WHO SHOULD ATTEND

Faculty and Research Scholars working within India (primarily from universities, colleges & academic institutions) in Science and Engineering having B.Tech/B.E./B.Sc. (Engg) in Mechanical Engineering, Civil Engineering, Industrial Engineering, Mining Engineering, and Mining Machinery Engineering.

Fee

Rs. 3000 per participant, which includes an e-course kit.

REGISTRATION

Nominations along with the receipt of online transaction should be submitted latest by 15 May, 2022.

For registration and online payment, click the link below: https://bit.ly/3FFnJxb

COORDINATOR

Prof. Ajit Kumar
Assistant Professor
Mining Machinery Engineering
IIT (ISM) Dhanbad
Email: ajit@iitism.ac.in
Mobile: +91-9471192264
+91-326-223-5125

Co-coordinator

Prof. Jayanta Das
Associate Professor
Mining Machinery Engineering
IIT (ISM) Dhanbad
Email: jayantadas@iitism.ac.in
Mobile: +91-9471191639
+91-326-223-5941

MODE OF CONDUCT OF THE COURSE

Google Meet
Online sessions

Organised by
Indian Institute of Technology (ISM), Dhanbad

Faculty Development Program on Fluid Power Technology and its Applications (June 6th to 10th, 2022)
ABOUT IIT (ISM)

Standing tall since 1926, the institute is steadily sailing through the millennium change and has emerged into one of the most prominent institution- Indian Institute of Technology (ISM) Dhanbad, an Institute of National Importance with full bloom functioning of 18 branches of Engineering, Applied Sciences, Management Studies, and Humanities. Situated in India's mineral-rich belt in Dhanbad, IIT (ISM) has had long centenary credentials of outperforming achievements/contributions in academia and the industry.

BACKGROUND

Fluid power has the highest power density of all conventional power-transmission technologies. Fluid power systems are extensively used in industrial applications such as manufacturing, processing, mining, construction, and mineral sectors. It provides many advantages over mechanical and electrical systems, such as ease of operation, simple construction, and control accuracy.

To improve productivity, efficiency, and safety, there has been a significant increase in the application of fluid power technology in industrial applications in the recent past. Due to its step-less variation in speed, high torque at low speed, and high power density, hydraulic systems are now extensively used in industrial and mobile applications. The global researchers and academicians in the said area are much engaged in innovative and advanced research in designing the fluid power components, drive, and control systems. Looking into the current scenario of fluid power technology in industrial and mobile applications, there is a need for a highly skilled and trained workforce in the concerned area through technology transfer.

Given the above, the course is designed to provide a platform for sharing knowledge and expertise in the area of fluid power technology. This course also aims to provide opportunities to acquire specialized research skills in the area of fluid power technology, its control, and the application of AI/ML in the said area. The proposed program is beneficial for the faculty/researchers working in the area of fluid power/fluid systems to cater to the need for the design and maintenance of hydraulic machinery deployed in several industrial applications.

OBJECTIVE OF THE COURSE

- To acquaint the participants with the fundamental design aspects of hydraulic components like pumps, motors/cylinders, valves, and accessories.
- To explore diverse perspectives related to the design procedures of a fluid power transmission system used in different applications.
- To discuss the different control strategies applied to fluid power technology.
- Application of AI/ML in hydraulic systems.
- Hands-on/Virtual practice for participants to assemble and disassemble hydraulic components and make hydraulic systems/or through video demonstrations.

SCOPE OF THE COURSE

The scope of the course is to let the participants be introduced to the fundamental principles and analytical modeling of fluid power components, circuits, and systems. They will also learn the benefits and limitations of fluid power compared with other power transmission technologies, the operation, use, and symbols of standard hydraulic components, how to formulate and analyze models of hydraulic components and circuits, and how to design and predict the performance of fluid power circuits.

HIGHLIGHTS

- Extensive theory classes.
- Virtual practical classes showing the working of different hydraulic systems.
- Case studies.
- Engaging the participants in practical design problems and their solutions.

RESOURCE PERSONS

Guest speaker from IITs working in the area of Fluid Power Technology. The experts from respective industries will also be invited for sharing their expertise.

As per The Gazette of India, Part III-Section 4, No. 18.0 (ix); all short-term and long-duration Faculty Development Programmes (FDPs) for teachers/faculty will be considered for career advancement scheme.