

SARDAR PATEL UNIVERSITY
Programme: BCA
Semester: IV
Syllabus with effect from: June 2019

Paper Code : US04SBCA23	Total Credit: 2
Title of Paper: System Software	

Lectures per week : 2
All units carry equal weightage.

Exam Duration: 2 hrs

Sr. No	Description in detail	Weightage (%)
I	Introduction to Language Processors and Compilers Classification of Software, Introduction to System Software, Overview of Addressing Modes and Instruction Formats, Concept of Execution by OS and Executable Files, Language Processing Activities, Phases of Compilation Process, Compiler vs. Interpreter, Context of Compiler	25%
II	Fundamentals of Assembly Language and Assemblers Elements of Assembly Language Programming, A Simple Assembly Language Scheme, Description of different types of Assembly Language Statements: Imperative Statements, Declaration Statements, Assembler Directives, Advantages of Assembly Language, Forward Reference, Pass and Types of Assemblers	25%
III	Editors, Macros, Linkers, and Loaders Editors: Overview of the Editing Process, Types of Editors: Line Editors, Stream Editors, Screen Editors, Word Processors, Structure Editors, Syntax Directed Editor, Design of Editors/Editor Structure Linkers: Introduction: Translated, Linked and Load Time Addresses, Relocation and Linking Concepts, Program Relocation, Self-Relocating Program Loaders: Basic functions of Loader, Types of Loaders Macros: Macro Definition and Call, Macro Expansion	25%
IV	System Software Tools Language Processor Development Tools: Introduction to Software Tools for Program Development and their description Debug Monitors: Interactive Debugging System and its usefulness, Debugging Functions and Information User Interface: Design Criteria and Examples Device Driver: Role of Device Drivers, Examples of Device Drivers	25%

Basic Text & Reference Books:-

1. Dhamdhare D. M., "Systems Programming and Operating Systems", Second Revised Edition, Tata McGraw-Hill Company Limited, 2004.
2. Leland L. Beck, "System Software - An Introduction to Systems Programming", 3rd Edition, Pearson Education Asia, 2000.
3. Dhamdhare, Introduction to System Software, McGraw Hill.
4. Aho. A.V., Sethi R. and Ulman J.D, "Compilers, Principles, Techniques and Tools", Addison-Wesley Publishing Company, 1988/Pearson.
5. Srimanta Pal, Systems Programming, Oxford University Press.
John Donovan, System Programming, TMH.
6. Leland L. Beck and D. Manjula, System Software-An Introduction to Systems Programming, Pearson.
7. Das, Compiler Design Using Flex and Yacc, PHI.
8. John J. Donovan "Systems Programming", Tata McGraw-Hill Edition, 1972
9. John R. Levine, Linkers & Loaders – Harcourt India Pvt. Ltd., Morgan Kaufmann Publishers, 2000