System Programming & Operating System
Code: EC704A
Contacts: 3L
Credits: 3

1.0 Assemble Language [3]
Introduction to assembly language, Description of functional characteristics, addressing modes,Data types and instruction structure, Registers, Indexing, Instruction set description

2.0 Macros [2]
Recursive macros,Stacks, Procedures, exception handling

3.0 Assemblers [4]
Overview of assembly process, Processing of imperative, declarative and assembler directive statements, Relocation, linking and loading concepts, One and two pass assembler, Symbol table organization, program sections, output forms.

4.0 Macro-assembler [3]
Macro definitions and parameters, Macro call expansion, Macro definition and macro call within a macro, Conditional assembly macro-processor

5.0 Loaders [3]
Review of loading, linking and relocation, Absolute, dynamic and direct loading schemes, program linking schemes and resolution of external references, Optional features in loaders and linkage editors, Overlay structures and dynamic loading

6.0 Compiler Construction [7]
Introduction to Compiler, Phases and passes, Bootstrapping, Lexical analysis, Syntax analysis, Bottom-up and top-down parsers, Translation, Code optimization, Code generation

7.0 Overview of Operating Systems [4]
Introduction to operating systems, Concepts of batch-processing, Multi-programming, Time-sharing, real-time operations, Resource manager view, Process view and Hierarchical view of an OS.

8.0 Memory Management [3]
Partitioning, Paging, Demand-paging., Page Replacement

9.0 Processor Management [6]
Multiprocessing and Interactive systems, Precedence graphs, Critical section problem, Semaphores, Producer consumer problems, Classical process coordination problems, Inter process communication, Conditional critical region, Concurrent languages, Deadlock

10.0 Protection [2]
Protection policies & mechanisms, Domain of protection, Access matrix