

University of Toronto
AEROSPACE PROGRAMME
Job Posting - Course Instructor Position
Fall Term 2023 (September – December)

Posted on June 30, 2023

The Aerospace Programme seeks 1 Course Instructor for the following course:

AER210H1F – Vector Calculus & Fluid Mechanics

The first part covers multiple integrals and vector calculus. Topics covered include: double and triple integrals, surface area, multiple integrals in polar, cylindrical and spherical coordinates, general coordinate transformations (Jacobians), Taylor series in two variables, line and surface integrals, parametric surfaces, Green's theorem, the divergence and Stokes's theorems. The second part provides a general introduction to the principles of continuum fluid mechanics. The basic conservation laws are derived in both differential and integral forms using different fluid models, and the link between the two is demonstrated. Applications covered include: dimensional analysis, hydrostatics, flow visualization, incompressible and compressible frictionless flows, the speed of sound, the momentum principle, viscous flows and selected examples of real fluid flows. The students conduct two hands-on laboratory experiments involving microfluidics and flow visualization, which complement the fluid mechanics lectures and experience technical report writing.

Qualifications

An academic background in fluid mechanics and advanced mathematics for fluid flow analysis. An undergraduate degree in mathematics or an engineering discipline such as aerospace, and graduate research in the area are also required. Graduate studies and research in the area of aerospace engineering is preferred.

Relevant Criterion

The need to acquire experience is the more relevant criterion than past teaching experience in respect of this posted position.

Duties

- Developing syllabus.
- Teaching two sections weekly: Tuesdays, 09:00-11:00, 11:00-12:00 and Thursdays, 11:00-12:00, 12:00-14:00.
- Conducting scheduled office hours for academic counselling of students.
- Leading tutorials or laboratories/practicals.
- Evaluation of tests and the final examination.

Duties of this position shall be performed at the campus on which the position is located.

Estimate of TA Support: 10 TAs (total of 620 hours)

Estimated Course Enrolment: 200 students

Rate of Pay: \$8,142.51 (per half course excludes vacation pay) or \$9,123.38 (per half course excludes vacation pay) if first CI appointment per each section of the course.

Application Process

Applicants should submit a cover letter, C.V. (including previous teaching evaluations (if applicable)), and a list of references by **July 24, 2023**. Applications should be sent to:

Carmela Versace, Manager
Institute for Aerospace Studies
4925 Dufferin Street
Toronto, ON M3H 5T6
E-Mail: manager@utias.utoronto.ca

The University strives to be an equitable and inclusive community, and proactively seeks to increase diversity among its community members. Our values regarding equity and diversity are linked with our unwavering commitment to excellence in the pursuit of our academic mission. The University is committed to the principles

of the Accessibility for Ontarians with Disabilities Act (AODA). As such, we strive to make our recruitment, assessment and selection processes as accessible as possible and provide accommodations as required for applicants with disabilities. If you require any accommodations at any point during the application and hiring process, please contact uoft.careers@utoronto.ca. During employment, to request accommodation from the University, contact the supervisor or department chair and/or Health & Wellbeing Programs & Services at hwb@utoronto.ca. For more information about accommodations at U of T, please visit our Accommodation webpage.

The hiring criteria for Course Instructors positions are academic qualifications, the need to acquire experience, previous teaching experience and previous satisfactory employment under the provisions of this Collective Agreement.

The University of Toronto is strongly committed to diversity within its community and especially welcomes applications from racialized persons / persons of colour, women, Indigenous / Aboriginal People of North America, persons with disabilities, LGBTQ2S+ persons, and others who may contribute to the further diversification of ideas.

Candidates who are members of Indigenous, Black, racialized and LGBTQ2S+ communities, persons with disabilities, and other equity seeking groups are encouraged to apply, and their lived experience shall be taken into consideration as applicable to the position.

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

The position(s) posted above is (are) tentative, pending final course determinations and enrolments.

Positions posted here are open to Graduate Students in the School of Graduate Studies, Postdoctoral Fellows and Undergraduate Students in the University of Toronto.