

Syllabus — 編譯系統(Spring, 2005)

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3. Web page for this course: <http://www.iis.sinica.edu.tw/~tshsu/compiler2005>

4. Class materials:

- Textbook: “*Compilers Principles, Techniques, and Tools*”, by Aho, Sethi, and Ullman, 1986 (reprinted with corrections March 1988), Addison Wesley. — The “dragon” book.
- Reference book: “*Crafting a Compiler with C*”, by Fischer and LeBlanc, 1991, Benjamin/Cummings.
- Class notes

		Feb			24		
		Mar	3	10	17	24	31
5. 上課時間及地點: 每週四2:20PM – 5:10PM, 資102.		Apr	7	14	21 (mid-term)	28	
		May	5	12	19	26	
		Jun	2	9	16		

Office hours: by appointments; before or after the classes.

6. Prerequisites: assembly language, high-level programming language (C-like language), data structures, and automata.

7. Topics: (Reading ch#2 and ch#12 by yourself is expected.)

- Introduction (ch#1)
- Lexical analysis (Scanner): (ch#3.1, 3.3, 3.4, 3.6, 3.7, 3.5) regular expressions, finite state machine, LEX
- Syntax analysis (Parser): (ch#4.2–4.5, 4.7–4.9 excluding error handling) context-free grammar, top-down parsing, LL(1), bottom-up parsing, SLR, LR(0), LR(1), LALR, YACC
- Syntax-directed translation (ch#5)
- Symbol tables (ch#7.6, 6.5, 6.3)
- Run time storage organization (ch#7.1–7.5, 7.7–7.9)
- Code generation (ch#8) declarations, expressions, advanced data structure, control flow, procedure/function
- Optimization (ch#9):
 - How to write a compiler (ch#11)
 - Advanced topics¹: error handling (ch#4), optimization (ch#10), ...

¹if time allowed.

8. Evaluation:

- (a) homeworks (25%): all due dates for homeworks are **FIRM**, one homework per 2 to 3 lectures.
作業遲交每一天扣10%, 抄襲(被抄襲)均不計分.
- (b) mid-term exam (35%);
- (c) final project (40%): check points, documents, presentation, and testing;
- (d) class participation and performance.