

**Tomorrow's workers
... They are right here**



**Montgomery County ESC Business Advisory Council
2024-2025 Joint Statement of Work**







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Montgomery County ESC Business Advisory Council

Ensuring our workforce can compete by enhancing partnerships between schools, higher education, non-profits, the military, and employers



The Business Advisory Council is:

- Ensuring student success and career-readiness
- Keeping talent in our region
- Helping existing and new businesses thrive
- Making our region a great place to live and work

This school year, we committed to dramatically expanding our workforce efforts. Our Business Advisory Council planted a flag to redefine how our districts partner with others. As detailed in this report, we have grown our efforts from serving pockets of students here and there, to ensuring that a majority of students across our region are now engaging in deeply impactful career connections experiences.

In 2025, we're continuing to expand our dialogue with new partners across southwest Ohio. It's all about strengthening our capacity to enrich our region's Business Advisory Council. We're focused on transforming our 23 partner school districts and supporting our 90,000+ students by ramping up our community and local industry group-based workforce development efforts.

For the third year in a row, we're proud to accept our four-star rating from the Ohio Department of Education and Workforce for our work in the 2023-2024 school year. We not only received the highest rating possible for our work over the last school year, but we also received awards for excellence in developing professional skills for the future, building partnerships, and coordinating career development experiences. This recognition helps highlight our ambitious goals and raise awareness about our initiatives as we continue to grow and expand this work.

This school year, we are continuing to expand work-based learning opportunities and attainment around industry-recognized credentials for students in our region. We're particularly focused on better connecting students to industry-relevant exposure with an emphasis on expanding these opportunities at an early age.

This report shows how we have expanded on our successes and look to continuously improve this work for the benefit of students and local employers.

VISION

All MCESC BAC member districts' students are career-focused and have the preparation they need to succeed on the job and in life.

MISSION

We will promote substantive and effective collaboration between educators and industry to prepare students to compete in a global economy.

VALUES We believe in:

- 1. Integrity** – Our workforce must embrace personal and civic responsibility and hold strong ethical standards.
- 2. Equity** – All students' educational needs and aspirations must be respected. Every career choice has value.
- 3. Innovation** – The job market and employers' needs are ever-changing. Innovation is a constant and requires life-long skill development.
- 4. Diversification** – Montgomery County's economy is diverse by design, and every industry sector is counting on access to talented employees. Young people need to have access to diverse educational options that prepare them to succeed in our local economy.
- 5. Collaboration** – Industry leaders and educators must work together to create a cohesive and sustainable system that builds a highly skilled and adaptable workforce.
- 6. Communication** – Clear and proactive feedback is a prerequisite for successful partnerships.



How we work together

The Plan was established at this level, and continues to be reviewed and updated based on feedback, and then re-submitted to the Ohio Department of Education and the Governor's office as per ORC mandate.

Members of the Steering Committee are comprised of P2P Institute Attendees, Subcommittee Co-Chairs, and community stakeholders.

Co-Chairs host the Annual BAC Dinner and facilitate three other MCECSC BAC At-Large Quarterly Meetings. Additionally, the Steering Committee convenes at least two times per year.

Each of the BAC member organizations is expected to have representation on at least one BAC subcommittee.

Each of the 6 subcommittees is responsible for carrying out the specific BAC Goals. The "Plan" established includes the strategies, actions and those responsible associated with each of the 6 Goals. (See *Plan*, pages 15-23.)

Each subcommittee meets regularly. Updates are documented for use at MCECSC BAC quarterly meetings.



CAREER READINESS PROGRESSION

K 1 2 3 4 5 6 7 8 9 10 11 12

CAREER AWARENESS

Elementary Grades (K-5)

CAREER EXPLORATION

Middle Grades (6-8)

CAREER PLANNING

High School (9-12)



- **Career Awareness Programming**
 - A-Z Curriculum
 - Career Speakers
 - Aligned Events



- **Career Exploration Course Offerings**
- **Industry Site Visits***
- **Pathways Fair**



- **YouScience***
- **Student Snapshot***
 - ↳ Identifies Career Pathway
- **Job Shadowing Experiences***
(aligned to YouScience results)
**Can and should be repeated*



- **Employability Skills Course**
- **Individualized College and Career Plan**
 - ↳ Identifies /confirms Career Pathway
- **Job Shadowing Experiences**

Career Navigation + College Access Support

K-8

6-8

8-9

9



- **Essential Career Pathways Course(s)**
 - ↳ Identifies /confirms Career Pathway
- **Digital & Financial Literacy Courses**
- **Job Shadowing Experiences**



- **TechPrep/CCP Courses Digital & Financial Literacy Courses**
(Aligned Pathway)
- **Industrial Credential Curriculum**
Sinclair, Graduation Alliance and other identified partners will provide Industry-specific Pathway sheet and Industry Credential Curriculum
- **Hiring Fairs**
- **Assessment for Industry-recognized Credential**
Take at completion of Industry Credential Curriculum
- **Continued College and Career Advising**



SUMMER Industry experience/ Internship



- **TechPrep/CCP Courses**
(Aligned Pathway)
Sinclair and other higher ed partners will provide Industry-specific Pathway sheet
- **Industrial Credential Courses**
Sinclair, Graduation Alliance and other identified partners will provide Industry Credential Curriculum
- **College & Career Signing Day**
- **Industry-recognized Credential Assessment**
Take at completion of Industry Credential Curriculum



Post-secondary Work/ Training

Internship, Course-aligned practicum, Apprenticeship, Job or Military

Career Navigation + College Access Support

10

11

12

Employer Engagement Menu



CAREER AWARENESS

Field Trip Location
Grade 3+, 1.5 -2 hours/visit

Host students and/or counselors and teachers to tour your workplace and discuss career options, required education, a typical day, and more.

Classroom Speaker
Grades K-12, 30-90 minutes

Visit a school and talk with a class about what it means to work in your industry.

EXPLORATION

Job Shadow
Grades 6-8, 4-8 hours

Provide an opportunity for students to observe, discuss and participate in daily routines and activities for a particular job.

Power Lunches
Grades 6-8, 1-2 hours

Staff a table at a school during lunch hour to promote your industry and the current and next generation jobs in your career field.

Career Fair
Grades 6-12, 2-4 hours

Staff a booth to share advice on pursuing a career, skills and knowledge needed, and career roles and responsibilities.

PLANNING

Work-Based Learning
Grades 9-12, 6-8 weeks

Provide professional work experiences (an internship, pre-apprenticeship, or apprenticeship) that apply to classroom learning and builds skills.

Teacher Externship
Grades 9-12, 15-60 hours

Help teachers learn about careers for their students in your industry! Provide job shadowing, training, or similar experience that will help teachers bring workplace norms, tools and skills into the classroom.

EXTRA CREDIT

Informational Interview
Grades 6-12, 30-90 minutes

Answer student questions in person, by phone, email, or in a group about your profession or specific topic.

Resume Assistance/ Mock Interview
Grades 6-12, 1-2 hours

Provide feedback to students on their resumes and interview skills.

Other ideas?

Let us know other ways you'd like to get involved.



<https://bit.ly/3zfsQau>

Name _____ Company _____ Title _____

Email _____ Phone _____ I'd like to participate in the BAC Yes No

2024-2025 Business Advisory Council Calendar

Main BAC Meetings 2024/2025

September 18 9:00 am-10:30 am

November 21 9:00 am-10:30 am

February 19 5:30 pm-8:00 pm (Annual Dinner)

April 23 9:00 am-10:30 am

Working Group Meetings

BAC Industry Engagement Subcommittee

Co-Chairs: Amanda Byers (Dayton Area Chamber of Commerce) & Cassie Barlow (SOCHE)

All on Zoom

September 3 3:00 pm-4:00 pm

November 14 2:30 pm-3:30 pm

April 15 2:00 pm-3:00 pm

BAC Student Engagement Subcommittee

Co-Chairs: Kelsey Turner (Kettering Health Network) & Stephanie Hinds (Brookville Locals Schools)

October 8 9:00 am-10:30 am

December 17 9:00 am-10:30 am

March 25 9:00 am-10:30 am

BAC Parent & Community Engagement

Co-Chairs: Dr. Marita Abram (Sinclair College) & Lisa Rindler (Greater Dayton Area Hospital Association)

September 11 9:00 am-10:30 am

November 13 1:00 pm-2:30 pm

March 11 9:00 am-10:30 am

BAC Educator Engagement Subcommittee

Co-Chairs: Tommy Renfro (Shook Construction) & Nicole Will (Kettering Local Schools)

September 17 1:00 pm-2:30 pm

November 12 1:00 pm-2:30 pm

May 1 1:00 pm-2:30 pm

BAC Policy & Advocacy Subcommittee

Co-Chairs: Stephanie Keinath (Dayton Area Chamber of Commerce) & Rick Wegmann (Goodwill Easter Seals)

All on Zoom

October 9 1:00 pm-2:00 pm

November 18 1:00 pm-2:00 pm

March 6 10:00 am-11:00 am

BAC Warren County Subcommittee

Co-Chairs: Tom Isaacs (Warren County ESC) & Chad Bridgman (Warren County Career Center)

October 4 9:00 am-10:30 am

December 6 9:00 am-10:30 am

February 7 9:00 am-10:30 am

April 4 9:00 am-10:30 am

Career Connections Months of Action

We continue to lean into a regional approach to this work and have built on the momentum of embracing national and state-sponsored Career Connections Months of Action. Utilizing available resources, we produce content recommendations and a calendar with a general timeline of when districts could participate in these initiatives. We are excited to leverage a regional strategy linked to proven annual efforts like MFG Month and National Health Professions Month.

Some of our region's Coordinated Career Connections Months of Action include:

Construction Appreciation Month - September

Manufacturing Month - October

Health Professions Month - November

Computer Science Education Month - December

In-Demand Jobs Month - May



Leveraging Student Voice

Building on our BAC plan each year, we're continuing to review who else needs to be at the table. We're finding new ways to gather and implement student feedback and exploring how we can activate our students in creative ways. Our region's young people are often misunderstood. This year we focused on leveraging partners to identify and highlight local success stories so we can continue to showcase young people going into our region's in-demand sectors. We firmly believe exposing students to potential careers where they can find both meaning and purpose will strengthen their interest in school and anchor them to long-term success later in their lives.

2024 Inside Dayton Summer Internship Program:

Over the summer of 2024, we convened our fourth cohort of students in a two-week, intensive in-person paid summer leadership program. Throughout the program, the students met with elected leaders, industry professionals, community members, and more to learn about the future of our region and the jobs of tomorrow. We're grateful to the three Inside Dayton Fellows representing Sinclair College, The Ohio State University, and Wright State University who helped serve as program coordinators and mentors for our high school interns. These 28 students hailed from 15 local high schools and provided an important lens for this year's plan.



2024-2025 Montgomery County Student Advisory Delegation:

The Montgomery County Student Advisory Delegation, which includes 27 juniors and seniors from 13 high schools, meets four times throughout the year to learn about the education system in Ohio and develop the knowledge and skills to utilize their experience to be a voice in education. The delegates provide direct feedback to educational and political leaders on how they can improve the education system to ensure Ohio students are future-ready.



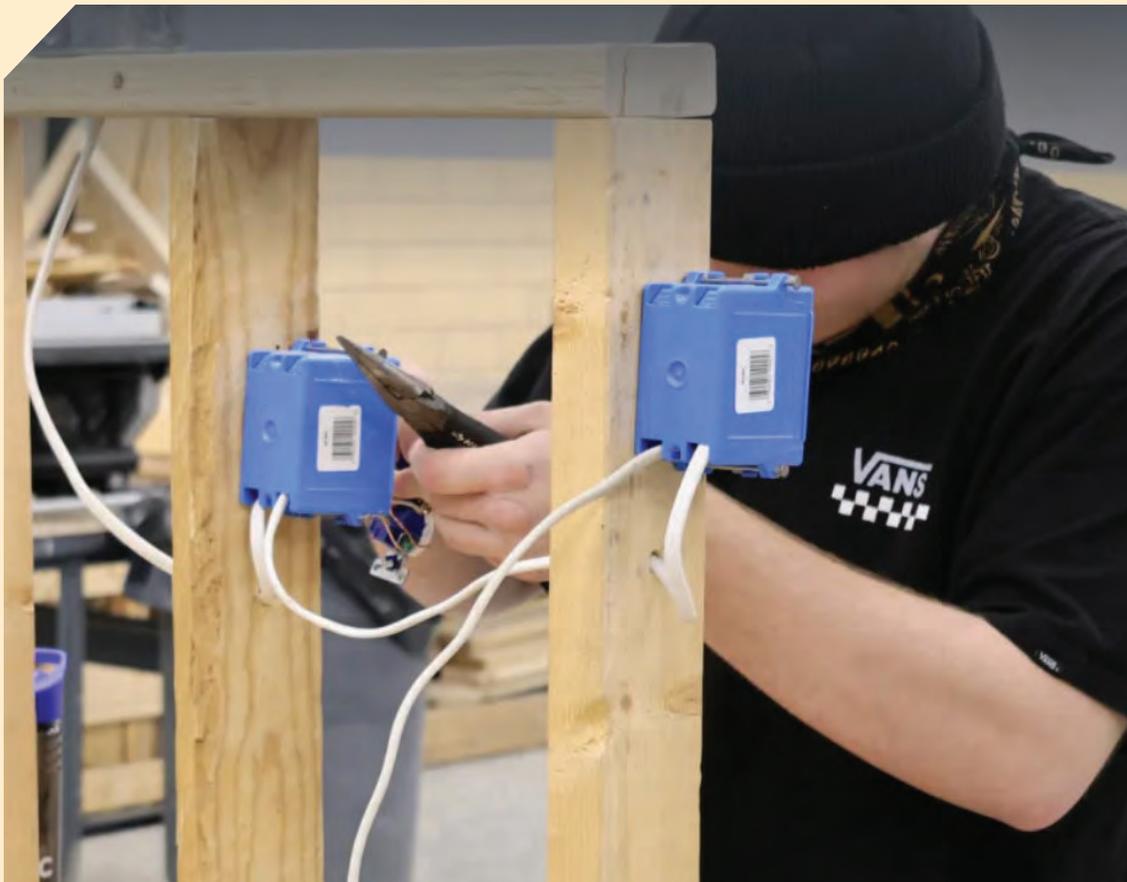
Serving Students With Disabilities

Our Business Advisory Council's workforce development initiatives, led by the Montgomery County Educational Service Center (ESC), place a strong emphasis on ensuring students with disabilities are fully integrated into career and college planning efforts. The Montgomery County ESC serves over 300 students with disabilities from across the region, working intensively with in-house staff to provide individualized goal-setting around careers and college access. Tools like YouScience are used not only to help identify strengths and aptitudes for these students, but the insights gained are tailored to meet their unique needs.



Additionally, through a partnership with the Miami Valley Career Tech Center, MCECSC has implemented Career Tech Education into Learning Center North which serves our high school students with disabilities. Many of the students engage in work-based learning through our partnerships with The Abilities Connection and SOCHE, and working with a local bank, the students set up bank accounts and develop financial literacy skills.

This comprehensive approach ensures that students with disabilities are actively participating in workforce development initiatives, receiving the guidance and support necessary to prepare for life beyond school.



Objectives

1) Student Engagement

For students to be well-equipped to make a career plan, they must be aware of the diverse career opportunities that exist locally and beyond and understand what it takes to prepare for these careers.



Schools must offer opportunities for career experiences for students both inside and outside of school and assist students in making appropriate plans for after high school.



Industry must provide career experiences that help students explore their career opportunities and help advise schools and students on how to move effectively toward careers.

★ Accomplishments

- 23 partnering schools hosted **1,468 career exploration experiences** for our region's students.
- 12 partner districts hosted career fairs during the first half of the school year, with 5 more districts set to hold career fairs in 2025.
- **96% of our partner school districts administered assessments** to students to help them make better-informed education and career choices. 70% of our districts leverage an aptitude and interest assessment.
- 3 days of Career Adventure Days were held in November 2024, at the Dayton Metro Library **reaching over 900 students** from 6 member districts.

2) Parent and Community Engagement

Our region is rich in career and educational opportunities, but our parents and community need to better understand how they can be advocates for students' success.



Schools must share with parents and the community what is already occurring to help prepare students for their futures. They must highlight the diversity of industries that can lead to successful careers.

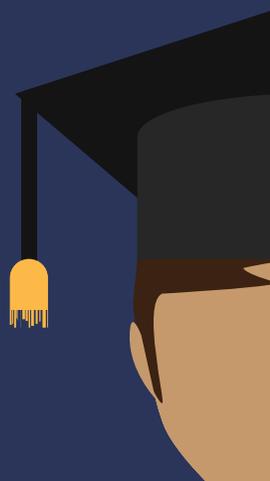


Industry must collaborate with schools to create opportunities for industry exposure that elevates the community's understanding of locally available careers.

★ Accomplishments

- **74% of districts utilize career connections content** for parent and community outreach to help build understanding of educational and career opportunities for students.
- **74% of districts are highlighting alumni and recent graduates' stories to encourage students** as they explore career options.

STUDENT ENGAGEMENT | PARENT AND COMMUNITY ENGAGEMENT



3) Industry Engagement

For efficient and productive career experiences (i.e. internships, job shadowing, apprenticeships) to be feasible, we need a one-stop shop for industry and schools to connect.



Schools must provide flexibility in scheduling to allow students to participate in career experiences.



Industry must engage in meaningful partnerships and invest in opportunities for students to have career experiences while they are still in school.

★ Accomplishments

- **337 industry partners providing direct support** to district career connections activities.
- **2,068 students engaged** in work-based learning opportunities.

4) Educator Engagement

Educators are well-positioned to guide our students on a path toward career success if they have the training, curriculum tools and support from industry to increase their own awareness, knowledge and skills to support students' career planning.



Schools must provide opportunities for educators to connect to careers and curriculum designed to give students experiences to help them design plans after high school.



Industry must invest time and resources in our region's career connections work while acknowledging the challenges educators face.

★ Accomplishments

- **40+ Career Champions and Counselors participated in three site visits to local employers** including Public Health, Think Patented, and Dayton Children's Hospital to learn about career opportunities in our region.



5) Policy and Advocacy

A statewide approach is critical in addressing the needs of an ever changing workforce landscape.



Schools must inform policymakers on the needs and challenges of K-12 partners.



Industry must inform policymakers on the specific needs of our future workforce.

★ Accomplishments & Update

- **10 partners from education, industry, and the community attended** the Pathways to Prosperity Fall Institute in October 2024.
- **3-pronged policy focus developed in support of and aligned workforce agenda** that meets the needs of the current regional workforce demands.

6) Warren County Working Group

This special committee serves as a resource for Warren County member districts to apply the larger efforts of our BAC to their localized framework.

★ Accomplishments

- **3 informational meetings** regarding local workforce opportunities were held.



Student Engagement For students to be well-equipped to make a career plan, they must be aware of the diverse career opportunities that exist locally and beyond and understand what it takes to prepare for these careers.



Schools must offer opportunities for career experiences for students both inside and outside of school and assist students in making appropriate plans for after high school.



Industry must provide career experiences that help students explore their career opportunities and help advise schools and students on how to move effectively toward careers.

Strategy		Actions	Responsibility	Time-frame
1. Expand opportunities for building career awareness with student input	Schools	<ul style="list-style-type: none"> Utilize feedback from students (Inside Dayton, Student Advisory Delegation, Chief Science Officers) to inform communication & activities Deploy social media to promote educational and career opportunities utilizing existing networks including the County Communication Collaborative Organize five Career Connections Months of Action 	<ul style="list-style-type: none"> Student Engagement Parent & Community Engagement Educator Engagement County Communications Collaborative All districts 	June 2025
	Industry	<ul style="list-style-type: none"> Provide info/photos/etc for social media engagement Resource career activities (speakers, tours, WBL, etc) 	<ul style="list-style-type: none"> Local chambers of commerce Industry Groups DDC 	
2. Promote the intentional and strategic use of student aptitude and interest data	Schools	<ul style="list-style-type: none"> Utilize YouScience results in programmatic decision making and marketing opportunities Support districts in understanding their aggregate and individual student assessment results 	<ul style="list-style-type: none"> MCESC All Districts 	January 2025
	Industry	<ul style="list-style-type: none"> Develop and expand career connections opportunities based on industry-specific aptitude and interest data Explore additional funding opportunities for long-term use of software like YouScience 	<ul style="list-style-type: none"> Local chambers of commerce Industry Groups DDC 	
3. Implement more robust K-5 career awareness outreach	Schools	<ul style="list-style-type: none"> Promote and expand best practices of career awareness programs and activities 	<ul style="list-style-type: none"> MCESC/All Districts 	June 2025
	Industry	<ul style="list-style-type: none"> Resource career activities (speakers, tours, in-class demonstrations, etc) 	<ul style="list-style-type: none"> Local chambers of commerce/ Industry Groups/DDC 	



Subcommittee Metrics

of career connections activities offered across BAC districts: **1,468**

of students engaged in career connections activities: **79,567**

of students completing YouScience: **4,801**

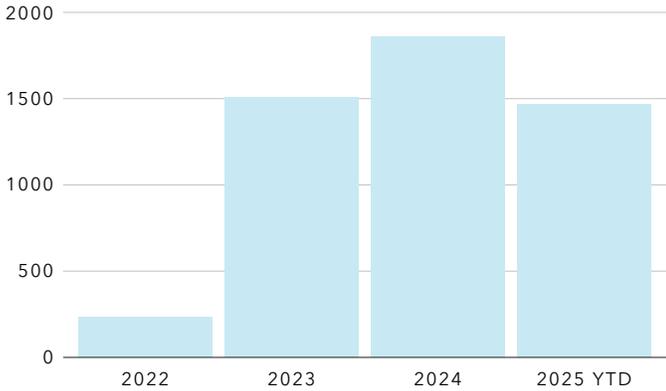
of students enrolling in post-high school training/education: **4,180**

of credentials earned in BAC-aligned top industries during high school: **625**

These data points will be compared to similar data points collected over time to show our BAC's longitudinal progress.

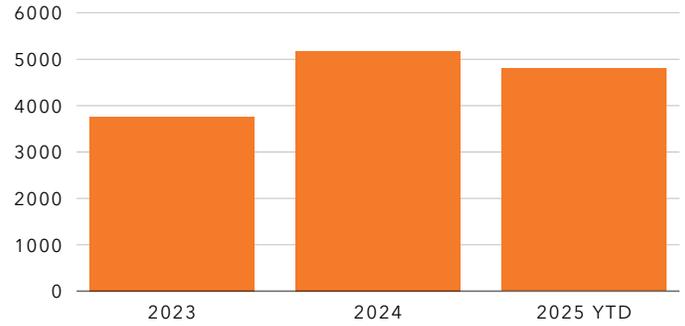
Key Outcome Measures By Subcommittee

of career connections activities offered across BAC districts



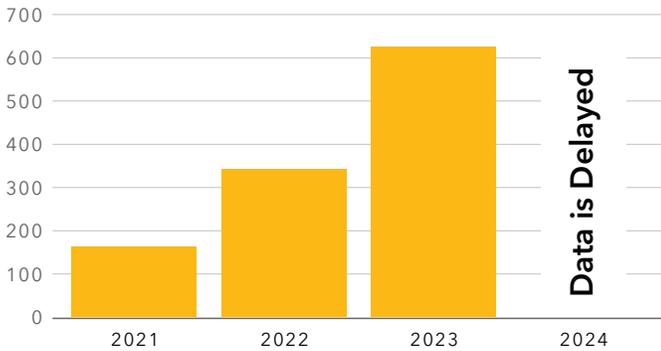
Source: District self-reporting

of students completing YouScience



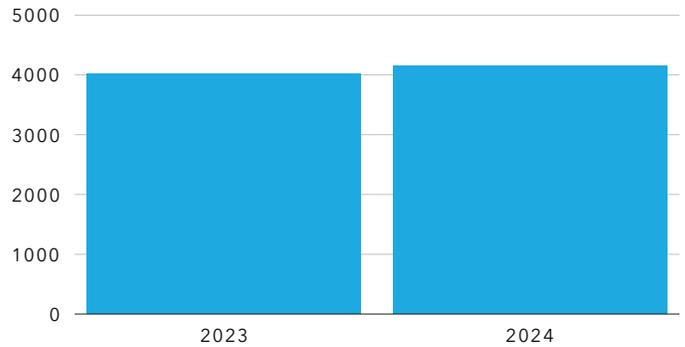
Source: YouScience Clusters Alignment

of credentials earned in BAC-aligned top industries during high school



Source: Ohio Department of Education and Workforce Report Portal, Industry Recognized Credentials

of students enrolling in post-high school training/education



Source: Ohio School Report Cards, District CCWMR Data 2023-2024

of students engaged in career connections activities



Source: District self-reporting

*This data was not collected in previous years.

Parent & Community Engagement

Our region is rich in career and educational opportunities, but our parents and community need to better understand how they can be advocates for students' success.



Schools must share with parents and the community what is already occurring to help prepare students for their futures. They must highlight the diversity of industries that can lead to successful careers.



Industry must collaborate with schools to create opportunities for industry exposure that elevates the community's understanding of the careers available locally.

Strategy		Actions	Responsibility	Timeframe
1. Leverage all available career connections content to ensure BAC districts have access to the full portfolio of resources	Schools	<ul style="list-style-type: none"> Develop a plan for storing, organizing, and ensuring access to career connections content available to caregivers Design a content calendar to align with local and state career connections initiatives and events Explore potential partnership with parent & caregiver groups 	<ul style="list-style-type: none"> All Districts MCESC County Communications Collaborative 	June 2025
	Industry	<ul style="list-style-type: none"> Provide career connections content and list of non-profit partners to engage 	<ul style="list-style-type: none"> Industry Groups Think TV Local chambers of commerce DDC 	June 2025
2. Utilize social media and other communication sources as well as events to promote career connections with parents and community	Schools	<ul style="list-style-type: none"> Focus efforts on our Career Connections Months of Action Deploy content each month in concert with external industry and non-profit partners expanding parents understanding of upcoming events Promote and support the STEM Future Fair Map out caregiver facing social media groups for BAC geography 	<ul style="list-style-type: none"> All Districts MCESC County Communications Collaborative DO STEM 	June 2025
	Industry	<ul style="list-style-type: none"> Provide industry data, success stories, and photos, to support communications teams with parent and community outreach Leverage traditional media partners to share career connections successes and messaging 	<ul style="list-style-type: none"> Industry Groups Think TV Local chambers of commerce DDC 	June 2025
3. Research and promote best practices for engaging families and community in career connections work	Schools	<ul style="list-style-type: none"> Align Career Navigators & College Access work to the overall BAC goals Utilize parent connections to increase participation of industry partners in districts 	<ul style="list-style-type: none"> All Districts MCESC Higher Ed Partners 	June 2025
	Industry	<ul style="list-style-type: none"> Provide videos, events, and other resources 	<ul style="list-style-type: none"> Industry Groups Think TV Local chambers of commerce DDC 	June 2025
4. Expand partnerships with community organizations to further embed career connections in the community	Schools	<ul style="list-style-type: none"> Focus on K-5 career connections outreach and PTO groups Organize outreach to alumni and recently graduated seniors Engage in outreach to community/non-profit organizations including the Summer & Afterschool Collaborative 	<ul style="list-style-type: none"> All Districts MCES Higher Ed Partners 	June 2025
	Industry	<ul style="list-style-type: none"> Provide necessary information for outreach communications 	<ul style="list-style-type: none"> Industry Groups Think TV Local chambers of commerce DDC 	June 2025

Subcommittee Metrics

% of districts sharing career connections content targeting families/caregivers: **74%**

% of partner districts highlighting to caregivers ongoing K-5 career connections outreach: **74%**

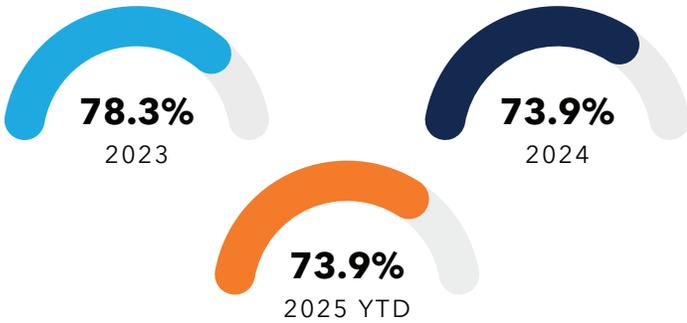
% of partner districts highlighting alumni and recent graduates: **74%**

of community partners engaged in career connections activities: **12**

These data points will be compared to similar data points collected over time to show our BAC's longitudinal progress.

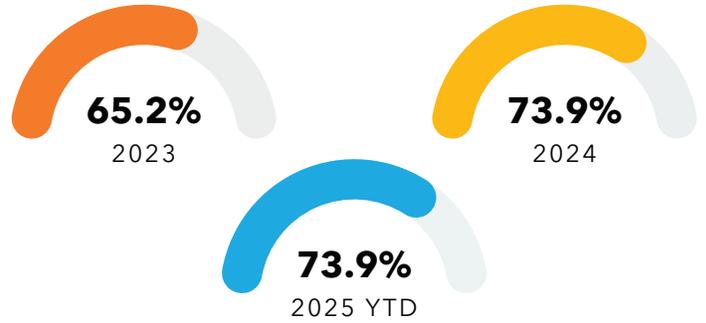
Key Outcome Measures By Subcommittee

% of districts sharing career connections content targeting families/caregivers



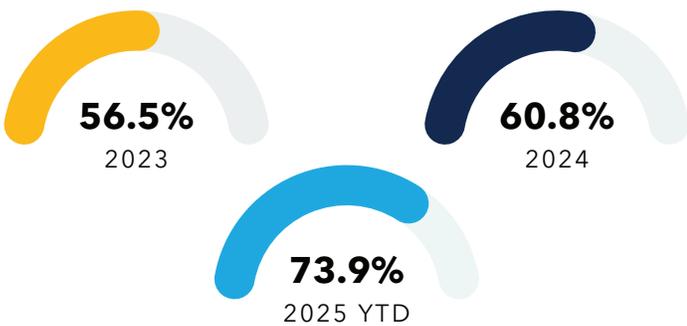
Source: District self-reporting

% of partner districts highlighting to caregivers ongoing K-5 career connections outreach



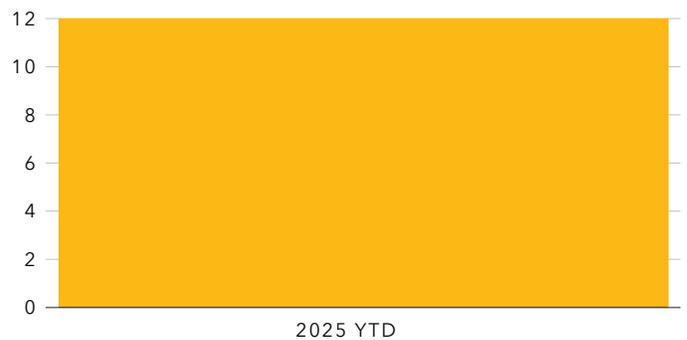
Source: District self-reporting

% of partner districts highlighting alumni and recent graduates



Source: District self-reporting

of community partners engaged in career connections activities



Source: District self-reporting

*This data was not collected in previous years.

Industry Engagement For efficient and productive career experiences (i.e. internships, job shadowing, apprenticeships) to be feasible, we need a one-stop shop for industry and schools to connect.



Schools must provide flexibility in schedules to allow students to participate in career experiences.



Industry must engage in meaningful partnerships and invest in opportunities for students to have career experiences while they are in school.

Strategy		Actions	Responsibility	Timeframe
1. Develop partnerships to provide increased opportunities for career activities	Schools	<ul style="list-style-type: none"> Organize Industry-specific College & Career Fairs & other career connection activities 	<ul style="list-style-type: none"> MCESC All Districts 	June 2025
	Industry	<ul style="list-style-type: none"> Work with trade associations to engage with schools to build career awareness capacity 	<ul style="list-style-type: none"> Industry Groups & Business Organizations SOCHE 	
2. Raise awareness about the value of work-based-learning (WBL) for both students and industry	Schools	<ul style="list-style-type: none"> Engage students and recent graduates to develop messaging on why WBL matters. Define examples of quality work-based learning amongst BAC districts 	<ul style="list-style-type: none"> MCESC All Districts 	June 2025
	Industry	<ul style="list-style-type: none"> Engage industry partners to develop messaging and highlight success stories. 	<ul style="list-style-type: none"> Industry Groups & Business Organizations SOCHE 	
3. Increase WBL opportunities within key industry sectors	Schools	<ul style="list-style-type: none"> Develop instructions on a district-by-district basis for opportunities for students to engage with WBL opportunities 	<ul style="list-style-type: none"> MCESC All Districts 	June 2025
	Industry	<ul style="list-style-type: none"> Highlight industry partners who are strategically partnering with schools 	<ul style="list-style-type: none"> Industry Groups & Business Organizations SOCHE 	



Subcommittee Metrics

of industry partners supporting career activities across partner districts: **337**

of students engaged in work-based learning: **2,068**

% of students within the BAC that have been placed in work-based learning experiences: **6.9%***

of business partners accepting students into work-based learning opportunities: **200+**

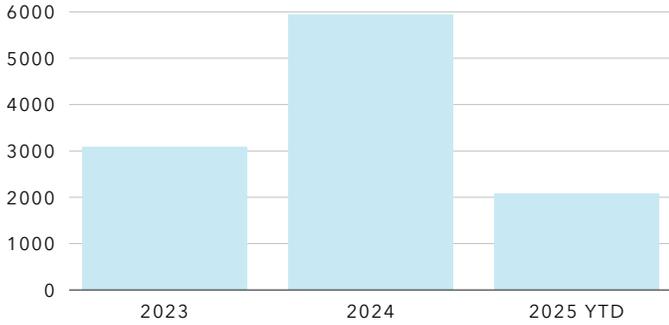
% of students who have earned an in-demand industry-recognized credential: **34.8%**

These data points will be compared to similar data points collected over time to show our BAC's longitudinal progress.

*Incomplete Data Set

Key Outcome Measures By Subcommittee

of students engaged in work based learning



Source: District self-reporting

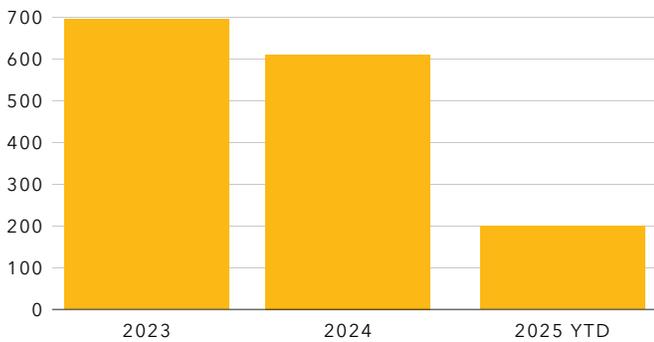
% of students within the BAC that have been placed in work-based learning experiences



Source: District self-reporting

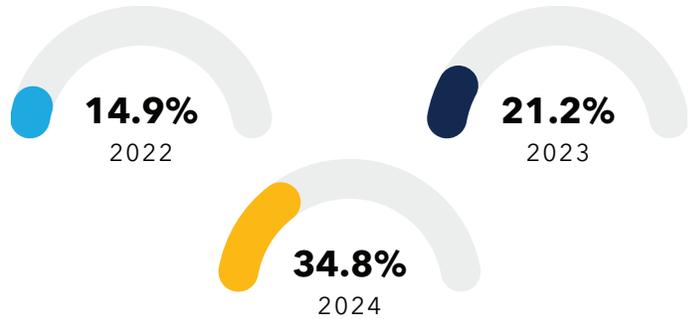
*Incomplete Data Set

of business partners accepting students into work-based learning opportunities



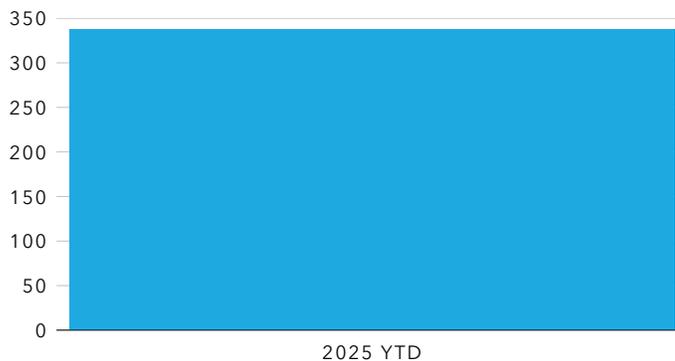
Source: District self-reporting

% of students who have earned an in-demand industry recognized credential



Source: Ohio Department of Education and Workforce Report Portal, Industry Recognized Credentials

of industry partners supporting career activities across partner districts



Source: District self-reporting

*This data was not collected in previous years.

Educator Engagement

Educators are well-positioned to guide our students on a path toward career success if they have the training, curriculum tools and support from industry to increase their own awareness, knowledge and skills to support students' career planning.



Schools must provide opportunities for educators to connect to careers and curriculum designed to give students experiences to help them design plans after high school.



Industry must invest time and resources in our region's career connections work while acknowledging the challenges educators face.

Strategy		Actions	Responsibility	Timeframe
1. Provide guidance and support for work-based learning	Schools	<ul style="list-style-type: none"> Promote statewide operational definitions of work-based learning and tracking of industry recognized credentials Provide and support implementation of Work-Based Learning Resources (guidance documents, OMJ readiness seals, pre-apprenticeships, job, s hadowing, etc) Design & pilot WBL toolkit 	<ul style="list-style-type: none"> Educator Engagement Subcommittee Industry Engagement Subcommittee 	June 2025
	Industry	<ul style="list-style-type: none"> Partner with schools to help plug identified gaps with industry-relevant opportunities (speakers, tours, lunches, projects, etc) 	<ul style="list-style-type: none"> Industry Groups 	
2. Utilize data to drive decisions and increase career readiness across the educational continuum	Schools	<ul style="list-style-type: none"> Share Learn to Earn Indicators, Career Readiness Survey Data, and Snapshot Data with Career Champions, Counselors, Building Admin, MVRCD, Teachers 	<ul style="list-style-type: none"> MCESC L2ED 	June 2025
	Industry	<ul style="list-style-type: none"> Meet with ten districts to review their career connections related data and brainstorm potential areas of collaboration 	<ul style="list-style-type: none"> Educator Engagement Subcommittee 	
3. Expand authentic experiences and activities connected to careers	Schools	<ul style="list-style-type: none"> Learn and promote career activities and tasks that align with content standards (technical and employability skills) Promote careers with each Industry Cluster, by generating resources and activities for one week's worth of programming for each cluster Host quarterly Career Champions/Counselors Meetings with Industry Tours Host Teacher Industry Experiences Explore best practices on region's teacher experiences efforts 	<ul style="list-style-type: none"> All districts MCESC 	June 2025
	Industry	<ul style="list-style-type: none"> Attend focus groups to develop career activity ideas and identify career alignment with content standards Host Teacher Industry Tours and Experiences 	<ul style="list-style-type: none"> Local chambers of commerce Industry Groups 	
4. Create plug and play structural course alignment options for workforce sectors	Schools	<ul style="list-style-type: none"> Host Career Pathway Labs 	<ul style="list-style-type: none"> MCESC L2ED Educator Engagement Team 	June 2025
	Industry	<ul style="list-style-type: none"> Partner with schools in Career Pathway Lab Process 	<ul style="list-style-type: none"> Local Chambers of Commerce Industry Groups 	

🔍 Subcommittee Metrics

of BAC pathways implemented across BAC districts: **45**

of students in BAC Pathways across BAC districts: **4,582**

of career-centered professional development opportunities offered: **149**

of educators impacted by professional development opportunities: **1,765**

These data points will be compared to similar data points collected over time to show our BAC's longitudinal progress.

🔑 Key Outcome Measures By Subcommittee

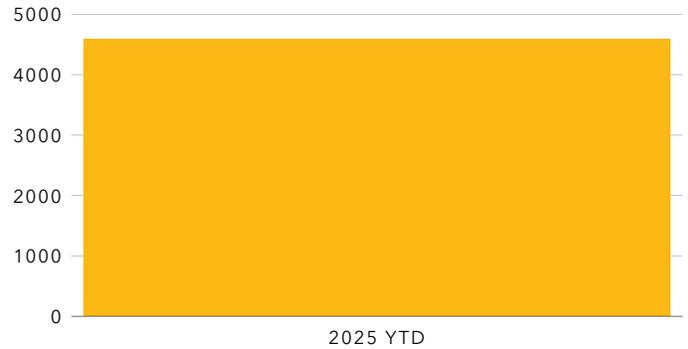
of BAC pathways implemented across BAC districts



Source: District self-reporting

*This data was not collected in previous years.

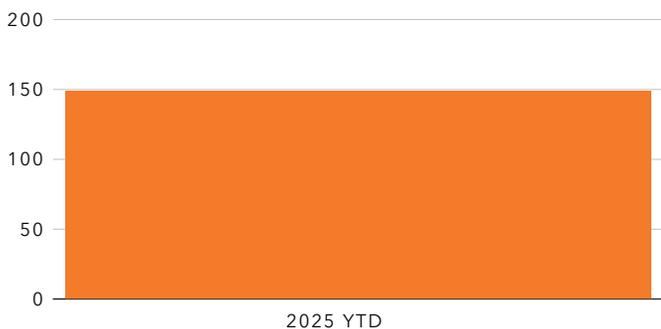
of students in BAC Pathways across BAC districts



Source: District self-reporting

*This data was not collected in previous years.

of career-centered professional development opportunities offered



Source: District self-reporting

*This data was not collected in previous years.

of educators impacted by professional development opportunities



Source: District self-reporting

*This data was not collected in previous years.



Schools must inform policymakers on the needs and challenges of K-12 partners.



Industry must inform policymakers on the specific needs of our future workforce.

Strategy		Actions	Responsibility	Timeframe
1. Advocate for policies that support the work of all BACs	Schools	<ul style="list-style-type: none"> Provide feedback on barriers to implementation of career connections work 	<ul style="list-style-type: none"> All districts 	June 2025
	Industry	<ul style="list-style-type: none"> Provide feedback on workforce needs and possible policy and legislative changes Help educate local employers on policies that work to support the future workforce 	<ul style="list-style-type: none"> Chamber Industry Groups BBB DDC 	
2. Provide real-world and school-based examples of success stories to support policies	Schools	<ul style="list-style-type: none"> Document local best practices to feature high-quality work-based learning and career connections experiences 	<ul style="list-style-type: none"> All districts 	June 2025
	Industry	<ul style="list-style-type: none"> Identify pragmatic incentives and policies to increase employers participation in work-based learning and career connections opportunities 	<ul style="list-style-type: none"> Chamber Industry Groups DDC 	
3. Ensure stakeholder access to community workforce data	Schools	<ul style="list-style-type: none"> Define what data is available and can be used to support continued advancement of opportunities for students 	<ul style="list-style-type: none"> All districts 	June 2025
	Industry	<ul style="list-style-type: none"> Explore available data and help identify strategies to close gaps in awareness and access to opportunities for students 	<ul style="list-style-type: none"> Chamber Industry Groups DDC 	

Subcommittee Metrics

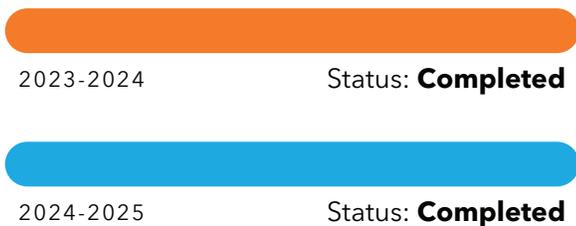
Creation of policy agenda: **Completed**

of Legislative Briefings: **2**

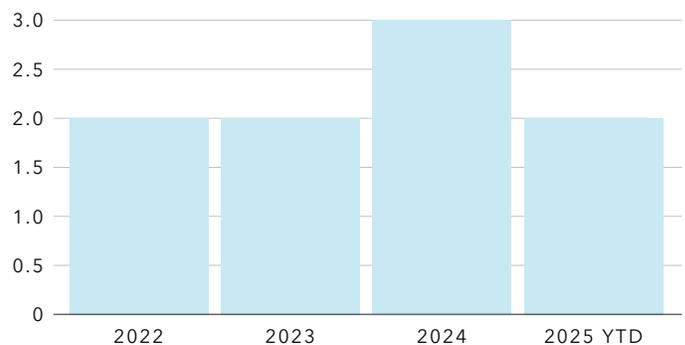
These data points will be compared to similar data points collected over time to show our BAC's longitudinal progress.

Key Outcome Measures By Subcommittee

Creation of a Policy Agenda



of Legislative Briefings



Source: District self-reporting

Engaging National Partners

Pathways to Prosperity Network Update

Since 2018 our BAC has been a member of the Pathways to Prosperity Network, an initiative of Jobs for the Future at the Harvard Graduate School of Education. Pathways to Prosperity's data-driven work is in alignment with our BAC work, focused on creating meaningful career pathways for students who are eager to complete high school and earn a high-value credential or degree.

In October 2024, a working group attended the annual Fall Pathways to Prosperity Institute. Our group consisted of superintendents and staff from Learn to Earn Dayton, as well as economic development professionals from the Dayton Area Chamber of Commerce and the Dayton Development Coalition and a Montgomery County Commissioner. After the Fall Institute, we convened for a follow-up meeting with BAC leaders and our Pathways to Prosperity support staff to continue mapping our in-demand industry pathways. This meeting served as an opportunity to better connect our BAC's committee co-chairs and update our partners on our regional pathway models.

Pathway Implementation Labs Industry Pathway Models

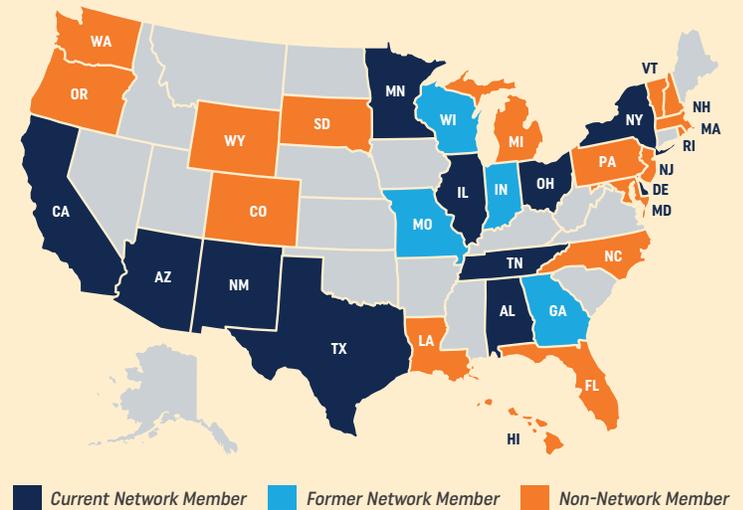
Stemming from our Pathways to Prosperity work, we partnered with Sinclair College, Wright State, Clark State, industry partners, and various stakeholders in the region to develop pathway models in health science, computer science, advanced manufacturing, elementary education, aerospace and aviation, and most recently, business and management.

The regional pathway models (found on the following pages) are intended to support more seamless transitions from high school to college to career. Pathway models demonstrate the full vision of pathways, beginning with identifying high-demand jobs, and then backward mapping to educational opportunities that will prepare young people for these jobs, including potential postsecondary programs, high school coursework, and college and career preparation activities. These in-demand pathways demonstrate the different positions available in these industries and the varying income levels associated with each position.

Building on last year's success, MCECSC intends to host a Business and Management Pathway Design Lab this spring bringing together teams from partner BAC districts to design how to incorporate this new pathway into their respective schools. Each participating district team will audit its course offerings, work-based learning options, advising practices, and competency development opportunities to identify gaps in their offerings that needed to be addressed to fully implement the pathways.

Following the Design Labs, we intend to host an Implementation Lab that layers in industry partners, higher education, the non-profit community, and K-12 partners to work together to identify resources and solutions to fill the gaps identified in the Design Labs. These sessions will help our BAC to develop and further coordinate career connection experiences and build partnerships within our southwest Ohio ecosystem.

Pathways to Prosperity Network



A photograph of two men in a factory or industrial setting. The man on the left has short, light brown hair and a beard, wearing a white t-shirt. He is looking down and to the right. The man on the right is wearing a dark blue suit jacket and is holding a folder or document. The background shows industrial equipment, including a wooden crate filled with small metal parts.

Index

- 27** Computer Science Regional Pathway Model
- 29** Health Science Regional Pathway Model
- 31** Advanced Manufacturing Regional Pathway Model
- 33** Elementary Educator Regional Pathway Model
- 35** Aerospace and Aviation Regional Pathway Model
- 37** Business and Management Regional Pathway Model



Regional pathway models support the alignment of stakeholders including employers, higher education, K-12, and workforce, to ensure pathways prepare young people for careers with family-supporting wages and build a robust talent pipeline for employers. Pathway models demonstrate a vision from 8th grade to career including high school coursework, college and career preparation activities, potential postsecondary programs, and in-demand jobs in the regional labor market. This is a living document that will need to be updated regularly to reflect current education programs and workforce needs.

Academic Coursework

This general coursework is recommended for all students in the IT/computer science pathway.

	Grade 8	Grades 9 and 10	Grade 11	Grade 12	
Career Focused Courses	Information Technology Networking Programming	Foundational IT/Comp Sci or CCP Course such as: ⊕ CIS 1107–Introduction to Operating Systems ⊕ BIS 1120–Introduction to Software Applications ⊕ BIS 1105–IT Fundamentals	Strategic CCP Course such as: ⊕ CIS 1130–Network Fundamentals ⊕ CIS 1111–Introduction to Problem Solving and Computer Programming	Strategic CCP Course such as: ⊕ CIS 1140–Information Systems Analysis and Design ⊕ CIS 2165–Database Management	<p>⊕ Note: College Credit Plus courses apply to both high school and postsecondary requirements, saving students time and money. Students who complete the following six courses can earn the IT Fundamentals Certificate at Sinclair Community College: BIS 1120, CIS 1107, CIS 1111, CIS 1130, CIS 1140, CIS 2165</p>
English	Grade 8 English	English I English II	English III	English IV ⊕ ENG 1101–English Composition I	
Math	Algebra I	Geometry ⊕ MAT 1470–College Algebra	Algebra II	Trigonometry/Calculus	
History	Social Studies	World History	US History	US Government	
Science	Physical Science	Biology	Chemistry	Physics	

College and Career Preparation

These additional activities support students in preparing for both college and career. Work-based learning enables students to apply their academic learning in a real-world setting. Advising supports students in making decisions that align best with their strengths and future goals. Competencies describe the technical skills students need for a successful career in information technology and computer science.

	Grade 8	Grades 9 and 10	Grade 11	Grade 12
Work-Based Learning	Career Exploration: • Career Adventures Course—IT • Work-Site Tours • Power Lunches • Pathway Fairs	Career Planning: • Job Shadow • HR Interview • Virtual Pathway Mentor • Resume Prep	Career Planning: • Internship • Career Fair • Mock Interview	Career Planning: • Internship • Career Fair • Mock Interview • Exposure to Related Software Languages
Advising	• YouScience	• Individualized College and Career Plan (ICCP) • Confirmation of Pathway • Identification of Credentials and College Options • Revisit ICCP	• Financial Literacy Course • College Application Prep Work • Industry Recognized Credential Examination	• Free Application for Federal Student Aid (FAFSA) • Complete Ohio Means Jobs (OMJ) Readiness Seal • College and Career Signing Day
Competencies	• Employability Skills Course	• User and Customer Support • Principles of IT Systems and Concepts • Principles of Data and Documentation • Logic and Fundamentals of Computer Languages • Principles of Software • Word Processing, Spreadsheet, and Presentation Software	• Security, Compliance, and Risk Management • Routing and Network Configurations • Servers and Storage • Fundamentals of Cloud Computing and Virtualization	• Individualized Specialization

IT/Computer Science Technical Competencies

User and Customer Support

Use understanding of the range of services and customer-focused approaches used to provide assistance and technical support in order to help users solve problems and implement solutions related to IT.

Principles of IT Systems and Concepts

Use understanding of fundamental IT concepts, systems, platforms, and tools to understand the common roles and career trajectories of IT professionals.

Principles of Data and Documentation

Use understanding of numerical sequencing, information flow, data, and record keeping in order to understand the role of technology in converting data into organized content and maintaining accurate records.

Logic and Fundamentals of Computer Languages

Use understanding of how computer languages communicate to build basic mobile and web applications.

Principles of Software

Use understanding of designing, writing, testing, and maintaining source code of computer program to manage, maintain, and edit software.

Word Processing, Spreadsheet, and Presentation Software

Use understanding of Microsoft Office and Google Suite to create written documents, organize data, and develop visual presentations.

Security, Compliance, and Risk Management

Use understanding of malware, firewall, IDS, and legal or regulatory requirements to recognize basic threats to networked computers and ensure procedures are in place for compliance.

Routing and Network Configurations

Use understanding of common networking protocols to explain the purpose of routing, monitoring, and network configurations.

Servers and Storage

Use understanding of data backup systems to store and recover information.

Fundamentals of Cloud Computing and Virtualization

Use understanding of the features, benefits, and concepts of virtualization to differentiate among types of cloud services.

Selected Postsecondary Options

The selected postsecondary credentials in IT/computer science are based on program options and transfer agreements at Sinclair Community College. Some education paths have credentials that easily stack or build from the previous credential, while others are not as easily stackable. Stackable credentials can help an individual progress in their career pathway or move up a career ladder to different or higher paying jobs. Within the fields of IT and computer science, a particular education credential can prepare students for a variety of occupations.

	 Potential Initial Credential	 Stackable Credentials	 Typical Occupational Outcome	
Computer Information Technology	<ul style="list-style-type: none"> • CompTIA A+ • CompTIA IT Fundamentals+ 	<ul style="list-style-type: none"> • Computer Information Systems—User Support Associate of Applied Science Students eligible to take the following certification exams: A+, Network+, Security+, MCSA Exam TestOut Client Pro 	<ul style="list-style-type: none"> • Computer Information Systems Bachelor of Science 	<ul style="list-style-type: none"> • Computer Network Support Specialist • Computer User Support Specialist
	<ul style="list-style-type: none"> • CompTIA IT Fundamentals+ • CompTIA A+ • CCENT • Network+ • MTA 	<ul style="list-style-type: none"> • Computer Information Systems—Network Engineering Associate of Applied Science Students eligible to take the following certification exams: CCNA, Security+, A+, MCSA Exam TestOut Server Pro 2016: Install and Storage* *This credential is connected to an optional elective course, students need to take that specific elective in order to take the certification exam. 		<ul style="list-style-type: none"> • Network Administrator • Network Security Analyst • Network Engineer
	<ul style="list-style-type: none"> • CompTIA IT Fundamentals+ • MTA • CompTIA A+ • OCAJ 	<ul style="list-style-type: none"> • Computer Information Systems—Software Development Associate of Applied Science Students eligible to take the Network+ certification exam 		<ul style="list-style-type: none"> • Software Developer • Web Developer • Help Desk Analyst • Network Administrator • User Support Specialist • Network Security Analyst • Network Engineer
Cybersecurity: Prevention and Investigation Technology	<ul style="list-style-type: none"> • CompTIA IT Fundamentals+ • CompTIA A+ • MTA 	<ul style="list-style-type: none"> • Computer Information Systems—Secure System Administration Associate of Applied Science Students eligible to take the following certification exams: Network+, Linux+, Security+, MCSA Exam TestOut Server Pro 2016: Install and Storage, MCSA Exam TestOut Server Pro 2016: Networking, MCSA Exam TestOut Server Pro: Identify, Securing Windows Network Environment 2016 Exam 	<ul style="list-style-type: none"> • Information Technology and Cybersecurity Bachelor of Science 	<ul style="list-style-type: none"> • Cybersecurity Analyst/Technician • Cyber Crime Analyst/Investigator • Incident Analyst/Responder • IT Auditor
	<ul style="list-style-type: none"> • CompTIA IT Fundamentals+ 	<ul style="list-style-type: none"> • Cyber Investigation Technology Associate of Applied Science Students eligible to take the following certification exams: Network+, Linux+, Security+, MCSA Exam TestOut Server Pro 2016: Install and Storage, Securing Windows Network Environment 2016 Exam 		<ul style="list-style-type: none"> • Intelligence Analyst • IT Specialist • Systems Administrator • Network Engineer • Information System Security Manager • Cyber Security Incident Response Specialist • Private Investigator
Guided Transfer	<ul style="list-style-type: none"> • CompTIA IT Fundamentals+ • CompTIA A+ • CompTIA Security+ 	<ul style="list-style-type: none"> • Computer Science Associate of Science 	<ul style="list-style-type: none"> • Computer Science Bachelor of Science 	<ul style="list-style-type: none"> • Software Developer • Software Engineer • Data Engineer

Selected Occupations, Wages, and Job Growth

The IT and computer science careers listed below are projected to grow in the region. The living wage (\$23.16/hour) is from the MIT Living Wage Calculator for one adult and one child in Montgomery County in 2021. Note that all occupations included have median hourly earnings above a living wage, but that some jobs have a large pay range; this means that employees who have less experience, credentials, and skills can be paid significantly less than the median wage, which can be seen in the “entry level wages” column. The last column shows national data on how many workers in these positions have a bachelor’s degree or higher, indicating that for some positions, a four-year degree is an important credential.

Typical Job	Alternate Job Titles	Pays Living Wage (\$23.16)			Expected Growth (2020–2025)		Typical Work Experience Required	Workers with a Bachelor’s or Higher*
		Median Hourly Earnings	Entry Level Wages	Positions (2020)	Positions	Percent		
Software Developers	<ul style="list-style-type: none"> • Application Developers • Systems Engineer 	\$44.13	\$26.68	5,561	646	12%	None	85%
Computer Systems Analysts	<ul style="list-style-type: none"> • Information Technology Analyst 	\$42.09	\$26.36	1,740	127	7%	None	73%
Computer and Information Systems Managers	<ul style="list-style-type: none"> • Application Development • Director IT Director 	\$63.86	\$41.01	943	92	10%	5+ Years	73%
Computer User Support Specialists	<ul style="list-style-type: none"> • Desktop Support Technician • Help Desk Analyst 	\$25.39	\$15.82	2,129	71	3%	None	48%
Information Security Analysts	<ul style="list-style-type: none"> • Information Security Officer • Network Security Analyst 	\$47.61	\$27.32	373	65	17%	Less Than 5 Years	67%
Network and Computer Systems Administrators	<ul style="list-style-type: none"> • Network Administrator • Systems Administrator 	\$37.41	\$23.56	955	27	3%	None	54%
Computer Network Architects	<ul style="list-style-type: none"> • Network Analyst • Network and Security Engineer 	\$43.36	\$28.72	293	23	8%	5+ Years	57%
Web Developers	<ul style="list-style-type: none"> • Web Designer • Webmaster 	\$38.45	\$21.03	750	6	1%	None	68%

This document was developed by JFF, Learn to Earn Dayton, and the Montgomery County ESC. Special thanks to Sinclair Community College and the Technology First Workforce Committee for your feedback and contributions.

Montgomery County Health Science Pathway

Regional pathway models support the alignment of stakeholders including employers, higher education, K-12, and workforce, to ensure pathways prepare young people for careers with family-supporting wages and build a robust talent pipeline for employers. Pathway models demonstrate a vision from 8th grade to career including high school coursework, college and career preparation activities, potential postsecondary programs, and in-demand jobs in the regional labor market. This is a living document that will need to be updated regularly to reflect current education programs and workforce needs.

Academic Coursework

This general coursework is recommended for all students in the health science pathway.

	Grade 8	Grades 9 and 10	Grade 11	Grade 12	
Career Focused Courses	Health Science and Technology	Foundational Health Science or CCP Course such as: + ALH 1101–Introduction to Healthcare Delivery	Strategic CCP Course such as: + HIM 1101–Medical Terminology	Strategic CCP Course such as: + PSY 1100–General Psychology	+ College Credit Plus (CCP) courses apply to a broad range of postsecondary programs in health science. The credits apply to both high school and postsecondary requirements, saving students time and money.
English	Grade 8 English	English I, English II + ENG 1101–English Composition	English III + COM 2206–Interpersonal Communication	English IV + COM 2206–Interpersonal Communication	
Math	Grade 8 Math or Algebra I	Algebra I, Geometry + MAT 1470–College Algebra	Algebra II	Trigonometry/Calculus + MAT 1470–College Algebra	
History	Social Studies	World History	US History	US Government	
Science	Physical Science	Biology + BIO 1107–Human Biology	Chemistry	Physics + BIO 1141–Principles of Anatomy & Physiology I	

College and Career Preparation

These additional activities support students in preparing for both college and career. Work-based learning enables students to apply their academic learning in a real-world setting. Advising supports students in making decisions that align best with their strengths and future goals. Competencies describe the technical skills students need for a successful career in the health sciences.

	Grade 8	Grades 9 and 10	Grade 11	Grade 12
Work-Based Learning	Career Exploration: • Career Adventures Course—Healthcare • Work-Site Tours • Power Lunches • Pathway Fairs	Career Planning: • Job Shadow • HR Interview • Virtual Pathway Mentor • Resume Prep	Career Planning: • Internship • Career Fair • Mock Interview	Career Planning: • Internship • Career Fair • Mock Interview
Advising	• YouScience	• Individualized College and Career Plan (ICCP) • Confirmation of Pathway • Identification of Credentials and College Options • Revisit ICCP	• Financial Literacy Course • College Application Prep Work • Industry Recognized Credential Examination	• Free Application for Federal Student Aid (FAFSA) • Complete Ohio Means Jobs (OMJ) Readiness Seal • College and Career Signing Day
Competencies	• Employability Skills	• Computer Applications, Records, and Data Recording • Professional Working Environments • Healthcare Rules and Regulations • Healthcare Industry Ethics • Healthcare Confidentiality	• Medical Terminology • Customer Service and Patient Focus • Healthcare Safety Systems and Environment • Healthcare Professional Licensure • Healthcare Sanitation	• Individualized Specialization

Health Science Technical Competencies

Computer Applications, Records, and Data Recording

Use understanding of keyboarding, data entry, and word processing to accurately record information on health technology systems.

Professional Working Environments

Use understanding of the importance of a sequence of tasks, cross-functional working environments, and professional communication to successfully work as part of a team.

Healthcare Rules and Regulations

Use understanding of basic laws and regulations (Patient Bill of Rights, CLIA, EMTALA, OSHA, etc.) to meet accreditation standards and obey the law.

Healthcare Industry Ethics

Use understanding of confidentiality, morality, and legal concepts to evaluate and apply the merits, risks, and social concerns to workplace decisions.

Healthcare Confidentiality

Use understanding of HIPAA in order to adhere to legal requirements and maintain confidentiality.

Medical Terminology

Use understanding of basic medical terminology, including abbreviations, acronyms, and diagnostic terms, to communicate effectively with healthcare personnel and patients.

Customer Service and Patient Focus

Use understanding of communication, active listening, and conflict resolution to identify and meet the needs of a patient or customer.

Healthcare Safety Systems and Environment

Use understanding of health and safety procedures and protocols to ensure a safe, secure, and healthy work environment.

Health Professional Licensure

Use understanding of appropriate industry education requirements, licensure, and certification to ensure adherence to regulations that guide service delivery.

Healthcare Sanitation

Use understanding of health cleanliness regulations and sanitation procedures to ensure that healthcare facilities and tools meet standards for cleanliness.

Selected Postsecondary Options

The selected postsecondary credentials in health science are based on program options and transfer agreements at Sinclair Community College. Some education paths have credentials that easily stack or build from the previous credential, while others are not as easily stackable. Stackable credentials can help an individual progress in their career pathway or move up a career ladder to different or higher paying jobs.

	 Potential Initial Credential	 Stackable Credentials	 Typical Occupational Outcome	
Allied Health	Radiographer	Associate of Applied Science in Radiologic Technology—students eligible to take the ARRT exam	Advanced Imaging Certifications e.g.: Computed Tomography (CT), Magnetic Resonance Imaging (MRI), and Mammography Bachelor of Radiation Science Technology Bachelor of Science in Healthcare Administration	Radiologic Technician
	State Tested Nurse Aide (STNA)	Associate of Applied Science in Respiratory Care	Bachelor of Science in Respiratory Care Bachelor of Health Sciences Bachelor of Science in Healthcare Administration	Respiratory Therapist
	Certified Dental Assistant	Associate of Applied Science in Dental Hygiene—students eligible to take state board exams and apply for state licensing	Expanded Function Dental Auxiliary (EFDA) Continuing Education Programs e.g.: Local Anesthesia and Nitrous Oxide for Dental Hygiene	Dental Hygienist
Nursing	State Tested Nurse Aide (STNA) Licensed Practical Nurse (LPN)	Associate of Applied Science (AAS) in Nursing—students eligible to take RN exam	Bachelor of Science in Nursing (BSN) Master of Science in Nursing (MSN)	Nurse
Guided Transfer (pre-med, pre-dentistry, or other advanced degree track)	State Tested Nurse Aide (STNA)	Associate of Science in Pre-Professional Studies	Bachelor of Science Doctoral Degree	Physician (Doctor or Dentist)

Selected Occupations, Wages, and Job Growth

The health science careers listed below are projected to grow in the region. The living wage (\$23.16/hour) is from the MIT Living Wage Calculator for one adult and one child in Montgomery County in 2021. Note that some jobs in the table do not pay a living wage and do not easily stack to further credentials, making economic advancement difficult.

Typical Job	Pays Living Wage (\$23.16)	Median Hourly Earnings	Preferred Education	Stackable Credential	Positions (2020)	Expected Growth (2020–2030)	
						Positions	Percent
Home Health and Personal Care Aides	No	\$11.33	Short-Term Home Health Aide Certificate	Not typically stackable	3,458	860	25%
Medical Assistants		\$16.53	Medical Assistant Technology (AAS)		1,701	432	25%
Emergency Medical Technicians and Paramedics		\$16.53	Emergency Medical Services (AAS)		502	159	32%
Phlebotomists		\$16.85	Short-Term Phlebotomy Certificate		742	144	19%
Medical and Health Services Managers	Yes	\$47.22	Health Information Management/Administration (BS)	Health Administration (MS)	808	116	14%
Respiratory Therapists		\$28.60	Respiratory Care (AAS)	Respiratory Care (BS)	584	71	12%
Radiologic Technicians		\$28.24	Radiographic Technology (AAS)	Radiation Science Technology (BS)	626	43	7%
Diagnostics Medical Sonographers		\$35.77	Diagnostic Medical Sonography (AAS)	Diagnostic Medical Sonography (BS)	284	39	14%
Dental Hygienists		\$34.00	Dental Hygiene (AAS)	Expanded Function Dental Auxiliary (EFDA) License	644	20	3%
Registered Nurses	Yes	\$32.61	Nursing (BS)	Nursing (MS)	10,190	611	6%
Nurse Practitioners		\$51.02	Nursing (MS)	Terminal degree for this occupation	672	174	26%
Physicians	Yes	\$101.08	Doctor of Medicine (MD)	Terminal degree for this occupation	1,220	141	12%

This document was developed by JFF, Learn to Earn Dayton, and the Montgomery County ESC. Special thanks to the Greater Dayton Area Hospital Association (GDAHA) Education Subcommittee and Sinclair Community College for your feedback and contributions.

Montgomery County Advanced Manufacturing Pathway

Regional pathway models support the alignment of stakeholders including employers, higher education, K–12, and workforce, to ensure pathways prepare young people for careers with family-supporting wages and build a robust talent pipeline for employers. Pathway models demonstrate a vision from 8th grade to career including high school coursework, college and career preparation activities, potential postsecondary programs, and in-demand jobs in the regional labor market. This is a living document that will need to be updated regularly to reflect current education programs and workforce needs.

Academic Coursework

This general coursework is recommended for all students in the advanced manufacturing pathway.

	Grade 8	Grades 9 and 10	Grade 11	Grade 12	
Career Focused Courses		Foundational Advanced Manufacturing or CCP Course such as: + MET 1131–Personal Computer Applications for Engineering Technology + CAM 1109–Fundamentals of Tooling and Machining	Strategic CCP Course such as: + EET 1120–Introduction to DC and AC Circuits + EGR 1106–Basic Mechanical and Technical Skills	Strategic CCP Course such as: + COM 2211–Effective Public Speaking	+ College Credit Plus (CCP) courses apply to a broad range of postsecondary programs in advanced manufacturing. The credits apply to both high school and postsecondary requirements, saving students time and money.
English	Grade 8 English	English I English II	English III	English IV + ENG 1101–English Composition I	
Math	Grade 8 Math or Algebra I	Algebra I Geometry	Algebra II	Trigonometry/Calculus + MAT 1470–College Algebra	
History	Social Studies	World History	US History	US Government	
Science	Physical Science	Biology	Chemistry	Physics	

College and Career Preparation

These additional activities support students in preparing for both college and career. Work-based learning enables students to apply their academic learning in a real-world setting. Advising supports students in making decisions that align best with their strengths and future goals. Competencies describe the technical skills students need for a successful career in advanced manufacturing.

	Grade 8	Grades 9 and 10	Grade 11	Grade 12
Work-Based Learning	Career Exploration: • Workforce Sector Course—Advanced Manufacturing • Work-Site Tours • Power Lunches • Pathway Fairs	Career Planning: • Job Shadow • HR Interview • Virtual Pathway Mentor • Resume Prep	Career Planning: • Internship • Career Fair • Mock Interview	Career Planning: • Internship • Career Fair • Mock Interview
Advising	• YouScience	• Individualized College and Career Plan (ICCP) • Confirmation of Pathway • Identification of Credentials and College Options • Revisit ICCP	• Financial Literacy Course • College Application Prep Work • Industry Recognized Credential Examination	• Free Application for Federal Student Aid (FAFSA) • Complete Ohio Means Jobs (OMJ) Readiness Seal • College and Career Signing Day
Competencies	• Employability Skills	• Equipment Safety • Manufacturing Environment • Personal Health and Safety • Spatial Reasoning • Process, Design, and Development • Installation	• Customer Focus • Quality Assurance and Continuous Improvement • Digital Manufacturing • Supply Chain Logistics	• Individualized Specialization

Manufacturing Competencies

Equipment Safety

Students can use their understanding of equipment usage, practices, and procedure to maintain a healthy, safe, and secure work environment.

Manufacturing Environment

Students can use their understanding of workstations, tools, and equipment operations to safely navigate a manufacturing environment.

Personal Health and Safety

Students can use their understanding of personal safety and environmental regulations to comply with local, federal, and company health/safety demands.

Spatial Reasoning

Students can use their understanding of objects in relation to one another to understand three-dimensional imaging.

Process, Design, and Development

Students can use their understanding of technical drawings and schematics to complete the design and development process.

Installation

Students can use their understanding of tools to assemble and disassemble simple tools.

Customer Focus

Students can use their understanding of communication and project management to understand client needs and complete projects accordingly.

Quality Assurance and Continuous Improvement

Students can use their understanding of product and process to meet quality systems requirements as defined by customer specifications.

Digital Manufacturing

Students can use their understanding of digital manufacturing tools and computer-based programs to complete the development and design for implementation processes.

Supply Chain Logistics

Students can use their understanding of materials, suppliers, and internal systems to plan and monitor movement and storage of materials and products.

Selected Postsecondary Options

The selected postsecondary credentials in advanced manufacturing are based on program options and transfer agreements at Sinclair Community College, except for the welding program, offered through Hobart Institute. Some education paths have credentials that easily stack or build from the previous credential, while others are not as easily stackable. Stackable credentials can help an individual progress in their career pathway or move up a career ladder to different or higher paying jobs.

	 Initial Credentials	 Stackable Credentials	 Potential Occupational Outcome
Engineering Technology	<ul style="list-style-type: none"> Industrial Engineering Technology Associate of Applied Science Students eligible to take the following certification exam: Six Sigma Green Belt Certification 	<ul style="list-style-type: none"> Bachelor of Science in Industrial Engineering Technology (with additional transfer courses) 	<ul style="list-style-type: none"> Engineering Technicians Quality Control Technicians Production Supervisors Continuous Improvement Specialists
	<ul style="list-style-type: none"> Mechanical Engineering Technology Associate of Applied Science Students eligible to take the following certification exam: Certified SolidWorks Associate (CSWA) IRC 	<ul style="list-style-type: none"> Bachelor of Science in Mechatronics Engineering Bachelor of Science in Mechanical and Manufacturing Engineering Technology 	<ul style="list-style-type: none"> Mechanical Engineering Technicians
	<ul style="list-style-type: none"> Automation and Control Technology with Robotics Students eligible to take the following certification exam: FANUC Handling Tool 		<ul style="list-style-type: none"> Control System Technician and Designer Systems Engineering Technician Industrial Equipment Professional
Welding (Hobart Institute)	<ul style="list-style-type: none"> Pathway Welding Program Students eligible to take four nationally recognized certifications: AWS® D1.1 Shielded Metal Arc Welding AWS® D1.1 Flux Cored Arc Welding AWS® D1.6 Gas Tungsten Arc AWS® D1.1 Gas Metal Arc Welding Pulsed Spray Transfer 	<ul style="list-style-type: none"> Welder-Fabricator Pathway Students eligible to take two additional nationally recognized certifications: AWS® D1.1 Gas Metal Arc Welding Pulsed Spray 3G AWS® D1.1 Flux Cored Arc Welding Self-shielded 	<ul style="list-style-type: none"> Welder
Computer Aided Manufacturing	<ul style="list-style-type: none"> Computer Aided Manufacturing/CNC Technology Associate of Applied Science 		<ul style="list-style-type: none"> Machinist/CNC Machinist Process Improvement Specialist
Guided Transfer	<ul style="list-style-type: none"> Engineering and Engineering Technology University Transfer Associate of Science 	Several options including, but not limited to: <ul style="list-style-type: none"> Bachelor of Science in Civil Engineering Bachelor of Science in Electrical Engineering Bachelor of Science in Mechanical Engineering Bachelor of Science in Industrial Engineering 	<ul style="list-style-type: none"> Engineer

Selected Occupations, Wages, and Job Growth

The advanced manufacturing careers listed below are projected to have job openings over the next five years in the region. The living wage (\$28.66/hour) is from the MIT Living Wage Calculator for one adult and one child in Montgomery County in 2022. Like all industries, many high-wage jobs in advanced manufacturing require a bachelor's degree or beyond. However, there are a few jobs below that don't require a four-year degree and pay over \$20/hour. In manufacturing, there are few defined career advancement opportunities, but one such opportunity is moving into a managerial/supervisory role. The last column in the table shows the occupation's risk of being affected by automation, a factor to consider as individuals plan for their careers.

Typical Job	Pays Living Wage (\$28.66)	Median Hourly Earnings	Entry Level Wages	Positions (2021)	Average Annual Openings	Expected Growth (2021-2026)	Typical Education Required	Higher-than-Average Risk of Automation
Electronics Engineers	Yes	\$53.67	\$42.73	1,388	87	-2%	Bachelor's degree	No
Software Developers and Software Quality Assurance Analysts and Testers	Yes	\$44.13	\$26.68	5,640	482	11%	Bachelor's degree	No
Mechanical Engineers	Yes	\$43.37	\$34.38	1,213	79	4%	Bachelor's degree	No
Industrial Engineers	Yes	\$38.47	\$31.96	1,114	85	8%	Bachelor's degree	No
Electrical and Electronics Repairers	Yes	\$31.38	\$28.24	78	7	6%	Postsecondary certificate	No
Supervisors/Managers	Yes	\$30.77	\$24.53	2,052	190	2%	High school diploma or equivalent	No
Machinist/CNC Machinist	No	\$23.20	\$17.88	2,050	206	4%	High school diploma or equivalent	Yes
Welders, Cutters, Solderers, and Brazers	No	\$20.89	\$17.72	663	82	8%	High school diploma or equivalent	Yes
Maintenance Repair Workers	No	\$19.80	\$16.09	3,277	320	0%	High school diploma or equivalent	Yes
Inspector/Quality Assurance Auditor	No	\$18.93	\$16.21	1,855	196	-6%	High school diploma or equivalent	Yes

This document was developed by JFF, Learn to Earn Dayton, and the Montgomery County ESC. Special thanks to Sinclair Community College, Hobart Institute of Welding Technology, and the Dayton Region Manufacturers Association for their feedback and contributions.

Regional pathway models support the alignment of stakeholders including employers, higher education, K-12, and workforce, to ensure pathways prepare young people for careers with family-supporting wages and build a robust pipeline for employers. Pathway models demonstrate a vision from 8th grade to career including high school coursework, college and career preparation activities, potential postsecondary programs, and in-demand jobs in the regional labor market. This is a living document that will need to be updated regularly to reflect current education programs and workforce needs.

Academic Coursework

This general coursework is recommended for all students in the Education pathway.

	Grade 8	Grades 9 and 10	Grade 11	Grade 12	
Career Focused Courses		 Foundational Education or CCP Course such as: ECE 1101 - Introductory to Child Development	 ECE 2200 - Families, Communities, & Schools	 EDU 1100 - Introduction to Education	 College Credit Plus (CCP) courses apply to a broad range of postsecondary programs in education. The credits apply to both high school and postsecondary requirements, saving students time and money.
English	Grade 8 English	English II English III	 ENG 1101 - English Composition I	 ENG 1201 - English Composition II	
Math	Grade 8 Math/Algebra	Algebra I/Geometry	Algebra II	Trigonometry/Calculus	
History	Social Studies	 World History American History HIS 1101* - US History	World History Social Studies Elective**	US Government	
Science	Physical Science	Biology	Chemistry	Physics	

*Miami University students replace with HIS 1112: Western Civilization **Optional

College and Career Preparation

These additional activities support students in preparing for both college and career. Work-based learning enables students to apply their academic learning in a real-world setting. Advising supports students in making decisions that align best with their strengths and future goals. Competencies describe the skills and knowledge students need for a successful career in education career fields.

	Grade 8	Grades 9 and 10	Grade 11	Grade 12
Work-Based Learning	<ul style="list-style-type: none"> Job Shadow Peer Tutoring 	<ul style="list-style-type: none"> Job Shadow Join Educator Rising/Participate in a Grow Your Own Program at your HS Summer work with childcare, tutoring, student programs, etc. 	<ul style="list-style-type: none"> Job Shadow Job Fair Mock Interview Participate in Educator Rising/Participate in a Grow Your Own Program at your HS Summer work with childcare, tutoring, student programs, coaching, etc. 	<ul style="list-style-type: none"> Job Shadow Job Fair Mock Interview Educator Rising Participate in a Grow Your Own Program at your HS Summer work with childcare, tutoring, student programs, coaching etc.
Advising	<ul style="list-style-type: none"> YouScience 	<ul style="list-style-type: none"> Identification of Credential and College Options Financial Literacy Course Begin Ohio Means Jobs Readiness Seal College Application Prep Work 	<ul style="list-style-type: none"> Financial Literacy Course Ohio Means Jobs Readiness Seal Identify content area and grade level of interest for teaching license 	<ul style="list-style-type: none"> Complete FAFSA Complete College Application Complete Ohio Means Jobs Readiness Seal College and Career Signing Day
Competencies	<ul style="list-style-type: none"> Employability Skills CPR & First Aid Certification 	<ul style="list-style-type: none"> Written Communication Verbal Communication Organization Responsible Decision Making Social Awareness Relationship Skills Child Development 	<ul style="list-style-type: none"> Ethics in Education Technology Competencies 	<ul style="list-style-type: none"> Individual specialization in grades and subjects of interest

Educational Competencies

Written Communications:

The ability to identify, clearly state, and convey a goal to the reader.

Verbal Communication:

The ability to deliver and understand verbally transmitted information quickly and accurately.

Organization:

The ability to manage many tasks: planning lessons, delivering instruction, scheduling, maintaining records, prioritization, and collaboration.

Social Awareness:

The ability to understand and empathize with the perspectives of others, including those from diverse backgrounds, cultures, and contexts.

Relationship Skills:

The ability to establish and maintain healthy and supportive relationships and to navigate settings with a broad spectrum of individuals and groups.

Responsible Decision Making:

The ability to make caring and constructive choices about personal behavior and social interactions across various situations.

Child Development:

Understand the sequence of physical, intellectual, language, and emotional changes that occur in a child from birth to young adulthood.

Technology Competencies:

The ability to perform and adapt core technology functions necessary for the classroom and functions within an educational setting.

Educational Professional Licensure:

Use understanding of appropriate education requirements, licensure, and certification to obtain appropriate credentials.

Ethics in Education:

Understand the value of educational integrity and the responsibility inherent in the profession of teaching.

Selected Postsecondary Options

The selected postsecondary credentials in the education pathway are based on transfer agreements at Sinclair Community College. Some education paths have credentials that easily stack or build from the previous credential, while others are not easily stackable. Credentials can help individuals document their progress in defined career pathways and help them measure their move up the career ladder into different or higher paying jobs.

Professional Role	 Initial Credential	 Stackable Credentials	 Typical Occupational Outcome
Educational Aide	Educational Aide Permit	<ul style="list-style-type: none"> • Associates degree or 48 semester hours at an accredited college or university • ParaPro Exam 	Educational Aide with ESEA endorsement
Early Childhood Education	Child Development Associate Credential (CDA), Ohio Administrator Credential (OCCRA)	<ul style="list-style-type: none"> • Associates degree, Associate of Arts (AA) or Bachelor of Arts (BA) in Early Childhood Education (Non-Licensure) • Pre-Kindergarten License, Pre-Kindergarten Special Needs, Teaching English to Speakers of Other Languages (TESOL), Adapted Physical Education, Bilingual, Computer/Technology, Computer Science, Drama/Theater 	<ul style="list-style-type: none"> • Pre-kindergarten Teacher • Lead Teacher at Childcare Center or Early Learning Center • Childcare Center Administrator
Elementary Teacher	Teaching License	<ul style="list-style-type: none"> • Bachelors Degree, Early Childhood Generalist License, • Primary (PK-5) License, Teaching English to Speakers of Other Languages (TESOL), Gifted Intervention Specialist, Drama/Theater, Computer Science, Computer/Technology, Bilingual, Adapted Physical Education 	Elementary Teacher
Middle Childhood Education	Teaching License	<ul style="list-style-type: none"> • Bachelors Degree • Middle Childhood License, Middle Childhood Generalist Endorsements (LA, Math, Science, Social Studies) , Teaching English to Speakers of Other Languages (TESOL), Gifted Intervention Specialist, Drama/Theater, Computer Science, Computer/Technology, Bilingual, Adapted Physical Education 	Grades 4-9 Teacher
Adolescent Young Adult Education (AYA)	Teaching License	<ul style="list-style-type: none"> • Bachelors Degree • Adolescent Young Adult (AYA) License, AYA Subject Endorsements, Teaching English to Speakers of Other Languages (TESOL), Gifted Intervention Specialist, Drama/Theater, Computer Science, Computer/Technology, Career Based Intervention, Bilingual, Adapted Physical Education 	Grades 7-12 Teacher
Educational Leadership	Two years of successful teaching experience under a standard teaching license, Master's Degree, Approved Preparation Program, or Alternative pathway	<ul style="list-style-type: none"> • Principal License • Administrative Specialist License • Superintendent License 	<ul style="list-style-type: none"> • Assistant Principal • Principal • Dean of Students • Superintendent • Instructional Coordinator

Additional information about supplemental licensures can be found at the Ohio Department of Education website:
<https://education.ohio.gov/Topics/Teaching/Licensure/Supplemental-License/Supplemental-Teaching-License-for-Endorsement-Area>

Selected Occupations, Wages, and Job Growth

The education careers listed below are projected to grow in the region. The living wage (\$32.08 per hour) is from the MIT Living Wage Calculator for one adult and one child in Montgomery County in 2022. Those pursuing a career in public sector education may choose to explore the additional career benefits unique to the field such as retirement, healthcare, and leave. Note that some jobs in the table do not pay a living wage; however, degree and credential pathways exist in all professions and the following information documents the earning potential for different roles within education.

Occupation	Job Summary	Entry-Level Education	2021 Median Pay	Median Hourly Earnings	Pays Living Wage (\$32.08)	Expected Growth 2020-2030
Teacher Assistants	Teacher assistants work with a licensed teacher to give students additional attention and instruction.	Some college, no degree	\$24,360	\$16	No	9%
Preschool Teachers	Preschool teachers educate and care for children younger than age 5 who have not yet entered kindergarten.	Associate's degree	\$30,210	\$20	No	18%
Elementary School Teachers	Kindergarten and elementary school teachers instruct young students in basic subjects in order to prepare them for future schooling.	Bachelor's degree	\$61,350	\$41	Yes	7%
Middle School Teachers	Middle school teachers educate students typically in sixth through eighth grades.	Bachelor's degree	\$61,320	\$41	Yes	7%
High School Teachers	High school teachers teach academic lessons and various skills that students will need to attend college and to enter the job market.	Bachelor's degree	\$61,280	\$41	Yes	8%
Career & Technical Education Teachers	Career and technical education teachers instruct students in various technical and vocational subjects, such as auto repair, healthcare, and culinary arts.	Bachelor's degree	\$61,160	\$41	Yes	5%
Special Education Teachers	Special education teachers work with students who have a wide range of learning, mental, emotional, and physical disabilities.	Bachelor's degree	\$61,820	\$42	Yes	8%
Elementary, Middle, & High School Principals	Elementary, middle, and high school principals oversee all school operations, including daily school activities.	Master's degree	\$98,490	\$56	Yes	8%
Instructional Coordinators	Instructional coordinators oversee school curricula and teaching standards. They develop instructional material, implement it, and assess its effectiveness.	Master's degree	\$63,740	\$43	Yes	10%
Librarians & Library Media Specialists	Librarians and library media specialists help people find information and conduct research for personal and professional use.	Master's degree	\$61,190	\$41	Yes	9%
School & Career Counselors and Advisors	School counselors help students develop academic and social skills. Career counselors and advisors help people choose a path to employment.	Master's degree	\$60,510	\$41	Yes	11%

Source: Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook, Career and Technical Education Teachers, at <https://www.bls.gov/ooh/education-training-and-library/career-and-technical-education-teachers.htm> (visited August 18, 2022).

*living wage calculation based on one adult and one child in Montgomery county in August of 2022 from the MIT Living Wage Calculator (<https://livingwage.mit.edu/counties/39113>)

Montgomery County Aerospace and Aviation Pathway

Regional pathway models support the alignment of stakeholders, including employers, higher education, K-12, and workforce, to ensure pathways prepare young people for careers with family-supporting wages and build a robust talent pipeline for employers. Pathway models demonstrate a vision from eighth grade to career, including high school coursework, college and career preparation activities, potential postsecondary programs, and in-demand jobs in the regional labor market. This regional pathway model is a living document that will need to be updated regularly to reflect current education programs and workforce needs.

Academic Coursework

This general coursework is recommended for all students in the aerospace and aviation pathway.

	Middle School/ Grade 8	Grades 9 and 10	Grades 11	Grade 12	
Career Focused Courses		Foundational Aerospace and Aviation or CCP Course such as: + MET 1131–Personal Computer Applications for Engineering Technology + AVT 1105–Orientation to Aviation	Strategic Aerospace and Aviation or CCP Course such as: + AVT 1101–Introduction to Unmanned Aerial Systems + AVT2125–Developments in Aviation I	Strategic Aerospace and Aviation or CCP Course such as: + ECO 2160–Principles of Macroeconomics + MAN 1107–Foundations of Business	+ College Credit Plus (CCP) courses apply to a broad range of postsecondary programs in aerospace/aviation. The credits apply to both high school and postsecondary requirements, saving students time and money.
English	Grade 8 English	English I English II + ENG 1101–English Composition	English III	English IV + COM 2211–Effective Public Speaking	
Math	Grade 8 Math or Algebra 1	Algebra I Geometry	Algebra II + MAT 1470–College Algebra	+ MAT 1470–College Algebra + MAT 1570–Analytic Geometry and Trigonometry	
History	Social Studies	World History	U.S. History	U.S. Government	
Science	Physical Science	Biology	Chemistry	Physics + PHY 1141–College Physics I	

College-level English courses can be taken at any grade level in a student's high school career.

College and Career Preparation

These additional activities support students in preparing for both college and career. Work-based learning enables students to apply their academic learning in a real-world setting. Advising supports students in making decisions that align best with their strengths and future goals. Competencies describe the technical skills students need for a successful career in aerospace and aviation.

	Grade 8	Grades 9 and 10	Grade 11	Grade 12
Work-Based Learning	Career Exploration: • Career Adventures Course–Aviation • Work-site tours • Power lunches • Pathways fairs	Career Planning: • Job shadow • HR interview • Virtual pathway mentor • Resume prep	Career Planning: • Internship • Career fair • Mock interview	Career Planning: • Internship • Career fair • Mock interview
Advising	• YouScience	• Individualized college and career plan (ICCP) • Confirmation of pathway • Identification of credentials and college options • Revisit ICCP	• Financial literacy course • College application prep work • Industry recognized credential examination	• Complete Free Application for Federal Student Aid (FAFSA) • Complete Ohio Means Jobs (OMJ) Readiness Seal • College and career signing day
Competencies (defined below)	Employability skills	• Project Management and Process • Troubleshooting • Technical Writing and Editing • Fundamentals of Physics and Industry Math • Fundamentals of Systems Engineering	• Cybersecurity • Risk Management and Compliance • Quality Assurance and Control • Financial and Resource Management • Fundamentals of Computer Programming and Software Development	Individualized Specialization

Aerospace/ Aviation Technical Competencies

Project and Process Management
Students can use their ability to interpret project needs, set deadlines, and sequence activities to effectively complete a project in a timely manner.

Troubleshooting
Students can use their ability to apply a systematic approach to identifying, isolating, designing/redesigning, and testing solutions in order to implement a solution or solve a problem.

Technical Writing and Editing
Students can use their understanding of clear, grammatically correct, and concisely written communications to convey accurate messages in professional work plans, emails, and informative documents, including technical and proposal writing.

Fundamentals of Physics, Math, and Chemistry
Students can use their understanding of the basic laws of physics, chemistry, and algebraic logic to apply concepts to projects and solve relevant problems.

Fundamentals of Engineering and Systems
Students can use their understanding of relationships across complex and diverse systems in order to manage and monitor programming to obtain system optimization.

Cybersecurity
Students can use their understanding of operating systems, networks, telecommunications, ethics, and cryptography in order to maintain secure systems.

Risk Management
Students can use their understanding of the standards, applications, and regulatory requirements necessary to protect confidentiality, integrity, and availability of information.

Quality Assurance and Control
Students can use their understanding of digital design, testing, writing, and maintaining source code in order to manage and edit software across its life cycle.

Financial and Resource Management
Students can use their understanding of the principles of managing, monitoring, and controlling resources, including assets, money, and products in order to achieve project expectations.

Fundamentals of Digital Design, Computer Programming, and Software Development
Students can use their understanding of designing, writing, testing, and maintaining source code to manage and edit software.

Postsecondary Options

These selected postsecondary credentials in aerospace and aviation, based on program options and transfer agreements at Sinclair Community College, lead to careers with wages that are over \$25/hour. Stackable credentials can help individuals progress in their career pathway or move up a career ladder to different or higher-paying jobs. In aerospace and aviation, there are a wide variety of subfields, including engineering, manufacturing, computer science, etc. The diversity of subfields is represented in the variety of postsecondary programs included. One common pathway to the aerospace and aviation industry not included below is through the military, but the pathways vary—some students enlist immediately after completing high school and some complete a relevant bachelor's degree before beginning their service.

	 Potential Initial Credential	 Stackable Credentials		 Typical Occupational Outcome
Maintenance	Short-Term Certificates: <ul style="list-style-type: none"> • General Aviation Maintenance • Powerplant Aviation Maintenance • Airframe Aviation Maintenance 	<ul style="list-style-type: none"> • Aviation Airframe and Powerplant Maintenance Technology Associate of Applied Science 	<ul style="list-style-type: none"> • Aviation Maintenance Bachelor of Science 	<ul style="list-style-type: none"> • Aviation Maintenance Technician • Aircraft Mechanic
Operations/Pilot	<ul style="list-style-type: none"> • Aircraft Dispatcher Short-Term Certificate 	<ul style="list-style-type: none"> • Aviation Technology/ Professional Pilot Associate of Applied Science 	<ul style="list-style-type: none"> • Aviation Technology/ Professional Pilot Bachelor of Applied Science 	<ul style="list-style-type: none"> • Airline Pilot • Professional Pilot
Unmanned Aerial Systems	<ul style="list-style-type: none"> • Unmanned Aerial Systems Short-Term Certificate 	<ul style="list-style-type: none"> • Unmanned Aerial Systems Associate of Science 	<ul style="list-style-type: none"> • Unmanned Aerial Systems Bachelor of Science 	<ul style="list-style-type: none"> • Systems Operator • Drone Pilot
Business Operations	<ul style="list-style-type: none"> • Business Information Certificate 	<ul style="list-style-type: none"> • Business Administration Associate of Science 	<ul style="list-style-type: none"> • Business Bachelor of Science 	<ul style="list-style-type: none"> • Buyers and Purchasing Agents
Guided Transfer-Engineering	<ul style="list-style-type: none"> • Engineering and Engineering Technology University Transfer Associate of Science 	<ul style="list-style-type: none"> • Engineering Science • Engineering Technology Bachelor of Science 	<ul style="list-style-type: none"> • Engineering Master of Science 	<ul style="list-style-type: none"> • Engineer

Selected Occupations, Wages, and Job Growth

The table below includes labor market information about selected aerospace and aviation careers, including median wages and typical education required. The living wage is derived from the MIT Living Wage Calculator and is intended to be sufficient wage to support one adult and one child living in the Dayton metropolitan statistical area. Note that while all of these jobs are expected to have openings in the next 5–10 years, we were not able to include data about specific predicted growth because so many of these jobs are in the military and that data is separate from civilian jobs.

Typical Job	Pays Living Wage (\$34.16)	Median Hourly Earnings	Typical Education Level	What % of workers are age 55+?
Logisticians	Yes	\$43.24	Bachelor's degree	21%
Aircraft Mechanics and Service Technicians	No	\$28.83	Postsecondary nondegree award	13%
Industrial Engineers	Yes	\$38.33	Bachelor's degree	31%
Flight Attendants	Yes	\$34.47	High school diploma	Insufficient data
Airline Pilots, Copilots, and Flight Engineers	Yes	\$97.84	Bachelor's degree	Insufficient data
Aerospace Engineers	Yes	\$53.80	Bachelor's degree	29%
Avionics Technicians	No	\$28.07	Associate's degree	Insufficient data
First-Line Supervisors of Mechanics, Installers, and Repairers	No	\$31.35	High school diploma	31%
Aerospace Engineering and Operations Technicians	No	\$30.18	Associate's degree	31%
Buyers and Purchasing Agents	Yes	\$38.67	Bachelor's Degree	32%
Software Developers	Yes	\$47.26	Bachelor's degree	17%

Montgomery County Business and Management Pathway

Regional pathway models support the alignment of stakeholders, including employers, higher education, K-12, and workforce, to ensure pathways prepare young people for careers with family-supporting wages and build a robust talent pipeline for employers. Pathway models demonstrate a vision from grade 8 to career that includes high school coursework, college and career preparation activities, potential postsecondary programs, and in-demand jobs in the regional labor market. This is a living document that will need to be updated regularly to reflect current education programs and workforce needs.

Academic Coursework

This general coursework is recommended for all students in the business and management pathway.

	Middle School/ Grade 8	Grades 9 and 10	Grade 11	Grade 12	
Career Focused Courses		Foundational Business Services or College Credit Plus (CCP) course such as: + BIS 1120: Intro to Software Application or + MAN 1107: Foundations of Business*	Strategic Business Services or CCP course such as: + LAW 1101: Business Law or + MAN 1107: Foundations of Business	Strategic Business Services or CCP course such as: + ACC 1210: Accounting or + ECO 2180: Principles of Microeconomics	+ CCP courses apply to a broad range of postsecondary programs in business. The credits apply to both high school and postsecondary requirements, saving students time and money.
English	Grade 8 English	English I English II + ENG 1101: English Composition	English III	English IV + COM 2211: Effective Public Speaking	
Math	Grade 8 Math or Algebra 1	Algebra I Geometry + MAT 1120: Business Math	Algebra II + MAT 1460: Math for Business Analysis	+ MAT 2160: Business Calculus or + MAT 2270: Calculus and Analytic Geometry	
History	Social Studies	World History	U.S. History	U.S. Government	
Science	Physical Science	Biology	Chemistry	Physics	

College-level English courses can be taken at any grade level in a student's high school career.

*Students taking Foundations of Business in grades 9 and 10 will be most successful if the course is paired with structured work-based learning opportunities.

College and Career Preparation

These additional activities support students in preparing for both college and career. Work-based learning enables students to apply their academic learning in a real-world setting. Advising supports students in making decisions that best align with their strengths and future goals. Competencies describe the technical skills students need for a successful career in business and management.

	Grade 8	Grades 9 and 10	Grade 11	Grade 12
Work-Based Learning	Career exploration: • Worksite tours • Power lunches • Pathways fairs	Career planning: • Job shadow • HR interview • Virtual pathway mentor • Resume prep	Career planning: • Internship • Career fair • Mock interview	Career planning: • Internship • Career fair • Mock interview
Advising	• YouScience (grade 8)	• Individualized college and career plan (ICCP) • Confirmation of pathway • Identification of credentials and college options • Revisit ICCP	• Financial literacy course • College application prep work • Industry-recognized credential examination	• Complete Free Application for Federal Student Aid (FAFSA) • Complete Ohio Means Jobs Readiness Seal • College and career signing day
Competencies (defined below)	• Employability skills	• Business operations • Customer care • Management principles • Principles of economics and business • Project management	• Data analysis • Entrepreneurship/business innovation • Finance • Marketing • Technical applications	• Individualized Specialization

Business and Management Technical Competencies

Business operations

Students can use their understanding of how to plan, organize, and monitor business processes and functions to assess performance and recommend operational improvements.

Customer care

Students can use their understanding of market demands and professional communication skills to effectively respond to the needs of customers.

Data analysis

Students can objectively identify, analyze, and evaluate data and information to create a solution to a business challenge.

Entrepreneurship/business innovation

Students can use their understanding of idea generation and business development to introduce entrepreneurial ideas for a business.

Finance

Students can use their understanding of financial systems and accounting principles and procedures to examine and assess a business's financial information.

Management principles

Students can use their understanding of interrelated functions of management and leadership abilities to make a strategic decision for a business.

Marketing

Students can use their understanding of marketing strategy, tactics, and decision-making to promote a product or service or create a marketing plan.

Principles of economics and business

Students can use their understanding of micro- and macroeconomics to understand how an economy functions and assess its impact on a business.

Project management

Students can interpret project needs, set deadlines, and plan individual and team workflow and communications to effectively complete projects in a timely manner.

Technical applications

Students can use their ability to rapidly learn and use new technological platforms to efficiently import, organize, and manipulate data for reporting and presentations.

Postsecondary Options

These selected postsecondary credentials in business and management, based on program options and transfer agreements at Sinclair Community College, lead to careers with wages that are more than \$24 per hour. In business services and management, there are a wide variety of subfields, including management, supply chain, and human resources. This diversity of subfields is represented in the variety of postsecondary programs included.

A bachelor's degree is the common point of entry for many business services and management positions. **While some occupations in the business field can be obtained with an associate's or applied associate's degree, bachelor's degrees are necessary to help an individual specialize and progress in a career pathway.**

Both Wright State University and the University of Dayton offer guided transfer programs, through the Sinclair College Wright Path program and the University of Dayton/Sinclair Academy, respectively. These partnerships allow a student to first obtain an associate's degree from Sinclair while receiving the academic and support benefits of being a student at their university. Upon completion, students transfer to the university to continue pursuing a bachelor's degree, making credit transfers seamless and degree attainment more affordable.

Cluster		 Potential Initial Credential	 Stackable Credentials ● Wright State ■ University of Dayton	 Typical Occupational Outcome	
Business Management	Management	Guided Transfer: Business Administration Associate of Science	<ul style="list-style-type: none"> ● Management Bachelor of Science in Business ■ Management Bachelor of Science in Business Administration 	<ul style="list-style-type: none"> ■ Master of Business Administration 	<ul style="list-style-type: none"> • Sales managers • Project management specialist • Management analyst
	Business Operations/Supply Chain		<ul style="list-style-type: none"> ● Supply Chain Management Bachelor of Science in Business ● Management Information Systems Bachelor of Science in Business ■ Operations and Supply Chain Management Bachelor of Science in Business Administration 	<ul style="list-style-type: none"> ● Logistics and Supply Chain Management Master of Science 	<ul style="list-style-type: none"> • Logistician • Operations research analyst • Business operations specialist
Business Administration	Marketing		<ul style="list-style-type: none"> ● Marketing Bachelor of Science in Business ■ Marketing Bachelor of Science in Business Administration 	<ul style="list-style-type: none"> ● Marketing Analytics and Insights Master of Science ■ Master of Business Administration 	<ul style="list-style-type: none"> • Market researcher
	Accounting		<ul style="list-style-type: none"> ● Accountancy Bachelor of Science in Business ■ Accounting Bachelor of Science in Business Administration 	<ul style="list-style-type: none"> ■ Master of Business Administration ■ Master of Professional Accountancy ■ Master of Finance 	<ul style="list-style-type: none"> • Accountant
	Human Resources		<ul style="list-style-type: none"> ● Human Resource Management Bachelor of Science in Business 	<ul style="list-style-type: none"> ■ Master of Business Administration 	<ul style="list-style-type: none"> • Compliance officers • Training and development specialists

Selected Occupations, Wages, and Job Growth

The table below includes labor market information about selected business and management careers, including median wages and typical education required. The living wage is derived from the MIT Living Wage calculator and is intended to be a sufficient wage to support one adult and one child living in the Dayton metropolitan statistical area. An entrepreneurship pathway is not captured within the data below due to the nature of the occupation. However, the skills required for these occupations can help prepare a student for entrepreneurial endeavors.

Typical job	Pays living wage (\$34.71)	Median hourly earnings	Number of positions (2023)	Expected growth (2023–2028)		Typical education level	% of workers age 55+
				Positions	Percent		
Accountants and auditors	Yes	\$35.00	2,674	16	1%	Bachelor's degree	28%
Business operations specialists, all other	Yes	\$43.25	4,234	68	2%	Bachelor's degree	28%
Compliance officers	No	\$31.02	618	40	7%	Bachelor's degree	29%
Logisticians*	Yes	\$44.60	1,413	78	6%	Bachelor's degree	22%
Management analysts	Yes	\$43.31	2,128	94	4%	Bachelor's degree	30%
Market research analysts and marketing specialists	No	\$28.19	1,667	49	3%	Bachelor's degree	17%
Operations research analysts	Yes	\$47.17	409	21	5%	Bachelor's degree	28%
Project management specialists	Yes	\$42.63	1,977	33	2%	Bachelor's degree	27%
Sales managers	Yes	\$58.85	917	32	3%	Bachelor's degree	23%
Training and development specialists	No	\$24.82	831	16	2%	Bachelor's degree	26%

*Those in logistician roles are also called production planners, supply chain analysts, and supply specialists.

This document was developed by Jobs for the Future (JFF), Learn to Earn Dayton, and the Montgomery County Educational Service Center. Special thanks to Sinclair Community College, Wright State University, the University of Dayton, and local business and management leaders for your feedback and contributions.

Montgomery County Business Advisory Council Participants

Thank you to the members of the Business Advisory Council. The group includes representatives from 23+ school districts, 7 in-demand industries, higher education, local government, military, local economic development organizations and other community partners.

To join the Council or to learn more about how your school or business can participate, contact Bryan Stewart, Workforce Director at Bryan.Stewart@MCESC.org.

Associated Builders and Contractors, Ohio Valley	Miamisburg City Schools
Better Business Bureau	Miami Valley Apprenticeship Coordinators Group
Brookville Local Schools	Miami Valley Career Technology Center
CareSource	Miami Valley HR Association
Carlisle Local Schools	Miami Valley Urban League
Centerville City Schools	Midwest Microelectronics Consortium
Construction Builders Association	Montgomery County
CRG, Inc.	Montgomery County Educational Service Center
Dayton Area Chamber of Commerce	New Lebanon Local Schools
Dayton Area Logistics Association	Northmont City Schools
Dayton Business Committee	Northridge Local Schools
Dayton Children's Hospital	NuVasive
Dayton Development Coalition	Oakwood City Schools
Dayton Metro Library	Ohio Regular Army and Army Reserve
Dayton Region Manufacturers Association	PSA Airlines
Dayton Public Schools	Quality Quartz Engineering
Digital Transformation Center	Shook Construction
DO STEM	Sinclair College
Expedient Technology Solutions	Southwestern Ohio Council for Higher Education
Franklin City Schools	Springboro Community City School District
GE Aerospace	Technology First
Greater Dayton Area Hospital Association	The Entrepreneurs' Center
Hobart Institution of Welding Technology	Trotwood-Madison City Schools
Huber Heights City Schools	U.S. Army
Jefferson Township Local Schools	Valley View Local Schools
Junior Achievement of OKI Partners	Vandalia-Butler City Schools
Kettering City Schools	Warren County Career Center
Kettering Health Network	Warren County Educational Service Center
Kings Local Schools	Wayne Local Schools
Learn to Earn Dayton	West Carrollton City Schools
Lebanon City Schools	Wright-Patt Credit Union, Inc.
Little Miami Local School District	Wright-Patterson Air Force Base
Mad River Local Schools	Yaskawa Motoman
Mercy Health	YMCA of Greater Dayton