DEA-IND-411 Industrial Automation

**SEMESTER:** Fall  
**CREDITS:** 4.5 ECTS (3 hrs. per week. 2h Theory + 1h Lab)  
**LANGUAGE:** Spanish  
**DEGREES:** IEM

**Course overview**  
This course is an introduction to industrial automation. Upon satisfactory completion of the course, the student will be able to: identify the components of an automatized system; model the system from the point of view of Boolean logic and Grafcet methodology; use a Programmable Logic Controller (PLC) for implementing the control functions of the system; and use of a SCADA to supervise the system.

**Prerequisites**  
Electric Circuits, Logic Circuits, Programming principles.

**Course contents**

**Theory:**
1. Introduction.  
2. Input and Output devices.  
4. Programmable Logic Controllers (PLC).  
5. Methodologies for Industrial Automation (Grafcet, GEMMA).  
6. Power system automation.  
7. Human Interface and Supervision.

**Laboratory:**
- **P1.** Relay logic.  
- **P2.** Introduction to PLC programming.  
- **P3.** Grafcet.  
- **P4.** PLC Integrated functions.

**Textbook**
- No textbook.

*This document is a brief outline of the course and does not replace the official program of study*

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Grading

- Final exam accounts for 45% of the final grade.
- Mid-term exam accounts for 15%.
- Laboratory exam and lab reports accounts for 40% of the final grade.