BOARD OF HIGHER EDUCATION
REQUEST FOR BOARD ACTION

NO.:BHE 26-22

BOARD DATE: October 1, 2025

APPROVAL OF LETTER OF INTENT OF MIDDLESEX COMMUNITY COLLEGE TO AWARD THE ASSOCIATE OF SCIENCE IN ROBOTICS AND AUTHORIZATION FOR FAST TRACK REVIEW

MOVED: The Board of Higher Education (BHE) has evaluated the Letter of Intent of **Middlesex Community College** to award the **Associate of Science in Robotics** 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 adopted by the BHE on 10/1/2025.

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

Contact: Richard Riccardi, Sc.D., Deputy Commissioner for Academic Affairs and Student Success

BOARD OF HIGHER EDUCATION
Middlesex Community College
Letter of Intent
Associate of Science in Robotics

DEGREE TITLE ABSTRACT ON INTENT AND MISSION OF PROGRAM

Middlesex Community College (MCC) intends to develop a 60-credit associate of science in robotics degree. The proposed degree program will support students to complete the program requirements on a full-time or part-time basis. The purpose is to educate robotics technicians for employment in the growing electronics and bioelectronics manufacturing automation sector throughout Massachusetts and New England. Working with MCC's Office of Career-Integrated Learning, students in the program will be required to complete a one semester internship with an industry employer within the first year of their studies. The proposed degree program will also prepare students to pass the Fuji Automatic Numeric Controls (FANUC) Robotics Operator I certification exam. Courses taken for the associates degree will be eligible for transfer to a bachelor's degree in robotics at other four-year institutions. Middlesex has a transfer agreement with Northeastern University College of Professional Studies for an AS to BS in mechatronics for students majoring in electrical engineering. Middlesex has discussed the program with the University of Massachusetts at Lowell New England Robotics Validation and Experimentation (NERVE) Center.

The mission of Middlesex Community College guides how they establish programs and activities to support our students and the community: "Middlesex Community College values equity and inclusion as the foundation for excellence, innovation, and success. Through pathways, we educate, challenge, and support all students. MCC is central to the evolving educational, cultural, economic, and workforce needs of the local and global communities." The mission of the STEM Division focuses on preparing students to succeed. The STEM division is committed to providing a student-centered learning environment and multiple pathways that meet the needs of their diverse students as they pursue further education or a career.

The proposed degree program will commit to the mission of the College and STEM division through:

- Educating and preparing the local community for high demand positions that provide livable wages and opportunities for career advancement.
- Establishing internship opportunities with MCC's Office of Career-Integrated Learning to provide students with work experience and professional connections for life after graduation
- Providing a hands-on learning experience within a small class setting that aligns to individual student needs.
- Providing a well-rounded education that is sensitive to a culturally and ethnically diverse student body, faculty, and staff.
- Enabling faculty to investigate and establish best practices and adapt the latest technological advances into their curriculum.

Middlesex Community College will be the sole college in Eastern Massachusetts to offer a two-year associate in science degree in robotics. As both an Asian American, Native American, and Pacific Islander Serving Institution (AANAPISI) and an Emerging Hispanic Serving Institution (EHSI), the proposed degree program will provide an equitable education to a diverse community while preparing students for long-term career success.

The proposed Associate of Science in Robotics was approved by Middlesex's Board of Trustees on April 29, 2025. The LOI was circulated on May 30, 2025. One comment was received noting a missing link to another existing community college program. The LOI was revised to reflect the clarification.

A. **ALIGNMENT WITH MASSACHUSETTS GOALS FOR HIGHER EDUCATION**

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

Middlesex has a commitment to providing an affordable equitable education while supporting economic opportunity. The proposed degree program is an example of the College's commitment while identifying educational pathways that address areas of local workforce needs. For example, it is well known that students who take math their first year have greater academic success compared to students that begin math after their first year. In fall of 2022, MCC students that took math the first year had a 67% retention rate compared to a 23% retention rate of students that did not take any math. In fall 2022, there was an 82% persistence rate of students that took math their first semester compared with a 42% persistence rate of students that did not take any math. For students that need extra support, Middlesex offers math corequisite (coreq) courses. With the math coreq model, the developmental math course is taken concurrently with the college-level math course with the same instructor teaching both. This allows students to take college-level math during their first year of college will enable them to finish their math requirement for the proposed degree program in the first year. The proposed degree program places math in the fall semester of the first year, which encourages success for all students. The proposed degree program closes the gap in local workforce needs via the Office of Career-Integrated Learning (OCIL). OCIL provides resume review, interview practice, and information regarding internship opportunities to all students based on request. OCIL connects with local companies that are interested in hiring our students.

MCC is located in Middlesex County, Massachusetts which includes the gateway city of Lowell (population 113,608, US Census 2022) and most of the Merrimack Valley area that extends to the cities and towns of Woburn, Methuen, Billerica, Dracut, and Chelmsford. Most MCC students are from Lowell, MA, with U.S. Census Bureau demographic data of 48.3 % white (not Hispanic), 17.6% Hispanic or Latino, 22.2% Asian, and 9.0% Black or African American. In 2016, Middlesex was designated a USDOE Asian American Native American Pacific Islander Serving Institution (AANAPISI). As of 2023, MCC is an Emerging Hispanic Serving Institution (EHSI). As of fall of 2024, Middlesex had over 9,400 students enrolled.

To improve the quality of life within local community, adults need well-paying jobs with good benefits. Adults that return to school also need well-paying jobs to offset their educational investment. At

Middlesex, approximately 45% of students receive some form of financial aid often impacting their ability to stay in college and complete a career pathway and/or degree. Many of them need to work while in school to support family. For students to be employable, they need to be educated, trained with an in-demand skillset, and have relevant work experience. For unemployed looking for work, those with high school or vocational training saw the highest increase in job postings at 66% compared to those with Bachelor's or advanced degrees in the area. (Research, October 2022)

The proposed degree program is an example of the College's commitment of accessibility to an affordable equitable education for a diverse community while providing an opportunity to a high paying career path. While Middlesex offers two-year degrees in electrical engineering, mechanical engineering, and computer science, the proposed degree program will train students in a highly specialized, in-demand field comprised of skills and courses covering all three disciplines. Students will be educated on topics recommended by employers on our advisory board. This will occur during class lectures, collaborative projects, and laboratories. The proposed degree program will prepare students for the industry by providing relevant experience throughout their program.

Currently, Middlesex offers non-credit courses and an 8-week workforce development training in robotics. Through the proposed degree program, non-credit students will earn course credit, specifically 4 credits for principles of electric circuits (EGR 104), towards the proposed degree for completing the 8-week robotics workforce development programs. Non-credit to credit transfer will allow students to further their training and continue towards a degree path. Non-credit is working with the STEM division in sharing resources, including equipment and lab space. The non-credit division is renovating 1,600 square feet of building space for classroom and FANUC robotics simulation and training use. This space will also be accessible and open to students in the proposed degree program.

Also, students with prior relevant work experience can apply for college credit through the Credit for Prior Learning (CPL) program. In this program, the CPL department evaluates students' past employment, training programs, military service, and other related life experiences. Academic course credit is awarded commensurate to the equivalent life experience. The program will also provide a bridge to four-year programs.

Program or Department Supports to Ensure Student Retention and Completion

Middlesex historically provides academic support for student success through resources that include library services, audio/visual resources, classroom, laboratory space, performance arenas, supplies, equipment, wellness staff, advising support, and student support services. Students in the proposed degree program will be offered the same level of resources and support as all other associate degree at the College. This includes access to all academic, social, economic, and equity programs.

MCC offers supports for student success that includes peer and professional tutors, mentors, academic coaches and personal and academic counseling. For example, the MCC STEM division utilizes STEM Starter Academy to offer these supports for any student enrolled in a STEM course. SSA reaches out to students in STEM courses and offers 1:1 mentoring and scholarships. STEM Starter Academy began in 2013 as legislation from an initiative in the MA Department of Higher Education (DHE). In partnership with the states community college system, "the goal of STEM Starter Academy is to recruit, ready, retain and graduate a diverse body of students earning STEM certificates and degrees who go on to transfer to a four-year STEM program and/or enter the workforce."

Middlesex offers first generation and ethnic and racial affinity groups, peer mentoring, and training for racial healing circles. MCC has extensive programs and personnel to support all students with advising, achievement programs and inspired social activities on campus to aid retention and foster individual achievement.

In addition, the Success Scholars Program is available to support students enrolled in courses at Middlesex. Success Scholars provides guidance and resources, like academic support, mentors, career guidance, financial help, and wellness programming, to support student success. Middlesex has been a grantee of the federal the TRIO program for several years. Their TRIO program is for first generation college students with a documented disability, and it supports students in academic advising, tutoring, career planning, financial aid, self-improvement workshops, and transfer assistance. Subject to the continuation of state or federal funding support, the programs above will be made available to students pursuing the proposed degree.

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

Middlesex has a dean of K-16 education and educational partnerships that collaborates with local vocational technical high schools (i.e., Shawsheen, Nashoba Valley, and Minuteman Regional Vocational Technical High Schools). In particular, there is a strong relationship with faculty and staff at Lowell High School. Lowell High School is located only a few blocks from MCC's Lowell campus and it also offers vocational training. Currently, MCC has articulation agreements with these high schools including biotechnology, computer-aided design, and principles of digital electronics. MCC has 17 articulation agreements with area secondary schools.

Middlesex has extensive experience in college access programs as well as in the development of Early College and dual enrollment with a focus on under-represented and low-income students. MCC has over 1,000 Early College enrollees taking courses on campus or virtually. Early college and dual enrollment allow students to receive college credit prior to high school graduation. Dual enrollment (DE) courses currently running through Middlesex that are applicable to the proposed degree program include calculus I and introduction to engineering. High schools that are interested in building a robotics track with Middlesex include Greater Lawrence Technical High School, Chelmsford High School, Minuteman High School, Lexington High School, Greater Lowell Technical High School and Nashoba Valley Technical High School.

In September 2023, MCC signed an articulation agreement with Northeastern University's mechatronics BS program within their College of Professional Studies. While robotics focuses on semi-autonomous and autonomous vehicles, mechatronics encompasses robotics plus the cross-section of electronics and mechanics in smart systems. Northeastern University has provided Middlesex a letter of support for the proposed degree program. MCC also has interest from UMass Lowell's New England's Robotics Validation and Experimentation (NERVE) Center. MCC and UML are actively meeting to discuss potential avenues for collaborations.

In addition to educational partners, the College has working relationship with local career centers. Local career centers enable the college to stay up to date on regional employment trends that inform college programming. MCC regularly collaborates with local employers, MassBridge, MassHire Career Centers, workforce development organizations and local community-based organizations. MassBridge, led by the Massachusetts Center for Advanced Manufacturing, develops and tests a well-connected, state-based

training and career pathway model. Middlesex has worked with MassBridge to advertise programs and build curriculum.

Finally, Middlesex will use a Business Industry Leadership (BILT) model to develop an advisory board for the proposed degree program. This advisory board model is replicated within other educational models (i.e., biotech, computer aided design) at the college. This advisory board will be characterized by industry-faculty relationships that are active, fluid, and responsive to industry trends. The BILT members will be recruited from MCC industry connections and local employers. They will meet with faculty three to four times per year and review and publish the Knowledge, Skills, and Abilities (KSAs) students will need for employment within the next one to two years. Curriculum content and student learning outcomes will be updated in the appropriate course from the results of the review.

Relationship to MassHire Regional Blueprints

Priority Employment Areas - The MA Executive Office of Labor and Workforce Development oversees regional employment centers known as MassHire offices. MassHire offices collaborate with employers and aids job-seekers and the newly or chronically unemployed. The recent Greater Lowell MassHire office regional scan shows three priority employment areas [1]: 1) Advanced Manufacturing, 2) Healthcare and 3) Professional, Scientific, and Technical/IT. Many of the employers in this area, such as the Raytheon Corporation, MITRE, BAE Systems, and Analog Devices span these priorities as they have manufacturing facilities on-site. MCC has engaged in training workforces with these large employers and regularly collaborates with them for job placements.

Robotics Technicians - Robots are now visibly recognized in daily life like military missions, space explorations, surgeries, classroom activities, and environmental clean-up at grocery stores. To maintain, repair, and operate the equipment, robotics technicians and operators are highly employed. They are needed in virtually every manufacturing sector thanks to the increase in automation in many manufacturing industries. Robotics technicians configure, operate, and troubleshoot automated systems used in production. They increase efficiency, maintain safety and compliance, and prolong the life of robotic equipment. At the national level, employment is projected at about 1,300 openings for electro-mechanical and mechatronics technologists and technicians each year from 2022 to 2032. Massachusetts remains a strong employer of Electro-Mechanical and Mechatronics Technologists and Technicians. The Robotics and Automation sectors already employ over 900 people in the area and the expected growth

rate is 10% [2]. In Massachusetts, robotic research and development is expanding with over 400 innovative companies and 35 research and design centers. In Massachusetts, Electro-Mechanical and Mechatronics Technologists and Technicians Workers on average earn $61,480 annually, well above the minimum wage [3].

Citations

1. P. Farkas, MassHire, Lowell "Northeast Regional Labor Report Blueprint Update".
2. Mass Dept of Unemployment Assistance, "lmi.dua.eol.mass.gov," September 2023. [Online]. [Accessed September 2023].
3. Onet Online, "www.onetonline.org/link/localwages/17-3024.01?st=MA," September 2023. [Online]. [Accessed September 2023].

Duplication

Eastern Massachusetts does not have another two-year associate in science in robotics degree program (table 1 below). The one two-year associate degree in Massachusetts at Berkshire Community College is over 140 miles from Middlesex and is not within daily driving distance. The proposed degree program differs from New Hampshire Technical Institute (NHTI in Concord, NH) as the proposed degree program will allow for industry work opportunities, extensive laboratory training, and Fuji Automatic Numeric Controls (FANUC) certification. According to the NHTI website, they are not accepting new students at this time. Three other MA community colleges offer certificates programs in robotics/mechatronics, however the proposed degree program will allow students to continue on to transfer into a bachelors' and advanced degree programs.

Students will come from over 20 local high schools including the Shawsheen, Nashoba Valley, Minuteman Regional Vocational Technical High Schools. The largest feeder school for MCC is Lowell High School (Lowell, MA) located just a few blocks away from MCC's Lowell Campus. MCC has a decades-long and highly successful relationship with LHS. The program will also recruit residents of the greater Lowell area needing career retraining, immigrants, veterans, underemployed, and women reentering the workforce.

Table 1: Robotics and Automation Programs in Massachusetts

College	Program Name	Credential	Number of Credits/Program Length	Location	Distance from Middlesex (Bedford, MA)
Cape Cod Community College	Robotics and Manufacturing Automation	Certificate	18 Credits	West Barnstable, MA	85 Miles
Springfield Technical Community College	Electrical/robotics technology	Certificate	24 credits/1 year	Springfield, MA	95 Miles
Berkshire Community College	Mechatronics	certificate; Associate in Science	28 credit certificate; 60 credit degree	Pittsfield, MA	142 Miles
New Hampshire Technical Institute	Robotics and Automation Engineering Technology	Associate in Science	70-71 credits (two year degree)	Concord, NH	60 Miles
Lakes Region Community College	Industrial Automation & Robotics	Associate in Science	63 Credits	Laconia, NH	81 Miles
Quinsigamond Community College	Electronics Engineering Technology - Mechatronics	Associate in Science	62 – 66 credits	Worcester, MA	45 miles
	Automation Robotics Manufacturing Technology	certificate	29 credits		
Middlesex Community College	Robotics	Associate in Science	62 credits	Bedford, MA	--

Innovative Approaches to Teaching and Learning

The proposed degree program will be established as a four-semester two-year program sequence but will support the schedules of both full time and part time students. Students may take courses in any order they wish, provided they meet the prerequisites. Degree requirements include courses in math, physics, introductory engineering, electrical engineering, robotics engineering, programming, material science,

humanities, and social science. Students will take courses in Middlesex's on-campus industrial based material science and engineering laboratories and have the option of an experiential learning opportunity, as an industry internship. This internship will be based on their well established learn-and-earn model through their Office of Career-Integrated Learning (OCIL). Learn-and-Earn is a structured career opportunity for students to work in their selected field full-time or part-time at a high paying wage ($20.00 - $30.00/hour), while taking courses in their programs. Employers in the Learn-and-Earn model guarantee work for 6 to 12 months, with the possibility of permanent positions afterwards.

All MCC students in a degree program are required to take one-credit First Year Experience (FYE) classes for study skills improvement, resume building, and strategies to enhance employability. By the end of the course of study, students will be prepared to take the Fuji Automatic Numeric Controls (FANUC) robot operator I certification exam.

The proposed opening date of the program would be fall 2026. The AS concentration will start with 10 students (five full time and five part time) in the first year, then increase each year by % over the three years. This has been their experience in student recruitment in comparative engineering majors at MCC. This allows students to have close connections with their peers and the instructor.

B. ALIGNMENT WITH CAMPUS STRATEGIC PLAN AND MISSION

The vision of Middlesex Community College (MCC) focuses on "equity to transform lives and shape futures. MCC's mission is to value equity and inclusion as the foundation for excellence, innovation, and success. Through pathways, MCC educates, challenges, and supports all students. MCC is central to the evolving educational, cultural, economic, and workforce needs of global and local communities." From 2019 to 2021, the International Federation of Robotics reported a 25% increase on the acquisition of robotic systems in the electronics industry. In Massachusetts, robotic research and development is expanding with over 400 innovative companies and 35 research and design centers. Robots are now visibly recognized in daily life like military missions, space explorations, surgeries, classroom activities, and environmental clean-up at grocery stores. To maintain, repair, and operate the equipment, robotic technicians are needed in these industries.

A goal of Middlesex Community College is to identify educational pathways that address areas of workforce needs of local industries while providing economic stability. For over 50 years, MCC has been the starting point for residents of northeastern Massachusetts who want to transform their lives. Middlesex supports and educates students needing career retraining, immigrants, veterans, underemployed, and women reentering the workforce. MCC has established academic and credentialing programs to prepare both young and older adults for the fast-paced technology and manufacturing employers that share MCC's geographic location in central and eastern Massachusetts. Their programs weave interactive learning strategies, state-of-the-art technology and civic engagement into an educational experience to best serve the long-term needs of each individual. The proposed degree program will be an academically rigorous and industry relevant program that will educate and train the local community.

Goals and Objectives (Form B)

See the LOI Program Goals and Objectives table

The goals and objectives of the proposed degree program is to educate students for robotics careers, provide an equitable education for all students, and support pathways for student success. These goals follow with Middlesex Community College's strategic plan and the current mission of the STEM division.

C. ALIGNMENT WITH OPERATIONAL AND FINANCIAL OBJECTIVES OF INSTITUTION

Enrollment Projections (Form C)

In the fall of 2022, 261 students were enrolled in MCC's engineering programs and 231 students were enrolled in MCC's computer science major. Within the engineering technology department, 38% of students were full time and 62% of students were ¾ time or less. In the computer science degree program, 44% of students were full time and 56% of students were ¾ time or less. In AY 21-22, engineering and engineering technology students took a total of 2,542 credits, while computer science majors took 2,375 credits. In AY 21-22, 47 students graduated in engineering and 27 graduated with computer science degrees.

MCC's non-credit workforce division runs an eight-week soldering and engineering technology program that prepares students for in demand technology careers. Within the past year, MCC ran the program twice with an average of 10 students per cohort. Following this program, students may choose to continue on at MCC within the academic division for course credit.

The goal of the proposed degree program for the first year is to enroll approximately 5 full-time students and 5 part-time students. Over the next five years, the proposed degree program will steadily increase enrollments through marketing and admission to attain a similar number of enrolled students as in engineering and computer science. Program enrollments in the proposed degree program will increase enrollment in eight subjects including general education, math, science, and English composition courses. Students in the proposed degree program will increase the overall headcount and total credits taken each semester at Middlesex. Enrollment projections have been reviewed with MCC's dean of enrollment.

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

The engineering department employs two full-time faculty and five adjunct faculty. The full-time and adjunct faculty have experience teaching electrical engineering courses. Faculty in the department also have experience with robotics systems in classroom environments. The department will develop four core robotics courses and one internship course. They will bring the Fuji Automatic Numeric Controls (FANUC) robotics operator I certification training and exam to Middlesex. Full time faculty along with the dean of STEM and career services will recruit professionals to serve on the robotics BILT advisory board.

The college leadership has committed to filling one open full-time faculty position to teach electrical and robotics courses in the department beginning in fall 2025 and are in the hiring process for that position now. For additional program support, Middlesex has two electrical and mechanical engineering adjuncts that are qualified to teach topics in integrated circuits and robotics and automation.

The college has committed to providing a building in the center of the Bedford campus that focuses solely on science and engineering. This renovation what was formerly known as Henderson Hall will now be known as the MCC Life Sciences Center. The Life Science Center is supported by the Massachusetts Life Science Center Workforce Development Grant, Skills Capital Grant, HUD Economic Development Initiative, and private donors. This building has space reserved for a robotics lab that is 1,288 square feet.

In July 2024, MCC's computing and engineering technology department received an NSF Advanced Technical Education (ATE) grant titled, "An Equity Focused Robotics and Automation Education Program for Career Development and Employment" (Award # 2400824). The purpose of this award is to fund the development of an A.S. in robotics degree. Middlesex will utilize the Advanced Technological Education (ATE) program business and industry leadership team, or BILT, model to inform curriculum and validate the job skills students will learn.

STAFF REVIEW AND VALIDATION

Staff thoroughly reviewed the **LOI** proposing full degree granting authority for the **Associate of Science in Robotics** program submitted by **Middlesex 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

Required (Core) Courses in the Major (Total # courses required** = 11**)		
Course Number	Course Title	Credit Hours
CAD 110	Engineering Graphics I	3
EGR 104	Principles of Electric Circuits	4
EGR XXX	Hydraulics and Pneumatics	4
EGR XXX	Industrial Electricity and Electronics	4
EGR XXX	Programmable Logic Controllers with Programming	4
EGR XXX	Robotics & Automation I	4
EGR XXX	Statistical Process Control, Quality Assurance and Principals of Maintenance	4
EGR XXX	Robotics & Automation II	4
EGR XXX	Robotics Internship	3
	Sub Total Required Credits	34
Elective Courses (Total # courses required = 3) *(attach list of choices if needed)*		
IDS 101	First Year Experience	1
IDS XXX	IDS Elective	1
IDS XXX	IDS Elective	1
	Sub Total Elective Credits	3

Distribution of General Education Requirements Attach List of General Education Offerings (Course Numbers, Titles, and Credits)	# of Gen Ed Credits
Arts and Humanities, including Literature and Foreign Languages (English Composition I, English Composition II, Humanities/Arts Elective)	9
Mathematics and the Natural and Physical Sciences (Statistics, Physics I)	8
Social science or behavioral science	6
Sub Total General Education Credits	23

Curriculum Summary	
Total number of courses required for the degree	19
Total credit hours required for degree	60

Prerequisite, Concentration or Other Requirements: Eligible for ENG 101 and Math Module 4; eligibility may be demonstrated through placement, course enrollment, previous college coursework, or high school transcripts.

Form B: LOI Goals and Objectives

Goal	Measurable Objective	Strategy for Achievement	Timetable
Curriculum- Develop eight new robotics-specific courses needed to complete the degree program at Middlesex.	Integrated circuits, programmable logic controllers with programming, robotics and automation I, robotics and automation II, and robotics internship will be developed and approved by the curriculum committee at Middlesex. These courses will also be added as electives in our electrical and mechanical engineering associate degree programs.	Faculty meetings will be scheduled for course development planning.	Summer 2025-Fall 2025: Course Development Spring 2025: Course Approval by local governance
Student Certification - Establish a robot certification exam to take at Middlesex. Establish Middlesex Community College as a testing center for the FANUC robotics operator I exam.	The percentage of students passing the FANUC robot operator I certificate. The number of alumni students supporting the advanced manufacturing and microelectronics industries in the region.	Faculty will contact and meet with FANUC representatives to acquire the robotics operator I certification exam and testing equipment for the college.	Spring 2026
Industry Advisory Board Development – Develop a 10 - 15 person advisory board consisting of a group of industry professionals with an ongoing active	Faculty are confident students are graduating with relevant industry sought skills.	Faculty and staff will reach out to current industry relationships. The advisory board will meet with our faculty 3 - 4 times per year. Once per year, knowledge and skills that students will need for employment within the next 1 – 2 years will be reviewed. Curriculum content and student learning outcomes will be	Fall 2025, or once the LOI is approved

relationship with the college.		updated in the appropriate course from the results of the annual review.	
Support Success and Access for All Students – Develop equity-based strategies inside the classroom. Establish course supports outside the classroom.	Equity strategies are integrated into robotics curriculum and students are supported through mentorship.	Full-time and part-time robotics faculty will attend professional development opportunities, specifically offered by the Association of College and University Educators (ACUE). ACUE offers a 6 - 8 week online course on creating an inclusive and supportive learning environment to support professors in this area. Faculty will collaborate with our internal Success Scholars Program to offer mentor sessions for students enrolled in the robotics degree program.	Summer 2025-Spring 2026

Form C: LOI Program Enrollment

	Year 1	Year 2	Year 3	Year 4	Year 5
New Full-Time	5	10	20	40	80
Continuing Full-Time	0	5	15	30 (accounts for graduation)	60 (accounts for graduation)
New Part-Time	5	5	10	15	30
Continuing Part-Time	0	5	10	20	40
Enrollment Totals - (Full Time) - (Part Time)	10 (5) (5)	25 (15) (10)	55 (35) (20)	105 (70) (35)	210 (140) (70)

Form D: LOI Program Budget

One Time/ Start Up Costs	***One Time Equipment Costs***					
		Annual Enrollment				**240 students**
	Cost Categories	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
	One Full Time Faculty Assistant Professor (Salary) salary at $75, 232; (*with 2% increase/year)	24,828** **salary cost of 30% faculty time on program based on enrollment numbers and need for equipment setup	38,368** **salary cost of 50% faculty time on program based on enrollment numbers	78,271.37** **salary cost of 100% faculty time on program based on enrollment numbers	79,836.79** **salary cost of 100% faculty time on program based on enrollment numbers	81,433.52** **salary cost of 100% faculty time on program based on enrollment numbers
	One Full Time Faculty Assistant Professor (Fringe) fringe at 45.81% (*with 2% increase/year)	11,373.70** **fringe cost of 30% faculty time on program based on enrollment numbers and need for equipment setup	17,576.38** **fringe cost of 50% faculty time on program based on enrollment numbers	35,856.11** **fringe cost of 100% faculty time on program based on enrollment numbers	36,573.23** **fringe cost of 100% faculty time on program based on enrollment numbers	37,304.69** **fringe cost of 100% faculty time on program based on enrollment numbers
	One Part Time/Adjunct Faculty(Salary) salary at a step 3;	16,548	16,879.92	17,217.51	17,561.86	17,913.09

	(*Two four credit courses with lab/semester 3 lecture 3 lab; with 2% increase/year) 6 lecture credits total 6 lab credits total					
	<u>One Part Time/Adjunct Faculty (Fringe)</u> fringe at 2.45% (*with 2% increase/year)	405.43	413.55	421.82	430.26	438.87
	Staff	0	0	0	0	0
	<u>General Administrative Costs</u>	0	0	0	0	0
	<u>7 New Courses for Development</u> 1,000.00/credit (*7 courses totaling 26 credits)	26,000	0	0	0	0
	Facilities/Space/Equipment Setup	10,000	0	0	0	0
	Field & Clinical Resources	0	0	0	0	0
	Marketing/Program Printouts	5,000	4,000	3,000	2,000	1,000
	Other (Specify) Paper, ink, pens, equipment repair	1,500	1,500	1,500	1,500	1,500
	Expenses Total	***95,655***	***78,738***	***136,267***	***137,902***	***139,590***

One Time/Start-Up Support			***Annual Income***			
	Revenue Sources	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
	Grants NSF ATE Award (10/2024 – 10/2027) Total = 554,943 * award currently being litigated	184,981	184,981	184,981		
	Full Time Student Tuition MA Residents 252.00/credit (3 Total) 4 courses	15,120 (5 FT students enrolled)	45,360 (15 FT students enrolled)	105,840 (35 FT students enrolled)	211,680 (70 FT students enrolled)	423,360 (140 FT students enrolled)
	Part Time Student Tuition MA Residents 252.00/credit (3 Total) 4 courses	7,560 (5 PT students enrolled)	15,120 (10 PT students enrolled)	60,480 (20 PT students enrolled)	105,840 (35 PT students enrolled)	211,680 (70 PT students enrolled)
	Specialized Course Fees (*EGR 104 167.00; PHY I 171 167.00) Total specialized course fees throughout program = 334.00	3,340	5,010	10,020	18,370	36,740
	Other (specify)					
	Revenue Total	***211,001***	***250,471***	***361,321***	***335,890***	***671,780***
	Program Income TOTALS	115,345.87	171,733.15	225,054.19	197,987.86	532,189.83