Title: Programming for Bioinformatics [1-0-4-6]

Content *:*
Any one of these programming languages (C, C++, or Python) and a few modules of using R for data analysis.

C/C++: Introductory concepts ; Variable types, declarations, scalars, arrays, etc. Operators (assignment, etc.), Control structures and conditional statements; loops (do, while, until, etc.), subroutines. Illustrative problem solving with applications in Bioinformatics. Object oriented programming (for C++).

Python: Variables: types and re-declaration; operators - math, Boolean, logical, etc.; strings - escape sequences, concatenation, comparison, etc.; conditional statements; loops; lists and dictionaries, tuples, set operations, Pandas for handling large datasets; File operations: reading, writing; learning to write clean code using multiple modules, i.e. functions, Coding in Google Colab or Jupyter preferably; Parsing outputs of BLAST (and HMMs) using Biopython.

Texts / References*:*
(i) H. Bhasin (2019) Python Basics. Mercury Learning and Information, New Delhi.
(ii) J. Hunt (2019) Advanced Guide to Python 3 Programming. Springer Nature Switzerland AG, Switzerland.
(iii) Y. Kanetkar (2016) Let us C. BPB Publications, New Delhi.Y. Kanetkar (2016) Let us C. BPB Publications, New Delhi.
(iv) Y. Kanetkar (2020) Let us C++. BPB Publications, New Delhi.Y. Kanetkar (2016) Let us C. BPB Publications, New Delhi.