Raj Kumar Goel Institute of Technology, Ghaziabad, Uttar Pradesh, INDIA

Department of Electrical and Electronics Engineering

Summer Training Program for Students

ABB Industrial Automation Centre

Now a days almost all manufacturing industries are proceeding for automation to survive in globally competitive market to increase productivity and improve quality of products. This increases the demand of trained engineers in the field of industrial automation. In order to meet the demand of modern automated industries in terms of skilled technocrats and well trained engineers, **Department of Electrical and Electronics Engineering** has established a C**entre of Excellence, ABB Industrial Automation** in **B-Block Basement Room no BB-03/1**.

The main aim of this Centre is to bridge the gap between the requirement of modern industries and knowledge of our graduates. This will also enhance the worth of institution in terms of providing summer training, increase in placement and interaction with industrialist.

In this regard the Centre is going to organize a **4 weeks summer training program on PLC/SCADA**. So you are requested to motivate the students to join **summer training program** to enhance their technical skill as well as placement opportunity.

Details of Training:

Duration: 4 Weeks

Batch I: Starting from 2nd week of June, just after end of University Examination

Batch II: Starting from 1st week of July

Course Contents: Attached

Contact Person:

1. Mr. Tej Prakash Gupta - Sr. Trainee Coordinator at Rhythm Automation Control pvt. Ltd. Mobile No. 8130506644, Email - Training@rhythmautomation.com
2. Mr. Yashpal Singh – Manager at Rhythm Automation Control pvt. Ltd. Mobile No. 9958444794, Email – Yashpal@rhythmautomation.com

Note:

- Students will be provided industrial summer training certificate.

Prof. (Dr.) J.G Yadav
HOD EN

Course Contents of Industrial Summer Training on PLC/SCADA

Topics	Sub Topics	Time (Minutes)
Introduction	ABB Profile Placements Role of ABB in the automation industry Future growth path in different industries Evaluation and Grading System	30
Industrial Control System	Examples	20
Automation	Introduction and its Types, History, Application & Need Leading Automation Companies	30
Human Machine Interface (HMI) Supervisory Control and Data Acquisition (SCADA)	Introduction Leading Manufacturers of SCADA System	20
Introduction to Programmable Logic Controllers (PLC) and its Application areas	Introduction to PLC and its various manufacturer, Industrial Motor and Drives, Distributed Control Systems and Process Instrumentation	35
Panel Designing and Practical Exposure	Introduction to Panel Designing through AutoCAD and E-Plan, onsite practical exposure, business ethics and soft skill Development	20
Basic SCADA/HMI Theory	Introduction of SCADA/ HMI	15
	Types of SCADA/ HMI Software	10
	Licensing Concepts	10
	Software Overview	20
	Tag Database Development	30
	Graphic Display Settings	10
Basic SCADA/HMI Lab	Introduction of Piping and Instrumentation Diagram	10
	Introduction of Process and Instrumentation Diagram	10
	Creating your HMI application, Graphic Display Setting	20
	Tags, Tag types, Tag creation	20
	Animation, Simple Animation through Memory and system tags	40
	Creation of Buttons	10
	Exercise	20
Basic PLC Theory	Introduction of PLC	15
	Block Diagram of PLC and Role of each module	20
	Types of I/O Modules	20
	I/O Configuration Types	10
	Scan Cycle of PLC	15
	PLC Wiring : Source and Sink Concept	20
	PLC Programming Software Introduction Basic Instructions	20
Basic PLC Lab	PLC Lab Kit Hardware Introduction, control builder plus and Communication with PLC	20
	PLC programming S/W, Creating your application, Data Files and I/O Addressing	15
	Introduction bit Instructions(XIC, XIO ,OTE) Uploading and Downloading	15
	Concept of Switching function w.r.t to field contacts, Start/Stop Logic and Holding	40

	Realization of logic gates (AND,OR ,NOR etc) by bit Instructions	30
PLC-SCADA Communication	Add data server or OPC Server, Topic creation and verification of communication	15
	Colour Animation, Create PBs and Indicators with respect to Start/Stop logic in PLC and verify the communication	15
	PLC Timers and function of Timers	30
	PLC-SCADA Communication	60
	Timer and its Types, Applications	60
	Exercise based on Timers	120
Animation Lab	Scripts and its Types	20
	Popup and Parameter File Creation	20
	Adding Existing HMI components, Expression on animation ,Global Object's Image Adding	20
	Exercise based on PLC Timers and SCADA Animations	60
	Scripts and its Types	40
	Creating Pop up and window navigation Generating Smart Symbol / Break Cell and Make Cell Animations	40
	Indirect addressing and parameter passing	40
PLC / SCADA / HMI Theory / Lab	PLC counters and function of counters	60
	PLC Counters and timers related exercise	120
	Comparison, Move and Logical Instructions	60
	Mathematical Instructions	30
	Exercise	240
Advance SCADA/HMI Theory	Alarms and events	40
	Data logging and trending	50
	Tag data base Importing and exporting	30
	Active-X Control	40
	Recipe Control	45
	Security	35
Advance PLC Theory	Advanced and Program Control Instructions of PLC and related Exercise	120
	Introduction of Functional Block Diagram and concept of FBD logic Development	120
Project Lab	HMI Development for respective project Note- Screen development, Animation , Tag Data base, popup creation, alarm configuration, Logging and trending, Communication, Launching runtime are covered	300
Project Lab	Logic Development for respective project	300
Project Lab	Simulation of project	240
	Acceptance Test	
	Interview Question related to PLC/HMI Project	
Project Lab	Simulation of project	240
	Acceptance Test	
	Interview Question related to PLC/HMI Project	
TEST	PLC SCADA	120
Miner Project	PLC/SCADA Based Projects	240
	TOTAL TIME IN MINUTES	**3600 (60 Hours)**