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## Rexroth Bosch Group Germany

## **Faculty Development Program**

on

### **Automation Technologies- Hydraulics Systems**

(11<sup>th</sup> - 12<sup>th</sup> Jan, 2018)



Organized by Department of Mechanical Engineering ABESIT, Ghaziabad

# Our Centers of Excellence in Campus Technologies Industrial Automation Analog & Embedded Systems Entuple Technologies

Venue ABESIT Ghaziabad



#### ABES Institute of Technology College Code 290

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Approved by AICTE, Ministry of HRD, New Delhi & Affiliated to Dr. APJ Abdul Kalam Technical University (formerly Uttar Pradesh Technical University), Lucknow Campus-2, 19th km. Stone, NH-24, Vijay Nagar, Ghaziabad - 201009, (U.P.), India, Phone: 91+120-6517673, 6517675 Fax: +91-120-2845600, Mobile No. 9953522000 website: www.abesit.in, email: info@abesit.in

#### About the Bosch Rexroth Germany Center of Excellence in Automation Technologies

The Bosch Rexroth hydraulic training systems clearly illustrate the operation behavior of modern hydraulic circuits and perfectly prepare trainees for work in the company as industrial standard components are used for different practical applications, exercises and device sets e.g., for on/off hydraulics, proportional technology, control technology or mobile applications. The exercise manuals contain examples for all learners-beginners and professionals. Center of excellence of Bosch Hydraulics Training System at ABESIT allows practical exercises on current standard components from the industrial sector. Everything is as it is in the real world. Hydraulics training system emphasizes on mechanical knowledge as well electrical and electronics domain. The training system consists of the workstation, the components contained in the device sets and the project manuals. It provides both novices and advanced trainees with practical knowledge in the fields of hydraulics. Face-to-face and practical training with personal contact, direct communication and particularly "touching" the components consolidate the theoretical knowledge of hvdraulics.

While there are literally hundreds of end use applications for RHM fluid power systems, some of the more common uses include: metal cutting machine tools, metal forming machinery, conveyor systems, component test stands, foundries and primary metals plants and presses, including cushions, clutches & brakes.

#### **About the Institute**

ABES Institute of Technology is a reputed engineering institute in NCR which embarked on its mission in the field of technical education from the Academic Session 2007-08. The institute has lushgreen and sprawling campus situated next to Crossing Republik, NH-24, Ghaziabad. Institute philosophy has been to invest all the resources towards students' cause and development. Institute teaching staff is qualified, experienced and result oriented which is reflected in the institute result. There are personnel with industry background to lend a right blend of theory and practical applicability of the course concept. 'ABESIT-Centers of Excellence & Innovations (CEI)' has been setup to take the curriculum few steps ahead through mechanism that introduces a "hands on practice" and innovation for development of products as conceived by the students. 'Abesit-Corporate Resource Centre (CRC)'/Placement Cell is playing a vital role in placement activities. Various co-curricular and extra-curricular activities are regularly conducted which ensures the overall development of the students. For further details please visit our website: www.abesit.in

#### **Faculty Development Programe on Industrial Hydraulics**

Day 1		
Date	Time	Topics
11/01/2018	10:00 - 11:00	<ul> <li>Welcome to participants &amp; Inauguration</li> <li>Introduction to "Bosch Rexroth" &amp; introduction of participants</li> <li>What is the hydraulics? Briefing on Industrial oil hydraulics.</li> <li>Fundamentals of hydraulic lever, Bernoulli's concept, Reynolds's number, continuity equation etc.</li> </ul>
	11:00 - 11:15	Tea Break
	11:15 - 12:15	Elements of hydraulics system. • function, Construction Working principle & characteristics of: Hydraulic pumps like Gear, Vane, Radial, Motor.
	13:15 - 14:15	Lunch break
	14:15 - 15:45	Various check valves. (Simple & Pilot operated check valves) Flow control valves. Simple Throttle & Viscosity/temperature compensated throttle. Throttles without & with load compensation. Comparision of functional aspects and use in hydraulic circuits.
	15:45 - 16:00	Tea break
	16:00 - 17:15	<ul> <li>Pressure control valves.</li> <li>Relief, Sequence, Reducing Functions Experiments to be performed on training.</li> </ul>

#### Dav 2 Dat

Date 12/01/2018	Time 09:30 - 11:00	Topics Directional control valves. Proppet design concept, Spool design valves (both direct & pilot operated.)
	11:00 - 11:15	Tea Break
	11:15 - 13:15	<ul> <li>Hydraulic Cylinders &amp; Accessories.</li> <li>Lab session Practical study of typical selective hydraulic components like; various pumps: Gear, Vane, Axil, Radial etc., Pressure control valve, P.O.C.V. etc.</li> </ul>
	13:15 - 14:15	Lunch break
	14:15 - 15:45	<ul> <li>Lab Session continued: - Preparation of Electro-Hydraulic circuits and its execution on Training.</li> </ul>
	15:45 - 16:00	Tea break
	16:00 - 17:00	<ul> <li>Importance of oil cleanliness/contamination control in hydraulics.</li> <li>Viscosity - Temperature relationship and its importance.</li> <li>Safety aspects in hydraulics.</li> <li>Question/Answer session.</li> <li>Feed-back &amp; summary session.</li> <li>Closing remarks.</li> </ul>

#### Who can Participate

The program is open to faculty members, M.Tech. students, research scholars and professionals working in industries.

Registration

#### The Registration fee of the program is Rs. 2500/- per participant

- Participants have to arrange for their travel and accommodation.
- Participants are required to send the scanned copy of their registration form at fdpme@abesit.in on or before 08<sup>th</sup> Jan, 2018.
- Max registrations are limited to 25 participants on a first come, first served basis.

#### Certificate

The training will be conducted by experts from the company Bosch Rexorth. Participation certificates shall be awarded to all the participants by the company after the completion of the training, within one week.

#### For more Information please contact

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