Syllabus
Course Description

Course title	Introduction to Information Science
Course code	42144
Scientific sector	ING-INF/05
Degree	Bachelor in Industrial and Mechanical Engineering
Semester	I
Year	I
Academic year	2016-2017
Credits	6
Modular	No

Total lecturing hours	36
Total lab hours	24
Total exercise hours	
Attendance	Attendance at assigned laboratory sections is required; lecture attendance is very strongly recommended.
Prerequisites	Registration for the course of Bachelor in Industrial and Mechanical Engineering
Course page	http://www.unibz.it/en/sciencetechnology/progs/bachelor/industrial/courses/default.html

Specific educational objectives	The course will provide an introduction to basic concepts in information and computer science (hardware and software), particularly those topics of fundamental importance to Industrial and Mechanical Engineering.

Lecturer	Prof. Karl von Ellenrieder Facoltà di Scienze e Tecnologie Building K, Room 2.08 Tel.: +39 0471 017172 E-mail: karl.vonellenrieder@unibz.it Web: https://next.unibz.it/en/faculties/sciencetechnology/academic-staff/person/37038-karl-dietrich-von-ellenrieder
Scientific sector of the lecturers	ING-INF/04 - Automatica
Teaching language	English
Office hours	16:30-17:30 Wednesday and Thursday
List of topics covered	• Basic programming syntax and structure in C • Functions • Conditional control structures • Arithmetic, comparison and Boolean operators • Pointers and addressing • Data types • Interrupts • Simple electronic circuits
Teaching format	Classroom lectures and laboratory exercises

| Learning outcomes | **Knowledge and understanding**

At the end of the course, students will understand:
• basic software design procedures
• how to develop simple microprocessor programs
• how to interface a microprocessor with simple sensors and actuators
• how to implement simple electro-mechanical systems

Applying knowledge and understanding: through hands-on laboratory exercises that complement the lectures.

Making judgments: on the choice of the right tools such as data types, programming approaches, or electrical components.

Communication skills: presenting and discussing solutions to selected laboratory problems.

Learning skills: basic foundations for more advanced courses in Industrial and Mechanical Engineering. |
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Assessment	Laboratory exercises (60%), written final exam (40%)
Assessment language	English
Evaluation criteria and criteria for awarding marks	Criteria for the evaluation of the written exam and laboratory exercises: completeness and correctness of answers. Students are required to receive an overall grade of higher than 60/100 points in order to pass the course.

| **Required readings** | Smith, A. G. *Introduction to Arduino: A piece of cake*, CreateSpace Independent Publishing Platform, 2011. ISBN: 978-1463698348

Hardcopies available in library reserves, or can be downloaded here – http://www.introtoarduino.com/downloads/IntroArduinoBook.pdf |
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| **Supplementary readings** | Blum, J. *Exploring Arduino: Tools and Techniques for Engineering Wizardry*, John Wiley & Sons, 2013. ISBN: 978-1-118-54936-0 |