# Syllabus
## Course description

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| **Course title** | Introduction to Information Science |
| **Course code** | 42301 |
| **Scientific sector** | ING-INF/05 |
| **Degree** | Bachelor in Wood Engineering |
| **Semester** | 1 |
| **Year** | I |
| **Academic Year** | 2018-2019 |
| **Credits** | 6 |
| **Modular** | no |

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| **Total lecturing hours** | 36 hrs |
| **Total lab hours** | 24 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/ |

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| **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. |

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| **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 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 |

|  | 5. Pointers and addressing<br>6. Data types<br>7. Interrupts<br>8. Simple electronic circuits |
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| **Teaching format** | Classroom lectures and laboratory exercises |

| **Learning outcomes (ILOs)** | <u>Knowledge and understanding</u><br><br>1. Basic software design procedures.<br>2. How to develop simple microprocessor programs.<br>3. How to interface a microprocessor with simple sensors and actuators.<br>4. How to implement simple electro-mechanical systems.<br><br><u>Applying knowledge and understanding</u><br><br>5. Reports for hands-on laboratory exercises that complement the lectures will require you to devise and sustain arguments.<br><br><u>Making judgements</u><br><br>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.<br><br><u>Communication skills</u><br><br>7. Lab reports will require you to present information, ideas, problems and solutions in clear and simple language.<br><br><u>Learning Skills</u><br><br>8. Basic foundations for further study in more advanced courses in Industrial and Mechanical Engineering. |
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| **Assessment** | **Formative assessment** |
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| Form | Length /duration | ILOs assessed |
|---|---|---|
| Labs | 24 hours total | 1-7 |

**Summative assessment**

| Form | % | Length /duration | ILOs assessed |
|---|---|---|---|
| Final Exam | 40 | 4 hours | 1-4,6,8 |

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| **Assessment language** | English |
| **Evaluation criteria and criteria for awarding marks** | Labs: Completeness and correctness of reports; quality of writing; level of observation of physical processes<br><br>Written Final Exam: Completeness and correctness of answers.<br><br>Students are required to receive an overall grade of greater than 60/100 points in order to pass the course. |

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| **Required readings** | Smith, A. G. *Introduction to Arduino: A piece of cake*, CreateSpace Independent Publishing Platform, 2011. ISBN: 978-1463698348<br><br>Hardcopies available in library reserves, or can be downloaded here – http://www.introtoarduino.com/downloads/ IntroArduinoBook.pdf |
| **Supplementary readings** | Blum, J. Exploring Arduino: Tools and Techniques for Engineering Wizardry, John Wiley & Sons, 2013. ISBN: 978-1-118-54936-0 |