

CARLETON UNIVERSITY

Department of Mechanical and Aerospace Engineering

MASTER'S THESIS EXAMINATION

CANDIDATE: *Ayman Al-Sukhon*
Bachelor of Engineering, Ryerson University, 2018

DATE: *Wednesday August 19, 2020, 13:00 Video Conference*

THESIS TITLE: *Multiscale Design Optimization of Hopper Cars Employing Functionally Graded Honeycomb Sandwich Composites*

EXAMINATION BOARD:

Internal Examiner	Hamzeh Hajiloo, Civil & Environmental Engineering	(Video Conference)
Member of Department	Fidel Khouli, Mechanical & Aerospace Engineering	(Video Conference)
Member of Joint Institute	Hamza Abo El Ella, In Place of University of Ottawa - National Research Council	(Video Conference)
Thesis Supervisor	Mostafa El Sayed, Mechanical & Aerospace Engineering	(Video Conference)
Chair of Defence	Jie Liu, Mechanical & Aerospace Engineering	(Video Conference)
Chair/Director of Department or Designate	Ronald Miller	(Ex-officio)
Dean of Faculty	Larry Kostiuk	(Ex-officio)
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Ronald Miller, Chair/Director of Department or Designate
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