Syllabus

Descrizione corso

Titolo insegnamento	Modellazione CAD di prodotti industriali
Codice insegnamento	42200
Titolo aggiuntivo	
Settore Scientifico-Disciplinare	IIND-03/B
Lingua	Inglese
Corso di Studio	Corso di laurea in Ingegneria Industriale Meccanica
Altri Corsi di Studio (mutuati)	
Docenti	prof. Yuri Borgianni, Yuri.Borgianni@unibz.it https://www.unibz.it/en/faculties/engineering/academic-staff/person/35189 dr. Aurora Berni, Aurora.Berni@unibz.it https://www.unibz.it/en/faculties/engineering/academic-staff/person/42284
Assistente	
Semestre	Secondo semestre
Anno/i di corso	1
CFU	5
Ore didattica frontale	48
Ore di laboratorio	8
Ore di studio individuale	69
Ore di ricevimento previste	15
Sintesi contenuti	The objective of the course is to disclose the chances offered by 3D CAD systems for the modelling and representation of products of different complexity and from different industrial domains.
Argomenti dell'insegnamento	- Use of 2D CAD for technical drawing - Parametric 3D CAD for parts, assemblies and drafting

	- Modelling of complex shapes with parametric and non-parametric CAD - CAD-supported drafting of industrial and technical products - Interaction between different CAD platforms
Parole chiave	CAD; part; assembly; features; industrial products
Prerequisiti	The completion of the course "Fundamentals of Technical Drawing", which provides the necessary concepts for the understanding of the present course. The concepts illustrated in "Fundamentals of Technical Drawing" will be taken for granted
Insegnamenti propedeutici	
Modalità di insegnamento	The course consists of classroom lectures in which the topics are presented by the lecturer; they will benefit from digital presentations of slides (uploaded materials) and the illustration of the intarfaces and main features of some CAD systems (computer-supported explanations). The exercises, all related to the use of CAD systems) are computer-based; they can be in different formats according to the their scope: a. tutorial-based (lecturer explaining) b. practical (students doing assigned exercises) c. a mixture of the above, for example a tutorial followed by exercises, A PC classroom will be booked for some exercises; frequently this will apply for the exercises of format b.
Obbligo di frequenza	Attendance is not compulsory
Obiettivi formativi specifici e risultati di apprendimento attesi	Knowledge and understanding 1) representation of geometries and products through different means and CAD systems (2D and 3D) 2) functioning logic of CAD systems, main differences between 2D and 3D software applications, parametric and non-parametric systems 3) modelling of solids including standard geometries and/or free-form shapes 4) use of CAD systems to accelerate the correct execution of

	technical drawings 5) use of 3D CAD to approach the design of meaningful assemblies 6) exchange of files and CAD information across multiple CAD platforms Applying knowledge and understanding 7) applying drawing standards correctly within CAD environments 8) use of CAD systems to design new products Making judgements 9) choosing the most convenient system for technical documentation and modelling 10) within a 3D CAD system, choosing the most effective functions to model a specific geometric feature Communication skills 11) using the appropriate terms in the course's discipline Learning skills 12) ability to autonomously extend the knowledge acquired during the course by testing functionalities in CAD software that will not be used in the course
Obiettivi formativi specifici e risultati di apprendimento attesi (ulteriori info.)	-
Modalità di esame	The assessment is based on a (exclusively or predominantly) computer-based exam, including exercises requiring:

	1. to model, through a parametric 3D CAD, a part for which a draft will be assigned 2. to draft a part, through a CAD system, for which a 3D model created through a parametric CAD will be assigned 3. to model through a 3D CAD a part based on a description and some requirements (e.g., encumbrance, assemblability, presence of ergonomic surfaces). Exercises of type 1 specifically target Learning Outcomes 1, 3, 10 Exercises of type 2 specifically target Learning Outcomes 2, 4, 6, 7, 9 Exercises of type 3 specifically target Learning Outcomes 1, 3, 5, 8, 10 Additional exercises, for example with open questions, might be added in the exam so to target all Learning Outcomes. These questions might be answered in a written form or through a computer. During the exam, the students will avail of all the CAD software applications used during the course and all necessary means to do the exercises and answer any additional questions.
Criteri di valutazione	For each exercise included in the exam, the maximum number of points achievable is indicated. The final score is the sum of points achieved in each exercise.
Bibliografia obbligatoria	Slides and other materials provided by the lecturers during the course. All materials will be shared in the repository used (MS Teams).
Bibliografia facoltativa	-
Altre informazioni	-
Obiettivi di Sviluppo Sostenibile (SDGs)	Innovazione e infrastrutture, Istruzione di qualità