

COLLEGE OF ENGINEERING TRIVANDRUM

BOSCH REXROTH CET CENTRE OF EXCELLENCE IN AUTOMATION TECHNOLOGIES

SHORT TERM TRAINING PROGRAMME ON ROBOTICS AND INDUSTRIAL AUTOMATION

<p>Contents</p>	<p>Drives: Cylinders for different drive purposes Valves: Various valve types (pneumatic/hydraulic/electric controlled) Controls: Pneumatic, hydraulic, and electric controls of valves Position control: Limit switches and sensors Speed control: Uses of throttle valves Logic control: AND/OR valves Pressure control: Uses of adjustable pressure sensors Time-dependent control, Symbolic representation of devices, standards Relay Logics, Electro-Pneumatics, Programmable Logic Controllers, Interfacing hydraulic and pneumatic system with PLC, Study of different types of sensors and their application. Hands on Training on Pneumatic, Hydraulic, Electro-Pneumatic circuits, electro hydraulic and Interfacing hydraulic and pneumatic system with PLC. Basics Of CNC programming: G codes and M codes. Advanced programming techniques using</p> <ul style="list-style-type: none"> • Basic machining cycles • Advanced machining cycles • Canned cycles • Mirroring commands • Subroutines (Subprogram) • Hands on training sessions using Vertical Machining Centre <p>Robotics: Introduction - Definitions, Robot Elements - links, joints, end effector, actuators. Robot specifications, Work envelope of different robots, Classification of Robots, Sensors in Robotics- status sensors, environment sensors, quality control sensors, safety sensors. Mobile robots: steered and differentially driven robots, quadcopter. Hands on training on differentially driven robots, quadcopter, manipulator.</p>
<p>Outcomes</p>	<p>The participant:</p> <ul style="list-style-type: none"> • can design, assemble and test basic pneumatic/hydraulic/electro-pneumatic circuits • can maintain and troubleshoot pneumatic/hydraulic/electro-pneumatic/electro-hydraulic components and basic control systems.
<p>Facilities of centre</p>	<p>Hydraulic kit- 6 nos. Pneumatic kit- 6 nos. PLC kit- 6 nos. Sensoric kit- 4 nos. Differentially driven mobile robot – 1 nos. Quadcopter – 1 nos. ABB manipulator – 1 nos. RobotStudio Software.</p>
<p>Duration</p>	<p>120 hours(Timing: Batch I-Monday to Friday 4.30PM- 6.30PM,Saturdays &Sundays Batch II- Monday, Wednesday& Friday 12.30PM-6.30PM, Saturdays &Sunday)</p>
<p>Eligibility</p>	<p>Degree/Diploma in Mechanical/Electrical/Instrumentation Engineering or Allied</p>

	branches (Current students can also apply)
Course Fee	Rs.7500/- (Direct Payment Through Centre for Continuing Education, CET or DD drawn in favour of BOSCH-CET CENTRE FOR CONTG EDN Payable at Trivandrum DD and duly filled application form should reach by registered post to The Centre for Continuing Education, College of Engineering Trivandrum pin: 695016 on or before 30/08/2019)
Last Date for Apply	20.09.2019
Date of Commencement	24.09.2019
No. Of Seats per Batch	25
Online registration Link	https://cetcce.web.app/register/robotics-and-automation
Contact	Prof. Vinod B. R, Co-ordinator, Bosch Rexroth CET Centre of Excellence in Automation Technologies, Assistant Professor, Department of Electronics and Communication Engineering CET, TVM-695016. vinodbrcet@gmail.com , mob: 9447344250 Prof. Shafeek M, Course Co-ordinator, Assistant Professor, Department of Mechanical Engineering, CET, TVM-695016.e-mail: shafeek@cet.ac.in , mob: 9495828145