



Mathematics & Mathematics Education Seminar



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Technology, New Zealand

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Venue: MME Journal
Room (NIE 7-03-16)



An Institute of



An Innovative Way of Teaching and Assessing Critical Thinking in Mathematics

Seminar Abstract:

Fake news, conspiracy theories, information wars and deep fakes are getting more common in our society. Therefore, abilities to recognise mistakes and think critically are very important nowadays. Including so-called provocative questions in teaching and assessment in mathematics can enhance students' critical thinking skills. Such questions look like typical routine questions but in fact that have a catch – they are deliberately designed to mislead the solver. The intention is to prepare students for real life better by transferring their critical thinking skills outside the classroom. Results of several studies on attitudes of school mathematics teachers' and university mathematics lecturers towards using provocative mathematics questions in teaching and assessment are presented in the talk. Practical recommendations for teaching practice and professional development with many examples are also discussed.

Biography:

Dr Sergiy Klymchuk is an Associate Professor of mathematics and Founding Director of the STEM Tertiary Education Centre at the Auckland University of Technology, New Zealand. He has 43 years' experience in teaching university mathematics in different countries. His PhD and previous research were in differential equations and recent research interests are in mathematics education. He authored or co-authored more than 250 publications including the Counterexamples in Calculus book that received an Outstanding Academic Title Award from the Choice magazine of the American Library Association in 2010; Paradoxes and Sophisms in Calculus book that made the cover of the 2014 Publications Catalogue of the Mathematical Association of America; and the internationally acclaimed book on popular mathematics Money Puzzles: On Critical Thinking and Financial Literacy that has been published in 9 countries. He is a Fellow of the Institute of Mathematics and its Applications (IMA) based in the UK, a member of the Royal Society of New Zealand (RSNZ) and several international organisations on mathematics education. He is originally from Ukraine and has been living in New Zealand since 1996.