

DEPARTMENT OF MECHANICAL AND INDUSTRIAL ENGINEERING
Faculty of Applied Science and Engineering
University of Toronto

Job Posting for the 2020-2021 Session

This job is posted in accordance with the CUPE 3902 – Unit 1 Collective Agreement.

MIE236H1: Probability

Course Description: Introduction to probability (the role of probability, exploratory data analysis and basic graphical methods). Sample space and events, Venn diagram. Definitions of probability. Axiomatic definition and basic rules. Conditional probability and Bayes' rule. Concept of random variables. Discrete, continuous, and joint distributions. Probability mass functions, density function, cumulative distribution function. Expectation, variance, and covariance. Important discrete and continuous distributions. Multivariate normal distribution. Functions of random variables. Moment Generating functions. Central limit theorem, laws of large numbers, Markov and Chebyshev's inequalities, types of convergence. Fundamental sampling distributions, Chi-square, t, and F distributions. One sample estimation and hypothesis testing.

Schedule: TBD

TA Support: TBD

Course Enrolment (est.): 135

Campus: St. George

- **Date of appointment:** September to December 2020
- **Rate of pay:** as of January 1, 2020 is \$10,000 (per half course includes vacation pay). Please note that should rates stipulated in the collective agreement vary from rates stated in this posting, the rates stated in the collective agreement shall prevail.
- **Duties include:** Preparation of lectures and course materials; delivery of lectures; supervision of Teaching Assistants; setting and marking of tests and exams; evaluation of final grades; contact with students.
- **Qualifications required:** Applicants should have a strong record of presenting lectures or acting as a teaching assistant. Applicants must be able to demonstrate considerable depth of knowledge and experience in the subject area. The applicant must be able to lecture in a clear voice, and explain concepts clearly. Please note that applicants should have excellent communication skills in English - both oral and written work. Professional Engineer (P.Eng.) license or Engineering Intern (EIT) registration required. Successful candidate will be reimbursed for the EIT registration fee.
- **Application Procedure:** See Course Instructor job postings on the department website at <https://www.mie.utoronto.ca/about-mie/careers/> If interested, submit a Course Instructor Application Form, Resume and Teaching Dossier to the MIE Undergraduate Office (MC109) or by email to ugservices@mie.utoronto.ca. If during the application and/or selection process you require accommodation due to a disability, please contact Gayle Lesmond/ ugservices@mie.utoronto.ca Applicants are required to fill out an application form, which can be found on the department website (<https://www.mie.utoronto.ca/about-mie/careers/>) and returned to: Mechanical Engineering Building, Room 109 or by emailing ugservices@mie.utoronto.ca by **May 22, 2020**. Applicants must include full contact information of their supervisor, plus two U of T employees (faculty or staff) who can testify to the teaching skills of the applicant. The appointment will be made at the earliest possible time before the commencement of classes by the Associate Chair (Undergraduate) of the Department of Mechanical and Industrial Engineering. No other offers or notices of the outcome of applications are authorized by the Department. Final availability of the position is contingent upon final course determination, enrolment, budgetary considerations, and the final determination of assignments flowing from Article 14:03 of the Collective Agreement.