UNIVERSITÀ DI PAVIA

Anno Accademico 2021/2022

VIRTUAL MODELING AND ADDITIVE MANUFACTURING (3D PRINTING)

Enrollment year	2019/2020
Academic year	2021/2022
Regulations	DM270
Academic discipline	ING-IND/34 (INDUSTRIAL BIOENGINEERING)
Department	DEPARTMENT OF ELECTRICAL,COMPUTER AND BIOMEDICAL ENGINEERING
Course	INDUSTRIAL ENGINEERING
Curriculum	Meccanica
Year of study	3°
Period	1st semester (27/09/2021 - 21/01/2022)
ECTS	3
Lesson hours	23 lesson hours
Language	Italian
Activity type	WRITTEN TEST
Teacher	MORGANTI SIMONE (titolare) - 2 ECTS MARCONI STEFANIA - 1 ECTS
Prerequisites	No prerequisites are required.
Learning outcomes	The course – accessible by both students and professionals from Association of Engineers- aims to provide the bases for the study of additive manufacturing techniques (or 3D printing), following the growing demand from various fields of application, in the industrial and the medical world. The course will provide basic elements on the additive technologies available on the market, on the materials that can be used, on the potential applications in the medical, architectural and engineering (civil and mechanical) fields.

	The lessons, organized by experts in the various sectors, will provide the student with a broad vision of the potential of additive technologies in the various fields.
Course contents	Topics covered in the course include: - Introduction to additive technologies. - Introduction to printable materials, with a focus on metallic, polymeric and biocompatible materials. - The FDM printing process and its control. - Applications in the field of architecture, civil engineering and mechanical components. - Applications in the medical field with examples in the fields of general surgery, vascular surgery, ENT surgery, orthopedic surgery, anatomy and tissue regeneration. - Business models dedicated to 3D printing: competitive advantages, analysis of economic and financial sustainability.
Teaching methods	The course includes lectures which will take place mainly at the Collegio Borromeo, on a weekly basis. The courses will be held mainly in the 18.00-19.30 hours to allow participation to professionals of the Association of Engineers. Consult the calendar available on the course website: http://www-4.unipv.it/3d/training-education/#1469537337109-8db2e53a-0bcf
Reccomended or required readings	Teaching material available on Kiro website and on the course web page. http://www-4.unipv.it/3d/training-education/#1469537337109-8db2e53a-0bcf
Assessment methods	The learning assessment involves a final written exam. OPTIONAL to improve the evaluation: carrying out a project individually or in groups.
Further information	For information, subscription and updates on the course visit: http://www-4.unipv.it/3d/training-education/#1469537337109-8db2e53a-0bcf
Sustainable development goals - Agenda 2030	

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