INTRODUCTION TO PROGRAMMING IN C

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INTENDED AUDIENCE : Any interested learners.

PRE-REQUISITES : No prior programming required; mathematical maturity of a second level UG student in science or engineering.

COURSE OUTLINE :

This is a course in programming in C. No prior programming experience is assumed; however, mathematical maturity at the level of a second year science or engineering undergraduate is assumed. We emphasize solving problems using the language, and introduce standard programming techniques like alternation, iteration and recursion. We will briefly glimpse the basics of software engineering practices like modularization, commenting, and naming conventions which help in collaborating and programming in teams.

ABOUT INSTRUCTOR :

Prof. Satyadev Nandakumar is an Assistant Professor from the Department of Computer Science and Engineering IIT Kanpur who specialises in Computable Analysis, Algorithmic Information Theory, Symbolic Dynamics. His research interests includes Theoretical Computer Science, Algorithmic Information Theory, Computible Analysis.

COURSE PLAN :

Week 01 : Introduction. Straight-Line Code. Variables, Operators, Expressions and Conditionals.

Week 02 : Loops.

Week 03 : Functions.

Week 04 : One-Dimensional Arrays and Pointers.

Week 05 : Recursion.

Week 06 : Multi-dimensional Arrays, Linked Lists.

Week 07 : Operating on Files.

Week 08 : Organizing C projects, working with multiple source directories, makefiles.