Semester	AUG 2022
Open to semester	1
Course code	**TD1113**
Course title	**Introduction to computing**
Credits	3 /
Course Coordinator & participating faculty (if any)	Vivek Mallick*, Baskar Balasubramanyam
Nature of Course	Lectures and Lab
Pre-requisites	None
Objectives (goals, type of students for whom useful, outcome etc)	This is an introductory course in programming and algorithms. The course, via an easy programming language like python, will impart basic coding skills. The student will also get some experience in breaking up a problem into programmable steps, and then actually converting them into executable codes. Some basic algorithms and useful skills, like plotting a graph, will also be covered.
Course contents (details of topics /sections with no. of lectures for each)	Basic introduction to a computer, and basic operating system commands to communicate with the computer. Using an editor (e.g. gedit) and ipython. Input/Output from the screen and a file. Conditional branching: if...then...elif...else. Loops: for, do while, while. Functions. Recursion. Introduction to Numpy and Matplotlib (for plotting graphs and other plots). Data manipulation. Some basic algorithms, eg bubble and/or merge sort, definite integration, methods of finding roots of an equation, etc.
Evaluation /assessment	End-Sem Examination-50% Mid-Sem Examination-50% Others-0%
Suggested readings (with full list of authors, publisher, year, edn etc.)	1. Charles Dierbach, Introduction to Computer Science using Python 2. John Guttag, Introduction to Computation and Programming Using Python. 3. Allen Downey, Jeffrey Elkner, Chris Meyers, How to think like a computer scientist : Learning with Python 4. Mike McGrath, Python 5. David Evans, Introduction to Computing