## Syllabus

### Course description

<table>
<thead>
<tr>
<th>Course title</th>
<th>Introduction to Information Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course code</td>
<td>42144</td>
</tr>
<tr>
<td>Scientific sector</td>
<td>ING-INF/05</td>
</tr>
<tr>
<td>Degree</td>
<td>Bachelor in Industrial Mechanical Engineering</td>
</tr>
<tr>
<td>Semester</td>
<td>1</td>
</tr>
<tr>
<td>Year</td>
<td>I</td>
</tr>
<tr>
<td>Academic Year</td>
<td>2017-2018</td>
</tr>
<tr>
<td>Credits</td>
<td>6</td>
</tr>
<tr>
<td>Modular</td>
<td>no</td>
</tr>
</tbody>
</table>

| Total lecturing hours        | 36 hrs                              |
| Total lab hours              | 36 hrs                              |
| 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**

https://next.unibz.it/en/faculties/sciencetechnology/bachelor-industrial-mechanical-engineering/course-offering/

**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:

**Scientific sector of the lecturer**

ING-INF/04 - Automatica

**Teaching language**

English

**Office hours**

As listed on Cockpit or by appointment

**Teaching assistant (if any)**

Dr. Lenarduzzi, Valentina – Valentina.Lenarduzzi@unibz.it

**Office hours**

As listed on Cockpit or by appointment

**List of topics covered**

The course covers the following topics:

1. Basic programming syntax and structure in C
2. Functions
3. Conditional control structures
4. Arithmetic, comparison and Boolean operators
### Learning outcomes (ILOs)

**Knowledge and understanding**

1. Basic software design procedures.
2. How to develop simple microprocessor programs.
3. How to interface a microprocessor with simple sensors and actuators.
4. How to implement simple electro-mechanical systems.

**Applying knowledge and understanding**

5. Reports for hands-on laboratory exercises that complement the lectures will require you to devise and sustain arguments.

**Making judgements**

6. On the choice of the right tools such as data types, programming approaches, or electrical components. The labs will also require you to gather and interpret relevant data.

**Communication skills**

7. Lab reports will require you to present information, ideas, problems and solutions in clear and simple language.

**Learning Skills**

8. Basic foundations for further study in more advanced courses in Industrial and Mechanical Engineering.

### Assessment

<table>
<thead>
<tr>
<th>Form</th>
<th>Length / duration</th>
<th>ILOs assessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labs</td>
<td>24 hours total</td>
<td>1-7</td>
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</table>

**Summative assessment**

<table>
<thead>
<tr>
<th>Form</th>
<th>%</th>
<th>Length / duration</th>
<th>ILOs assessed</th>
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<tbody>
<tr>
<td>Final Exam</td>
<td>40</td>
<td>4 hours</td>
<td>1-4, 6, 8</td>
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<tr>
<td>Assessment language</td>
<td>English</td>
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<tr>
<td>----------------------</td>
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</tbody>
</table>
| **Evaluation criteria and criteria for awarding marks** | Labs: Completeness and correctness of reports; quality of writing; level of observation of physical processes  
Written Final Exam: Completeness and correctness of answers.  
Students are required to receive an overall grade of greater than 60/100 points in order to pass the course. |
Hardcopies available in library reserves, or can be downloaded here – http://www.introtoarduino.com/downloads/IntroArduinoBook.pdf |