

MASSACHUSETTS STATE ARTICULATION AGREEMENT

BETWEEN

MASSACHUSETTS COMMUNITY COLLEGES AND
MASSACHUSETTS CHAPTER 74 APPROVED SECONDARY
CAREER/VOCATIONAL TECHNICAL PROGRAMS

ENGINEERING TECHNOLOGY

Effective Date: December 5, 2012

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From:
*A Chapter 74 Approved Secondary
Career/Vocational Technical Program*

To:
*Community College Courses**

In this Program:

Engineering Technology

One or more of the following course(s) or equivalent:

Basic Electricity I
Basic Engineering Circuit Lab
DC Circuit Theory & Lab
Electrical Circuits I
Electrical Principles I
Electronics for Technicians I
Electronics I
Engineering Essentials and Design
Engineering Fundamentals
Fundamentals of Electronics

Introduction to Electrical Circuits
Introduction to Electricity and
Electronics
Introduction to Engineering & Lab
Introduction to Engineering, Science,
Technology, and Society
Introduction to Robotics I
Pre-Engineering Elective
Principles of Electric Circuits

In accordance with the definition of an articulation agreement found in the Carl D. Perkins Career and Technical Education Improvement Act of 2006, this state level articulation agreement has been established between all Massachusetts Community Colleges and all high schools having Chapter 74 approved secondary career/vocational technical programs in *Engineering Technology* to provide students with a non-duplicative sequence of progressive achievement leading to technical skill proficiency, a credential, a certificate, or a degree linked through this credit transfer agreement

The principles, policies, and guidelines in this transfer agreement shall apply uniformly to all students attempting to transfer credits earned in Massachusetts secondary CVTE programs.

**The specific course a student receives credit for is determined by the community college curriculum.*

SECTION I: ADMISSION CRITERIA AND PROCEDURES APPLY

- 1) Students eligible for credit are subject to the same application and admission requirements as all other students. The graduation requirements will be no different from the graduation requirements for all other students.
- 2) The minimum high school grade point average (GPA) of 2.0 plus an average grade of B (3.0/80% or higher) earned in the course/s that comprise the Massachusetts Chapter 74 approved Secondary Career/Vocational Technical program listed above.
- 3) Massachusetts students who have completed the Chapter 74 approved secondary career/vocational technical program covered by this agreement shall provide evidence (transcript) that he/she earned a 3.0 GPA/80% or higher in the technical courses that will be awarded advanced credit at all 15 Massachusetts Community Colleges.

SECTION II: AWARDING OF CREDIT

- 1) Articulated credits accepted by a community college pursuant to this agreement shall be placed on the student's college transcript prior to the end of the first semester. When possible the posting will be within 60 days of receiving the student's high school transcript but no later than 30 days after the semester add-drop deadline.
- 2) The credit *shall not* be held in escrow or be dependent upon the results of the college placement test results, required prerequisites, etc.
- 3) Student will receive credit regardless of their college major.
- 4) The student will be awarded up to 8 credits or the number of credits (2–8 credits) that will allow the student to move to the next class level without penalty. The intent of this section is to award the student the appropriate number of credits so that he/she will be in sync with the native student who attends the community college and who has completed the introductory class.

SECTION III: SECONDARY SCHOOL ELIGIBILITY FOR ADVANCED CREDIT

The Massachusetts Community Colleges will honor this agreement for two years after the student's date of high school graduation. In cases where a student's graduation exceeds 2 years, the community college will determine eligibility on a case by case basis.

This agreement is contingent upon a high school with Chapter 74 approved programs maintaining:

- 1) Current accreditation by the New England Association of Schools and Colleges; and
- 2) Current approval by the Massachusetts Department of Elementary and Secondary Education pursuant to Massachusetts General Law Chapter 74 and the Vocational Technical Education Regulations.

SECTION IV: APPEAL PROCESS

Matriculated students have the right to petition the college responsible for certifying credit (e.g. college transfer coordinator, academic dean or other person/s) if credit is not awarded under this agreement. Students may appeal or grieve denial of credit with any community college by referring to the grievance process in that college student handbook. If a student prevails on appeal the college must place the credit on the student's college transcript prior to the end of the first semester – within 60 days of receiving the student's high school transcript but no later than 30 days after the add-drop deadline.

SECTION V: GENERAL CONDITIONS OF THIS AGREEMENT

- 1) Students receiving articulated credits are strongly advised to review all enrollment, transfer and graduation requirements for four-year post-secondary schools prior to making plans to apply to any Massachusetts Community College.
- 2) The transferability of the associate degree credit to a baccalaureate program is determined by each four year institution and cannot be guaranteed.
- 3) This agreement is endorsed by the Massachusetts Community Colleges Executive Office on behalf of Massachusetts Community College Presidents' and the Massachusetts Association of Vocational Administrators.
- 4) This agreement will be reviewed when a substantive change in the framework occurs by the framework's review committee.

SECTION VI: FAIR NOTICE OF MATERIAL MODIFICATION

- 1) A fair notice period of 24 months by a community college will provide confidence to students and parents that the agreement will be in effect when the student graduates from high school. It is intended that this section not be combined with any other section for the purpose of extending the warning period to be more than 24 months.

SECTION VII: COLLEGES ARE ENCOURAGED TO DEVELOP ARTICULATION

- 1) Individual colleges are encouraged to continue the practice of developing individual articulation agreements in a variety of classes/programs.
- 2) Colleges are encouraged to consider adopting this agreement to apply to secondary non-chapter 74 programs where appropriate.
- 3) The community colleges continue to have the discretion to award advanced credit in cases not specifically covered by this agreement. This agreement may apply to students in secondary non-chapter 74 approved programs or in cases where a word or course title or program title may vary from this agreement, etc.
- 4) The community college program title changes alone will not impact this agreement because the agreement is based upon student achievement of knowledge and skills in this area as outlined in the Massachusetts Chapter 74 frameworks.

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William Messner
President, Holyoke Community College and
Chair, Massachusetts Community Colleges Council of Presidents



David J. Ferreira
Executive Director
Massachusetts Association of Vocational Administrators

Engineering Technology Frameworks Objective Comparisons

POST SECONDARY PROGRAM OBJECTIVES	CHAPTER 74 ENGINEERING TECHNOLOGY FRAMEWORKS	
Understand fundamental electrical concepts	2.R.02	Explain what classifies a material as an insulator or conductor.
	2.R.03	Define the difference between direct and alternating currents.
	2.T.01	Use engineering notations and prefixes: Mega, Kilo, milli, micro, nano, pico, micro-micro.
	2.T.06	Describe difference between open and closed loop control.
	2.U.06	Draw and label a digital waveform (signal generators, wave types, square, sawtooth, sine).
	2.W	Design a circuit.
Understand and identify common electrical components	2.R.04	Describe a resistor and what its function is in circuit design.
	2.S.01	Identify resistors using code.
	2.S.02	Demonstrate how diodes operate and their function.
	2.S.03	Explain and demonstrate how transistors function.
	2.S.04	Describe the differences between different display devices (LED (light emitting diodes), seven segment display, LCD (liquid crystal display).
	2.S.05	Identify different types of capacitors and their voltage polarity requirements.
	2.S.06	Describe the function of sensors in electronic circuitry (temp., optical, etc).
	2.T.03	Identify basic circuit components (source, load, control, conductors).
Use common electronic meters to measure component & circuit properties	2.D	Maintain equipment and machinery.
	2.F.03 c	Identify appropriate electronic device/gauge for specific tasks.
	2.F.04 c	Calibrate and use electronic devices and/or gauges accurately.
	2.T.02	Measure resistance using multimeters.
	2.U.03	Measure the value of capacitors using instrumentation.
	2.U.04	Measure current in both series and parallel circuits.
	2.U.05	Measure voltage in both series and parallel circuits.
	2.U.07	Find rise and fall time, and frequency using an oscilloscope.
Conduct circuit analysis on series and parallel AC and DC circuits.	2.B	Demonstrate and apply the design process.
	2.C	Demonstrate skills in problem solving, diagnostics, and troubleshooting.
	2.D	Maintain equipment and machinery.
	2.E	Demonstrate and apply manufacturing process management techniques.
	2.H	Document and communicate engineering concepts.
	2.Q	Determine reliability and liability of a design.
	2.T.04	Read schematics.
	2.T.05	Describe the difference between series, parallel, and series-parallel circuits.
Apply Ohm's law to analyze simple one loop circuits to complex mesh circuits utilizing network theorems such as Thevenin, Norton and superposition	2.H	Document and communicate engineering concepts.
	2.L.02	Utilize the steps of the design process to solve a given problem or problem(s).
	2.U.01	Calculate voltage and current in simple circuits using Ohm's law.
	2.U.02	Calculate current and voltage using Kirchhoff's law.