Code	INM396	Prerequisites	ING212
Name	Assisted Engineering (CAE) I	Co-requisites	INM305

Credits	Contact Hours
01	22
Categorization of credits	
Math and basic science	
Engineering topic	X
other	

Coordinator's name	Jorge Luis Vargas Colmenares

Text book
Other supplemental materials
Chang, K. (2014). Motion simulation and mechanism design with SolidWorks motions 2013.—Mission, KS: SDC Publications. Lee, H. (2014). Engineering dynamics labs with SolidWorks motion 2014.— Mission, KS : SDC Publications. Lombard, V. (2013.). SolidWorks® 2013 BIBLE. Wiley & Sons. Meriam, J.L. (2012). Engineering Mechanics: Dynamics (6th Ed.). Wiley & Sons.

Description
This subject includes the study, exploration and use of modern computational tools for the analysis, design, optimization and simulation of applications and viable solutions for our current world. Emphasis is placed on the use and application of mechanical sciences (mainly dynamics) using for this, the complement tools "Motion" of Solidworks software.

Type of course	☒ Required ☐Elective _

Specific goals for the course	
Outcomes of instruction	EG1. Use different techniques for solving problems that arise in the development of the subject. EG2. Execute the calculations to characterize the physical variables of the dynamic systems and/or modeled mechanisms. EG3. Verify the procedures in a logical way, which allows solutions according to the required need of the problem posed.

	EG4. Model dynamic systems and/or mechanisms using software designed for that purpose.
Student outcomes	EG1 Identify, formulate and solve complex engineering problems by applying the principles of Engineering, Science and Mathematics.

CG2. Apply the engineering design process to produce solutions that meet specific needs, taking into account public health and safety, global, cultural, social, environmental, and economic factors, as well as any other factor as appropriate to the discipline. |

Topics
Unit I. SolidWorks and the Kinematics of Particles
Unit II. SolidWorks and Particle Dynamics I
Unit III. SolidWorks and Particle Dynamics II
Unit IV. SolidWorks and Particle Dynamics III
Unit V. SolidWorks and the Kinematics of Planar Rigid Bodies
Unit VI. SolidWorks and the Dynamics of Planar Rigid Bodies I
Unit VII. SolidWorks and the Dynamics of Planar Rigid Bodies II
Unit VIII. SolidWorks and the Dynamics of Planar Rigid Bodies III
Unit IX. SolidWorks and 3-D Rigid Body Kinematics
Unity X. SolidWorks and the Dynamics of Rigid 3-D Rigid Bodies
Unit XI. SolidWorks and Vibration Characterization