

DIPLOMA IN MECHATRONICS AND ADVANCED MANUFACTURING TECHNOLOGY

At a Glance

Faculty

www.kpu.ca/trades (<http://www.kpu.ca/trades/>)

Area of Study:

www.kpu.ca/trades/mechatronics (<https://www.kpu.ca/trades/mechatronics/>)

Academic Level:

Undergraduate

Credential Granted:

Diploma

Start Date:

Fall (September)

Intake Type:

- Limited

Minimum Credits Required:

60 / 30

Curriculum Effective Date:

01-Sep-2020

Description

The Mechatronics and Advanced Manufacturing Technology program prepares graduates for careers in the manufacturing industry. With growing reliance on automated technology in the manufacturing sector, technicians are being challenged to perform higher-level tasks that involve diagnostics, analytics, trouble-shooting and hands-on maintenance and repair. Students will acquire critical theoretical and technical knowledge, and hands-on practical experience in applied trades areas such as machining, welding, metal fabrication and electrical. In addition to these skills, students in this program will acquire the knowledge to enable them to prepare technical reports pertaining to the operation and management of an automated manufacturing facility.

The program supports applied research, product development and commercialization solutions. The program also includes the most current technology in computer numerical control (CNC) programming, renewable energy, and computer controlled autonomous systems; hydraulic, pneumatic, electronic and robotic.

Semesters 1 and 2 are aligned to the internationally recognized Siemens Mechatronic Systems Certification (SMSC) program and provide certificate graduates with the opportunity to obtain Siemens Mechatronic Systems Certification Levels 1 and 2. Certificate graduates from the Mechatronics and Advanced Manufacturing Technology program will be

equipped with the knowledge, expertise and skills to operate, maintain, and conduct diagnostics on mechatronic systems at a technician level.

Semesters 3 and 4 incorporate advanced manufacturing principles; sustainability practices, engineering resource planning, lean manufacturing practices, communications and business operations. These principles are augmented by experiential skill development in machining, metal fabrication, welding and electrical which will prepare graduates to meet the demands of the emerging trend known as "Industry 4.0". Graduates from the Mechatronics and Advanced Manufacturing Technology program will be well prepared to work in numerous occupations in the engineering technician/technologist fields.

Requirements

Admission Requirements

In addition to the Faculty's Undergraduate Admission Requirement, which consists of KPU's Undergraduate English Proficiency Requirement (<https://calendar.kpu.ca/admissions/english-proficiency-requirements/>), the following program admission requirements apply:

- Satisfy the Math requirement at Level E1 of the Mathematics Alternatives Table (<https://calendar.kpu.ca/course-information/mathematics-alternatives-table/>); and
- Successful completion of Physics 11 (or equivalent).

OR

- A Red Seal Endorsement (RSE) from the list of approved RSEs. The list of approved RSEs can be found on the department website at [kpu.ca/trades/mechatronics](http://www.kpu.ca/trades/mechatronics) (<http://www.kpu.ca/trades/mechatronics/>)

Advanced Standing

Students admitted to the program may be eligible for advanced standing based on transfer credit and/or Prior Learning Assessment and Recognition (PLAR) (<https://calendar.kpu.ca/admissions/recognition-prior-learning/>).

Curricular Requirements

Year 1		Credits
MAMT 1100	Electrical Components	4
MAMT 1110	Mechanical Components and Electrical Drives	3
MAMT 1120	Electro-pneumatic and Hydraulic Control Circuits	4
MAMT 1130	Digital Fundamentals and Programmable Logic Controllers (PLC)	4
MAMT 1200	Process Control Technologies	2
MAMT 1211	Integrated Automation	2
MAMT 1212	Automation Systems	4
MAMT 1221	Motor Control	2
MAMT 1222	Mechanical Systems	3
MAMT 1230	Manufacturing Processes	2

Upon successful completion of Year 1 (30 credits), students are eligible to exit the program and receive a Certificate.

Credits		30
Year 2		
BUSI 1210	Essentials of Management	3
CADM 1155	Manufacturing Design and Software	4
ELEC 1300	Electrical Design and Renewable Energy	4
MAMT 1300	Manufacturing Trends and Technology	4
MAMT 1400	Professional Skills and Work Practicum	4

MILL 1300	Machining and Computer Numerical Control (CNC) Programming	4
WELD 1300	Welding and Metal Fabrication Essentials	4
Select 3 credits from courses in ENGL or CMNS at the 1100 level or higher		3
Credits		30
Total Credits		60

Other Information

This program is delivered using an online learning management system.

Each student will be required to bring his/her own laptop or equivalent electronic device. Students are advised NOT to purchase a personal laptop computer until specifications and requirements have been provided to successful applicants.

Credential Awarded

Upon successful completion of this program, students are eligible to receive a **Diploma in Mechatronics and Advanced Manufacturing Technology**.

Upon successful completion of the requirements for Year 1, students are eligible to receive a **Certificate in Mechatronics and Advanced Manufacturing Technology**.