

COURSE	Name : System Automation
	Code : EE184522
	Credits : 3
	Semester : V

Description of Course

This course provides an understanding to the course participants about the forms of automation system application in the industry, various automation systems, control principles and various design methods of ladder in the field of automation, and instrumentation technology and process control.

Learning Outcomes

KNOWLEDGE

(P01) Mastering the concepts, procedures and principles of engineering and manifesting them in the form of procedures required for analysis and design of systems in the field of Electronics, Power Systems, Multimedia Telecommunications, and Control System.

SPECIFIC SKILL

(KK01) Able to formulate engineering problems in the field of Electronics, Power Systems, Multimedia Telecommunications, and Control System.

GENERAL SKILL

(KU12) Able to implement information and communication technology in the context of execution of its work.

ATTITUDE

(S09) Shows a responsible attitude towards the work in the field expertise independently.

(S12) Working together to be able to take full advantage of their potential.

Course Learning Outcomes

KNOWLEDGE

Mastering the concepts and principles of engineering and make it happen in the form of procedures necessary for the analysis and design of electric power systems, regulatory systems, multimedia telecommunications, or electronics

SPECIFIC SKILL

Able to analyze and design automation systems in the industry
able to provide consultation on design and development of industrial automation system

GENERAL SKILL

Able to apply various design method of ladder diagram to Programmable Logix Controller (PLC) equipment

Ability to apply products technology in system and control other

ATTITUDE

Show a responsible attitude towards the work in the field of expertise independently

Main Subjects

1. The concept of system automation
2. System automation equipment
3. Design of ladder diagram based on sequence chart
4. Design of ladder diagram based on cascade method
5. Design of ladder diagram based on Grafchet
6. Design of ladder diagram based on State diagram
7. Design of ladder diagram based on Huffman method
8. Design of ladder diagram based on Petri-net

Reference(s)

- [1] D. Pessen, Industrial Automation, Wiley, 1989
- [2] S. Baranov, Logic Synthesis for Control Automata, Kluwer Academic Publisher, 1994
- [3] Applying Structured Analysis To Automation Systems (Paper 1)
- [4] The Principles of State Logic Control (Paper 2)
- [5] Tadao Murata, Petri Nets: Properties, Analysis and Applications, Proceedings of the IEEE, vol.77, no 4, April 1989 (paper 3)

Prerequisite(s)

EE184404 Introduction to Control Systems
