

Five-Year Capital Outlay Plan
2022 - 2026

Macomb Community College

Education • Enrichment • Economic Development

Discover. Connect. *Advance.*℠

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STRATEGIC PLAN 2025

Mission

Transform lives and communities through the power of education, enrichment and economic development.

Vision

Macomb Community College will be a leader in higher education, improving society through innovative learning experiences that create pathways for personal advancement and drive economic vitality.

Values

Accountability
We take personal and collective responsibility for our actions in order to provide excellent services and experiences.

Collaboration
We rely on partnerships with students, employees and the community to achieve our common goals.

Inclusion
We embrace diversity and individuals' experiences to create a sense of belonging and empowerment for all students and employees.

Innovation
We foster creativity and agility to succeed in a constantly changing environment.

Integrity
We demonstrate high levels of professionalism, honesty and ethical behavior throughout the institution.

Respect
We value all people and treat everyone with dignity.

GRAP7116

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STRATEGIC PLAN 2025

Strategies

Success & Equity	Promote success and equitable outcomes for all students through innovative academic experiences, relevant programs and strategic partnerships.
Student Experience	Provide an inclusive and supportive student experience through accessible technology and personalized service.
Organizational Effectiveness	Strengthen organizational effectiveness, efficiency and agility by improving college-wide communication, collaboration and processes.
Employee Engagement	Cultivate employee engagement, fulfillment and retention through meaningful recruitment, onboarding and professional development opportunities.
Awareness & Value	Enhance community awareness of Macomb's value as a source of education, enrichment and economic development.

Student Experience Statement

Macomb Community College strives to provide a relevant and valuable education characterized by an empowering student experience that will include:

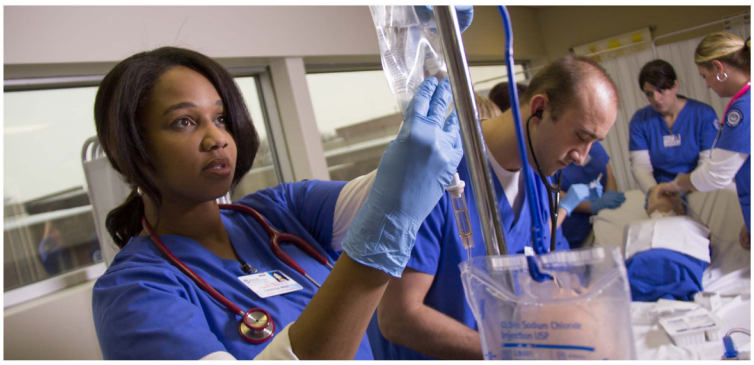
- quality academic and career programs with real-world applications that foster lifelong learning and prepare students for the future;
- personalized and helpful services that are easy to navigate and accessible in person and online;
- meaningful connections with knowledgeable and engaged faculty and staff; and
- clear pathways to completion, transfer and employment.

Macomb Community College faculty, staff and administration will promote this experience with:

- academic programs, class schedules and service hours designed to meet students' varying needs and goals;
- a new student orientation that helps students navigate college processes, identify available resources and select an educational program;
- reliable and welcoming service providing timely support for students; and
- an inclusive environment that embraces diverse identities and perspectives, fostering a sense of belonging among all students and employees.

GRAP7116







Instructional Programming

Macomb Community College

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Instructional Programming

Macomb Community College (www.macomb.edu) is one of the nation's leading community colleges, providing learning experiences to nearly 38,000 students annually. As a publicly funded and community-based institution of higher education, Macomb provides a comprehensive program of high-quality educational, enrichment and economic development experiences designed to promote student success, individual growth and social advancement. The college's comprehensive educational programming includes pre-collegiate experiences, university transfer and career preparation programs, bachelor's degree completion and graduate degree programs, workforce training, professional education and certification, and continuing education and enrichment opportunities.

a. Describe existing academic programs and projected programming changes during the next 5 years, in so far as academic programs are affected by specific structural considerations (i.e., laboratories, classrooms, current and future distance learning initiatives, etc.)

For over 60 years, Macomb has earned the reputation of being on the leading edge in program development and course delivery. As a result, Macomb has been able to meet the changing needs of the community and workforce it serves.

Macomb students have the option to take classes 7 days a week, day or night; on campus, online, via hybrid (i.e., online and on ground), and in 8-week, 12-week or 16-week blocks of time. The college has also developed fast-track and accelerated programs and online-facilitated programs. Over 2,700 classes are offered each term at the college's campuses and throughout the county at community education centers. Today's students require greater flexibility and independence for their education and training, which obviously impacts the design and utilization of the college's instructional space and programming.

As with any institution, it is important for Macomb Community College to understand the educational needs in the community and anticipate changes in programming that will be necessary to meet those needs. In Michigan today there is a growing need for a highly skilled workforce to fill the abundance of job openings in advanced manufacturing. It is because of the increasing demand of our employer partners that Macomb continues to focus on the updating and expansion of the Skilled Trades and Advanced Technology Center. In this facility, Macomb trains students for positions such as CNC machine programmers and operators, welders, robotics programmers and operators, land surveyors and other high-demand careers in advanced manufacturing and skilled trades.

The Center is in need of many updates including mechanical and electrical systems that are nearly 40 years old. There are a number of safety issues, capacity concerns and lab updates that are needed in this area as well. It is imperative students are learning on state-of-the-art equipment giving them real experiences that will make them viable candidates to hit the ground running for the employer. The renovation of this complex is necessary to meet the labor market demands in these areas, assist in closing the skills gap, and provide the highest quality education to students in the pipeline and beyond.

b. Identify the unique characteristics of each institution's mission. For Community Colleges: Two-year degree and certified technical/vocational training, workforce development activities, adult education focus, continuing or lifelong educational programming, partnerships with intermediate school districts, community activities, geographic service delivery area (s), articulation agreements or partnerships with four-year institutions.

Certified Technical/Vocational Training/Workforce Development Activities

Dental Sciences

Macomb Community College's new initiatives include filling a void in dental services and training in the County. The Center for Health Careers will be launching a non-credit workforce certificate in Dental Assisting in Fall 2021. Plans are in motion to renovate an existing college office building as a dental training center.

A community dental clinic is scheduled to be opened Fall 2021. The clinic will be made available to the dental community in Macomb County as a training facility for continuing education needs. The clinic will also start community dental services convening a Dental Hygiene Associate Degree program effective Fall 2022.

Public Service Institute

Macomb Community College's Public Service Institute (PSI) offers advanced training and career and technical training for law enforcement agencies, fire and Emergency Medical Services (EMS) agencies and private industry. These programs are offered at East Campus, containing classroom facilities as well as an indoor firearms range; simulation rooms; MILO range theater to assist with critical decision making; live fire burn building and tower; confined space training capability; search and rescue trailer; gymnasium; computer lab; and configurable training structure. Training equipment includes a fire engine; several police vehicles; a fire prevention system training trailer; fire extinguisher training simulator and vehicle fire simulator.

These facilities and equipment are used for conducting training in many areas. Law enforcement training includes a corrections academy for training corrections officers for the Macomb County Sheriff's Office; evidence technician; mountain bike patrol; SWAT school; radar operator; as well as firearms qualification.

Fire Departments utilize the training facility for advanced courses such as Rapid Intervention Team Training; as well as utilizing the training tower and live fire training.

Private industry utilizes the MIOSHA Training Institute at the PSI. MIOSHA courses are offered year-round to serve the needs of local industry.

Human Patient Simulator Lab

Simulation lab used by multiple programs providing students the opportunity to practice skills in a safe environment prior to or simultaneously with clinical experience. The lab is currently equipped with various high-fidelity simulators spanning from pediatrics to geriatrics. Anatomage table is made available to students in various allied programs inclusive of Veterinary Technician and Veterinary Assistant. Immediate goals for expansion are inclusive of virtual reality experiences.

Emergency Medical Services (EMS) simulation lab

Macomb's EMS Lab contains an Ambulance Simulator to replicate treating patients in the back of a

rig. The simulator is equipped with multiple cameras to allow students to do peer to peer evaluations. The EMS lab is also equipped with high-fidelity human patient simulators that vary in age and condition. Macomb Community College houses in the EMS lab state of the art cardiac simulators to replicate cardiac patient care in a controlled setting.

Pharmacy Technician
Macomb's program is providing students with a web-based virtual reality clean room simulation product to practice sterile compounding which will help move the program from our WCE noncredit programming to our academic credit side.

Cybersecurity Degree
Having met the rigorous standards of the National Security Agency (NSA) and the Department of Homeland Security (DHS), Macomb has received their jointly awarded designation as one of the National Centers for Academic Excellence in Cyber Defense Education Program (CAE-CDE) Associate Level, through 2024. This designation signifies that Macomb's academic programs are mapped to NSA/DHS-approved curriculum and contribute to the security of the nation's information infrastructure by preparing students to be highly capable cybersecurity experts. This degree will be 100% online beginning winter 2021.

Cybersecurity Center: https://www.macomb.edu/community/cybersecurity-center.html

New Cloud Computing
Macomb's IT-Cloud Computing Program will provide you with the IT skills that are increasingly in demand as more and more companies move data and software applications from in-house to a more accessible cloud platform on the internet. Earn either a Certificate or an Associate of Applied Science Degree from Macomb, while preparing for vendor-specific certifications.

Building Performance and Energy Management (BPEM)
The BPEM program is new to Macomb as of Fall 2020 and is a cutting-edge program designed to meet the needs of a new and coming trade. The program focused on energy and building automation to increase efficiently, comfort and savings within the workplace. For the first time with in the Engineering and Advanced Technology department we have designed a truly cross discipline program by embedding in a large portion of Information Technology (IT) classes as required courses within the program. Some of these IT classes are Cyber Security and Programing. With the large advancements in IT technology and the digital push the Construction/ Climate Control industries have been forced to evolve into not only using hand tools but also fully understanding digital controls. Building Automation is a new and growing industry and we are proud to say that Macomb is the first School in Michigan to offer a program that meets todays industry needs.

Center for Advanced Automotive Technology (CAAT)
CAAT is a curriculum resource for other institutions of higher education and local school districts. CAAT has developed a new program being offered through our Automotive department called Vehicle Engineering Technician (VET). The VET program launched Fall 2020 and is a specifically designed to meet a large gap in the automotive manufacturing and testing industry. This program merges the hands-on automotive technician with the IT specialist to produce and test todays most advanced components within an automobile such as lane assist technology, traction control systems, brake assist technology and autonomous vehicles.

Automotive Technology
As one of the largest Automotive Technology programs in the state, Macomb strongly supports the automotive industry and the aftermarket in developing technicians for service and development careers. The general Automotive Technology program enables students to pursue certificates and associate degrees aligned with the National Institute for Automotive Service Excellence (ASE) criteria. The college also has a corporate Automotive Technology program. The General Motors ASEP program is a cohort-based co-op type program that alternates school and work periods for three years leading to degree completion.

Digital Sculptor Program
Macomb Community College created a digital sculptor program to address the specialized needs of the automotive industry at the request of industry leaders and developed with industry experts. This program combines the traditional hand sculpting skills (aka clay modeling) with computer-based software to create and manipulate 3-D virtual models. The certificate and associate degree programs officially began in fall of 2015 and continues to see steady enrollment. A formal digital sculptor / clay modeling co-op program with General Motors is in the final approval stages.

Automated Systems Technology - Mechatronics
The mechatronics program integrates multiple disciplines including mechanical, electronic, hydraulic, pneumatic, and computer-controlled logic processing with robotics applications to streamline the manufacturing processes and improve quality and expense of production. Mechatronics is one of the fastest growing fields in manufacturing. In the next five years the Mechatronics program is planning to expand its offerings with additional equipment representative of current manufacturing trends and the continued integration of Industry 4.0 concepts throughout the curriculum.

Media and Communications Arts
The Media and Communications Arts Program prepares students for several career paths that integrate advanced technology with creative input to produce marketable products that are relevant to our technology driven world. The subset of degrees offered within the MACA program include 3D Animation, Interactive Web Media, Motion Design, Photographic Technologies, Video Production and Design and layout.

Michigan Technical Education Center (M-TEC)
Macomb Community College's M-TEC is a 40,600 square foot, $7.5 million facility on the site of the former Warren Tank Plant. This dynamic learning environment is distinguished by its design, which includes robotic training cells, integrated CAD/CAM and a large flexible high-bay space that can be rapidly adapted to meet any business training requirements.

M-TEC also houses a resource center, computer labs and classrooms offering the most advanced training technologies in automated systems, computer aided drafting and quality management processes. The programs offered are industry-driven, flexible, accessible and designed to address the challenges of today's marketplace. Students are enrolled in pathways that are short-term, fast paced and we have embedded stackable national industry certifications.

The robotic training cells at Macomb's M-TEC are ideal for training a variety of students from maintenance technicians to engineers. These instructional labs offer students the opportunity to learn current, real-world industry applications for robotic handling of materials in fully functional

manufacturing cells. Here the student is given the opportunity to apply theoretical knowledge to the robotics and systems actually involved in advanced manufacturing processes, rather than only on desktop trainers or simulators. An investment of over $2,6 Million in new and upgraded state-of-the-art equipment was installed with funding provided through the Department of Labor Trade Adjustment Assistance Community College and Career Training (TAACCCT) grant, the State of Michigan Community College Skilled Trades Equipment Program, the Make It in America DOL grant and the college itself.

The $2.6 million investment has advanced its capabilities in advanced integrated manufacturing, automated systems and robotics. M-TEC offers training on the latest industry-specific equipment in body-shop, paint, general assembly, stamping and powertrain. In addition, we offer automated systems training that includes FANUC and ABB robots, laser alignment, CMM, RFID, FANUC CNC Robodrill, robot load/unload and vision system, VFD training stations, AB and Siemens PLC training stations, and more. With over 400,000 robots installed, FANUC is the largest supplier of robots worldwide and Macomb's M-TEC is the only community college training center in Michigan scheduled for a FAST designation. In addition, the college provides the industry-recognized FANUC CERT.

This update allows for our students to learn on equipment exactly like that which they will find in the workplace. Our employer partners express the exceptional positive impact this has on their companies. The students are entering the workplace ready to hit the floor running reducing the amount of training time employers have to allow for.

In 2020, equipment was added in multiple stages to increase capacity for the long-term and address the need for a greater student to trainer ratio due to COVID social distancing and capacity limits. In combination with funding from the college and the CARES Act, five FANUC training carts, three electric motors learning systems, three AC motor drive training systems, four AC motor controls training systems, and four variable frequency AC drive learning systems were added to the existing automated systems equipment portfolio to create a functioning replica of a manufacturing facility. This environment and equipment provide students with real-life experiences to prepare them for high-tech manufacturing marketplace further.

One of the critical components to the modern manufacturing workplace is the integration of once-independent sectors; many have coined as the elements to the fourth industrial revolution or Industry 4.0. In concert with industry's need for a skilled workforce with the knowledge of how and why these sectors such as engineering, advanced technology, internet of things (IoT), industrial internet of things (IIoT), artificial intelligence (AI), big data, cloud computing, and cybersecurity, integrate, the response to COVID-19 forced the associated programs to utilize augmented and virtual reality technologies. Combined, they are considered XR technologies. These XR technologies are not only used in the manufacturing environment, but they also bolster virtual learning. As such, the college partnership with capital access available through the CARES Act purchased thirty-two augmented reality devices with accompanied software to promote the use, knowledge, experience, and virtual learning opportunities.

Finally, in response to a marine industry-led collaborative effort, the college created the Marine Maintenance Technician program, a first in Michigan. This customized program provides the training industry stated they need to ensure the long-term viability of a high-desired and meaningful sector of the great lakes state. The initial capital invested in this program by the college

exceeded $600,000 allocated for the first five years, not including donations from industry, government agencies, and nonprofits that support the marinas across the state. To meet the COVID-19 safety protocols for on-ground education while adhering to the capacity restrictions, the CARES Act supported the increase of marine engines to keep with the 1:1 student to engine ratio goal. Combined with the investment in automated systems, XR technologies, and to the Marine Maintenance Technician program, another $1M was invested.

Michigan New Jobs Training Program (MNJTP)
Designed as an economic development tool, the Michigan New Jobs Training Program allows community colleges to provide free training for employers that are creating new jobs and/or expanding operations in Michigan. The training for the newly hired workers is paid by capturing the state income tax associated with the new employees' wages. Macomb Community College has worked with over 66 companies and entered into 18 MNJTP agreements with Macomb County employers. Those contracts represent a total of $3.9 million in contracts with a projected 4,470 new jobs. All of which have a starting earning wage at 175 percent of minimum wage from the time of the contract. Macomb has a waiting list of companies as soon as the college is eligible for more training dollars.

Apprenticeship
For more than 60 years, Macomb Community College has provided local industry members with cutting-edge instruction designed for registered apprenticeship and other sponsored employee educational programs. In 2015, Macomb Community College, in partnership with Grand Rapids Community College, was awarded the American Apprenticeship Initiative Grant, which enabled the development and implementation of the Michigan Apprenticeship Program Plus (MAP+) to further develop and expand apprenticeship career pathways. The program spans from building awareness, including working with high schools and other organizations to link individuals to opportunities, providing pre-apprentice and apprenticeship training, matching employers and students, leveraging associate degree attainment and creating options for bachelor's degree completion. The program offers industry-driven, structured training that allows employers to develop current employees as well as, to interview and hire students. Currently the college has more than 500 sponsored students (registered apprenticeship or employee-in-training) from over 70 companies.

The Macomb MAP+ is focused on manufacturing-related areas such as CNC machining, robotics, tooling, die, mold, welding and industrial maintenance as well as supporting other traditional apprenticeship areas such as construction and climate control. In 2016, MAP+ was recognized by Automation Alley with their Educational Initiative of the Year award.

The college is a member of the Registered Apprenticeship College Consortium (RACC), a national network of colleges and registered apprenticeship programs working together to provide college-to-career opportunities. In addition, the college also has specific articulation agreements with five construction union groups. Under the agreement, union organizations provide credit to apprentice workers for training received by any of the five partners.

The following union organizations are participating:

- Detroit Carpenter Joint Apprenticeship Training Committee
- Local 80 Sheet Metal Training Center
- Michigan Laborers Training & Apprenticeship Institute
- Millwright Local 1102 Apprenticeship Program

- Greater Detroit Cement Masons Joint Apprenticeship Committee

A graduate apprentice can receive up to 32 credit hours at Macomb for completion of the apprenticeship training. The credits apply to an associate of applied science degree. Those who complete engineering and advanced technology courses at Macomb and then enter an apprenticeship program with one of the partners can receive credit of up to one year of related training instruction.

Adult Education Focus, Continuing or Lifelong Educational Programming

Center for Teaching and Learning (CTL)

The major technology enhancements in the area of teaching have significantly improved the ability of the college's faculty to deliver curriculum in a variety of modes reflective of the learning preferences of their students. To support teaching and learning in the classroom, the college created the Center for Teaching and Learning (CTL) which is designed to serve as a "one-stop shop" and professional development training center for full-time and adjunct faculty members. The mission of the Center for Teaching and Learning is to make a positive impact on student success by fostering and promoting a culture of teaching and learning. The CTL provides pedagogically sound and creative support to the faculty through individual consultations, professional development programs, technology support, and curriculum design and assessment expertise. The CTL offers assistance with a wide variety of instructional and professional development topics such as teaching methods, web development, distance learning, curriculum development, instructional technology and assessment. Training and the sharing of best practices, as facilitated by the CTL, allow the faculty to optimize their utilization of the college's technology resources while enhancing their classroom content deliveries.

Society of Active Retirees (SOAR) Macomb

The Society of Active Retirees is a community-based lifelong learning initiative of Macomb Community College. SOAR Macomb offers a range of non-credit enrichment courses covering a variety of topics, providing its members with opportunities for social and cultural enrichment and personal growth. Membership in SOAR Macomb is open to all who are committed to lifelong learning. The program was established in 2014 and has grown to over 500 active members and offered 70 class offerings in 2019-20. This program will be rebranded in 2020-21 to the Macomb Organization for Retiree Enrichment (MORE)

Workforce and Continuing Education (WCE)

Macomb's Career Academic departments extend the college's tradition of education and service by providing job skills and lifelong learning opportunities that measurably improve the quality of life for individuals in the Macomb County region. Workforce and Continuing Education can be categorized into the following:

- Career Training: Assists individuals seeking immediate employment, new career opportunities, retraining and skill upgrades for the workplace.

- Corporate Training: For businesses seeking to upgrade employee proficiency in technical and professional areas and those seeking to find and train new employees.

- Workforce Assessment: Assessment and test preparation courses that address the workforce development needs of local and regional employers, trade and labor organizations, economic and workforce development organizations and educational systems and institutions.

- Entrepreneurial Training: Geared to small business owners, entrepreneurs and those agencies and individuals involved in economic and job development in the community.

- Personal Enrichment: Opportunities for individuals to pursue special interests in art, language, culture and wellness.

- Professional Development: Provided for those individuals interested in advancing their current career, need training to retain a certification or are ready to enter a new field, Macomb offers many convenient options for professional and career development through both its academic and *Workforce and Continuing Education programs.*

- College 4 Kids – Provides educational opportunities and a college campus connection for students ages 3 to 17. Through fun activities and enriching, memorable experiences, students learn and succeed through personal achievement.

Workforce and Continuing Education programs directly align with academic career programs to enhance non-credit to credit career pathways in Engineering & Advanced Technology, Business & Information Technology and Health & Public Service. This innovation allows Macomb students to advance through progressive levels of training more efficiently and attain labor market payoffs sooner.

Futures for Frontliners

Futures for Frontliners is a state scholarship program for Michiganders without college degrees who worked in essential industries during the state COVID-19 shutdown in spring 2020 (April 1 – June 30). This scholarship provides these frontline workers with tuition-free access to a local community college to pursue an associate degree or a skills certificate. Macomb is supporting this initiative by reaching out to current, stopped-out and prospective students about this opportunity. To date we have awarded the scholarship to 732 students for the Winter 2021 semester.

Reading and Writing Studios

Macomb Community College continues to respond to the changing demographics of our Count, including expanded resources for the academically underprepared and for students whose primary language is not English. Recognizing that their persistence and success is vital to the overall community, Macomb opened academic literacy support at both South and Center campuses in 2015. The Reading and Writing Studios (RWS) offer free support for any interested student, including specialized programming for students whose primary language is not English and scaffolded support for students new to digital literacies. This service has been incredibly successful thus far with current Macomb students, measured in terms of GPA and retention. To date there have been over 24,000 clients who have utilized the studios. In response to the global COVID-19 pandemic, the RWS has expanded live, online tutoring, established asynchronous tutoring via written feedback, and expanded asynchronous resources, including video tutorials.

Partnerships with Intermediate School Districts

High School Course Transfer (Articulation)

Macomb has a positive working relationship with all of the county's high schools and technical centers, from which approximately 68% college-bound seniors attend Macomb Community College within five years of their high school graduation; Macomb currently has approximately 185 formal articulations agreements with the local school districts. These agreements create one avenue of earning college credit while in high school, and effectively provide students with the opportunity to "jump start" their college career in the various career and technical fields of study.

Early College of Macomb - A college access, college ready model

Macomb Community College and the Macomb Intermediate School District have partnered to provide a countywide program for high school juniors who want to get a jump-start on their college education and their careers. In this three-year program, students participate in an integrated sequence of high school and college courses with no out-of-pocket cost for books, fees and tuition with the potential to graduate with a high school diploma and associate degree at the end of grade 13. In the 11th year of the Early College of Macomb there were 739 high school students enrolled in grades 11 – 13. The eighth cohort had 193 students complete the program through year 13.

Classroom to Career Talent Consortium Partnership

As a consortium member in the Macomb Classroom to Career Talent Consortium, Macomb Community College continues its five-year agreement to participate in the Marshall Plan for Talent Grant with three Macomb County school districts; Armada, Center Line, and Fraser. Macomb is offering credit for prior learning opportunities to high school students with a clear pathway to an industry recognized certificate in Medical Assisting.

New School District Partnership

Macomb Community College has entered into three Early College Partnerships to provide opportunities to students outside Macomb County. The Dryden Community Schools and Oxford Community Schools partnerships provide an opportunity for high school students in grades 11-13 to enroll in Macomb Community College courses with no out-of-pocket cost for books, fees and tuition with the potential to graduate with a high school diploma and associate degree at the end of grade 13. The Lapeer County Intermediate School District Early College Academy Partnership (ECAP) provides an opportunity for high school students in grades 11-13 to enroll in college courses with no out-of-pocket cost for books, fees and tuition with the potential to graduate with a high school diploma and associate degree at the end of grade 13. College coursework in grades 11 and 12 are provided by other post-secondary partners affiliated with the ECAP. Beginning in grade 13, the students apply and begin college coursework at Macomb Community College.

Partnerships with Four Year Partners

Macomb has over 300 articulation and/or transfer agreements with four-year colleges and universities throughout the state and nation.

List of transfer programs to universities: http://www.macomb.edu/transfer

Macomb established a landmark on the higher education landscape when it built its UC, one of the first community college-driven initiatives in the nation, to provide access to bachelor's degree completion and master's degree programs. At Macomb's UC, 11 "partner" institutions offer students an opportunity to complete a bachelor's or master's degree in over 50 programs. Students

can also earn a doctoral degree in osteopathic medicine through Michigan State University's medical school in the UC. Additional UC partners are Central Michigan University, Ferris State University, Madonna University, Northwood University, Oakland University, Rochester University, University of Detroit Mercy, Walsh, Wayne State University, and Western Michigan University.

Annually, more than 3,500 students are enrolled in over 400 sections at Macomb's UC, pursuing bachelor's, master's and doctoral degrees in fields from business, computer science, elementary education to engineering, health services, and counseling. This UC is now larger than some of Michigan's smaller community colleges and several of its independent universities.

Macomb's recent articulation agreements with four-year institutions are:

2019 – NEW ARTICULATIONS

Baker College - BBA in multiple business areas/ABA in General Business (87 credits transfer); Central Michigan University – BS in Nursing/AAS in Nursing (89-94 credits); Davenport University – BS in Nursing/AAS in Nursing (90 credits); Eastern Michigan University – BS in Children & Families/AAS in Early Childhood Studies (93 credits); Eastern Michigan University – BS in Electrical & Computer Engineering/AS in Pre-Engineering (77 credits); Eastern Michigan University – BS in Exercise Science/AAS in Exercise Science (76 credits); Eastern Michigan University – BS in Exercise Science/AAS in Physical Therapist Assistant or Respiratory Therapy (86 credits); Franklin University – BS/Any Macomb degree (94 credits); Ferris State University – BS in Respiratory Therapy/AAS in Respiratory Therapy (90 credits); Oakland University – BS in Exercise Science/AAS in Exercise Science (84 credits); Oakland University – BS in Human Resource Development/AGS (64 credits); Oakland University – BS in Wellness & Health Promotion/AAS in Health & Wellness Promotion (66 credits); Purdue University Fort Wayne – Bachelor of Applied Science/Any AAS (88 credits); Rochester University – BBA in Computer Information Systems/AAS in any IT program (90 credits)

2019 – RENEWED ARTICULATIONS

Chamberlain College of Nursing – BS in Nursing/AAS in Nursing (77-92 credits); Eastern Michigan University – BS in Electronic Engineering Technology/AAS in Electronic Engineering Technology (79 credits); Eastern Michigan University – BS in Paralegal Studies/AAS in Paralegal (86 credits); Eastern Michigan University – BS in Product Design Engineering Technology/AAS in Product Development (93 credits); Eastern Michigan University – BS in Simulation, Animation, and Gaming/AAS IT-Programming for Electronic Games (82 credits); Ferris State University – BS in Criminal Justice-Generalist/Any Macomb Degree (85 credits); Ferris State University – BS in Industrial Technology & Management/Any AAS or ABA (90 credits); Ferris State University – BS in Nursing/AAS in Nursing (86 credits); Madonna University – BS in Criminal Justice/AAS in Law Enforcement, LE with Academy, or Homeland Security (90 credits); Madonna University – BS in Emergency Management/AAS in various public services programs (89 credits); Madonna University – BS in Nursing/AAS in Nursing (89 credits); Madonna University – BS in Paralegal Studies/AAS Paralegal (74 credits); Oakland University – Bachelor of Integrative Studies/Any Macomb degree (88 credits); University of Detroit Mercy – BS in Health Services Administration/Any Macomb degree (87 credits); Wayne State University – Bachelor of Social Work/AA in Pre-Social Work (71 credits)

2020 – NEW ARTICULATIONS

Boise State University – BS in Respiratory Care/AAS in Respiratory Therapy (90 credits); Eastern Michigan University – Bachelor of Social Work/AA in Pre-Social Work (73 credits); University of Michigan Dearborn – BA in Children & Families/AAS in Early Childhood Studies (72 credits)

2020 – RENEWED ARTICULATIONS

Ferris State University – BS in Business Administration-Professional Track/Any Macomb degree (90 credits); Ferris State University – BS in Automotive Management/AAS Auto Degrees (84 credits); Madonna University – BS in Hospitality & Tourism Management/ABA Hospitality Management (87 credits); Saginaw Valley State University – BS in Nursing/AAS in Nursing (93 credits); Wayne State University – BS in Computer Technology/Any Macomb degree (75 credits); Wayne State University – BS in Construction Management/AAS in Construction Management or any Macomb degree (75-78 credits); Wayne State University – BS in Electrical/Electronic Engineering Technology/AAS in Electronic Engineering Technology or any Macomb degree (77- 86 credits); Wayne State University – BS in Electromechanical Engineering Technology/Any Macomb degree (77 credits); Wayne State University – BS in Mechanical Engineering Technology/AAS in Mechanical Engineering Technology or any Macomb degree (76-77 credits); Eastern Michigan University – BS in Technology Management/Various Macomb tech programs (94 credits); University of Michigan-Dearborn – BBA in Business Administration/ABA in General Business (66-68 credits)

Community Activities

Student Options for Success (SOS)
The SOS program connects students with a variety of community and public benefit organizations to help them with living expenses while pursuing higher education. Academic success is a priority, but many students still struggle with basic expenses such as food, rent, utilities, childcare, and healthcare while in school. The SOS program helps students find resources to support their educational goals by providing tools for ongoing financial stability and long-term self-sufficiency. Many students have faced new challenges due to COVID-19. The SOS office has provided students with information about new programs and funding for supports related to the pandemic. SOS and other related staff have also worked to distribute federal CARES Act funds to students in need to quickly help alleviate financial challenges. Over 3400 students have been supported with CARES funding to date.

Community Enrichment
In addition to the 38,000 students who enroll in Macomb's credit and non-credit programs each year, nearly 375,000 people participate in its community service programs.

The Macomb Center for the Performing Arts (MCPA) offers nearly 500 cultural events and hosts more than 128,000 visitors. The MCPA is a center of education and enrichment in Macomb County, offering a variety of cultural experiences to patrons of all ages. In addition to professional staged programs, the center also offers choir and summer workshops for children.

The Sports and Expo Center is Macomb County's largest conference and expo center that boasts 61,000 square feet of space. Families, community, athletic and special events hosted by the college are held in this spacious venue.

The Albert L. Lorenzo Cultural Center has become a place for discovery, creating a venue where people can explore the historical and current experience that shape the community's heritage. The center operates on a philosophy of fostering partnerships and collaboration to augment existing assets already available in the community, while bringing new cultural resources and experiences to the residents of Macomb County. Programming for the Cultural Center is designed to explore topics from a variety of perspectives, creating multidimensional experiences that provide interactive opportunities for learning, celebration, and entertainment.

In addition to these facilities, Macomb participates in many other activities and organizations throughout each year. Macomb makes a concentrated effort to analyze the communities' needs and helps create solutions. For example, Macomb works closely with the Chaldean Community Foundation to assist Iraqi individuals who are transitioning into our communities. We provide English as a second language (ESL) training at their facility in Sterling Heights assisting them to acclimate within the community.

Pre-COVID 19, Macomb partnered with county, Macomb Intermediate School District and industry to host the Lake St. Clair Water Festival and Auto STEAM Days. Both of these events bring students on campus to learn about different aspects of our community. The water festival focuses on water preservation, conservation and safety. Auto STEAM Days students learn about career pathways available in these fields, check out the latest trends in technology, discover the electric vehicle, experience hands on robotics opportunities, and so much more. This is an interactive and fun way to get students interested in these careers as we help Macomb County's engineering and automotive businesses fill their employee pipeline through our programs. Our hope is to resume these activities in 2021.

Lastly, for the last five years the college has partnered with One Macomb, the Macomb Intermediate School District, all of the school districts in the county, McLaren Macomb Hospital and others to host a Macomb County Diversity Summit for students in grades 8 – 11. This is an effort to increase awareness and understanding of the many cultures in our county and provide ways for our students to be leaders in these efforts. This event is typically held in November and due to COVID 19 it was cancelled. However, there are already plans in place to host it virtually in February of 2021.

In addition to these and the many more community events hosted on Macomb's campuses, the college also partners and supports the following organizations whose activities match our mission:

- ACCESS
- Advancing Macomb
- Academies at Romeo High School
- Anchor Bay Chamber of Commerce
- Anton Art Center
- Automation Alley
- Center for Automotive Research
- Chaldean Chamber/ Community Foundation
- Clinton River Area of Concern Public Advisory Council
- Clinton River Watershed Organization
- Detroit Institute of Arts
- Detroit Regional Chamber (including the Detroit Scholarship Fund)

- Detroit Symphony Orchestra
- Detroit Zoological Society
- Eastpointe-Roseville Chamber of Commerce
- Families Against Narcotics/ Hope Not Handcuffs program
- Inforum
- Interfaith Center for Racial Justice
- Leadership Macomb
- LIFT (Lightweight Innovations for Tomorrow)
- Macomb County Chamber/Macomb Foundation
- Macomb County Water Resources Advisory Council
- Macomb-Oakland University INCubator
- Macomb County Robotics Collaboration and Innovation Center
- Macomb Symphony
- MCREST
- Metropolitan Affairs Coalition
- Michigan Automotive and Defense Cyber Awareness Team
- Michigan Opera Theatre
- Motor City Symphony
- Richmond Chamber
- Romeo/Washington Chamber
- Selfridge Air National Guard Base Community Council
- Southeast Michigan Council of Governments
- Sterling Heights Chamber
- Sterling Heights Community Foundation
- Turning Point
- United Way
- Workforce Intelligence Network Southeast Michigan

c. Identify other initiatives which may impact facilities usage

All of the activities listed in the previous section impact facility usage at Macomb. In addition to those ongoing programs and community outreach events, an increase in the skilled trades and advanced manufacturing credit/non-credit training enrollment strains facility usage at South Campus specifically. This is the basis for the capital outlay request. As the skilled trades continues to thrive in Southeast Michigan, more and more jobs go unfilled. Based on the full schedule of classes and our community partnership events there are limited options for finding other space to accommodate the continued expected increase in skilled trades training classes need to do our part in filling the skills gap. The renovation of the Skilled Trades and Advanced Technology Center is the only viable option for Macomb to expand facility usage.

d. Demonstrate economic development impact of current/future programs (i.e., technical training centers, Life Science Corridor and Tri-Technology Corridor initiatives, etc.)

Economic Growth

Macomb Community College provides significant economic value to Macomb County and the region, with a study completed in 2018 found that the college and its students add $992.4 million in income to the county's economy and provide a return of $5 in benefits for every $1 invested in the college by taxpayers. Emsi, a leading provider of economic impact studies and labor market data to educational institutions, workforce planners and regional developers in the U.S. and internationally, recently completed the study employing fiscal year 2015-16 academic and financial data. (At the time of the study, the latest year for which complete data was available.)

The $5 of benefit returned to taxpayers for every $1 they invest in the Macomb Community College is comprised of added tax revenue stemming from the college's student's higher lifetime earnings, increased output of local businesses and savings to the public sector due to reduced demand for government-funded services.

The study also showed that students receive a substantial 13 percent return on their investment in a Macomb education. For every $1 spent, students gain a return of $3.50 in higher future earnings. During the analysis year, Macomb Community College operations, its students and alumni added
$992.4 million in income to the Macomb County economy, approximately equal to 2.5 percent of the county's total gross regional product. This means that more than 16,000 jobs in Macomb County – one out of every 26 -- is supported by the activities of the college and its students.

Macomb Community College is fully committed to addressing the needs of area employers by providing a skilled workforce prepared for the new advanced technology job opportunities. In addition to that commitment and Macomb's many other credit programs, the college is also focused on economic development and has a significant role in these efforts. Macomb continues to be an institution that not only helps existing companies with their workforce needs by educating their current and future employees, but also seeks to be an institution that helps form new companies.

In addition to the overall economic impact, Macomb believes that innovation and entrepreneurship is a vital part of a thriving community. For that reason, the college opened the Center for Innovation and Entrepreneurship which offers educational opportunities to students, faculty and community members around exploring entrepreneurship and taking action on innovative ideas.



Staffing & Enrollment

Macomb Community College

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II. Staffing and Enrollment

Colleges and universities must include staffing and enrollment trends in the annual 5-year comprehensive master plans. This component should:

a. Describe current full and part-time student enrollment levels by academic program and define how the programs are accessed by the student (i.e., main or satellite campus instruction, collaboration efforts with other institutions, Internet or distance learning, etc.)

As of fall 2019, nearly 12,000 (59%) Macomb students are enrolled in Arts and Sciences programs, which are primarily designed to facilitate transferring to four-year colleges and universities. The next largest group of students, 2,300 (12%), is concentrated in various business programs, including high demand programs, such as accounting and global supply chain management. Roughly, 1,350 students (7%) are enrolled in health service programs, including nursing, respiratory therapy surgical technology and other health specialties. Over 1,300 (7%) students are enrolled in engineering technologies. Approximately 650 students are preparing for various skilled trades in automotive, construction, manufacturing and other areas. Nearly 600 (3%) are studying in information technology (programming, networking and cybersecurity), and lastly, 500 (3%) are preparing for public safety careers (law enforcement, firefighting and emergency medicine).

The majority of Macomb students attend part-time (69%), meaning they take less than 12 credits per term. Only 31% attend full-time (12 or more credits per term).

Of the 378,000 total credit hours students took in the 2019-20 academic year, 71% were completed at one of the College's two main campuses (Center Campus in Clinton Township or South Campus in Warren). Twenty-seven percent attended virtually (online via the internet). And, 2% attended at satellite campuses (East Campus in Clinton Township and off-campus).

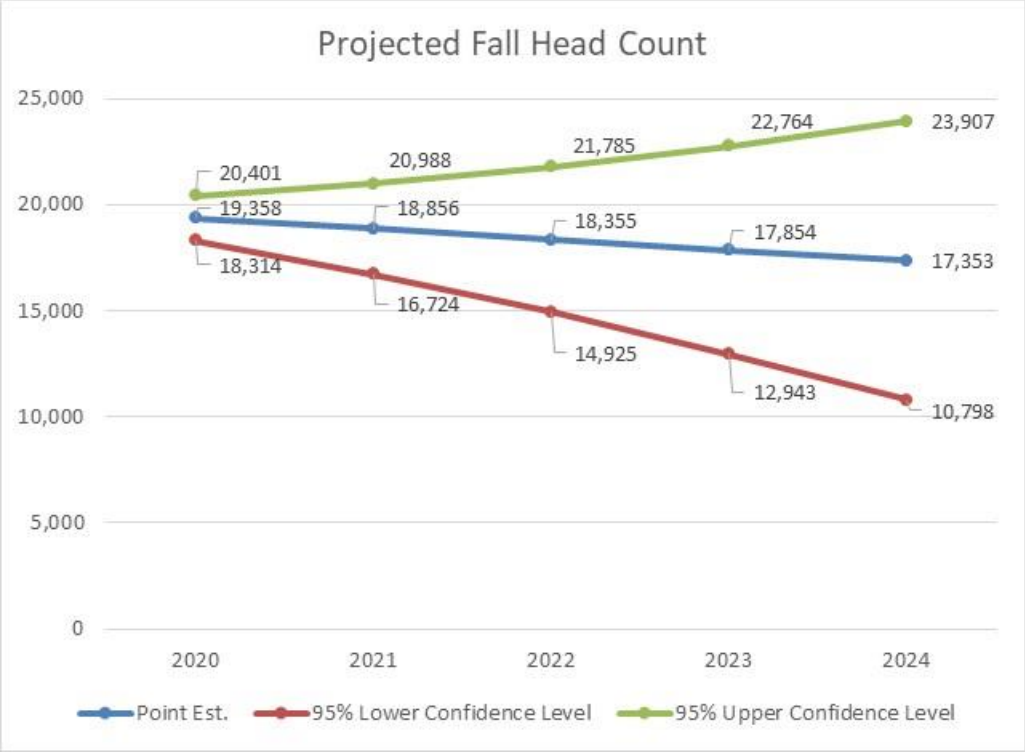
To increase opportunities for all of our students, Macomb Community College collaborates with many postsecondary and secondary educational institutions – four-year colleges and universities, two-year community colleges, and high schools. We collaborate with multiple public and private Michigan colleges and universities through roughly 240 articulation agreements, which provide for the transfer of an entire set of prescribed courses and simplifies the transfer process for our students. We partner closely with Wayne State University through a program called Wayne Advantage, a program that provides for concurrent enrollment opportunities through which students can take courses that will be accepted at both institutions and leading to associates and bachelor's degree opportunities. We collaborate with Oakland Community College to provide two health specialty programs, Diagnostic Medical Sonography and Radiology, for which there would be insufficient enrollment to offer at both institutions, yet for which the communities have need. Lastly, we collaborate with over 40 Macomb, Wayne, Saint Clair, and Oakland County high schools, offering 175 transfer credit agreements for a wide variety of career and technical education (CTE) fields.

b. Project enrollment patterns over the next five years (including distance learning initiatives)

An ensemble of exponential smoothing and Autoregressive Integrated Moving Average (ARIMA) timeseries models were evaluated with respect to the best fit, measured as a function of prediction error, with the head count and credit hours data from fall 2004 through fall 2019. Of

the models evaluated, Brown's linear trend (double exponential smoothing) model had the best fit with past head count data and was used to project head count for the fall 2020 through fall 2024 period.

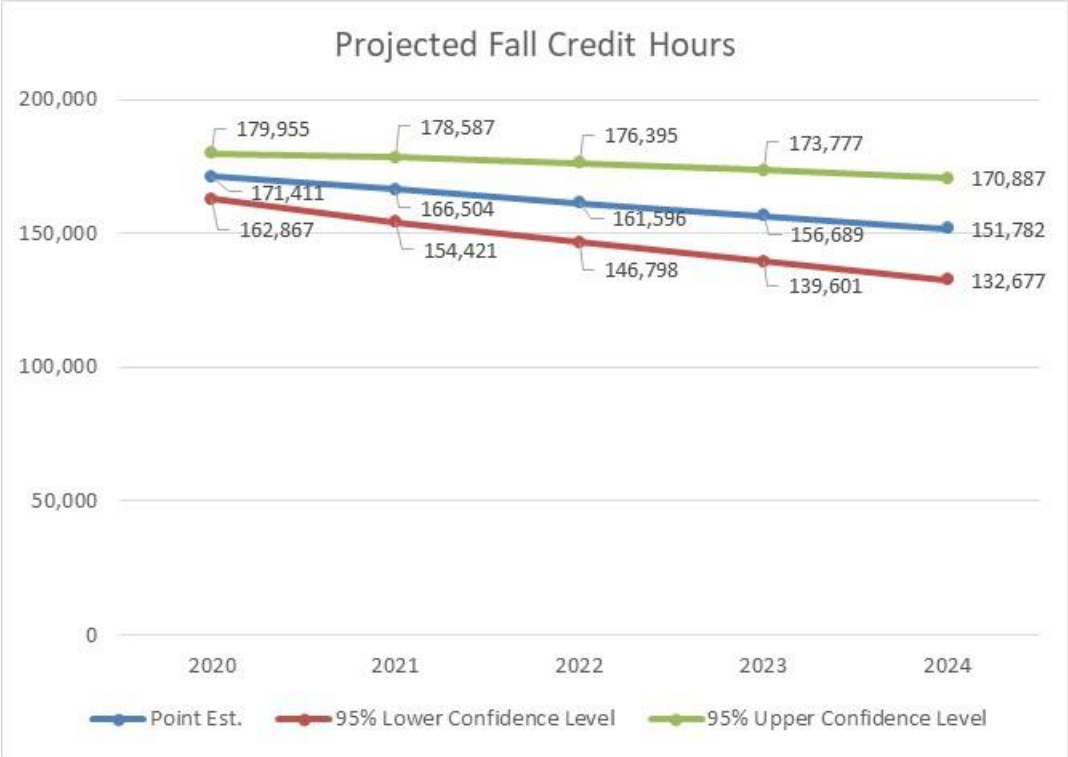
The estimated model for head count accounted for 90.5% of the variation in head count over the 2004 through 2019 period. The average absolute percentage prediction error for the period estimated was 1.6%. The point estimates for the projected fall head count suggest declining enrollment, with average annual declines of about 2.6% through the 2020 to 2024 period.



Of the models evaluated, an ARIMA (0,1,0) model had the best fit with past credit-hours data and was used to project credit hours for the fall 2020 through fall 2024 period. The model accounted for 94.7% of the variation in credit hours over the 2004 through 2019 period. The mean absolute percentage prediction error for the period estimated was 1.5%. The model projects credit hours to decline over the 2019 to 2023 period, at the rate of about 2.9% per year.

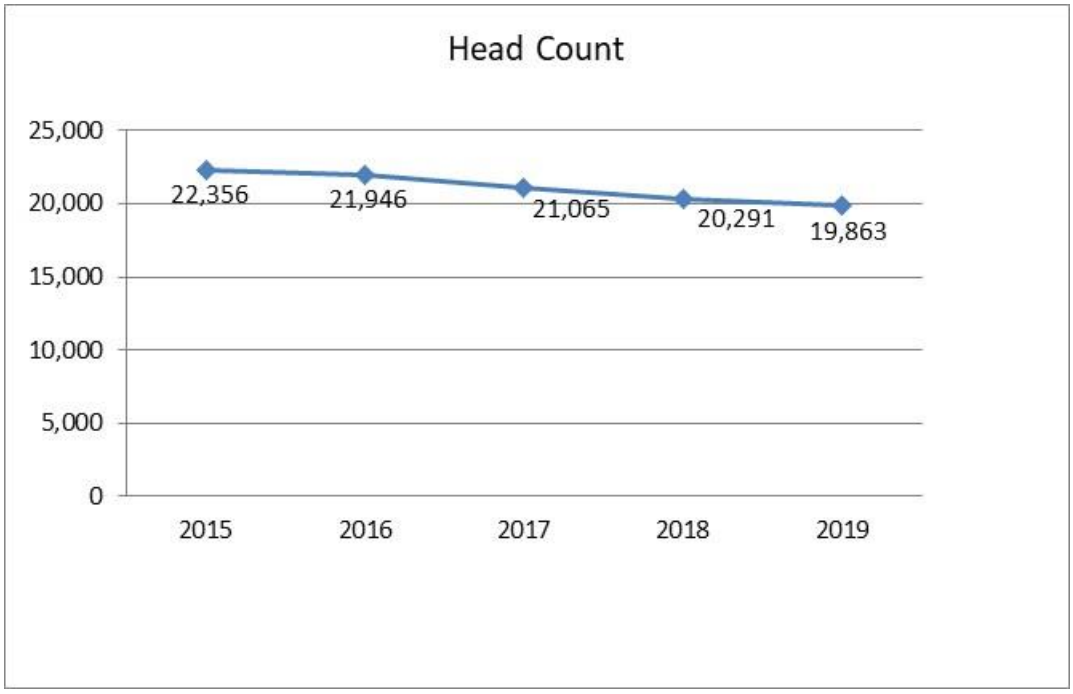
The models that were evaluated, and the two that were selected, were univariate models that used only past historical enrollment information to predict future head count and credit hours. Such models can be very accurate if the enrollment data contain no trends or contain trends that change slowly. As a result of the Covid-19 pandemic, however, actual head count and credit hours for the fall 2020 semester will be considerably less than trend values based on the immediate past and substantially below head count and credit-hour projections. Current enrollment estimates for head count and credit hours for the fall 2020 semester are 17% and 13%, respectively, below the projected point estimates based on past data. The pandemic represents a discontinuity in the enrollment history and introduces considerable uncertainty with respect to enrollment forecasting, since it is unclear what kind of impact it will have on the enrollment decision making of our student

population. As a consequence, past enrollment data may lose value for predicting future enrollment. While projected head count and credit hours may return in fall semesters past 2020 to values closely approximating trend values based on enrollment prior to the Covid-19 pandemic, considerable uncertainty remains concerning future enrollment.



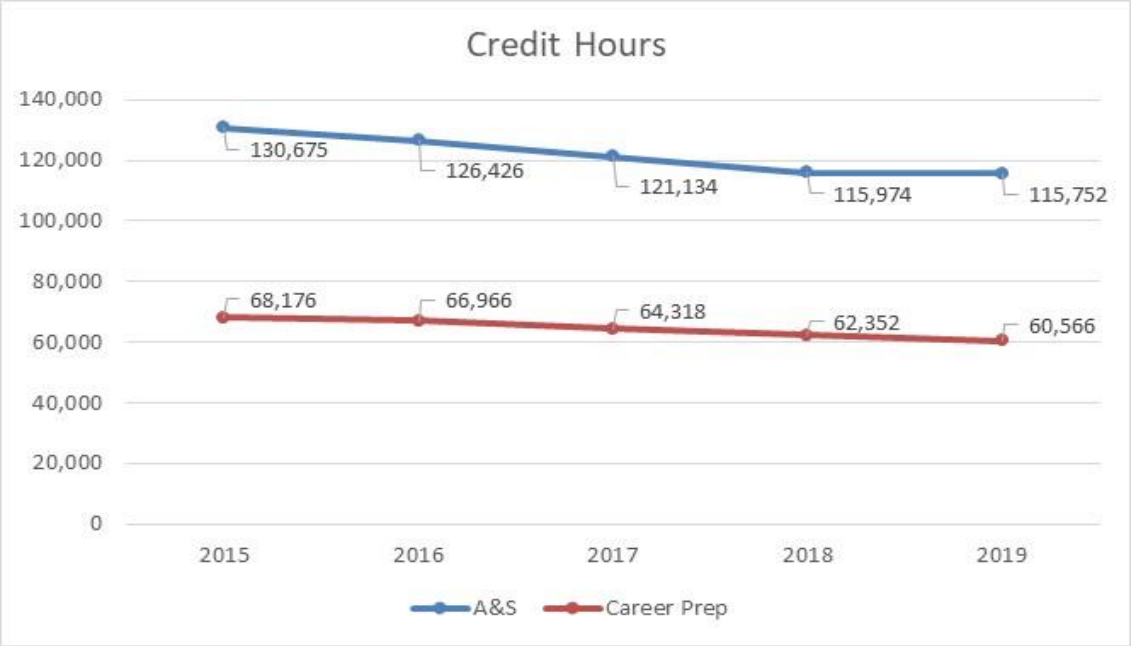
c. Evaluate enrollment patterns over the last five years

The College's fall 2019 credit head count was 19,863, which was down 2.1% from the previous fall semester, while total credit hours (176,318) decreased by 1.1%. Since fall 2015, credit head count has decreased by 11.2%, while total credit hours have decreased by 11.3%. The trends over the past five years of declining head count and credit hours reflect the high enrollment earlier in the period that was driven largely by the recent financial recession, followed by the ensuing improvement in the economy and the labor market. They also reflect the impact of demographic trends, which have resulted in decreasing numbers of high school graduating seniors, and an increase in tuition.



Total credit hours in Arts and Sciences courses and in Career and Technical Education courses have each decreased, by 11.4% and 11.2% respectively, since fall 2015, which reflects, at least in part, the decline in head count over the period, coupled with a decline in average credit-hour load. The proportion of total credit hours accounted for by Arts and Sciences has remained fairly constant at about 65% to 66% since fall 2015.

	2015	2016	2017	2018	2019	Change
A&S	130,675	126,426	121,134	115,974	115,752	-11.4%
Career Prep	68,176	66,966	64,318	62,352	60,566	-11.2%
Total	198,851	193,392	185,452	178,326	176,318	-11.3%



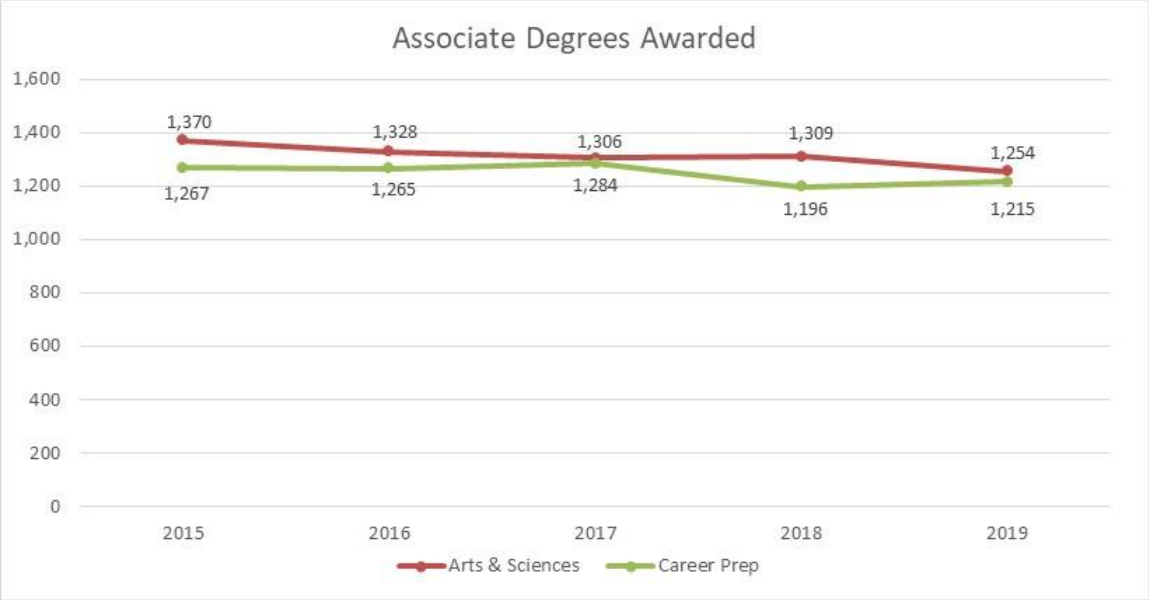
The College's FY 2019-20 non-credit enrollment decreased 31.9% from that of the previous fiscal year and by 46.4% since FY 2015-16. The unusually large increase in non-credit head count in FY 2015-16 partly reflects an increase in grant-supported training. The large year-on-year decline in FY 2019-20 non-credit head count from FY 2018-19 head count is reflects primarily the reduction in the number of non-credit offerings, which are designed overwhelmingly for face-to-face instruction, as a consequence of the Covid-19 pandemic.

Non-Credit Head Count

Year	Head Count	Change from Previous Year
2019-20	7,445	-31.9%
2018-19	10,398	-3.3%
2017-18	11,314	-4.7%
2016-17	11,877	-14.5%
2015-16	13,893	16.9%

Degrees Awarded

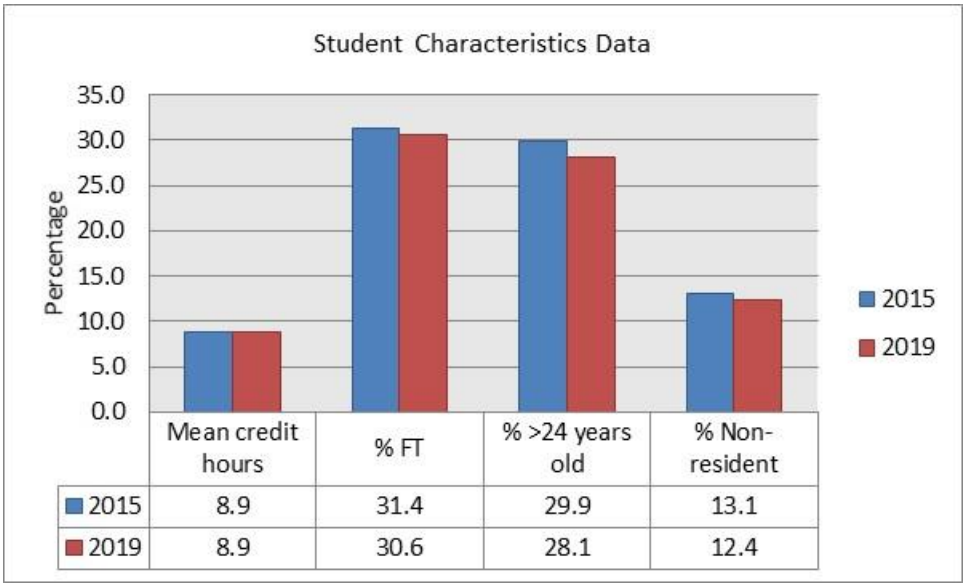
The total number of degrees awarded in the 2018-19 academic year (2,469) decreased by 1.4% from the previous year. The number of degrees awarded in the Arts and Sciences (1,254) decreased by 4.2%, while the number of degrees awarded in Career and Technical education (1,215) increased by 1.6% from the previous year. The number of degrees awarded in the Arts and Sciences decreased by 8.5% from the number awarded in the 2014-15 academic year, while the number of degrees in Career and Technical Education decreased by 4.1% over the same period. The total number of degrees awarded has decreased over the period by 6.4%. The decline in the total number of degrees awarded from the number awarded in the 2014-15 academic year reflects at least in part the decline in head count.



Student Characteristics

The trend toward an increasingly younger student body at Macomb continues. In fall 2015, 70.1% of Macomb students were 24 years old or younger, while this segment accounted for 71.9% of Macomb students in fall 2019. The proportion of students older than 24 declined 6.0% from fall 2015 to fall 2019. The decline in the proportion of older students over the period reflects at least in part the improvement in the labor market since the recent financial recession and the corresponding increase in the opportunity cost of being a student.

Students at Macomb had an average credit-hour load in fall 2019 of 8.9 credit hours, which was essentially unchanged from the average credit-hour load in fall 2015. The proportion of students that were full-time (12 or more credit hours) is down 2.5% over the period, from 31.4% to 30.6%. The proportion of students that were non-resident declined by 5.3% over the period, from 13.1% to 12.4%.



d. Provide instructional staff/student and administrative staff/student ratios for major academic programs or colleges

Staffing

In fall 2019, Macomb had 231 full-time and 578 part-time faculty members teaching credit courses and 74 administrators.

Instructional Staff to Student Ratio (Credit)

	Number FT Instructional Staff	Number of Students	Ratio
Fall 2019	231	19,863	0.01

Administrative Staff to Student Ratio (Credit)

	Number FT Administrative Staff	Number of Students	Ratio
Fall 2019	74	19,863	0.004

e. Project future staffing needs based on 5-year enrollment estimates and future programming changes

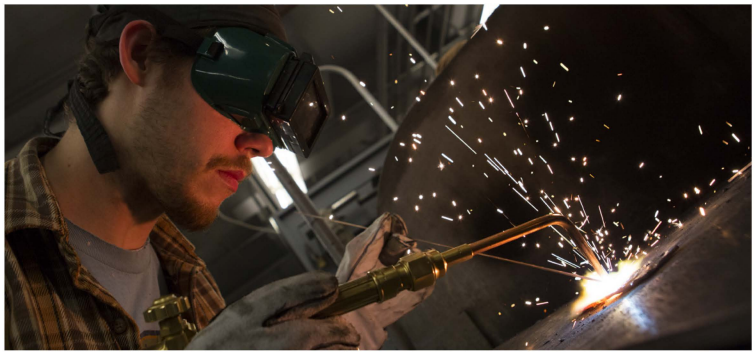
While acknowledging the uncertainty of enrollment in the near future as a consequence of the Covid-19 pandemic, projected staffing levels over the next five years are expected to change little from the current level, though a decline in staffing is more likely than an increase, given existing enrollment trends prior to the Covid-19 pandemic.

f. Identify current average class size and projected average class size based on the institution's mission and planned programming changes

Since average class size is a function of numerous factors—such as head count, average credit hour load and policies and practices regarding the assignment of faculty to classes—each of which can only be estimated with considerable uncertainty, any projections of average class size are inherently uncertain. Average class size has changed very little over the most recent five years. While average class size in the most recent two years was slightly below average class size in the previous three years, the evidence for a declining trend is nevertheless weak. Given that, the average over the most recent five-year period (21.8) represents the best estimate for fall 2020 and the near future.

Year	Total Number of Lecture Sections	Average
Fall 2019	1,534	21.5
Fall 2018	1,606	21.5
Fall 2017	1,682	22.0
Fall 2016	1,814	22.1
Fall 2015	1,875	22.0







Facility Assessment

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Facility Assessment

A professionally developed comprehensive facilities assessment is required. The assessment must identify and evaluate the overall condition of capital facilities under college control. The description must include facility age, use patterns, and an assessment of general physical condition. The assessment must specifically identify:

a. Summary description of each facility (administrative, classroom, biology, hospital and etc.) according to categories outlined in "net-to-gross ratio guidelines for various building types," DMB-Office of Design and Construction Major Project Design Manual, appendix 7. If facility is of more than one "type", please identify the percentage of each type within a given facility.

Macomb Community College hired the services of Hobbs+ Black Associates in 2018 to conduct facility condition assessments of the college's South and Center campuses, respectively.

The facility condition assessments are available on the college's public website at links provided below in this section. The assessments include summary descriptions of each facility, functionality of existing structures and space allocation, utility system condition, facility infrastructure condition and adequacy of existing utilities and infrastructure systems in their current state.

b. Building and /or classroom utilization rates (Percentage of rooms used, and percent capacity). Identify building/classroom usage rates for peak (M-F, 10-3), off-peak (M-F, 8-10 am, 3-5 pm) evening and weekend periods.

At this time, Macomb Community College does not have an effective way of reporting building and classroom utilization rates from the software currently used to plan for and schedule classes. However, in preparing the schedule of classes each semester, the college is at capacity during certain days and times when classrooms are not available for additional sections. In these instances, online sections may offer additional options.

c. Mandated facility standards for specific programs, were applicable (i.e., federal/industry standards for laboratory, animal, or agricultural research facilities, hospitals, use of industrial machinery, etc.)

All of Macomb Community College's programs fully comply with all applicable laws, general industry safety and health standards, construction safety and health standards, and administrative standards authorized by Public Acts and promulgated by OSHA, MIOSHA and other regulatory agencies.

d. Functionality of existing structures and space allocation to program areas served.

See facility condition assessment in the links below:
South Center Campus Facility Condition Assessment 2018
Campus Facility Condition Assessment 2018

e. Replacement value of existing facilities (insured value of structure to the extent available).

The replacement value of the college's facilities is posted to the college website as the 2015 Policy Property List Report as prepared by the Michigan Community College Risk Management Authority.

f. Utility system condition (i.e., heating, ventilation, and air conditioning [HVAC], water and sewage, electrical, etc.).

See facility condition assessment in the links below:
South Center Campus Facility Condition Assessment 2018
Campus Facility Condition Assessment 2018

g. Facility infrastructure condition (i.e., roads, bridges, parking structures, lots, etc.).

See facility condition assessment in the links below:
South Center Campus Facility Condition Assessment 2018
Campus Facility Condition Assessment 2018

h. Adequacy of existing utilities and infrastructure systems to current and 5-year projected programmatic needs.

See facility condition assessment in the links below:
South Center Campus Facility Condition Assessment 2018
Campus Facility Condition Assessment 2018

i. Does the institution have an enterprise-wide energy plan? What are its goals? Have energy audits been completed on all facilities, if not, what is the plan/timetable for completing such audits?

Macomb Community College plans to reduce energy consumption and costs through the renovation of aged facilities as prioritized through the facility condition assessments. Energy audits have not been completed on the facilities as the buildings are not individually metered to track consumption and the cost to do so is significant. The college has researched grant funding for this purpose, but thus far has not found any viable funding sources to assist in this endeavor.

j. Land owned by the institution, and include a determination of whether capacity exits for future development, additional acquisitions are needed to meet future demands, or surplus land can be conveyed for a different purpose.

At this time, the land owned by the college is considered to be sufficient for capacity.

k. What portions of existing buildings, if any, are currently obligated to the State building Authority and when these State Building Authority leases are set to expire.

The following buildings are currently obligated to the State Building Authority through the following lease expiration dates:
University Center II; 2036
Emergency Training Center; 2043
Health Science and Technology; 2043
C Building; 2051



Implementation Plan

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Implementation Plan

The 5-year comprehensive master plan should identify the schedule, by which the institution proposes to address major capital deficiencies, and:

a. **Prioritize major capital projects requested from the State, including a brief project description and estimated cost, in the format provided. (Adjust previously developed or prior year's figures utilizing industry standard CPI indexes where appropriate).**

   As indicated in this 5-year capital outlay plan, the highest priority is the Skilled Trades and Advanced Technology Center at the college's South Campus.

b. **If applicable, provide an estimate relative to the institution's current deferred maintenance backlog. Define the impact of addressing deferred maintenance and structural repairs, including programmatic impact, immediately versus over the next five years.**

   The college's current deferred maintenance backlog (DMB) is in the facility condition assessment reports posted to the college website. The facility condition assessment will serve as an aid in determining the DMB priority projects. These priority projects will be planned and implemented in a phased-in approach as it is impossible to address all of the needs immediately while serving the needs of students and the community.

   Renovations are scheduled as follows and will be funded from the capital projects fund, technology fund and general fund as appropriate. Below are the renovation plans by building through 2019-20.

   2019: Authorization received from Board of Trustee for renovation of South Campus K Building (FCI of 30% deficient / poor condition). Project is scheduled to be completed in January of 2021.

   2021: Authorization received from Board of Trustee for renovation of South Campus N building (FCI 15% deficient / poor condition); complete rehab of all HVAC, Lighting, Temperature controls and finishes. Safety/agency requirements, sitework and exterior work. Pending Board of Trustee authorization for South Campus D Building (FCI 17% deficient/poor condition); Various HVAC, lighting, temperature controls and finishes; safety/agency requirements, site work and exterior and interior work.

c. **Include that status of on-going projects financed with State Building Authority resources and explain how completion coincides with the overall 5-year plan.**

   There is currently no state project actively financed at Macomb Community College. The Skilled Trades & Advanced Technology Center was approved for planning in December 2018, PA 618 of 2018, and is currently in process for construction authorization.

d. **Identify to the extent possible, a rate of return on planned expenditures. This could be expressed as operational "savings" that a planned capital expenditure would yield in future years.**

   The college estimates an operational savings of 10 – 15 percent on each renovated facility and updated infrastructure. In addition, deferred maintenance that is addressed in a timely and planned manner is much more cost effective than emergency repairs.

e. Where applicable, consider alternatives to new infrastructure, such as distance learning.

The college's long-term plans include renovations of facilities rather than new construction. Distance learning can augment the skilled trades programs but cannot replace hands-on training and experience offered through classes held in the Skilled Trades and Advanced Technology Center.

f. Identify a maintenance schedule for major maintenance items in excess of $1,000,000 for fiscal year 2018 through fiscal year 2022.

See facility condition assessment on website and refer to b above. Administration currently has renovation authorization from the Board of Trustees through 2019-21 as outlined above.

g. Identify the amount of non-routine maintenance the institution has budgeted for in its current fiscal year and relevant sources of financing.

Refer to "f" above.