Mechatronics (Robotics and Automation)

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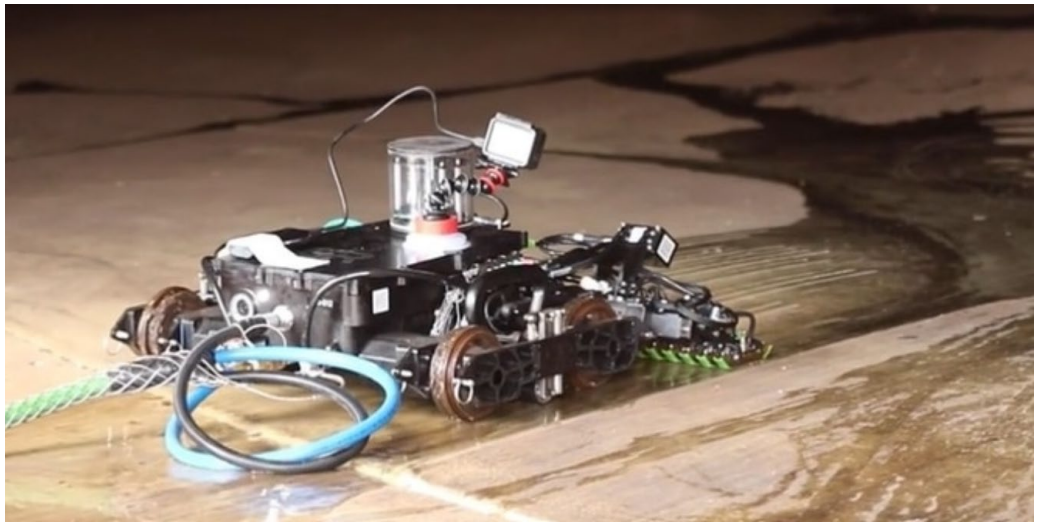
Agenda

- What is mechatronics Engineering Technology
- Program overview

What is Mechatronics?

- Combination of electronics, mechanics, controls and automation



North Hill Campus | Brandon, MB

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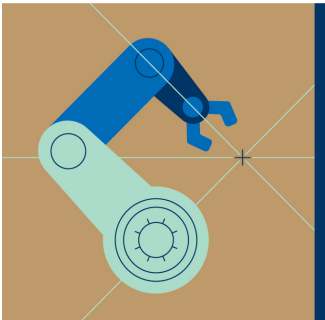
Program Overview

- NEW! First intake begins September 2025
- Three-year diploma program
- Annual September intake
- Classes run Monday-Friday
- Full-time program



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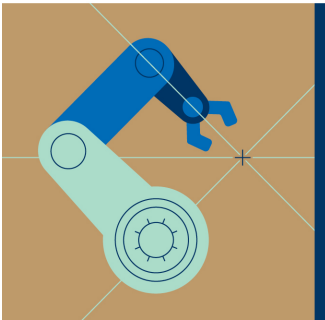
Student Experience

- What do they learn?
  - How to create, troubleshoot and improve automated processes
  - Learn about industrial processes and machinery, robotics, automation and control
- Studying real-world systems to identify/solve problems/opportunities
- Hands on learning – from soldering , coding PLC's, building circuits …
- Students use industry standard design software - Siemens PLC's
- Students learn on leading edge specialized test equipment
- Applied Research allows students opportunities to collaborate with industry partners



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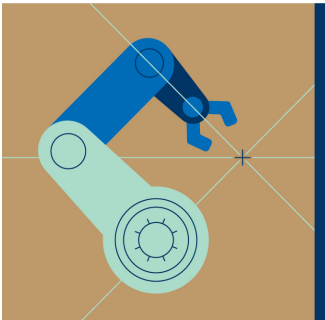
Courses – Year One

- College Foundations
- Foundations of Drawings
- Computer Foundations
- Basic Electrical Circuits & Systems
- Advanced Electrical Circuits & Systems
- Electronics & Instrumentation Lab
- Materials & Machining 1
- Math
- Math for Technology
- Physics
- Physics for Technology
- Technical Reading & Writing



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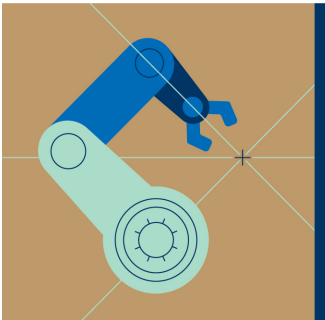
Courses – Year Two

- Complex Mechatronic Systems
- Computer Aided Design
- Communication Devices
- Digital Fundamentals & PLC
- Electrical Components
- Codes & Practices
- Introduction to Manufacturing
- Introduction to Robotics
- Field Measuring Devices
- Pneumatics & Hydraulic
- Programming Fundamentals
- Interpersonal Skills



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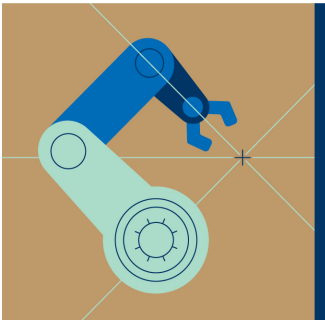
Courses – Year Three

- Capstone – Proposal
- Capstone - Project
- Automation Systems
- Integrated Automation
- Manufacturing Processes
- Mechanics & Machine Elements
- Motor Control
- Robotic Applications
- Robotic Basics
- Process Control Technologies
- Science & Society
- Internet of Things
- Professionalism & Ethics



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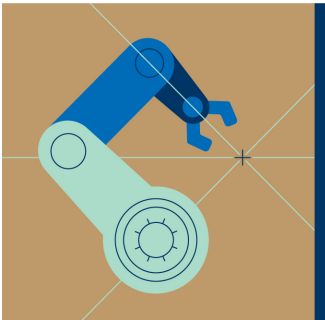
Student in the Program

Fit for this program?

- **Curious**
- Creative
- **Team** focused
- **Analytical**
- Enjoys variety



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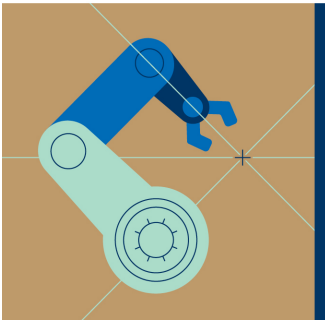
Overview of Employment

Careers

- Controls technician or technologist
- PLC programmer
- Electronics technician or technologist
- Service Rep. or Tech.
- Automation Technician or technologist
- Project Coordinator, lead, manager
- Process Tech…

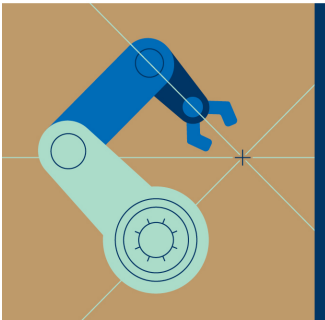
Compensation – mid to top paying tradesperson rate



Overview of Employment

Mechatronics graduates work in a variety of areas including:

- Oil and Gas
- Chemical
- Manufacturing
- Pharmaceutical
- Packaging
- Service Industries
    - Contractors…



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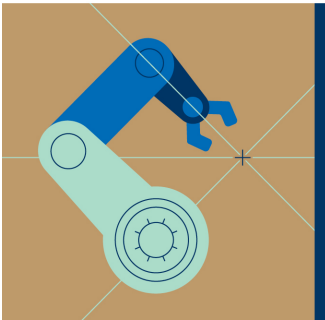
Overview of Employment

Potential local employers may include:

- Cenovus
- Tundra oil
- Transcanada Pipeline
- Koch
- MB Hydro
- Pfizer
- Bausch
- Enbridge
- Schreem
- Maple Leaf and Hylife



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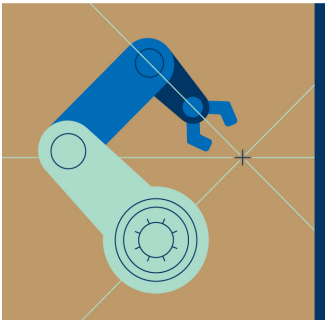
BRITE
TANK

Future Study Options

- Any future study options/articulation agreements? I don't think we have any yet…any opportunities for certifications with professional associations?
- Needs work – Lakehead?, Windsor?, U of M?, U of S?,…

What Makes the Program Unique?

- Fit for purpose for Manitoba
  - Electronics and controls focused
  - Taking a systems approach
  - Geared as a starting point to be a value to your future employers and to yourself
    - Siemens Level 1 and 2 certified
    - Manitoba limited Electrical license
- Using Agriculture Industry examples but showing broad applicability.



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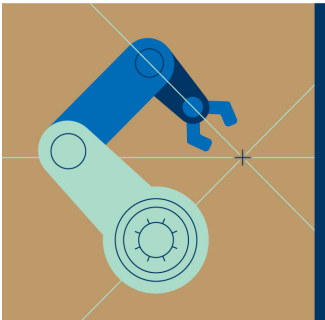
Admission Requirements

- A complete Manitoba Grade 12 or equivalent, including:
  Physics 30S or equivalent with a minimum grade of 70%
  Pre-Calculus or Applied Mathematics 40s or equivalent with a minimum grade of 70%

- If English is not your first language, official proof of English language proficiency is required. See **assiniboine.net/elp** for more information.



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