

Syllabus

Course description

Course title	Technical Drawing and Industrial Engineering Methods
Course code	42146
Scientific sector	ING-IND/15
Degree	Bachelor in Industrial and Mechanical Engineering (L-9)
Semester	2
Year	I
Academic year	2016-2017
Credits	6
Modular	No

Total lecturing hours	46
Total lab hours	
Total exercise hours	18
Attendance	Highly recommended
Prerequisites	
Course page	

Specific educational objectives	The course belongs to the set of basic teachings within industrial engineering and, as a result, for the Bachelor in Industrial and Mechanical Engineering. It introduces the fundamental notions for what concerns the contents of SSD ING-IND/15. The course's objective is providing students the required skills about representation techniques for the technical drawing and the function of mechanical components. Besides, notions will be provided concerning Computer-Aided Design. Students will be able to exploit the knowledge acquired during the course in order to improve product development cycles. More in details, the treated topics follow: • Drawing standards and representation options: ○ Orthographic projections and axonometric drawings ○ section drawings ○ drawing lines • Representation of machine components ○ dimensioning ○ dimensional tolerance ○ form tolerance ○ surface roughness • Machines' main components:
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	○ screws and threaded connections ○ shaft-hub connections ○ non-detachable joins gears ○ bearings ○ other elements • Assemblies • Fundamentals of Computer-Aided Design (CAD) with practical exercises
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Module 1	
Lecturer	<i>Yuri Borgiaanni, K0-05, yuri.borgiaanni@unibz.it, +39 0471 017821 - https://tinyurl.com/jeet4cr</i>
Scientific sector of the lecturer	ING-IND/15
Teaching language	English
Office hours	From Monday to Friday, upon email request
Teaching format	Frontal lectures and exercises

Learning outcomes	Knowledge and understanding • learning formalized representation standards within technical drawing • distinguishing machine elements and understanding their function within a complex mechanical system Applying knowledge and understanding • applying drawing standards correctly • representing a technical system accurately Making judgements • pointing out pros and cons with respect to the use of technical systems • evaluating which machine elements are best integrated in more complex technical systems, according to constraints and expected performances
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Assessment	Written exam, which includes practical exercises (e.g. projections, sections and axonometric drawing) and questions about the course's contents.
Assessment language	English
Evaluation criteria and criteria for awarding marks	The final evaluation is based on the outcomes of the written exam. A clear indication will be given of the maximum number of points that students can achieve by solving each exercise. Within the assessment, particular relevance will be attributed to the understanding of the concepts about machine elements, as well as the capability to represent technical systems correctly.

Required readings	Handouts of the course supplemented by extracts of selected books and Internet websites.
Supplementary readings	Some extra material will be provided also in Italian and German in order to support students' comprehension; however, it will not cover the whole contents of the course.