UNIVERSITY OF THESSALY
SCHOOL OF ENGINEERING – DEPARTMENT OF CIVIL ENGINEERING

SERIES OF SCIENTIFIC LECTURES
ACADEMIC YEAR 2025-2026

Novel Approaches in Serviceability Analysis of Reinforced Concrete Members

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Wednesday **6/5/2026**, Time: **11:00**
Hybrid Seminar: **Room A**, MS Teams
Live Streaming: DIAVLOS, YouTube

Abstract: This presentation reviews recent advances in the analysis of deformation, crack width, deflection, and bond behavior in reinforced concrete structures. It begins with a brief overview of existing methods and constitutive models for deformation and crack width prediction, then introduces an inverse approach for deriving average stress–average strain relationships for cracked tensile concrete from reinforced concrete beam tests. The presentation also discusses a strain compliance crack width model for RC beams, followed by an extended comparison of a pure shear crack width model with experimental results and alternative formulations. In addition, it revisits the assumptions commonly used in deflection analysis and proposes a new model for RC beams. Finally, experimental and numerical findings on bond behavior in RC ties are presented, highlighting their relevance to serviceability and structural response.