MECH ZONES

MAGAZINE

DEPARTMENT OF

MECHANICAL

2021 - 2022

DR .T.THIMMAIAH INSTITUTE OF TECHNOLOGY

OORUGUM, KGF-563120

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Department of Mechanical Engineering

Dr. T. THIMMAIAH INSTITUTE OF TECHNOLOGY

STUDENTS MAGAZINE 2021- 2022

PRESIDENT MESSAGE

In today's technological world, every aspiring engineer comes to the college with great dreams of excelling the roles of Team Player, Team leader and eventually becoming an industrial leader. It is a proud moment that the Seventh edition of "MechNEWS" has been initiated by the Department of Mechanical Engineering, focusing the activities and achievements of students and faculties of the department. By Understanding our responsibility, let us all work together to create a new and better livable world by this good practice and implementing them in an ethical way.

FROM PRINCIPAL DESK

It gives me immense pleasure in releasing the Seventh edition of "MechNEWS" of the Department of Mechanical Engineering, showcasing all the happenings of the last academic year. A glance at the statistics reveals that the students have done well in placement, academics, and co-curricular activities with the able mentoring of the faculty members. Sustaining the interest of the readers is very critical and I strongly believe that the Department of Mechanical Engineering is achieving this in its own imitable style. My congratulations and best wishes to the entire editorial team in bringing out this newsletter in a well-structured manner.

CHIEF EDITOR

Mr. Manjunatha Babu N S
Associate Professor, HOD

STUDENT EDITORIAL BOARD

Final year
Karthikeyan V
Rama K
Rahil Babu D

3rd year
Ajay Kumar K
Madhu K
Swetha G

2nd year
Varun Kumar A V
Srikanth K
Madhan P

TOPPER OF THE BATCH

KARTHIKEYAN V (1GV19ME415)

Chief editorial Message

Dear Students, Faculty, and Readers,

It is a great pleasure to present this edition of our student magazine, a platform that showcases the talent, creativity, and technical expertise of our Mechanical Engineering students. This magazine reflects the dedication and enthusiasm of our students and faculty in academics, research, and extracurricular activities

ABOUT THE DEPARTMENT

Mechanical Engineering is one of the core engineering disciplines that provides quality education on various applications, enabling students to understand and address several industrial aspects. Since many components across different fields require manufacturing, mechanical engineering plays a vital role in any era.

The highlight of our department at Dr. TTIT includes excellent placement opportunities, experienced faculty, an effective teaching-learning environment, and well-equipped laboratory facilities. Students are encouraged to work in teams for project work, which involves material selection, design, fabrication, and development. They are also encouraged to explore and develop their own start-ups, potentially creating internship and job opportunities for themselves and others.

The department motivates both students and faculty to participate in various programs (software training, hands-on workshops, technical events, seminars, and industrial visits) that help develop analytical and practical skills, which can be applied to real-world problems.

VISION OF THE DEPARTMENT

To transform the students into technically competent Mechanical Engineers nurturing them in learning sustainable and innovative technology with professional ethics and social concern.

MISSION OF THE DEPARTMENT

M1 - Striving to empower students with fundamentals in the field of Mechanical Engineering with innovative, managerial and professional skills.

M2 - To create an environment for progressive learning through industry institute partnership.

M3 - Imparting quality technical education stressing on new technology with professional ethics for the benefit of the society.

PROGRAM EDUCATIONAL OBJECTIVES (PEO)

PEO-1 Graduates will have successful professional careers in the Industry, adapting to evolving needs with their strong foundation in science and engineering principles.

PEO-2 Graduates will engage in higher studies and professional development demonstrating innovation and research capabilities in solving real-world problems while being aware of the societal impact.

PEO-3 Graduates will exhibit leadership, professional ethics, effective communication skills, teamwork and a commitment to lifelong learning.

PROGRAM SPECIFIC OBJECTIVES (PSO)

PSO-1 Design and develop components or systems in the field of Mechanical Engineering.

PSO-2 Apply modern hardware and software technologies to perform structural and thermal analysis

Program Outcomes (PO)

Graduates will be able to:

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
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.
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.
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.
5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
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.
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.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
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.
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.
12. **Life-long learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning.

GUEST LECTURE

- Guest Lecture was organized to student of Mechanical Engg on "Essential Design and Entrepreneurship Skills to build your Career to International Standards" by Mr. R J Vinod, Director Global Sales, Indus USA Inc on 29th Oct 2021.

- A technical talk on "Top 10 skills for Future and Industry 4.0" by Mr. Mohan S, CEO, Indoskill was arranged to Final year students of Mechanical Engineering on 12th Nov 2021.

- Three Days Workshop was conducted on "Python Programming for Real-time Industrial Applications by Mr. Md Azar Hussain & Mr. Mohan S – Indoskill (Aqmenz Automation Pvt Ltd), Bangalore from 28th to 30th Dec 2021.
- Mr. Prasanna Kumar V, Associate Director – IT of Merck has delivered an expert talk on Demand & Supply Network for 6th & 8th Semester Students in the month of April 2022.
- Mr. Lakshmish Bhat, Senior Manager, Continental Automotives Pvt Ltd has delivered an expert talk on Supplier Quality Management for 6th & 8th Semester Students on 27th May 2022.

- Technical Dumb Charade was conducted on 28.2.22 for interested students of all disciplines of Dr. TTIT - KGF.

INDUSTRIAL VISIT

- One Day Industrial Visit to Deccan Hydraulics Pvt Ltd, Bangarapet was arranged to all students of Mechanical Engg on 11th Dec 2021.

- A visit to "Apollo Tricoat Tubes Pvt Ltd – Malur" was arranged to students of 4th
- and 8th Semester on 21st June 2022 to get exposed to steel pipe and tube using ultra-modern manufacturing facilities.

SEMINARS / FDP ATTENDED

- Dr. Mohan Kumar K - Associate Professor attended 5 days "Virtual FDP on Trendy Manufacturing with Generative Design using Fusion 360" Hosted by ICT Academy, from 24th to 29th Jan 2022.
- Mr. Srinivas A - Assistant Professor has attended a workshop on "Hands on training on XRD & FTR" at Jyothi Institute of Technology, Bangalore on 25.02.22.

PUBLICATIONS

- Dr. H G Shenoy & Mr. Pruthvi H M published a research paper on "Effect of Zn, Mg and heat treatment on Al base alloy on hardness using Taguchi Technique", in IOP Science, January 2022.
- Dr. P.D. Sudersanan published a research paper on "Influence of Heat Treatment on the Tensile and Hardness Characteristics of Friction Stir Weld Joints of Dissimilar Aluminium Alloys" in the AIP Conference Proceedings, January 2022.
- Dr. Manjunatha Babu N S & Dr. Mohan Kumar K published a research paper on "Study on Structural Stability of Intake Manifold through Finite Element

  Analysis", in International Journal of Ambient Energy, Taylor & Francis, April 2022.
- Dr. Manjunatha Babu N S has published a textbook titled "MEMS Design, Fabrication and Its Application" in Scientific International Publishing House, July 2022.

FACULTY / STUDENTS ACHIEVEMENTS

- Dr. Narsimha C - Associate Professor, has attended the National Conference on NCRTEST 2022 held at CBIT – Kolar on 23/06/2022 as a session expert.
- Mr. Ajay Kumar K - Student of 6th Semester, has cleared 4 NPTEL Courses and credited with a Star Award.
- Mr. Praveen V - Student of 4th Semester, has won First Place in Business Plan Competition organized by Institution Innovation Council, Dr TTIT.
- Mr. Roshan U - Student of 8th Semester, has qualified GATE 2022 with rank score of 9913 and got admitted to IIT Ropar, Rajasthan.
- Mr. Nitish B R, Mr. Manivasagathian and Mr. Naresh Dev, under the guidance of Mr. Sagar S - Assistant Professor has received a best project award for their final year project entitled "Vortex Bladeless Wind Mill" in the Project Expo 2022 organized by IIC – Dr TTIT.

DEPARTMENT TOPPERS

2021 - 22	FIRST PLACE	SECOND PLACE	THIRD PLACE
SECOND YEAR	 Varun Kumar A V (1GV20ME013)	 Madhan P (1GV20ME006)	 Sathish (1GV21ME409)
THIRD YEAR	 Ajay Kumar K (1GV19ME001)	 Pawan Kalyan N (1GV19ME021)	 Swetha G (1GV20ME413)
FINAL YEAR	 Karthikeyan V (1GV19ME415)	 Renald Vishwa (1GV19ME425)	 Lakshmana K (1GV19ME417)

Students Achievement 2021 - 2022

Workshop was conducted on "Python Programming for Real-time Industrial Applications" for all Non-IT students from 28.12.21 to 30.12.21 by Indoskill, Bangalore

A visit to Deccan Hydraulics was provided to our students of 3rd and 5th Semester on 11.12.21.

A visit to Apollo Tri-coat Tubes Pvt Ltd - Malur was provided to our students of 4th and 8th Semester on 21.06.22.

Mr. Ajay Kumar K, Student of 6th Semester has cleared 4 NPTEL Courses and credited with a Star Award.

Mr. Praveen V, Student of 4th Semester has won First Place in Business Plan Competition organized by Institution Innovation Council, Dr TTIT.

Golden Valley Educational Trust

Dr. T. THIMMAIAH INSTITUTE OF TECHNOLOGY

Affiliated to VTU Belagavi,Approved by AICTE New Delhi,ISO 21001- 2018 Certified

Oorgaum Post, Kolar Gold Fields - Karnataka - 563120

CERTIFICATE OF ACHIEVEMENT

This is to Certify, that Mr. Praveen.V

from the Department of Mechanical Engineering studying in the Sixth Semester

has secured the FIRST Prize in the Poster Making competition on Business Plan organized by

Institution's Innovation council, Dr. T. Thimmaiah Institute of Technology, K.G.F.

Held on 26th May 2022.

Prof. Ruckmani Divakaran
Dean - Academics

Dr. H. G. Shenoy
Vice-Principal President IIC

Dr. Syed Ariff
Principal

Mr. Roshan U, Student of 8h Semester has qualified GATE 2022 with rank score of 9913 and got admitted to IIT Ropar, Rajasthan

GATE 2022 Scorecard

Graduate Aptitude Test in Engineering (GATE)

Name of Candidate	ROSHAN.U
Parent's/Guardian's Name	UDAY KUMAR.P
Registration Number	ME22S81227010
Date of Birth	21-Dec-2000
Examination Paper	Mechanical Engineering (ME)

GATE Score:	386
All India Rank in this paper:	9933
Number of Candidates Appeared in this paper:	89567

Marks out of 100*: 31.3

Qualifying Marks**	General	EWS/OBC (NCL)	SC/ST/PwD
	28.1	25.2	18.7

Valid up to 31st March 2025

Prof. Ranjan Bhattacharyya
Organising Chairman, GATE 2022
on behalf of NCB-GATE, for MoE

* Normalized marks for Civil Engineering (CE) and Mechanical Engineering (ME) Papers

** A candidate is considered qualified if the marks secured are greater than or equal to the qualifying marks mentioned for the category for which valid category certificate, if applicable, is produced along with this score card.

Organising Institute: Indian Institute of Technology Kharagpur

General Information

The GATE 2022 score is calculated using the formula

$$\text{GATE Score} = S_q + (S_t - S_q)\frac{(M - M_q)}{(M_t - M_q)}$$

where,
M is the marks obtained by the candidate in the paper, mentioned on this GATE 2022 scorecard
$\mathbf{M_q}$ is the qualifying marks for general category candidate in the paper
$\mathbf{M_t}$ is the mean of marks of top 0.1% or top 10 (whichever is larger) of the candidates who appeared in the paper (in case of multi-session papers including all sessions)
$\mathbf{S_q}$ = 350, is the score assigned to $\mathbf{M_q}$
$\mathbf{S_t}$ = 900, is the score assigned to $\mathbf{M_t}$

In the GATE 2022 score formula, $\mathbf{M_t}$ is 25 marks (out of 100) or $\mu + \sigma$, whichever is greater. Here μ is the mean and σ is the standard deviation of marks of all the candidates who appeared in the paper.

Qualifying in GATE 2022 does not guarantee either an admission to a post-graduate program or a scholarship/assistantship. Admitting institutes may conduct further tests and interviews for final selection.

Graduate Aptitude Test in Engineering (GATE) 2022 was organized by Indian Institute of Technology Kharagpur on behalf of the National Coordination Board (NCB) – GATE for the Department of Higher Education, Ministry of Education (MoE), Government of India.

Mr. Nidish, Mr. Manivasagathian, Mr. Naresh dev has received a best project award in Project Expo 2022 organized by IIC – Dr TTIT.

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Oorgaum Post, Kolar Gold Fields - Karnataka - 563120

CERTIFICATE OF ACHIEVEMENT

This is to Certify that Mr. Naresh Dev.N from the Department of Mechanical Engineering has participated in the "Dr. TTIT PROJECT EXPO - 2022" organized by Institution's Innovation Council, Dr TTIT, K.G.F, on 29th June 2022. The Project Titled "Fabrication of Vortex Bladeless Wind Mill" was awarded as the "Best Project".

Prof. Ruckmani Divakaran, Dean - Academics

Dr. H. G. Shenoy, Vice-Principal & President IIC

Dr. Syed Ariff, Principal

Mr. Mohan V S, CEO of Indoskill has delivered an expert talk on Top 10 Job Skills for Future for all Non-IT branch students in the month of October 2021.

Mr. Vinod R J, Director (Global Sales) of Indus USA Inc has delivered an expert talk on Essential Design and Entrepreneurship Skills to build your career to International Standards for 5th & 7th semester students in the month of October 2021.

Mr. Prasanna Kumar V, Associate Director – IT of Merck has delivered an expert talk on Demand & Supply Network for 6th & 8th Semester Students in the month of April 2022

Mr. Lakshmish Bhat, Senior Manager of Continental Automotives Pvt Ltd has delivered an expert talk on SQM for 6th & 8th Semester Students in the month of April 2022.

RECENT TRENDS IN MECHANICAL ENGINEERING

Mechanical engineering is evolving rapidly, driven by technological advancements and the need for sustainable solutions. Here are some of the recent trends shaping the field:

1. **Artificial Intelligence (AI) and Robotics:** AI is enhancing automation and efficiency in manufacturing processes, while robotics is taking on complex tasks with precision.

2. **3D Printing (Additive Manufacturing):** This technology allows for creating intricate designs and customized parts, reducing material waste and production time.

3. **Sustainability:** Engineers are focusing on eco-friendly materials, energy-efficient designs, and renewable energy technologies to combat climate change.

4. **Internet of Things (IoT):** IoT enables real-time monitoring and predictive maintenance, optimizing mechanical systems and reducing downtime.

5. **Digital Twins:** Virtual models of physical systems are being used for simulations, improving design accuracy and speeding up development.

These trends are not only transforming industries but also opening up exciting opportunities for innovation. Which of these trends interests you the most?