E&CE 770
Microwave Filters for Communication Systems

Term: **Summer 2018**
Instructor: **R. R. Mansour**
Time Table: [redacted]
Lecture Room [redacted]

Lectures will start the on Wednesday May 2nd , 2018

COURSE DESCRIPTION

Filters represent a critical and substantive portion of any communication system. Over the past years, significant research and development efforts have focused on improving performance, developing advanced design methodologies and introducing new filter concepts. The course is aimed at senior undergraduates and graduate students with some background in RF engineering. The materials of the course are well balanced between theory and practical implementations. The course includes the following:

1) System considerations for filter design
2) Conventional synthesis techniques for filter circuits
3) Coupling matrix synthesis techniques for advanced filter networks
4) Filter configurations used in today's communication systems
5) Design and physical realization of coupled resonator filters
6) Advanced EM-based design techniques for RF circuits including filters
7) Computer-aided diagnosis and tuning of RF filters
8) Diplexer and Multiplexer theory and design
9) High power considerations in RF filter networks

Text Book:

[1] R. C. Cameron, C. M. Kudsia and R. R. Mansour, "Microwave Filters for Communication Systems - Fundamentals, Design and Applications," Wiley, 2007.

If you have any questions please call Professor Mansour at (ext. 35780) or send an e-mail to: (rrmansour@uwaterloo.ca).