

COMPUTER AIDED DESIGN (CAD)

Macomb Community College's Michigan Technical Education Center (M-TEC) is the college's headquarters for its engineering and advanced technology workforce and continuing education team. The M-TEC is a 40,600-square-foot facility providing education and training in advanced integrated manufacturing, automated systems and robotics. We work across multiple industry sectors and in collaboration with employers to develop and deliver customized solutions addressing the technical talent pipeline at every level of an organization or industry sector.

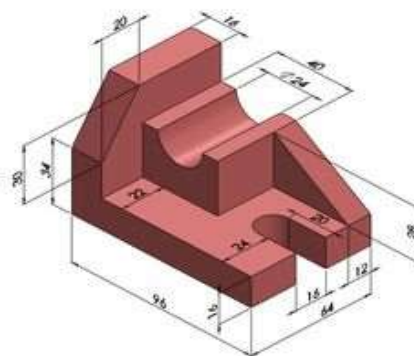
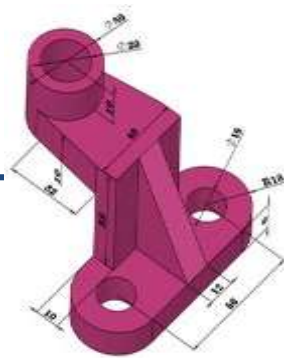
Computer Aided Design (CAD) renders 2D and 3D drawings and is the industry standard in the drafting and modeling of engineering and architectural designs. Used in conjunction with other technology, including Computer Aided Engineering, Computer Aided Manufacturing (CAM) and Computer Numerical Control (CNC), CAD allows for lower product development costs and shorter design cycles and is the starting point for most every consumer good we use today.

Macomb's Workforce Development Computer Aided Design (CAD) courses are for those already employed in the field who need a refresher on the latest software or those new to CAD who are preparing for their first job. We focus on offering professional, high-quality training and partner with Dassault Systemes to provide software solutions for CATIA. Our training programs are designed to increase on-the-job productivity by identifying and addressing skill gaps and blend a variety of learning styles to create the most thorough learning environment available. These classes are taught by dedicated instructors who are subject matter experts with real-world experience. The M-TEC Center now offers a selection of SolidWorks and Unigraphics NX programs as well.

Macomb's Workforce Development Department is dedicated to supporting companies and improving our region's workforce with custom-designed training, education, and certification programs. Our experienced staff works with your HR professionals, subject matter experts, and organizational leaders to provide you with the proficiencies needed for today's fast-paced, global business environment. Courses can be conducted at our facility or yours. Receive a cost effective, customized training program that focuses on the strategic objectives of your business.

"The design of each element should be thought out in order to be easy to make and easy to repair."

Leo Fender, inventor behind the Fender Telecaster and Fender Stratocaster Guitars



Schedule is subject to change without notice.

Classes are held Mon-Fri 8am-4:30pm unless otherwise noted

****Class runs Mon-Thurs 5:30pm-9:30pm**

Additional classes will be scheduled as needed.

CAD COURSE DESCRIPTIONS

NEW Course Offerings

SOLIDWORKS

SolidWorks Essentials – CCAD 8135 - 28 hours

Prerequisites: Experience with the Windows™ operating system.

This course is designed to teach you how to use the SolidWorks mechanical design automation software to build parametric models of parts and assemblies and how to make simple drawings of those parts and assemblies. Topics include SolidWorks Basics and the User interface, Introduction to Sketching, Basic Part Modeling, Modeling a Casting or Forging, Patterning, Revolved Features, Shelling and Ribs, Editing: Design Changes, Configurations of Parts, Design Tables and Equations, Using Drawings, Bottom-Up Assembly, and Using Assemblies.

SolidWorks Advanced Part Modeling – CCAD 8134 - 21 hours

Prerequisites: Completed CCAD 8135 SolidWorks Essentials

This course is designed to teach you how to create engineering drawings of parts and assemblies using SolidWorks mechanical design automation software. Topics include Multibody Design Techniques, Saving Solid Bodies, Sketching with Splines, Introduction to Sweeps, 3D Sketching and Curve Features, Threads and Library Feature Parts, Advanced Lofts and Boundary Features, and Advanced Filleting and other Features.

SolidWorks Assembly Modeling – CCAD 8133 - 21 hours

Prerequisites: Completed CCAD 8135 SolidWorks Essentials

This course is designed to teach you how to utilize the assembly modeling capabilities of SolidWorks mechanical design automation software. Topics: Top-Down Assembly Modeling, Advanced Mate Techniques, Using Configurations with Assemblies, Display States and Appearances, Assembly Editing, Layout-based Assembly Design, Large Assemblies, and the Motion Manager.

SolidWorks Simulation – CCAD 8132 - 21 hours

Prerequisites: Completed CCAD 8135 SolidWorks Essentials

This course is designed to teach you how to use the SolidWorks Simulation software to help you analyze static structural behavior of your SolidWorks part and assembly models. Topics: The Analysis Process, Mesh Controls, Stress Concentrations, and Boundary Conditions, Assembly Analysis with Contacts, Symmetrical and Free Self-Equilibrating Assemblies, Assembly Analysis with Connectors, Compatible /Incompatible Meshes, Assembly Analysis Mesh Refinement, Analysis of Thin Components, Mixed Meshing Shells and Solids, Mixed Meshing Solids, Beams, and Shells, Design Scenarios, Thermal Stress Analysis, Adaptive Meshing, and Large Displacement Analysis.

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Essentials for NX CAD Designers – CCAD 8130 - 105 hours

Prerequisite: None

This three-week course will help you develop solid models, detail drawings, and produce assemblies; to create and manipulate profile based solid features, form features, simple sheet bodies, and product structures using Assembly tools.

This course includes learning Sketching, Solids, Editing Solids, Modeling Tools I and II, Surfacing I and II, Assembly Models I and II, Drafting, and Lab Work.

NX CAD Instruction Track – CCAD 8131 - 70 hours

Prerequisite: None

This method-based course focuses on productive modeling techniques that capture design intent in the content of the Master Model. The first week will take the student through NX CAD updates and tips & tricks between versions 8.5-9.0; following up with NX CAD Essentials for the beginner. This design track will incorporate solid models, detail drawings, and produce assemblies; form features, simple sheet bodies and product structures will also be taught using assembly tools. The last week will focus on advanced topics including freeform modeling, advanced curves and Product Manufacturing Information.

This includes Gateway, Sketch, Modeling, Assemblies, Drafting, Advanced Curves, Freeform Modeling, Expressions, Advanced Assemblies, and Product Manufacturing Information.

CATIA V5

CATIA V5 Fundamentals – CCAD 8109 - 40 hours

Prerequisite: None

This course covers the basics of CATIAv5. Students will be able to build simple parts and assemblies in CATIA. They will understand and use the CATIAv5 interface and be able to make simple drawings of those parts and assemblies. This course includes 40 hours of open lab with instructor.

CATIA V5 Mechanical Design Fundamentals – CCAD 8119 - 40 hours

Prerequisite: None

This course teaches how to start a complex design project from its specifications (top down approach) and complete it by reusing existing data. It focuses on advanced skills and concepts that enable you to create and analyze complex parts and assemblies. This course includes 40 hours of open lab with instructor.

CATIA V5 Mechanical Design Expert – CCAD 8114 - 40 hours

Prerequisite: Experience with CATIA V5

This course teaches students how to create a polygon in the Sketcher workbench and how to create pattern instances at points and axis systems in the Part Design workbench. You will also see how to manage dimension systems in the Drafting workbench. This course will teach you to use the fundamental concepts in CATIA V5 to build simple automotive parts and assemblies, and make simple drawings of those parts and assemblies. You will also learn how to use the advanced solid modeling techniques necessary for Powertrain design methodology.

Other CATIA V5 Programs can be offered on request:

CATIA V5 Part Design, Sketcher, Surfaces, Surface Design Expert, and Detail Drafting.

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CATIA DASSAULT CERTIFICATION EXAMS



Certification is a key success factor for students to obtain better paid job opportunities and increased recognition. By getting certified, you demonstrate your expertise and prove your capability to differentiate yourself from the others in today's increasingly competitive job market. Certified Training and Testing Center with access to all courses offered by Dassault Systemes.

CCAD 8123 - CATIA V5 Associate – Part Design Certification Exam

CCAD 8128 - CATIA V5 Associate – Assembly Design Certification Exam

CCAD 8125 - CATIA V5 Surface Design Certification Exam

*Professional Benefits: Based on a survey we conducted with 7,000 3DS Certified Engineers (10% response)

- 10% said they received a **salary increase**
- 41% said they found a **better job** (73% for students)
- 47% said they received **recognition** in their company

Contact workforcedev@macomb.edu or call 586-498-4100 for additional information.

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Discover. Connect. Advance.SM
Student Name: _____

COMPUTER AIDED DESIGN COURSE REGISTRATION FORM

PLEASE COMPLETE FORM (**One form per student**) AND FAX to 586.498.4101.
For more information, call Macomb's Workforce & Continuing Education Department at 586.498.4100.

<input type="checkbox"/>	SolidWorks Essentials	28hrs.	CCAD 8135	June 3-6, 2019 Sept 9-12, 2019 Nov 4-7, 2019	\$ 1,600	
<input type="checkbox"/>	SolidWorks Advanced Part Modeling	21hrs.	CCAD8134	June 10-12, 2019 Sept 16-18, 2019 Nov 11-13, 2019	\$ 1,200	
<input type="checkbox"/>	SolidWorks Assembly Modeling	21hrs.	CCAD 8133	June 17-19, 2019 Sept 23-25, 2019 Nov 18-20, 2019	\$ 1,200	
<input type="checkbox"/>	SolidWorks Simulation	21hrs.	CCAD 8132	June 24-26, 2019 Sept 30-Oct 2, 2019 Dec 2-4, 2019	\$ 1,200	
<input type="checkbox"/>	Essentials for NX CAD Designers	105hrs.	CCAD 8130	July 8-26, 2019 Oct 7-25, 2019	\$ 7,485	
<input type="checkbox"/>	NX CAD Instruction Track	70hrs.	CCAD 8131	Aug 5-16, 2019 Nov 11-22, 2019	\$ 4,990	
<input type="checkbox"/>	CATIA V5 Fundamentals	40hrs.	CCAD 8109	July 15-19, 2019 Oct 7-11, 2019	\$ 1,825	
<input type="checkbox"/>	CATIA V5 Mechanical Design Fundamentals	40hrs.	CCAD 8119	Aug 12-16, 2019 Nov 4-8, 2019	\$ 1,825	
<input type="checkbox"/>	CATIA V5 Mechanical Design Expert	40hrs.	CCAD 8114	Aug 19-23, 2019 Nov 11-15, 2019	\$ 1,825	
<input type="checkbox"/>	Part Design Certification Exam	2hrs.	CCAD 8123	Upon Request	\$ 100	
<input type="checkbox"/>	Assembly Design Certification Exam	2hrs.	CCAD 8128	Upon Request	\$ 100	
<input type="checkbox"/>	Surface Design Certification Exam	2hrs.	CCAD 8125	Upon Request	\$ 100	

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PERSONAL IDENTIFICATION INFORMATION

Please print clearly: Must provide full name, and either an identification number or your date of birth. Please list only current and true information for official records, certificates of completion or certification and transcripts. This information will be maintained confidentially within FERPA guidelines.

NAME: Last First Middle (optional) Maiden

You must provide one of the three items of identification listed below.

()
LAST FOUR ONLY-SOCIAL SECURITY NUMBER (U.S.) BIRTHDATE (MM/DD/YYYY) MCC ID NUMBER (IF PREVIOUSLY ENROLLED AT MCC)

COUNTRY OF CITIZENSHIP: U.S. OTHER COUNTRY: _____

+

HOME MAILING ADDRESS

HOME CITY STATE OR PROVIDENCE POSTAL ZIP CODE

HOME TELEPHONE WORK PHONE

EMAIL ADDRESS EMPLOYER—

NAME OF COMPANY

EMPLOYER ADDRESS

CITY STATE OR PROVIDENCE POSTAL ZIP CODE

The information as listed on this form is true to the best of my knowledge. I authorize the release of my college records to my employer if necessary.
Refund Policy: • 100% refund if course is cancelled by the College.
• 100% refund if student drops prior to the course start date.
• 0% refund if student drops on or after course start date.

SIGNATURE DATE

Please provide the appropriate credit card information below: Student Name: _____

Course: _____ Course: _____ Course: _____ Course: _____

CREDIT CARD INFORMATION

Please charge the following credit card		<input type="checkbox"/> Visa	<input type="checkbox"/> Master Card	<input type="checkbox"/> Discover
Authorized Card Holder Name				
Credit Card#				
Exp. Date				
TOTAL				

**If email receipt requested—please send to: _____

Note: If paying by purchase order or prefer to be invoiced, please email: workforcedev@macomb.edu