DEPARTMENT OF MECHANICAL ENGINEERING

THE MECH CHRONICLE

MAGAZINE

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ISO 9001 : 2015 Certified Institution

CODE:URCE

USHARAMA

COLLEGE OF ENGINEERING AND TECHNOLOGY

AUTONOMOUS

On NH-16, Telaprolu, Near Gannavaram, Krishna District - 521109.

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About the College

Usha Rama College of Engineering and Technology, established by Usha Rama Educational Academy, with the aim of inculcating quality education to students and produce young technocrats having good knowledge. The college is approved by AICTE and affiliated to JNTU-Kakinada. It is sponsored by Chicago based Multi-Million Dollar Advansoft group.

Advansoft Group made an extensive study of the functioning of premier educational institutions in India and abroad and had an extensive consultation with Industry, academicians and scholars, the efforts of which finally culminated in laying the foundation for the college in 2008. Even before the college commenced its functioning, an elaborate plan was drawn up for acclimatizing and absorbing the students predominantly hailing from a rural background, into an environment demanding learning of frontier technologies.

The Trust comprises a team of highly respected professionals in the field of Academics, Management and Industry, dedicated to creating an Institution imparting quality education. Usha Rama College of Engineering and Technology is well supported by a governing body and an academic advisory council consisting of eminent academicians and professors with decades of experience in premier Institutions.

URCE has within a short span of time emerged as one of the premier professional Institutions in this region. The Institute maintains high standards of education by providing a wide array of world-class academic facilities, employing highly qualified and experienced faculty members and creating an ambience that is conducive to quality education.

INSTITUTE VISION

To emerge as a centre of excellence in technical education by imparting quality teaching learning practices and research for the transformation of society.

INSTITUTE MISSION

- **Provide an ideal and the best class infrastructure to foster exploration in engineering and research.**
- **Build dedicated faculty with student centric teaching incorporating experiential, innovative skills.**
- **Encourage lifelong learning, entrepreneurial thinking and ethical responsibility in students to address societal challenges.**

DEPARTMENT VISION

To impart quality education in the field of Mechanical Engineering to meet the industrial standards and technological needs of the society.

DEPARTMENT MISSION

- **To provide quality education for career building and skill enhancement and to become globally competitive.**
- **To groom the students with leadership qualities, problem solving approach, along with team work and effective communication.**
- **To promote higher education, entrepreneurship skills, research cum innovation with a focus on industrial and societal needs and to mould the students with professional ethics and moral values.**

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

PEO 1: To train the graduates in building a successful professional career in Mechanical Engineering.

PEO 2: To encourage the graduate engineers to achieve their goals through higher education and Research & Development activities.

PEO 3: To support the graduates to become moral & ethically responsible citizens in the development of the nation.

PROGRAM SPECIFIC OUTCOMES (PSOs)

PSO1: Apply Engineering fundamental knowledge, complex mathematics, science and provide solutions to mechanical Engineering system.

PSO2: Design and develop products innovatively with modern tools and to optimize manufacturing processes.

Programme Outcomes (POs)

PO - 1: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO - 2: 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.

PO - 3: 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.

PO - 4: 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.

PO - 5: 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.

PO - 6: 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.

PO-7: 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.

PO -8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO - 9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO - 10: Communication: Communicate effectively on complex engineering activities with the engineering community and with 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.

PO - 11: 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.

PO - 12: 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.

PUBLICATIONS BY FACULTY

Journal Publications

1. Dr. B.Kiran Babu, "Developing micro-lamellar composites of magnesium-calcium deficient nanohydroxyapatite by powder metallurgy route: in vitro degradation studies" The Canadian Journal of Metallurgy and Materials Science, Vol.64(1), pp. 14-24, 2024.
2. Dr. B.Kiran Babu, "Shot peening of AZ31 magnesium alloy: role of surface microstructure and iron diffusion on corrosion behaviour" The Canadian Journal of Metallurgy and Materials Science, Vol.64(1), pp. 226-236, 2024.
3. G. Jaya Raju "A review on reinforcements, fabrication methods, and mechanical and wear properties of titanium metal matrix composites". Journal of Engineering and Applied Science, 71, 60, 2024.

Conferences

1. G. JayaRaju, "Improve the performance of complex system through artificial intelligence" AIP Conf. Proc. 2821, 070012 (2023).
2. Dr. R. Bhargavi, "Mechanical Properties of Basalt/Chopped E-Glass Fiber and Graphite Powder Reinforced Hybrid Composites". Journal of Physics: Conference Series, 2765, 012002.
3. Dr. S. Madhusudan, "Experimental Studies on Polyester-Titanium Functionally Graded Materials". Journal of Physics: Conference Series, 2765, 012013.
4. Dr. V. Ajay Kumar, "Investigations on Microstructure and Mechanical Properties of HAp Nanocomposites reinforced with ZrO2 and TiO2". Journal of Physics: Conference Series, 2765, 012009.

RESOURCE PERSONS IN STTPS/FDPS

Dr. V. Ajay Kumar, Assoicate Professor, ME Department.

"Emerging trends In Biomedical Healthcare Applications" at Sri Mittapalli College of Engineering (Autonomous) Tummalapalem, Guntur District, Andhra Pradesh, 24th – 28th July 2023.

Dr. B. Kiran Babu, Assoicate Professor, ME Department.

"Optimization of Advanced Manufacturing Processes" at Amrita Sai Institute of Science and Technology, Paritala, Vijayawada, Andhra Pradesh, 16th -20th October 2023.

Dr. S. Madhusudan, Professor & HOD, ME Department.

"Composites materials – An Overview" at Adikavi Nannayya University, Rajamandry, Andhra Pradesh, 7th Feb' 2024

EVENTS ORGANIZED BY THE DEPARTMENT

FACULTY DEVELOPMENT PROGRAM / SHORT TERM TRAINING PROGRAM ORGANIZED

- Six days FDP on "Novel Materials" on 04th - 09th December, 2023.

  Key note speakers are:

  1. Dr. Rafi Mohammad, Assistant Professor, NIT, AP.
  2. Dr. A. Gopala Krishna, Professor, JNTU Kakinada,
  3. Dr. G. Bhanu Kiran, Assistant Professor, IIIT, Srikakulam.
  4. Dr. N. Ramanaiah, Professor, Andhra University, Visakhapatnam
  5. Dr. Gopi Krishna, Assistant Professor, Achraya Nagarjuna University, Guntur
  6. Dr. V. Chittaranjan Das, Professor, R.V.R. & J. C College of Engg., Guntur
  7. Dr. S. Rajesh, Associate Professor, S.R.K.R Engg. College, Bhimavaram

- Six days FDP on "Green Technologies and Sustainability" on 22nd - 27th April, 2024.

  Key note speakers are:

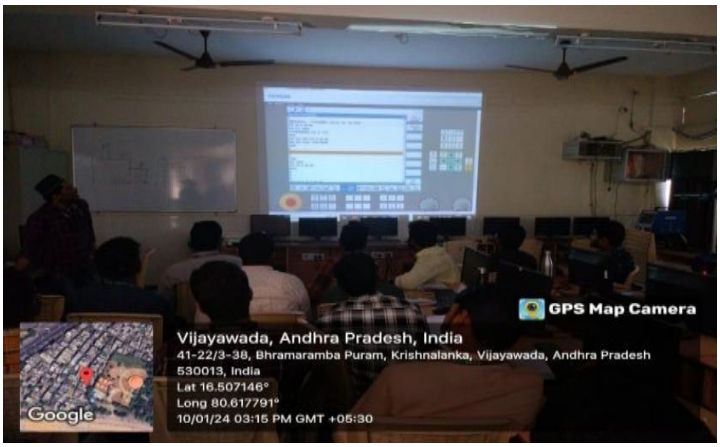
  1 Dr. P. Vamsi Krishna, Associate Professor, NIT, Warangal.
  2. Dr. M. Vijay Kumar, Assistant Professor, NIT, Warangal.
  3. Dr. G. Vijay Kumar, Professor, P.V.P.S.I.T, Vijayawada.
  4. Dr. B. Raghu Kumar, Professor, P.V.P.S.I.T, Vijayawada.
  5. Dr. P.S. Rama Srikanth, Professor, Dean School of ME, VIT, AP.
  6. Dr. S.S. Rao, Professor, Dept. of M.E., K. University.

WORKSHOPS/SEMINARS

- A Seminar on "Artificial Intelligence in Mechanical Design " by Dr. P.S. Rama Srikanth, Professor, Dean School of ME, VIT, AP, for ME students on 05/07/2023.
- Two day's workshop on " 3D Printing " by Dr. B.K.C Ganesh Managing Director, Print 3D Technologies, Tirupathi, AP. for ME students on 15/09/2023 to 16/09/2023.

- A One-week training program on " CATIA Product Design and Drafting " by Prasanna Lakshmi, Trainer, association with APSSDC, at Usha Rama college of Engineering and Technology (Autonomous) for ME students on 26-12-2023 to 30-12-2023.

- A one-week training program on “CNC Machining” by Pathan Mahabub Khan, Trainer, association with APSSDC at Andhra Loyola Institute of Engineering and Technology, Vijayawada, for III BTech ME students on 08-01-2024 to 13-01-2024.



- Two days workshop on " Advanced CAD Design" by Dr. B. Raghu Kumar, Professor, P.V.P.S.I.T, Vijayawada, for ME students on 28/02/2024 to 29/02/2024.
- A Seminar on " Electric Vehicles: Challenges & Future Prospects" by Dr. N. Ramanaiah, Professor, Andhra University, Visakhapatnam, for ME students on 02/03/2024.

FACULTY DEVELOPMENT PROGRAMS ATTENDED

- N. Ranjith Kumar, G. Jaya Raju, Assistant Professor. 5-day Online FDP on the theme “Inculcating Universal Human Values in Technical Education” organized by All India Council for Technical Education (AICTE) from 12/06/23 to 16/06/23.

- Dr B.Kiran Babu, K.Vidya, Associate Professor, Ch.Sony, Assistant Professor, A one-week online FDP on "Advancements in Mechanical Engineering" organized by the Department of Mechanical Engineering, Lakireddy Bali Reddy College of Engineering, Mylavaram, Krishna (Dt.), Andhra Pradesh, India organized from 19/06/2023 to 24/06/2023.
- Dr. R. Bhargavi, Professor. Dr.V. Ajay Kumar, Dr.KVV Naga Raju, Assoicate Professor. K.Srinivasa Rao Assistant Professor A one-week online FDP on "Advances in materials and Manufacturing Technologies" organized by the Department of Mechanical Engineering, Kallam Haranadhareddy Institute of Technology Guntur, Andhra Pradesh, India organized from 26/06/23 to 30/06/23.
- K.Vidya, Associate Professor, D. Keerthi Yadav, B. Nani and D. Sujatha, Assistant Professor, A one-week online FDP on "Viksit Bharat 2047" organized by the Rajiv Gandhi University (Kadapa), Anantha Lakshmi Institute of Technology & Sciences (Ananthapuram), India organized from 29/01/24 to 02/02/24.
- G. Jaya Raju, Assistant Professor, A two-week online FDP on "Industry 4.0/5.0" organized by the PVPSIT, Vijayawada, India organized from 15/04/24 to 27/04/24.

CERTIFICATIONS COURSES THROUGH NPTEL

- Dr. B. Kiran Babu, completed a certification course titled, "Programming in Java" offered through Swayam - NPTEL during Jul-Oct 2023.
- Dr. R Bhargavi, completed a certification course titled, "National Accreditation Teaching Learning in Engineering" offered through Swayam - NPTEL during Jan-Apr 2024.
- Dr. B. Kiran Babu, completed a certification course titled, "Cloud Computing" offered through Swayam - NPTEL during Jan-Apr 2024.

INDUSTRIAL VISIT

III B.Tech. students of Mechanical Engineering visited "APSRTC ZONAL WORKSHOP, VIDYADHARAPURAM", Vijayawada on 17-08-2023.

STUDENTS PARTICIPATIONS IN PROFESSIONAL EVENTS

- K Venkata Narendra Reddy, K Praveen Tejas has participated in the event Project Expo at Andhra Loyola Institute of Engineering and Technology, Vijayawada on 07-10-2023.
- V Ravi Teja, Sanapala Suresh and T Jaya Sumanth has participated in the event Project Expo at Andhra Loyola Institute of Engineering and Technology, Vijayawada on 07-10-2023.
- P Kesava Sai Kumar, S Saikumar, M Siva Ramakrishna, has participated in the event Poster Presentation at Andhra Loyola Institute of Engineering and Technology, Vijayawada on 07-10-2023.
- Dhanush Kumar, Sk Mustafa and T Jaya Sumanth has participated in the event Poster Presentation at Andhra Loyola Institute of Engineering and Technology, Vijayawada on 07-10-2023.
- S Suresh, V Ravi Teja, T Jaya Sumanth, has participated in the event Technical quiz, during VKR Fest 2K24 at VKR, VNB & AGK College of Engineering, Gudivada, Andhra Pradesh on 22-03-2024.
- Sanapala Suresh, Md Ibrahim Sanavullah Baig, M Durga Mallesh, J Saikumar has participated in the event Technical quiz, during VKR Fest 2K24 at VKR, VNB & AGK College of Engineering, Gudivada, Andhra Pradesh on 22-03-2024.
- D Vamsi Prakash, B Sai Rohith, G Durga Prasad has participated in the event Project Expo at Swarnandhra College of Engineering & Technology, Narsapur, Andhra Pradesh on 19-04-2024.
- T Lakshman Kumar, S Suresh has participated in the event Project Expo and won 2nd Prize at Swarnandhra College of Engineering & Technology, Narsapur, Andhra Pradesh on 19-04-2024.
- B Vijay Jeevan Kumar, M Sasi Kumar, D Mohan Surya has participated in the event Technical quiz at Swarnandhra College of Engineering & Technology, Narsapur, Andhra Pradesh on 19-04-2024.
- T Naga Maha Akhilesh, V Leela Naga Sandeep, A Chennakesava has participated in the event Technical quiz and won 2nd Prize at Swarnandhra College of Engineering & Technology, Narsapur, Andhra Pradesh on 19-04-2024.

PUBLICATIONS BY STUDENTS

CONFERNCES

1. D Mohan Surya, B Anil Kumar, A V Ramanjaneyulu and R Anil Kumar "3D Printing for Implant Applications: A Review" 4th International Conference on Emerging Trends In Mechanical Engineering and Industrial Automation – 2024, (NEC-ICETMEIA-2024), 19th &20th Apirl, 2024, at Narasaraopet Engineering College, Andhra Pradesh, India. ISBN No: 978-93-91420-93-2.
2. A ChenneKesava, P Kesava Sai Kumar, T Naveen and D Mahesh Kumar "Experimental Investigations on Mechanical and Tribological Properties of Al6101- SiC Metal Matrix Composite Fabricated Through Stir Casting" 4th International Conference on Emerging Trends In Mechanical Engineering and Industrial Automation – 2024, (NEC-ICETMEIA-2024), 19th &20th Apirl, 2024, at Narasaraopet Engineering College, Andhra Pradesh, India. ISBN No: 978-93-91420-93-2.
3. Ch Manikanta, C Tarun Sai Varma, P Jadeesh and N Raghava "Influence of Bagasse Ash Particles on Mechanical Properties of Al 6082 Metal Matrix Composites" won 2nd prize, 4th International Conference on Emerging Trends In Mechanical Engineering And Industrial Automation – 2024, (NEC-ICETMEIA-2024), 19th &20th April, 2024, at Narasaraopet Engineering College, Andhra Pradesh, India. ISBN No: 978-93-91420-93-2.

Editorial board

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Dr B Kiran Babu (Chief Editor)

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T Ugravarun (II Year)

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