25844 - Analysis of Pieces and Computer-Assisted Assembly

Información del Plan Docente

Academic Year	2017/18
Faculty / School	110 - Escuela de Ingeniería y Arquitectura
Degree	271 - Bachelor's Degree in Industrial Design and Product Development Engineering
ECTS	7.5
Year	
Semester	First Four-month period
Subject Type	Optional
Module	---

1.General information

1.1.Introduction

1.2.Recommendations to take this course

1.3.Context and importance of this course in the degree

1.4.Activities and key dates

2.Learning goals

2.1.Learning goals

2.2.Importance of learning goals

3.Aims of the course and competences

3.1.Aims of the course

3.2.Competences

4.Assessment (1st and 2nd call)

4.1.Assessment tasks (description of tasks, marking system and assessment criteria)

5.Methodology, learning tasks, syllabus and resources

5.1.Methodological overview

The learning process that has been designed for this subject is based on problems solving and self-learning

5.2.Learning tasks

1. Master classes and problems

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2. Practices
3. Seminar

5.3.Syllabus

The program includes the following activities

Bloque I. Aspects of 3D modeling.

Bloque II. Assemblys. Advanced positions and contacts. Examples.

Bloque III. Kinematic and dynamic calculation of mechanisms.

Bloque IV: Introduction to the methodology and to the calculation- simulation tools based on the finite element method (FEM). Preprocessing module of FEM.

Bloque V. Calculation process, results analysis and optimization.

Prácticas:

- 2 sesiones de modelado y ensamblaje
- 1 sesión para simulación de mecanismos
- 1 sesión procedimiento de análisis
- 1 sesión para análisis estático y optimización

Block I: Introduction to the methodology and to the calculation- simulation tools based on the finite element method (FEM)
Block II: Aspects of 3D modeling.
Block III: Kinematic and dynamic calculation of mechanisms.
Block IV: Preprocessing module of FEM.
Block V: Calculation process, results analysis and optimization.

Practices:
Five practice sessions developed by computer are proposed.
Seminar:
A seminar will be held to present and define subject work.

5.4.Course planning and calendar

It will be offered at the beginning of the course, and will be agreed with the / the students of the subject, depending on the availability of external collaborators.

5.5.Bibliography and recommended resources

- Gómez González, Sergio. SolidWorks práctico / Sergio Gómez González . - 1ª ed. Barcelona : Marcombo , cop. 2012
- Gómez González, Sergio. SolidWorks Simulation / Gómez González, Sergio . Editorial RA-MA, 2010

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- Planchard, David C.. SolidWorks 2006 tutorial : a step-by-step project based approach utilizing 3D solid modelling / David C. Planchard, Schroff Development Corporation, Marie P. Planchard Kansas : Schroff Development Corporation, cop. 2006
- Oñate Ibañez de Navarra, Eugenio. Cálculo de estructuras por el método de elementos finitos : análisis estático lineal / Eugenio Oñate Ibañez de Navarra . - [2a. ed.] Barcelona : Centro internacional de Métodos Numéricos en Ingenieria, 1995
- 20 YC Symposium 2006 . State of the Art of CAD/CAM Restorations / edited by Werner H. Mörmann. London [etc.] : Quintessence, 2006.