Mechanical Engineering Specializations:

Students typically select their 4A courses from the courses offered in the ME specializations below. Students may select any combination of courses that meets their career objectives; however, at least 7 of the required 9 fourth-year technical electives must be ME courses. Note that there are additional rules about CSEs and additional rules for students enrolled in the Biomechanics Option. Please refer to the ‘Mechanical Engineering Fourth Year Course Selection’ sheet available in the Undergrad Office. This is also available on the web at https://uwaterloo.ca/mechanical-mechatronics-engineering/sites/ca.mechanical-mechatronics-engineering/files/uploads/files/4th%20year%20course%20selection%20Jan%202013.pdf

Please note that MSCI 331, MSCI 431, MSCI 432, MSCI 444, MSCI 452, MSCI 423 and MSCI 551 count as 4th year technical electives (non-ME technical electives). Contact Tanya Yoworski if you need more information.

1. Fluid Mechanics
   ME 566 Computational Fluid Dynamics for Fluids Engineering Design   C. Devaud
   ME 595 Special Topics Course Sect 001 “Microfluidics’   C. Ren

2. Thermal Engineering
   ME 456 Heat Transfer 2   K. Duan
   ME 459 Energy Conversion   G. Schneider
   ME 599 Special Topics Course Sect 001 “Building Energy Performance”   D. Mather

3. Solid Mechanics and Design
   ME 423 Mechanical Design 2   C. Butcher
   ME 559 Finite Element Methods   N. Chandrashekar

4. Engineering Materials
   ME 435 Industrial Metallurgy   A. Gerlich
   ME 436 Welding & Joining Processes   D. Weckman
   ME 596 Special Topics Course “Microelectonics”   M. Mayer

5. Automation and Control
   ME 548 Numerical Control of Machine Tools 1   K. Erkorkmaz
   ME 561 Fluid Power Control Systems   M. Vlasea

6. Welding Specialization - see Prof Adrian Gerlich, Co-ordinator, or visit the website at http://uwaterloo.ca/mechanical-mechatronics-engineering/current-undergraduate-students-mechanical-engineering/welding-and-joining-specialization


ME 4A Core Course – ME 481   J. Baleshta

NOTE: ME 401 (Law for Professional Engineers) counts as a List D Complementary Studies Elective [instructor is D. Byskal].