

COMPUTER PROGRAMMING III (2nd Year - I Sem.)

(B.Sc. Programmes)

Aim

To impart knowledge to analyze, solve, design and code real-life problems using Fortran90&95 language.

Objectives

- To learn the basic concepts of computing.
- To know the methodology of problem solving.
- To develop skills in programming using the FORTRAN language.

UNIT–I // Introduction to Fortran 90: Evolution of Fortran 90, simple FORTRAN programs

Numeric constant and variables: constants, scalar variables, declaring a variable name, implicit declaration,

Arithmetic expressions: arithmetic operators and modes expression, integer & real expression, assignment statements, defining variables, mixed mode expression, intrinsic function, Problems

UNIT–II // Input – output statements: list- directed input statement, list- directed output statement , advanced Input and Output, Flow charts and Pseudo code, Examples

Conditional statements: relational operators, the block IF construct, logical IF statements, the selection structure, IF THEN ELSE, NESTED IF THEN ELSE, Selected Case statements, Problems and Applications.

UNIT–III // Control statements: Implementing Looping in programs: block Do loop, count controlled do-loops, Nested Do-loop, control with the While do, the accumulation process and the Do loop. Problems and Applications

UNIT-IV // Defining and manipulating Arrays: Arrays variables, one & two dimensions, initializing Arrays, input and output of array, summation & subtraction of arrays, Matrix Multiplication and Processing Two-Dimensional Arrays, the terminology used for multidimensional arrays, Arrays as Arguments. Matrices and Their Applications

UNIT – V

Functions and Subprograms and Modules, Errors.

COMPUTER PROGRAMMING LAB

- 1- The students should be taught Fortran programming in classroom session followed by programming practice in the lab session.
- 2- Course instructors have to plan for programming exercises to be solved independently by students during tutorial classes and the lab.

REFERENCE BOOKS

- 1- V. Rajraman, Computer programming in FORTRAN 90 and 95, 2010
- 2- Introduction to Fortran 90 for Scientists and Engineers.
- 3- Michel Boillot, Understanding Fortran with Structured problem solving.

The course within (15 Weeks)

Units 2

Theoretical (1-hr/week), Tutorial (1 -hr/week), Practical (2-hr/week)