

**Notice of University Oral Examination
Master of Science in Engineering**

**LONG-TERM DEFLECTION OF ONE-
WAY CONCRETE SLAB STRIPS
CONTAINING STEEL AND GFRP
REINFORCEMENT**

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TIME: 2:00 pm
LOCATION: H 224 – TME

A pdf of the thesis is available in the CE Office for the period Aug 22-29 2011

Examining Committee

Chairperson:	Dr. Eric Hildebrand
Supervisors:	Dr. Peter H. Bischoff
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ABSTRACT: Fibre reinforced polymers (FRP's) are considered an alternative to steel reinforcement in concrete structures because of their noncorrosive nature and nonmagnetic properties. FRP materials are, however, brittle and have a lower stiffness compared to steel. The latter property can lead to deflection and crack control problems in FRP-reinforced concrete flexural members under service loads. A considerable amount of information is available for short-term deflection of FRP-reinforced concrete members, but data on long-term deflections are scarce. This study presents the results of monotonic (short-term) and sustained (long-term) loading tests of 12 concrete shallow beams reinforced with either steel or glass FRP (GFRP) bars. The short-term load-deflection responses of the members are evaluated using existing deflection prediction models (Branson's and Bischoff's), and the long-term deflection results (monitored over a period of one year) are used to evaluate the existing ACI code and CSA standard approaches for estimating long-term deflection.