Mathematics and Engineering at Queen's University

In response to the need in industrial research and development for engineers with a greater knowledge of applied mathematics and modelling techniques, Queen's University offers a unique program in Mathematics and Engineering. This program, the only one of its kind in North America, is fully accredited by the Canadian Council of Professional Engineers. Students develop advanced skills in practical and theoretical engineering, based on solid foundations in pure and applied mathematics.

After a common first year taken by all engineering students at Queen's, students admitted to the Mathematics and Engineering program devote studies to their chosen engineering option, along with core courses in abstract algebra, probability and statistics, ordinary and partial differential equations, boundary value problems, complex analysis, and classical control theory. Students also take a variety of fourth year/graduate courses in their respective field of specialization, such as modern control theory, Lagrangian mechanics, dynamics and control, information theory, data compression, telecommunication and data network modeling, and statistical signal processing.

Applied Mechanics Option

An engineer graduating from this option is well versed in all of the fundamental fields of mechanical engineering. In the second and third years of study, this student takes several courses in fluid mechanics, dynamics, mechanics of solids, applied thermodynamics and mechanical laboratories, all offered by the Mechanical Engineering Department. In the student's final year, courses are chosen from a wide variety of fourth year and graduate level Mechanical Engineering courses. The rigorous mathematical training, in conjunction with the mechanical theories studied, give this engineer a better understanding of the fundamentals behind mechanical engineering, enabling them to tackle problems from first principles when conventional means prove inadequate.

In addition to the courses in mathematics and engineering, students are required to take several courses in the humanities and social sciences, as well as engineering management and economics.

It is an ambitious program whose successful completion requires a combination of engineering and problem solving ability as well as dedication and sustained effort. A graduate of this program will have an unusually diverse background, and will be able to function effectively in many engineering environments.