

Job Description

Job Title:	Laboratory Clinic/Engineer
Department:	Mechanical & Mechatronics Engineering
Reports To:	Design Engineer
Jobs Reporting:	None
Salary Grade:	USG 9/10
Effective Date:	April 2018

Primary Purpose

The Laboratory/Clinic Engineer provides technical support for the Mechanical & Mechatronics Engineering department with primary responsibility for the undergraduate Engineering Clinic and undergraduate laboratories. The incumbent will create and develop labs, activities, demonstrations, and workshops, and mentor, instruct, and assist students in the labs while maintaining required safety standards.

Key Accountabilities

Provide Technical Support for the MME Clinic and MME Undergraduate Laboratories

- Supervise, mentor, instruct, and assist students on undergraduate projects
- Supervise, mentor, instruct, train, and assist students on safe use of equipment and tools
- Hire, supervise, mentor, instruct, train, assist, and evaluate co-op students
- Ensure the effective utilization and development of teaching assistants who assist with undergrad laboratories from term-to-term
- Instruct teaching assistants, instructors, and other staff in safe and effective use of equipment, tools, software, and proper laboratory procedures
- Design, develop, construct, prototype, and facilitate labs, activities, demonstrations, and workshops
- Design, fabricate, and construct mechanical and mechatronic systems for lab and class use
- Develop and maintain written instructions, manuals, training content, and SOPs for all lab users
- Maintain safety standards in the clinic workspace
- Specify, source, procure, install, maintain, and repair equipment, tools, and supplies

Keep Pace with Technology and Program Requirements

- Regularly review labs, activities, demonstrations, workshops, and projects to ensure topics are current
- Collaborate with faculty course instructors for development and continuous improvement of labs, activities, demonstrations, workshops, and projects
- Review, recommend, and make changes in materials, techniques, content, resources, or procedures to optimize the value of the laboratory or activity and to keep laboratories and activities current

Continuous Development and Operations

- Monitor expenditures for clinic supplies/equipment and report to management
- Identify opportunities for MME Clinic and undergraduate curriculum development
- Track and document activity development and impacts
- Gather data on effectiveness and impact of MME clinic on students on ongoing basis
- Instruct teaching assistants, instructors, and other staff on effective activity design and facilitation techniques

Job Description



- Recruit and facilitate faculty course instructor adoption of MME Clinic activities, demonstrations, workshops, and projects
- Communicate with course instructors, other staff, MME department, external departments, and other stakeholders about MME Clinic initiative, goals, and accomplishments
- Manage and maintain labs, offices, and storage areas
- Maintain and manage online tools, including: Learn course, website, WCOOnline booking system, and social media
- Assist in the creation and maintenance of inclusive, welcoming, and supportive environment

Provide Support for Capstone Design Projects

- Supervise, consult, advise, and provide individual student and group support for fourth-year student design projects
- Assist with co-ordination and planning of Mechanical Engineering Capstone Design Project Symposium
- Maintain safety standards for fourth-year student design projects and the Mechanical Engineering Capstone Design Project Symposium
- Assist with other duties or special projects as assigned by Design Engineer

Required Qualifications

Education

- University degree required in mechanical engineering, mechatronics engineering, or similar engineering program that included mechanical and electrical design
- Must be, or be capable of becoming registered as a Professional Engineer registered in Ontario

Experience

- Minimum 1-3 years of prototyping experience required
- Minimum 1-3 years of teaching experience required

Knowledge/Skills/Abilities

- A strong aptitude for mechanical technologies and systems is essential
- Must have good knowledge and operational experience in many of the following areas:
 - electro-mechanical systems;
 - thermal and fluids test and measurement techniques;
 - material properties and materials testing;
 - hydraulic, pneumatic, and electric control systems;
 - mechanical systems with electronic components;
 - mechanical testing equipment;
 - digital data acquisition, monitoring, and control systems;
 - analogue and digital test equipment;
 - systems maintenance and calibration;
 - product sourcing;
 - computer programming;
 - computer aided design and solid modelling;
 - safety standards and procedures;
 - engineering tools (eg. Labview, MatLab); and
 - engineering design
- Knowledge and experience in other areas are an asset:
 - rapid prototyping,
 - small-run manufacturing (machining, welding, injection moulding, vacuum forming, etc.),
 - textiles,

- sculpture,
- design thinking,
- chemical handling, and
- vacuum/submersible system design
- Good problem solving, communication, project management, and lateral thinking skills
- Ability to work independently and as part of a team
- Demonstrated ability to build consensus and work in volatile and demanding circumstances
- Be a role model of empathy, inclusivity, equity, and resilience
- Must be proficient in Microsoft Office suite, audio/visual equipment and editing software, social media, data management

Nature and Scope

- **Contacts:** Provides technical support for undergraduate students, faculty, and other technical staff. Must be able to effectively communicate with people at all levels of expertise.
- **Level of Responsibility:** Independently hire, supervise, and evaluate co-op students. Independently mentors and instructs students. Manages MME Clinic and undergraduate laboratory spaces, equipment inventory, MME Clinic budget, and online tools.
- **Decision-Making Authority:** Advises students, teaching assistants, and instructors. Independently manages co-op students. Develops budget, funding acquisition, and equipment purchase discussions for MME executive approval. Leads equipment, supply, and tool purchase decisions.
- **Physical and Sensory Demands:** Occasionally works with equipment that are heavy and/or dirty, but often work is light and clean.
- **Working Environment:** Working conditions vary and range from working at a computer, to bench work, to work in wet labs, workshops, studios, and other areas. Working outside of normal hours will periodically be required to deal with emergencies, maintenance, extended run activities, upgrades, and events.