

# CS126: Introduction to Compilers

## Syllabus

Fall 2003

Steven P. Reiss

Date	Topic	Reading	Program
9/3	Course mechanics; Overview of a compiler		
9/5	Overview of DECAF and its compiler	1-15, Syntax	
9/8	Lexical Analysis I: Hand coding, FSA representation	16-24	
9/10	Lexical Analysis II: JavaCC lexical specifications	24-37	
9/12	Lexical Analysis III: LEX specifications and theory		SAMPLE
9/15	Syntax I: Top-down parsing	38-55	
9/17	Syntax II: JavaCC syntactic specifications	JavaCC	
9/19	Syntax III: Bottom-up parsing	55-76	LEX
9/22	Syntax IV: SLR Parser Construction	76-85	
9/24	Syntax V: Semantics and error handling	76-85	
9/26	Abstract syntax trees	86-102	SYN0
9/29	Translation I: SDT, parser actions	Semantics	
10/1	Translation II: Attribute grammars		
10/3	Semantics I: Symbol tables	102-111	SYN1
10/6	Semantics II: Symbol processing in semantics	111-115	
10/8	Semantics III: Type and expression processing	283-297	
10/10	Semantics IV: Target Environment	116-135	SYN2
10/13	NO CLASS		
10/15	IRs for compilers	350-354	
10/17	DECAF intermediate representation	162-175	SEM1
10/20	MIDTERM		
10/22	Code Generation I: Allocation & control flow	136-161	
10/24	Code Generation II: Expressions		SEM2
10/27	Assembler languages, x86 assembler	x86 overview	
10/29	Register Allocation I: Overview	219-248	
10/31	Register Allocation II: Global allocation		ICODE1
11/3	Register Allocation III: Local allocation		
11/5	Register Allocation IV: Putting it together		
11/7	Assembler Generation I: Overview	176-202	ICODE2
11/10	Assembler Generation II: Complex instructions		
11/12	Optimization I: Overview		
11/14	Optimization II: Graphs and domination	203-218	REGGEN
11/17	Optimization III: Flow computations	350-375	

<b>Date</b>	<b>Topic</b>	<b>Reading</b>	<b>Program</b>
11/19	Optimization IV: Flow Computations continued		
11/21	Optimization V: Local optimization		ASMGGEN
11/24	Optimization VI: Peephole optimization		
11/26	THANKSGIVING		
11/28	THANKSGIVING		
12/1	Optimization VII: SSA	399-439	
12/3	Optimization VIII: SSA continued		
12/5	Optimization IX: Dominator optimizations	376-398	DECAF
12/8	Optimization X: Object-oriented optimizations	335-349	
12/10	Modern code generation	440-483	
12/20	FINAL (9am slot)		