The Department of Engineering Science invites applications for the following position(s):

**TEACHING ASSISTANT**
Teaching Support Staff Union (TSSU)

**COURSE:** ENSC 475 – Biomedical Instrumentation

**LOCATION:** Burnaby

**DURATION:** January 3, 2020 to April 30, 2020

**QUALIFICATIONS:**
- Good written and one-to-one oral communication skills. Good time management skills.
- Ability to hold at least one hour of office hours every week throughout the term.
- Be available for help with exam invigilation of all midterms and final exam, and to help in grading final exam.
- Applicant may be required to submit evidence of having had course material.
- Applicant may be required to demonstrate competency on equipment that will be used for course laboratories.
- Be able to:
  - Identify and explain common biomedical engineering discipline-specific electronics, sensors, and signal processing such as instrumentation amplifiers, filters, isolation circuitry, LED and photodiode circuits, right-leg-drive circuits for ECG amplifiers, strain gauges, thermocouples, pressure sensors, oximeters, etc.
  - Design, explain, build, and trouble-shoot test circuits that capture physiological signals such as temperature, bioelectric, and blood flow measurements. Design and model electrodes that interface with biopotentials.
  - Explain electrical design issues specifically relating to signal conditioning of physiological signals such as EEG, EMG, ECG, ENG, action potentials, ERG, EOG.
  - Explain the principal and operation of various common biomedical instruments, that may include: cardiographs, pulse oximeters, non-invasive blood pressure (NIBP) monitors, temperature monitors.
  - Have rudimentary understanding of medical device standards, regulatory environment, design control, and risk management analysis methodology.
  - Guide students in safe biomedical instrumentation design; explain potential safety risks and mitigations. Live subject ethical considerations.
  - Explain electrical safety issues especially including those specific to biomedical instrument design such as macro and micro shock, safety using electrodes, safe grounding, isolation circuitry, etc.
  - Be familiar with Arduino boards for data collection and analyses.

**CLOSING DATE:** November 04, 2019

Engineering Science graduate students apply using the online form at: [https://courses.cs.sfu.ca/forms/ensc-ensc-ta-application-engineering-science-gradu/](https://courses.cs.sfu.ca/forms/ensc-ensc-ta-application-engineering-science-gradu/)

All other applicants (e.g. graduate students in other departments, undergraduate students and external applicants) apply using the online form at: [https://courses.cs.sfu.ca/forms/ensc-ensc-ta-application-non-ensc-grad-students/](https://courses.cs.sfu.ca/forms/ensc-ensc-ta-application-non-ensc-grad-students/)

The University is committed to the principle of equity in employment

The information submitted with your application is collected under the authority of the University Act (R.S.B.C. 1996, c.468, s. 27(4)(a)), applicable federal and provincial employment regulations and requirements, the University's non-academic employment policies and applicable collective agreements.

The information is related directly to and needed by the University to initiate the employment application process. The information will be used to contact references supplied by you, evaluate your qualifications and complete the employment process by making a hiring decision. Applicant information may also be disclosed to the Teaching Support Staff Union in accordance with Article XIII F.3.1.a (iv) of the Collective Agreement.

If you have any questions about the collection, use and disclosure of this information please contact the Associate VP, Human Resources, Simon Fraser University, Burnaby, BC V5A 1S6. Telephone 778-782-3237.