PG Diploma in Industrial Automation System Design

Objective of the Course:

This course is aimed at making an Engineer with appropriate experience; a qualified designer of Industrial automation systems with the use of PLCs, PACs, Industrial Field Instruments, Industrial PCs, SCADA/HMI, Data-acquisition boards, Machine vision, robots, Microprocessor based instruments, and related Software. The course also includes an industrial oriented project work during which the student will be working on specific assignments of his/her choice.

Learning Outcomes:

Qualified automation engineers to meet the requirements of designing appropriate industrial automation systems.

Expected Job Roles:

Industrial Automation Design Engineer

Duration of the Course (in hours) 720 hrs /*24 Weeks*

Appr. Fees (INR): Rs.68,000/- (Service Tax Extra)

Minimum eligibility criteria and prerequisites if any

a. BE /B.Tech in Electrical/ Electronics/ Instrumentation/ Chemical Engineering/ Applied Electronics and Instrumentation/ Instrumentation & Control/ Electronics & Communication/ Mechatronics / Computer Science.
b. Candidates who have appeared in the qualifying examination and awaiting results may also apply

Outline of the Course

S. No	Topic	Minimum No. of Hours
1.	Measurements with Industrial Field Instruments Data Acquisition Systems Process Plant Control & Automation System Design Programmable Automation Controllers (PAC) Automation System Integration &Engineering Concepts	600
2.	PLC & PID Controllers Industrial Data Communications	
3.	Industrial Drives & Robotics	
4.	SCADA/HMI System Development	
5.	Distributed Control System (DCS)	
6.	Project Work	120
	Theory/ Lecture Hours:	300
	Practical/ Tutorial Lecture Hours:	300
	Total Hours:	720

Books recommended for reference and reading:

REFERENCES

1. Distributed computer control for Industrial Automation, by: Popovic & Bhatkar, Dekker.
2. Process Dynamics and Control, by: Dale E seborg, John Wiley.
3. Process Control- Modeling, Design and Simulation, by: B.Wayne Bequette, PHI.
4. Chemical Process Control- Introduction to Theory and Practice, by: Stepano Paulose, PHI.
5. Standard Recommended Practices for Instrumentation & Control, Vol 1-3,11th edition; Instrument Society of America.
6. Process Control Systems, application design and tuning, 3rd edition; by: F.G.Shinskey, McGraw- Hill.
7. Sensors, Transducers & LabVIEW an application approach to learning virtual instrumentation; by: Barry E. Paton; Prentice Hall PTR.
8. Microsensors: Principles and Applications; by: Gardner, J W, Wiley (1994)
9. Measurement Systems, Application and Design, 4th edition; by: Ernest O.Doebelin, McGraw- Hill.
10. Industrial Instrumentation Principles and Design, 1st edition; by:Tattamangalam. R.Padmanabhan, Springer Verlag.
11. Handbook of Transducers, 1st edition; by: Harry N.Norton, Prentice Hall.
12. Advances in Distributed Sensor Technology; by: S.S.Iyengar, L.Prasad, Hla Min; Prentice Hall PTR
13. Electronic Instrument Design, by: Kim R.Fowler; Oxford University Press.
14. Noise Reduction Techniques in Electronic Systems, by: Henry W.Ott; John Wiley & Sons.
15. Operational Amplifiers and linear integrated circuits, 3rd edition by: Robert F. Coughlin; Prentice Hall International, Inc
16. Learning With LabVIEW 7 Express by: Bishop, Robert
17. LabVIEW: Advanced Programming Techniques by Bitter, Rick
18. LabVIEW Signal Processing by: Chugani, Mahesh
19. LabVIEW Digital Signal Processing And Digital Communication by: Clark, Cory
20. Digital Signal Processing System-Level Design Using LabVIEW by: Kehtarnvaz, Nasser, Kim, Namjin
21. Image Acquisition And Processing With LabVIEW by: Relf, Christopher
22. Introduction to Programmable Logic Controllers, Dunning, Gary
23. Programmable Logic Controllers: Principles and Applications, Webb, John W
24. Programmable Controllers, Theory and Implementation, L. A. Bryan
25. Manuals of PLC (ABB, AB and Siemens), DCA and SCADA

In addition manufacturer's device data sheets and application notes are to be referred to get practical application oriented information.

Group Code:	CADD	**Group Name:**	Autocad/ Industrial Automation
Course Code:	PG01	**Course Name:**	PG Diploma in Industrial Automation System Design