

ARTICULATION AGREEMENT

Between

Northeast Wisconsin Technical College

Degree in Electrical Engineering Technology / Transfer Track

And

Northern Michigan University

College of Professional Studies

Degree in Electronics Engineering Technology

August 2013

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Article I

Agreement on Principle

Northern Michigan University (NMU) and Northeast Wisconsin Technical College (NWTC) agree that students, who choose to transfer from a community college to a senior college or university to earn a bachelor's degree, should be provided with a smooth curriculum transition that minimizes loss of credit and duplication of coursework. Therefore, Northern Michigan University and Northeast Wisconsin Technical College agree to enter into this curriculum articulation agreement for students who complete the Electrical Engineering Technology / Transfer Track at NWTC and transfer to NMU to complete the Electronics Engineering Technology. Both institutions enter into this agreement as cooperating, equal partners who shall maintain the integrity of their separate programs.

Article II

Agreement on Program Specifics

NMU and NWTC agree that any student who has successfully completed the minimum requirements outlined on the attached articulation guide may transfer the course credits indicated toward the Electronics Engineering Technology at NMU. Students who follow this articulated program agreement must apply and be admitted to NMU. NWTC students will receive equal consideration with other students seeking admission and financial aid. The bachelor's degree graduation requirements for students who follow this articulated program agreement are listed on the attached articulation guide.

Article III

Agreement on Communication

NMU and NWTC agree to cooperate in communication with each other and with their common and respective publics concerning the established relationship between the two institutions. Communication may include the development of various kinds of publications to inform those who might benefit personally or professionally from the opportunities provided by this agreement. Faculty and staff at both institutions will share the information in this agreement with interested and qualified students and both institutions will provide counseling and advising to students and prospective students.

Article IV

Agreement on Maintenance and Review Procedures

At least one administrative member from each institution will be appointed to act as agents for the implementation of this agreement, to speak for the institutions and to communicate changes to respective faculty members, advisors, counselors, and others to whom the information is pertinent. Responsibility for oversight of this agreement rests with the (responsible position) at Northeast Wisconsin Technical College and the Engineering Technology Department Head at Northern Michigan University.

Both parties agree to communicate annually any changes in their respective programs that may affect this articulation agreement. During the third year, both parties will review the agreement for revision and possible renewal. If the agreement is not renewed by the end of the effective agreement, Northeast Wisconsin Technical College (NWTC) students who started the articulated program prior to termination of the agreement, will be given three additional years to be admitted to NMU under terms of this agreement.

This agreement is in effect from 1 August 2013 until 1 August 2016. *Note: Students, who began NWTC Electrical Engineering Technology / Transfer Track prior to the effective date of this agreement, may use the agreement to the extent that the program requirements followed are consistent with this agreement.*

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Effective Dates of this Articulation Agreement: 1 August 2013 until 1 August 2016

Introduction:

The purpose of this articulation agreement is to provide a smooth transition for students who want to earn an associate degree in Electrical Engineering Technology / Transfer Track at Northeast Wisconsin Technical College prior to a transfer to Northern Michigan University to complete a bachelor's degree in Electronics Engineering Technology. As displayed in this document, the first and second years of coursework are completed at Northeast Wisconsin Technical College and third and fourth years at NMU.

This major provides students with the necessary preparation for positions in industry as engineering technologists. Graduates of the program are employed as field service engineers, application engineers, software engineers and technicians.

Effective Dates:

The effective dates of this agreement are from 1 August 2013 to 1 August 2016. If this agreement is not renewed at the end of the effective period, students who have already started this articulated program at NWTC will be given three additional years to be admitted to NMU under the terms of this agreement. Students, who began the program prior to the effective date, may use the agreement to the extent that the requirements completed are consistent with this agreement.

First and Second Years at NWTC:

The first and second years of NMU's Electronics Engineering Technology degree are NWTC's Electrical Engineering Technology / Transfer Track degree. Although it includes up to 70 credit hours, only a maximum of 64 semester credits and an additional 4 semester credits in physical education (health promotion) activity courses may transfer to NMU from a two-year college. Unless otherwise designated, a grade of C- or higher is required for transfer to NMU. The following section displays NWTC's Electrical Engineering Technology / Transfer Track degree with restricted selections to meet requirements within NMU's Liberal Studies Program:

NWTC Course #	NWTC Course Title	Credit Hours	NMU Equivalent	NMU Degree Requirements
10-801-136	English Composition	3	EN 111	Liberal Studies, Div. 1, Communication
10-801-197	Technical Reporting	3	EN 211D	Liberal Studies, Div. 1, Communication
10-809-172	Race Ethnic & Diversity	3	SS 1009	Liberal Studies, Div. IV, Social Sciences
10-809-195	Economics	3	EC 101	Liberal Studies, Div. IV, Social Sciences
10-809-198	Intro to Psychology	3	PY 100G	Liberal Studies, Div. IV, Social Sciences
10-660-104	DC 1: Introduction	1	ET 112	Major
10-660-105	DC 2: Circuits	1		
10-660-106	DC 3: Circuit Theorems	1		
10-660-107	AC 1: Properties	1	ET 113	Major
10-660-108	AC 2: Reactance	1		
10-660-109	AC 3: RLC Circuits	1		
10-662-112	DC/AC 3	3		

10-605-160	Linear Electronics 1: BJT Amps	1	ET 210	Major
10-605-161	Linear Electronics 2: JFET Amps	1		
10-662-124	Electronic Circuit Analysis	3		
10-660-103	Digital 3: Registers	1	ET 211	Major
10-660-113	Digital 4: ALU	1		
10-660-114	Digital 5: Characteristics	1		
10-660-112	Electronics 3: Op-Amps-Basic	1	ET 212	Major
10-605-162	Linear Electronics 3: Filters	1		
10-804-195	College Algebra w Apps	3	MA 111	Other Required Course
10-804-196	Trigonometry w Apps	3	MA 106	Other Required Course
10-804-198	Calculus I	4	MA 161	Other Required Course
10-804-181	Calculus II	4	MA 163	Other Required Course
10-806-143	College Physics 1	3	PH 201	Other Required Course
10-620-140	Machine Wiring and Safety	1	ET 1009	Electronics Technical Elective with no NMU equivalent
10-620-161	Power Electricity 1: Motors	1		
10-620-162	Power Electricity 2: Motors	1		
10-605-163	Micro 1: Introduction	1		
10-605-164	Micro 2: Technique	1		
10-605-165	Micro 3: Interfaces	1		
10-605-170	Datacomm 1: Introduction	1		
10-605-171	Datacomm 2: Pulse Code Mod	1		
10-605-172	Datacomm 3: Delta Modulation	1		
10-605-180	Analog Comm1: Noise Effects	1		
10-605-181	Analog Comm 2: AM/SSB	1		
10-605-182	Analog Comm 3: FM Systems	1		
10-605-169	Electronics Design Integration	3		
10-660-101	Digital 1: Logic	1		
10-660-102	Digital 2: Sequential	1		
10-660-110	Electronics 1: Diodes – Basics	1		
10-660-111	Electronics 2: Trans- Basic	1		

Third and Fourth Years at NMU...

The third and fourth years of NMU's Electronics Engineering Technology degree is comprised 64 credits. To qualify for a bachelor's degree at NMU, students must meet all graduation requirements, which include the courses listed below at NMU.

NMU Course #	NMU Course Title	Credit Hours	NMU Degree Requirements
ET 250	Industrial Electrical Machinery	4	Major
ET 252	Industrial Motor Controls	4	Major
ET 311	Applied Programmable Controllers	2	Major
ET 321	Embedded System Programming	4	Major
ET 360	Process Control Systems	3	Major
ET 410	Interfacing & Data Acquisition Techniques	3	Major
ET 420	Microcontroller Applications	3	Major
ET 431	Senior Project I	1	Major
ET 432	Senior Project II	1	Major
CH 105	Chemical Principles	4	Other Required Course
DD 105	Schematic / Diagram Drafting	2	Other Required Course
IT 180	Introduction to Fluid Power	3	Other Required Course
IT 214	Industrial Observation	1	Other Required Course
IT 215	General Industrial Safety	2	Other Required Course
IT 265	Total Productive Maintenance	2	Other Required Course
IT 420	Quality Control	3	Other Required Course
MA 171	Intro to Probability & Statistics	4	Other Required Course
TE 351	Humanity and Technology	4	Other Required Course
	Choose one Division II course (World Culture)	4	Liberal Studies Course

	Choose one Division VI course	4	Liberal Studies Course
HP 200	Physical Well Being	1	Health Promotion Course
HP xxx	physical activity course	1	Health Promotion Course
	Free Electives	4	
Total Credit Hours:		64	

Suggested Course Sequence:

Third Year at NMU	Fourth Year at NMU
Fall Semester: ET 250 Ind Elec Machinery 4 cr. ET 360, Process Control 3 cr. IT 180, Intro to Fluid Power 3 cr. IT 214, Industrial Observation 1 cr. HP 200, Physical Well Being 1 cr. MA 171, Intro to Probability & Stats 4 cr. Semester Total: 16 cr.	Fall Semester: CH 105, Chemical Principles 4 cr. ET 321 E Systems Programming 4 cr. ET 431, Senior Project I 1 cr. IT 420 Quality Control 3 cr. Liberal Studies Course 4 cr. Semester Total: 16 cr.
Winter Semester: DD 105, Schematic / Drafting 2 cr. ET 252, Industrial Motor Controls 4 cr. ET 311, Applied Prog Controllers 2 cr. IT 215, General Industrial Safety 2 cr. IT 265, Total Productive Maint 2 cr. Liberal Studies Course 4 cr. Semester Total: 16 cr.	Winter Semester: ET 410, Interfacing .. 3 cr. ET 420 Microcontroller Applications 3 cr. ET 432, Senior Project II 1 cr. HP xxx, physical activity course 1 cr. TE 351 Humanity and Technology 4 cr. Free elective 4 cr. Semester Total: 16 cr.

Additional Graduation Requirements:

1. At least 8 credit hours of a major must be earned at NMU;
2. A "C" grade or higher is required for all courses within major;
3. At least 4 credit hours of a minor must be earned at NMU;
4. A total of 128 credit hours are required for a BS in Electronic Engineering Technology
5. The Liberal Studies Program completed by the student must fulfill the 300-level requirement & World Cultures requirement.
6. Complete the Health Promotion requirement, which includes HP 200 and an HP activity course.

Notes to Students:

1. Complete the articulated program as indicated in this articulation guide. Any course substitutions should only be made with the guidance of an advisor or counselor to assure that all requirements are met;
2. Students are encouraged to meet with the Engineering Technology Department Head at NMU early, before completing an admission application to NMU;
3. A copy of the articulation agreement should be brought to all advising sessions. Copies of this agreement are available at _____.

Revised 1 Aug 2013 based on NMU's 2013-2014 University Bulletin

For further information regarding the selection and transfer of courses, contact one of NMU's Transfer Admissions Counselors, at 1-800-682-9797 or transfer@nmu.edu

Sent to
Mike R.
3/18/13

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We the representatives of Northeast Wisconsin Technical College and Northern Michigan University agree to the terms of this agreement, which will be for an initial period of three (3) years.

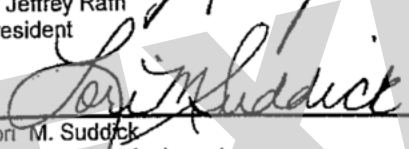
Signatures

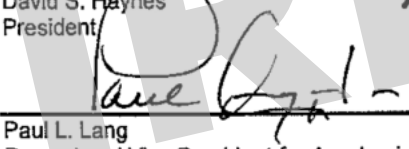
Northeast Wisconsin Technical College

Northern Michigan University

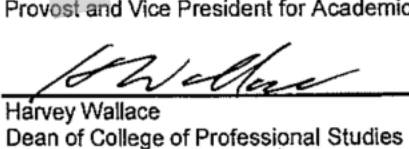

H. Jeffrey Rafn
President
Date 2/10/13


David S. Haynes
President
Date

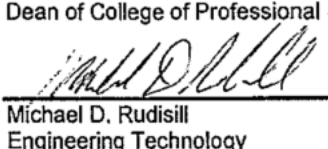

Lori M. Suddick
Vice-President for Learning
Date 2-19-13


Paul L. Lang
Provost and Vice President for Academic Affairs
Date 3/6/13


Pamela J. Phillips
Vice-President for Student Services
Date 2/19/13


Harvey Wallace
Dean of College of Professional Studies
Date 3/6/13


Mark N. Weber
Academic Dean Trades & Technical
Date 2/26/13


Michael D. Rudisill
Engineering Technology
Date 28 FEB 13

CC: NMU Registrar
NMU Director of Admissions
NMU Transfer Admissions Counselor
NMU Director of ACAC