



CENTRE FOR ADVANCED STUDIES

DR. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY



5-Days Short-Term Course

on

Industrial Automation & Smart Manufacturing

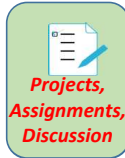
22-26 March 2022



Highlights



Completion
Certificate



Projects,
Assignments,
Discussion



Experts led
Discussion



Research
Possibilities
at CAS

Free Registration – Limited seats
Last Date of Registration: 21st March, 2022

Registration Link:

<https://cas.res.in/workshopreg.html>



Eligibility: B.Tech. (4th Year Mechanical/ECE/EE/EN Engineering)

Infrastructure Available: Industrial Automation Lab

Mode: Offline

Number of Seats: 30



**System
support**
Anurag Chaubey



Coordinator
Dr. Anuj Kumar Sharma

Co-coordinator
Gaurav Rai

Contents

- ✓ Introduction: Automation in Production System
- ✓ Automatic Storage and Retrieval System
- ✓ Automatic loading and unloading of parts on machines
- ✓ Automatic Guided Vehicle
- ✓ Automated assembly and inspection System
- ✓ End Session and Discussion on Problems

Centre for Advanced Studies, Dr. A.P.J. Abdul Kalam Technical University
Jankipuram Vistar, Lucknow, Uttar Pradesh 226031, Email: anujsharma@cas.res.in



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Day	Session	
	Forenoon	Afternoon
Day 1	Introduction of CIM Systems: Introduction, Automation definition, Types of automation, CIM, processing in manufacturing, Production concepts, Manufacturing lead time, production rate, components of operation time, capacity, Utilization and availability, Work-in-process	Introduction Of CIM Component And Role Of The Elements Of CIM SYSTEM - General Intro of CNC Turning ,CNC Vertical Milling, Automatic Grinding Machine, ASRS, Assembly station, AGVS, Vision Inspection system.
Day 2	AUTOMATION : Automatic machine tools to process parts Automatic assembly machines Industrial robots Automatic material handling and storage systems Automatic inspection systems for quality control Feedback control and computer process control Computer systems for planning, data collection, and decision making to support manufacturing activity	<i>FUNCTIONS IN MANUFACTURING - 1. Processing 2. Assembly 3. Material handling and storage 4. Inspection and test 5. Control</i>
Day 3	Automation Component- Type of Sensors used, Types of Actuators, Types of Controller, CIM Software Demonstration and Automation Logic, Automated Guided Vehicle System: Introduction, Vehicle guidance and routing, System management, Automation Component uses and application in AGV	<i>Automated Storage and Retrieval System- Concept Uses and application, Automation Component Software Demo, Robotic Automation- Fundamentals Of Robotics, Advance Robotics, Pick and Place , gantry robot, SIX AXIS ROBOT - Demonstration of software and hardware working . Sample programs, applications</i>
Day 4	SCARA ROBOT- Working Demonstration, Software, applications, Automated Assembly Systems: Design for automated assembly systems, types of automated assembly system, Parts feeding devices, Selectors, feedback and placement analysis of Multi-station Assembly Machine	<i>VISION INSPECTION SYSTEM- Concept, application, software demo, types of sensors, Explanation of CNC Lathe: What is CNC Lathe , TYPES OF CNC Lathe Application of CNC Lathe , Consideration , Conclusion.</i>
Day 5	Explanation of CNC Mill : What is vertical milling machine , TYPES OF vertical milling machine, Application of vertical milling machine , Consideration , Conclusion. Explanation of Automatic Grinding Machine : What is Automatic Grinding Machine , Application of Automatic Grinding Machine , Consideration , Conclusion.	<i>End Session and Discussion on Problems</i>

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