



Guía docente

205228 - CT3D - Critical Thinking para Impresión 3D

Última modificación: 29/05/2020

Unidad responsable: Escuela Superior de Ingenierías Industrial, Aeroespacial y Audiovisual de Terrassa
Unidad que imparte: 758 - EPC - Departamento de Ingeniería de Proyectos y de la Construcción.

Titulación: GRADO EN INGENIERÍA EN TECNOLOGÍAS INDUSTRIALES (Plan 2010). (Asignatura optativa).
GRADO EN INGENIERÍA EN TECNOLOGÍAS AEROESPACIALES (Plan 2010). (Asignatura optativa).
GRADO EN INGENIERÍA EN VEHÍCULOS AEROESPACIALES (Plan 2010). (Asignatura optativa).
GRADO EN INGENIERÍA ELECTRÓNICA INDUSTRIAL Y AUTOMÁTICA (Plan 2009). (Asignatura optativa).
GRADO EN INGENIERÍA ELÉCTRICA (Plan 2009). (Asignatura optativa).
GRADO EN INGENIERÍA MECÁNICA (Plan 2009). (Asignatura optativa).
GRADO EN INGENIERÍA QUÍMICA (Plan 2009). (Asignatura optativa).
GRADO EN INGENIERÍA DE SISTEMAS AUDIOVISUALES (Plan 2009). (Asignatura optativa).
GRADO EN INGENIERÍA DE TECNOLOGÍA Y DISEÑO TEXTIL (Plan 2009). (Asignatura optativa).
GRADO EN INGENIERÍA DE DISEÑO INDUSTRIAL Y DESARROLLO DEL PRODUCTO (Plan 2010). (Asignatura optativa).

Curso: 2020 **Créditos ECTS:** 6.0 **Idiomas:** Inglés

PROFESORADO

Profesorado responsable: Macarulla Martí, Marcel

Otros: Arcal Cunillera, Jordina
Nicolau Martinez, Marc

METODOLOGÍAS DOCENTES

This is a hands-on course where students will learn and implement Creativity and Design Thinking methodologies to solve a real challenge from the industry, using HP's additive manufacturing technology. They will work hand by hand with HP's industry experts and industrial companies, learning how to identify opportunities for the adoption of 3D printing production. Students will practice how to guide teams into the unknown through the process of experimentation, understanding user needs, generating innovative solutions & reducing the risks of launching new ideas through Minimum Viable Products.

During the course different ideas will be developed and the best idea of each group will be printed with the HP additive manufacturing technology. In total, each group will have two prints granted by HP.

OBJETIVOS DE APRENDIZAJE DE LA ASIGNATURA

El objetivo de este curso es formar a los estudiantes para resolver retos planteados por la industria usando tecnologías de fabricación aditiva.

HORAS TOTALES DE DEDICACIÓN DEL ESTUDIANTADO

Tipo	Horas	Porcentaje
Horas aprendizaje autónomo	90,0	60.00
Horas grupo mediano	60,0	40.00

Dedicación total: 150 h



CONTENIDOS

Module 1: Introduction to user centered desing and desing thinking

Descripción:

In this module, students will learn the basics of user-centered design and design thinking and will apply its processes and tools including: research techniques to understand people and identify user needs, empathy & interpreting reality, workflow, persons & their needs, mapping user needs and looking for patterns.

Dedicación: 15h

Grupo mediano/Prácticas: 6h

Aprendizaje autónomo: 9h

Module 2: Creativity and prototyping

Descripción:

In this module, students will learn and will apply techniques for creativity and prototyping.

Dedicación: 25h

Grupo mediano/Prácticas: 10h

Aprendizaje autónomo: 15h

Module 3: Best practices for additive manufacturing

Descripción:

In this module, students will learn best practices for additive manufacturing.

Dedicación: 25h

Grupo mediano/Prácticas: 10h

Aprendizaje autónomo: 15h

Module 4: Solving an industry challenge using additive manufacturing

Descripción:

This module will be focus on solving a challenge proposed by a company using additive manufacturing. Designed solutions will be printed using HP additive manufacturing technology, one print during the course, and another at the end of the course.

Dedicación: 75h

Grupo mediano/Prácticas: 30h

Aprendizaje autónomo: 45h

Module 5: Storytelling

Descripción:

This module will be focused on learn techniques to communicate developed ideas and solutions.

Dedicación: 10h

Grupo mediano/Prácticas: 4h

Aprendizaje autónomo: 6h



SISTEMA DE CALIFICACIÓN

The final grade depends on the following assessment criteria:

- 20% classroom deliverables
- 20% midterm deliverable (solutions + first print of the solution)
- 40% final deliverable (final solution and second print of the solution)
- 20% Presentation and video

BIBLIOGRAFÍA

Básica:

- Kelley, Tom; Kelley, David. Creative confidence : unleashing the creative potential within us all. London: William Collins, 2013. ISBN 9780008139384.
- Osterwalder, Alexander [et al.]. Value proposition design : how to create products and services customers want : get started with : bad value proposition design : a guide to burning cash, communicating poorly, and spending your short life building stuff nobody wants. Hoboken: John Wiley & Sons, cop. 2014. ISBN 9781118968055.
- Fitzpatrick, Rob. The MOM test : how to talk customers and learn if your business is a good idea when everyone is lying to you. Leipzig: Founder Centric, 2014. ISBN 9781492180746.
- Portigal, Steve. Interviewing users : how to uncover compelling insights. Brooklyn, NY: Rosenfeld Media, 2013. ISBN 9781933820118.
- Knapp, Jake. Sprint : how to solve big problems and test new ideas in just five days. New York: Simon & Schuster, 2016. ISBN 9781501140808.