



Program and Degree: BSc in Aerospace Engineering	
Course Description	
Course Title	Algorithm and computer programming
Prerequisites	None
The course aims	The course is aimed at introducing the bases of computer programming and programming languages to the undergraduate students of engineering. The students who successfully complete this course will be able to design the algorithm of a process and convert it into a computer program
Contents	<ol style="list-style-type: none"> 1. Brief history of computers. 2. Introducing the different hardware parts of a computer such as memory units, input and output units. 3. Definition of software and introduction to the different kinds of programming languages. 4. Design of algorithms to solve a problem and convert it into a flowchart. 5. Methods of computer programming. 6. Introduction to different programming languages such as Python, C++, and FORTRAN. 7- In this course the following topics in Python programming will be covered: <ul style="list-style-type: none"> ○ Different built-in data types in Python ○ Sequences: List, Tuple, and Dictionary ○ Conditional statements ○ Repeat loops ○ Functions and modular programming ○ I/O files ○ Object-oriented programming ○ Package management ○ Jupyter Notebook ○ Introduction to some packages such as: Numpy, Sympy, Scipy, and Matplotlib
Duration	1 Semester (16 weeks)
Course Hours	3 hours/week
Course Type	Required