ABOUT GVP COLLEGE OF ENGG.

Gayatri Vidya Parishad College of Engineering (GVPCE) was established in 1996 by Gayatri Vidya Parishad, a premier educational trust, to promote technical education. The GVPCE(A) offers 10 B.Tech., 5 M.Tech programs and MCA with an annual intake of around 1260. The college is accredited by NAAC with 'A+ +' Grade. The institute received funds of Rs. 5 Crores under Technical Education Quality Improvement Program (TEQIP), S.C-1.2 by MHRD, Government of India.

The Department of Science & Technology, New Delhi, sanctioned the Scientific & Industrial Research Centre (SIRC) to support the research activities. The college was granted autonomy by UGC in 2009. The college adopted Outcome Based Education methodology for all programmes from the academic year 2013-14. The college received Rs. 12 Crores from funding organizations DST / NBHM / ARB / AICTE etc. towards 45 R&D projects. Research and Consultancy projects, dedicated faculty, well equipped laboratories, good infrastructure and meritorious students are the major strengths of the Institution. The institute encourages collaborative learning between industry and academia as a means of reinforcing its curriculum with practical and real world experiences.

ABOUT THE DEPARTMENT

The Department of Mechanical Engineering has been functioning since the inception of Gayatri Vidya Parishad College of Engineering in 1996, with an initial intake of 60 students, which has now increased to 120. The department boasts a team of highly qualified faculty members, many of whom hold Ph.D.s from prestigious institutes such as IITs, NITs, and universities in India & abroad. In 2020, the department launched a B. Tech (Robotics) program with an intake of 60 students. Additionally, it offers an M. Tech program in CAD/CAM with an intake of 12.The department has secured several R&D and consultancy projects worth Rs. 240 lakhs and has published 246 papers in reputed national and international journals and conferences. It holds 14 patents, with 7 granted, 4 published, and 3 filed. Several faculty-authored books have been published by reputed publishers across the country. The department has been accredited by NBA five times. The department also houses a Centre for Machinery Condition Monitoring, providing solutions to high-vibration problems. Additionally, it is well-equipped with CNC machining and Advanced Robotics laboratories.

Chief Patron:
Prof. Dr. Ing. P.S. Rao
President, Gayatri Vidya Parishad.

Patrons :
Sri. D. Dakshina Murthy
Vice - President, Gayatri Vidya Parishad.

Prof. K. P. R. Sastry
Vice - President, Gayatri Vidya Parishad.

Prof. P. Somaraju
Secretary, Gayatri Vidya Parishad.

Chair person :
Prof. A.B. Koteswara Rao, Ph.D. (IIT Delhi)
Principal, GVPCE (A)
& Professor, Dept. of Mechanical Engineering

Programme Advisory Committee :
Dr. A. Syamsundar
Vice Principal, GVPCE (A)

Dr. C.V.K. Bhanu
Dean, Internal Quality Assurance Cell (IQAC)

Dr. M. V. S. Sairam
Dean of Academic Programs-UG

Convener :
Dr. B. Govinda Rao
Professor & Head, Dept. of Mechanical Engineering

Program Coordinator :
Dr. S. Rama Krishna
Associate Professor, Dept. of Mechanical Engineering

Organizing Committee Members :
Dr. D. Srinivasa Rao, Professor
Dr. Sanjay Kumar, Associate Professor
Dr. Y. Seetharama Rao, Associate Professor
Dr. M. Amrita, Associate Professor
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Dr. K.V.Varalakshmi, Assistant Professor
Dr. P.P.S.Keerthi, Assistant Professor

A One-Week National Workshop
(Online Mode)

On

Smart Diagnostics: AI and Machine Learning for Vibration Analysis in Machinery and Structures

11th – 15th November 2024

Organized by

DEPARTMENT OF MECHANICAL ENGINEERING

COLLEGE OF ENGINEERING (AUTONOMOUS)

GAYATRI VIDYA PARISHAD
COLLEGE OF ENGINEERING (Autonomous)
Approved by AICTE & Affiliated to Andhra University, Visakhapatnam form 2022-23
Accredited by NAAC with A++ Grade
Madhurawada, Visakhapatnam-530048

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ABOUT THE WORKSHOP

This workshop aims to explore the integration of Artificial Intelligence (AI) and Machine Learning (ML) into modern vibration analysis techniques for fault diagnosis in rotating machinery and structural systems. As industries increasingly adopt smart, data-driven solutions, AI and ML provide innovative methods to predict, diagnose, and address mechanical issues before they become critical. Participants will gain insights into how these technologies are transforming traditional vibration-based diagnostics by enabling precise, real-time monitoring and data-driven decision-making, ultimately improving maintenance strategies and operational efficiency. Through a combination of theoretical sessions, live demonstrations, and real-world case studies, the workshop will equip attendees with a comprehensive understanding of how AI and ML can enhance the performance and reliability of machinery and structural systems..

RESOURCE PERSONS

- ❖ **Dr. Rajiv Tiwari**, Professor
  Mechanical Engineering Department, IIT Guwahati

- ❖ **Dr. Nitesh P. Yelve,** Professor
  Department of Mechanical Engineering, IIT Bombay

- ❖ **Dr. Piyush Shakya**, Associate Professor
  Mechanical Engineering Department, IIT Madras

- ❖ **Dr. Sriparna Saha**, Associate Professor
  Computer Science and Engineering Department
  IIT Patna

- ❖ **Dr. J. Srinivas**, Professor
  Department of Mechanical Engineering, NIT Rourkela

- ❖ **Dr. Srikanth Korla**, Professor
  Mechanical Engineering Department, NIT Warangal

- ❖ **Dr. K. Ramjee**, Professor and HOD,
  Mechanical Engineering Department, AUCE(A),VSP

- ❖ **Dr. V. Rama Krishna**, Scientist- F,
  NSTL, Visakhapatnam

- ❖ **Santhosh Kumar Annabattula,**
  Senior Product Manager
  ACG , Pharma Manufacturing Company, Mumbai

- ❖ **Dr. Edwin Vijaykumar**, Professor
  EEE Department. GVPCE(A)
  Former General Manager, Visakhapatnam Steel Plant

TOPICS

- • How AI and ML Are Transforming Traditional Vibration Monitoring and Diagnostics
- • Introduction to Smart Vibration Analysis and Its Role in Fault Detection
- • AI and ML Fundamentals
- • Neural Networks, Supervised and Unsupervised Learning, and Decision Trees
- • Sensors for Vibration Measurement and Structural Health Monitoring
- • Demonstration on Vibration Measurement and Structural Health Analysis
- • Feature Extraction and Fault Classification Techniques
- • Application of AI and ML Algorithms for Fault Classification in Machinery
- • Application of AI and ML Algorithms for Fault Classification in Structures
- • Test & Feedback followed by Valedictory

NOTE:
Timings of sessions: 1:00 PM to 2:30 PM
                      3:00 PM to 4:30 PM

LEARNING OBJECTIVES

- • Understand the principles and applications of AI and ML in vibration analysis.
- • Learn how to extract meaningful features from vibration data.
- • Develop skills in building and training AI and ML models for fault diagnosis.
- • Apply AI and ML techniques for predictive maintenance.
- • Gain insights into the practical challenges and solutions in implementing AI and ML for vibration-based fault diagnosis.

ELIGIBILITY

- • M. Tech Students
- • Research Scholars
- • Faculty
- • Industry Persons

REGISTRATION FEES

- ➢ For Industry persons   - Rs 1000/-
- ➢ For Faculty   - Rs 500/-
- ➢ For Research Scholars & Students   - Rs. 200/-

NOTE:
- • The number of participants is limited to 200.
- • Last date for registration: November 10, 2024.
- • E-certificates will be issued to participants who achieve at least 75% attendance and score a minimum of 60% in the online test conducted at the end of the program.

REGISTRATION LINK:

https://docs.google.com/forms/d/e/1FAIpQLSebKolHHvaS3ZgfQX-A2tkP5hgcvU_1ThXLSvSoVD1OgPSjyg/viewform?usp=sf_link

PAYMENT DETAILS:
Name of the Account holder:
HOD Mechanical Engg. Dept. GVPCEA
Account Number: 91912010000245
Name of the Bank: Union Bank
IFSC code: UBIN0819191

CONTACT

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