University of Windsor

Department of Electrical and Computer Engineering
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2019 FALL OVERLOAD/SESSIONAL APPOINTMENTS

In accordance with section 54:07 of the 2017-2021 Collective Agreement the Windsor University Faculty Association (WUFA), Department of Electrical and Computer Engineering invites applications from qualified individuals interested in teaching the following course(s), subject to final budgetary approval, course enrollment and appointment of new full-time faculty.

Applicants are required to review University of Windsor Senate Bylaw 51 (Academic Evaluation Procedures) and Article 5:23 to 5:25 of the Collective Agreement with WUFA. Full documentation is available online by visiting the University of Windsor website (www.uwindsor.ca)

ELEC-8900 - Special Topics: Advanced Energy Storage Systems

General background on alternative energy sources and sustainability Introduction to electric-based transportation. Overview of Land-Marine-Space vehicle electrification. Description of vehicle dynamics and dynamic equations. Vehicle performance, and fuel economy characteristics. Basic concept of regenerative braking energy. **cross listed with MECH-8290-60/62**

Course Offered Online

GENG-8010 - Engineering Mathematics

The course will cover topics in advanced modern engineering mathematics not addressed in earlier courses and considered to be crucial for more advanced engineering courses at the graduate level. These topics include: Fourier series and Fourier transforms, with applications in the frequency domain modelling, solution of partial differential equations with applications in continuum mechanicals and electromagnetism, solution of integral equations with applications in acoustics and aerodynamics. (Open to Masters of Engineering students, excluding students in the MEng Auto Program. Open to engineering MASc/PhD students on permission of the department/faculty as a qualifying course only. Will not count for credit towards MASc/PhD degree).

Course Offered evenings

ELEC-8900 - 05 - Data Mining

With fast advances in information technology, there has been an explosive growth in our capabilities to generate and collect data in the last decade. How to analyze the large amount of data in an understandable and efficient way remains a challenging problem. Data mining addresses this problem by providing methodologies to automate the analysis and exploration of large complex data sets. This course will cover the basic topics of data analysis and data mining to extract patterns and underlying knowledge from data and transform it into an understandable structure for further use, for instance, in machine learning, predictive analytics, process control, fault diagnosis, monitoring and decision making. In this class, various computational data mining techniques at the intersection of artificial intelligence, machine learning and statistical learning will be introduced and considerable efforts will also be given on their implementation, strengths and weaknesses for different applications. Students must have a strong background in mathematics. **Cross-listed with MECH-8290-05**

Course Offered evenings

ELEC-8900 - 86 - Condition Monitoring & Diagnostic Technology

The aim of the course is to provide students with the methodological competences and the computational tools necessary to tackle critical problems in the areas of condition monitoring, diagnostics, prognostics and health management of machine, electromechanical and mechatronic systems and industrial equipment. To this purpose, the course presents proven methods to improve safety, increase efficiency, manage equipment aging and obsolescence and reduce maintenance costs of mechanical systems and industrial equipment. In this course, various computational techniques at the intersection of signal processing, computational intelligence, machine learning and statistical learning for condition monitoring, fault detection, diagnosis and prognosis will be introduced and considerable efforts will also be given on their implementation, strengths and weaknesses for different applications in electromechanical systems, mechatronic devices, machine, rotating machinery: gearbox and bearings, power generation and wind turbines, sensors and actuators, electric motors and drives. **Cross listed with MECH-8290-76**. Description Selected advanced topics in a field of research in the Electrical Engineering. (May be repeated more than once for credit if the topics.

Course Offered evenings

Applicants who wish to be considered for the privilege of Employment Equity need to self-identify themself as members of the Targeted groups. Preference will be given to Canadian Citizens, Permanent Residents of Canada. With the exception of exemptions identified under Section 54:08 (a) of the WUFA Collective Agreement, all applicants are required to submit official teaching evaluations (SET scores) or equivalent of all courses they have taught along with an updated CV. Only applicants with a background in **Electrical & Computer Engineering or related fields** will be considered. Applicants who have not taught previously in the Department will be asked to complete an Engineering Academic Application for Employment which is available at this website: https://www.uwindsor.ca/engineering/mame/sites/uwindsor.ca.engineering.mame/files/sessional_application_form_fall_2018.pdf) and will be required to submit three (3) letters of reference and teaching evaluations to:

Dr. Behnam Shahrrava, Acting Department Head
Faculty of Engineering, Electrical & Computer Engineering
University of Windsor, Windsor, Ontario, N9B 3P4
or by e-mail to: ece@uwindsor.ca

Closing date for application(s) is: June 25, 2019
Please note that only successful candidates will be contacted.

The University of Windsor is committed to employment equity and welcomes applications from Aboriginal Peoples, persons with disabilities and members of visible minorities. Applications from women are particularly encouraged. Applicants who wish to be considered for the privilege of Employment Equity need to self-identify themselves as a member of the targeted groups. In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents of Canada.

Sincerely,

Behnam Shahrrava

Dr. Behnam Shahrrava, Acting Department Head
Faculty of Engineering, Electrical & Computer Engineering

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