



DEPARTMENT OF  
**Mechanical and  
Materials Engineering**

**ACADEMIC ASSISTANT POSITION AVAILABLE**  
**Academic Year 2023-24**

**Posting Date:** August 28, 2023

**Closing Date:** Sept 4, 2023

1 position/1 section available, in person

The Department of Mechanical and Materials Engineering in the Faculty of Engineering and Applied Science at Queen's University invites applications from suitably qualified candidates interested in supporting the delivery of the following undergraduate course in the 2023-24 session.

The course will be taught in person with an expected enrollment of approximately 60 students. The successful applicant will work approximately 5 hours per week on average over the course of the semester supporting the course instructor including in person tutorial support, marking and student feedback.

**MECH 444 – Computational Fluid Dynamics**

September 2023 – December 2023

**Qualifications:**

Minimum of a BAsC, or similar in Mechanical Engineering or a related field, expertise in the field relevant to the course, and experience with the **OpenFOAM software**. Previous educational background and/or experience must be suited to supporting the course described below. Candidates must have excellent communication and presentation skills as proven with prior experience.

**Course Description and Teaching Requirement:**

**MECH 444 Computational Fluid Dynamics | 3.5**

This course provides an overview of, and hands-on experience in, the numerical modelling of fluid flows. Finite volume, finite difference and finite elements methods are introduced. Students are expected to gain critical insight into the capabilities and limitations of fluid flow models by numerically simulating various engineering flows and by doing a term project. Topics include: comparison of numerical, experimental and analytical methods in fluid mechanics, numerical grids and their generation, flow equations and their discretization, solution techniques, turbulence modelling and data presentation. Features of commercial codes are critically reviewed.

(Lec: 3, Lab: 0, Tut: 0.5)

Academic Units:

Mathematics 0 Natural Sciences 0 Complementary Studies 0 Eng Science 30 Eng Design 12

Prerequisites: MTHE 272 (MATH 272) or ENPH 213 (PHYS 213) or MECH 203, MECH 341

Program and Course Symbols and Codes can be found at <https://calendar.engineering.queensu.ca/>

Fall term classes begin September 5, 2023 and end December 5, 2023 while the examination period ends on December 21, 2023. Grading and final mark reconciliation may extend into the next month.

The University invites applications from all qualified individuals. Queen's is strongly committed to employment equity, diversity, and inclusion in the workplace and encourages applications from Black, racialized/visible minority and Indigenous/Aboriginal people, women, persons with disabilities, and 2SLGBTQ+ persons. All qualified candidates are encouraged to apply; however, Canadians and permanent residents of Canada will be given priority.

The academic assistants at Queen's University are governed by the *Collective Agreement* between the United Steelworkers (USW) Local 2010, Unit 01 and the University, which is posted at:

[https://www.queensu.ca/humanresources/sites/hrwww/files/uploaded\\_files/union-associations/CollectiveAgreement\\_USW2010-01\\_2020-2023.pdf](https://www.queensu.ca/humanresources/sites/hrwww/files/uploaded_files/union-associations/CollectiveAgreement_USW2010-01_2020-2023.pdf)

To comply with Federal laws, the University is obliged to gather statistical information about how many applicants for each job vacancy are Canadian citizens/ permanent residents of Canada. Applicants need not identify their country of origin or citizenship, however, all applications must include one of the following statements: I am a Canadian citizen/permanent resident of Canada; OR, I am not a Canadian citizen/permanent resident of Canada. Applications that do not include this information will be deemed incomplete.

The University will provide support in its recruitment processes to applicants with disabilities, including accommodation that takes into account an applicant's accessibility needs. If you require accommodation during the interview process, please contact Gabrielle Whan, [gabrielle.whan@queensu.ca](mailto:gabrielle.whan@queensu.ca)

Applications should include a complete and current curriculum vitae, a statement of teaching experience, the names and contact details of two referees who may be contacted, and any other relevant materials the candidate wishes to submit for consideration. Applications can be submitted to the Mechanical and Materials Engineering Appointments Committee by email to Gabrielle Whan, Department Manager at [gabrielle.whan@queensu.ca](mailto:gabrielle.whan@queensu.ca) or at the address below. Applications should arrive no later than **September 4, 2023 at 11:59 pm.**

Mechanical and Materials Engineering Appointments Committee  
c/o Gabrielle Whan  
Department of Mechanical and Materials Engineering  
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