

Maine Community College System
Five Year Program Review

College: Central Maine Community College
CIP: 43.0406

Program: Forensic Science
Credential(s): Associate in Applied Science (AAS)

Review team: Margaret Brewer, Betsy Libby, Brianna Doyle, Matt Tiff, David King, Meridith Bonney, Stephen Bolduc, Terry Charlton

Date: March 2021

Period of review: AY1718-AY1920

Program Overview:

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

The purpose and objectives of the Forensic Science, A.A.S program is to prepare students for employment in the area of crime scene investigation and/or to upgrade to a position within the industry. At the completion of the A.A.S. program students will be able to photograph crime scene evidence, collect, examine, compare and identify fingerprints, collect blood, trace and fiber evidence, cast shoeprint impressions and assist in identifying deceased individuals. The program will prepare students for career paths in criminal justice including detective, deputy sheriff, criminal investigator, crime scene photographer or crime scene technician.

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
<ol style="list-style-type: none"> 1. Explain the fundamental concepts of chemistry and biology as these relate to forensic investigations. 2. Demonstrate competency in the collection, processing, analyses, and evaluation of evidence. 3. Demonstrate competency in the principles of crime scene investigation, including the recognition, collection, identification, preservation, and documentation of physical evidence. 4. Identify the role of forensic investigator and physical evidence within the criminal justice system. 5. Demonstrate the ability to document and orally describe crime scenes, physical evidence, and scientific processes. 6. Identify and examine current and emerging concepts and practices within the forensic investigation field. 	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	AY1516	AY1617	AY1718	AY1819	AY1920
AAS			--	--	--

4) Program Graduates Employed: There are not enough graduates in the cohort for wage data comparison.

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

5) Partnerships, collaborations, associations and memberships

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

<i>Date(s) of Meeting</i>	<i># of college attendees</i>	<i># of Non-college attendees</i>
04/27/2017	2	3
04/25/2018	2	5
11/08/2018	2	5
11/07/2019	2	3
11/18/2020	2	5

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

n/a

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

	AY1617	AY1718	AY1819	AY1920
Licensure/certification pass rates (if applicable)				
Program Advisory Committee Member Survey (on scale of 1-5 averaged):				
Program Curriculum				4.75
Technical currency of the program				4.50
Preparation of program graduates for work in the field				4.25
Communication from program administration/faculty				4.75
Overall quality of the program				4.50
Other (please specify): Major equipment purchased recently for this program with federal funds				3.67

7) Student demographics:

Admissions					
	AY1516	AY1617	AY1718	AY1819	AY1920
Fall Applications			3	18	37
% chg in Fall Applicants from PY			--	500%	106%
Enrolled (Yield)			3	1	11
% chg in Enrolled from PY			--	-67%	1000%

Student Enrollment ¹					
	AY1516	AY1617	AY1718	AY1819	AY1920
Unduplicated Headcount Enrolled in Program			4	10	17
% chg in Headcount from PY			--	150%	70%
Enrolled Credit Hours			47	135	194
% chg in Credit hours from PY			--	187%	44%
FTE			3	9	13
% chg in FTE from PY			--	200%	44%

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

Student Success					
Cohort Year	AY1516	AY1617	AY1718	AY1819	AY1920
Cohort Enrollment			8	8	18
Retained to the next semester			75%	50%	61%
Retained to the next year			38%	38%	33%
Graduation Rates					
100% of program time			0%	0%	
150% of program time			0%		
200% of program time					
Transfer Rate (non-graduates) ²			38%	0%	11%
Transfer Rate (graduates)			0%	0%	
Enrolled in Another Program ²					
Graduated from Another Program ²			25%	0%	0%

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

8) 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:

- The Forensic Science program is the only two-year program in the State of Maine. The program features an overlapping interdisciplinary model that provides students the chance to develop a holistic understanding of criminal investigation that includes criminal, medico-legal and private investigative perspectives.
- There is a strong relationship with the program advisory board who continuously review curriculum so that it remains current with industry practices.
- The full-time and adjunct faculty in Forensic Science are a high caliber and represent a wealth of experience in the field including the Office of Chief Medical Examiner, State of Maine Crime Lab and Maine State Police Major Crimes Unit.
- The Life Sciences Department provides a robust foundation in chemistry and biology that supports programming needs. Students benefit from hands-on learning in the College's state-of-the-art organic chemistry lab.
- The faculty actively promote the program through outreach efforts. The program participates in Totally Trades, providing an opportunity for high school girls to explore trade, technical and other nontraditional careers. Prior to the COVID-19 pandemic, local high school groups regularly visited campus and participated in forensic science program exploration.

- Students that plan to transfer to a four-year institution benefit from articulation agreements with the University of Southern Maine. The program directly transfers to their B.A. in Criminology, B.A. in Chemistry or B.S. in Chemistry programs.

Challenges:

- Current subject matter experts typically assist faculty as guest lecturers on-campus. Due to the COVID-19 pandemic, students missed these opportunities since faculty were unable to include these visits in the curriculum.
- Online delivery of curriculum during the COVID-19 pandemic was challenging for faculty. They discovered that the hands-on nature of program specific courses did not translate well into the remote learning environment.
- Forensic Science students report to faculty that they find the advanced science courses challenging. Faculty and the Learning and Advising Center work together to connect students with tutoring options through the Math and Science Center.

Planned steps for continuous improvement:

- The Public Service and Social Sciences department is adding an Introduction to Forensic Science course for the Fall 2021 semester; this can be utilized as an elective in other programs and will give students the opportunity to explore forensic science. This course will also be offered as a dual enrollment agreement to engage potential students.
- The department is requesting funds in the upcoming budget process to purchase a FARO scanner. This cutting-edge equipment would allow the capture of crime scene evidence by forensic scientists. The Maine State Police has several scanners and currently use them at major crime scenes. The addition of this scanner will better prepare students for crime scene investigation after graduation, and there is the potential to offer industry training at CMCC on scanner usage.
- Students and faculty will continue to utilize the Learning and Advising Center specialists who are professional, full-time advisors. These advisors serve as back up advisors to students in all programs and can assist with directing students to tutoring options through the Math and Science Center.

Five-year Assessment Plan for Student Learning Outcomes

Forensic Science

March 2021

Name of Program or General Education Domain

Date

Learning goal (as appropriate):

Student learning outcomes:	Academic year during which assessment will occur	Source(s) and type of assessment artifact(s) that will be collected (e.g.: embedded questioning, capstone assignments, standardized testing, performance observation, portfolio reviews, etc.)	Method(s) to be used for assessing artifact(s)	Assessment Goal (targets/criteria) for direct measure	Assessment Outcome (Number of Students Achieving an "acceptable" or better)	Assessment Goal was:		
						Met	Not Met	Pending Review
1. Explain the fundamental concepts of chemistry and biology as these relate to forensic investigations.	2019-20	Standardized testing (final exam)	Industry professional(s)	70%	71.4%	✓		
2. Demonstrate competency in the collection, processing, analyses, and evaluation of evidence.	2019-20	Standardized testing (final exam)	Industry professional(s)	70%	71.4%	✓		
3. Demonstrate competency in the principles of crime scene investigation, including the recognition, collection, identification, preservation, and documentation of physical evidence.	2019-20	Standardized testing (final exam)	Industry professional(s)	70%	71.4%	✓		
4. Identify the role of forensic investigator and	2019-20	Standardized testing (final exam)	Industry professional(s)	70%	71.4%	✓		

physical evidence within the criminal justice system.								
5. Demonstrate the ability to document and orally describe crime scenes, physical evidence, and scientific processes.	2019-20	Standardized testing (final exam)	Industry professional(s)	70%	71.4%	✓		
6. Identify and examine current and emerging concepts and practices within the forensic investigation field.	2019-20	Standardized testing (final exam)	Industry professional(s)	70%	71.4%	✓		

Most significant assessment findings? (Pedagogical, instructional, curricular changes). Please report on actions taken and on ongoing assessment plans.

- 71.4% of students achieved Outcomes 1 through 6 during this assessment period, compared to 84% during the prior year.
- The disparity from the previous year is not due to COVID-19 (the college went remote halfway through the spring semester); students performed markedly better in the spring semester (86%) than in the fall semester (57%).
- No pedagogical/instructional/curriculum changes took place between the 2018-19 and 2019-20 academic years. We will continue to monitor these numbers moving forward.