Session: Odd semester, 2022 (Aug-Dec)

Semester: 3rd

Course Title: Compiler Design

Course Code: CSC3036

Class	Unit	Topics
Class 1	Unit I: Introduction	What is Compiler?, Phases of Compiler
Class 2	Unit I: Introduction	Overview of working of a compiler
Class 3	Unit III: Syntax Analysis	Grammar representation, Derivation and parse tree
Class 4	Unit III: Syntax Analysis	Ambiguity and Possible elimination
Class 5	Unit III: Syntax Analysis	Top Down Parsing
Class 6	Unit III: Syntax Analysis	Recursive Descent and Predictive top down parsing
Class 7	Unit III: Syntax Analysis	Elimination of left recursion, Adopting Translation scheme by applying left recursion
Class 8	Unit III: Syntax Analysis	Left recursion elimination technique in productions containing semantic actions
Class 9	Unit II: Lexical Analysis	Regular expression, Regular Definitions
Class 10	Unit II: Lexical Analysis	Extensions of regular expressions
Class 11	Unit II: Lexical Analysis	Recognition of tokens
Class 12	Unit II: Lexical Analysis	Structure of Lex program
Class13	Unit II: Lexical Analysis	NFA, DFA, Conversion from NFA to DFA
Class 14	Unit II: Lexical Analysis	Conversion from NFA with null transition into NFA without null transition

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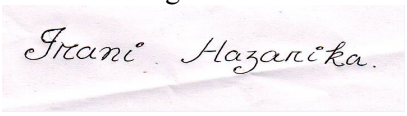

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Class	Unit	Topics
Class 15	Unit II: Lexical Analysis	Conversion from NFA with null transition into DFA
Class 16	Unit II: Lexical Analysis	Minimization of DFA
Class 17	Unit III: Syntax Analysis	Example of elimination of left recursion, left factoring, left factoring for dangling else grammar
Class 18	Unit III: Syntax Analysis	FIRST and FOLLOW of a grammar G
Class 19	Unit III: Syntax Analysis	LL(1) grammar, Construction of predictive parsing table for LL(1) grammar
Class 20	Unit III: Syntax Analysis	Parsing table for Dangling-else problem (non-LL(1) grammar)
Class 21	Unit III: Syntax Analysis	Moves of a predictive parser on an input
Class 22	Unit III: Syntax Analysis	Error recovery in predictive parser
Class 23	Unit III: Syntax Analysis	Bottom up parsing, Reductions, Handle Pruning
Class 24	Unit III: Syntax Analysis	Shift Reduce Parsing, Conflicts during Shift Reduce Parsing
Class 25	Unit III: Syntax Analysis	LR(0) Automaton
Class 26	Unit III: Syntax Analysis	Construction of LR(0) parsing table
Class 27	Unit III: Syntax Analysis	Construction of SLR Parsing table
Class 28	Unit III: Syntax Analysis	Canonical-LR

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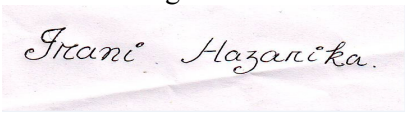

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Class	Unit	Topics
Class 29	Unit III: Syntax Analysis	LALR parser
Class 30	Unit III: Syntax Analysis	Dangling -Else Ambiguity
Class 31	Unit III: Syntax Analysis	Yacc
Class 32	Unit III: Syntax Analysis	Yacc
Class 33	Unit IV: Code generation	Symbol table contents
Class 34	Unit IV: Code generation	Type checking
Class 35	Unit IV: Code generation	Syntax directed translation
Class 36	Unit IV: Code generation	Forms of intermediate codes, Abstract Syntax Trees
Class 37	Unit IV: Code generation	Directed Acyclic Graph
Class 38	Unit IV: Code generation	Three address code
Class 39	Unit IV: Code generation	Intermediate code generation for different language constructs like arrays
Class 40	Unit IV: Code generation	Intermediate code generation for different language constructs like boolean expressions
Class 41	Unit IV: Code generation	Intermediate code generation for different language constructs like if, ifelse, while, case or switch, function call
Class 42	Unit V: Code Optimisation	Basic blocks

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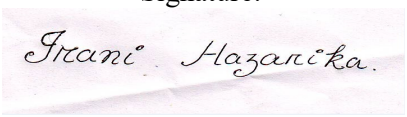

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Class	Unit	Topics
Class 43	Unit V: Code Optimisation	Common sub-expression elimination
Class 44	Unit V: Code Optimisation	Variable propagation
Class 45	Unit V: Code Optimisation	Code motion
Class 46	Unit V: Code Optimisation	Strength reduction, Elimination of dead code
Class 47	Unit V: Code Optimisation	Loop optimization

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