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Master thesis – *Masterarbeit*
for
Vorname Nachname
Student No.: XXXXXXXX

Thesis received: XX.XX.20XX	Workload: 750 h (25 CP)
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First examiner: Prof. Dr.-Ing. U. Nackenhorst	Supervisor: Vorname Nachname,...
Second examiner: Prof. Dr.-Ing. Vorname Nachname	

Modelling the effect of creep and shrinkage on the behaviour of concrete using the finite element method with ABAQUS
Modellierung des Einflusses von Kriechen und Schwinden auf das Verhalten von Beton mit der Finite-Elemente-Methode mit ABAQUS

Consideration of the time-dependent deformations due to creep and shrinkage is necessary to ensure safety and serviceability of concrete structures. In the scope of this thesis, available models for prediction of creep and shrinkage deformations in concrete will be reviewed and the effect of shrinkage and creep on the mechanical response and the behaviour of concrete will be simulated using the advanced finite element software (Abaqus). Results of the FE simulation will be verified with the analytical models and the experimental results available in the literature.

Required knowledge includes an interest in the finite element method and the basics of programming. This thesis will be supervised in English.

Literature:

[1] BAZANT, Z. P. (1988): Mathematical modeling of creep and shrinkage of concrete,Wiley.

[2] GHALI, A., FAVRE, R., & ELBADRY, M (2018): Concrete structures: Stresses and deformations: Analysis and design for serviceability. CRC Press.

[3] ABAQUS, I. (2014): Abaqus documentation.