# GLOBAL ACADEMY OF TECHNOLOGY
## DEPARTMENT OF MECHANICAL ENGINEERING

# NEWS LETTER

AUG 2021-JAN 2022

**The Mechanical Engineering Department is committed to excellence in technical education, innovation, and hands-on learning. Our students actively engage in projects, research, and industry exposure to become future-ready engineers.**

### INDUSTRIAL VISIT

The Industrial Visit offered students a valuable opportunity to observe real-time industrial systems and enhance their practical understanding.

### CULTURAL EVENTS

The cultural events showcased the rich talents of our students, highlighting music, dance, drama, and the spirit of togetherness.

### STUDENT PUBLICATIONS

Student publications reflect the growing research culture within the department, with students contributing papers to conferences and journals across various mechanical engineering domains.

# GLOBAL ACADEMY OF TECHNOLOGY

## INSTITUTE VISION

Become a premier institution imparting quality education in engineering and management to meet the changing needs of society.

## INSTITUTE MISSION

- M1: Create environment conducive for continuous learning through quality teaching and learning processes supported by modern infrastructure.
- M2: Promote Research and Innovation through collaboration with industries.
- M3: Inculcate ethical values and environmental consciousness through holistic education programs

## DEPARTMENT VISION

Become one of the leading providers of education in mechanical engineering with emphasis on research, development and innovation for the benefit of society.

## DEPARTMENT MISSION

- M1: Impart quality technical education in the field of mechanical engineering through excellent teaching-learning process, modern infrastructure and computing tools.
- M2: Prepare students for successful careers by providing placements and encouraging research, development and innovation through industry-institute interaction.
- M3: Instill professional ethics and environmental consciousness amongst students through inclusive development programs.

# GLOBAL ACADEMY OF TECHNOLOGY
# DEPARTMENT OF MECHANICAL ENGINEERING

## PROGRAM EDUCATIONAL OBJECTIVES (PEOs) of the DEPARTMENT

PEO of Graduate students in Mechanical Engineering aims to have:

- **PEO1:** Engineering competence, critical thinking, creativity, and ethical inclusivity in professional practice.
- **PEO2:** Continuous intellectual growth through advanced education, professional development, independent inquiry, and experiential learning.
- **PEO3:**Leadership and teamwork excellence throughout professional careers.

## PROGRAM SPECIFIC OUTCOMES (PSOs) of the DEPARTMENT

After successful completion of Mechanical Engineering Program, the graduates will be able to:

- **PSO1:** Specify, design, and analyze machine elements using CAD/CAE software.
- **PSO2:** Evaluate thermal performance of Heating, Ventilation & Air-Conditioning systems, electronic systems, Solar Roof Top Photo-Voltaic systems using experimental approach or /and CFD tools and design these systems for better performance.
- **PSO3:** Develop composite materials, manufacturing processes and products in an efficient, safe and cost-effective manner.

# PROGRAM OUTCOMES

## Engineering Graduates will be able to:

**PO1. Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

**PO2. 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.

**PO3. 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.

**PO4. 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.

**PO5. 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.

**PO6. 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.

**PO7. 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.

**PO8. Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO9. Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10. 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.

**PO11. 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.

**PO12. 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.

# INDUSTRIAL VISIT

Students of the Mechanical Engineering Department visited Armstrong Global Castings, gaining valuable exposure to modern foundry operations and casting technologies. The visit provided insights into metal melting, mould preparation, quality control, and the advanced techniques used in manufacturing high-precision cast components. This hands-on experience helped students understand the practical applications of material science, production processes, and industrial safety standards.

As part of their industry exposure, students visited the Bangalore Metro Rail Corporation Ltd. (BMRCL) Baiyappanahalli Depot. The visit offered an in-depth understanding of metro rail operations, maintenance procedures, rolling stock inspection, and control systems. Students explored the workshop facilities, learned about track infrastructure, signalling operations, and the engineering behind efficient urban transportation. The experience enhanced their knowledge of large-scale public transport systems and real-time engineering applications.

| SI No | Industry Visited | Date |
|---|---|---|
| 1 | Armstrong Global castings | 26-11-2021 |
| 2 | Bangalore Metro Biyappanahali | 12-03-2021 |

# STUDENT PUBLICATIONS

| SI NO | Name of the Student | Sem | Name of the Publisher | Name of the Journal/ Conference, etc. | Issue No |
|---|---|---|---|---|---|
| 1 | Shashwath.S<br>Shashank.S<br>Sujay.N | 8 | Oxford college of Engineering | National conference on science Engineering & Management | 1 |

# PROGRAMS ORGANIZED

| SI NO | Name of the Professional Societies/Bodies, Chapters, Clubs | Name of the Event | Date of Event (DD/MM/YYYY) |
|---|---|---|---|
| 1 | Indian Society of Heating, Refrigerating & Air conditioning Engineers (ISHRAE) | Quiz competition | 18-09-2021 |
| 2 | Indian Society of Heating, Refrigerating & Air conditioning Engineers (ISHRAE) | Technical presentation on "Recent Advancements in Thermal Sciences" | 23-10-2021 |
| 3 | Indian Society of Heating, Refrigerating & Air conditioning Engineers (ISHRAE) | Guest lecture on "Future in HVAC Industries" | 23-10-2021 |
| 4 | Indian Society of Heating, Refrigerating & Air conditioning Engineers (ISHRAE) | Industrial visit to M/s Aerow Duct | 1-12-2021 |

# CULTURAL ACTIVITIES

The cultural events brought vibrancy and creativity to the campus, showcasing the diverse talents of our students. Through dance, music, drama, and artistic performances, the events celebrated cultural diversity, teamwork, and youthful energy. These activities not only encouraged artistic expression but also strengthened the sense of community within the department.

| SI NO | USN | Name | Event | Host Organiser | Date |
|---|---|---|---|---|---|
| 1 | 1GA18ME087 | Rohit Bhat.H | Inter- Collegiate<br><br>First Annual Essay Contest 2019 | Bhavan'S<br>Gandhi Centre of Science and Human Values<br>Bengaluru | 09-04-2021 |

# STUDENTS PARTICIPATION IN PROFESSIONAL EVENTS

| SI NO | Name of the student | Name of the Event | Date of Event (DD/MM/YYYY) | Name of Award |
|---|---|---|---|---|
| 1 | Abhishek Kadam M<br><br>Medipallivari Tharun Kumar Reddy | ISHRAE - Quiz competition | 18/09/2021 | 1st prize with cash amount of 10,000/ at Reva Institute of Technology |
| 2 | Abhishek Kadam M | ISHRAE- Paper presentation Competition | 23/10/2021 | Participated |
| 3 | Biradar Shashank Satish<br><br>Anjana P | ISHRAE- Paper presentation Competition | 23/10/2021 | Won cash prize of Rs. 5000 / |
| 4 | Abhay S | ISHRAE- Paper presentation Competition | 23/10/2021 | Participated |
| 6 | Harish Basavaraj Kamplikoppa | ISHRAE-Quiz competition | 18/09/2021 | Participated |
| 7 | Harish Basavaraj Kamplikoppa | ISHRAE – Paper presentation Competition, | 23/10/2021 | Participated |
| 8 | Kunaal Patel N M | ISHRAE- Paper presentation Competition | 23/10/2021 | Participated |

# ACTIVE MOU'S DURING THE YEAR

| SI NO | Name of the institution/ industry/ corporate house Month and Year of signing MoU Duration | Month and Year of signing MoU | Duration |
|---|---|---|---|
| 1 | Suprajiv / Skillsonics | 2021 | 4.03.2021 to 4.03.2022 |
| 2 | Advance Mechanical Service P Ltd. / Suprajiv | 2020 | 14.12.2020 to 14-12-2022 |
| 3 | VWX Private Limited | 2019 | 10.10.2019 to 10.10.2022 |
| 4 | ASKAR MICRONS (P) Ltd. | 2019 | 26.04.2019 to 26.04.2022 |
| 5 | IMAGEX TECHNOLOGIES | 2019 | 10.04.2019 to 10.04.2022 |
| 6 | CADEM TECHNOLOGIES | 2019 | 9.04.2019 to 9.04.2022 |
| 7 | LEANworx Technologies Pvt. Ltd. | 2019 | 9.04.2019 to 9.04.2022 |
| 8 | GAT – Toyota Centre of Excellence | 2018 | 21-06-2018-Still active |

# NUMBER OF PAPERS PUBLISHED PER TEACHER IN THE JOURNALS NOTIFIED ON UGC WEBSITE

| SI NO | Name of the author/s | Department of the Author(s) | Title of paper | Name of journal |
|---|---|---|---|---|
| 1 | Dr. T. Prashanth, | Mechanical | Study of buzz phenomenon in suddenly expanded flow structure using experiments and visualization | Numerical Heat Transfer, Part B: Fundamentals |
| 2 | Mr. G R Gurunagendra, | Mechanical | Investigations on microstructure and tensile properties of as-cast ZA-27 metal matrix composite reinforced with zircon sand | Material Today: Proceedings |
| 3 | Mr. G R Gurunagendra,B. R.raju Mr.Amith.D.G,Mr.Vijay Kumar Pujar, Mr.Ravi keerthi.C | Mechanical | Mechanical, wear and corrosion properties of micro particulates reinforced ZA-27 hybrid MMC by stir casting: A review | Material Today: Proceedings |
| 4 | Mrs. P B Asha, Mrs.Sneha Sarika Murthy | Mechanical | Investigation of physical, mechanical & wear behavior of aluminum composite carrying ceramic Boron carbide particles | Material Today: Proceedings |
| 5 | Mr. Vijayakumar Pujar, Dr.Bharat.V. | Mechanical | A review on mechanical and wear properties of fiber-reinforced thermoset composites with ceramic and lubicating fillers | Material Today: Proceedings |
| 6 | Mr. Rajesh. R | Mechanical | Comparison of GRA and TOPSIS optimization techniques in DMLS-Processed Bronze-Nickel Samples | Springer nature |

| | | | | |
|---|---|---|---|---|
| 7 | Mr.R. Kiran, Mr.Poornachandra Dr.V.Ravi Kumar, Mrs.Asha.P.B, Prakash Rao C R | Mechanical | Experimental Study on Polymer Nanocomposites Based Strain Sensors for Structural Health Monitoring | Journal of Minerals and Materials Characterization and Engineering |
| 8 | Mr. G R Gurunagendra, | Mechanical | Investigations on stresses and Displacements of Annular Rotating Disc using FEA | ACS journal for Science & Engineering |
| 9 | Dr.N.Rana Pratap Reddy | Mechanical | Experimental Studies On Reduction of Nox Emission of Biodiesel Fuelled Engine Using A Novel Natural Additive | Research Square |
| 10 | Mr. Ghaleppa B | Mechanical | Production & optimization for performance & Emission Parameters of a CI-DI Engine Running on Mahua Biodiesel Blended with Mahua Oil | International Advanced Research Journal in Science, Engineering and Technology |

# FACULTY DEVELOPMENT PROGRAM ATTENDED BY FACULTIES

| SI NO | Name of Teacher who attended the programme | Title of the programme | Duration (from - to) |
|---|---|---|---|
| 1 | Mr.Ranjith. P.K | FDP on "Inculcating Universal Human values in Technical Education" | 13-09-2021 to 17-09-2021 |
| 2 | Mr.Shamanth.C | FDP on "Inculcating Universal Human values in Technical Education" | 13-09-2021 to 17-09-2021 |
| 3 | Mrs.Asha P.B | FDP on "Inculcating Universal Human values in Technical Education" | 13-09-2021 to 17-09-2021 |
| 4 | Mr. Poornachandra | ATAL FDP on "Electric Vehicles" | 04-10-2021 to 8-10-2021 |

| | | | |
|---|---|---|---|
| 5 | Dr.D.V.Ravikumar | Training program on "Trends in CNC Machining & Technology" | 04-10-2021 to 8-10-2021 |
| 6 | Dr.V.Ravikumar | ATAL FDP on "Electric Vehicles" | 04-10-2021 to 8-10-2021 |
| 7 | Dr.V.Ravikumar | FDP on "Recent trends in applications of AI, ML, IOT & Robotics in Mechanical Engineering". | 28-10-2021 to 30-10-2021 |
| 8 | Mr. Poornachandra | FDP on "Recent trends in applications of AI, ML, IOT & Robotics in Mechanical Engineering | 28-10-2021 to 30-10-2021 |
| 9 | Mrs.Asha P.B | FDP on "Recent trends in applications of AI, ML, IOT & Robotics in Mechanical Engineering | 28-10-2021 to 30-10-2021 |

# TATA GRADUATE ENGINEERING TRAINING

| 15 Days of Hands-on Training on CNC technology for Graduate Engineer Trainees of Tata Electronics Pvt. Ltd., Hosur | |
|---|---|
| Date: 28 July 2021 – 13 August 2021 | Participants: GET of TEPL (29 Girls, 09 Boys) |
| Location: CIM Center, GAT | Resource Person: Experts from CIM Center, GAT,<br>Mr. Rajiv, Director, Suprajiv<br>Mr. Thangaraj, Tech Expert, Skillsonics |

| 15 Days of Hands-on Training on CNC technology for Graduate Engineer Trainees of Tata Electronics Pvt. Ltd., Hosur | |
|---|---|
| Date: 16 Aug 2021 – 01 Sep 2021 | Participants: GET of TEPL (30 Girls, 03 Boys) |
| Location: CIM Center, GAT | Resource Person: Experts from CIM Center, GAT,<br>Mr. Rajiv, Director, Suprajiv<br>Mr. Thangaraj, Tech Expert, Skillsonics |

| 15 Days of Hands-on Training on CNC technology for Graduate Engineer Trainees of Tata Electronics Pvt. Ltd., Hosur | |
|---|---|
| Date: 06 Sep 2021 – 23 Sep 2021 | Participants: GET of TEPL (30 Girls) |
| Location: CIM Center, GAT | Resource Person: Experts from CIM Center, GAT,<br>Mr. Rajiv, Director, Suprajiv<br>Mr. Thangaraj, Tech Expert, Skillsonics |

## Name of the Editor :

Dr. Shreekala N

V Dhanyanth (1GA19ME070) (VI)

## Student Members :

Chandan Krishna (1GA19ME013)

Kashyap S (1GA19ME032) (VI)