University POLITEHNICA of Bucharest

Faculty of Industrial Engineering & Robotics

Study programme: Industrial Engineering

Form of study: Bachelor

COURSE SPECIFICATION

Course title	Computer Aided Design 2	Semester	4
Course code	UPB.06.D.04.O.004	ECTS	5

Course structure	Lecture	Seminar	Laboratory	Project	Total hours
No. of hours/ week	2		2	2	6
No. of hours/ semester	28		28	28	84

Lecturer	Lecture	Laboratory	Seminar	Project
Name, academic degree	Cristian TARBĂ, Lecturer		-	Manuela DIJMĂRESCU, Lecturer
Contact (E-mail, location)	cristian.tarba@upb.ro CE 107		-	manuela.dijmarescu@upb.ro CB 112

Course description (max: 200 words)

Learn the process of designing 3D solids with CATIA from conceptual sketching, through to solid modeling, assembly design, and drawing production. Upon completion of this course the students will acquire the skills to confidently work with CATIA. Gain an understanding of the parametric design philosophy of CATIA. The course introduces to the student to the CATIA V5 environment with emphasis on the use of the Sketcher Workbench. Also the course introduces the student to the CATIA V5 Part Design workbench. The creation of Sketch-Based Features and best-practice methodology is stressed throughout the class. The class will cover all areas for the Part Design Workbench while interacting with Sketcher and Reference Elements to create modifiable parts. Generative Shape Design (GSD) module allows users to create a history-based part that will save time in the incorporation of engineering changes and modifications. GSD will introduce students to the functions used for the creation of a surfaced part in the CATIA Version 5 environment. Students will be taught "Best Practice" methods and processes for the efficient design of parts. Generative Drafting module introduces students to the CatDrawing format.

Seminar description (max: 200 words)

Laboratory description (max. 200 words)

As a result of completing the applications it is aimed at acquiring skills in CATIA V5 modeling of diverse types of parts and assemblies with varying degrees of difficulty, in close correlation with the applications presented in the course. For the project classes students will have to make a structural - functional analysis of mechanical parts, assemblies and sheet metal parts

Project description (max. 200 words)

The project takes the student thorough all the steps needed to create the manufacturing technology for two parts which belong to an assembly. Based on their functionalities within the assembly the

parts are identified with their surfaces and the machining options that can be applied on to meet the requirements established in the 2D drawing. Also, the students are given the opportunity to modify the part's specifications to improve the precision and surface quality required by their role in the assembly.

Assessment methods	Percentage of the final grade	Minimal requirements for award of credits
Written exam	20	10
Report/ Project	20	10
Homework	30	15
Laboratory	30	15

References
1. *** CATIA V5R21 Fundamentals Design, Dassault Systemes
2. *** Ghionea, I., Proiectare asistata in CATIA v5, Elemente teoretice si aplicatii, Editura BREN, Bucuresti, 2012
3. *** Popescu, D., s.a., Îndrumar CAD CATIA V5, ISBN 973-700-011-0, Editura Aius, 2004
4. *** Note de curs şi lucrări aplicative la disciplinele: GD, DT, MTP, OM, TAP, PAC.
5. *** Desen tehnic – Standarde şi comentarii.
6. *** Fonte şi oţeluri – Standarde şi comentarii.
7. *** Toleranţe şi ajustaje - Standarde şi comentarii.
8. *** Organe de asamblare - Standarde şi comentarii.
9. A. Marinescu, O. Alupei – Toleranţe şi ajustaje pentru piese în construcţia de maşini, Editura BREN, 2004.
10. C. Pârvu, A. Marinescu, G. Măntescu, M. Matei, C. Drăghici, D. Comănescu – Ghid de proiectare la Analiza de Produs, UPB; 2006.

Prerequisites	Co-requisites (courses to be taken in parallel as a condition for enrolment)

Additional relevant information:

Date: 17th of May 2022