



**HEALTHCARE
INNOVATION IS
WITHIN OUR REACH**

INSTITUTE OF BIOMEDICAL ENGINEERING

UNB's Institute of Biomedical Engineering (IBME) is redefining what's possible in healthcare by combining technical, experimental, commercial, and social studies. Our renowned research clinic focuses on prosthetics and rehabilitation engineering to keep pace with rapid advancements in technology and modern medicine.

Students at the IBME are formally enrolled in existing graduate programs, such as electrical engineering, mechanical engineering, kinesiology and other faculties, including interdisciplinary studies. The IBME provides students with the necessary collaborative and interdisciplinary hands-on training to move the field of biomedical engineering forward, and better the quality of life of patients worldwide. Our graduates go on to become world leaders in biomedical engineering.

RESEARCH AREAS

- Simulation and modeling techniques
- Signal processing
- Data analysis and management
- Instrumentation
- Experimental design
- Prosthetics design
- Exoskeleton
- Outcome measures
- Biomechanics & electrophysiology
- Pattern recognition

DEGREES OFFERED

MScE, PhD

APPLICATION DEADLINE

Open

STUDY OPTIONS

Thesis

DURATION

1-2 years (Master's)
- 4 years (PhD)

ENTRY TERMS

Fall, Winter,
Spring

APPLICATION REQUIREMENTS

- IBME students enroll in a related graduate program (such as electrical engineering, mechanical engineering or kinesiology), but conduct research in biomedical engineering. Entrance requirements vary by program.
- Prior to applying, all applicants should submit a statement of interest to secure research supervision.
- Students changing from one major to another may be required to take a transitional program of coursework.

CURRENT FACULTY RESEARCH

- **Pilot Projects:** Designing low-cost prosthetic hands, assessing biomechanics and electrophysiology of human mobility, and advancing medical technology start-ups
- **Pattern Recognition:** Classification of movement for lower-limb prostheses, examining pattern interactions, and developing robust, dynamic classifiers
- **Exoskeleton Research:** Researching the impact of exoskeletons on joint biomechanics, designing exoskeletons, and studying nonlinear control of exoskeletons
- **Outcome Measures:** Inventing tools to measure spasticity and peripheral nerve interfaces, and quantitatively assess rehabilitation to help inform doctors and insurance policy decisions



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ENGINEERING GRADUATE STUDENTS LUKE DILLMAN AND KATIE WILSON EXAMINE A PROTOTYPE AT UNB'S INSTITUTE OF BIOMEDICAL ENGINEERING