

SYLLABUS

1. Course name: PROJECT 3

2. Course code: PLCR311146

3. Credits: 1 (1/0/2)

Duration: 15 weeks (1 theory + 0 laboratories + 2 self-studying/week)

4. Instructors:

1- Assoc. Prof. PhD. Truong Dinh Nhon

2- Assoc. Prof. PhD. Nguyen Minh Tam

4- M.Eng. Ta Van Phuong

4- M.Eng. Nguyen Tan Doi

5. Course conditions

Prerequisites: Programmable Logic Controller

Corequisites: Programmable Logic Controller in Practice

6. Course description

This project requires students to use PLC to solve some requirements from industry by applying the previous knowledge in the subjects of Programmable Logic Controller, SCADA systems... for automating the control systems. Besides, this project also helps students train their abilities to working in group research documents, write reports, and make a presentation.

7. Course Goals

Goals	<i>Goal description</i> (This course provides students:)	ELOs
G1	An ability to apply the knowledge of PLC and SCADA to design the program for automating the control systems	1.1, 1.2, 2.2, 4.3, 4.4, 4.1, 1.3
G2	An ability to read professional documents in English.	2.1
G3	An ability to write reports and make presentations clearly and coherently.	3.3
G4	An ability to work effectively in team	3.1
G5	An ability to engage in life-long learning	2.4
G6	An ability to understand the tenants of professional codes of ethics and to understand the impact of engineering solutions in a global, economic, environmental, and societal context	4.1, 4.2

* Note: High: H; Medium: M; Low: L

8. Course Learning Outcomes (CLOs)

CLOs		Description (After completing this course, students can have:)	Outcome
G1	G1.1	Ability to apply the theories in PLC using digital and analog signal in order to design program for automatic control systems.	2.2, 1.3
	G1.2	Ability to use some popular PLCs to program control systems	1.1, 1.2
	G1.3	Ability to implement an appropriate designing prototypes	1.3
	G1.4	Ability to verify and validate the design according to the requirements.	4.1
G2	G2.1	Ability to read the datasheets of available electric and electronic components in English.	2.1
	G2.2	Ability to read online training documents in English.	2.1
G3	G3.1	Ability to read and compile the requirements about contents, formats, and methods of presenting the reports.	3.3
	G3.2	Ability to design slides clearly and coherently in order to present the reports.	3.3
G4	G4.1	Ability to collaborate in teams, brainstorm, and reach decisions	3.1
G5	G5.1	Ability to analyze new engineering case studies and learn how to access new information	2.4
G6	G6.1	Ability to analyze ethical aspect as applied to case studies and their own project	4.1, 4.2

9. Study materials

- **Textbooks:** Lecturers will provide the documents relating to the subject

- **References:**

10. Student Assessments

- Grading points: 10

- Planning for students assessment is followed:

Type	Contents	Linetime	Assessment techniques	CLOs	Rates (%)
Weekly assessments					50
Test 1-14	50	Week 1-14	Rubrics	G1-G6	50
Final reports				50	50
Test 1	50	Week 15	Reports and representations	G1-G6	50

11. Course details:

Weeks	Contents	CLOs
1,	Content 1: <CHOOSING OF SUBJECT TITLES> (2/0/4)	
2	A/ Contents and teaching methods: (2)	G1, G2, G4,

	<p>Contents:</p> <p>1.1 Introduction to the course</p> <p>1.2 Requirements of the Project 3</p> <p>1.3 Steps to follow</p> <p>1.4 The schedule of this course</p> <p>1.5 Choosing the subject titles</p> <p>Teaching methods:</p> <p>+ Presentation</p>	G5, G6
	<p>B/ Self-study contents: (4)</p> <p>1.6 Choosing the subject title on the pre-chosen lists or on the Internet.</p>	
3, 4	<p>Content 2: <APPROVING THE SUBJECT TITLES> (2/0/4)</p>	
	<p>A/ Contents and teaching methods: (2)</p> <p>Contents:</p> <p>2.1 Listing the students who chose the subject titles</p> <p>2.2 Approving the subject title according to the priorities</p> <p>2.3 The requirements of the project 3</p> <p>2.4 The purposes of the project</p> <p>2.5 The limitation of the project</p> <p>2.6 Method of writing the project proposals</p> <p>Teaching methods:</p> <p>+ Discussion</p>	G1, G2, G4, G5, G6
	<p>B/ Self-study contents: (4)</p> <p>2.7 Surveying all available documents to write the project proposal</p>	
5, 6	<p>Content 3: <WRITING THE CHAPTER 1 OF THE REPORT: INTRODUCTION> (2/0/4)</p>	
	<p>A/ Contents and teaching methods: (2)</p> <p>Contents:</p> <p>3.1 Conducting to the subject title</p> <p>3.2 The reasons for choosing the subject</p> <p>3.3 The functions of the proposed control systems</p> <p>3.4 Parameters and limitations of the proposed control systems</p> <p>Teaching methods:</p> <p>+ Presentation</p> <p>+ Discussion</p>	G1-G6
	<p>B/ Self- study contents: (4)</p> <p>3.5 Researching all documents to write the chapter 1 of the report</p>	
7, 8	<p>Content 4: < WRITING THE CHAPTER 2 OF THE REPORT: CONTROL SYSTEMS DESIGNS > (2/0/4)</p>	
	<p>A/ Contents and teaching methods: (2)</p> <p>Contents:</p> <p>4.1 Introducing the subject requirements</p> <p>4.2 Designing the blocking diagram</p>	G1-G6

	<p>4.3 Designing the sub blocking diagram</p> <p>Teaching methods:</p> <ul style="list-style-type: none"> + Presentation + Discussion 	
	<p>B/ Self- study contents: (4)</p> <p>4.4 Research all documents to write the chapter 2 of the report</p>	
9, 10	<p>Content 5: < WRITING THE CHAPTER 3 OF THE REPORT: CONDUCTING THE PLC CONTROL SYSTEM> (2/0/4)</p>	
	<p>A/ Contents and teaching methods: (2)</p> <p>Contents:</p> <ul style="list-style-type: none"> 5.1 The requirements of PLC control systems 5.2 Steps to construct the PLC control systems 5.3 Steps to test the PLC control systems 5.4 Steps to program the PLC control systems 5.5 Steps to operate the PLC control systems 5.6 Evaluate the PLC control systems 's outputs 5.7 Debugging and maintaining the PLC control systems <p>Teaching methods:</p> <ul style="list-style-type: none"> + Presentation + Discussion 	G1-G6
	<p>B/ Self- study contents: (4)</p> <p>5.8 Research all related documents to write the chapter 3 of the report</p>	
11, 12	<p>Content 6: < WRITING THE CHAPTER 4 OF THE REPORT: CONCLUSION AND DEVELOPMENT > (2/0/4)</p>	
	<p>A/ Contents and teaching methods: (12)</p> <p>Contents:</p> <ul style="list-style-type: none"> 6.1 Conclusion of the report 6.2 The completed tasks of the report 6.3 The uncompleted tasks of the report 6.4 Development directions of the subject 6.4 Writing the references and operation guiding <p>Teaching methods:</p> <ul style="list-style-type: none"> + Presentation + Questioning + Discussion 	G1-G6
	<p>B/ Self- study contents: (24)</p> <p>6.5 Writing the contents of the chapter 4 based on the acquired results</p>	
13, 14	<p>Content 7: <PREPARING THE PRESENTATION SLIDES> (2/0/4)</p>	
	<p>A/ Contents and teaching methods: (2)</p> <p>Contents:</p> <ul style="list-style-type: none"> 7.1 Designing the presentation slides 	G3

	7.2 Requirements of the presentation slides 7.3 Sequences of the contents in slides Teaching methods: + Presentation + Discussion	
	B/ Self- study contents: (4) 7.6 Writing the presentation slides based on the acquired results	
15	Content 8: < REPORT ASSESSMENTS> (1/0/2)	
	A/ Contents and teaching methods: (1) Contents: 8.1 Content assessments (30%) 8.2 Result assessments (20%) 8.3 Interview assessments (50%) Teaching methods: + Presentation + Questioning + Discussion	G1-G6
	B/ Self- study contents: (12) 8.6 Preparing to make presentations	

12. Learning ethics:

Project must be done by the students themselves. Plagiarism found in the assessments will get zero point

13. First approved date:

14. Approval level:

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Department

Instructor

**Assoc. Prof. PhD.
Nguyen Minh Tam**

**Assoc. Prof. PhD.
Truong Dinh Nhon**

M.Eng. Ta Van Phuong

15. Syllabus updated process

1st time: Updated content dated	Instructors
2st time: Updated content dated	Head of department

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