

VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT

S.Y. BSc

Electronics

Syllabus of IDS Subject

There shall be two courses of Applied Nature (CAN) subjects each of 50 marks (35 marks external exam. And 15 marks internal exam.). The students can opt for any two subjects from within the list (Energy, Environmental Physics, Mathematical methods, statistical methods, group of symmetry, Programming methodology, PCB Design and Technology, Electromagnetics and Radiation, Circuit Simulation) of CAN subjects at second year B Sc. The syllabi for the new subjects are given below. There has been no change in the syllabus of the existing CAN subjects.

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CAN Course : Programming Methodology

OVERVIEW OF PROBLEM SOLVING :

Introduction to computer operating system (DOS and Windows) and its commands, introduction to computer based problem solving, programme design; top-down design and step-wise refinement, loops, basic programming constructs, implementation issues, programming environment, algorithm design examples, programming techniques.

FUNDAMENTALS OF PROGRAMMING :

Overview of C, data types, constants and variables, expression and operators, assignment statements, programme control statements, control constructs, arrays, functions-fundamentals, basic I/O, console I/O, scope rules, functions (parameters passing: call by value, call by reference, calling functions with arrays), recursion.

DYNAMIC DATA STRUCTURES IN C :

Pointers (pointer arithmetic, pointer versus arrays, pointer to functions, functions with variable number of arguments), structures, unions, enumerated data type and type def statements, the C-preprocessor, C standard Lib and header files.

MISCELLANEOUS FEATURES :

File handling, advance features of C.

PROGRAMME & DOCUMENTATION :

Coding style variables names, declarations, statement construction, test case design, basic path, black box testing, principles of documentation.

Note : It is desirable that at least 10 computer systems be provided to students for study and implementation of above concepts.

List of Recommended Text Books :

- 1) R G Dromey, How to solve it by Computer, (1992) PHI, New Delhi.
- 2) A. C. Kenneth, Problem Solving and Programming, Prentice Hall International
- 3) Jones, Robin & Stewart, The Art of C Programming, Narosa Publishing House, New Delhi.
- 4) H. Schildt, C made easy (1987), McGraw Hill Book Company

- 5) B. W. Kernighan & D. M. Ritchie, The C Programming Language, PHI <New Delhi.
- 6) Cooper, Mullish, The Sprit of C (1987) Jaico publishing House, New Delhi.
- 7) Schaum Series
- 8) R. S. Pressman, Software Engineering, (1992), McGraw Hill.