STATE INSTITUTE OF ENGINEERING & TECHNOLOGY
Department of Computer Engineering

LESSON PLAN

Subject Name :-Compiler Design **Subject Code:- PC-CS-302A**
Year :-3rd **Semester:- 6th**

Lecture No	Unit No	Topic	COs Covered
L 1	Unit-I	Introduction to Language Processing System, Compiling Analysis of the source program	CO1
L 2		Phases of a compiler	
L 3		Compiler construction tools	
L 4		Lexical Analysis –Regular Expression	
L 5		Introduction to Finite Automata and Regular Expression	
L 6		Conversion of Regular Expression to NFA	
L 7		Role of Lexical Analyzer, Specification of Tokens	
L8	Unit-II	Syntax Analysis, Role of the Parser	CO2
L 9		Abstract Syntax Trees	
L 10		Symbol Table	
L 11		Ambiguity in Context-Free Grammars	
L 12		Types of Parsing, Top Down Parsing	
L 13		Recursive Descent Parsing, LL Parser, Backtracking	
L 14		Bottom up Parsing	
L 15		SLR Parser	
L 16		Canonical LR Parser	
L 17		LALR Parser	
L 18		Revision	
L 19		Test	
L20		Semantic Analysis: Semantic Errors, Attribute Grammar, Synthesized attributes	
L21		Static Allocation, Stack Allocation, Heap Allocation	
L22		Activation Trees	

L23	Unit-III	Symbol Table	CO3
L24		Intermediate Code Generation	
L25		Intermediate languages	
L26		Declarations	
L27		Assignment Statements	
L28		Boolean Expressions	
L29		Case Statements	
L30		DAG representation of Basic Blocks	
L31		A simple Code generator from DAG	
L32		Issues in the design of code generator	
L33		Revision	
L34	Unit-IV	Code Optimization and Run Time Environments	CO4
L35		Principal Sources of Optimization	
L36		Machine independent optimization, Machine dependent optimization	
L 37		Optimization of Basic Blocks	
L 38		Loop Optimization, Peephole Optimization	
L 39		Introduction to Global Data Flow Analysis	
L40		Storage Organization	
L 41		Static Storage Management	
L 42		Heap Storage management	
L 43		Parameter Passing, Error Recovery, Panic Mode, Statement mode, Global Correction	
L 44		Revision	
L 45		Test	

Text Book:

1. Aho, Ravi Sethi, Jeffrey D Ullman, “Compilers Principles, Techniques and Tools”, Pearson Education Asia, 2018.

References:

1. C. N. Fischer and R. J. LeBlanc, “Crafting a compiler with C”, Benjamin Cummings, 2003.
2. V Raghavan, “ Principles of Compiler Design”, Second Edition, Tata McGraw-Hill, 2018.
3. HenkAlblas and Albert Nymeyer, “Practice and Principles of Compiler Building with C”, PHI, 2001.
4. Kenneth C. Louden, “Compiler Construction: Principles and Practice”, Thompson Learning, 2003
5. Allen I. Holub “Compiler Design in C”, Prentice Hall of India, 2003.