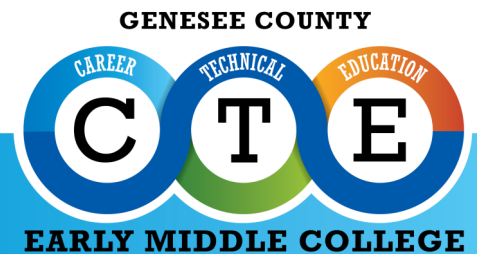
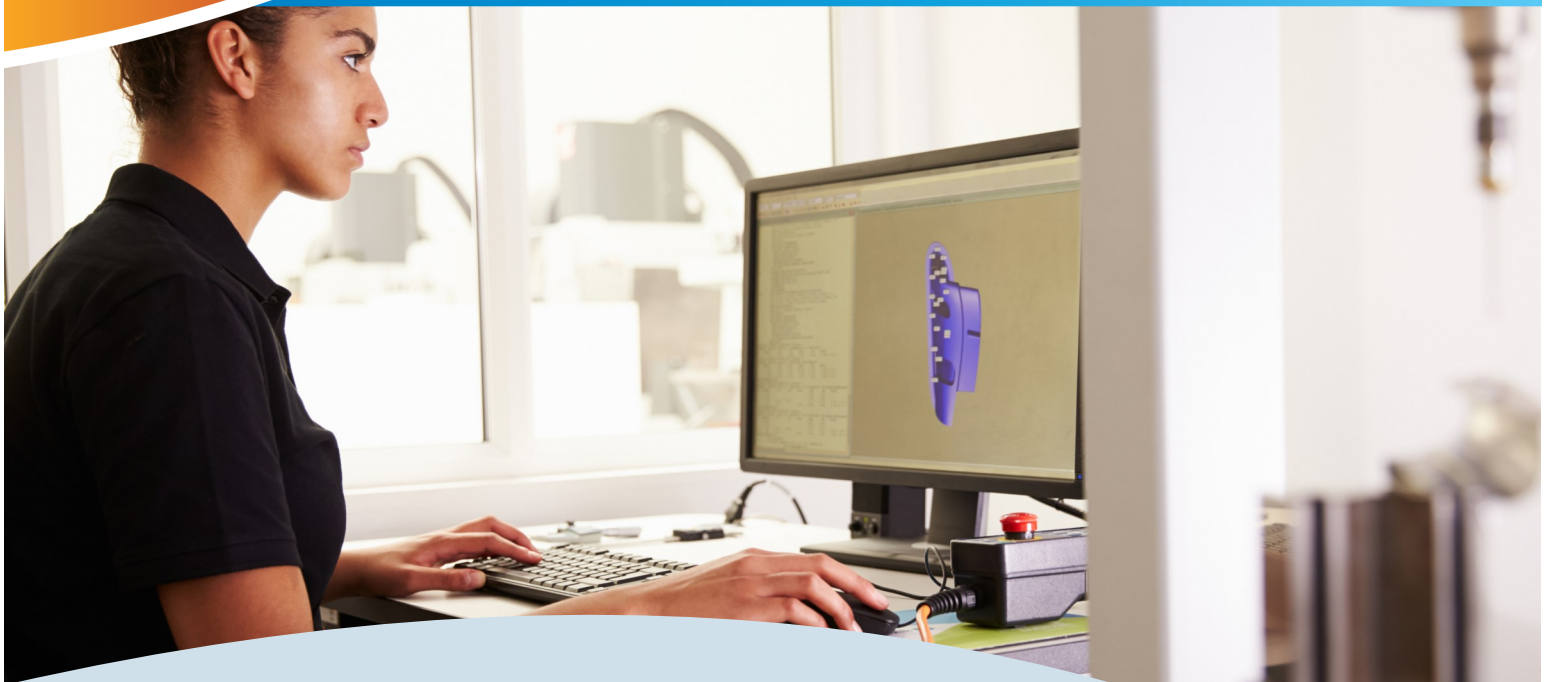


**Genesee County  
Career Technical Education  
Early Middle College**



# Computer Aided Drafting & Design



**The Computer Aided Drafting & Design program at Mott Community College prepares students for both the Associate of Applied Science Degree and Certificate of Achievement.**

**The CAD & Design** program prepares students for entry level design and engineering technology positions where the CAD system is used to drive the concurrent design and manufacturing environment. The complete product lifecycle is addressed from concept to the end of the product's useful life. Students use devices such as rapid prototyping to develop digital design solutions. Emphasis is placed on both product and process (tool) design in the second year. Related electives explore the translation of the CAD model into the basis for manufacturing related design activities, known as CAM (computer aided manufacturing). Graduates often find employment engaged in design related activities, in areas such as aerospace, defense, automotive, and medical technology.



**The jobs of today require highly skilled technicians.  
Gain the knowledge and hands-on experience that will  
make you employable in these rewarding careers.**



# Computer Aided Drafting & Design

## A Genesee County Career and Technical Education Early Middle College Partnership

### ESSENTIAL ELEMENTS

In addition to the five year plan of study, these POS Essential Elements are integral to the student's educational development.

**Career and Technical Student Organization (CTSO)**

**Community Service**

**Educational Development Plan (EDP)**

**Work-Based Learning (WBL)**

### What is an Early Middle College?

The Genesee County Career and Technical Education Early Middle College (GC CTE EMC) is a unique opportunity for students to explore and earn an associate's degree, credential or transferable credit in a CTE Career Pathway while in high school.

Students will begin blending their high school coursework with college level coursework in 11th grade, adding additional college courses in 12th grade and complete a full schedule of college coursework in a 13th year.

### What is the MEMCA Certificate?

The Michigan Early Middle College Association (MEMCA) Certificate recognizes early middle college students who successfully complete a minimum of 15 college credit hours. The student must also complete 100 hours of verified community service, a minimum of 40 hours of internship, job shadowing, or clinical experience, or 70 hours of combined community service and verified career exploration.

**SEQUENCE OF COURSES** The grades 9-13 sequence of courses includes the Michigan Merit Curriculum requirements and the required college course work for the listed credentials. See Sequence of Course legend below.

<sup>1</sup>Students must place into these courses through a placement test. If a student does not place into these classes, the sequence of courses will be modified for the student's individual plan of study.

\*Michigan Merit Curriculum: These requirements can be met by successfully completing the first course in the same box. This option will vary by district; please discuss with your local counselor.

\*\*Students will enroll in this college course.

\*\*\*Students receive free college credit for this course by successfully completing the first course listed in the box.

9TH GRADE SEQUENCE OF COURSES		10TH GRADE SEQUENCE OF COURSES	
1st Semester	2nd Semester	1st Semester	2nd Semester
English 9	English 9	English 10	English 10
Math	Math	Math	Math
Science	Science	Science	Science
Social Studies	Social Studies	Social Studies	Social Studies
Foreign Language	Foreign Language	Physical Education	Health
Band/Choir/Fine Arts/VPAA	Band/Choir/Fine Arts/VPAA	Band/Choir/Fine Arts	Band/Choir/Fine Arts

## 11TH GRADE SEQUENCE OF COURSES

1st Semester	2nd Semester
CTE Mechanical Drafting CADD 100 Mechanical Blueprint Reading w/CADD *** 2 <sup>nd</sup> Year Foreign Language, 3 <sup>rd</sup> Year Science & VPAA*	CTE Mechanical Drafting CADD 120 2D CADD Applications *** 2 <sup>nd</sup> Year Foreign Language, 3 <sup>rd</sup> Year Science & VPAA*
Algebra II	Algebra II
ENGL 101 English Composition I ** English 11 <sup>1</sup>	COMM 140 Principles of Interpersonal Communication **
Government	TECH 120 Intro to Fab Lab or ELEC 170 Modern Industrial Robotics I or MECH 144 Machining **
Band/Choir/Fine Arts or Elective	Band/Choir/Fine Arts or Elective

## 12TH GRADE SEQUENCE OF COURSES

1st Semester	2nd Semester
CTE Mechanical Drafting Advanced Studies 2 <sup>nd</sup> Year Foreign Language, 3 <sup>rd</sup> Year Science & VPAA*	CTE Mechanical Drafting Advanced Studies CADD G4E *** 2 <sup>nd</sup> Year Foreign Language, 3 <sup>rd</sup> Year Science & VPAA*
ENGL 102 English Composition II ** English 12 <sup>1</sup>	CADD 140 Mechanical Detailing Applications **
CADD 110 Architectural Blueprint Reading w/CADD **	CADD 160 Fundamentals of Design**
CADD 130 Parametric Modeling Fundamentals **	ELEC 171 Modern Industrial Robotics II or MECH 150 Material Systems & Evaluation **
Band/Choir/Fine Arts or Elective	Band/Choir/Fine Arts or Elective

## 13TH GRADE SEQUENCE OF COURSES

1st Semester	2nd Semester
CADD 201 Unigraphics Basic Modeling & Drafting I **	CADD 150 Intro to Analysis CAM & Sim Tools **
CADD 203 Advanced Dimensioning & Geometric Dimensioning and Tolerancing **	MATH 128 Technical Mathematics ** Final Year Math/4 <sup>th</sup> Math Related *
CADD 204 CADD Product Design Applications **	CADD 206 CADD Product Data Management Processes **
ECON 221 Principles of Economics (Macro) ** Economics <sup>1</sup>	CADD 205 CADD Tool & Design Applications **

This Program of Study is a guide; an individual sequence of courses will be developed for each student and is subject to change by student readiness, course availability and local school district policy.



### HOW TO ENROLL

See your high school counselor to obtain an enrollment application for the Genesee County Career Technical Education Early Middle College. The application, along with additional information about the program, is also available at [www.gccteemc.org](http://www.gccteemc.org).

## DEGREE/ CERTIFICATION

Associate Degree in CAD & Design  
A.A.S.

Architectural Certificate

Mechanical Certificate

CADD/CAM Certificate

## WAGES AND EMPLOYMENT TRENDS

**Median National Wages 2020**  
\$28.01 hourly, \$58,270 annual

**Median State Wages 2020**  
\$26.37 hourly, \$54,840 annual

**National Employment 2020**  
53,600 employees

**Projected National Growth 2020-2030** -1% or lower

**Projected National Openings 2020-2030** 4,700 employees

Source: Bureau of Labor Statistics.

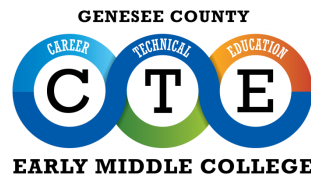
## PARTICIPATING DISTRICTS

Atherton • Beecher • Bendle • Bentley • Carman-Ainsworth • Clio • Davison  
Fenton • Flushing • Genesee • GISD • Goodrich • Grand Blanc • Kearsley  
Lake Fenton • Lakeville • Linden • Madison Academy • Montrose • Mt. Morris  
Swartz Creek • Westwood Heights

The Genesee County Career Technical Education Early Middle College is available to Genesee County high school students through a partnership of Genesee County public school districts and the Genesee Intermediate School District (GISD).



Students accepted into the Genesee County Career Technical Education Early Middle College program will remain students of their high school and may attend courses at Baker College, Genesee Career Institute, and Mott Community College to complete requirements in their Program of Study.



**For more information contact:  
Genesee County Career Technical Education  
Early Middle College Coordinator**

**Phone: (810) 591-3288**

**Email: [gc-cte-emc@geneseeisd.org](mailto:gc-cte-emc@geneseeisd.org)**

**Website: [www.gccteemc.org](http://www.gccteemc.org)**