University of Victoria

Posting for CUPE 4163 Specialist Instructional (TA) – Fall 2025

Department: **Mechanical Engineering**

Term of appointment: **TAs are expected to be available from the beginning of the semester (Sep 3, 2025) and available to assist with marking the final examination (exam period is Dec 6-20).**

Hourly Rate: **$34.72**

BME 200 - Molecular and Cellular Physiology Instructor: **K. Valente**

Special Skills or Other Requirements:

- Responsible for grading assignments, holding office hours online, and running tutorials online that relate analyzing cells at a molecular level using engineering principles.
- Responsible for running oral online exams together with the instructor.
- Position will include running labs (face-to-face or online - still to be confirmed). Labs require a certain level of expertise on microfluidics, PCR and cell culture, in addition to WHMIS and Biosafety certificates from OHSE UVic.

BME 320 – Engineering Materials with BME Applications Instructor: **K. Valente**

Special Skills or Other Requirements:

- Candidate should have a strong background in material science (including metals, semi-conductors, ceramics and polymers)
- Candidate should have a strong background in biomedical materials
- Candidate must be familiar with running laboratory classes
- Candidate must have excellent time management skills in addition to interpersonal and communication skills
- Candidate must complete a WHMIS safety training course

BME 401A/MECH 580 A03 – Biomechanical Modeling Instructor: **C. Dennison**

Special Skills or Other Requirements:

- Knowledge of undergraduate solid and fluid mechanics
- Experience in liaising with undergraduate and graduate students
- Asset: familiarity with MATLAB, Python, and Finite Element codes

BME 410/510/MECH 580 A01 - Bio Printing: 3D Printing Body Parts Instructor: **E. Askari**

Special Skills or Other Requirements:

- Excellent interpersonal and communication skills
- Previously TA'd this course preferred
- Expertise in cell culture, 3D Bioprinting using the Cellink bioprinters (BioX or LumenX)

BME 500 – Medical Device and Systems Design Instructor: **S. Fardindoost**

Special Skills or Other Requirements:

- Background in biomedical engineering or related fields, with a solid understanding of medical devices, design principles, and regulatory standards (e.g., Health Canada, FDA).
- Strong communication and organizational skills to support student teams, provide feedback on project work, and assist in evaluating design reports and presentations.

ENGR 110/112 - Design and Communication I Instructor: **F. Firmani**

Special Skills or Other Requirements:

- Primary duty is interacting with student teams online during labs advising students on their design exercises and projects, marking, student feedback. Also time during lecture hour on team learning activities.
- You must be outgoing, enjoy interacting with students, and able to communicate clearly and effectively in spoken and written English.
- Background in practical engineering design (concept generation/selection/refinement) and teamwork (conflict management, expectation setting) is essential

MECH 200A – Intro to Technical Drawing and CAD Instructor: **V. Ahsani**

Special Skills or Other Requirements:

- Excellent interpersonal and communication skills
- Proficiency with SolidWorks
- Solid background in Engineering Drawing and descriptive geometry
- Being familiar with the Engineering Design Process
- Available to supervise SolidWorks labs/tutorials remotely and in-person

MECH 240 - Thermodynamics Instructor**:** **H. Struchtrup**

Special Skills or Other Requirements:

- Strong background and knowledge in thermodynamics
- Excellent interpersonal and communication skills
- Must be able to take initiative and be flexible

MECH 242 - Dynamics Instructor**:** **M. Bras**

Special Skills or Other Requirements:

- Knowledge of rigid body dynamics and related mathematical background (vector algebra, matrix algebra, coordinate representation of vector equations using matrix notation)
- Experience with MATLAB and Simulink (for consulting with students on numerical implementations of solutions to problem sets)
- Duties include consulting with students, grading assignments, and running tutorials

MECH 320 – Mechanics of Solids II Instructor: **B. Nadler**

Special Skills or Other Requirements:

- Some experience with COMSOL Multiphysics
- Grading and lab

MECH 342 – Dynamics II Instructor: **B. Buckham**

Special Skills or Other Requirements:

- Preferably has prior experience with the course or a related subject
- Comfortable using Brightspace, MATLAB, and OBS Studio
- Has completed undergraduate dynamics courses and is confident in deriving and working with equations of motion for rigid bodies in 3D.

MECH 350 – Engineering Design Instructor: **N. Dechev**

Special Skills or Other Requirements:

- Excellent interpersonal and communication skills are essential.
- Candidates must have demonstrated experience in Engineering Design.
- Must have completed Mech Eng. Machine Shop safety course, or permission of the Department Machinist to work in the Machine Shop.

MECH 381 – Control Systems II Instructor: **H. Najjaran**

Special Skills or Other Requirements:

- MATLAB and SIMULINK proficiency
- Knowledge of classical control (frequency domain)
- Familiarity with modern control (time domain)

MECH 390 – Energy Conversion Instructor: **A. Rowe**

Special Skills or Other Requirements:

- An ideal candidate will have previously taken courses or similar experience
- Preferably has been a teaching assistant for the course before

MECH 392 – Mechanics of Fluid II Instructor: **P. Oshkai**

Special Skills or Other Requirements:

- Strong background in fluid mechanics
- Ideal candidate will have previously taken this course or equivalent
- Preferably has been a teaching assistant for the course before

MECH 395 - Heat Transfer Instructor: **S. Gharehkhani**

Special Skills or Other Requirements:

- Explaining concepts & methods for heat conduction, convection & radiation calculation
- Helping students to apply these methods to energy systems, bio systems & manufacturing
- Guiding students to recognize examples of HT in daily life (e.g. the kitchen, HVAC)

MECH 400A – Capstone Design Proposal Instructor: **TBD**

Special Skills or Other Requirements:

- Experience with Engineering Design
- Experience with machine shop manufacturing, software and electronics
- Previous experience setting design criteria/specifications
- Excellent communication – verbal and written
- The ability to understand various complex problems.
- The ability to interact with and guide students to provide project direction for students.

MECH 410/520 - Computer-Aided Design and Engineering Instructor: **Z. Dong**

Special Skills or Other Requirements:

- Previously taken MECH 410/520 or equivalent course required
- Knowledge of Siemens NX CAD/CAE (FEA/CFD) and ANSYS required
- Knowledge of Solidworks desirable

MECH 422 - Advanced Materials and Processes Instructor: **S. Tekumalla**

Special Skills or Other Requirements:

- Candidates should have a strong background in materials/manufacturing (e.g. MECH 285).
- Previous experience in assisting with group projects is an asset.
- The candidates will mentor the student teams through their project component of the course.
- Excellent communication skills, both verbal and written
- Duties include consulting with students and evaluation of the students' assignments, projects, and term papers.

MECH 424 – Materials for Sustainability Instructor: **B. Yu**

Special Skills or Other Requirements:

- Solid knowledge of materials science (e.g. MECH 285), solid mechanics (e.g. MECH 220), and thermal properties (e.g. MECH240)
- Experience in materials selection, using ANSYS Granta EduPack, and/or life cycle analysis package
- Excellent communication skills, both verbal and written
- The ideal candidate should have a strong interest in sustainable technologies and climate action
- This is a project-based learning course. The ideal candidate needs to demonstrate the ability to mentor student teams, support students in project planning, and provide constructive feedback on design proposal.

MECH 443/541 – Advanced Thermodynamics Instructor: **H. Struchtrup**

Special Skills or Other Requirements:

- Good knowledge of Thermodynamics
- Ideal candidate will have previously taken course or similar experience

MECH 450C/580 A01 – Energy Conversion & Storage Instructor: **A. Rowe**

Special Skills or Other Requirements:

- Knowledgeable in Thermofluids – thermodynamics, heat transfer, fluid mechanics

MECH 450D/580 A03 – Engineering Optimization Instructor: **R. Marques**

Special Skills or Other Requirements:

- Solid knowledge of linear algebra (matrix algebra and determinants) and calculus (differential calculus and Taylor series).
- Excellent interpersonal and communication skills (for consulting with students)
- Proficiency with MATLAB software and knowledge of programming in Python are required (for marking students' assignments).

MECH 458/554 - Mechatronics Instructor: **H. Najjaran**

Special Skills or Other Requirements:

- Hands-on experience with C programming
- Atmel microprocessor programming
- Previously taken MECH 458/554

MECH 459/558 - Fundamental of Hybrid Electric Vehicles Instructor: **Z. Dong**

Special Skills or Other Requirements:

- Previously taken MECH 459/558 required
- Knowledge of MATLAB/Simulink required
- Knowledge of ADVISOR and AUTONOMIE required

MECH 472/576 – Intro to Electron Microscopy Instructor: **R. Herring**

Special Skills or Other Requirements:

- Previously taken materials science or materials engineering course (eg. Mech 285) required.
- Ideal candidate will have previously taken course or similar experience

MECH 487 – Sensors and Actuators Instructor: **N. Dechev**

Special Skills or Other Requirements:

- Excellent interpersonal and communication skills
- Must be able to take initiative and be flexible

MECH 594/595/695 - Seminar Instructor: **K. Ahmadi**

Special Skills or Other Requirements:

- Candidate will coordinate seminars, introduce speakers, collect feedback, prepare the next term's schedule, and maintain attendance spreadsheet