Frank Richter:
Computational Linguistics II: Parsing

Seminar:	Monday 11ct–12.45 at the SfS, Hörsaal 0.02, and Wednesday 11ct–12.45 at the SfS, Hörsaal 0.02
Seminar starts:	Monday, October 23rd, 2006
Credits:	6 CP (B.A. in ISCL)
Instructors:	Frank Richter, Jan-Philipp Söhn
Office Hours:	Tuesdays 10.00 – 11.00

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- Webpage:

  http://www.sfs.uni-tuebingen.de/∼fr/teaching/ws06-07/cl2/

- Midterm: Wednesday, December 13th, 2006

- Final: Monday, February 12th, 2007

Class Participation

Examination regulations of the Neuphilologische Fakultt require that students attend courses regularly. If students do not attend a course meeting on more than two occasions in one semester without proper excuse (e.g. doctor's note), the course instructor has to give them a failing grade.
Please do not put me in a position to have to fail you for this reason. If you cannot come to class, please email me ahead of time, if at all possible.

You are expected to come on time. Being late without good reasons will count as not having attended a course meeting.

If you own a mobile phone and carry it with you, please turn it off before class.

Reading Assignments

Please read the assigned reading in advance of the class meeting for which it was assigned. I will presuppose that you have read the material when we discuss it in class.

Grading Policy

Your grade will be based on two components: Midterm exam (50 %) and final exam (50 %). In addition you are required to participate in an oral presentation of approximately one hour in class.

Course Objectives

The main objective of this course is to give a broad overview of formal language theory and of parsing strategies for classes of formal languages which are important in natural language processing. It is also intended to give you an opportunity to practice oral presentations.

Time Table

23.10.:	Organizational matters, General Introduction
25.10.:	Grammars, Chomsky hierarchy Ia (reg. expressions, DFAs)
30.10.:	Grammars, Chomsky hierarchy Ib (NDFAs)
06.11.:	Grammars, Chomsky hierarchy IIa (PDAs)
08.11.:	Grammars, Chomsky hierarchy IIb1 (CFGs)
13.11.:	Grammars, Chomsky hierarchy IIb2 (CFGs, normal forms)
15.11.:	Grammars, Chomsky hierarchy III (CSGs, Turing machines)
20.11.:	ID/LP grammars, dependency grammars
22.11.:	HPSG, LFG, PATR II, DCGs
27.11.:	Introduction to parsing, overview
29.11.:	Unger parser (#)
04.12.:	CYK I (#)
06.12.:	CYK II
11.12.:	Preparatory session for midterm exam
13.12.:	Midterm exam
18.12.:	Top-down parsing I (#)
20.12.:	Top-down parsing II
08.01:	Bottom-up parsing
10.01:	Left corner chart parser I (#)
15.01:	Left corner chart parser II
17.01:	Earley parser I (#)
22.01:	Earley parser II
24.01:	Deterministic LR parsing I (#)
29.01:	Deterministic LR parsing II
31.01:	Tomita parser I (#)
05.02:	Tomita parser II
07.02:	Preparation of the final exam, questions
12.02:	Final exam
14.02:	Discussion of the final exam

Sessions marked with an '#' may include oral presentations.

Course Readings

Grune, Dick and Jacobs, Ceriel 1990. *Parsing Techniques. A Practical Guide*. New York: Ellis Horwood Limited.

Hopcroft, John E. and Ullman, Jeffrey D. 1979. *Introduction to Automata Theory, Languages, and Computation*. Addison-Wesley Publishing Company.

Lewis, Harry R. and Papadimitriou, Christos H. 1981. *Elements of the Theory of Computation*. Englewood Cliffs, New Jersey: Prentice-Hall Inc.

Naumann, Sven and Langer, Hagen 1994. *Parsing. Eine Einführung in die maschinelle Analyse natürlicher Sprache*. B.G. Teubner Stuttgart.