

IT - 201 (Programming Methodology)

Lab course (2 credits)

The objective of this course is to introduce the basic principles of programming. The course will consist of theory and practice of the following: Design principles; Implementation principles; Test and Debug principles.

The course includes : Overview of programming languages; Design - concepts of modular design and algorithms, Program structure; Basic Data Types: Integers, Floating point , Booleans, Complex numbers, Strings; Matrices; Looping and Branching; Functions; Testing and Debugging Principles. The languages preferred for teaching this course are **ONE of** Python/ MATLAB/ Perl /C.

The practice of the principles will be learnt using SCILAB (the open source equivalent of MATLAB).

REFERENCES

1. Introduction to Problem Solving and Programming with Pascal. G.Michael Schneider, Steven W Weingart and David M Perlman, John Wiley and Sons.
2. Introduction to Scilab, 2008-2010 - Consortium Scilab-Digiteo-Michael Baudin, Creative Commons licence www.scilab.org.
3. Getting started with MATLAB 7 a quick introduction to scientists and engineers, Rudra Pratap, Oxford University Press, 2006.
4. Learning Perl: 6th Edition. Making Esay Things Easy and Hard Things Possible, Randal L. Schwartz, brian d foy, Tom Phoenix, O'Reilly.
5. Learning Python, 4th Edition. Powerful Object-Oriented Programming, Mark Lutz, O'Reilly.
6. The C Programming Language, 2nd Edition, Brian Kernighan and Dennis Ritchie, Prentice Hall, India.