



LUIAS Distinguished Lecture

Workshop on Optimisation Models for Planning and Scheduling

Speaker

Professor Ignacio E. GROSSMANN

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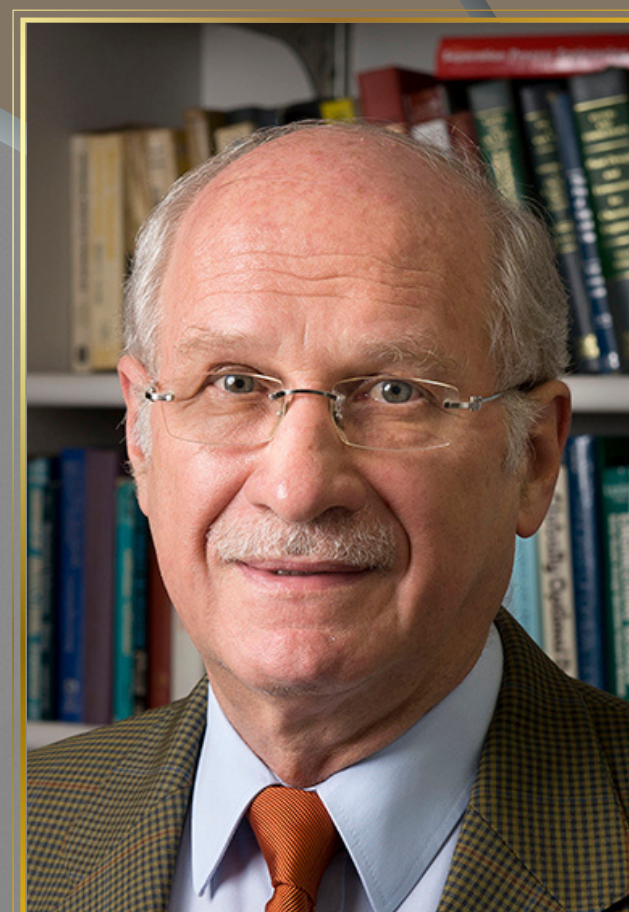
Scan to Register



Date: 27 May 2026 Time: 2:00PM - 5:15PM

Venue: LYH201/2, 2/F, Lau Lee Yuen Haan
Amenities Building

Mode: Hybrid (Face-to-face or Zoom)



Abstract

In this 3-hour workshop, we first provide a brief review of problems arising in the scheduling of batch processes and in the planning of networks and supply chains. As a follow-up to the workshop “Modelling of discrete optimisation problems with mixed-integer and disjunctive programming techniques,” that took place in December 2025, we describe mixed-integer optimisation models for single stage and multistage batch processes with parallel units and due dates, and multipurpose plants for which the powerful State-Task-Network model is introduced. We next consider mixed-integer optimisation models for the design and operation of continuous processing supply chains. We also discuss the extension to digital supply chains where both business transactions and material flows are integrated into an integrated optimisation model. We consider next decomposition techniques for multisite production planning and simultaneous optimisation of supply chain planning and inventory policies. Finally, we review constraint programming techniques that rely on techniques from artificial intelligence, computer science, and operations research to optimise integrated planning and scheduling problems. We illustrate the integration of mixed-integer optimisation and constraint programming in batch scheduling problems leading to reductions of order magnitude reductions in computational times.

Biography

Prof Ignacio E. Grossmann is the Rudolph R. and Florence Dean University Professor in the Department of Chemical Engineering, and former department head at Carnegie Mellon University. He obtained his B.S. degree at the Universidad Iberoamericana, Mexico City, in 1974, and his M.S. and Ph.D. at Imperial College in 1975 and 1977, respectively. He is a member and former director of the Center for Advanced Process Decision-making, an industrial consortium that involves 20 petroleum, chemical, engineering, and software companies. He is a member of the National Academy of Engineering, and Fellow of AIChE and INFORMS. He has received the INFORMS Computing Society Prize and the following AIChE awards: Computing in Chemical Engineering, William H. Walker for Excellence in Publications, Warren Lewis for Excellence in Education, Research Excellence in Sustainable Engineering, Founders Award for Outstanding Contributions to the Field of Chemical Engineering. In 2015 he was the first recipient of the Sargent Medal by the IChemE. He has honorary doctorates from Abo Akademi in Finland, University of Maribor in Slovenia, Technical University of Dortmund in Germany, University of Cantabria in Spain, Russian Kazan National Research Technological University, Universidad Nacional del Litoral, Argentina, Universidad de Alicante in Spain, RWTH Aachen, Germany, and Universidad Nacional del Sur, Argentina. He is a 2019 top cited scientist in Computer Science and Electronics: 53 Worldwide, 38 National. He has authored more than 700 papers, the recent textbook Advanced Optimisation for Process Systems Engineering, and the textbook Systematic Methods of Chemical Process Design, which he co-authored with Larry Biegler and Art Westerberg. He has also organised the virtual library on process systems engineering. Grossmann has graduated 68 Ph.D. and 37 M.S. students. His main research interests are in the areas of discrete/continuous optimisation, optimal synthesis and planning of chemical processes and energy systems, supply chain optimisation, and optimisation under uncertainty.

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