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New book examines life-cycle bridge performance and cost management

"Bridge Safety, Maintenance and Management in a Life-Cycle Context" is the second book collaboration by Lehigh University structural engineering professor Dan M. Frangopol and alum Sunyong Kim, a professor at Wonkwang University

Book Announcement
LEHIGH UNIVERSITY



Dan M. Frangopol, the inaugural Fazlur R. Khan Endowed Chair of Structural Engineering and Architecture at Lehigh University, has co-authored a [new book](#) on life-cycle engineering.

Bridge Safety, Maintenance and Management in a Life-Cycle Context (CRC Press; available February 17, 2022) is an authoritative resource for "students, researchers, practitioners, infrastructure owners and managers, and transportation officials to build up their knowledge of life-cycle bridge performance and cost management at both project level and network level under various deteriorating mechanisms, hazards, and climate change effects."

Frangopol, who is widely recognized as a pioneer in the field of life-cycle engineering, wrote the book with Sunyong Kim, an associate professor and chair of the Department of Civil and Environmental Engineering at Wonkwang University in South Korea. Kim received a PhD in Structural Engineering from Lehigh in 2011, with Frangopol as his advisor. The two researchers previously collaborated on *Life-Cycle of Structures Under Uncertainty*, which was published in 2019.

The new book discusses "bridge life-cycle performance and cost analysis, prediction, optimization, and decision making under uncertainty" while focusing on topics including "bridge safety and service life prediction; bridge inspection and structural health monitoring; bridge maintenance; life-cycle bridge and bridge network management; optimum life-cycle bridge management planning; resilience and sustainability of bridges and bridge networks under hazards; and bridge management considering climate change."

Frangopol's main research interests are in the development and application of probabilistic and optimization concepts and methods to civil and marine structures under various types of hazards.

He is the Founding President of both the International Association for Bridge Maintenance and Safety (IABMAS) and the International Association for Life-Cycle Civil Engineering (IALCCE).

He is the Founder and Editor-in-Chief of *Structure and Infrastructure Engineering*, an international peer-reviewed journal launched in 2005.

His research and professional service have garnered numerous awards from ASCE, IABSE, IASSAR, ISHMII and other professional organizations.

Frangopol has authored/coauthored 4 books, 64 book chapters, over 440 articles in peer-reviewed journals, including 11 award-winning papers, and more than 600 papers in conference proceedings.

He holds 4 honorary doctorates and 14 honorary professorships.

He is a member of the National Academy of Construction of the United States, a foreign member of the Academy of Europe (London), a foreign associate of the Engineering Academy of Japan, a foreign member of the Royal Academy of Belgium, an honorary member of the Romanian Academy, an honorary member of the Romanian Academy of Technical Sciences, and a distinguished member of ASCE.

Read more about Frangopol's research and achievements [here](#).

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Media Contact

Katie Kackenmeister
Lehigh University
kbk318@lehigh.edu

More on this News Release

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KEYWORDS

STRUCTURAL ENGINEERING

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PROJECT MANAGEMENT

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