



Code	INS208	Prerequisites	CBM201
Name	Programming Fundamentals	Co-requisites	INS208L

Credits	Contact Hours
04	40
Categorization of credits	
Math and basic science	
Engineering topic	X
Other	

Coordinator's name	Fernando Hirujo
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Text book
Other supplemental materials
Bronson, G. J. (2010) C++ para ingeniería y ciencias. México: Cengage Learning Editores, S. A. Hirujo, F. (s.f.) Notas de clase: Fundamentos de Programación [manuscript prepared by teachers]. Joyanes, J. (2013). Fundamentos generales de programación. México: McGraw-Hill. Joyanes, L., Zahonero, I. (2014). Programación en C, C++, Java y ULM. (2nd edition). México: McGraw-Hill.

Description	
The Fundamentals of Programming course aims to develop in the student the general and specific skills necessary to solve common engineering problems, using the computer as a tool, through a formal process of problem analysis and its algorithmic synthesis. To achieve this goal, students are introduced to the systematic study and use of a specific programming language for coding, debugging, and testing the developed solution. The student will understand and correctly apply the syntactic and semantic rules of the selected programming language, the types of data accepted by this language, its vocabulary, sequential structures, flow control (selective or conditional, iterative or repetitive); the use of available function libraries and the control and format of data input/output.	
Type of course	☒ Required ☐ Elective

Specific goals for the course

Outcomes of instruction	EG1. Distinguish the importance of programming for the development of information systems. EG2. Comply with the functions and tasks designated for their role in the team, as well as emerging activities, respecting the established deadlines and commitments.
Student outcomes	CG1. Identify, formulate, and solve complex engineering problems by applying the principles of engineering, science, and mathematics. CG2. Work effectively in teams whose members collectively provide leadership, create a collaborative and inclusive environment, set goals, plan tasks, and meet objectives.

Topics
Unit I. Algorithms and Data Concept Unit II. Elements of Programming Languages Unit III. Conditional Statements Unit IV. Repetitive Sentences. Basic data structures