ARTICULATION AGREEMENT

Between the

ASSOCIATE IN SCIENCE DEGREE – ENGINEERING SCIENCE TRANSFER PROGRAM

Of

North Shore Community College

And the

UNIVERSITY OF MASSACHUSETTS LOWELL

James B. Francis College of Engineering

Fall 2017

This articulation agreement has been established between North Shore Community College (NSCC) and the University of Massachusetts Lowell's College of Engineering (UML). This agreement was developed with the intent of facilitating the success of students at North Shore Community College (NSCC) and the University of Massachusetts Lowell as well as the transfer of course credits between the two partner institutions. Furthermore, these agreements are intended to serve as a guideline for those who desire to complete their Associate of Science Degree in Engineering Science Transfer at North Shore Community College while also transferring into Bachelor of Science in Engineering Degree Programs at the University of Massachusetts Lowell.

Students completing the described course program, in accordance with the minimum standards as set in this agreement, will be admitted to the corresponding Engineering Degree program at the University of Massachusetts Lowell. Furthermore, such students who complete the described series of courses will receive an Associate of Science degree in Engineering Science Transfer at NSCC. Students who do not meet the minimum standards set forth herein will be considered for admissions to UML on a case-by-case basis.

OBJECTIVES:

1. To facilitate the completion of students' Associate of Science Degree in Engineering Science Transfer at NSCC.
2. To facilitate the completion of students' Bachelor of Science Degrees in various Engineering Programs at UML.
3. To encourage the transfer of qualified students from North Shore Community College to the University of Massachusetts Lowell by providing effective and concise guidelines.
4. To award appropriate academic credit for courses completed at NSCC towards UML's Engineering degree programs.

TERMS OF THE TRANSFER ARTICULATION AGREEMENT:

1. This document is based upon the evaluation of course descriptions offered by NSCC and UML. NSCC courses as listed in this agreement will transfer to UML provided a grade of "C" or higher has been earned. Courses judged below college level by the University of Massachusetts Lowell will not be accepted for transfer credit.
2. UML guarantees the acceptance of all students who complete those NSCC courses in the related concentrations as listed in the attached Programs of Study with an overall GPA of 2.5 or higher to the Bachelor of Science in Engineering Degree Programs.
3. UML guarantees the transfer of credit as stipulated in the attached Programs of Study. The University of Massachusetts Lowell may accept courses taken beyond the Associate Degree; however, students are encouraged to contact the transfer advisor at the University of Massachusetts Lowell for approval.
4. North Shore Community College transfer students will be subject to all general education requirements of the University of Massachusetts Lowell as set forth in the

University of Massachusetts Lowell catalog. Students meeting the requirement of the General Education Foundation Courses (MASS Transfer Block) will be exempt from 35 credits of University general education requirements, but will be required to meet any specific College of Engineering general education requirements, not to exceed two courses.

This agreement shall remain in effect for a period of three years from the date of its enactment, with the provision that the terms specified herein will continue to apply to students admitted from North Shore Community College's Associate in Science Degree: Engineering Transfer program within one year of the expiration of the agreement. Each institution agrees to provide timely notice to the other in the event of any modification to the curriculum that might affect compatibility for admission and transfer of coursework. This agreement may be subject to change, with notification, if curriculum requirements change at either institution. Students admitted to the North Shore Community College's Associate in Science Degree: Engineering Science program prior to such notification shall be admitted to the University of Massachusetts Lowell on the basis of this agreement. This agreement is conditional upon the Engineering Department maintaining its' program approval from the Massachusetts Board of Higher Education.

Signature Page

Patricia Gentile Date
President, North Shore Community College

Jacqueline Moloney Date
Chancellor, University of Massachusetts Lowell

Karen Hynick Date
Vice President, Academic and Student Affairs

Michael Vayda Date
Provost, University of Massachusetts Lowell

Laura Rubin Date
Dean, STEM and Education

Joseph Hartman Date
Dean, University of Massachusetts Lowell

Susan Curry Date
Director of College Articulations

Gerald Durkin Date
Associate Dean of Enrollment and Director of Transfer Admissions

	NSCC	UML	Chem.	Civil	Comp.	Elect.	Mech.	Plastics
	CHE 103 - Chemistry 1 & Lab (4)	CHEM.1210 - Chemistry I (3)	R	R	R	R	R	R
		CHEM.1230L - Chemistry I Lab (1)	R	R	R	R	R	R
	CHE 104 - Chemistry 2 & Lab (4)	CHEM.1220 - Chemistry II (3)	R	R				R
		CHEM.1240L - Chemistry II Lab (1)	R	R				R
	CMP 101 - Composition 1 (3)	ENGL.1010 - College Writing I (3)	R	R	R	R	R	R
	CMP 102 - Composition 2 (3)	ENGL.1020 - College Writng II (3)	R	R	R	R	R	R
	CPS 101 - Computer Science 1 (4)	COMP.1010 - Computing I (3)						
		COMP.1030L - Computing I Lab (1)						
*		ECE-2160 - ECE Applications programming (3)			R	R		
		CHEN.1070 - Intro to Chemical Engineering I (2)	R					
		EECE.1070 - Intro to Elec and Comp Engineering I (2)			R	R		
	EGS 101 - Intro to Engineering (2)	ENGN.1070 - Intro to Engineering I (2)	R	R	R	R	R	R
	Humanities or Social Sciences (3)	General Ed. Requirement (3)	R	R	R	R	R	R
	Humanities or Social Sciences (3)	General Ed. Requirement (3)	R	R	R	R	R	R
	MAT 251 - Calculus 1 (4)	MATH.1310 - Calculus I (4)	R	R	R	R	R	R
	MAT 252 - Calculus 2 (4)	MATH.1320 - Calculus II (4)	R	R	R	R	R	R
	MAT 301 - Calculus 3 (4)	MATH.2310 - Calculus III (3)	R	R	R	R	R	R
	MAT 302 - Differential Equations (4)	MATH.2340 - Differential Equations (3)	R	R			R	R
*		MATH-2360 - Engineering Differential equations			R	R		
	PHY 201 - Physics 1 & Lab (4)	PHYS.1410 - Physics I (3)	R	R	R	R	R	R
		PHYS.1410L - Physics I Lab (1)	R	R	R	R	R	R
	PHY 202 - Physics 2 & Lab (4)	PHYS.2450 - Physical Properties of Matter (3)					R	
		PHYS.2450L - Physics III Lab (1)					R	
	PHY 301 - Physics 3 & Lab (4)	PHYS.1440 - Physics II (3)			R	R	R	R
		PHYS.1440L - Physics II Lab (1)			R	R	R	R
		CHEN.2050 Fundamentals of Electricity (3)	R					
		EECE.2110 - Fundamentals of Electricity (3)		R				
E	CAD 101 - CAD 1 (4)	ENGN.1080 - Intro to Engineering II (2)						
**	This course is supposed to be updated to SolidWorks.	CIVE.1070 - Intro to Civil and Environmental Engineering (2)		R			R	
**		PLAS.1070 - Intro to Plastics Engineering						R
E	CAD 102 - CAD 2 (4)	MTEC.2000 - Computer Aided Drafting (3)						
E	CHE 201 - Org. Chemistry 1 & Lab (4)	CHEM.2210 - Organic Chemistry I (3)	R					
		CHEM.2040 - Intro. Org. and Poly Chem						R
E	CHE 202 - Org. Chemistry 2 & Lab (4)	CHEM.2220 - Organic Chemistry II (3)	R					

		CHEM.2050 - Organic Chemisry Lab (1)	R						
E	CPS 102 - Computer Science 2 (4)	COMP.1990 - Computer Sci 1000 Level Elect (3)							
	CPS 224 - Obj Orient Prog in C++ (4)	COMP.2010 - Computing III (3)							
		EECE.2160 - ECE Applications Programming			R	R			
E	EGS 201 - Statics (3)	ENGN.2050 - Statics (3)		R			R	.	
		PLAS.2110 - Engineering Mechanics (3)						R	
E	EGS 202 - Dynamics (3)	ENGN.2070 - Dynamics (3)		R			R		
E	EGS 204 - Strength of Materials (3)	ENGN.2060 - Strength of Materials (3)		R			R		
E	EGS 206 - Materials Science (3)	MECH.2960 - Materials Science for Eng. (3)					R		
		CHEN.3080 - Intro to Material Science and Engineering (3)	R						
		CIVE.3100 - Engineering Materials (3)		R					
E	EGS 211 - Intro Circuits 1 & Lab (6)	EECE.2010 - Circuit Theory I (3)			R	R			
		EECE.2070 - Basic EE Lab I (2)			R	R			
E	EGS 212 - Intro Circuits 2 & Lab (6)	EECE.2020 - Circuit Theory II (3)			R	R			
		EECE.2080 - Basic EE Lab II (2)			R	R			
E	EGS 214 - Thermodynamics (3)	CHEN.2020 - Energy Balances and Intro to Thermodynamics (3)	R						
		MECH.2420 - Thermodynamics (3)					R		
		PLAS.2470 - Thermodynamics (3)						R	
E	EGS 216 - Intro to Dig Logic & Lab (4)	EECE.2650 - Logic Design (3)			R	R			
E	MAT 210 - Linear Algebra (3)								
E	PHY 302 - Physics 4 & Lab (4)								

E = Engineering Electives at North Shore

R = Required by UMass Lowell

* = equivalency for EE/ECE students

** = accepted during transition period

Can only accept the course if student can pass the CSWA exam (Certified SolidWorks Associate)