



SEMINAR ANNOUNCEMENT  
**FUNCTION ALGEBRAS AND CLONES**  
368.158

ERHARD AICHINGER

PREREQUISITES:

Basic knowledge in abstract algebra, e.g. acquired in one of the following courses: Linear algebra, Introduction to algebra and discrete mathematics, Algebra for Informatics.

CONTENT:

Clone theory is a part of discrete mathematics that studies how new functions can be obtained from composing certain given functions. Historically, the field evolved from Emil Post's classification of possible logical connectives on the set  $\{\text{true}, \text{false}\}$  in 1941. This course will first focus on the basics of clone theory and on the finite description of clones, and then give some of the applications of clone theoretic methods in equational logic and computational complexity.

METHOD:

Students will be asked to read and present certain parts of papers.

START:

Tuesday, October 6, 10:15-11:45 in S2 054.

COURSE MATERIAL:

- (1) Pöschel, R. and Kalužnin, L. A. *Funktionen- und Relationenalgebren*, volume 15 of *Mathematische Monographien*. VEB Deutscher Verlag der Wissenschaften, Berlin, 1979.
- (2) Aichinger, E. *Basics of clone theory*, unpublished lecture notes, available at <http://www.algebra.uni-linz.ac.at/Students/UniversalAlgebra/s11/clonebasics5.pdf>.
- (3) Aichinger, E. *Constantive Mal'cev clones on finite sets are finitely related*. Proc. Amer. Math. Soc., 138(10):3501–3507, 2010.
- (4) Aichinger, E., Mayr, P., and McKenzie, R. *On the number of finite algebraic structures*. J. Eur. Math. Soc. (JEMS), 16(8):1673–1686, 2014.