

**Articulation Agreement Between
Wayne State University & Macomb Community College (MCC)
Associate of Applied Science (AAS) in Manufacturing Engineering Technology *or*
Any Associate Degree (AA, AAS, ABA, AGS or AS)
from Macomb Community College to
Bachelor of Science in Mechanical Engineering Technology
at Wayne State University (WSU)
Catalog Year 2019-20**

This agreement made this _____ day of _____, 2019 is by and between Wayne State University (WSU) and Macomb Community College (MCC).

Wayne State University and Macomb Community College wish and intend by this Agreement to set forth the terms and conditions of engaging in an educational program, to facilitate the seamless transfer of students who earn an Associate of Applied Science in Manufacturing Engineering Technology or any Associate of Arts (AA), Associate of Applied Science (AAS), Associate of Business Administration (ABS), Associate of General Studies (AGS), or Associate of Science (AS) degree with the Michigan Transfer Agreement endorsement and other specific courses to complete a Bachelor of Science in Mechanical Engineering Technology from Wayne State University, College of Engineering.

**Article I
Agreement on Program Integrity**

Wayne State University and Macomb Community College will maintain the integrity of their separate programs and enter into this agreement as equal and cooperating partner institutions.

**Article II
Agreement on Principle**

This agreement is intended to provide a smooth and seamless curriculum transition for Macomb Community College students that transfer to Wayne State University to earn a Bachelor of Science degree from the College of Engineering. The agreement is designed for students who follow a prescribed plan of study leading to an Associate of Applied Science in Manufacturing Engineering Technology or any Associate degree (AA, AAS, ABA, AGS or AS) with the Michigan Transfer Agreement (MTA) endorsement. The credits transferred from the outlined appendices to this document, will be included in the total credit hours required for the Wayne State University baccalaureate degree. All other standard admission, curriculum, and graduation requirements of MCC and WSU must also be satisfied.

**Article III
Agreement of Program Articulation**

Wayne State University and Macomb Community College agree that any student, who has earned the aforementioned Associate of Applied Science in Manufacturing Engineering Technology or any Associate (AA, AAS, ABA, AGS or AS) with MTA endorsement, may transfer the credits from their program to the WSU College of Engineering toward the Bachelor of Science (BS) degree.

This agreement specifically allows the transfer of up to seventy-seven (76-77) credits from Macomb Community College to WSU. This is beyond the currently stipulated sixty-four (64) credits that was approved by the WSU Board of Governors. The purpose of allowing students to transfer additional credits is to enable them to complete the Associate of Applied Science in Manufacturing Engineering Technology with MTA endorsement with a minimal loss of credit and maximize transfer credits toward their BS degree.

The Bachelor's degree requirements for students who follow this articulation agreement are outlined on the Curriculum Guide (Attachment A).

Article IV Agreement on Student Support

WSU and MCC agree to track the progress and success of articulation participants. Responsibility for this tracking rests with the WSU College of Engineering in conjunction with the WSU Transfer Student Success Center (TSSC).

Article V Agreement on Communication

WSU and MCC agree to cooperate in communication with each other and with common and respective publics concerning the established relationships between the two institutions. Communication will include the development of various kinds of publications to inform those who might benefit from the opportunities provided by this articulation agreement. The appropriate faculty and staff in both institutions will share the information in this agreement with interested and qualified students. Both institutions will provide academic advising to students and prospective students. Joint efforts in marketing the program and student recruiting will be pursued.

Both institution further agree to communicate annually concerning curriculum changes that may affect the agreed upon program relationship. Responsibility for communication related to this agreement will rest with the individuals appointed under Article VI.

Article VI Agreement and Review Body Procedures

Each institution will appoint one or more faculty administrators to act as agents for the implementation of this agreement, and communicate changes to respective faculty members, advisors, and others to whom the information is pertinent. Responsibility for the oversight of this agreement rests with the respected academic departments at both institutions.

**Article VII
Regarding Independent Relationship**

In the performance of their respective duties and obligations under this Agreement, each party is an independent contractor and neither is the agent, employee, or servant of the other, and each is responsible only for its own conduct. Each institution is solely responsible for the development and design of its own curriculum. Changes on the part of either party will/may necessitate review of this document.

**Article VIII
Agreement not to Discriminate**

Each institution covenants and agrees that it does not discriminate on the basis of race, creed, color, age, sex, or national origin and it complies with the Americans with Disabilities Act of 1990, and that it does not discriminate on the basis of “physical or mental handicap” except where there exists a bona fide academic qualification.

Each party shall be separately responsible for compliance with all federal and state laws, including nondiscrimination laws and all applicable sections of the Michigan Handicapper’s Civil Rights Act. Illegal discrimination by either party may be considered a material breach of this Agreement.

**Article IX
Entire Agreement**

This Agreement constitutes the entire agreement between the parties, and all prior discussions, agreements, and understandings, whether verbal or in writing, are hereby merged into this Agreement.

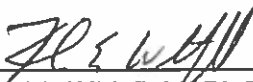
**Article X
Amendment/Modifications/or Terminations Provision**

Each institution agrees to the terms of this Agreement. No amendment or modification to this Agreement, including any modification or amendment of this paragraph, shall be effective unless the same is in writing and signed by all parties or their Successors.

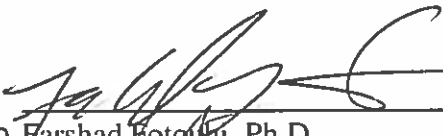
This cooperative arrangement will be in effect immediately upon signature and will be subject to review for continuance after a period of five (5) years. Renewal will be for five years unless either party notifies the other in writing by December 31 of the year preceding the last year of the agreement of their intention to renegotiate or of non-renewal of this agreement.

This Agreement is effective immediately upon approval by WSU and MCC and shall remain in effect unless terminated by either party providing six months advance written notice. In the event that this Agreement must be terminated, all students currently enrolled in the program shall be allowed to complete the program as described.

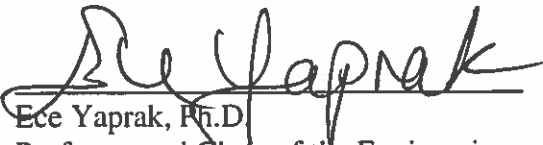
Signatories for Wayne State University:



Keith Whitfield, Ph.D.
Provost and Senior Vice President for
Academic Affairs




Farshad Fotouhi, Ph.D.
Dean, College of Engineering




Ece Yaprak, Ph.D.
Professor and Chair of the Engineering
Technology Division

Date: _____

Signatories for Macomb Community College:



Donald Ritzenhein, Ph.D.
Provost and Vice President, Learning Unit



Donald Hutchison
Dean, Engineering and Advanced Technology

Date: 1-28-2020

FORM APPROVED
PG
01 OCT 2019
OFFICE OF THE
GENERAL COUNSEL

Macomb Community College: Associate of Applied Science (AAS) in Manufacturing Engineering Technology	Wayne State University: Bachelor of Science (BS) in Mechanical Engineering Technology
<i>Articulated Program: Students who have declared this program on their student record are following a formal agreement between Wayne State University and Macomb Community College.</i>	
Macomb Community College - Before Transfer	
Major Requirements	Minimum 62 Hrs
Semester 1:	
ENGR 1000 - Introduction to Engineering	3
ATMT 1300 - Metallurgy-Characteristics of Ferrous Metals	2
PRDE 1250 - Basic Blueprint Reading	2
PRDE 1300 - Industrial & Materials Processes	4
<i>GEN ED - Group I.A Satisfies MTA</i> ENGL 1180 - Communications 1 or ENGL 1210 - Composition 1	3-4
Semester 2:	
ATMT 1150 - Machine Theory-Machine Tool Laboratory 1	3
ATMT 1310 - Metallurgy-Characteristics of Non-Ferrous Metals	2
DRCG 1140 - Interactive Computer Graphics-Introduction to 2D & 3D AutoCAD	4
<i>GEN ED - Group III Satisfies MTA</i> ECON 1160 - Principles of Economics 1	3
Semester 3:	
ELEC 1161 - Electronic Technology 1	3
PRDE 1450 - AutoCAD: Detailing & Assemblies	3
SPCH 1060 - Speech Communication	3
<i>GEN ED - Group I.B Satisfies MTA</i> ENGL 1190 - Communications 2 or ENGL 1220 - Composition 2	3-4
Semester 4:	
ELEC 1171 - Electronic Technology 2	3
PRDE 2200 - Jig & Fixture Detailing & Design	3
<i>GEN ED - GROUP II Satisfies MTA</i> MATH 1465 - Accelerated Precalculus	5
PHYS 1180 - College Physics 1 <i>Satisfies MTA</i>	4
Semester 5:	
ATQT 1000 - Quality Inspection Fundamentals	2
PHYS 1190 - College Physics 2	4
<i>GEN ED - GROUP IV Satisfies MTA</i> PHIL 2010 - Introduction to Philosophy or PHIL 2100 - Introduction to Ethics	3

Additional requirements to be completed at Macomb Community College	Minimum 15 Hrs
CHEM 1050 - Introduction to General Chemistry	4
ELEC 1221 - Microcontrollers with Robotic Application	4
PHIL 2120 - Professional Ethics	3
BCOM 2050 - Business Communications	4
General Education--Michigan Transfer Agreement plan* <i>Students who complete a Michigan Transfer Agreement (MTA or MACRAQ) will have met the general education requirements for Wayne State University. Students who do not complete a Michigan Transfer Agreement will have additional requirements. See a Macomb counselor or academic advisor for specific MTA courses and requirements or visit: www.macomb.edu/transfer</i>	Minimum 30 Hrs
Basic Composition--2 courses: ENGL 1180 or ENGL 1210 and ENGL 1190 or ENGL 1220	-
Mathematics--1 course: MATH 1465 - Accelerated Precalculus	-
Humanities & Fine Arts--2 courses: PHIL 2010 or PHIL 2100 And 1 additional course from a different subject area: any ARAB, any CHIN, any FREN, any GRMN, any ITAL, any SPAN (except SPAN 1265), ARTT 1620, ARTT 1625, ARTT 2650, ARTT 2660, ENGL 1730, ENGL 2410, ENGL 2420, ENGL 2510, ENGL 2520, ENGL 2600, ENGL 2610, ENGL 2640, ENGL 2710, ENGL 2720, ENGL 2730, ENGL 2740, ENGL 2800, ENGL 2810, ENGL 2850, any HUMN, INTL 2000, INTL 2300, INTL 2800, MUSC 1030, MUSC 1040, MUSC 1050, MUSC 1060, MUSC 1070, MUSC 1160, MUSC 1170, MUSC 2080, MUSC 2180, MUSC 2710, or MUSC 2720	3-4
Sciences--2 courses needed from different subject areas, with one course containing a lab CHEM 1050 - Introduction to General Chemistry PHYS 1180 - College Physics 1	-
Social Sciences--2 courses from different subject areas: ECON 1160 - Principles of Economics 1 And 1 additional course from a different subject area: any ANTH, any GEOG, any HIST, INTL 2010, any POLS, any PSYC, or any SOCY	3-4
If needed, complete an additional course(s) from the applicable general education categories above to reach the minimum 30 MTA required credit hours	-

Wayne State University Coursework - After Transfer:

Major Requirements	48 Hrs
ET 2160 - Computer Applications for ET	2
ET 3430 - Applied Differential and Integrated Calculus	4
ET 3450 - Applied Calculus and Differential Equations	4
ET 3030 - Statics	3
ET 3050 - Dynamics	3
ET 3850 - Reliability and Engineering Statistics	3
ET 3870 - Engineering Economic Analysis	3
ET 5870 - Engineering Project Management	3
MCT 4150 - Thermodynamics	3
ET 4999 - Senior Project	3
DESIGN TRACK	
MCT 3100 - Mechanics of Materials	3
MCT 3410 - Kinematics and Dynamics of Machines	3
MCT 4400 - Design of Machine Elements	3
Upper Division Tech Electives	8
ENERGY TRACK	
MCT 4180 - Fluid Mechanics	3
MCT 4210 - Heat Transfer	3
MCT 5210 - Energy Sources and Conversion	3
Upper Division Tech Electives	8
MANUFACTURING TRACK	
MIT 3520 - Manufacturing Processes Theory	2
MIT 3600 - Process Engineering	3
MIT 4700 - Computer-Aided Design and Manufacturing	3
Upper Division Tech Electives	9
Maximum Macomb Credits = 77	
Minimum credits at Wayne State University = 48	
Minimum credits for Bachelor of Science in Mechanical Engineering Technology - 124 credit hours	

Important Information:

- All content is for informational purposes and is designed to be used as a tool to assist students with transfer information but should not be used for self-advicing.
- Courses may require prerequisite courses not included on this guide. Consult with your academic advisor before registering for classes.
- When pursuing a Macomb degree work closely with a Macomb and Wayne State University advisor to ensure BOTH Macomb and Wayne State University degree requirements are being met.
- A minimum cumulative 2.00 GPA or better is required for admission.
- This transfer guide may contain more than the maximum number of allowable transfer credits Wayne State University will accept.
- Macomb and Wayne State University reserve the right to make any necessary changes to courses, provisions, or transfer requirements without notice.
- It is the responsibility of the student to be aware of changes that affect their transfer program. Students are strongly encouraged to contact Wayne State University on an annual basis to review their program requirements.
- Students may concurrently be enrolled and taking courses at both Macomb and Wayne State University the same semester after completing the minimum requirements for Wayne State University. Meet with an academic advisor or counselor for additional information.
- Macomb Community College has a Reverse Transfer Agreement with Wayne State University. If you decide to transfer before graduating from Macomb you may be eligible to earn your associate degree after the fact.
www.macomb.edu/transfer
- Please contact Wayne State University at 586-447-3905 to schedule an appointment, or to view additional information visit:
Wayne.State.University-Macomb.University.Center
- Please refer to Wayne State University's transfer guide, or consult with a WSU Engineering Technology advisor before taking these classes.
<https://wayne.edu/transfercredit/>

Macomb Community College: Any Associate Degree (AA, AAS, ABA, AGS, AS)	Wayne State University: Bachelor of Science (BS) in Mechanical Engineering Technology, Electrical/Electronic Engineering Technology, OR Electromechanical Engineering Technology
<i>Articulated Program: Students who have declared this program on their student record are following a formal agreement between Wayne State University and Macomb Community College.</i>	
Macomb Community College - Before Transfer	
Requirements vary with each Macomb degree. The courses below fulfill Wayne State University's curriculum requirements for MET, EET, and EMT programs, as well as MTA course requirements. Consult with your Macomb Advisor to ensure Macomb degree requirements are also being met.	
Program Requirements	Minimum 62 Hrs
<i>Satisfies MTA</i> ENGL 1180 - Communications 1 or ENGL 1210 - Composition 1	3-4
<i>Satisfies MTA</i> ENGL 1190 - Communications 2 or ENGL 1220 - Composition 2	3-4
<i>Satisfies MTA</i> MATH 1465 - Accelerated Precalculus or MATH 1415 - Precalculus 1: College Algebra and MATH 1435 - Precalculus 2: College Trigonometry	5 4 3
PHYS 1180 - College Physics 1 <i>Satisfies MTA</i>	4
PHYS 1190 - College Physics 2 <i>Satisfies MTA</i>	4
CHEM 1050 - Introduction to General Chemistry <i>Satisfies MTA</i>	4
PHIL 2120 - Professional Ethics <i>Satisfies MTA</i>	3
BCOM 2050 - Business Communications	4
Select a total of 21 credits from the following subject areas: ATAM, ATAP, ATBC, ATDD, ATEM, ATMT, ATPP, ATSS, ATTR, ATWD, AUTO, CIVL, CLCT, CORE, DRAD, DRCG, ELEC, ENGR, MACA, MECT, PRDE, RNEW, ROBO, SURV	21
Mechanical Engineering Technology Pathway	
ATMT 1300 - Metallurgy-Characteristics of Ferrous Metals	2
ATMT 1310 - Metallurgy-Characteristics of Non-Ferrous Metals	2
Select one course from the following: ATAP 2010, ATAP 2030, ATAP 2350, ATAP 2360, ATAP 2370, DRCG 1140, PRDE 1400, PRDE 1410, PRDE 1450, PRDE 1520, PRDE 1620, PRDE 2520	2-4
ELEC 1141 - Basic Electronics	3
ATMT 1150 - Machine Theory-Machine Tool Laboratory 1	3
Electrical/Electronic Engineering Technology Pathway	
ELEC 1141 - Basic Electronics	3
ELEC 1211 - Digital Electronics Basics	3
ELEC 2270 - Microcontroller Programming	3
Additional Electives <i>May be fulfilled within degree, MTA, and/or prerequisite courses</i>	(3-4)
Optional: ITCS 2530 - C++ Programming 1 (4 cr) <i>Meets WSU's ET 2160 Requirement</i>	
Electromechanical Engineering Technology Pathway	
Select one course from the following: ATAP 2010, ATAP 2030, ATAP 2350, ATAP 2360, ATAP 2370, DRCG 1140, PRDE 1400, PRDE 1410, PRDE 1450, PRDE 1520, PRDE 1620, PRDE 2520	2-4
ATMT 1150 - Machine Theory-Machine Tool Laboratory 1	3
ELEC 1141 - Basic Electronics	3
ELEC 1211 - Digital Electronics Basics	3
ELEC 2270 - Microcontroller Programming	3

<p>General Education--Michigan Transfer Agreement plan* <i>Students who complete a Michigan Transfer Agreement (MTA) will have met the general education requirements for Wayne State University. Students who do not complete a Michigan Transfer Agreement will have additional requirements. See a Macomb counselor or academic advisor for specific MTA courses and requirements or visit: www.macomb.edu/transfer.</i></p>	<p>Minimum 30 Hrs</p>
<p>Basic Composition--2 courses: ENGL 1180 or ENGL 1210 and ENGL 1190 or ENGL 1220</p>	<p>-</p>
<p>Mathematics--1 course: <i>Required for WSU's program</i> MATH 1465 - Accelerated Precalculus or MATH 1415 - Precalculus 1: College Algebra and MATH 1435 - Precalculus 2: College Trigonometry</p>	<p>-</p>
<p>Humanities & Fine Arts--2 courses: PHIL 2120 - Professional Ethics And 1 additional course from a different subject area: any ARAB, any CHIN, any FREN, any GRMN, any ITAL, any SPAN (except SPAN 1265), ARTT 1620, ARTT 1625, ARTT 2650, ARTT 2660, ENGL 1730, ENGL 2410, ENGL 2420, ENGL 2510, ENGL 2520, ENGL 2600, ENGL 2610, ENGL 2640, ENGL 2710, ENGL 2720, ENGL 2730, ENGL 2740, ENGL 2800, ENGL 2810, ENGL 2850, any HUMN, INTL 2000, INTL 2300, INTL 2800, MUSC 1030, MUSC 1040, MUSC 1050, MUSC 1060, MUSC 1070, MUSC 1160, MUSC 1170, MUSC 2080, MUSC 2180, MUSC 2710, or MUSC 2720</p>	<p>3-4</p>
<p>Sciences--2 courses needed from different subject areas, with one course containing a lab CHEM 1050 - Introduction to General Chemistry PHYS 1180 - College Physics 1</p>	<p>-</p>
<p>Social Sciences--2 courses from different subject areas: any ANTH, any ECON, any GEOG, any HIST, INTL 2010, any POLS, any PSYC, or any SOCY</p>	<p>6-8</p>
<p>If needed, complete an additional course(s) from the applicable general education categories above to reach the minimum 30 MTA required credit hours</p>	<p>-</p>

Wayne State University Coursework - After Transfer:

Major Requirements

Mechanical Engineering Technology Program Requirements	48 Cr
ET 2160 - Computer Applications for ET	2
ET 3430 - Applied Differential and Integrated Calculus	4
ET 3450 - Applied Calculus and Differential Equations	4
ET 3030 - Statics	3
ET 3050 - Dynamics	3
ET 3850 - Reliability and Engineering Statistics	3
ET 3870 - Engineering Economic Analysis	3
ET 5870 - Engineering Project Management	3
MCT 4150 - Thermodynamics	3
ET 4999 - Senior Project	3
DESIGN TRACK	
MCT 3100 - Mechanics of Materials	3
MCT 3410 - Kinematics and Dynamics of Machines	3
MCT 4400 - Design of Machine Elements	3
Upper Division Tech Electives	8
ENERGY TRACK	
MCT 4180 - Fluid Mechanics	3
MCT 4210 - Heat Transfer	3
MCT 5210 - Energy Sources and Conversion	3
Upper Division Tech Electives	8
MANUFACTURING TRACK	
MIT 3520 - Manufacturing Processes Theory	2
MIT 3600 - Process Engineering	3
MIT 4700 - Computer-Aided Design and Manufacturing	3
Upper Division Tech Electives	9
Electrical/Electronic Engineering Technology Program Requirements	52 Cr
ET 2160 - Computer Applications for ET <small>Requirement met if ITCS 2530 is completed at Macomb</small>	2
ET 3430 - Applied Differential and Integrated Calculus	4
ET 3450 - Applied Calculus and Differential Equations	4
ET 3850 - Reliability and Engineering Statistics	3
ET 3870 - Engineering Economic Analysis	3
ET 5870 - Engineering Project Management	3
EET 3100 - Advanced Digital Design	3
EET 3150 - Network Analysis	4
EET 3180 - Analog Electronics	4
EET 3500 - Electrical Machines and Power Systems	3
EET 3720 - Micro and Programmable Controllers	3
EET 3300 - Applied Signal Processing	3
EET 4200 - Control Systems	4
Upper Division Tech Electives	6
ET 4999 - Senior Project	3

Electromechanical Engineering Technology Program Requirements		51 Cr
ET 2160 - Computer Applications for ET		2
ET 3430 - Applied Differential and Integrated Calculus		4
ET 3450 - Applied Calculus and Differential Equations		4
ET 3030 - Statics		3
ET 3050 - Dynamics		3
ET 3850 - Reliability and Engineering Statistics		3
ET 3870 - Engineering Economic Analysis		3
or		
ET 5870 - Engineering Project Management		
MCT 3010 - Instrumentation		3
EET 3150 - Network Analysis		4
EET 3500 - Electrical Machines and Power Systems		3
EET 3720 - Micro and Programmable Controllers		3
EET 4200 - Control Systems		4
EET/MCT Upper Electives		9
ET 4999 - Senior Project		3
Maximum Macomb Credits = 75-86		Minimum credits at Wayne State University = 49
Minimum credits for Bachelor of Science in MET, EET, or EMT - 124 credit hours		

Important Information:

- All content is for informational purposes and is designed to be used as a tool to assist students with transfer information but should not be used for self-advising.
- Courses may require prerequisite courses not included on this guide. Consult with your academic advisor before registering for classes.
- When pursuing a Macomb degree work closely with a Macomb and Wayne State University advisor to ensure BOTH Macomb and Wayne State University degree requirements are being met.
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- Please refer to Wayne State University's transfer guide, or consult with a WSU Engineering Technology advisor before taking these classes.
<https://wayne.edu/transfercredit/>