

September 10, 2014

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Minuteman School Committee

Recommended Educational Program Plan

A REVOLUTION IN LEARNING

Educational Program Plan (EPP) Overview

- MSBA Feasibility Study Requirements
- Chapter 74 Regulations
- Federal Perkins Indicators
- Critical Indicators
- Curriculum Requirements
- Program Closures and Mergers
- New Programs

MSBA Feasibility Study EPP Requirements

- 963 CMR 2.02: An approved Educational Program must comply with the requirements and regulations of the Massachusetts Department of Education.
- Revised Educational Program Plan must be approved in September 2014.
- Design team must submit the Preferred Schematic Design by January 2015
- Meetings with staff:
 - September 3, 17, 18, October 14, & 22.

CVTE Chapter 74 Regulations

- 603 CMR 4.04(1): In order to receive approval for a new program, the Superintendent shall submit an application to the Commissioner that demonstrates the labor market outlook for the program and compliance with approval criteria:
 - Organization: Advisory Committees
 - Control
 - Location (Facilities) and Equipment
 - Program of Study and Methods of Instruction
 - Qualifications of Personnel
 - Admission of Students
 - Employment of Students (Cooperative Education)
 - Expenditures
- 603 CMR 4.04(5): A school district that seeks to discontinue an approved vocational technical education program shall submit a closure plan to the Department that includes a timetable for program closure, information outreach to affected students and their parents/guardians, and options for students to complete the vocational technical education program.

Perkins Performance Indicators

- Academic Attainment Language Arts
- Academic Attainment Math
- Technical Skill Attainment
- Completion
- Graduation Rate
- Placement
- Nontraditional Participation
- Nontraditional Completion

Critical Indicators

- Industry Growth
- Wage Potential
- Student Interest
- Emerging Technologies
- Availability of Other Programs
- Community Partnerships
- Career Placement

CVTE Curriculum Frameworks

- The Vocational Technical Education Frameworks are organized under Career Clusters.
- Each Framework consists of six strands as follows:
 - Strand 1: Safety and Health Knowledge and Skills
 - Strand 2: Technical Knowledge and Skills
 - Strand 3: Embedded Academic Knowledge and Skills
 - Strand 4: Employability and Career Readiness Knowledge and Skills
 - Strand 5: Management and Entrepreneurship Knowledge and Skills
 - Strand 6: Technological Knowledge and Skills
- All Strands for all 44 CVTE programs have been revised and updated as of July 2014

MA Career Clusters & MM Programs

- Agriculture and Natural Resources Cluster
 - Environmental Science & Technology, Horticulture
- Arts and Communication Services Cluster
 - Design & Visual Communications, Multi-media Engineering
- Business and Consumer Services Cluster
 - Cosmetology & Barbering
- Construction Cluster
 - Carpentry, Electricity, Plumbing,
- Education Cluster
 - Early Education & Care
- Health Services Cluster
 - Health Assisting
- Hospitality and Tourism Cluster
 - Culinary Arts & Hospitality
- Information Technology Services Cluster
 - Programming & Web Development
- Legal and Protective Services Cluster
- Manufacturing, Engineering and Technology Cluster
 - Biotechnology, Robotics & Engineering Automation, Advanced Manufacturing
- Transportation Cluster
 - Automotive Technology

Engineering, Construction, & Trades Academy	Life Sciences & Services Academy	Shared House	
Electrical	Culinary Arts & Hospitality	Advanced Placement	Health & Safety
Advanced Manufacturing	Cosmetology & Barbering	Nursing Services	Entrepreneurship
Carpentry	Early Education & Care	Library	Financial Literacy
Automotive	Health Occupations	Special Education	Digital Literacy
Plumbing	Environmental Science	Physical Education	Reading Consultancy
Design & Visual Communications	Biotechnology	Humanities	Portfolios
Programming & Web Development	Horticulture	Guidance	Executive Function
Robotics Engineering Automation		Math	Co-Op
Multi-Media Engineering		Science	Project Based Learning
		English	Common Planning Time

Program Closures 2014 - 2017

- Telecommunications
- Marketing
- Heating Ventilation Air Conditioning
 - Will be a component of Plumbing
- Welding
 - Will be a component of Advanced Manufacturing

Telecommunications and Fiber Optics

- There are no Industry Recognized Certifications associated with this program
- High rate of attrition from freshman year
- Low numbers of students on co-op
- Advisory Board involvement limited
- DESE follow-up information regarding employment
 - 2012 - 0% (37.3% response rate)
 - 2011 - 0% (40% response rate)
 - 2010 - 0% (66.67% response rate)

Marketing

- Decreasing enrollment
- Few Work Co-op participants.
- DESE follow-up information regarding employment
 - 2012 - 0% (33% response rate)
 - 2011 - 16.67% (100% response rate)
 - 20110 - 42.86% (100% response rate)

HVAC

- Low interest in the program past several years
- 40% of the graduating class earned certifications available
- Advisory Board limited
- Poor response rate on CVTE follow-up survey
- Exit interviews indicate 2 of the 7 students graduating were headed to college
- DESE follow-up information regarding employment
 - 2012 - 50% (100% response rate)
 - 2011 - 100% (16.67% response rate)
 - 2010 - 28.57% (87.5% response rate)

Welding

- Will become a component of Advanced Manufacturing Program
- 40% of class of 2012 graduated with their AWS certification
- Few students (16%) participate in Work Co-op during 2011-2014
- Current program primarily focuses on Welding with very little focus on metal fabrication or manufacturing
- We do not have the equipment to teach technical skills described in the Frameworks of Metal Fabrication & Joining Technologies.
- Enrollment: 24 total students.
 - Low enrolled programs will be either phased out (Marketing and HVAC) or merged with other programs (Robotics and Hospitality).
- DESE follow-up information regarding employment
 - 2012 - 50% related employment (100% response rate)
 - 2011 - 100% related employment (83.5% response rate)
 - 2010 - 50% related employment (50% response rate)

New: Advanced Manufacturing

- Very Positive Indicators
 - Job Demand
 - Living Wage
 - Industry Partnerships
 - State Commitment from the highest levels
 - Private/Public Partnerships such as Amp it Up
 - Investment reasonable given the return

Job Growth in Advanced Manufacturing

- 16% Industry Growth since 2007
- Over 7,000 manufacturers in Massachusetts offering an average salary of \$75,000.
- Greatest need is for employees with basic skills who are able to walk into a job with minimal training and capability of being trained in more advanced skills over time.

Advanced Manufacturing & Metal Fabrication in Practice



State Commitment to Advanced Manufacturing

- \$21 million dedicated to supporting the state's manufacturers in FY2014 state budget.
- [Advanced Manufacturing Regional Partnership Academy](#) with the University of Massachusetts to address manufacturers' workforce needs.
- AMP it Up! is a statewide promotional campaign educating students, parents, teachers and guidance counselors about manufacturing careers in the Commonwealth.



New: Multimedia Engineering

- Critical Indicators
 - Job Demand
 - Industry Growth providing Emerging Opportunities
 - Student Interest
 - Strategic Partnerships
 - State Level
 - Post -Secondary Institutions (Suffolk U; MIT; NE)
 - Integrative Potential within and between schools

What is Multimedia Engineering?

- It has been described as representing a growing sector known as the Creative industries including:
 - Design
 - Film and Media
 - Music and Performance
 - Publishing
 - Advertising and Marketing
 - Architecture
 - Visual Arts and Craft

Opportunities in Multi-Media Engineering

- Post Secondary Program are emerging
- Several Labor unions work in these occupations
- Creative Industries have a \$2 billion statewide impact¹ and encompass over 100,000 Massachusetts workers.²

1. Report commissioned by Boston-based [New England Foundation for the Arts \(NEFA\)](#). 2011
2. http://www.boston.com/business/blogs/global-business-hub/2013/03/creative_indust.html

Support for the Creative Economy

- The Executive Office of Housing and Economic Development has formed the Creative Economy Network. Its action agenda includes:
 - Business Development
 - Workforce and Talent Development
 - Access to Capital
 - Visibility
 - Space Development
- The Massachusetts Creative Economy

Horticulture Framework Overview

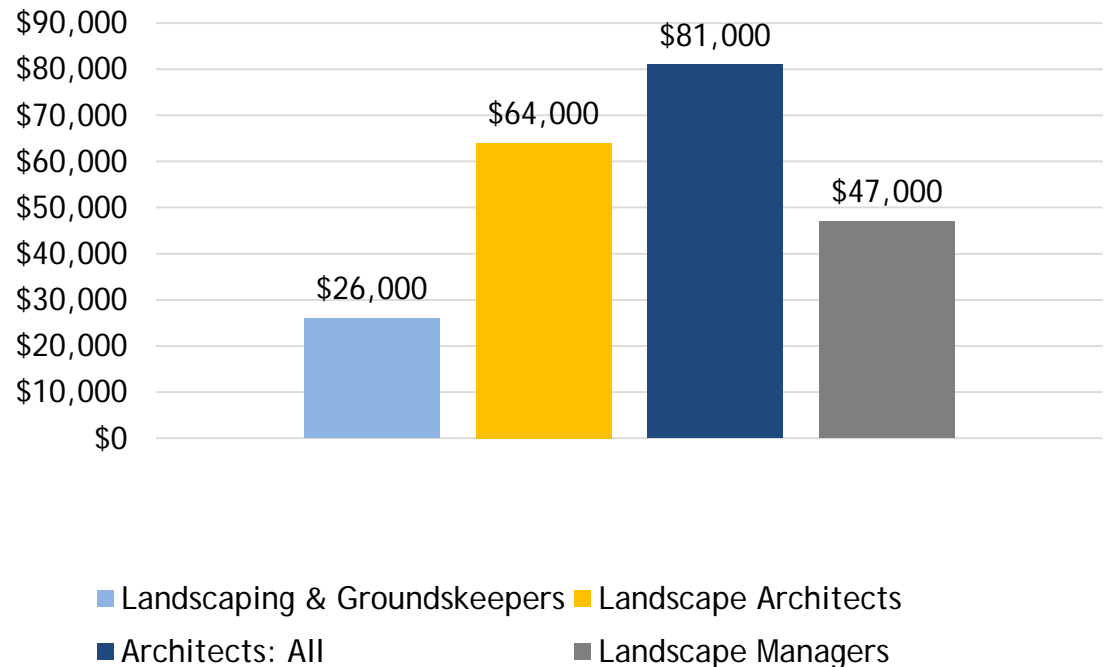
- Core competencies taught:
 - Botany
 - Plant Health Care
 - Soils
- Areas of concentration:
 - Arboriculture
 - Greenhouse Management & Floriculture
 - Landscaping & Turf Management

Critical Indicators

- Industry Growth
- Wage Potential
- Student Interest
- Emerging Technologies
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Average Wages for Related Jobs

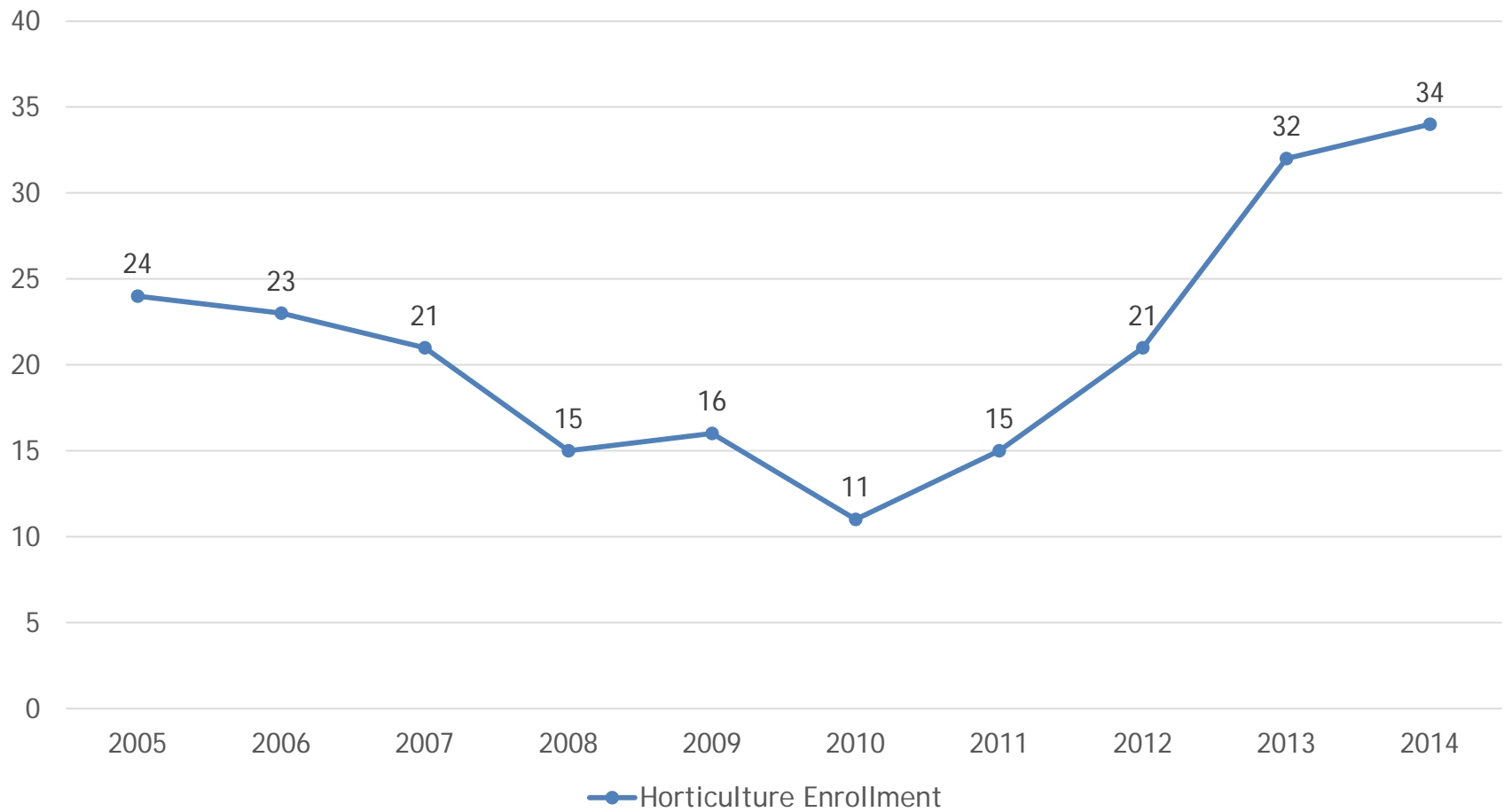
- Graduates from certificate programs are qualified for entry-level employment, however credits can be applied to associate degrees
- Graduates with associate's degree program are qualified for a range of management positions.
- Employment opportunities in landscaping are expected to increase by 20% or more between 2010 and 2020. Nationally, growth can be attributed to a rising interest in professional design and maintenance of grounds and gardens by businesses, municipalities and homeowners.



Minuteman Performance

- Class of 2010: 100% positive placement.
 - 75% employed in a related field.
- Class of 2011: 100% positive placement.
 - 50% employed in a related field.
- Class of 2012: 67% positive placement.
 - 33% employed in a related field.
- Co-op Placement
 - 2014: 45% of seniors placed
- Enrollment has steadily increased. Current 10-12 enrollment highest in 10 years (34).

Horticulture Enrollment 2005 - 14



Our Horticulture Program

Vocational Student Organization - FFA

Since 2009 FFA has gained in enrollment every year. Students are now joining from Horticulture, Biotechnology, Culinary, Automotive, and Environmental Science. This year we have 32 students not counting Freshman.

Participation in State events has increased: Safe Equipment Operations Competition, Turfgrass Career Development Event; Soils and Land Judging; and Agriculture Day at the State House

Community Service Projects:

- **Concord Playscape:** 2012 - Present: Prepare site, install plantings (over 2,000 plants) using landscape design plan. Students able to work with landscape designer (Phase 1) to mulch, prune existing plants, and conduct spring and fall clean up in existing garden.
<http://www.ripleyplayscape.org/>
- **Lincoln Garden Club:** 2012 - Present: Performed pruning and mulching for town park.
- **Region: Community Outreach for Garden Design** - Made scientific plant labels for gardens, pruned, plant installation, measured and calculated fill for pathways, prepped walkways for installation. <http://www.cogdesign.org/>
- **Minuteman National Park:** Garlic Mustard Pull with Park Ranger/Horticulturist, Geoff Grossman (invasive removal)
- **Lexington Historical Society:** Buckman Tavern fall and spring clean ups, pruning, mulching edging, prepping for opening weekend and closing for the season.
- **Sudbury Habitat for Humanity:** Met with Habitat director to measure and estimate supplies to redo existing landscape, currently in progress.

Current Community Partners

- [Wagon Wheel Nursery & Farmstand](#) - Lexington
- [Wilson Farm](#) - Lexington
- [Codman Community Farms](#) - Lincoln
- [Verrill Farm](#) - Sudbury & Concord
- Numerous Local Restaurants seeking “Farm to Table” partnerships with MM.
- [UMASS Center for Urban Sustainability](#) in Waltham offers exciting opportunities.

More Partnerships

- The University of Massachusetts Center for Agriculture, Food and the Environment sponsors research and provides educational opportunities, services and resources for commercial horticulture businesses.
 - These include landscape services, nurseries, greenhouses, turf care and tree care firms. The Center supports these businesses to increase the competitiveness of the Commonwealth and to enable them to attain important goals in environmental sustainability and workforce development.
- The Massachusetts Nursery and Landscape Association is the largest green industry business development vehicle in Massachusetts and works exclusively in this field.