

Course code and name		
Code	595010044	
Name	Product Engineering	
Semester	S7 [(September-January)]	

	Credits and contact hours
ECTS Credits	4,5
Contact hours	45

Coordinator's name	Núñez Mendoza, Neftalí [neftali.nunez@upm.es]
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Specific course information				
Tuition language Spanish				
Description of course content				
Study of the design and development process of an electronic equipment available for				
commercialization.				
It includes multidisciplinary activities related to reduce the production cost, to control				
functionality, quality and guarantee, and to fulfill the international standards and				
reliability requirements.				
The goal is to achieve a competitive product and a satisfactory lifecycle so the user will				
always buy the same brand.				
List of topics to be covered				
1. Introduction				
2. Product and System Design:				
2.1. Theoretical framework.				
2.2. Strategies for new product development.				
2.3. Value assessment (tangible and intangible).				
3. PLM (Product Life Cycle Management) and ISO 14000.				
3.1. Environmental Management-Life Cycle Assesment				
4. Reliability of products and systems.				
5. Theoretical bases of environmental, electrical, mechanical, optical testing and EMC				
6. Test plans for the qualification and validation of systems.				
Lab sessions:				
1. PCB Pull and Shear Test (MIL_STD standard) to check the weld.				
2. Software PLM. Product Life Management.				
3. Characterization for electrical and optical testing of optoelectronic devices				
4. Environmental testing of product liability by UNE-EN climate chambers: ALT				
(Accelerated Life Test).				



Prerequisites or co-requisites

- Electronics I
- Electronics II
- Production Technologies of Electronics Systems

Course category in the program

□ R (required)

☑ E (elective)

(elective courses may not be offered every year)

Specific goals for the course

Specific outcomes of instruction

- RA342 To know the tests for the qualification of systems and equipment.
- RA344 To carry out a study of prediction of reliability of an electronic equipment.
- RA341 To learn about and plan the lifecycle and prediction of reliability of components and systems.
- RA340 To learn about the interaction of the product design and manufacturing process chains.
- RA339 To learn about new products of high added value from technologybased strategies.
- RA343 To design a planning to test an equipment for an application in a specific sector.

Further reading and supplementary materials

- Marketing. Philip Kotler, Gary Armstrong. Ed. Pearson Educación, 14th Ed.
- Operations Management. R.Dan Reid & Nada R. Sanders. Ed. Wiley, 4th Ed.
- ISO 14000, and more standards ISO,IEC, UNE y MIL
- Moodle.