



PA TAACCCT Round 1
Subject Matter Expert Evaluation Final Report

The SM Jacobs Group
Middletown, DE
Submitted June 23, 2015

This report was written and prepared by The SM Jacobs Group, a contracted vendor of the PA TAACCCT Round 1 Consortium.

Due to the report being submitted to the TAACCCT Grant Administration Office at Community College of Philadelphia in multiple sections and in various formats it was necessary for TAACCCT staff to re-format and edit certain parts of the report. In doing this, no content of the submitted final report was altered.

*TAACCCT Round 1
Community College of Philadelphia*

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PA TAACCCT SUBJECT MATTER EXPERT FINAL REPORT

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Section One

Curriculum Development Survey

- *Survey Data Analysis*
- *Healthcare Technology Survey*
- *Production Technician Survey*
- *Advanced Manufacturing/Logistics & Energy Core Survey*

Survey Data Analysis

Purpose:

The enclosed report provides data and analysis from the survey instrument and virtual site visits conducted and created by the S M Jacobs Group. Survey documents are located in the appendix section of the final report. This survey was administered via Survey Monkey beginning June 23rd and culminating on July 15th. The purpose of the survey was to document the curriculum development processes for credit and non-credit programs in the areas of healthcare technology, production technician and advanced manufacturing at each of the fourteen community colleges in the state of Pennsylvania. The survey consisted of fifty two questions: 1-22 queried healthcare technology; 23-37 were about the production technician program and questions 38-52 dealt with advanced manufacturing.

Surveys were completed by project directors and/or faculty at the respective colleges. Follow up virtual site visits were conducted at each of the fourteen colleges, in an effort to capture additional explanations and data which was evident in the survey. These findings appear in part two of this report.

Significant findings and challenges encountered by The S M Jacobs Group are identified below:

Significant Survey and Virtual Site Visit Findings for Healthcare Technology

Eight of the fourteen community colleges offer a Healthcare Technology program. These programs are overwhelmingly offered as a non-credit option culminating in the granting of a certificate. The curriculum source for this program was primarily acquired from an existing curriculum that was modified to meet the needs of the TAACCCT program. On average, two to three faculty were involved in developing and modifying the curriculum which in most cases did not require a creative commons open source copyright. Most of the colleges worked with two or more industry partners to develop/acquire the curriculum.

The Healthcenter 21 curriculum was overwhelmingly unpopular with the Colleges that utilized it. Non-credit faculty used it primarily as an enhancement or pre-requisite to introductory courses and credit faculty felt that it was more suited for a high school environment and not rigorous enough for a college program.

Although the purchase cost of the program was relatively inexpensive, most colleges indicated that they would not purchase or use it again.

Challenges

The major challenge in collecting and analyzing the data for this portion of the report were the multiple surveys submitted by several of the colleges. Harrisburg Community College and Bucks Community College submitted three surveys each, two of which were incomplete. Reading Community College also submitted two surveys, one was incomplete. Multiple submissions caused the number of respondents identified on the charts to be incorrect. This miscalculation was corrected in the analysis portion of the document.

Significant Survey and Virtual Site Visit Findings for the Production Technician Program

Seven of the fourteen community colleges offer a Production Technician program. These programs are overwhelmingly offered as a non-credit option culminating in the granting of a certificate. This program on average takes twelve weeks to complete, or 151 to 200 hours of instruction. Courses are usually taught in the hybrid/blended format with two colleges each identifying all instruction being delivered as face to face or completely online.

Colleges reported that the curriculum for the Production Technician program was primarily purchased and they varied as to whether it was modified or not. Two colleges indicated that their existing curriculum was used and no changes were made to it, to meet the needs of TAACCCT. Most colleges further reported that their curriculum does not require a creative commons open source copyright. Three of those colleges also reported that they did not work with an industry partner to develop or acquire their curriculum. However, the colleges that reported they did work with an industry partner, overwhelmingly stated that the partners reviewed the Production Technician curriculum.

Most of the colleges offering this program identified the credentials received by the students as stackable. The program is very popular with male students with an average age of 40, usually an incumbent worker. Job placement for students who successfully completed this program is not as high as most of the Colleges had anticipated. Some schools are modifying their programs to address these concerns.

Colleges further indicated that they would continue to offer the program on their own if they were not to receive additional TAACCCT funding. All the schools felt that the program contributed substantially to the College and to the community.

One community college indicated a different opinion from the rest. This college felt that the program was geared toward a different audience, primarily a younger male (20's), but seems to attract the incumbent works; it is taking longer than anticipated to get the program off of the ground, primarily because the "community does not understand what manufacturing is". The college has decided to change the curriculum for Round 4, purchase more equipment and provide more in depth training.

Another College indicated that the Production Technician was created in response to community request. Their program demographics include 70% Latino students. The stackable credentials are equal to an AAS degree and move students from a minimum wage to a family sustaining wage.

Challenges

Although I did not have the challenge of multiple surveys as I did in previous reports, I did find that more colleges chose not to respond to several of the questions, especially those that asked about industry partners. Additional data was provided during the virtual site visit.

Significant Survey and Virtual Site Visit Findings for the Advanced Manufacturing Program

Eight of the fourteen community colleges offer an Advanced Manufacturing/Logistics and Energy core curriculum based on AMIST program. These programs are overwhelmingly offered as a non-credit option culminating in the granting of a certificate. The curriculum source for this program was primarily acquired from an existing curriculum that was modified to meet the needs of the TAACCCT program. On average, one faculty member was involved with the exception of Harrisburg community college, which indicated eight faculty participated in developing and modifying the curriculum. Only one college, Luzerne, responded that they did require a creative commons open source copyright. Most of the colleges worked with four or more industry partners to develop/acquire the curriculum.

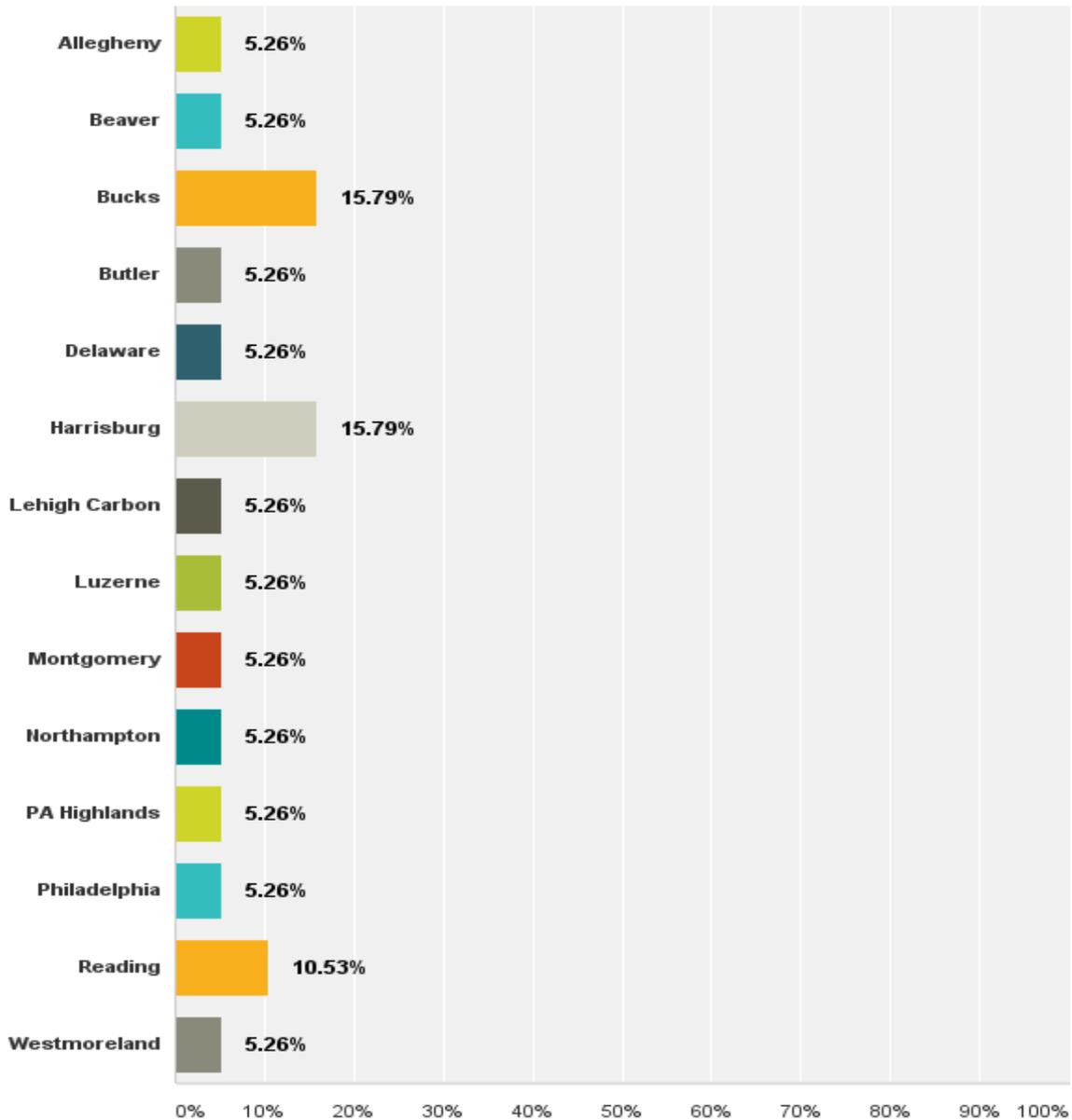
Challenges

There were no major challenges experienced in collecting the data for this report. There did appear to be several 'no response' to questions 49-51 by three colleges.

Healthcare Technology Survey Responses

Q1 Which of the community colleges in PA are you affiliated with?

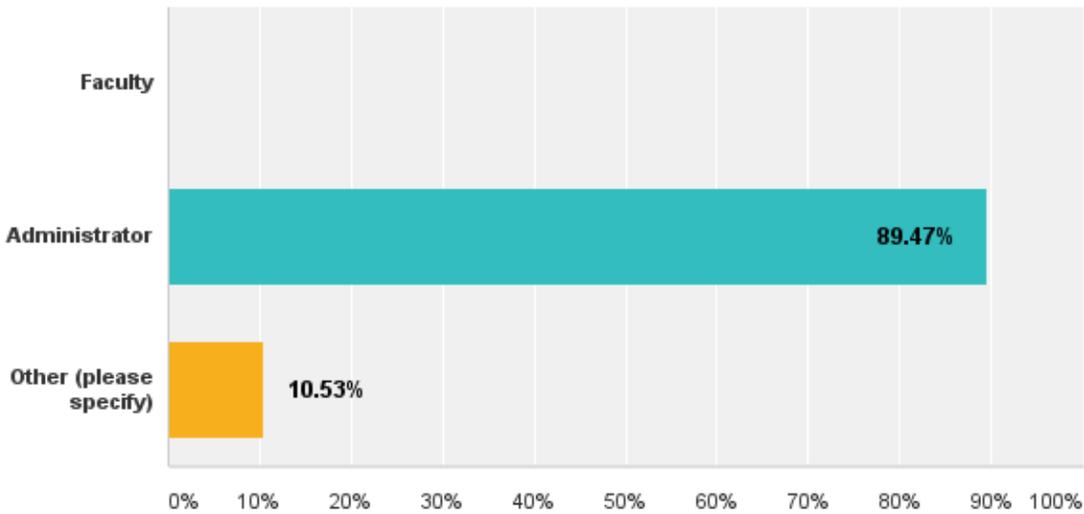
Answered: 19 Skipped: 0



All 14 community colleges responded to this question. Three of the colleges responded more than once: Harrisburg -3; Bucks – 3 and Reading – 2. This total would account for the total of 19 respondents listed in the survey chart.

Q2 What is your primary role at the college?

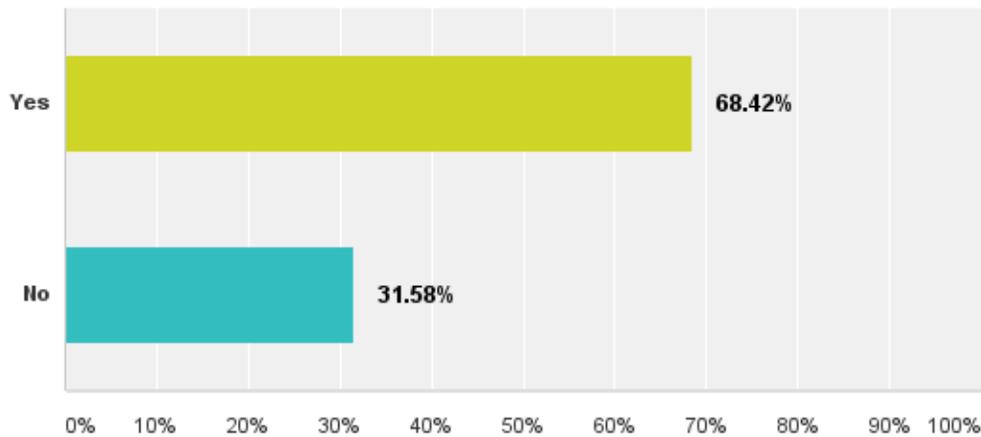
Answered: 19 Skipped: 0



Once again, 19 responses were received. 17 - (89%) responded Administrator, 2 - (10%) responded OTHER. No respondents identified as Faculty.

Q3 Do you use the Healthcenter 21 Core curriculum?

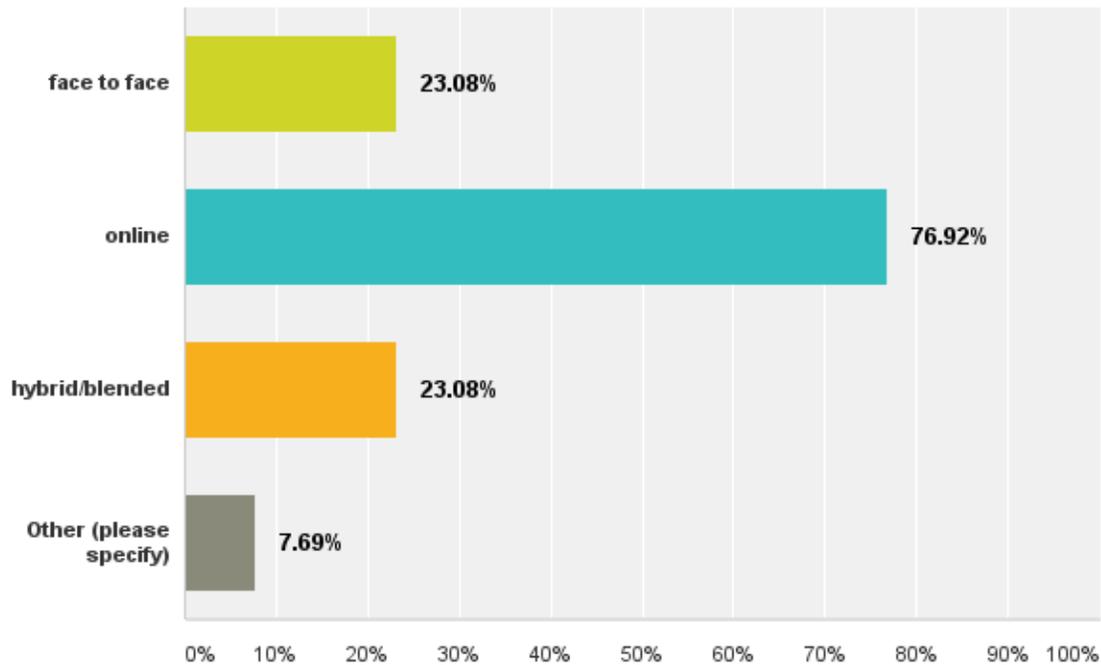
Answered: 19 Skipped: 0



19 responses, 13 (68%) responded Yes, (Harrisburg responded three times and Bucks responded twice). 6 (31%) responded No. 9 Colleges responded to follow up question 5.

Q4 How do you use the Healthcenter 21 core program ? (Select all that apply)

Answered: 13 Skipped: 6



13 responses were received for this question, 9 were valid.

The following Colleges responded:

Lucerne CC – Hybrid/Blended

Bucks CC – Online

Harrisburg CC – Face to Face, Online

Reading CC – Online

Butler CC – No Response

Lehigh Carbon CC – Online/Hybrid/Blended

Delaware County CC – Face to Face/Online/Hybrid/Blended

Montgomery County CC – Online

Northampton CC - Online

Question 5: Briefly describe how you use the Health Center 21 Core Program at your College.

Lucerne CC – Outreach/Marketing

Bucks CC – Introductory Part of HIT Comprehensive course

Harrisburg CC – Infused with Classroom learning in Intro to Healthcare course

Reading CC – Non-Credit Healthcare Explorations Course

Butler CC – Non-Credit Healthcare Explorations Course

Lehigh Carbon CC – Exploration and as an Introductory course

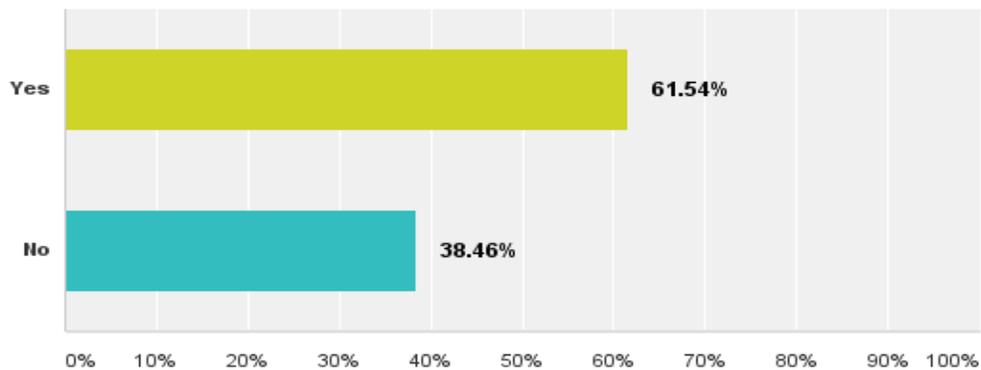
Delaware County CC – Online segment to face to face program

Montgomery County CC – Prerequisite for all TACT Healthcare Programs

Northampton CC – As an online exploration into healthcare fields

Q6 Were you and/or anyone at your college part of the PA TAACCCT Healthcare Workgroup that reviewed Healthcenter 21 modules at the start of the grant?

Answered: 13 Skipped: 6



13 Colleges responded - 9 were valid. 3 – No, 6- Yes

Question 7: Who did you collaborate with to complete this section of the survey?

Luzerne CC – Helene Mancuso Flannery

Bucks CC –Janet Baker

Harrisburg CC –Jackie Foster

Reading CC – Maria Speicher, Sue Costa, Linda Bell

Butler CC – Margaret Ashendon

Northampton CC – No

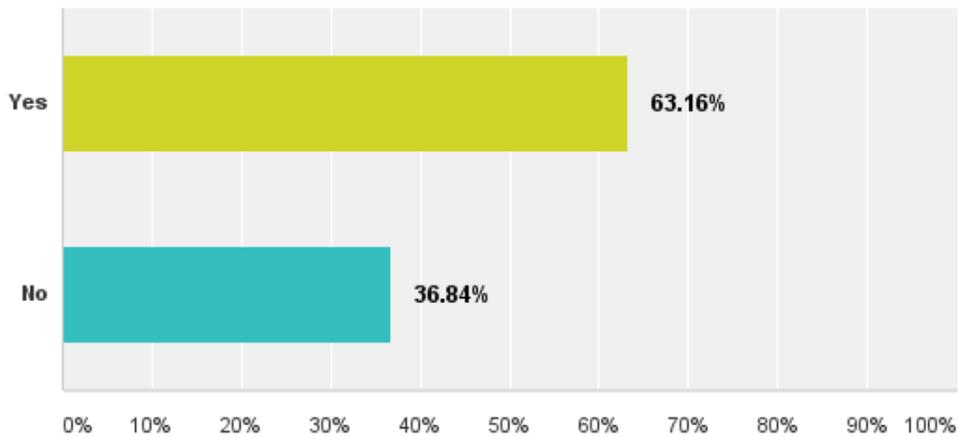
Lehigh Carbon CC – No one

Delaware CC – Rose Kurtz

Montgomery County CC – Joan Branch

Q8 Do you offer a Healthcare Technology program of study?

Answered: 19 Skipped: 0



8 Colleges responded – Yes: Beaver CC, PA Highlands CC, Harrisburg CC, Reading CC, Bucks CC, Lehigh Carbon CC, Delaware County CC, Montgomery County CC

Question 9: What is the name of your Healthcare Technology program of study?

Beaver CC – Electronic Health Record Management

PA Highlands CC- Healthcare Information Specialist

Harrisburg CC- Healthcare IT Specialist

Reading CC – Healthcare Information Technology Specialist/Electronic Health Records and Healthcare IT

Bucks CC – Healthcare Information Technology

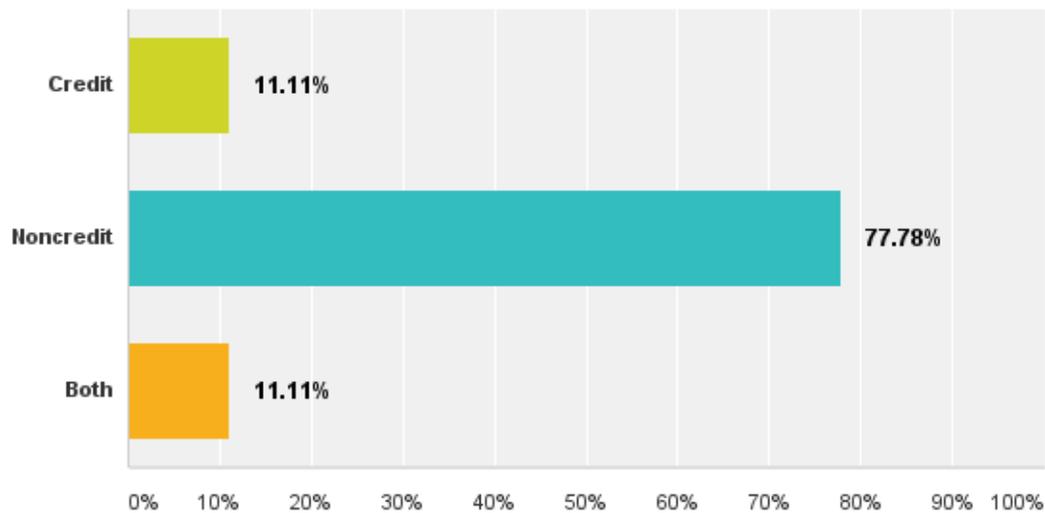
Lehigh Carbon CC – Healthcare Technology Specialist

Delaware County CC – Digital Patient Records Certification Program

Montgomery County CC – Health Information Technology

Q10 Is your Healthcare Technology program a credit program or a non-credit program?

Answered: 9 Skipped: 10



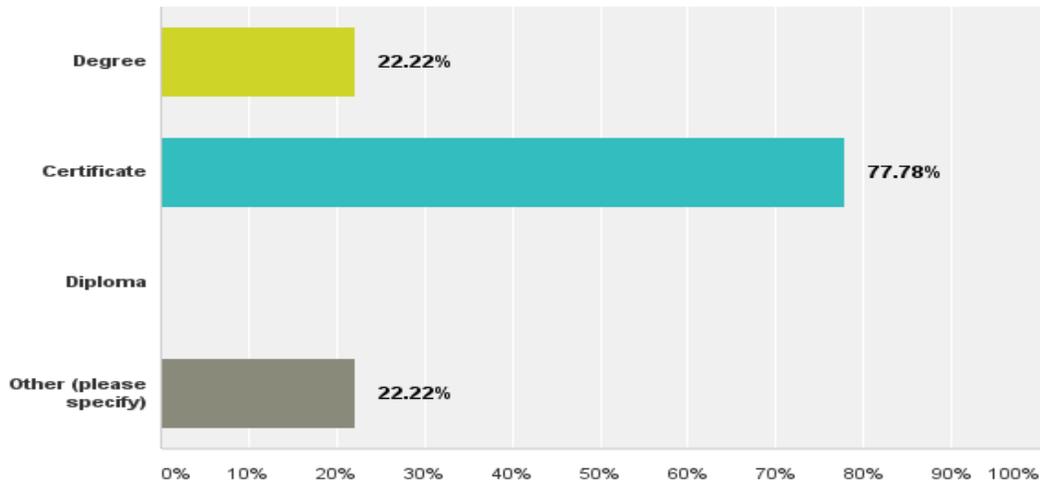
Colleges with credit programs: PA Highlands CC, Reading CC

Colleges with non-credit programs: Beaver CC, Harrisburg CC, Reading CC, Lehigh Carbon CC

Bucks CC, Delaware County CC, Montgomery County CC

Q11 What credential is awarded to students who complete your Healthcare Technology program? (Select all that apply)

Answered: 9 Skipped: 10

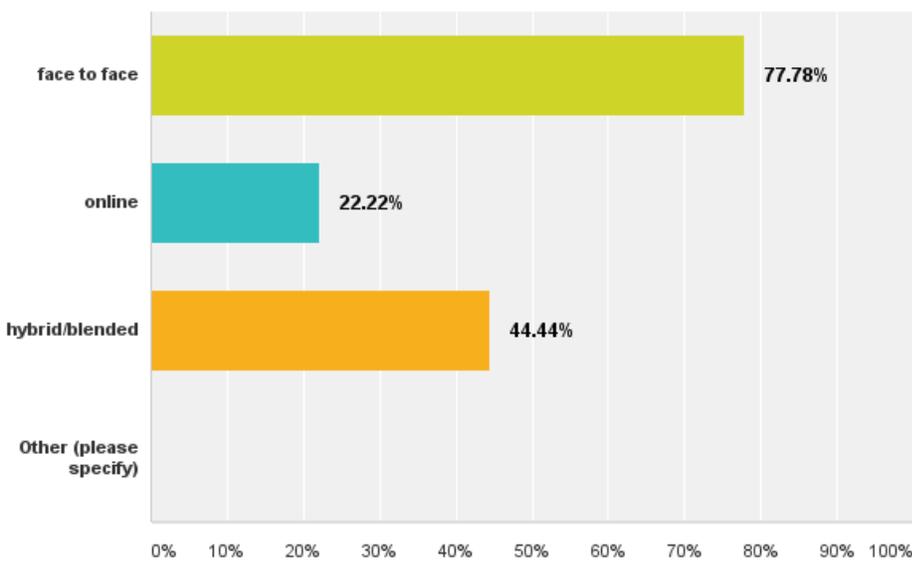


Colleges that offer a degree: PA Highlands CC, Reading CC

Colleges that offer a certificate: Beaver CC, Harrisburg CC, Reading CC, Bucks CC, Lehigh Carbon CC, Delaware County CC, Montgomery County CC

Q12 How are courses in your Healthcare Technology program offered? (Select all that apply)

Answered: 9 Skipped: 10



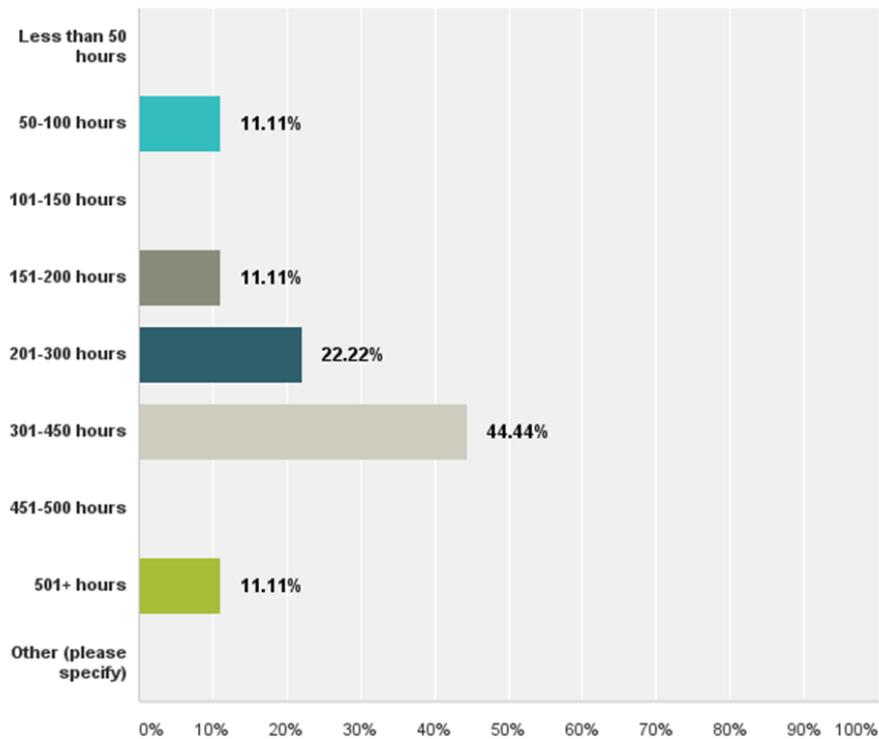
Face to Face: Beaver CC, PA Highlands CC, Harrisburg CC, Reading CC, Lehigh Carbon CC,
Montgomery County CC

Online: PA Highlands CC, Reading CC

Hybrid/Blended: PA Highlands CC, Delaware County CC

Q13 What is the average length of time required to complete your Healthcare Technology program ?

Answered: 9 Skipped: 10



Colleges that responded 50-100 hours: Beaver CC

151-200 Hours: PA Highlands CC

201-300 Hours: Delaware County CC

Montgomery County CC: 301-450 Hours, Harrisburg CC, Bucks CC, Lehigh Carbon CC

501+ Hours: Reading CC

Question 14: How many weeks does it take to complete your Healthcare Technology program?

Montgomery County CC – 30

Delaware County CC – 10

Lehigh Carbon CC – 11

Bucks County CC – 32

Reading CC – 60

Harrisburg CC – 15

PA Highlands CC – 60

Beaver CC – 12

Question 15: Briefly describe the curriculum in your Healthcare Technology program.

Beaver CC – Students are educated in the implementation and management of electronic health information using common electronic data interchange systems such as HL7, CDISC and DICOM.

PA Highlands CC – A medical records analyst would compile, process and maintain medical records of hospital and clinic patients in a manner consistent with medical, administrative, ethical, legal and regulatory requirements of the health care system. A medical records analyst would also process, maintain, compile and report patient information for health requirements and standards in a manner consistent with the healthcare industry's numerical coding system.

Harrisburg CC – Healthcare Courses, A+, Net+ and HIT Technician

Reading CC – Certifications that prepare individuals to install, troubleshoot and repair computer hardware in a healthcare setting; AAS – courses that prepare individuals to install, troubleshoot and repair computer hardware and software in a healthcare setting.

Bucks CC – HC 21, Intro to Computer Tech, either Medical Billing and Coding or Electronic Health Records Management

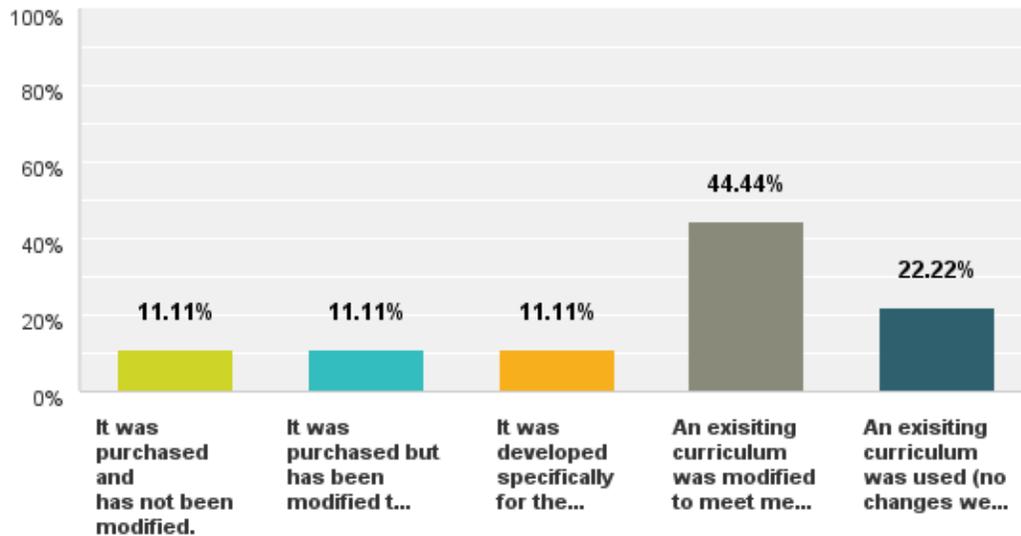
Lehigh Carbon CC – There are three instructional areas of focus – Computer programs MS word, Excel, Access, PowerPoint and Med iSOFT data entry, medical terminology, HIPAA and Professional Communication. The last week is spent in a practicum site to cement classroom learning. The career coach and job developer work with the students while in class to create a strong resume and interview skills.

Delaware County CC – Certification Program

Montgomery County CC – A+, Net+, Security, Health Information Technology

Q16 How did you acquire the curriculum for the Healthcare Technology program ?

Answered: 9 Skipped: 10



It was purchased and not modified: Beaver CC

It was purchased but has been modified to meet our needs: Reading CC

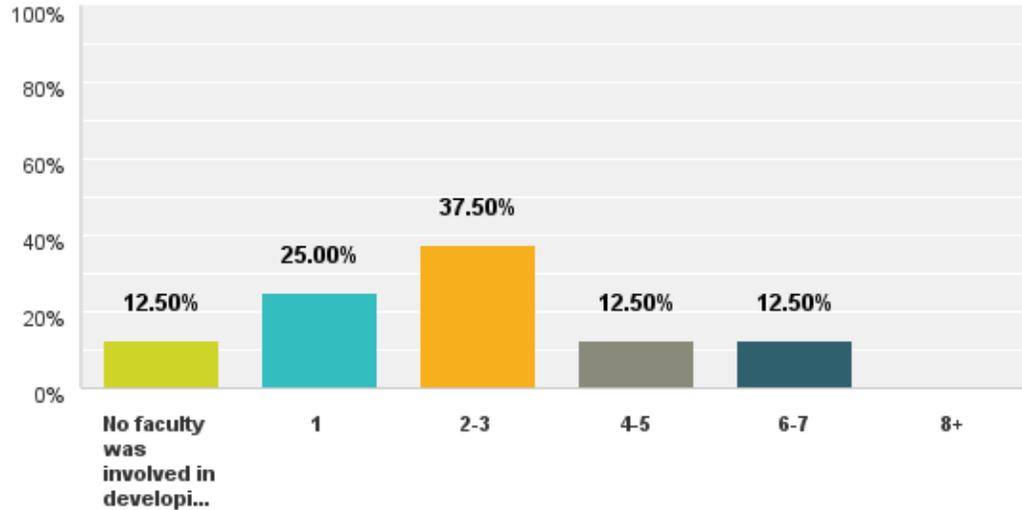
It was developed specifically for the TAACCCT program of study: Lehigh Carbon CC

An existing curriculum was modified to meet the needs of the TAACCCT program: PA Highlands CC; Harrisburg CC; Delaware County CC

An existing curriculum was used and no changes were required: Bucks CC; Montgomery County CC

Q17 How many faculty were involved in developing/modifying the curriculum for your Healthcare Technology program ?

Answered: 8 Skipped: 11



Colleges responded as follows:

None: Montgomery County CC

1: Reading CC, Harrisburg CC

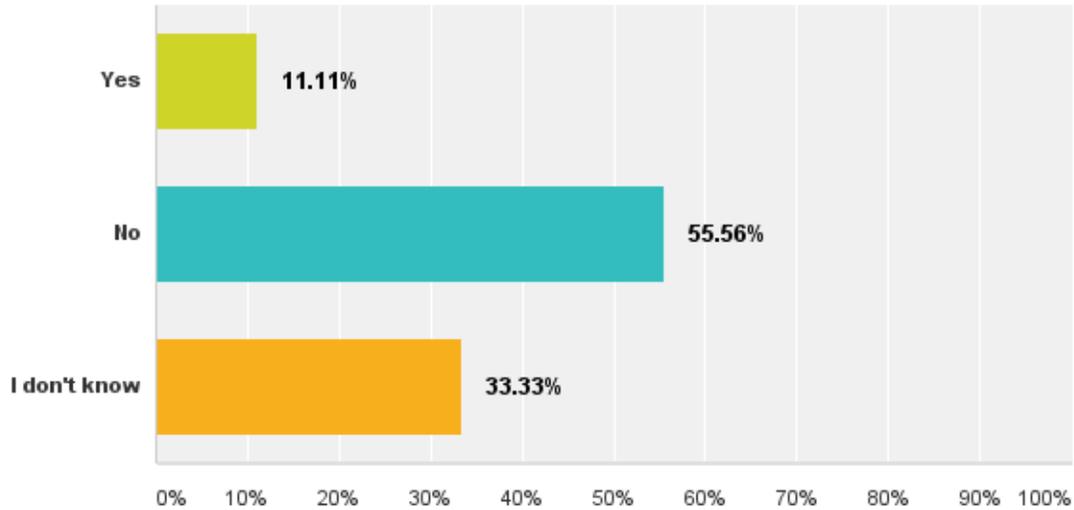
2-3: Delaware County CC, PA Highlands

4-5: Bucks CC

6-7: Lehigh Carbon CC

Q18 Does your Healthcare Technology curriculum require a creative commons open source copyright?

Answered: 9 Skipped: 10



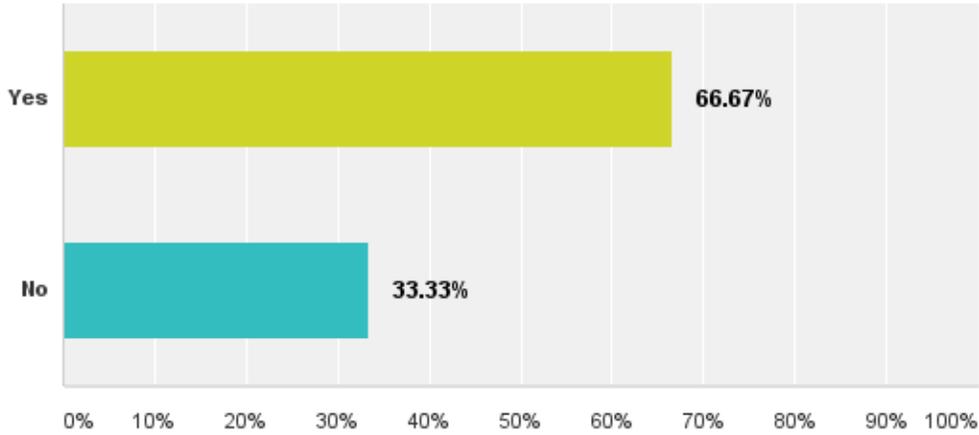
Colleges that responded YES: Lehigh Carbon CC;

Colleges that responded NO: Montgomery County CC; Delaware County CC; Bucks CC; PA Highlands CC and Beaver CC

Colleges that responded I DON'T KNOW: Reading CC; Harrisburg CC

Q19 Did your institution work with industry partners to develop/modify/acquire your Healthcare Technology curriculum?

Answered: 9 Skipped: 10

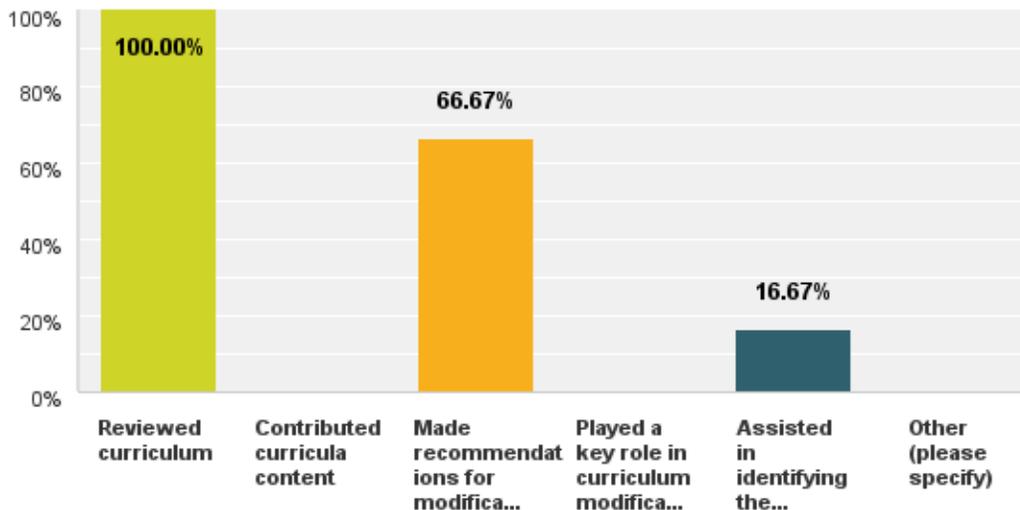


Colleges that responded YES: PA Highlands CC; Harrisburg CC; Reading CC; Lehigh Carbon CC; Delaware County CC

Colleges that responded NO: Beaver CC; Bucks CC; Montgomery County CC

Q20 For the Healthcare Technology curriculum, industry partners... (select all that apply)

Answered: 6 Skipped: 13



Reviewed Curriculum: Delaware County CC; Lehigh Carbon CC; Reading CC; Harrisburg CC; PA Highlands CC

Contributed curricula content: none

Made recommendations for modification: Reading CC; Harrisburg CC

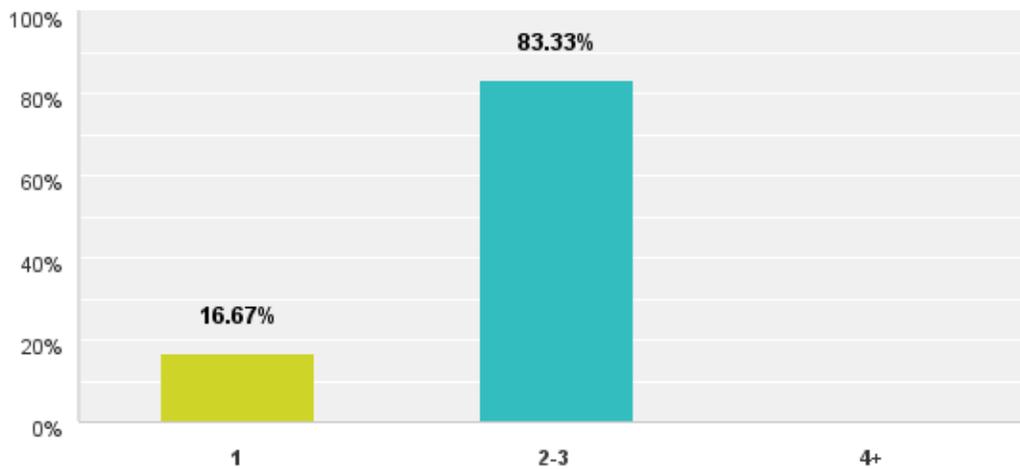
Played a key role in curriculum modification: none

Assisted in identifying the curriculum: none

Colleges that did not respond to this question: Montgomery County CC; Bucks CC; Beaver CC

Q21 How many industry partners provided input to assist the Healthcare Technology curriculum?

Answered: 6 Skipped: 13



Delaware County CC – 2-3

Lehigh Carbon CC – 2-3

Reading CC – 1

Harrisburg CC – 2-3

PA Highlands CC – 2-3

Colleges that did not respond to this question: Montgomery County CC; Bucks CC; Beaver CC

Question 22: Who did you collaborate with to complete this section of the survey? List names and titles.

Montgomery County CC: Anil Datta, Director, Computer Programs

Delaware County CC: Rose Kurtz

Lehigh Carbon CC: Terri Keefe

Bucks CC: Janet Baker, Director of Allied Health

Reading CC: Sue Costa, Director of Occupational Programs; Linda Bell, Assistant Dean of Business

Harrisburg CC: Robert Gill, Workforce; Dan Wagner, Director HACC Workforce Training

PA Highlands CC: Dr. Barbara Zaborowski, TAACCCT Project Director

Beaver CC: Condensed Curriculum International

7 Colleges responded YES out of a possible 14: Northampton, Butler, Harrisburg, Reading, Alleghany, Bucks and Lehigh Carbon Community Colleges.

Production Technician Survey Responses

Question 23: Do you use the Production Technician program of study?

7 Colleges responded YES out of a possible 14: Northampton, Butler, Harrisburg, Reading, Alleghany, Bucks and Lehigh Carbon Community Colleges.

Question 24: What is the name of the Production Technician program of study?

Northampton CC – Electromechanical: Automated Systems

Butler CC – MSSC Certified Production Technician

Harrisburg CC – HACC Manufacturing Workforce Training

Reading CC – Production Technician Certificate

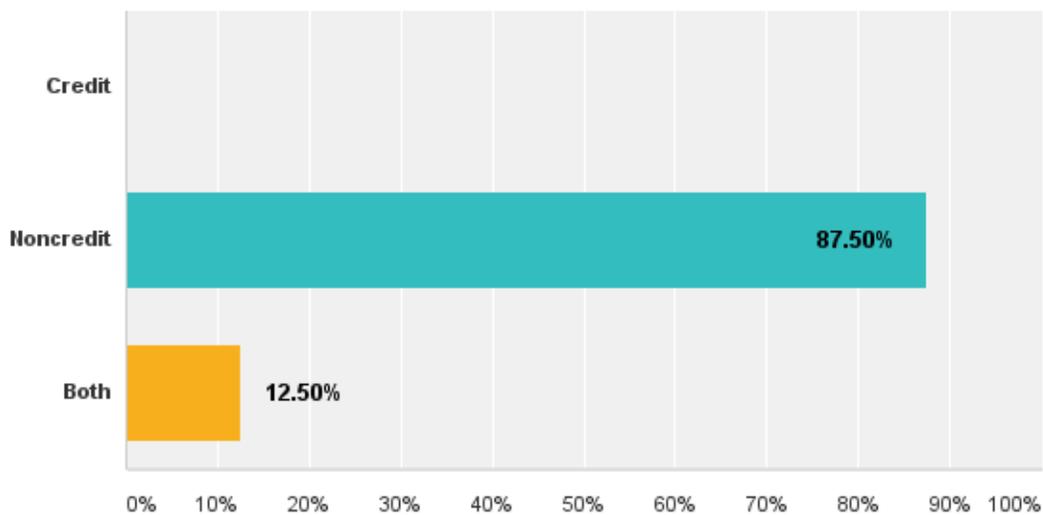
Alleghany CC – Certified Production Technician

Bucks CC - Production Tech 1

Lehigh Carbon CC – Production Technician

Q25 Is your Production Technician program a credit program or a non-credit program?

Answered: 8 Skipped: 11



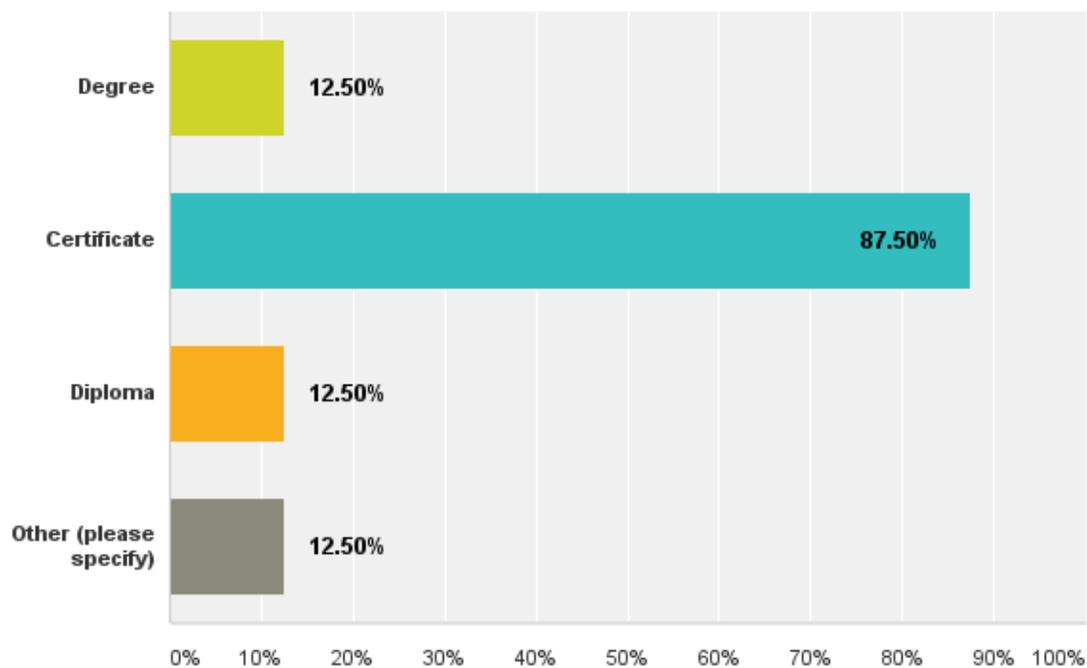
7 Colleges responded with the majority having non-credit programs.

Colleges with non-credit programs: Butler CC; Harrisburg CC; Reading CC; Allegheny CC;
Bucks CC; Lehigh Carbon CC

Colleges with both credit and non-credit programs: Northampton CC

Q26 What credential is awarded to students who complete your Production Technician program? (Select all that apply)

Answered: 8 Skipped: 11



Colleges who award certificates: Bucks CC, Reading CC, Allegheny CC, Lehigh Carbon CC, Butler CC, Northampton CC

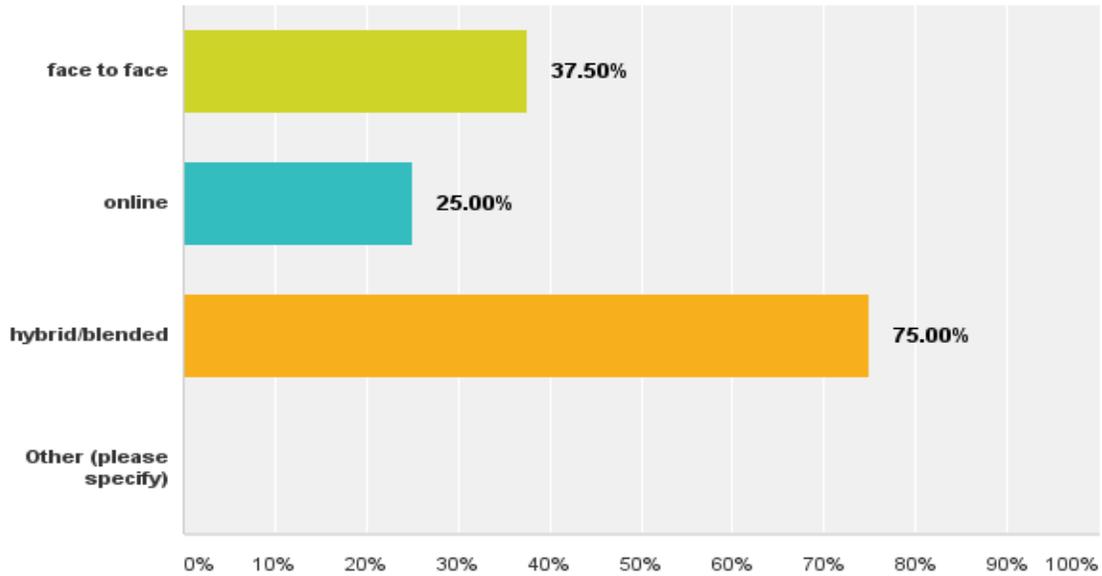
Colleges who award degrees: Northampton CC

Colleges who award other: Harrisburg CC

Colleges who award diplomas: Northampton CC

Q27 How are courses in your Production Technician program offered? (Select all that apply)

Answered: 8 Skipped: 11



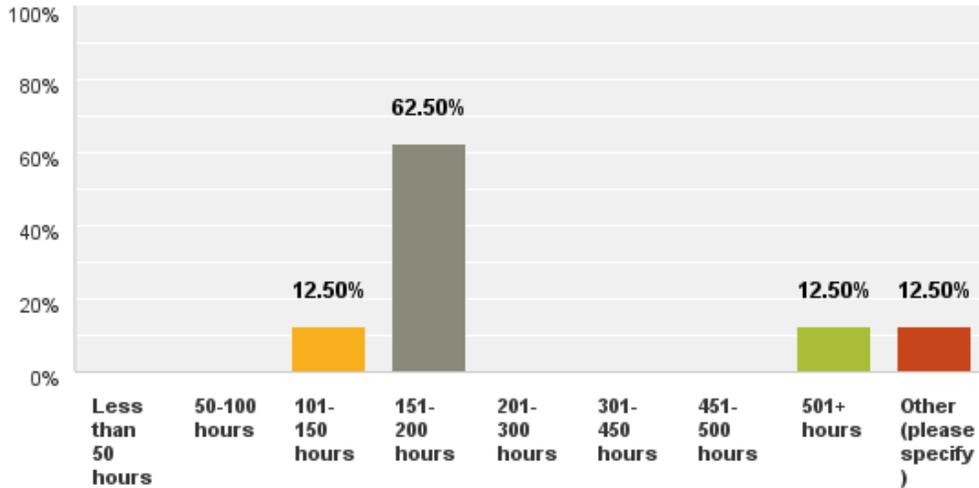
Colleges that offer face to face instruction: Northampton CC, Harrisburg CC

Online Instruction: Harrisburg CC, Lehigh Carbon

Hybrid/Blended Instruction: Northampton CC, Butler CC, Harrisburg CC, Reading CC, Alleghany CC, Bucks CC

Q28 What is the average length of time required to complete your Production Technician program ?

Answered: 8 Skipped: 11



Colleges that require 101-150 hours: Alleghany CC

Colleges that require 151-200 hours: Butler CC, Harrisburg CC, Reading CC, Bucks CC, and Lehigh Carbon

Colleges that require 501+ hours: Northampton CC

Question 29: How many weeks does it take to complete your Production Technician program (numbers only)?

Answered: 8 Skipped: 11

College	# of Weeks
Bucks CC	12
Butler CC	8
Alleghany CC	12
Lehigh Carbon CC	6
Harrisburg CC	12
Reading CC	12
Northampton CC	60

Question 30: Briefly describe the curriculum in your Production Technician program.

Answered: 8 Skipped: 11

Lehigh Carbon CC - The production technician program covers the basics information for entry into the manufacturing field: industrial math, blueprint reading, tools, production assembly, safety, personal protective equipment, and communication skills

Bucks CC - Intro to Manufacturing, Basic Welding Manufacturing, Production Skills, ACDC Electrical Fabrication Production Assembly

Alleghany CC - E-Learning purchased from MSSC and classroom lectures

Reading CC - An entry-level program for those wanting to work in a manufacturing environment; courses include technical, math, basic measurement, blueprint reading, mechanical fabrication, electrical fabrication, production assembly, MIG welding, safety, personal protective equipment, communication skills, conflict resolution, working in groups

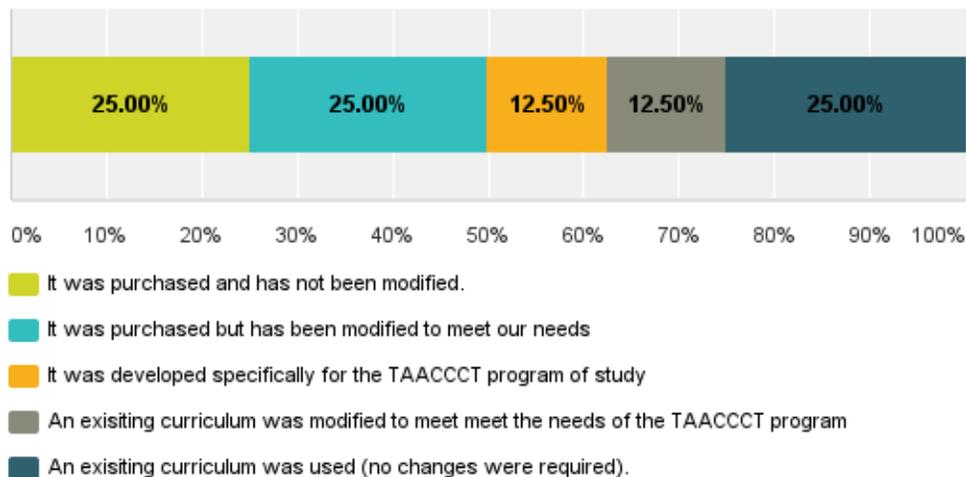
Harrisburg CC - centered around MSSC online program with specific technical courses added

Butler CC - Manufacturing Skills Standard curriculum is used.

Northampton CC - non AMIST

Q31 How did you acquire the curriculum for the Production Technician program ?

Answered: 8 Skipped: 11



Purchased and not modified: Alleghany CC, Lehigh Carbon CC

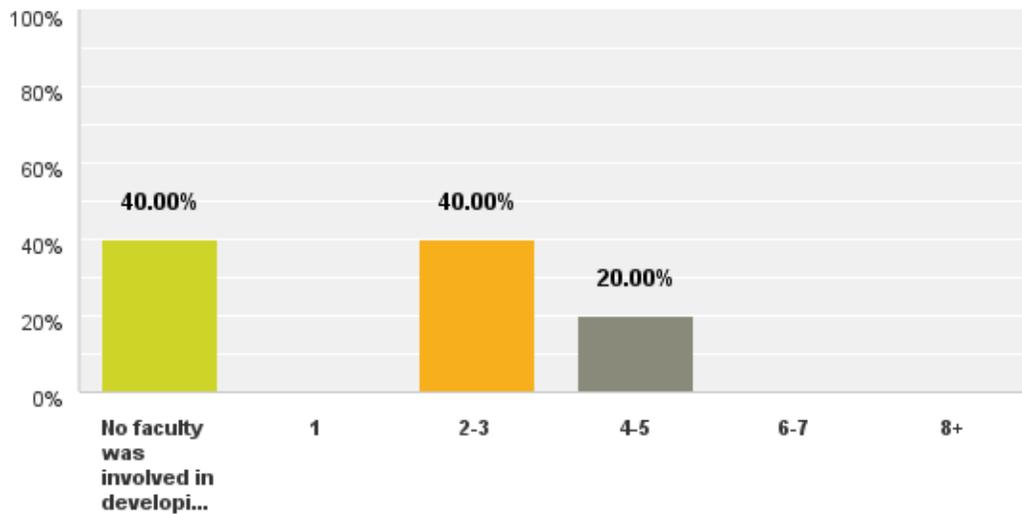
Purchased and has been modified: Reading CC, Harrisburg CC

Existing curriculum was modified to meet the needs of TAACCCT: Northampton CC

Existing curriculum was used (no changes were required): Butler CC, Bucks CC

Q32 How many faculty were involved in developing/modifying the curriculum for your Production Technician program ?

Answered: 5 Skipped: 14



No faculty was involved: Bucks CC, Butler CC

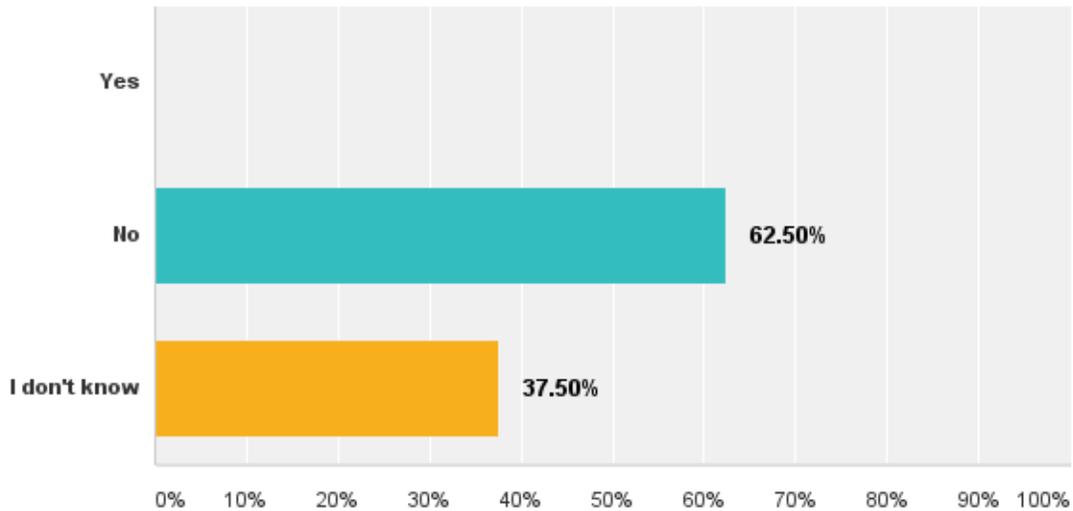
2-3 Faculty: Reading CC

4-5 Faculty: Harrisburg CC

Three colleges did not respond to this question.

Q33 Does your Production Technician curriculum require a creative commons open source copyright?

Answered: 8 Skipped: 11

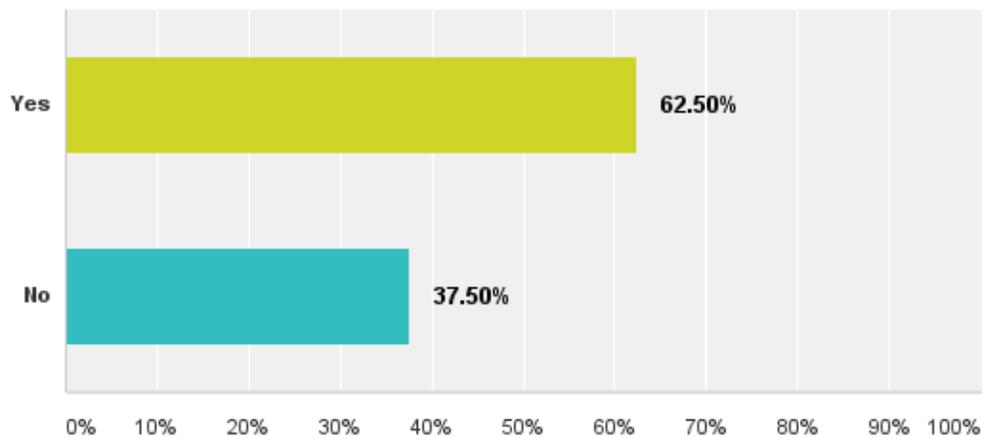


Colleges that responded NO: Northampton CC, Bucks CC, Lehigh Carbon CC, Alleghany CC, Butler CC

Colleges that responded "I don't know": Harrisburg CC Reading CC

Q34 Did your institution work with industry partners to develop/modify/acquire your Production Technician curriculum?

Answered: 8 Skipped: 11

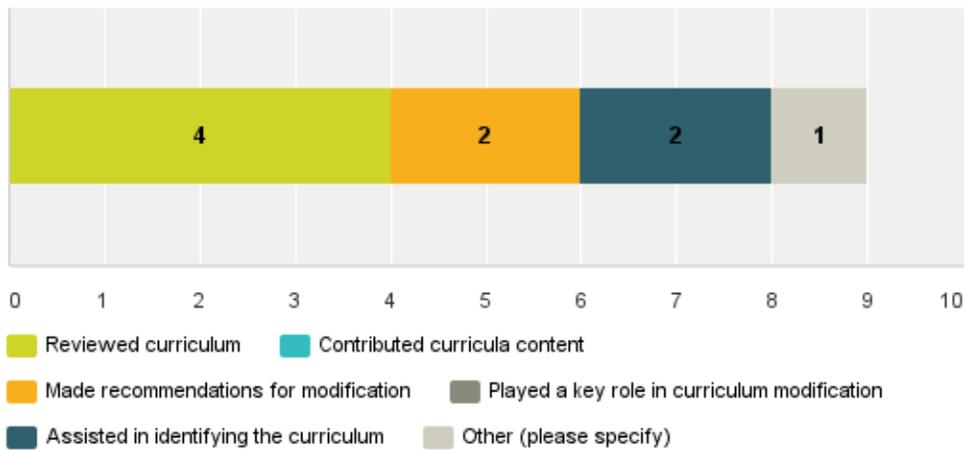


Colleges that responded YES: Northampton CC, Bucks CC, Harrisburg CC, Reading CC

Colleges that responded NO: Lehigh Carbon CC, Alleghany CC, Butler CC

Q35 For the Production Technician curriculum, industry partners...(select all that apply)

Answered: 5 Skipped: 14



Reviewed Curriculum: Reading CC, Harrisburg CC, Bucks CC, Northampton CC

Assisted in identifying curriculum: Bucks CC

Made recommendations for modification: Reading CC, Northampton CC

Question 36: How many industry partners provided input to assist the Production Technician curriculum?

4 Colleges responded and 3 did not. Responses are as follows:

Colleges that responded 2-3: Reading and Northampton CC

Colleges that responded 4+: Harrisburg and Bucks CC

Colleges that did not respond: Butler, Alleghany and Lehigh Carbon CC

Question 37: Who did you collaborate with to complete this section of the survey?

Reading CC – Bonnie Spayd, Executive Director, Workforce and Economic Development

Harrisburg CC – Bob Gill, Workforce; Dan Wagner, Director, HACC Workforce Training

Butler CC – Lisa Campbell, Director of Business and Industry Training

Alleghany CC – Sylvia Elsayed, Project Manager

Bucks CC – Emily Evans, Director of Workforce Development

Advanced Manufacturing/Logistics and Energy core Curriculum Survey Results

Question 38: Do you offer the Advanced Manufacturing/Logistics and Energy Core Curriculum based on the AMIST program of the study?

60% of the 14 PA Colleges reported YES: Luzerne; Bucks; Beaver; Harrisburg; Reading; Lehigh Carbon; Community College of Philadelphia and Montgomery County Community College

40% reported NO

Question 39: What is the name of your Advanced Manufacturing/Logistics and Energy Core Curriculum based on AMIST programs of study?

Luzerne CC – Industrial Maintenance Tech, Advanced Manufacturing PV Installer Program, CDL with N, Electrical Construction and Intro to Welding

Beaver CC – Industrial Maintenance Technician

Harrisburg CC – Manufacturing Workforce Training

Reading CC – Renewable Energy Core Technology/Skills

Bucks CC – AMIST 1

Lehigh Carbon CC – Industrial Automation Technician, Industrial Mechanical Technician, Industrial Electrical Technician and Mechatronics

Community College of Philadelphia – Advanced Manufacturing Training

Montgomery CC – Industrial Machinery Mechanic

Question 40: Is your Advanced Manufacturing/Logistics and Energy Core Curriculum credit or non-credit?

Luzerne CC responded that their program was both. All other colleges responded non-credit.

Question 41: What credential is awarded to students who complete your Advanced Manufacturing/Logistics and Energy Core Curriculum?

75% of Colleges reported that they awarded a certificate upon completion.

Harrisburg CC indicated OTHER, but did not specify.

Beaver CC and Luzerne CC specifically indicated a Certificate of Completion was awarded.

Question 42: How are Courses in your Advanced Manufacturing/Logistics and Energy Core Curriculum program offered?

The majority of the colleges indicated hybrid/blended 75%

Face to face was reported as the second most popular option.

Question 43: What is the average length of time required to complete your Advanced Manufacturing/Logistics and Energy Core Curriculum Program?

Colleges overwhelming responded that 301-450 hours were required to complete the program.

Question 44: How many weeks does it take to complete your Advanced Manufacturing/Logistics and Energy Core Curriculum Program?

Two Colleges reported the program took 21 weeks to complete with the rest averaging between 8 and 36 weeks for completion.

Question 45: Briefly describe the curriculum in your Advanced Manufacturing/Logistics and Energy Core Curriculum?

Harrisburg CC - courses from within the greater AMIST program, which may be selected on an individual basis

Reading CC - Provides entry-level skills for installing Solar PV and Solar Thermal systems; topics include: OSHA 10 hour certificate, digital volt meter, electrical power distribution, centrifugal pump, magnetic pump, gear pump, equipment sourcing, solar concepts

Bucks CC - Intro to Manufacturing -Productions Skills- Industrial Mechanical 1 and 2 Industrial Electrical 1 and 2 PLC Troubleshooting

Lehigh Carbon CC - Technical skills in pneumatics, hydraulics, PLC's, electrical wiring, ac/dc electrical systems, light and heavy duty v-belt drive, piping, electro-fluid power, electrical motor control, basic mechanical drives

CCP - Introduction to: DC-AC Electricity; Electrical Wiring; Hydraulics; Pneumatics; Mechanical Systems; Motors and Motor Controls; Programmable Logic Controllers

Montgomery CC - AMIST: Industrial Machinery Mechanic, Industrial Electrical, and PLC

Beaver CC - This training prepares individuals for entry-level employment in the maintenance field or for advancement in the renewable energy sector. Training includes three modules: Industrial Mechanic, Industrial Electrician, and PLC Technician

Luzerne CC - Structured as an interdisciplinary approach, our programs train students to become highly skilled manufacturing technicians, electricians, CDL drivers and learn the basic principles of Solar Energy and welding

Question 46: How did you acquire the curriculum for your Advanced Manufacturing/Logistics and Energy Core Curriculum?

Purchased, but was modified to meet our needs: Reading and CC Philadelphia

An existing curriculum was modified to meet the needs of the TAACCCT Program: Harrisburg, Beaver and Luzerne.

Purchased and has not been modified: Bucks and Lehigh Carbon CC.

Existing curriculum was used with no changes: Montgomery CC

Question 47: How many faculty were involved in developing/modifying the curriculum for your Advanced Manufacturing/Logistics and Energy Core Curriculum based on AMIST program?

CCP – 2-3

Luzerne, Beaver, MCC, Reading - 1

Lehigh Carbon, Bucks – no response

Harrisburg – 8+

Question 48: Does your Advanced Manufacturing/Logistics and Energy Core Curriculum based on AMIST program require a creative commons open source copyright?

MCC, Lehigh Carbon, Bucks, Beaver, CCP- No

Harrisburg, Reading – I don't know

Luzerne – Yes

Question 49: Did your institution work with industry partners to develop/modify/acquire your Advanced Manufacturing/Logistics and Energy Core Curriculum based on AMIST program?

Luzerne, MCC, Bucks, Harrisburg, CCP – Yes

Beaver, Reading, Lehigh Carbon – No

Question 50: For the Advanced Manufacturing/Logistics and Energy Core Curriculum based on AMIST program, industry partners (select all that apply).

CCP – Reviewed Curriculum, made recommendations for modification, played a key role in curriculum modification

MCC – OTHER

Lehigh Carbon – no response

Bucks – Reviewed curriculum, assisted in identifying curriculum

Reading – Reviewed curriculum, contributed curricula content, made recommendations for modification and played a key role in curriculum modification

Harrisburg – Reviewed curriculum, contributed curricula content and made recommendations for modification.

Beaver – No response

Luzerne – Reviewed curriculum

Question 51: How many industry partners provided input to assist the Advanced Manufacturing/Logistics and Energy Core Curriculum based on AMIST program?

Luzerne, Harrisburg, Bucks, CCP – 4+

Beaver, Lehigh Carbon – no response

MCC, Reading - 1

Question 52: Who did you collaborate with to complete this section of the survey?

CC Philadelphia – Judi Greif – TAACCCT Career Coach

Montgomery CC – Rich Mathias – Instructor, North MontCo Technical Career Center

Lehigh Carbon – no response

Bucks – Emily Evans, Director of Workforce Development

Reading – Bonnie Spayd – Executive Director, Workforce and Economic Development

Harrisburg – Bob Gill, Workforce and Dan Wagner, Director HACC Workforce Training

Beaver – Wayne Loschinsky, CCBC Industrial Maintenance Instructor

Luzerne – Fred Bettica – IMT Coordinator, Helene Mancuso Flannery, JobTrak PA Program Manager

Section Two

Virtual Site Visits

- *Analysis of Virtual Site Visits by Program*
- *Analysis of Virtual Site Visits by College*

Virtual Site Visits

Purpose:

The enclosed report provides the data and analysis from the virtual site visits conducted by The Jacobs Group in partial fulfillment of RFP 9831 – Subject Matter Experts – TAACCCT Grant and the Community College of Philadelphia.

Findings:

All fourteen community colleges were contacted by The Jacobs Group to participate in the virtual site visits. Colleges was contacted via email and asked to select a day and time for the virtual visit via Skype. Colleges that did not have Skype capability conducted the visit via conference call. All fourteen community colleges participated in the virtual site visits.

Questions for the visit centered on the specific programs offered at their institutions. Respondents answered questions regarding the success, failures and challenges of each curriculum.

Challenges:

The major challenge of the visits was scheduling, but this conflict was resolved to include all fourteen colleges.

Procedures:

This report presents the data in two segments; (1) by program and (2) by individual college. Questions are listed above the comments and then credited to the specific college.

Analysis of Virtual Site Visits by Program

Healthcare Technology

Did your College use the HealthCenter21 curriculum? If yes, how was it used?

Program was marketed through the Community Education Division

HealthCenter21 curriculum was used as a pre-requisite to the medical reimbursement course

All students enrolled in the Healthcare Program were required to complete the HealthCenter21 course

Students used the curriculum as a study tool for other courses

HealthCenter21 curriculum was used in the Intro to Healthcare course

Utilized as a supplemental tool for the instructor

Curriculum was used in the Medical Office Specialist course

Used as a discernment tool for prospective students

Used as a study guide for current students

Did not use the Healthcare 21 curriculum

Curriculum was used as a pre-course format

Class time was used initially but was changed mid-way and was utilized as a supplement

HealthCenter21 was used as a career explorations program

Students were primarily enrolled in a remedial course program utilizing a grant from a private foundation

Utilized by students who were interested in the Medical Secretary/Medical Billing program

Course was offered in non-credit

Local organizations – United Community Services for Families and the Boys and Girls Clubs supported use of the course for career exploration

HealthCenter21 was used as a supplement/preamble for course so that all students would begin program with a uniformed knowledge base

Credit faculty thought it was more appropriate for a high school environment and would not use it in their classes

Would not have used if access was provided; A formal program review was conducted and changed name of program to Health Information Specialist; Combined networking courses to offer a medical coding program; Credit program – degree offering; Program has been added to the current curriculum

Modules were custom developed and used for make-up assignments

What did you like/dislike about the course? Would you use it again, if yes, in what capacity?

May possibly be used in the TAACCCT 4 round as an alternative learning tool to enhance the curriculum

Not worth the cost for the audience that utilized it

Medical Billing curriculum was too difficult for the students – possibly due to the accelerated nature of the course

Curriculum was a good indicator of student success in the program

Students used the curriculum as a study tool for other courses

Curriculum was: “ very slow – mind-numbing”

Difficulty getting students to log in at home

Would only use certain modules of the program again

Would only use again as an open source tool

Would not utilize again if funding was not available

What does a typical student in your program look like?

Significant population of incumbent workers in program – not unemployed – possibly under employed

Students are primarily female

Program attracts an older population of students

Program has a large ESL population, most did not have a GED

Other comments of significance:

College worked with Industry Partners to create credit degree offering

College did not receive Round 4 funding and has decided to maintain program due to College's "very strong ties to the community".

College will not continue HealthCenter21 course after grant funding has ended

Production Technician

Describe your Production Technician Program?

Program has stackable credentials leading to a credit program that has grown substantially

Only one module was used

Course(s) were online, noncredit and blended

Utilized as a supplement to courses leading to a certificate

Certificates offered are not generally recognized outside the area

Program is “taking a while to get off the ground”

Community does not understand what “manufacturing” is

Curriculum will change for Round 4 of PA TAACCCT grant

College will purchase additional equipment

College will provide more in-depth training

Curriculum will build on stackable credentials

College will continue program after grant has ended

College will offer program as a degree, was previously offered as noncredit

Not many stackable credentials for manufacturing

Four were not stackable

CNC Machine Operator was the most successful program

Production Technician program was developed in response to the community request

Community is very strong in manufacturing

Jobs are available for students who complete the non-credit certificate

Credentials are stackable and can equal an AAS degree

College’s goal of the program is to move students from minimum wage jobs to family sustaining wage careers

Non-credit career based curriculum is competency based and totally measurable

Production Technician courses were incorporated into the manufacturing programs

College has begun to offer a modified version of the production tech program

Credentials are lateral rather than stackable

Manufacturing program used a new curriculum that was industry relevant

Provided students entry level experience and prepared them for NIMS certification

Used as an entry point for credit program

Credits were aligned toward CNC operator program for credit Placement exam is needed to test the different skill levels of students for the Industrial Maintenance program

Production Technician courses were incorporated into the manufacturing programs

College has begun to offer a modified version of the production tech program

Only one module was used

Course(s) were online, noncredit and blended

Utilized as a supplement to courses leading to a certificate

Did you work with Industry Partners to develop the Production Technician curriculum? Describe your current relationship with these partners.

Strong Industry Partnerships

College was able to re-establish prior relationships with industry

College worked with industry partners to develop competencies for the curriculum

Utilized Advisory Boards

College has a strong relationship with industry partners

Very dedicated industry partners

Strong relationship with industry

Industry partners seemed to be catching on

Curriculum was validated by industry partner ESSROC

Program has contributed substantially to the College and the community

Describe the demographic makeup of your program.

Population is mostly male, mixed demographics, average age of student is 40

70% are incumbent workers

Majority of students attend part time

Average student was male – 38 years of age

Community is 70% Latino

Language barriers are a major issue

ESL was the only college program that was not “female” type

Production Tech program has a strong Latino enrollment

Typical students were mostly male with an age range of 19-50

Program primarily attracts incumbent workers, but aimed at a different audience

What does job placement after completion look like for this program?

Jobs are available for students who complete the non-credit certificate

Program is “taking a while to get off the ground”

Community does not understand what “manufacturing” is

Curriculum will change for Round 4 of PA TAACCCT grant

College will purchase additional equipment

College will provide more in-depth training

Curriculum will build on stackable credentials

Advanced Manufacturing Logistics and Energy Core

Describe your Advanced Manufacturing Program?

Program offers a noncredit certificate

Very strong program

Curriculum was “canned”

Used core set of skills from Advanced Manufacturing Program in Solar PVC installer and Solar Thermal Installer

Program is non-credit

AMIST Energy Curriculum must be completed before taking specialized courses

Courses included: Basic hand tools; Hardware; Power Tools; Basic Electricity Skills: Basics of Mechanics, Piping and Pumps; Basic Measurements; Basic Math and Teamwork

Credentials are stackable

Program has four levels, seven modules

Program is non-credit

Certificates can be earned for each module

Curriculum was leased and is utilized in a computer lab

After passing a series of tests and quizzes, students can advance to the miniature equipment lab (hands on)

Program is non-credit

Credentials are lateral rather than stackable

Energy program courses were created around IREC

Program was NABCEC certified

College used grant for capacity building

College will keep program after grant funding ends

College offers the Energy Program Certification

Entry level job opportunities in the gas industry

Curriculum has been in effect since 2012

Due to the impact of energy in the region, the College chooses to offer energy credential

Roustabout is a stackable credential and completes the non-credit certificate in industrial mechanics

Six credits can be used toward a credit certificate

One partner offers two paid internships to students who completed non-credit certificates and are working toward a credit certificate

Describe your relationship(s) with Industry Partners.

College enjoys strong industry partnerships

One partner offers two paid internships to students who completed non-credit certificate and working toward a credit certificate

College also works well with Westmoreland Community College and their energy program

Energy program courses were created around IREC

Program was NABCEC certified

Energy program courses were created around IREC

Program was NABCEC certified

College worked with industry partners to develop competencies for the curriculum

Utilized Advisory Boards

College has a strong relationship with industry partners

Industry Partners – Siemens, Eastman Chemical, Equipment and Controls

Describe the demographics of your AMIST program.

Students are mostly male, average age is 40 years old

60% are displaced workers

College is working with CareerLink/WIBS to continue program

85 students were enrolled in the Energy and Advanced Manufacturing program

70 students completed the program

Primary focus of College was Energy and Advanced Manufacturing

Typical student was a dislocated worker

Most had no experience

Placement exam is needed to test the different skill levels of students for the Industrial Maintenance program

Most of the students were looking to start their own businesses

Most were incumbent workers looking for a career change

Average student was male – 38 years of age

Average student is male - Late 30's-40

Usually a displaced worker

Program participants are overwhelmingly male

Average age is 23

Some are from CareerLink

Program has some Veterans

Describe job placement for your AMIST program.

Only one or two classes offered - Low enrollment

Difficult to place students

Very strong program

Consistent enrollment – 70 students

Students are being employed upon completion

Enrollment was very good

Offered 9 classes – 10-12 weeks each

119 participants – 96 completed

Half acquired employment – half did not

Difficulty with placement of students due to time restrictions indicated in the grant

After passing a series of tests and quizzes, students can advance to the miniature equipment lab (hands on)

Job placement is available for students who successfully complete the program

Students who complete the program usually continue in school

Employment placement was good for the Energy/Advanced Manufacturing Program

College offers the Energy Program Certification

Entry level job opportunities in the gas industry

Curriculum has been in effect since 2012

Program has trained over 200 students

150 are employed with 75% employed in energy

Employees typically work 12 hour shifts

Regional employment is available

Analysis of Virtual Site Visits by College

Northampton Community College – Cindy Woodling

Program – Healthcare Technology

Healthcare 21 – 200 students started in the program, 10 completed

There were 12 modules, 8-12 weeks each

Program was marketed through the Community Education Division

Program has a large ESL population, most did not have a GED

May possibly be used in the TAACCCT 4 round as an alternative learning tool to enhance the curriculum

Not worth the cost for the audience that utilized it

Program – Production Technician – Electromechanical Automated Systems

Program has stackable credentials

Credit program that has grown substantially

Population is mostly male, mixed demographics, average age of student is 40

70% are incumbent workers

Majority of students attend part time

Curriculum was validated by industry partner ESSROC

Program has contributed substantially to the College and the community

College is building on program for Round 4 of the PA TAACCCT and plans to offer a certificate in Instrumentation Technology

Westmoreland Community College- Michelle Hansel

Program – Advanced Manufacturing Logistics and Energy Core

The PA TAACCCT grant funding will end soon for the program

College has assumed financial responsibility for the program

Program will offer certificates

Mechatronics program has 22-24 students in each course (there are 4 courses)

Industry Partners – Siemens, Eastman Chemical, Equipment and Controls

Program participants are overwhelmingly male

Average age is 23

Some are from CareerLink

Program has some Veterans

Program is a big success for the College

Bucks Community College – Billie Barnes

General Comments

PA TAACCCT grant has been good for the College

Enrollment has increased due to equipment

College is seeking other funding for programs, did not receive round 4 funding

Student feedback indicates that they like the program and want more training to be available

Expansion is possible, but limited due to funding

Program – Healthcare Technology

Healthcenter 21 curriculum was used as a pre-requisite to the medical reimbursement course

All students enrolled in the program were required to complete the Healthcenter 21 course

College reported a 100% completion rate – 230 HIT completers; 29 students dropped; 111 placements

Significant population of incumbent workers in program – not unemployed – possibly under employed

Medical Billing curriculum was too difficult for the students – possibly due to the accelerated nature of the course

Curriculum was a good indicator of student success in the program

Students used the curriculum as a study tool for other courses

Harrisburg Area Community College – Robert Gill, Dan Wagner and Jackie Foster

Program – Healthcare Technology

Healthcenter 21 curriculum was used in the Intro to Healthcare course

Utilized as a supplemental tool for the instructor

Curriculum was: “ very slow – mind-numbing”

Difficulty getting students to log in at home

Would only use certain modules of the program again

Program – Manufacturing Workforce Training– Industrial Maintenance

Only one module was used

Course(s) were online, noncredit and blended

Utilized as a supplement to courses leading to a certificate

Industry partners seemed to be catching on

Certificates offered are not generally recognized outside the area

Program – Energy

Only one or two classes offered

Low enrollment

Difficult to place students

Luzerne Community College – Helene Mancuso

Program – Health Information Management

Curriculum was used in the Medical Office Specialist course

Students are primarily female

Used as a discernment tool for prospective students

Also used as a study guide for current students

Would only use again as an open source tool

Would not utilize again if funding was not available

Program – Industrial Maintenance

Noncredit program offered in modules earning a certificate

Credit program offers a degree

College added CDL with Tanker and Welding courses after PA TAACCCT grant was awarded

Program will continue after grant has ended

College was awarded PA TAACCCT Round 4 funding

College is building welding curriculum into credit program

Very dedicated industry partners

Strong relationship with industry

Pennsylvania Highlands Community College-Barbara Zaborowski

Program – Healthcare Technology

Did not use the Healthcare 21 curriculum

Would not have used if access was provided

A formal program review was conducted and changed name of program to Health Information Specialist

Combined networking courses to offer a medical coding program

Program has 20-21 computer students

Credit program – degree offering

Worked with industry partners to develop curriculum

20 persons currently enrolled

Program has been added to the current curriculum

Lehigh Carbon Community College – Susan Lushinsky

Program – Energy

Program offers a noncredit certificate

Very strong program

Consistent enrollment – 70 students

Students are being employed upon completion

Curriculum was “canned”

Average student is male

Late 30’s-40’s

Usually a displace worker

College received Round 4 PA TAACCCT funding

All programs will continue

Program – Healthcare Technology

Curriculum was used as a pre-course format

Class time was used initially but was changed mid-way and was utilized as a supplement

Program attracts an older population of students

Program – Manufacturing

Program primarily attracts incumbent workers, but aimed at a different audience

Program is “taking a while to get off the ground”

Community does not understand what “manufacturing” is

Curriculum will change for Round 4 of PA TAACCCT grant

College will purchase additional equipment

College will provide more in-depth training

Curriculum will build on stackable credentials

Alleghany Community College – Sylvia Elsayed

Program – Production Technician – Mechatronics – Process Control Natural Gas

Enrollment was very good

Offered 9 classes – 10-12 weeks each

119 participants – 96 completed

Half acquired employment – half did not

Difficulty with placement of students due to time restrictions indicated in the grant

Average student was male – 38 years of age

College will continue program after grant has ended

College will offer program as a degree

Was previously offered as noncredit

College worked with industry partners to develop competencies for the curriculum

Utilized Advisory Boards

College has a strong relationship with industry partners

Reading Area Community College – John DeVere

Program – HealthCenter 21

RAC offered all three of the PA TAACCCT programs

Healthcenter 21 was used as a career explorations program

Students were primarily enrolled in a remedial course program utilizing a grant from a private foundation

Students were interested in the Medical Secretary/Medical Billing program

Course was offered in non-credit

Local organizations – United Community Services for Families and the Boys and Girls Clubs supported the course for career exploration

College has very strong ties to the community

College did not receive Round 4 funding and has decided to maintain the programs without the grant support

Modules were custom developed and used for make-up assignments

Negative /Downside of HealthCenter 21: Credit faculty thought it was more appropriate for a high school environment and would not use it in their classes

Program - Energy

Used core set of skills from Advanced Manufacturing Program in Solar PVC installer and Solar Thermal Installer

Program is non-credit

AMIST Energy Curriculum must be completed before taking specialized courses

Courses included: Basic hand tools; Hardware; Power Tools; Basic Electricity Skills: Basics of Mechanics, Piping and Pumps; Basic Measurements; Basic Math and Teamwork

Credentials are stackable

Most of the students were looking to start their own businesses

Most were incumbent workers looking for a career change

Program - Manufacturing

Not many stackable credentials for manufacturing

Four were not stackable

CNC Machine Operator was the most successful program

Production Technician program was developed in response to the community request

Community is 70% Latino

Language barriers are a major issue

ESL was the only college program that was not "female" type

Production Tech program has a strong Latino enrollment

Community is very strong in manufacturing

Jobs are available for students who complete the non-credit certificate

Credentials are stackable and can equal an AAS degree

College's goal of the program is to move students from minimum wage jobs to family sustaining wage careers

Non-credit career based curriculum is competency based and totally measurable

Grant has been successful for the College

Community College of Philadelphia – Waverly Coleman

College offers the Advanced Manufacturing – AMIST Program

Program has four levels, seven modules

Program is non-credit

Certificates can be earned for each module

Curriculum was leased and is utilized in a computer lab

After passing a series of tests and quizzes, students can advance to the miniature equipment lab (hands on)

Job placement is available for students who successfully complete the program

Students who complete the program usually continue in school

CCP has a moderate relationship with industry partners

Partners were involved with curriculum selection and review

College applied for Round 4 funding of PA TAACCCT grant, but was not funded

Plans are in place to continue current programming by charging tuition

College offered an Energy Conservation Program

Partnered with Energy Coordinating Agency

Program will not continue due to funding

College offers a Green Initiative Program

38 students were enrolled, 37 completed the program and 12 were placed in jobs

Students are eligible to take an exam with an outside entity to receive a certificate

College is uncertain as to whether the program will continue due to interest

College feels that the grant was very good, especially in the areas they had control of
In those areas, the College met/exceeded goals

Beaver County Community College

College offered Advanced Manufacturing programs in: Industrial Maintenance, Welding Oil/Gas
Waste Treatment Operator, Medical Billing and Coding

College offered Medical Billing and Coding courses but did not use HealthCenter 21

College utilized an outside technology for these courses

Primary focus of College was Energy and Advance Manufacturing

Typical student was a dislocated worker

Most had no experience

Placement exam is needed to test the different skill levels of students for the Industrial
Maintenance program

Production Technician courses were incorporated into the manufacturing programs

College has begun to offer a modified version of the production tech program

85 students were enrolled in the Energy and Advanced Manufacturing program

70 students completed the program

27 students were enrolled in the Healthcare program

Medical Billing and Coding was an under-performing program

Students struggled with the coursework

Employment placement was good for the Energy/Advanced Manufacturing Program

Strong Industry Partnerships

College was able to re-establish prior relationships with industry

Typical students were mostly male with an age range of 19-50

College did not apply for Round 4 funding

College will continue to offer programs when grant ends

Program is non-credit

Credentials are lateral rather than stackable

Delaware County Community College – Karen Kozachyn

DCCC offered the following programs using funding from the PA TACCCT Grant

Allied Health – Digital Patient Records Certification

Manufacturing – NIMS certified Computer Numeric Control Operator

Welding – General

Energy – PVC Solar, IREC and Geothermal

All programs were non-credit and led to a certificate

College considered the grant/programs to be successful

Courses were aligned with credit courses and offered 2 credits to students who took the credit Intro to Healthcare course

Healthcenter 21 was used as a supplement/preamble for course so that all students would begin program with a uniformed knowledge base

Students completed at their own pace before class started

College will not continue Healthcenter 21 course after grant funding has ended

College uses an outside entity

Manufacturing program used a new curriculum that was industry relevant

Provided students entry level experience and prepared them for NIMS certification

Used as an entry point for credit program

Credits were aligned toward CNC operator program for credit

Energy program courses were created around IREC

Program was NABCEC certified

College used grant for capacity building

College will keep program after grant funding ends

Butler Community College

College offers the Energy Program Certification

Entry level job opportunities in the gas industry

Curriculum has been in effect since 2012

Program has trained over 200 students

150 are employed with 75% employed in energy

Employees typically work 12 hour shifts

Regional employment is available

Program is non-credit

Students are mostly male, average age is 40 years old

60% are displaced workers

College is working with CareerLink/WIBS to continue program

College added OSHA safety as a separate credential to students in the program

Workforce is primarily non-credit

The credit energy certificate was not part of the PA TAACCCT grant

Due to the impact of energy in the region, the College chose to offer energy credentials

Roustabout is a stackable credential and completes the non-credit certificate in industrial mechanics

Six credits can be used toward a credit certificate

College enjoys strong industry partnerships

One partner offers two paid internships to students who completed non-credit certificate and working toward a credit certificate

College also works well with Westmoreland Community College and their energy program

Section Three

Curricula Review Analysis

- *Healthcare Technology Synopsis and Syllabi Review*
- *Production Technician Synopsis and Syllabi Review*
- *Advanced Manufacturing/Logistics and Energy Core*
- *Synopsis & Data*

Syllabi Review

Subject Matter Experts in the area of energy, manufacturing and nursing were selected and hired to evaluate the programs in their respective areas offered at the fourteen community colleges. SMEs were provided syllabi and all other program information supplied from the colleges including, survey results, and results of the virtual site visits for their evaluation.

SMEs used their expertise in their given field to make assessments as to whether the programs met industry standards and updated the curriculum to reflect this data. If a program provided training that would give the student an additional certificate, this was indicated in the spreadsheet (Appendices 1-3).

Industry standards were obtained by reviewing the certification guidelines of the certifying body for the individual and for an institution (Appendix 5). Additionally, if the standard could not be determined by the above analysis, industry standards were determined by identifying the minimum criteria needed for an entry level position in the particular field of work by researching open job descriptions based on the position title in each program industry. For example, an internet search was conducted for: *What is the minimum industry requirement for an industrial maintenance technician?* By reviewing a minimum of three job descriptions per position, SMEs were able to determine if the curriculum provided by the community colleges meet the industry requirements.

Data regarding industry standards was gathered from the following sources:

- Syllabi
- Virtual site visit report
- Course/program descriptions
- Job descriptions for positions students would apply for upon completion of the program
- Industry Certification Websites

Curricula Review Indicators

The following curricula indicators were utilized by the Subject Matter Experts (SMEs) to review the syllabi provided by the colleges:

1. How was the program offered; classroom, online, or hybrid.
2. What is the name of the course?

3. Is the program credit or non-credit?
4. How long is the program?
5. Was the curriculum for the program purchased or developed at the college?
6. If the curriculum was developed at the college, does the curriculum have a creative commons open source copyright?
7. Does the curriculum identify core competencies?
8. Are the competencies in line with industry standards?
9. Was the curriculum reviewed by an industry partner(s)?
10. Is the curriculum relevant and accurate?
11. Does the curriculum provide learning outcomes, achievement indicators, examples, instruction and assessment?
12. Does it provide opportunities for students to develop critical thinking, problem solving, and communication skills?

College Codes for Curricula Reviews

<u>College</u>	<u>Code</u>
Bucks	CC01
Butler	CC02
Alleghany	CC03
Beaver	CC04
CCP	CC05
Delaware County	CC06
Harrisburg	CC07
Lehigh Carbon	CC08
Luzerne	CC09
Montgomery	CC10
Northampton	CC11
PA Highlands	CC12
Reading	CC13
Westmoreland	CC14

Healthcare Technology Synopsis and Syllabi Review

SME General Synopsis of curriculum: Healthcare technology is a program offered at nine of the community colleges awarded TAACCCT funding. The curriculum focuses on healthcare information technology offering students certificates of competency upon completion. The syllabi reviewed indicated that the curriculum was primarily created from an existing one with input from credit and non-credit faculty. Competencies for the courses are in line with industry standards and are current and relevant. Texts and course materials were also current and relevant. The reviewed course syllabi provided learning outcomes to ensure students were educated in the implementation and management of electronic health information; identify terms describing pathology affecting body systems and developing a medical vocabulary. Other learning outcomes, achievement indicators and assessment criteria are listed below and can be found in the syllabi located in the appendix of this document. Subject Matter Experts (SME) used the four questions below, current industry standards and course syllabi to review the healthcare technology curricula. (See Appendix 1 for details on curricula).

School Name	School Code	Program Name	Credential (Certificate, Degree, Diploma, Specialized Diploma)
Bucks County Community College	CC01	Healthcare Information Technology Implementation Specialist	Certificate
Community College of Beaver County	CC04	Electronic Health Record Management	Certificate
Delaware County Community College	CC06	Allied Health	Certificate
Harrisburg Area Community College	CC07	Healthcare IT Specialist	Certificate
Lehigh Carbon Community College	CC08	Healthcare Technology Specialist	Certificate
Luzerne Community College	CC09	Health Information Management	Certificate
Montgomery Community College	CC10	Health Information Technologist	Certificate
Pennsylvania Highlands Community College	CC12	Healthcare Information Technician	Degree
Reading Area Community College	CC13	Healthcare Info Tech Specialist	Certificate

1. Does the curricular content for the core curriculum meet the needs of both students and industry?

After careful review of the documentation provided (course syllabi and industry standards), the SME concluded that the HealthCenter21 core curriculum does meet the needs of both students and industry, even though it was primarily utilized as a supplemental tool and not as a

standalone course in this grant. The majority of the nine community colleges that offered the HealthCenter21 core curriculum, indicated that it was used primarily for career exploration and as a supplement to the existing coursework. The curriculum was a purchased product and was modified to meet the needs of the institution and/or TAACCCT program. Only selected modules of the curriculum were used by the colleges, and they were modified to fit their needs.

This curriculum was a grant funded tool, and most colleges indicated “they would not purchase it if they had to pay for it.” Their reasons were: the curriculum was “mind-numbing”; the curriculum appeared to be geared towards a high school audience; and it did not have the approval of the credit nursing faculty.

2. Do the curricula meet industry standards?

The SME identified two sources to establish criteria for industry standards in healthcare technology: The National Healthcare Foundation Skills Standard and The National Consortium for Health Science Education (NCHSE). These documents are located in the appendix of this report. The HealthCenter21 core curriculum **meets** the standards outlined by the National Healthcare Foundation. The standards applied to this curriculum are: Academic Foundation, Communications, Employability Skills, and Teamwork.

The nine community colleges that offer the healthcare curriculum award a certificate upon completion of coursework. According to the 2013 US Bureau of Labor Statistics Occupational Outlook Handbook, “Health information technicians typically need a postsecondary certificate to enter the occupation.” A health information technician can further their education by earning professional certifications and taking continuing education courses.

3. Does the curriculum adequately prepare students for employment and/or further relevant study?

Healthcare Technology as a program was not evaluated by the SME, only the core curriculum course of HealthCenter21 was evaluated. In this capacity, the **core curriculum was found to be an effective tool for career exploration and supplemental study**. This curriculum serves as an introduction to healthcare and/or as a career exploration tool. It was offered in an online and/or hybrid format. Colleges primarily utilized the core curriculum to enhance courses such as Medical Reimbursement and Introduction to Healthcare. It was also used as a study guide for exams in these courses.

4. What are the common learning outcomes for this curriculum?

Upon completion of the HealthCenter21 core curriculum core course, students will be able to:

- Implement and manage electronic health information
- Identify word parts and their meanings in medical terms
- Utilize reference materials to determine meaning, usage, and spelling of medical terms
- Describe the main functions of each body system
- Define diagnostic, symptomatic, and therapeutic terms related to each system
- Identify terms describing pathology affecting body systems
- Define anatomical landmarks, directional, positional, and numeric medical terms
- Recognize common drugs and their actions
- Recognize the correct spelling of medical terms
- Develop a medical vocabulary

Production Technician Synopsis and Syllabi Review

SME General Synopsis of curriculum: This program is offered at eight of the fourteen community colleges in a non-credit capacity. Certifications offered are: MSSC (Manufacturing Skill Standards Council) and OSHA (Occupational Safety and Health Administration). The MSSC certification is a series of credentials that apply across all sectors of the manufacturing industry. These credentials are widely accepted and/or required in this industry (appendix).

Production technician courses were incorporated into the manufacturing curriculum at some colleges and offered as stand-alone programs at others. Courses were offered online, in the classroom, and in a hybrid format. Credentials for some programs are stackable and can lead to an associates' degree. Curricula were reviewed by industry partners and are in line with industry standards. Learning outcomes were identified on the syllabi as well as achievement indicators and assessment practices. The programs reviewed were all non-credit, with some offering stackable credentials, leading to an associate's degree. The degree programs provide opportunities for students to develop critical thinking, problem solving, and communication skills (See Appendix 2 for curricula details).

Production Technician/Manufacturing Dashboard

School Name	School Code	Program Name	Credential (Certificate, Degree, Diploma, Specialized Diploma)
Bucks County Community College	CC01	Production Technician 1	Certificate
Butler County Community College	CC02	MSSC Certified Production Technician	Certificate
Community College of Allegheny	CC03	Certified Production Tech	Certificate
Delaware County Community College	CC06	Production Technician/Manufacturing	Certificate
Harrisburg Area Community College	CC07	Manufacturing Workforce Training	Certificate
Lehigh Carbon Community College	CC08	Production Technician	Certificate
Northampton Community College	CC11	Electromechanical Technology: Automated Systems	Degree
Reading Area Community College	CC13	Production Technician - Advanced Manufacturing	Certificate

1. Does the curricular content for the core curriculum meet the needs of both students and industry?

The curricula content for the core curriculum does meet the needs of both the students and the industry. Production technician programs at the colleges cover basic information needed for entry into the manufacturing field. Courses offered include industrial math, blueprint reading, tools, production assembly, safety, personal protective equipment, and communication skills. Other courses such as Introduction to Manufacturing, Basic Welding, Manufacturing, Production Skills, and ACDC Electrical Fabrication Production Assembly are offered in an E-Learning environment and were purchased from MSSC.

2. Do the curricula meet industry standards?

The curricula **do** meet the industry standards of MSSC (Manufacturing Skill Standards Council) and OSHA (Occupational Safety and Health Administration). As stated previously, several colleges purchased their curriculum from MSSC. The production technician program covers the basic information for entry into the manufacturing field. Courses such as industrial math, blueprint reading, tools, production assembly, safety, personal protective equipment, and communication skills provide for an entry-level program for those wanting to work in a manufacturing environment. The curriculum is based upon the MSSC online program with specific technical courses added. Students are required to complete and pass MSSC and OSHA certification exams upon completion of their coursework.

The MSSC credentialing system covers four critical production functions defined by MSSC's industry-led, nationally validated skills standards, common to all sectors of manufacturing: Safety, Quality & Continuous Improvement, Manufacturing Processes & Production, and Maintenance Awareness.

3. Does the curriculum adequately prepare students for employment and/or further relevant study?

Students who receive certification upon completion of the Production Technician Program have a core understanding of the key work activities and core technical knowledge and skills needed in high performance manufacturing. Students **are** adequately prepared for employment and/or further relevant study by stacking their credentials and earning an associate's degree.

4. What are the common learning outcomes for this curriculum?

Upon completion of the production technician certificate, students will be able to:

- Understand the safety practices within the work environment.
- List the types of personal protection equipment and its limitations.
- Discuss the regulations governing industrial noise, machine guarding, heat stress, industrial chemical exposure and electrical exposure.
- Identify reference materials related to occupational safety.
- Define the legal responsibilities of supervisors and the “Right to Know” regulations.
- Recognize existing hazards in a sample environment and identify applicable standards.
- Demonstrate safety regulations and procedures for confined spaces.
- Demonstrate proper use and handling of hazardous materials and communications.
- Demonstrate proper completion and use of Material Safety Data Sheets (MSDS).

Advanced Manufacturing/Logistics and Energy Core

SME General Synopsis of curriculum: The AMIST Advanced Manufacturing, Logistics and Energy Core program offers certificates and degrees at eight of the fourteen community colleges. The programs are noncredit, culminating in the granting of a certificate. These certificates are Industry recognized and accepted for employment. Credentials could be stacked at several colleges in some programs leading to an associate’s degree. The Colleges created the curriculum for the programs in collaboration with their industry partners. Most programs were offered in the classroom and/or in a hybrid format. The curriculum was current and relevant and the length of time to complete the program averaged 200-300 hours. The curriculum was generally purchased and modified to the individual college’s programs. Syllabi provided learning outcomes, achievement indicators, instruction examples, and assessment techniques. Colleges offer the following industry certifications upon program completion: National Electric Code (NEC); Interstate Renewable Energy Council (IREC); North American Board of Certified Energy Practitioners (NABCEC) and Occupational Safety and Health Administration (OSHA) (See Appendix 3 for curricula details).

School Name	School Code	Program Name	Credential (Certificate, Degree, Diploma, Specialized Diploma)
Bucks County Community College	CC01	AMIST 1	Certificate
Community College of Butler County	CC02	Industrial Maintenance Technician	Certificate
Community College of Philadelphia	CC05	Advanced Manufacturing Training	Certificate
Delaware County Community College	CC06	PVC Solar, IREC, Geothermal	Certificate
Harrisburg Area Community College	CC07	Manufacturing Workforce Training	Certificate
Lehigh Carbon Community College	CC08	Industrial Automation Technician	Certificate
		Industrial Mechanical Tech	Certificate
		Industrial Electrical Tech	Certificate
		Mechatronics	Certificate
Luzerne County Community College	CC09	Industrial Maintenance Tech	Certificate/Dipolma
		Advanced Manufacturing PV Installer	Certificate
		CDL with N	Certificate
		Electrical Construction	Certificate/Dipolma
		Intro to Welding	Certificate
Reading Area Community College	CC13	Renewable Energy Core Technology	Certificate

1. Does the curricular content for the core curriculum meet the needs of both students and industry?

The curricular content for the core curriculum **does** meet the needs of both students and industry. The courses in these programs use a blended learning approach of theory and hands-on skills assessment to introduce students to the fundamental concepts and hands-on skills required by electro-mechanical technicians in the manufacturing, renewable energy and sustainability industries. This training prepares students for entry level employment in the following industries: Electrical Wiring, Motor and Motor Controls, Programmable Logic Controllers, Industrial Machinery Mechanic, Industrial Electrician and PLC Technician.

2. Do the curricula meet industry standards?

Yes, the curricula **do** meet industry standards. Students may earn industry certificates from: National Electric Code; NFPA-70; OSHA (Occupational Safety and Health Administration); IREC (Interstate Renewable Energy Council); and NABCEC (North American Board of Certified Energy Practitioners). Standards for each organization can be found in the appendix of this document.

3. Does the curriculum adequately prepare students for employment and/or further relevant study?

Yes, the curriculum **does** adequately prepare students for employment and/or further relevant study. During the virtual site visits, colleges that offered this program reported: students are being employed upon completion; job placement is available for students who successfully complete the program; employment placement was good for the Energy/Advanced Manufacturing Program; entry level job opportunities were available in the gas industry, and regional employment was available in these industries.

For students who want to continue their education beyond the certificate, the opportunity to do so was available.

APPENDICES

1. Healthcare Technology Curricula Review Worksheets
2. Production Technician Curricula Review Worksheets
3. Energy/Logistics Curricula Review Worksheets
4. Curriculum Indicators
5. Industry Standards
6. Subject Matter Expert Resumes