

Department of Materials Science and Engineering – Emergency Posting

Position: Sessional Lecturer I/II

Course Title and Code: MSE 202H1 F: Thermodynamics I

Course Description: The three laws of thermodynamics, Heat capacity theory and Debye's law. Calculations of enthalpy, entropy, and free energy of pure materials and reactions. Reversible and irreversible processes. Gibbs free energy, chemical equilibria, and phase rule. Introduction of Ellingham, Pourbaix, and pre-dominance area diagrams. Treatment of ideal and non-ideal solutions with the introduction of the concept of activity and activity coefficient. Binary and ternary phase diagrams and their applications to materials processing and materials properties. Thermodynamics of electrochemical systems.

Estimated Enrolment: 49

Estimated TA support: Tutorial (1) 65 hours

Class schedule: TBD

Sessional date of appointment: Fall Session, September-December 2020

Salary: Minimum level of pay is \$8,489.65 (Sessional Lecturer I) and \$9,085.58 (Sessional Lecturer II), and may increase depending on applicant's level of experience and suitability for the position.

Qualifications: A Ph.D. in Materials Science and Engineering, or a closely related field is essential. Experience lecturing and/or coordinating laboratories at the university level are preferred.

Please note: Undergraduate or graduate students and postdoctoral fellows of the University of Toronto are covered by the CUPE Unit 1 collective agreement rather than the Unit 3 collective agreement, and should not apply for positions posted under the Unit 3 collective agreement.

Brief description of duties:

The Department of Materials Science and Engineering requires a lecturer to teach MSE 202H1 F: Thermodynamics I during the Fall 2020-2021 semester. The successful applicant will be responsible for effectively delivering the course with all of the attendant organizational issues of lecture preparation and delivery, setting, supervision and marking of exams, final course marks, course evaluations, and so forth.

To indicate interest in this position, please send an updated CV and completed application form electronically download from <http://dlrssywz8ozqw.cloudfront.net/wp-content/uploads/sites/27/2016/04/19-Unit-3-Application-Format.doc>.

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Posting Date: Friday May 8, 2020

Closing date: Tuesday May 12, 2020

“This notice is posted in accordance with the CUPE 3902 Unit 3 Collective Agreement.” “Preference in hiring is given to qualified individuals advanced to rank of Sessional Lecturer II and Sessional Lecturer III in accordance with Article 14:12.” It is understood that some announcements of vacancies are tentative pending final course determination and enrolment.