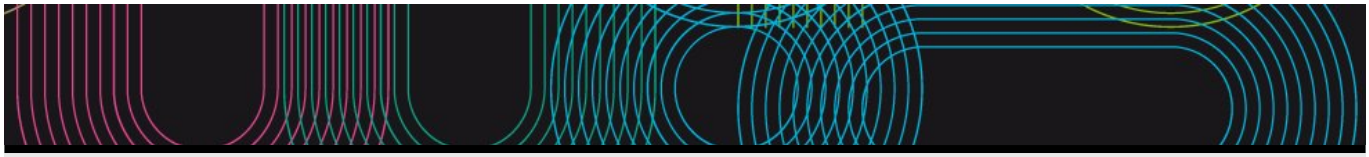
Universidade Vigo

Subject Guide 2023 / 2024



IDENTIFYING DATA				
Advanced design for 3D printing				
Subject	Advanced design for 3D printing			
Code	V04M196V01204			
Study programme	Máster Universitario en Fabricación Aditiva			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	6	Optional	1st	2nd
Teaching language	Spanish Galician			
Department				
Coordinator	Collazo Fernández, Antonio Pereira Domínguez, Alejandro			
Lecturers				
E-mail				
Web				
General description				

Training and Learning Results	
Code	
B6	Perform simulation and modeling processes for 3D design and prototyping of materials, as well as for simulation of structures and manufacturing processes.
B11	Recognise the possibilities of additive manufacturing versus traditional manufacturing.
C3	Identify opportunities for the creation of new designs from the possibilities offered by the new design and printing techniques of additive manufacturing.

Expected results from this subject	Training and Learning Results
Knowledges	B6 B11
Skills	C3

Contents	
Topic	
Design for additive manufacture	Requirements and specifications of the product Generation of models. It includes analysis of costs, analysis of risks, proofs of prototypes. Design detailed of product
Topological optimisation and Design of *aligeramiento of product	Aims of optimisation: it includes to determine load applied, the conditions of outline, the available materials. Generate a mesh and apply conditions of load Algorithms of topological optimisation
Design of structures of support and definition of optimum orientations	Analysis of product and study of supports Design of structures of support and patterns Study and Determination of orientations

Planning	Class hours	Hours outside the classroom	Total hours
Introductory activities	3	0	3
Problem solving	5	25	30

Mentored work	10	40	50
Project based learning	25	40	65
Presentation	2	0	2

*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

Methodologies

	Description
Introductory activities	Presentation course and development of the same
Problem solving	Development of problems of real type and proposed
Mentored work	Memory of the physical work made
Project based learning	Development of the practical cases proposed

Personalized assistance

Methodologies	Description
Introductory activities	
Problem solving	
Mentored work	
Project based learning	

Tests	Description
Presentation	

Assessment

	Description	Qualification	Training and Learning Results	
Mentored work	(*)Realización memoria de proyecto curso realizado	40	B11	C3
Project based learning	(*)Desarrollo de proyecto	40	B6 B11	
Presentation	(*)Presentación durante 15 minutos de propuesta	20	B6 B11	C3

Other comments on the Evaluation

Sources of information

Basic Bibliography

Complementary Bibliography

Damir Godec, Joamin Gonzalez-Gutierrez, Axel Nordin, Eujin Pei, & Julia Ureña Alcázar, **A Guide to Additive Manufacturing**, 10.1007/978-3-031-05863-9, Springer, 2020

Recommendations