

LESSON PLAN

Period	Date (tentative)	Topic	Unit No.	Teaching Methodology	Remarks	Corrective Action Upon Review
1	17/12	Unit 1 Introduction	1	CA		
2	17/12	Review of compiler structure	1	CA		
3	17/12	Advanced issues in Lexical Analysis	1	PPT, JWS		
4	18/12	Importance of code optimization	1	PPT		
5	18/12	Structure of optimizing compilers	1	PPT		
6	18/12	Placement of optimization in top-down optimizing compiler	1	PPT	BDW	
7						
8	20/12	Unit 2: Compiler Internal Issues - Data and Control Flow	2	CA		
9	21/12	Intermediate Representation (IR) - Basics in designing intermediate languages	2	CA		
10	21/12	High level intermediate languages (HLIR)	2	CA		
11	21/12	Medium level intermediate languages (MLIR)	2	CA		
12	21/12	Low level intermediate languages (LLIR)	2	CA		
13	21/12	Mathematical intermediate languages (MIR)	2	PPT		
14	21/12	Abstract intermediate languages (AIR)	2	PPT		
15	21/12	Representing A.I.R. and L.I.R. in C.A.N.	2	PPT		
16	21/12	IR in context of data structures	2	PPT		
17	21/12	Native IR: machine instructions	2	PPT		
18	21/12	Other intermediate language forms	2	PPT		
19	21/12	Runtime support: data representations and instructions	2	PPT		

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Period	Date (Semester)	Topic	Unit No.	Teaching Methodology	Remarks	Corrective Action / Learner Response
5	8/11	Parameter passing discipline	2	PPT		
5	8/11	Procedure technique: arguments, call and return	2	PPT		
5	8/11	Code sharing and recursion: recursive code	2	PPT		
5	8/11	Dynamic and polymorphic language support	2	PPT	BNV	
1	10/11	Unit 3: Control flow analysis: data flow analysis	3	PPT		
1	10/11	Control flow analysis: abstract & control flow analysis	3	PPT		
1	10/11	Control flow analysis: path block, basic block, control	3	CA		
5	10/11	Indirect flow analysis: control flow graph, search, dominance	3	CA		
5	10/11	Block, strongly connected components, reducibility	3	PPT		
4	10/11	Interval analysis: control flow, abstract analysis	3	PPT		
4	10/11	Interval analysis: tracking definitions, flow concepts	3	PPT		
1	10/11	Intervals, flow functions and fixed points	3	PPT		
1	10/11	Summary of data flow analysis: structural analysis	3	PPT		
5	10/11	Interval analysis, other approaches, bit-chains, all chains & sets	3	PPT		
5	10/11	Static single assignment SSA: basic blocks and control flow	3	PPT		
5	10/11	Structural and control	3	PPT	BNV	

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Period	Date / Lecture	Topic	Unit No.	Teaching Methodology	Remarks	Corrective Action / Upd. Review
1	25/11	Unit-4: dependency analysis and optimization	4	CA		
1	25/11	part: dependency and dependency graphs	4	CA		
4	26/11	basic block dependencies	4	PPT		
4	26/11	basic block dependencies in loops	4	PPT		
4	26/11	dependency coloring	4	PPT		
1	28/11	Introduction to optimization flow analysis and may reach information	4	PPT		
1	28/11	dependencies of individual statements, basic blocks & statements	4	PPT		
4	29/11	part 2: basic optimization constant expression analysis	4	PPT		
4	30/11	control information of expressions, algebraic simplification and fold-constant	4	PPT		
4	30/11	Value numbering, copy propagation	4	PPT		
4	30/11	choice conditional constant propagation	4	PPT	BDV	
1	1/12	Unit-5: regular allocation & control flow and loop level optimizations	5	CA		
1	2/12	part: regular allocation assignment, local methods, graph coloring	5	CA		
4	3/12	Priority based graph coloring, edge elimination, regular allocation	5	PPT		
1	4/12	part 2: control flow code elimination	5	PPT		
1	6/12	Transforming & simplifying code & loop simplification	5	PPT		
1	9/12	Loop insertion, unrolling (branch) optimization	5	PPT		
1	9/12	dead code elimination branch prediction	5	PPT	BDV	

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Period	Date (Semester)	Topic	Unit No.	Teaching Methodology	Remarks	Corrective Action Upon Review
5	14/12	Unit 5: Procedural/ Interprocedural analysis, Code optimization	5	CA		
6	15/12	Local code optimization, Global code optimization	5	CR		
1	16/12	Modular integration, Online Experiments	5	CR		
5	17/12	Local code optimization, Chunk stripping	5	CA		
1	18/12	Interprocedural CFA, IR code graph	5	PPT		
6	19/12	Interprocedural data flow analysis	5	PPT	BCW	
1	20/12	Interprocedural control flow propagation	5	PPT		
5	21/12	Interprocedural data analysis	5	PPT		
1	22/12	Interprocedural optimization	5	PPT		
5	23/12	Interprocedural register allocation	5	PPT		
1	24/12	Function-level optimization	5	PPT		
5	25/12	Global level optimization	5	PPT		
2	26/12	Interprocedural optimization	5	PPT		
4	27/12	Interprocedural optimization	5	PPT	BCW	