COURSE PRESENTATION FORM

COURSE NAME	Formal Languages
COURSE CODE	70100
LECTURER	Diego Calvanese
TEACHING ASSISTANT	Kurt Ranalter
TEACHING LANGUAGE	English
CREDIT POINTS	4
LECTURE HOURS	24
EXERCISE HOURS	12
OFFICE HOURS LECTURER	Friday, 15:00 – 17:00 Palais Trapp, Via della Mostra 4, office 2.08
OFFICE HOURS TEACHING ASSISTANT	Time to be determined Via Sernesi 1, Block C, office 5.16
PREREQUISITES	There are no prerequisites in terms of courses to attend. Students should be familiar with notions of mathematics and set theory, and with basic proof techniques, as taught in the mathematics courses of the first year.
OBJECTIVES	The objective of the Formal Languages course is to introduce and study the basic abstract models of computation, namely finite state machines, push down machines, and formal grammars, and their relationships to formal languages encoding problems. It is also discussed how the abstract computing devices are used to process languages, and hence to solve problems that are of practical relevance. A second objective is to get the student acquainted to a formal, rigorous approach in computer science.
SYLLABUS	Theory of regular languages, finite automata, regular expressions, regular grammars, theory of context-free languages, context-free grammars, pushdown automata, formal grammars.
TEACHING FORMAT	Frontal lectures; exercises in class.
ASSESSMENT	Written or oral final examination (100% of mark).
READING LIST	Textbook: *Introduction to Automata Theory, Languages, and Computation (3rd edition)*. J.E. Hopcroft, R. Motwani, J.D. Ullman. Addison Wesley, 2007. Further reading material for students interested in alternative viewpoints on

the course material:

Elements of the Theory of Computation (2nd edition). H.R Lewis, C.H. Papadimitriou. Prentice Hall. 1998.

Introduction to the Theory of Computation. M. Sipser. PWS Publishing Company. 1997.

SOFTWARE USED None

LEARNING OUTCOME Upon successful completion of the course, students will understand the general concepts of formal languages and grammars (specifically regular and context-free languages), and techniques used to process them. This background is a prerequisite to other courses, such as Compilers.

COURSE PAGE http://www.inf.unibz.it/~calvanese/teaching/fl/