Code	INM355 / INM376	Prerequisites	INI388
Name	Industrial Processes I	Co-requisites	INM355L INM376L

Credits	Contact Hours
04	44
Categorization of credits	
Math and basic science	
Engineering topic	X
Other	

Coordinator's name	Pedro Pablo Benitez Luna

Text book
Other supplemental materials
Grover, MP (2007). Fundamentals of Modern Manufacturing: Materials, Processes, and Systems (3rd ed.). McGraw Hill. Kalpakjian, S., & Schmid, S.R. (2014). Manufacturing, Engineering and Technology (7th ed. Vol. II). wesley, Lopez, A. (2008). machines. Workshop calculations. Society of Manufacturing Engineering (2012). Manufacturing Engineering.

Description	
In this subject, students acquire the basic knowledge of manufacturing processes without chip removal: types of manufacturing processes, their technical and economic criteria, and modern manufacturing methods. The course includes the fundamentals of production processes, emphasizing metal casting, different forging processes, welded joints, metal cutting, and notions of health and safety in each of these processes.	
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. Design manufacturing processes to respond to specific needs, taking into account economic, manufacturing, environmental, health and safety constraints. EG3. Analyze the different foundry processes appropriate for the efficient manufacture of a piece or product.
Student outcomes	CG1. Identify, formulates, and solves complex engineering problems by applying the principles of engineering, science, and mathematics. CG2. Applythe 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. CG3. Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering criteria to draw conclusions.

topics
Unit I. Introduction Unit II. Foundry I Unit III. Foundry II Unit IV. Powder metallurgy Unit V. Hot work processes (I) Unit VI. Hot work processes (II) Unit VII. Cold working processes Unit VIII. Forging, oxygas and arc welding Unit IX. Cutting with Torch, Arc, Plasma, Laser and Water Unit X. Coated electrodes, welding quality, risks and control. Unit XI. Arc welding with covered electrodes.