

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E Semester: 2 Computer Engineering

Subject Name Design of Language Processors

Sr.No	Course content
1.	Language Processors: Language Processing Activities, Fundamentals of Language Processing, and Fundamentals of Language Specification, Language Processor Development Tools
2.	Data Structures for Language Processing: Search Data Structures, Allocation Data Structures Scanning and parsing fundamentals.
3.	Assemblers: Elements of Assembly Language Programming, A simple Assembly Scheme, Pass Structure of Assembler, design of one and two pass assembler.
4.	Macros and Macro Processors: Macro Definitions and Call, Macro Expansion, Nested Macro Calls, Advanced Macro Facilities
5.	Compilers and interpreters: A simple one pass compiler, Lexical Analysis, Specification of tokens, Recognition of tokens, Finite automata, NFA, Syntax analysis, top down parsing, Bottom up parsing, LR parsers, Syntax directed Translation, L- attributed and S-attributed definitions with their implementation, Type checking, Run-Time Environment: issues and design, Intermediate code generation for declarations, Assignment statements, Boolean expressions, Case statements and Looping structures, Code Optimization, Optimization of basic blocks, loops in flow graphs, global data flow analysis, Code generation
6.	Linkers: Relocation and Linking Concepts, Design of a Linker, Self Relocating Programs, A suitable case study for linker, Loaders
7.	Compiler Design Issues

Reference Books:

1. System Programming and Operating Systems by D M Dhamdhare, TMH.
2. Compilers, Principles, Techniques and Tools by A.V. Aho, R. Sethi and J.D.Ullman, Pearson.
3. Advanced compiler Design by Muchnick
4. Systems Programming by John J. Donovan