University of Victoria
Civil Engineering

Sessional Lecturer postings for CUPE 4163 (Component 3)
Department of Civil Engineering
Faculty of Engineering and Computer Science

CIVE Courses – Summer 2023 Opportunities

Term of Appointment: May 1 to August 31, 2023

The Department of Civil Engineering is seeking qualified individuals to teach the following courses for the Summer 2023 academic term.

1) CIVE 210 Sustainability in Civil Engineering
2) CIVE 295 Building Science Fundamentals
3) CIVE 440 Hydrology and Hydraulics
4) CIVE 448 Drinking Water Contaminants
5) CIVE 450 Green Building Design
6) CIVE 453 Building and District Energy Simulation
7) CIVE 459 Earthquake Engineering
8) CIVE 480F Special Topics: Life Cycle Assessment
9) Proposals for other 4th year elective courses in intermediate or advanced level civil engineering topics will be considered. Please contact the Chair, Thomas Froese, at civechair@uvic.ca with proposals

CIVE 210 Sustainability in Civil Engineering Units: 1.5 Hours lecture-lab-tutorial: 3-0-0

Description
Global and local sustainability context; planetary boundaries; footprints. Conceptions of sustainability. Tools, methods and frameworks in sustainable assessment, planning and design - life cycle assessment, substance flow analysis of socioeconomic metabolism, resource efficiency analysis, energy return on investment and accounting of externalities. Uncertainty and risk management. Related policy - environmental impact assessment, pressure state response model. Sustainable Energy. Green design case studies.

CIVE 295 Building Science Fundamentals Units: 1.5 Hours lecture-lab-tutorial: 3-0-1

Description
Heat transfer by conduction, convection and radiation; thermal mass; fluids in motion; air and moisture content; air flow; ventilation; weather data; thermal comfort; solar gains; daylight.

CIVE 440 Hydrology and Hydraulics Units: 1.5 Hours lecture-lab-tutorial: 3-1.5.0

Description
Application of continuity, energy and momentum principles to flow in open-channels and closed conduits; design of channels considering uniform flow and flow resistance, non-uniform flow and longitudinal profiles; design of channel controls and transitions; unsteady flow; theory and design of hydraulic structures. Engineering hydrology and water

resource systems; estimation of design discharge; statistical analysis of extremes; impacts of climate change on the hydrologic cycle, watershed analysis, snow, runoff.

CIVE 448 Drinking Water Contaminants Units: 1.5 Hours lecture-lab-tutorial: 3-0-0

Description
Chemistry in water with a focus on metals or other contaminants, drinking water treatment technologies, toxicology, materials flow and life-cycle thinking, regulations, and an understanding of function in an industrial process.

CIVE 450 Green Building Design Units: 1.5 Hours lecture-lab-tutorial: 3-0-1

Pre-requisite: CIVE 210
Description
Design and construction concepts including site sustainability, water efficiency, energy flows, materials and resources, indoor environmental quality. Life cycle analysis methods, including estimation of material and energy flows in the construction, operation, maintenance and decommissioning of the built environment. Innovative design and integration. LEED (Leadership in Energy and Environmental Design) certification criteria.

CIVE 453 Building and District Energy Simulation Units: 1.5 Hours lecture-lab-tutorial: 3-0-0

Description
Building simulation skills are developed for: climate analysis; geometric and building envelope design; daylight and solar gains, including glazing and shading; thermal comfort and building control; heating, ventilation and air-conditioning systems; air flow and natural ventilation; renewable energy and storage technologies and district-level energy systems; parametric analysis and computational design optimization energy flows in buildings and districts, and of the integrated nature of the building design process.

CIVE 459 Earthquake Engineering Units: 1.5 Hours lecture-lab-tutorial: 3-0-0

Pre-requisites: CIVE 242, 351, ad 352
Description
Earthquake engineering related to structural design and performance: fundamental dynamics and analysis; structural performance of lateral resisting systems; basic design concepts; code requirements; laboratory testing as used in research and development of codes; considerations for non-structural components.

CIVE 480F Special Topics: Life Cycle Assessment Units: 1.5
Hours lecture-lab-tutorial: 3-0*-0

Pre-requisite: CIVE 210, Minimum third-year standing
Description
Life Cycle Assessment (LCA) is a methodology for measuring the potential environmental impacts of products or services during their entire life cycle (e.g., raw material extraction, production, manufacturing, distribution, use, and end-of-life). This course introduces the fundamental principles of LCA, how to perform it, how to interpret the

results, what are the key limitations, and how to use it strategically to improve the sustainability of human activities. This course aims to equip students with the decision-making and systems thinking skills involved in conducting sustainability assessment. It includes practical case studies, lectures, discussions, tutorial-style sessions, and is project-based with the development of a complete LCA.

CIVE 480X Special Topics: *TBD by proposal* Units: 1.5
Hours lecture-lab-tutorial: 3-0*-0

Pre-requisite: Minimum third-year standing
Submit proposals to Dr. Thomas Froese, Chair, at civechair@uvic.ca

Required Qualification and Experience

- The successful individual will have a Ph.D. or a Master's degree or be enrolled in a graduate program and must have relevant knowledge and experience with the subject matter. An equivalent combination of education and experience may be considered.
- Preference will be given to applicants who are registered as professional engineers (P.Eng.)
- Prior teaching experience at a university level is an asset.

Salary is commensurate with the qualifications and follows the Sessional Lecturer Salary Grid in the Collective Agreement between the University of Victoria and CUPE Local 4163 (Component 3).

The availability of this position is subject to funding and enrollment criteria. The University of Victoria reserves the right to fill additional teaching assignments from the pool of applicants for this posting.

UVic is committed to upholding the values of equity, diversity, and inclusion in our living, learning and work environments. In pursuit of our values, we seek members who will work respectfully and constructively with differences and across levels of power. We actively encourage applications from members of groups experiencing barriers to equity. Read our full equity statement here: www.uvic.ca/equitystatement

To apply: Please submit an expression of interest (e.g. cover letter) Attention: Dr. Thomas Froese, Department of Civil Engineering, together with a recent CV via email to civeadmin@uvic.ca by **February 3, 2023** (or until positions are filled).

If you are a graduate student your application must include a letter of support from your supervisor(s) indicating his/her/their agreement with you applying for a position. Per Faculty of Graduate Study policy, graduate students must be completed all coursework except the thesis to be eligible to be hired as a sessional lecturer.

The anticipated date by which employment decisions will be made is **February 28, 2023**.