Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG

CHAMPP
CENTER IN HAMBURG
FOR ASTRO, MATHEMATICAL
AND PARTICLE PHYSICS

LECTURE COURSE IN THE CHAMPP GRADUATE SCHOOL

Winter Term 2018/2019

Introduction to Higher Category Theory

T. Dyckerhoff

Course Description:

This course will be an introduction to higher category theory focussing on the approach via infinity-categories.

- Simplicial sets and simplicial homotopy theory
- The basic language of infinity-categories
- Simplicial categories and quasi-categories
- Stable infinity-categories
- Goodwillie calculus

Prerequisites:

Familiarity with basic concepts from category theory and algebraic topology will be useful, but aspects relevant for this course will be reviewed.

Literature:

The main reference will be Lurie's book "Higher topos theory". Moreover

- Brandenburg: Einführung in die Kategorientheorie
- Mac Lane: Categories for the working mathematician
- Weibel: An introduction to homological algebra
- Goerss-Jardine: Simplicial Homotopy Theory
- Lurie: Higher Algebra
- Joyal-Tierney: Quasi-categories vs Segal spaces

Date and Place:	Tue, 12:15 – 13:45, Hörsaal H1, Geomatikum Fri, 14:15 – 15:45, Hörsaal H5, Geomatikum
Problem Classes:	Fri, 12:15 – 13:45, SR 415, Geomatikum Starting on: 26 October 2018
Starting on:	16 October 2018