

Fanshawe College

FIRST: Fanshawe Innovation, Research, Scholarship, Teaching

Documentation (Approvals etc...)

Electromechanical Engineering Technician (Co-
op / Non Co-op)

2018

EMN2 Curriculum Modification for 2018-19

Fanshawe College

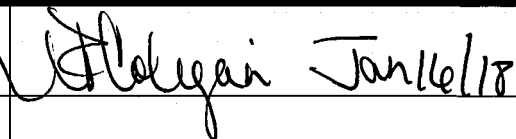
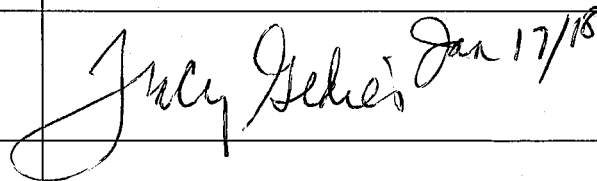
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CURRICULUM MODIFICATION REQUEST FORM

COURSE OR PROGRAM CURRICULUM "RATIONALE FOR CHANGE"

Program Requiring Changes

Electromechanical Engineering Technician

Program Title: Manufacturing Engineering Technology - COOP		
Program Number: EMN2	Date Submitted: 1/16/2018	
Dean responsible for program: Vertha Coligan	Chair: Dave Machacek	
Credential Provided: <input type="checkbox"/> Declaration of Academic Achievement <input type="checkbox"/> Local Certificate <input type="checkbox"/> Ontario College Certificate <input checked="" type="checkbox"/> Diploma <input type="checkbox"/> Advanced Diploma <input type="checkbox"/> Grad Certificate <input type="checkbox"/> Degree <input type="checkbox"/> Apprenticeship		
Program Intakes: <input checked="" type="checkbox"/> F <input type="checkbox"/> W <input type="checkbox"/> S Other:	Catalogue Year(s) Impacted: 2018/19	
Residency Requirement: <input checked="" type="checkbox"/> Met or <input type="checkbox"/> Not Met	Date of Last Program Review: 3/1/2016	
<i>I have read the reasons for the change and...</i>		<i>Signature and date</i>
Dean of Faculty (Lead program):	<input checked="" type="checkbox"/> Approve <input type="checkbox"/> Do Not Approve	 Jan 16/18
Dean of Faculty (Affiliate program-impacted by change):	<input type="checkbox"/> Approve <input type="checkbox"/> Do Not Approve	
Dean of Faculty (Affiliate program-impacted by change):	<input type="checkbox"/> Approve <input type="checkbox"/> Do Not Approve	
Senior Vice President Academic (required for major changes and late DAs):	<input type="checkbox"/> Approve <input type="checkbox"/> Do Not Approve	
Director, Centre for Academic Excellence:	<input checked="" type="checkbox"/> Supports <input type="checkbox"/> Does Not Support	 Jan 17/18
Office of the Registrar:	<input type="checkbox"/> Supports <input type="checkbox"/> Does Not Support	
Notes:		

Please answer each of the questions below, if applicable. Missing or incomplete information may delay review of the proposed changes.

1.0 Describe proposed change(s). Complete Appendix A (if necessary) and amend SDAR (Refer to Appendix C).

Replace MATH-1187 with MATH-1184

2.0 Reason/Rationale for Changes

2.1 The reason for the change is based on:

- A recent program review
- Program Advisory Committee feedback
- Student feedback
- KPI results
- Accreditation or other regulatory requirements
- Shared curriculum
- Trends in the field/industry
- Other (please describe):

2.2 Does the change support the College's Strategic Framework (mission, vision, values)?

- Yes
- No (If no, please explain)

2.3 What strategic goal(s) does the proposed change support?

- Goal 1 - Enhance innovative practices for exceptional student learning
- Goal 2 - Manage enrolment growth
- Goal 3 - Optimize use of resources
- Goal 4 - Build sustainable sources of alternative revenue

3.0 Students

3.1 Will the change affect the cost of the program for students?

- Yes
- No

3.2 If yes, there will be an additional cost for:

- Materials (Include details):
- Equipment (Include details):

Other (Please describe):

4.0 Program Learning Outcomes

4.1 Will the proposed change meet the Program Vocational Learning Outcomes? (Complete Appendix B and mark the changes in the mapping [e.g. red font])

Yes

No

4.2 Are there any implications related to progression because of pre-requisite courses (and/or co-requisite courses)?

No

Yes (If yes, please explain)

5.0 Relationships with Other Programs

5.1 Are any of the courses impacted by the change provided by another School (e.g., SLLS, LKSB) and/or delivered at another campus?

No

Yes

5.2 What Schools/Campuses will be impacted by the proposed change?

- Lawrence Kinlin School of Business
- School of Information Technology
- School of Tourism, Hospitality and Culinary Arts
- School of Community Studies
- School of Health Sciences
- School of Nursing
- School of Public Safety
- School of Contemporary Media
- School of Design
- School of Language and Liberal Studies
- Donald J. Smith School of Building Technology
- Norton Wolf School of Aviation Technology
- School of Applied Sciences and Technology
- School of Transportation Technology and Apprenticeship
- Continuing Education
- Simcoe/Norfolk Regional Campus
- St Thomas/Elgin Regional Campus
- Woodstock/Oxford Regional Campus
- Huron/Bruce Regional Sites

5.3 Will the change affect pathway agreements (e.g., bridging, articulations, laddering, advanced standing) with other Fanshawe program(s) and/or other institution(s)?
(Refer to the pathway agreements listed here: <http://transferagreements.fanshawec.ca/>)

- No
- Yes (If yes, indicate when you will notify the other Fanshawe program(s) and/or other institution(s) and the Pathways Coordinator in the Centre for Academic Excellence of the change)

5.4 If this program is a Co-Operative Education program, will the proposed change impact Co-op?

- No
- Yes (If yes, consult with the Co-op office prior to submission)

6.0 Resource Implications of Proposed Changes

6.1 Will the proposed change have staffing implications?

- No
- Yes (If yes, please explain)

6.2 Will the proposed change impact any of the Enabling areas?

- No
- Yes (If yes, please explain)

6.3 Will the proposed change affect space and/or technology requirements?

- No
- Yes (If yes, please explain)

7.0 General College Requirements

7.1 Are changes consistent with Colleges policies?

- Yes
- No (If no, please explain)

7.2 Will the program meet the General Education requirements (Policy 2-B-02) as listed below?

- No
- Yes

<p>Local Certificate, Ontario College Certificate and Graduate Certificate - none required)</p>	<p>Diploma - 3 required (minimum of 1 must be an elective)</p>	<p>Advanced Diploma - 4 required (minimum of 2 must be electives)</p>
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7.3 Will the program have 25% distinct curriculum to meet the Residency Requirement of 25% credit units? Consider all pathway agreements (e.g., bridging, internal articulations, laddering, advanced standing) with other Fanshawe programs and/or other institutions.

- No
 Yes

Note: In accordance with POLICY NUMBER: 2-B-17 Graduation from Approved College Programs

...to be eligible for any College Credential a student must be enrolled and complete at least 25% of that program's credit units at Fanshawe College, unless stipulated differently by other approving bodies such as the Postsecondary Education Quality Assessment Board (PEQAB).

7.4 Indicate:

- i) Total program hours before proposed change: 1371
 ii) Total program hours after proposed change: 1386
 iii) Level(s) in which the proposed change(s) occurs: level 1 and level 2

7.4.1 Are the total program hours consistent with the requirements as listed below?

- Yes
 No (If no, please explain)

Local Certificate - 300 hours	Ontario College Certificate - 600 hours
Diploma - 1200 to 1400 hours	Advanced Diploma - 1800 to 2100 hours
Graduate Certificate - 600 hours	

APPENDIX A: PROPOSED CURRICULUM MODIFICATION

Course Code	Existing DA Courses	Total Hours	Total Credits		Course Code	Proposed DA Courses	Total Hours	Total Credits
Level 1								
MATH-1187	Math 1	45	3	course replaced	MATH-1184	Mathematics 1	60	4
ENGR-1024	Engineering Graphics	75	3.5		ENGR-1024	Engineering Graphics	75	3.5
LAWS-1038	Law, Ethics & Occupational H&S	45	3		LAWS-1038	Law, Ethics & Occupational H&S	45	3
ELNC-1105	Practical Electronics	45	2		ELNC-1105	Practical Electronics	45	2
WRIT-1039	Reason & Writing 1-Technology	45	3		WRIT-1039	Reason & Writing 1-Technology	45	3
ELEC-1129	Electrical 1	75	4		ELEC-1129	Electrical 1	75	4
TOTAL		330	18.5		TOTAL		360	20.5
Level 2								
MATH-3073	Math 2	45	3		MATH-3073	Math 2	45	3
MACH-1154	Machining 1	45	2		MACH-1154	Machining 1	45	2
CNTL-1014	PLC & Automation	75	3.5		CNTL-1014	PLC & Automation	75	3.5
METH-1045	QA Fundamentals	45	3		METH-1045	QA Fundamentals	45	3
ELEC-3066	Electrical 2	75	4		ELEC-3066	Electrical 2	75	4
ENGR-1025	Engineering Design 1	45	2.5		ENGR-1025	Engineering Design 1	45	2.5
TOTAL		330	18		TOTAL		330	18
Level 3								
TOTAL		375	20		TOTAL		375	20
Level 4								
TOTAL		330	18		TOTAL		330	18
Level 5								
TOTAL		0	0		TOTAL		0	0
Level 6								
TOTAL		0	0		TOTAL		0	0

PROGRAM TOTAL 1365 56.5

PROGRAM TOTAL 1395 58.5

Level 4																
Course Number	Course Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
CADD-1071	CAD/CAM Applications-Intro	C	C			C	C			B		C	C		C	C
CNTL-3016	Robotics 2	C	C	C	C			B	C	B	C	C	B		C	B
COMM-3069	Technical Comm for Technicians											B				
INST-3008	Instrumentation		C	C		C						C	C			
MGMT-3074	Capstone Project Technician		C			C	C		C	C		C	C		C	B
WELD-1055	Welding	I	I			I	I				B	B	I	I	I	I

Vocational Learning Outcomes

1	fabricate mechanical components and assemblies, and assemble electrical components and electronic assemblies by applying workshop skills and knowledge of basic shop practices in accordance with applicable codes and safety practices.
2	interpret and produce electrical, electronic, and mechanical drawings and other related documents and graphics to appropriate engineering standards.
3	select and use a variety of troubleshooting techniques and test equipment to assess electromechanical circuits, equipment, processes, systems, and
4	modify, maintain, and repair electrical, electronic, and mechanical subsystems, equipment, and systems to ensure that they function according to
5	apply the principles of engineering, mathematics, and science to analyse and solve routine technical problems and to complete work related to
6	assist in the specification of manufacturing materials, processes, and operations to support the design and production of mechanical components.
7	analyse, build, and troubleshoot logic and digital circuits, passive AC and DC circuits, and active circuits.
8	apply, install, test, and troubleshoot a variety of mechanical, electrical, and electronic control systems.
9	install and troubleshoot basic computer hardware and programming to support the electromechanical engineering environment.
10	maintain and troubleshoot automated equipment including robotic systems.
11	establish and maintain inventory, records, and documentation systems.
12	select for purchase electromechanical equipment, components, and systems that fulfill the job requirements and functional specifications.
13	assist in quality-control and quality-assurance programs and procedures.
14	perform all work in accordance with relevant law, policies, codes, regulations, safety procedures, and standard shop practices.
15	develop personal and professional strategies and plans to improve job performance and work relationships with clients, coworkers, and supervisors.

Level 2

Course Number	Course Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
CNTL-1014	PLC & Automation	I	I	I	I	I		I	I						I	
ELEC-3066	Electrical 2	I	B	B	B	B		B	B						B	B
ENGR-1025	Engineering Design 1		B			I	I					I				
MACH-1154	Machining 1	I	I			I	I					I	I	I	I	I
MATH-3073	Math 2					B										
METH-1045	QA Fundamentals		I			I	I					I		B		I
COOP-1020	Co-op Education Employment															

Level 3

Course Number	Course Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
CNTL-3015	Robotics 1	I	B	B	B			B	B		I		I		I	
ELEC-3067	Electrical Machines	B	B	I	I	B		B							B	
ELNC-1106	Electronics 2		IBC	IBC		IBC		IBC							IBC	
ENGR-3016	Engineering Design 2	B	C			C	C					I	I	B	B	C
MACH-1155	CNC Processes & Apps-Intro	B	B			B	B					B	B	B	B	B
MATS-1026	Materials Engineering		I			I	I							I	I	I
MGMT-1007	Project Management															IBC

Level 4

Course Number	Course Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
CADD-1071	CAD/CAM Applications-Intro	C	C			C	C			B		C	C		C	C
CNTL-3016	Robotics 2	C	C	C	C			B	C	B	C	C	B		C	B
COMM-3069	Technical Comm for Technicians											B				
INST-3008	Instrumentation		C	C		C						C	C			
MGMT-3074	Capstone Project Technician		C			C	C		C	C		C	C		C	B
WELD-1055	Welding	I	I			I	I				B	B	I	I	I	I

Vocational Learning Outcomes

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- 1 fabricate mechanical components and assemblies, and assemble electrical components and electronic assemblies by applying workshop skills and knowledge of basic shop practices in accordance with applicable codes and safety practices.
- 2 interpret and produce electrical, electronic, and mechanical drawings and other related documents and graphics to appropriate engineering standards.
- 3 select and use a variety of troubleshooting techniques and test equipment to assess electromechanical circuits, equipment, processes, systems, and subsystems.
- 4 modify, maintain, and repair electrical, electronic, and mechanical components, equipment, and systems to ensure that they function according to specifications.
- 5 apply the principles of engineering, mathematics, and science to analyse and solve routine technical problems and to complete work related to electromechanical engineering.
- 6 assist in the specification of manufacturing materials, processes, and operations to support the design and production of mechanical components.
- 7 analyse, build, and troubleshoot logic and digital circuits, passive AC and DC circuits, and active circuits.
- 8 apply, install, test, and troubleshoot a variety of mechanical, electrical, and electronic control systems.
- 9 install and troubleshoot basic computer hardware and programming to support the electromechanical engineering environment.
- 10 maintain and troubleshoot automated equipment including robotic systems.
- 11 establish and maintain inventory, records, and documentation systems.
- 12 select for purchase electromechanical equipment, components, and systems that fulfill the job requirements and functional specifications.
- 13 assist in quality-control and quality-assurance programs and procedures.
- 14 perform all work in accordance with relevant law, policies, codes, regulations, safety procedures, and standard shop practices.
- 15 develop personal and professional strategies and plans to improve job performance and work relationships with clients, coworkers, and supervisors.

Degree Audit Report

Catalog: 2018/2019

Program: EMN2

Name: Electromechanical Engineering Technician (Coop)

Department: MAN - Applied Science and Technology

Academic Level: PS

CCD: 8 - 4AcadSem/1200-1400hrs

Credential: Ontario College Diploma

Grade Scheme: LG2

Major: EMN2 - Electromechanical Eng Tech'n

Div: MAN - Manufacturing Sciences Division

Co-Op Indicator: Mandatory Co-op

Academic Program Requirement

Total Credits: 75.50

Residency Reqmt: 19.00

GPA Requirement: 2.00

Residency Reqmt GPA: 2.00

Minimum Grade: D

Academic Requirement: EMN2.18 Electromechanical Engineering Technician (coop)

Major: EMN2

Grade Scheme: LG2

Minimum GPA: 2.00

Minimum Grade:

Subrequirement: Level 1

Take all of the following Mandatory Courses:

		Total Hours	Total Credits	GE
MATH-1187	Math 1	45.00	3.00	Remove
ENGR-1024	Engineering Graphics	75.00	3.50	
LAWS-1038	Law, Ethics & Occupational H&S	45.00	3.00	**
ELNC-1105	Practical Electronics	45.00	2.00	
WRIT-1039	Reason & Writing 1-Technology	45.00	3.00	
ELEC-1129	Electrical 1	75.00	4.00	
MATH-1184	Mathematics 1	60.00	4.00	Add

Subrequirement: Level 2

Take all of the following Mandatory Courses:

		Total Hours	Total Credits	GE
MATH-3073	Math 2	45.00	3.00	
MACH-1154	Machining 1	45.00	2.00	
CNTL-1014	PLC & Automation	75.00	3.50	
METH-1045	QA Fundamentals	45.00	3.00	
ELEC-3066	Electrical 2	75.00	4.00	
ENGR-1025	Engineering Design 1	45.00	2.50	
COOP-1020	Co-operative Education Employment Prep	6.00	1.00	

Subrequirement: Level 3

Take all of the following Mandatory Courses:

		Total Hours	Total Credits	GE
ELNC-1106	Electronics 2	75.00	4.00	
CNTL-3015	Robotics 1	45.00	2.00	
MACH-1155	CNC Processes & Applications-Intro	45.00	2.00	
MATS-1026	Materials Engineering	45.00	2.50	
ENGR-3016	Engineering Design 2	45.00	2.50	
ELEC-3067	Electrical Machines	75.00	4.00	

Degree Audit Report

MGMT-1007 Project Management 45.00 3.00 **

Subrequirement: Level 4

Gen Ed - Take a 3 credit General Education elective course Take all of the following Mandatory Courses:

		Total	Total	GE
		Hours	Credits	
INST-3008	Instrumentation	60.00	3.00	
CNTL-3016	Robotics 2	60.00	3.00	
MGMT-3074	Capstone Project Technician	30.00	2.00	
COMM-3069	Technical Communication for Technicians	45.00	3.00	
CADD-1071	CAD/CAM Applications-Intro	45.00	2.00	
WELD-1055	Welding	45.00	2.00	

Subrequirement: Gen Ed - Electives

Take 3 General Education Elective Credits - Normally Taken in Level 4

Subrequirement: Program Residency

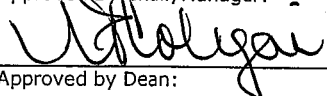
Students must complete a minimum of 19 credits in this program at Fanshawe College to meet the Residency Requirement and graduate from this program



 Approved By Chair/Manager:

Jan 16/2018 AST

 Department and Date:



 Approved by Dean:

Jan 16/18

 Date:

TS
Jan 17/18