Freie Universität Bozen
Libera Università di Bolzano
Università Liedia de Bulsan

Syllabus
Course description

Course title	Programmable Controllers for Industrial Automation
Course code	42168
Scientific sector	ING-IND/32
Degree	
Semester	II
Year	III
Academic Year	2022-23
Credits	6
Modular	No

Total lecturing hours	36
Total lab hours	
Total exercise hours	24
Attendance	
Prerequisites	Electrotechnics
Course page	

Specific educational objectives	The course discusses the theoretical and practical basis of the programmable controllers used in industry for automation purposes. At first the theory at the basis of digital systems is covered. More advanced topics related to programmable logic controllers are introduced afterwards. Practical exercises will be solved during exercise hours in laboratory.

Lecturer	Anton Soppelsa
Scientific sector of the lecturer	ING-IND/32
Teaching language	English
Office hours	Wednesday and Thursday, after class
Teaching assistant (if any)	-
Office hours	- -
List of topics covered	Digital system, design of logical function and system, implementation of finite state machine, programming languages adopted in programmable controllers.
Teaching format	Frontal lectures, exercises in laboratory and the PC.

Learning outcomes (ILOs)	At the end of the course the student will have knowledge and understanding to master the most important concepts about programmable logic controller. This competence will be applied to describe the state of the art of the adopted technology and to understand the design principles of common automation systems. The student will be able to make judgements selecting the more

	adequate automation system for a particular application. He will learn the field related technical terminology to improve his communication skills. In particular he will prepare a technical report about the laboratory activities during the course. He will also improve his ability to autonomously extend the knowledge acquired during the study course by reading and understanding scientific and technical documentation.

Assessment	The assessment of the course consists of the preparation of a report and its discussion with the teaching staff. In the report, each student will solve an automation problem assigned by the instructors. A practical implementation of the adopted solution will be developed by the student in the lab.
Assessment language	English
Evaluation criteria and criteria for awarding marks	The final grade is assigned considering the following criteria: correctness of the developed solution, clarity and correctness of answers, mastery of technical language ability to summarize, evaluate, and presenting the results, ability to establish relationships between topics.

Required readings	There is no single textbook that covers the entire course. The course material is collected from various sources that will be announced during the course.
Supplementary readings	