# Syllabus

## Course Description

<table>
<thead>
<tr>
<th><strong>Course title</strong></th>
<th>Introduction to Information Science</th>
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<tbody>
<tr>
<td><strong>Course code</strong></td>
<td>42144</td>
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<tr>
<td><strong>Scientific sector</strong></td>
<td>ING-INF/05</td>
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<tr>
<td><strong>Degree</strong></td>
<td>Bachelor in Industrial and Mechanical Engineering</td>
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<tr>
<td><strong>Semester</strong></td>
<td>I</td>
</tr>
<tr>
<td><strong>Year</strong></td>
<td>I</td>
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<tr>
<td><strong>Academic year</strong></td>
<td>2016-2017</td>
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<tr>
<td><strong>Credits</strong></td>
<td>6</td>
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<tr>
<td><strong>Modular</strong></td>
<td>No</td>
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<tr>
<th><strong>Total lecturing hours</strong></th>
<th>36</th>
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<tr>
<td><strong>Total lab hours</strong></td>
<td>24</td>
</tr>
<tr>
<td><strong>Total exercise hours</strong></td>
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- **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  
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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.

| 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


Hardcopies available in library reserves, or can be downloaded here – http://www.introtoarduino.com/downloads/IntroArduinoBook.pdf

Supplementary readings