POLITEHNICA University of Bucharest (**UPB**)
Faculty of Industrial Engineering and Robotics (**IIR**)
Study Programme: Industrial Engineering (**IE**)
Form of study: Licence (Bachelor)

COURSE SPECIFICATION

Course title:	Computer Aided Design 2	***Semester:***	4
Course code:	UPB.06.D.04.O.004	***Credits (ECTS):***	6

Course structure	Lecture	Seminar	Laboratory	Project	Total hours
Number of hours per week	2		2	2	6
Number of hours per semester	28		28	28	84

Lecturer	Lecture	Seminar / Laboratory / Project
Name, academic degree	Cristian TARBĂ, Asst. Prof	Laboratory – Cristian TARBĂ, Asst. Prof. Project – Manuela Dijmărescu, Asst. Prof.
Contact (email, location)	cristian.tarba@imst.pub.ro Room CO2	manuela.dijmarescu@imst.pub.ro Room CB112

Course description:

Learn the process of designing models with CATIA from conceptual sketching, through to solid modeling, assembly design, and drawing production. Upon completion of this course the students will have acquired 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. They will learn how to reuse like elements in the course of a design, identify the driving features of a part and proper filleting and trimming order. Students will also learn how to logically manage the specification tree so downstream users will easily understand it. Generative Drafting module introduces students to the CatDrawing format. CatDrawings are the two dimensional representation of a CATPart or CATProduct. Drawings are created by projecting views and creating text and dimensions to call out specific details of a part.

Seminar / Laboratory / Project description:

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.

Intended learning outcomes:

Course objectives aimed at acquiring the knowledge needed by students to build 3D models and shapes in CATIA V5 environment. It will be presented general information about the interface, terminology, principles of work, context menus, parameterization, associativity, specifications tree, manipulate objects, etc.. It also will be presented options and commands for applications: Sketcher, Part Design, Assembly Design, Drafting, Generative Shape Design and Sheet Metal.

Assessment method:	% of the final grade	Minimal requirements for award of credits
Written exam	20	
Report / project	20	
Homework	20	
Laboratory	20	
Other	20	

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., Indrumar 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):***
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Additional relevant information:

Date: 11.07.2016
Professional degree, Surname, Name: Asst. Prof. Cristian TARBĂ