IT Lab (Advanced) - IT-162
A Lab course (2 credits) 1-0-2 (L-T-P)

The objective of this course is to introduce fundamentals of computing and programming to non-CS students. We use Python as the programming language in the course.

Syllabus

- Basic Concepts: Problems and Instances, Solving a Problem, Implementing the Solution
- Programming: Elements of a Program, Overall Structure
- Variables; Operators and Operator Precedence; Logical Operators
- Basic Data Types: Integers, Floating point, Booleans, Strings, Lists; Typecasting
- Conditionals and Loops
- User defined functions
- File Handling
- Packages in Python: Numpy and Matplotlib, Statistical analysis of data
- Stages in Programming: Writing Code, Compilation, Execution, Debugging, Final Version

References

1. Introduction to Problem Solving and Programming with Pascal. G.MichaelSchneider, Steven W Weingart and David M Perlman, John Wiley and Sons.
2. How to Solve it by Computer. R. G. Dromey, PHI.
3. Learning Python, 4th Edition. Powerful Object-Oriented Programming, Mark Lutz, OReilly.
4. How to write Good Programs: A Guide for Students. Peredita Stevens, Oxford University Press
5. URL: www.python.org
6. URL: http://openbookproject.net/thinkcs/python/english2e/