Indraprastha College for Women
University of Delhi

Work Plan for ODD SEMESTER – 2025

Course Name:	B.Sc. (Hons.) Computer Science
Paper Title:	Compiler Design
Unique Paper Code:	
Semester:	VII
Faculty(s):	Ms. Nisha
Year:	2025-2026

Work Plan

Unit No.	Learning Objective	Lecture No.	Topics to be Covered
1st Aug - 3rd Aug	Introduction		Overview of Compilation
5th Aug- 10th Aug	Introduction		Phases of Compiler
12th Aug- 17th Aug	Lexical Analysis		Role of Lexical Analyzer
19th Aug- 24th Aug	Lexical Analysis		Specification and recognition of tokens
26th Aug- 31st Aug	Lexical Analysis		Symbol table, error reporting
2nd Sep-7th Sep	Lexical Analysis		Regular expressions and definitions
9th Sep- 14th Sep	Lexical Analysis		Lexical Analyzer and Generator-Lex
16th Sep- 21st Sep	Syntax Analysis		CFGS, left recursion
23rd Sep- 28th Sep	Syntax Analysis		Left-factoring, top-down parsing
30th Sep- 5th Oct	Syntax Analysis		Bottom-up parsing
7th Oct- 12th Oct	Syntax Analysis		Parser Generator-yacc
14th Oct- 19th Oct	Intermediate Representation		Syntax Directed definitions, Evaluation order for syntax directed definitions
21st Oct- 26th Oct	Intermediate Representation		Intermediate Languages: Syntax Tree, Three address code
28th Oct- 2nd Nov	Intermediate Representation		Types and declarations, Translation of expressions

4th Nov-9th Nov	Intermediate Representation		Loops & conditional statements, Type checking
11th Nov-16th Nov	Storage organization & Code generation		Activation records, stack allocation
18th Nov-23rd Nov	Storage organization & Code generation		Issues in code generation, Design of a simple code generations
25th Nov-27th Nov	Code Optimization		Principal source of optimization
28th Nov	Code Optimization		Peehole optimization

Unit	Contents/Syllabus
I	**Introduction:** Overview of compilation, Phases of a compiler.
II	**Unit 2 Lexical Analysis:** Role of a Lexical analyzer, Specification and recognition of tokens, Symbol table, Error reporting, Regular expressions and definitions , Lexical Analyzer Generator-Lex.

III	**Unit 3 Syntax Analysis:** CFGs, left recursion, left factoring, Top-down parsing- LL parser, Bottom-up parsing- LR parser, Parser Generator-yacc.
IV	**Unit 4 Intermediate representations:** Syntax Directed Definitions, Evaluation Orders for Syntax Directed Definitions, Intermediate Languages: Syntax Tree, Three Address Code, Types and Declarations, Translation of Expressions, loops and conditional statements, Type Checking.
V	**Unit 5 Storage organization & Code generation**: Activation records, stack allocation, Issues in Code Generation – Design of a simple Code Generator.
VI	**Unit 6 Code optimization :** Principal sources of optimization, Peephole optimization.
S. No.	**Name of Authors/Books/Publishers**
1.	Aho, A., Lam, M., Sethi, R., & Ullman, J. D. *Compilers: Principles, Techniques, and Tools*, 2nd edition, Addison Wesley, 2006.
2.	
3.	
4.	

	Paper Components		
Credits	**Lecture (L)**	**Tutorial (T)**	**Practical (P)**
4	**3**	**0**	**1**
Assessment Scheme			
S.No.	**Component**	**Marking Scheme**	**Total Marks**
1	Internal Assessment • Assignment/Quiz/Project/ Presentation • Class Test • Attendance	12 12 6	**30**

2.	Continuous Assessment (**Tutorial)** • Activity 1 • Activity 2 • Attendance		
3.	Practical • Continuous Assessment • End Term Written/Practical Exam • Viva	10 20 10	40
4.	End Semester Examination		90