repair works only. In addition, it was limited to depths below the surface of not over 30 ft (10meters). At first, underwater welding was just applied to weld a patch until a more thorough repair could be performed. But as soon as more experience was gained, ambitious individuals and companies joined forces to improve results and to establish achievable specifications.

While underwater welding have been used for new construction & installation of offshore structures, subsea pipelines, & harbour facilities, it is most often used for maintenance and repair applications. These includes repair of damage caused by corrosion, fatigue, and accidents of offshore structures such us oil platforms, repair & replacement of damaged subsea pipeline sections, repairing holes in ship's hulls or collision damage to harbour facilities.

As the name implies, underwater wet welding is done in an environment where the base metal and the arc are surrounded entirely by water. The electrode types used conform to AWS E6013 classification. These electrodes are waterproofed by wrapping them with waterproof tape or by dipping it into special sodium silicate mixes and allowing them to dry. The power source is a direct current machine rated at 300 or 400 amperes.




Student Placements

Congratulations

Mr. PS Venkata Sai
Gireesh Kumar
CADSYS



Mr. D Siva Lakshmana
Raju
Pentagon space



Mr. Mohammad Abdul
Javeed
Pentagon space



Mr. Gopiseti Vamsi
Hyundai Motor



P Prabhu Teja
Acuvate



B Siva
Acuvate



D H Rama Krishna
Acuvate

Batch Toppers**III B. TECH - I SEM MECHANICAL – A TOPPERS**

Mr. D. YASWANTH KUMAR
18P31A0311 8.86 (SGPA)



Mr. ABHISHEK SINHA
18P31A0302 8.57 (SGPA)



Mr. P.J. VINAY
19P35A0332 8.43 (SGPA)

Batch Toppers

III B. TECH - I SEM MECHANIACL – B TOPPERS



Mr. A. SURYA BHAGAVAN
18P31A0339 8.71 (SGPA)



Mr. M. VEERENDRA
19P35A0375 8.57 (SGPA)



Mr. A. RAMESH
19P35A0351 8.43 (SGPA)

III B. TECH - I SEM MECHANIACL – C TOPPERS



Mr. K. MANIKANTA
REDDY
18P31A0351 9.00 (SGPA)



Mr. M. AJAY
18P31A0355 8.71 (SGPA)



Mr. J. N. MANIKANTA
SWAMY
19P35A03B1 8.71 (SGPA)



Mr. Y. S. DURGAPRASAD
19P35A03D9 8.57 (SGPA)

IV B. TECH - I SEM MECHANIACL – A TOPPERS



Mr. D. SATHEESH
18P35A0320 8.23 (SGPA)



Mr. B. SIVA
17P31A0309 8.00 (SGPA)



Mr. B. DURGA PRASAD
18P35A0312 8.00 (SGPA)



Mr. B. NANAJI
18P35A0310 7.95 (SGPA)

Batch Toppers

IV B. TECH - I SEM MECHANIACL – B TOPPERS



Mr. K. U. V. DURGA RAO
18P35A0343 8.23 (SGPA)



Mr. M. S.V. KALYAN
18P35A0348 8.09 (SGPA)



Mr. K. SRINU
18P35A0339 8.00 (SGPA)

IV B. TECH - I SEM MECHANIACL – C TOPPERS



Mr.S.GOPALA KRISHNA
18P35A0381 7.91 (SGPA)



Mr. P. THRIMURTHULU
18P35A0375 7.86 (SGPA)



Mr. NISHANTHDEEP
17P31A03667.77(SGPA)



Mr. P. RAMU
17P31A0367 7.77 (SGPA)

IV B. TECH - I SEM MECHANIACL – D TOPPERS (2020-2021)



Mr. Y. SATISH KUMAR
17P31A03B2 7.95 (SGPA)



Mr. V. SATYA
18P35A03A3 7.86 (SGPA)



Mr. T. LAKSHMI GANESH
18P35A03C5 7.86 (SGPA)



Mr. K. CH. DURGA PRASAD
17P31A0386 7.82(SGPA)

Teachers Day Celebration



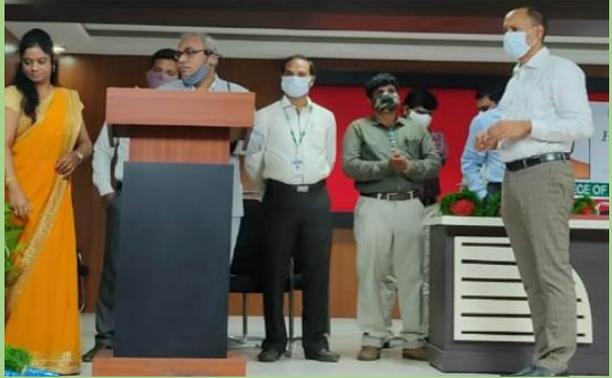
Dr CH V V M J Satish, felicitated for being awarded PhD from NIT Warangal



Dr K S S Mohan, felicitated for being awarded PhD from Andhra University



Mr. M Rambabu, felicitated for his long service in the Aditya institutions



Prof. T. Srihari, delivering speech on the occasion of teacher's day



Felicitating senior professor Prof. T. Srihari, on the occasion of teacher's day



Felicitating Head of the Department Dr. P. Danaiah on the occasion of teacher's day

NSS Activities

Vaccination Drive

Covid Vaccination Program for the staff and students conducted by NSS unit – Aditya college of Engineering and Technology with primary health center, Katravulapalli



ఆదిత్యలో విజయవంతంగా వేక్సినేషన్

గండేపల్లి, పెన్ వనర్, సెప్టెంబర్ 28

గండేపల్లి మండలం నూరంపాలెం గ్రామంలో గల ఆదిత్యా ప్రాంగణంలో మంగళవారం విశ్వేశ్వరాయభవనం నందు ఉ.7-00 నుండి సా.4-30వరకు 18 సంవత్సరాలు దాటిన విద్యార్థులకు, సిబ్బందికి కోవిడ్ వేక్సినేషన్ కార్యక్రమం విజయవంతంగా జరిగినట్లు ఆదిత్య విద్యాసంస్థల వైస్ చైర్మన్ డా.ఎన్. సతీష్ రెడ్డి తెలియజేశారు. ఈ కార్యక్రమంలో క్యాంపస్ డైరెక్టర్ డా.ఎం. శ్రీనివాసరెడ్డి, ఆదిత్య కాలేజ్ ఆఫ్ ఇంజనీరింగ్ & టెక్నాలజీ కళాశాల ప్రెసిపాల్.డా.డి.కె.రామకృష్ణారావు పాల్గొని వేక్సినేషన్ ప్రక్రియను వ్యవస్థీకరించారు. ఈ సందర్భంగా వక్రలు మాట్లాడుతూ ప్రతి ఒక్కరూ తప్పనిసరిగా వేక్సినేషన్ తీసుకోవాలని, రెండు డోసులు తీసుకున్నాకూడా మాస్క్ తప్పనిసరిగా ధరిస్తూ తొలికదూరం పాటించాలని అన్నారు. ఈ కార్యక్రమంలో కళాశాల ఎస్.ఎస్.ఎస్.విభాగం లో ఆర్గనైజర్ జె.శ్రీనివాస్, విద్యార్థులు సహాయంగా కార్యాచరణలో ప్రభుత్వ అనువర్తికి చెందిన వైద్యాధికారి డాక్టర్. రాజశేఖర్ సేకృత్యంలో వేక్సినేషన్ కార్యక్రమం నిర్వహించారు. వైద్యనోబుంది, ఆదిత్య సిబ్బంది పాల్గొన్నారు.

Covid Awareness and Food Distribution

NSS Volunteers in collaboration with Zeal foundation Kakinada Participated in Covid Awareness program and Food distribution to the needy people by following Covid norms and Restrictions



DRIVERLESS CARS



Revolutionary radar technology used in the latest Autopilot 8.0 of the most advanced Tesla driverless Models allows the car to see through fog. Improved braking prevents the car from hitting stray bears. And auditory alerts remind the driver to pay attention to the road. Drivers could certainly benefit from these features. According to the National Safety Council, 2015 had the highest percentage increase in traffic deaths over the past half-century with more than 38,000 people killed and 4.4 million injured. The majority of these deaths are caused by human errors like driving while drunk, driving while fatigued and driving while sipping a hot cup of coffee.

Driverless-car technology should solve these problems. After all, these systems don't (or more accurately, can't) get drunk, drowsy or distracted. This makes them in the eyes of some a safe bet. Yet, such technology merely trades one set of problems for another.

For one thing, an autopilot is only as good as the engineer who designed it. The engineer must think of all the problems a driver could face and preemptively come up with solutions. It's the ultimate imagination test. Success means correctly averting an erratic cyclist. Failure means overlooking the fact that not all potholes are coned off. Autopilot technology puts safety at the mercy of an engineer's brilliant yet imperfect mind.

Addiction to technology is also a concern. No system is perfect, and autopilots are no different. Yet, getting drivers to understand this is a tall order, particularly when technology works so well that admittedly imperfect systems appear perfect.

Here, the short-term thrill of not having to pay attention to the road while on the road takes precedence over the reality that the car's autopilot can fail at any time.

Most important of all are the unintended consequences of technology. Mr. Joshua Brown died when his Tesla Model S drove itself into the trailer of a truck that was crossing a Florida highway. The car's sensors were not able to detect the truck, and it crashed into the bottom of the trailer. New solutions invite new problems.