

CES9AG CAD CAM

CES9AG		ECTS Credits : 4	Semester : S9	
CAD-CAM : Design and manufacturing of high value-added mechanical parts		Duration: 36 hours		
Person(s) in charge:				
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keywords :				
Prerequisites:				
Objectives:				
The aim of this course is to show the contribution of simulation techniques in the design and manufacturing products. These techniques can quickly simulate the behavior of parts and components and also their manufacturing process. The automatic optimization techniques can design parts based on defined specifications.				
Program and contents:				
Choice of materials for the design step General description of material properties for design and manufacturing processes. Using of database and useful tools for choosing. Multi- tech design products according to the Material-Product-Process approach The design of mechanical systems, dimensioning of parts, and the choice of constructive provisions require the consideration of the manufacturing processes. The methodology to submit the shape of the product to the manufacturing process is not necessarily the best. The opposite approach, which tends to move the process from the product or the initial need is often more effective and more innovative. Behavior of materials during manufacturing processes - Review of the theoretical aspects of continuum mechanics (solid, fluid, and thermal aspects). - Manufacturing processes by plastic deformation and machining - Optimisation of manufacturing processes Numerical simulation of manufacturing processes The main aspects of simulation and numerical developments of manufacturing materials are presented. More attention is paid to machining processes simulation with industrial softwares <i>Teaching Methods</i> Presentation of industrial case study in the aerospace, nuclear, and automotive fields <i>Evaluation</i> Final examination / or project expertise				
Abilities:				
Levels	Description and operational verbs			
Know				
Understand				
Apply				
Analyse				
Summarize				
Assess				
Assessments:				
<input type="checkbox"/> Written Test	<input checked="" type="checkbox"/> Continuous Control	<input type="checkbox"/> Oral report	<input type="checkbox"/> Project	<input type="checkbox"/> Written Report