



**UCAM**  
UNIVERSIDAD CATÓLICA  
DE MURCIA

# FUNDAMENTALS OF 3D DIGITAL DESIGN & ADDITIVE MANUFACTURING (3D PRINTING)



## Duration

3 weeks, 60 contact hours.

## Objectives

- Get a global vision of the additive manufacturing process: from the digital modeling of an object to its final 3D printing.
- Know the basics of 3D design through advanced CAD tools such as Solid Works.
- Focus the design process to additive manufacturing.
- Obtain digital models through digitizing techniques such as scanning.
- Understand the basics of 3D printers: electronics, mechanics, etc.
- Control the maintenance and operation of 3D printers.
- Know the properties of the most common materials used for 3D printing.
- Manage a full additive manufacturing project.
- Get in contact with the 3D printing industry and entrepreneurs.

## Business Partners



## Fees

€2,500 /student

### Services provided:

- 1 Professor/tutor for free
- Accommodation (triple or double room upon availability)
- Breakfast and lunch (excluded weekends)
- Group airport transfer service
- Bus ticket
- UCAM welcome pack
- Teaching materials
- Murcia city center tour

## Contact

International Admissions Office  
(+34) 968 278 786  
admissions@ucam.edu  
international.ucam.edu

# Schedule

## WEEK 1: 3D DESIGN (Part I)

### Session 1: (Mr. Germán Meoro-Avilés)

- Basic concepts of Solidworks

### Session 2 : (Mr. Germán Meoro-Avilés)

- Introduction to the sketch

### Sessions 3: (Mr. Germán Meoro-Avilés)

- Basic part modeling: Extrusion

### Sessions 4: (Mr. Germán Meoro-Avilés)

- Basic modeling of parts: Revolution

### Session 5: (Mr. Darío García-Calderón)

- Company Visit I: Seminar at Cella Medical Solutions

## WEEK 2: 3D DESIGN (Part II)

### Session 1: (Mr. Germán Meoro-Avilés)

- Basic model of parts: Sweep

### Session 2: (Mr. Germán Meoro-Avilés)

- Configuration of starting formats

### Session 3: (Mr. Germán Meoro-Avilés)

- Drawings and plans

### Session 4: (Mr. Germán Meoro-Avilés)

- Assembly and Sub-assumptions

### Session 5: (Mr. Ginés Estrada)

- Company Visit II: GAE: 3D printer manufacturer

## WEEK 3: 3D PRINTING

### Session 1: (Various)

- 3D Printing Fundamentals

### Session 2: (Mr. Jaime Navarro)

- 3D FDM printing

### Session 3: (Mr. Jaime Navarro)

- 3D Printing issues, problems and solutions

### Session 4: (Mr. Jaime Navarro)

- Post-processing techniques

### Session 5: (Mr. José Acosta)

- Practice: Advance 3D Printing

# Teaching Staff

## Rafael Melendreras

Vice-Dean of the degree of Telecommunications Systems Engineering. He received the M.S. degree in Telecommunications Engineering (2000) at the Technical University of Valencia and his Ph.D. at the Catholic University of Murcia (UCAM) in the area of Digital Television (2012). Founder of the 3D Printing and VR Lab at UCAM, his area of research is Remote Sensing and Digital Television Systems.

## Miriam Mendoza

She obtained both Degrees in Image and Sound (2009) and Telecommunication Systems (2011) at UCAM, where she also coursed a Master in Teacher Training (2014). Nowadays her research for doctorate focuses on biosignals registry and treatment in Bell's palsy. Miss Mendoza coordinates UCAM's Energy Efficiency Commission as well as the Electronic Instrumentation and 3D laboratories.

## Germán Meoro

Coordinator of the Industrial Design department of the Regional Metal Federation. Received the title of Graduated in Engineering of Industrial Design (2002) in the University Cardenal Herrera of Valencia CEU. Founder of the Microfusion and 3D Printing Laboratory at FREMM, his research area is Industrial design, modeling, manufacturing processes, microfusion and 3D printing.

## Jaime Navarro

CEO and Founder of Universo Lemon Soc. Coop. He started the Degree in Civil Engineering at the Technical University of Madrid. He obtained the Bussiness Strategy Course at ENAE. He has a big experience in 3D CAD Design and 3D Printers ensemble.

## Darío García

Graduated in Biology by the University of Murcia. Master's Degree in Clinical and Applied Oncology Research from CEU San Pablo University and National Cancer Research Center (CNIO). Member of the Research Group on Multidisciplinary Oncology at the Catholic University San Antonio de Murcia (UCAM). Member of the Gastrointestinal Cancer Unit at CNIO. Doctorate in 3D printing in oncology, UCAM. CEO at Cella Medical Solutions. National Prize for the Most Brilliant Youth Idea in Spain 2015. National Prize AshokaBoehringer Making more health 2016.

## Ginés Estrada

Graduated in Industrial Engineering by the Technical University of Cartagena in 1.982. He has worked as designer, build and manufacturing responsible in numerous companies. Since 2014 he has been dedicated to the design, construction and commercialization of numerical control machines and 3d printers. Also, He has teaching experience in 3D Printing.

## José Acosta

He obtained his Degree in Biology from the University of Murcia. Mr. Acosta is a researcher with a doctoral contract in the Faculty of Health Sciences and member of the research group of Biomaterials and Regenerative Medicine of the UCAM. Also, he obtained the title of Industrial design technician with Autodesk Inventor by SEAS. Expert in innovation, 3D scanning, additive manufacturing (3D printing) and subtractive. Inventor.

