

**BOARD OF HIGHER EDUCATION
REQUEST FOR BOARD ACTION**

NO.: BHE 24-19

BOARD DATE: December 12, 2023

**APPROVAL OF LETTER OF INTENT OF MASSACHUSETTS BAY COMMUNITY COLLEGE
TO AWARD THE GENERAL STUDIES CERTIFICATE IN AUTOMOTIVE TECHNOLOGY
AND AUTHORIZATION FOR FAST TRACK REVIEW**

MOVED: The Board of Higher Education (BHE) has evaluated the Letter of Intent of **Massachusetts Bay Community College** to award the **General Studies Certificate in Automotive Technology** and has determined that the proposal aligns with BHE criteria. Accordingly, the BHE authorizes the Commissioner to review the program and to make a final determination on degree granting authority pursuant to the Fast-Track review protocol.

VOTED: Motion approved and advanced to the full BHE by the Executive Committee on 12/4/2023; and adopted by the BHE on 12/12/2023.

Authority: Massachusetts General Laws Chapter 15A, Section 9(b); AAC 18-40

Contact: Winifred M. Hagan, Ed.D., Senior Associate Commissioner for Strategic Planning and Public Program Approval

BOARD OF HIGHER EDUCATION
December 12, 2023
Massachusetts Bay Community College
Letter of Intent
General Studies Certificate in Automotive Technology

DEGREE TITLE ABSTRACT ON INTENT AND MISSION OF PROGRAM

The purpose of Massachusetts Bay Community College's (MBCC) proposed 39-credit General Studies Certificate in Automotive Technology program is to prepare students for a broad range of employment options, including servicing hybrid, diesel, and electric vehicles. It shares its core curriculum with an already established Associate in Science in General Studies Automotive Technology, which creates the opportunity for certificate students to either pursue the associate degree immediately or enter the workforce and complete the degree later in their careers. Both programs provide students who are interested in the automotive service industry with an alternative to MBCC's current manufacturer-specific programs (i.e., BMW, Chrysler, GM, and Toyota). The proposed certificate builds upon the existing strength of MBCC's Automotive Technology programs, which have a long history of propelling students into successful careers. It is expected that the resulting increase in the number of graduates will help meet the need of industry partners for highly skilled automotive technicians. It is planned that students will have opportunities to work in the industry through paid, cooperative education courses, enabling students to support their households while in the program as well and recoup tuition costs. MBCC has already received strong industry support and student interest for this program concentration.

The proposed General Studies Certificate in Automotive Technology was approved by the Massachusetts Bay Community College Board of Trustees on June 13 and the LOI was circulated on September 19, 2023. No comments were received.

A. ALIGNMENT WITH MASSACHUSETTS GOALS FOR HIGHER EDUCATION

Address Gaps in Opportunity and Achievement in Alignment with Campus-Wide Goals

The proposed certificate program aligns with campus goals by preparing students for rewarding careers while at the same time responding to regional workforce needs.

Graduates from this program will qualify for entry level automotive technology technician positions at a dealership, fleet service facility, independent repair facility, or franchised repair facility. The certificate is also expected to open opportunities for jobs in retail automotive parts sales, small-engine repair facilities, and the marine or motorsports industry. MBCC finds that the shortage of employees in the transportation industry has created a high demand for workers. MBCC expects that the proposed certificate will provide opportunities to New England dealerships, shop owners, and fleet owners to recruit new employees or to train existing staff through the proposed certificate. MBCC anticipates that the addition of this program will enable the College to increase industry partners, promote career experience opportunities, improve curriculum to meet increased needs, and continue to develop articulation agreements with high schools.

Attentive to gaps in opportunity and achievement in Massachusetts, MBCC recognizes that the students in its automotive technology programs are from diverse racial/ethnic backgrounds. MBCC actively recruits from areas with large numbers of potential students from low-income households or other underrepresented populations. The college has articulation agreements with all Chapter 74 vocational high schools to assist in enrollment. Once enrolled, students in the proposed certificate program will be supported and guided through completion. MBCC has dedicated coaches that work one-on-one with students from underrepresented populations in its automotive technology programs to assist them in navigating college and building skills that lead to success. As previously mentioned, MBCC underscores that the proposed program is expected to provide students with the opportunity to earn money through paid cooperative education experiences or be employed by independent repair facilities or aftermarket businesses while enrolled in the program.

Program or Department Supports to Ensure Student Retention and Completion

MBCC anticipates that every student in the proposed program will be assigned to a faculty advisor who will also be one of their instructors. Students will be required to meet at least twice per semester with their advisor in addition to seeing them in class. As such, instructors will be able to closely monitor the progress of their students and advisees and intervene when support or a referral to campus resources are needed to

ensure student progress and success, and before any challenges become insurmountable. In addition, students will have a learning specialist available on both MBCC campus and the automotive campus for academic support and access to a mental health counselor. Currently, an academic coaching program which assists students in automotive technology is planned to provide further support to students in the proposed program. It is further expected that faculty will assist students in finding cooperative education opportunities that fit the students' skill sets. Faculty will closely monitor all progress at the co-ops to maintain structure and strengthen the students' understanding of how the industry functions, what to expect from the automotive industry, and how to maintain success.

Alliances and Partnerships with PK-12, Other IHE's, Community Employers

With the potentially significant changes coming to the automotive industry, it is critical that MBCC collaborate closely with industry partners, adjust curriculum based on suggestions from partners, and provides opportunities for work exposure and future employment for students. The proposed program anticipates recruitment from Central to Eastern Massachusetts at vocational and traditional high schools, as well as within the automotive industry and job placement organizations. MBCC has articulation agreements with all Chapter 74 vocational high schools and is planning to develop more articulation agreements with other vocational high schools. It is planned that an advisory board will be established with representatives from the existing MBCC connections with independent repair facilities, dealerships, city and town departments of public works, and franchise service centers. MBCC underscores that these employers are most interested in hiring MBCC students and graduates. The advisory board is expected to meet on campus twice a year with the faculty and administration. Topics of discussion will be equipment needs, curriculum preparation, employment opportunities, enrollment goals, and enrollment assistance. MBCC plans that the proposed program will be Accredited by the Automotive Service Excellence Education Foundation (ASEEF).

Relationship to MassHire Regional Blueprints

Labor Market

MBCC finds that training programs are needed to develop more pathways and produce more automotive technicians to meet demands of a changing automotive repair industry. The Greater Boston Regional Planning Blueprint identified Professional and Technical Services as one of the most important to the region's economic success. The Blueprint also indicates that the automotive industry is struggling to find candidates with the right mix of education, experience, and skills. The nature of manufactured vehicles is increasingly characterized by digital technology and the industry is facing a shortage of trained technicians. MBCC reports that according to the 2020 Transportation Technician Supply & Demand Report, the supply of auto repair techs has fallen behind demand by 3 to 1. The report estimates that 642,000 technicians will be needed between 2020 and 2024, with an inadequate pipeline of new trainees filling this demand¹. Furthermore, the National Automobile Dealers Association estimates that there is currently a national gap of approximately 37,000 trained service technicians annually between the number graduating versus new job demand and retirements from the industry².

Career Options

As previously mentioned, career options for students in the proposed program include automotive technology technician positions at dealerships, fleet service facilities, independent repair facilities, and franchised repair facilities. It is expected that students in the proposed program will find employment in retail automotive parts sales, small-engine repair facilities, and the marine or motorsports industry. Cooperative education and career placement are an integral part of the program. It is planned that students work closely with faculty as both their instructors and advisors to learn about career options and growth as a regular part of their instruction.

¹ (Tech Force Foundation (n.d.). *Technician Supply & Demand*. Retrieved April 11, 2023, from <https://techforce.org/supply-demand-report/>).

² (National Automobile Dealers Association (n.d.). *Service Technicians*. Retrieved April 4, 2023, from <https://www.nada.org/nada/issues/service-technicians>).

Duplication

MBCC reports that while there are comparable programs in automotive technology in the area (including Mount Wachusett Community College, Quinsigamond Community College, and Benjamin Franklin Cummings Institute of Technology), the shortage of skilled technicians eclipse the fact that recruiting regions have a slight overlap. MBCC expects to recruit students primarily from areas that do not have a comparable program. MBCC is unique in offering manufacturer programs, which provide students with multiple options for growth once they have enrolled in the proposed program.

Innovative Approaches to Teaching and Learning

MBCC reports that all its automotive programs, including the proposed certificate program, involve significant experiential learning, using state-of-the-art diagnostic equipment on manufacturer-donated, late model vehicles. Much of the training is devoted to technical specialties, including cooperative education lab work at dealerships throughout the region. MBCC also reports that the proposed program will provide students with access to Electude³, an automotive e-learning platform that utilizes interactive simulations and animation to teach students in an engaging and compelling manner. Instructors align the specific objectives of e-learning with classroom theory and practical exercises.

B. ALIGNMENT WITH CAMPUS STRATEGIC PLAN AND MISSION

The development of the proposed certificate program is reported to be a direct result of MBCC's last approved strategic plan, which specifically listed as an important priority to "strengthen" and "maximize enrollment" in its automotive technology programs. Providing students with another, quicker pathway to a credential that leads to a career in the automotive industry, while making it stackable with an associate degree, furthers

³ "Electude's e-learning provides solutions for light vehicles, heavy vehicles and systems technologies. It's the brainchild of two automotive entrepreneurs who, while still at university, recognized that today's technical students are visual and kinesthetic learners, more suited to using their hands and eyes than to reading textbooks. Headquartered in the Netherlands with offices worldwide, Electude continues to introduce new curricula with the power to help students reach their potential." Retrieved 10/19/23 <https://www.electude.com/aboutus>

those goals. MBCC's president, provost, and the college administration leadership team are very supportive of the proposed program and committed to improving enrollment and retention in our automotive division.

Goals and Objectives (Form B)

MBCC expects that graduates of the proposed program will be able to: Diagnose and repair common conditions of the following automotive systems: brakes, suspension/steering, electrical/electronics, engine repair, engine performance, driveline/axles including manual and automatic transmissions and transaxles, heating, and air conditioning, utilizing the three "c" approaches: condition, cause, and correction: Operate the latest generation of computerized test and diagnostic equipment: Practice sound, basic, safe automotive shop skills, including personal and environmental protection along with handling of hazardous materials: Practice good basic shop habits, including demonstrating a good attendance record, punctuality, a willingness to work, and an ability to work independently or with others as a team: Apply basic laws of physics/scientific principles to automotive systems and components when performing in shop testing exercises and diagnosing problems: Locate and interpret technical data represented in online and original equipment manufacturer (OEM) provided resources: And, demonstrate good automotive shop management practices, customer relations, shop procedures, and writing skills to work with a diverse population of customers

C. ALIGNMENT WITH OPERATIONAL AND FINANCIAL OBJECTIVES OF INSTITUTION

MBCC expects that some students currently in other automotive programs may opt for the new certificate program. As well MBCC has found that more students are interested in its automotive programs than can be accommodated. It is expected that all programs including the proposed program will operate at or near capacity impact with minimal impact on other program enrollment and an overall automotive program enrollment increase.

Enrollment Projections (Form C)

The proposed General Studies Certificate in Automotive Technology program is designed with the capacity to serve a maximum of 24 students per cohort based on the amount of space available in the lab. Program enrollment during the first year is anticipated to be 8 students to give the program time for a slow start. MBCC anticipates an incremental increase of 8 students for a total incoming cohort of 16 students in the second year and is projected to reach full capacity of 24 by year 5. It is not anticipated that enrollment in other Automotive Technology programs at MBCC will decline as a result of adding the proposed certificate program.

Resources and Financial Statement of Estimated Net Impact on Institution (Form D, Appendices)

MBCC plans that the proposed program will not require any additional equipment or facilities, but will utilize resources already being used by the other automotive technology programs. It will require the hiring of one additional full-time faculty to lead the program as indicated in the expense projections on the budget form.

STAFF REVIEW AND VALIDATION

Staff thoroughly reviewed the **LOI** proposing full certificate granting authority for the **General Studies Certificate in Automotive Technology** submitted by **Massachusetts Bay Community College**. Staff validate that the **LOI** includes all data required by the Massachusetts Board of Higher Education. Staff recommendation is for BHE authorization for the Commissioner to review the program pursuant to the Fast-Track review protocol.

Form A: Curriculum Outline: Certificate in General Studies Automotive Technology

Required (Core) Courses in the Major (Total # courses required = 14)		
<i>Course Number</i>	Course Title	Credit Hours
AI 100	Automotive Fundamentals	3
AI 102	Automotive Electrical Fundamentals	5
AI 103	Automotive Engine Diagnosis and Repair	4
AI 105	Heating and Air Conditioning Diagnosis and Repair	3
AI 106	Automotive Brake Systems	3
AI 121	Cooperative Education I	1
AI 122	Cooperative Education II	1
AI 123	Cooperative Education III	1
AI 124	Cooperative Education IV	1
AI 200	Engine Performance	5
AI 202	Manual Drive Lines	3
AI 203	Automatic Transmissions	3
AI 204	Automotive Suspension Systems	3
AI 206	Hybrid and Electric Vehicles	3
	Sub Total Required Credits	39
Elective Courses (Total # courses required = 0) (attach list of choices if needed)		
NA	NA	0
	Sub Total Elective Credits	0
General Education Requirements Arts and Humanities, including Literature and Foreign Languages/ Mathematics and the Natural and Physical Sciences / Social Sciences		0 NA
Sub Total General Education Credits		0 NA
Curriculum Summary		
Total number of courses required for the degree		0
Total credit hours required for degree		39

Form B: LOI Goals and Objectives

Goal	Measurable Objective	Strategy for Achievement	Timetable
Prepare/train students for industry needs.	All students will participate in a paid Co-op.	Strengthen industry relationships with partners other than our current manufacturer partners.	January 2024
Have the program accredited by the Automotive Service Excellence Education Foundation (ASEEF)	Meeting the curriculum criteria, hours, and all the equipment needs to complete the ASE Education Foundation site visit that will assess the program.	The faculty and the Dean will review the program and complete the self-study.	May 2024
Development a successful marketing strategy.	Market this program using social media, enrollment recruiter, and highlighting it at college fairs and open houses.	Start with area vocational high schools. Also, target traditional high schools and other opportunities where the population is looking for career advancement or change.	2023
Evaluate and revise curriculum	Measure students' knowledge.	Meet with advisory board to confirm the knowledge is at the level needed	Yearly

Form C: LOI Program Enrollment

	Year 1	Year 2	Year 3	Year 4	Year 5
New Full-Time	8	16	20	22	24
Continuing Full-Time	0	8	16	20	22
New Part-Time	0	0	0	0	0
Continuing Part-Time	0	0	0	0	0
Totals	8	24	36	42	46

Form D: LOI Budget

<i>One Time/ Start Up Costs</i>		Annual Enrollment				
	<i>Cost Categories</i>	Year 1	Year 2	Year 3	Year 4	Year 5
	Full Time Faculty <i>(Salary & Fringe)</i>	\$90,675	\$92,488	\$94,872	\$96,769	\$98,148
	Part Time/Adjunct Faculty <i>(Salary & Fringe)</i>					
	Staff					
	General Administrative Costs					
	Instructional Materials, Library Acquisitions					
	Facilities/Space/Equipment					
	Field & Clinical Resources					
	Marketing					
	Other (Specify)					
<i>One Time/Start- Up Support</i>		Annual Income				
	<i>Revenue Sources</i>	Year 1	Year 2	Year 3	Year 4	Year 5
Perkins	Grants	\$29,000				
	Tuition	\$71,760	\$143,520	\$179,400	\$197,340	\$215,280
	Fees	\$15,600	\$31,200	\$39,000	\$42,900	\$46,800
	Departmental	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500
	Reallocated Funds					
	Other (specify)					
	TOTALS	\$123,860	\$182,220	\$225,900	\$247,740	\$269,580