Maine Community College System
Five Year Program Review

College: Central Maine Community College
Program: Building Construction Technology Jobsite Track (BJTA)
CIP: 46.0415
Credential: Associate in Applied Science (AAS)
Review Team: Betsy Libby, Margaret Brewer, Brianna Doyle, Curry Caputo, Pete Coffin, Anne St. Pierre, Jen Lyons, Eric Berg
Date: September 2021
Period of Review: AY 2016/2017-2020/2021

Program Overview:

1) **Program description** (*from the most recent college catalog*):

The Associate of Applied Science in Building Construction Technology Jobsite Track degree provides students with a two-year program alternating classroom and laboratory training with paid, on-the-job experience, leading to an Associate in Applied Science Degree in Building Construction Technology. The Jobsite Track degree is a joint effort of residential and commercial construction companies and CMCC. The program prepares students with skills required to meet industry needs through hands-on construction training on the jobsite. This program provides students with the tools necessary to improve their competitive capacity through a comprehensive, hands-on curriculum. It provides an opportunity for high school graduates to build on the technical training received through their technology center programs.

2) Program Learning Outcomes: all program learning outcomes are expected to be assessed within the five-year cycle. Please attach an Assessment Data and Reflection Template for each program learning outcome. Explain how the department used the assessment results to improve teaching, learning, and the curriculum.

List the program learning outcomes:	Method of assessment: list the courses and activities/assignments used to assess the learning outcomes
1. Interpretation of construction documents, print reading, sketches and associated communication skills. 2. Estimate project costs from working drawings and blueprints including MUBEC code requirements. 3. Demonstrate understanding of basic building science. 4. Demonstrate understanding of basic design load path considerations. 5. Use of transits and laser levels applied to construction projects. 6. Meet core competencies including but not limited to: tool safety, construction math, floor/wall/roof layout, fastener/adhesive technology, lumber characteristics and milling. 7. Demonstrate jobsite experience in both soft and trade skill sets including but not limited to: punctuality, preparedness, following directions and project specific construction trade skills.	Please see attached Five-Year Assessment Plan for Student Learning Outcomes.

3) Credentials Awarded within the IPEDS year, i.e. July 1-June 30:

Credentials Awarded					
Credential	AY1617	AY1718	AY1819	AY1920	AY2021
AAS	5	7	8	5	--

1) Program Graduates Employed: Data unavailable for first year earnings.

Number of Completers with any Wage Data	12
% of Completers with any Wage Data	75%
# of Completers with First Year Earnings	--
Median First Year Earnings	--

2) Partnerships, collaborations, associations and memberships

a) Advisory Meeting Dates and Attendance (past 3 years)

Date(s) of Meeting	*# of college attendees*	*# of Non-college attendees*
11/08/2018	2	9
11/07/2019	2	7
11/18/2020	2	5

b) Program external accreditation, associations, and memberships (if applicable): n/a

3) Other Indicators of student success, direct and/or indirect, which may include:

	AY1617	AY1718	AY1819	AY1920	AY2021
Licensure/certification pass rates (if applicable)	n/a	n/a	n/a	n/a	n/a
Program Advisory Committee Member Survey (on scale of 1-5 averaged):					
Program Curriculum	--	--	--	--	4.6
Technical currency of the program	--	--	--	--	4.6
Preparation of program graduates for work in the field	--	--	--	--	4.4
Communication from program administration/faculty	--	--	--	--	4.8
Overall quality of the program	--	--	--	--	4.6
Other (please specify): Major equipment purchased	--	--	--	--	3.6

4) Student demographics:

Admissions					
	AY1617	AY1718	AY1819	AY1920	AY2021
Fall Applications	53	44	57	62	--
% chg in Fall Applicants from PY	--	-17%	30%	9%	--
Enrolled (Yield)	16	12	15	26	--
% chg in Enrolled from PY	--	-25%	25%	73%	--

Student Enrollment[1]					
	AY1617	AY1718	AY1819	AY1920	AY2021
Unduplicated Headcount Enrolled in Program	27	28	34	40	35
% chg in Headcount from PY	--	4%	21%	18%	-13%
Enrolled Credit Hours	392	370	413	518	428
% chg in Credit hours from PY	--	-6%	12%	25%	-17%
FTE	26	25	28	35	29
% chg in FTE from PY	--	-4%	12%	25%	-17%

[1] = students within the program in the fall of the academic year

Student Success					
Cohort Year	AY1617	AY1718	AY1819	AY1920	AY2021
Cohort Enrollment	19	15	22	31	--
Retained to the next semester	63%	80%	59%	65%	--
Retained to the next year	58%	60%	41%	61%	--
Graduation Rates					
100% of program time	37%	20%	23%	16%	
150% of program time	47%	20%	23%		
200% of program time	47%	27%			
Transfer Rate (non-graduates)[2]	11%	7%			
Transfer Rate (graduates) [2]	5%	0%			
Enrolled in Another Program[2]	0%	0%			
Graduated from Another Program[2]	5%	0%			

[2]. Determined at the maximum graduation point in this table, i.e. 200%

5) Strengths, challenges, and planned steps for continuous improvement: In your summary assessment you should reference sections of this review that informs the plan.

Program Strengths:

- Strong relationships with a cross-section of building construction related commercial, residential and lumberyard businesses.
- Fostering of student soft skills and improvement in productivity, communication, timeliness and efficient material usage.
- High placement and retention with partnering employers. Students are successfully hired and retain jobs.
- Program serves as a good recruitment tool for students less interested in traditional classroom or lab instruction.
- Increased participation in ePortfolio work; students must create a post for every day on the job. Daily posts include photos that contribute to each student's digital photo resume. This represents more than double the participation effort as compared to the BCT program. These increases demonstrate improved communication skills.
- Curriculum provides greater depth in skills training than the traditional BCT program. Students spend more time learning and working with new concepts and skills (16 hours per week in BCT vs. 40 hours per week in BJT).
- Students can focus on their educational goals while earning a wage during their educational experience.
- Programming is developed and maintained by two highly dedicated full-time faculty members.

Challenges:

- Maintaining and increasing enrollment is difficult in this strong economy. Existing and potential students choose to enter the workforce directly. There is an anticyclical relationship between enrollment and the current state of the construction industry. This program was started with the agreement that employers would step up and not hire existing students away. It is time to revisit this with employers to ensure the development of a sustainable workforce pool.
- The number of female students enrolled in the program and working in the construction industry is minimal. It is challenging to attract females into the program due to gender stereotypes.
- Due to the offsite structure of the program, faculty have limited control of what students are learning on the job. This creates a potential gap for less diversity of skills and concepts exposure.
- Time constraints make it difficult for the Department Chair to conduct site visits at employer partners.
- Credit hours differ slightly between the BJT and the BCT program. This impacts students that choose to switch degree programs to meet personal scheduling flexibility.
- Tracking attendance is cumbersome due to the offsite program format. Students do not come to campus on a regular basis and the attendance system is designed to track traditional course attendance.
- BJT students do not have the opportunity to complete the full complement of competency-based assessments. They receive 75% of the assessments that BCT students experience.

Planned Steps for Continuous Improvement:

- Develop a pipeline for women in the workforce by attracting new female students, providing a safe and appropriate learning environment and connecting graduates with women-owned/operated businesses.
- A plan for creating an onramp to encourage the enrollment of female students is in development. A few of these ideas include female-specific marketing, connecting with the National Association of Women in Construction, and utilizing the Gender Equity Coordinator as a resource.
- Increase Career and Technical Education Center visits to strengthen partnerships and recruit prospective students.
- Increase BJT Program exposure through Social Media (YouTube, Facebook, Instagram).
- Work with Academic Affairs to simplify and streamline attendance taking and weekly entry.
- Review program curriculum map and adjust course descriptions and outcomes as needed to accurately reflect current courses and employer needs.

Five-year Assessment Plan for Student Learning Outcomes

Building Construction Technology — September 2021

Name of Program or General Education Domain — Date

Learning goal:

Student learning outcomes:	Academic year during which assessment will occur	Source(s) and type of assessment artifact(s) that will be collected	Method(s) to be used for assessing artifact(s)	Assessment Goal (targets/criteria) for direct measure	Assessment Outcome (*Percent of Students Achieving an "acceptable" or better*)	Assessment Goal was:		
						Met	Not Met	Pending Review
1. Interpretation of construction documents, print reading, sketches and associated communication skills.	2nd	BCT 152 Construction Document Reading and Cost Estimating BCT 251 Construction Business and Site Management	BCT 152: evaluation of instructor assigned project (Fall 2020) BCT 251: evaluation of instructor assigned homework and final exam (Spring 2021)	Achieve 75% final course grade	Final Project 68% Homework/Final Exam 92%	 x	x	
2. Estimate project costs from working drawings and blueprints including MUBEC code requirements.	2nd	BCT 152 Construction Document Reading and Cost Estimating BCT 251 Construction Business and Site Management	BCT 152: evaluation of instructor assigned project (Fall 2020) BCT 251: evaluation of instructor assigned	Achieve 75% final course grade	Final Project 68% Homework/Final Exam 92%	 X	X	

			homework and final exam (Spring 2021)					
3. Demonstrate understanding of basic building science.	2nd	BCT 152 Construction Document Reading and Cost Estimating BCT 200 Structural Analysis	BCT 152: evaluation of instructor assigned project (Fall 2020) BCT 200: evaluation of instructor assigned homework and final exam (Fall 2020)	Achieve 75% final course grade	Final Project 68% Evaluation of instructor assigned homework and final exam 43%		X X	
4. Demonstrate understanding of basic design load path considerations.	2nd	BCT 200 Structural Analysis	BCT 200: evaluation of instructor assigned homework and final exam (Fall 2020)	Achieve 75% final course grade	Evaluation of instructor assigned homework and final exam 43%		X	
5. Use of transits and laser levels applied to construction projects.	1st	BCT 144 Building Concepts III BCT 126 Construction Site Surveying	BCT 144: instructor observation and evaluation of lab project. (Spring 2021) BCT 126: instructor observation and	Achieve 75% final course grade	Instructor observation and evaluation of lab project 94% Observation and evaluation of field exercises 63%	X	 X	

			evaluation of field exercises					
6. Meet core competencies including but not limited to: tool safety, construction math, floor/wall/roof layout, fastener/adhesive technology, lumber characteristics and milling.	2nd	BCT 154 Millwork I	BCT 255: instructor observation and evaluation of skills application (Spring 2021)	Achieve 75% final course grade	Observation and evaluation of skills 60%		X	
7. Demonstrate jobsite experience in both soft and trade skill sets including but not limited to: punctuality, preparedness, following directions and project specific construction trade skills.	1st/2nd	BCT 185 Field Experience I (Spring 2021) BCT 186 Field Experience II (Summer 2021) BCT 285 Field Experience III (Fall 2020) BCT 286 Field Experience IV (Spring 2021)	All courses: Instructor review and evaluation of ePortfolio, and employer evaluation of student performance	Achieve 75% final course grade	BCT 185, 186, 285, 286 100%	X		

- When compared to BCTA students, the BJTA students achieve higher competency at demonstrating soft and trade skill sets.
- Agreement between the college and employers doesn't allow for the instructor to direct which skills or concepts students are exposed to.
- More communication with students needed prior to the final project to make sure they are on track.