
SYSTEM SOFTWARE

Paper Code **CEN-406**

Course Credits **4**

Lectures / week **3**

Tutorial / week **1**

Course Description **UNIT – I**

Introduction, fundamental of language processing and specification, language processor development tools, Data structure of language processing, scanning and parsing. Machine structure and Machine language: Approach to new machine, state table and diagram, Machine structure, memory, registers, Data, Instructions, special features. Address modifications.

UNIT- II

Elements of assembly language programming, review of instruction format, Addressing modes, Functions of Assembler, Design of Assemblers: single pass assemblers, two pass assembler, Macros processors: Macro instruction, features of macro preprocessor, implementation of Macros.

UNIT- III

Relocation and linking concept, Design of linker, self-relocating program, linking of overlays. Loader: Function of loader, various loading schemes, general loader, relocating loader, Direct linking loader, Dynamic loading, Design of absolute loader, Design of direct linking loader.

UNIT- IV

UNIX basic commands, File system, I/O Redirection and piping, processes in Unix, Communication commands.

UNIT – V

Decision, Loops- while, until and for loops, break and continue, File meta characters, Functions of shell, exporting variables, trapping signals, shell variables \$?, \$\$, \$#, \$*, \$!, system administration.

**References / Text
Books:**

- System programming and operating system By D.M. Dhamdere, TMH 2nd Revised edition.
- System programming By John J. Donovan, TMH Reprint 2005.
- Unix programming By Allen Cox , Wrox publication
- Unix Shell Programming By Yashwant Kanetker, BPB Publication

**Computer Usage /
Software Requires:**

e.g. Mac or Linux Operating System, Bash Shell, Gedit, GCC
