Syllabus

Course Description

Course Title	Fundamentals of Technical Drawing
Course Code	42199
Course Title Additional	
Scientific-Disciplinary Sector	IIND-03/B
Language	English
Degree Course	Bachelor in Industrial and Mechanical Engineering
Other Degree Courses (Loaned)	
Lecturers	Prof. Yuri Borgianni, Yuri.Borgianni@unibz.it https://www.unibz.it/en/faculties/engineering/academic-staff/person/35189
Teaching Assistant	
Semester	Second semester
Course Year/s	1
CP	3
Teaching Hours	22
Lab Hours	8
Individual Study Hours	45
Planned Office Hours	9
Contents Summary	The goal of the course is to illustrate the main rules to be followed in the technical drawing for representation of parts, which is of fundamental importance for communication among parties in mechanical, engineering and manufacturing companies.
Course Topics	- Lines used in technical drawing according to standards - Orthographic projections - Sections - Dimensioning - Tolerances and roughness - Introduction to mechanical components

Keywords	technical drawing; standards; projections; sections; dimensioning; tolerances
Recommended Prerequisites	-
Propaedeutic Courses	
Teaching Format	The course includes classroom lectures in which the topics are presented by the lecturer through digital presentations (uploaded slides) and the frequent support of the blackboard. The practical exercises will be carried out in a paper-based fashion.
Mandatory Attendance	Attendance is not compulsory
Specific Educational Objectives and Learning Outcomes	Knowledge and understanding 1) fundamental rules and standards of the technical drawing 2) drafting of parts through the use of representation methods and dimensioning 3) tolerances and errors Applying knowledge and understanding 4) interpretation of a solid based on necessary views and sections 5) applying drawing standards correctly 6) representing a part accurately Making judgements 7) autonomously choosing (and justifying the choice of) a specific representation method in terms of, e.g. clarity, completeness and non-ambiguity 8) identifying the critical dimensions in the representation of a part Communication skills

	9) using the appropriate terms in the field of technical drawing Learning skills 10) ability to autonomously extend the knowledge acquired during the study course by consulting additional sources 11) ability to interpret drawings and identify possible inconsistencies with standards
Specific Educational Objectives and Learning Outcomes (additional info.)	-
Assessment	The examination of the course is via a written exam that might include: a. exercises with projections and/or sections b. exercises to test the understanding of dimensioning and drafting c. questions about theoretical aspects d. exercises to calculate fits e. exercises to detect errors in the technical drawing. The assessment procedure evaluates • the capability of interpreting and representing technical systems correctly (Learning Outcomes 1, 2, 3, 5, 6), by means of exercises of type a.; • the capability of drafting and dimensioning correctly (Learning Outcomes 1, 2, 5, 6, 7, 8), by means of exercises of type b.; • the capability of reporting the fundamental notions of technical drawing in a correct and detailed way (Learning Outcomes 1, 3, 9) by means of exercises of type c.; • the understanding of fits, along with the calculation thereof, and indications of admitted manufacturing errors (Learning Outcomes 3, 8) by means of exercises of type d. • the capability of identifying inconsistencies in the technical drawing (Learning Outcomes 1, 2, 3, 4, 5, 6, 7, 8, 11) by means of exercises of type e. The Learning Outcome 10 will be monitored by providing supplementary material.

Evaluation Criteria	For each exercise included in the written exam, the maximum number of points achievable is indicated. The final score is the sum of points achieved in each exercise.
Required Readings	Slides and other materials provided by the lecturer during the course. All materials will be shared in the repository used (MS Teams).
Supplementary Readings	-
Further Information	-
Sustainable Development Goals (SDGs)	Industry, innovation and infrastructure, Quality education