

Mechatronics AAS – IMMMEAPT, 768A
Requirements Effective Spring 2024
Program Planning Guide

Program Description: Mechatronics is a two-year program that prepares students for immediate employment and future advancement in companies or government organizations that manufacture, service, sell, design, or support electromechanical systems that control machinery, automation, and/or processes. This degree is offered jointly with Shoreline Community College. Students must take classes at both North Seattle College (NSC) and Shoreline Community College (ShCC) to complete this degree.

Prerequisites: Many classes have prerequisites. Prerequisites are those classes that prove eligibility for entry-level classes by testing or by having satisfied prior course work. Course work earned at other institutions must be unofficially evaluated or approved by a program advisor before registering. Courses in this degree with prerequisites are marked with an asterisk (*). See catalog for more information.

Mechatronics AAS Prerequisites: Placement into ENGL 097/098 (or higher) or successful completion of ABE 050, Placement into MATH 084 or successful completion of ABE 031 or equivalent or higher class and BUS 169 or equivalent computer experience.

Note: Advanced placement testing, work experience, and transfer of credits may result in course waivers, credit transfer, and advanced placement.

Program Requirements		
Course Number	General Education/Related Instruction Requirements (17-20 credits)	Credit Hours
EET 109* or MATH& 142*	Mathematical Applications for Circuit Analysis (NSC) or Pre-Calculus 2	5
ENGL& 101* or ENGL& 235* or BTWRT 215*	Composition or Technical Writing or Composition, Business Communications (ShCC)	5
Human Relations Elective	Choose one of the following: <ul style="list-style-type: none"> BUS 236 Interpersonal Communication in the Workplace (preferred) (NSC) or Any approved Human Relations course (NSC) or BUS 104 Human Relations in Business (ShCC) or BUS 105 Essentials of Human Relations (ShCC) 	2-5
US Cultures/ Global Studies Elective	Choose one of the following: <ul style="list-style-type: none"> BUS 112 Multi-Cultural Communication in the American Workplace (preferred) (NSC) or Any approved US Cultures/Global Studies course (NSC) or BUS 103 Multiculturalism in the Workplace (ShCC) or MCS 105 Introduction to Multicultural Studies (ShCC) 	5
Course Number	Degree Requirements (79-85 credits)	
EET 106*	Introduction to Soldering (NSC)	1
EET 112* or MFGT 247	Fundamentals of Fluid Power (NSC) or Motive Maintenance (ShCC)	5
EET 131	IT Essentials – A+ Certification (NSC)	5
EET 137*	Introduction to Robotics (NSC)	5
EET 138 or MFGT 280	Industrial Robotics (NSC) or Robot Certification (ShCC)	5
EET 161*	D.C. Principles of Electronics (NSC)	5

EET 162*	A.C. Principles of Electronics (NSC)	5
EET/EEL 201*	Energy Generation and Conversion (NSC)	5
EET/EEL 202*	Industrial Motor Controls and Drives (NSC)	5
EET/EEL 203	Programmable Logic Controllers (NSC)	5
MFGT 105 or MFGT 107 and MFGT 108	Basic Manufacturing (ShCC) or Basic Manufacturing Part A and Basic Manufacturing Part B (ShCC)	20
MFGT 244	Preventative Maintenance (ShCC)	3
MFGT 245	10-Hour OSHA (ShCC)	1
MFGT 246	Mechanical Maintenance (ShCC)	5
EET 291 or MFGT 196 or Complete two of the following courses: EET 108 EET 114* EET 132* EET 163* EET 170*	Electronics Internship (NSC) or Advanced Manufacturing Internship (ShCC) or Complete two of the following courses at NSC: <ul style="list-style-type: none"> • EET 108 Introduction to Fiber Optics • EET 114 Applied Physics • EET 132 IT Essentials – A+ Certification Advanced • EET 163 Solid State Electronics • EET 170 Digital Electronics & PLCs I 	4-10
		Total Credits: 96-105 (excluding pre-requisites)

Program Outcomes:

- Identify and apply technical concepts and terms used in industrial energy and control.
- Ability to troubleshoot robotic systems, using knowledge of microprocessors, programmable controllers, electronics, circuit analysis, mechanics, sensor and feedback systems, hydraulics, and pneumatics.
- Ability to repair, maintain and install mechanical and electrical industrial production or processing machinery and equipment.
- Locate, evaluate, and apply relevant information from various sources to address workplace problems.

What skills do I need to be successful in this field?

- <https://www.onetonline.org/link/summary/17-3024.00>
- <http://www.onetonline.org/link/summary/49-2094.00>
- <http://www.onetonline.org/link/summary/49-9041.00>

What are some potential job titles?

- Industrial Machinery Mechanic
- Electrical and Electronics Repairer, Commercial and Industrial Equipment
- Robotics Technician
- Electro-Mechanical Technician
- Millwright

Wages, employment trends and pathways

- <https://www.onetonline.org/link/summary/17-3024.00#WagesEmployment>
- <https://www.onetonline.org/link/summary/49-2094.00#WagesEmployment>
- <http://www.onetonline.org/link/summary/49-9041.00#WagesEmployment>

Course Sequence: This program of study is outlined by quarter, and courses should be taken in the indicated sequence. However, it should not be concluded that students will always proceed through their program of study exactly as prescribed here. The number of quarters listed here is minimal. Not all courses are offered every quarter. Individual student experiences, educational and training background, and personal schedules and demands all may affect the time it takes to finish this program. Summer quarter is included in the sequence below for this program. The internship requirement (EET 291 or MFGT 196) is the preferred selection for this degree. Students not able to meet this requirement may substitute two of the following courses: EET 108, EET 114, EET 132, EET 163, and EET 170 in lieu of the internship requirement.

North Seattle College Start

1st quarter: EET 109 or MATH& 142, EET 131, EET 161	15 credits
2nd quarter: EET 106, EET 137, EET 162, EET/EEL 202	16 credits
3rd quarter: EET 112, EET 138, EET/EEL 201	15 credits
4th quarter: MFGT 105 (Shoreline)	20 credits
5th quarter: BUS 236 (or approved Human Relations elective), EET/EEL 203, ENGL& 101	15 credits
6th quarter: BUS 103 or MCS 105, MFGT 244, MFGT 245, MFGT 246 (all Shoreline)	14 credits
7th quarter: MFGT 196 (Shoreline) or EET 291 or two of the following: EET 108, EET 114, EET 132, EET 163, EET 170	4-10 credits

Shoreline Community College Start

1st quarter: MFGT 105 (Shoreline)	20 credits
2nd quarter: MFGT 244, MFGT 245, MFGT 246, BUS 104 or BUS 105 (all Shoreline)	11-14 credits
3rd quarter: MFGT 247, MFGT 280, ENGL& 101 (all Shoreline)	15 credits
4th quarter: MFGT 196 (Shoreline)	6-9 credits
5th quarter: EET 109 or MATH& 142, EET 161, EET/EEL 203	15 credits
6th quarter: EET 106, EET 137, EET 162, EET/EEL 202	16 credits
7th quarter: BUS 112 (or approved US Cultures or Global Studies elective), EET 131, EET/EEL 201	15 credits
8th quarter: If MFGT 196 was not completed at Shoreline, EET 291 or two of the following: EET 108, EET 114, EET 132, EET 163, EET 170	4-10 credits

Program Contact: Julie Lyderson-Jackson 206-934-4609 julie.lyderson@seattlecolleges.edu

EET Coordinator: Charles Eckard 206-934-4588 charles.eckard@seattlecolleges.edu

Electronics Department Website: <https://northseattle.edu/electronics>

Program Website: <https://northseattle.edu/programs/mechatronics>

NSC Advising: 206-934-3658 <https://northseattle.edu/advising>