

### ABOUT THE PROGRAM

Students work on acquiring high-level drafting skills and utilize computer-aided drafting (CAD) software. They learn to construct and revise engineering working drawings to ASME (American Society of Mechanical Engineers) standards.

### PROGRAM OUTCOMES

- Prepare detail and assembly drawings for documentation of mechanical parts and machines using CAD (Computer-Aided Design) software using ASME Y14.5M Standard.
- Create CAD geometry, parts and assemblies.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

Lakeshore credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSIONS AND FIRST SEMESTER ENROLLMENT STEPS

- Submit online application.
- Complete the online Student Success Questionnaire.
- Complete Student Success Tutorial prior to meeting with your program counselor.
- Schedule your 1st Time Program Counseling/Registration Session with your assigned program counselor to plan your first semester schedule, review your entire plan of study and discuss the results of the Student Success Questionnaire.

*\*Submit transcripts and test scores (optional, highly recommended): College transcripts, along with high school transcripts and test scores from within the last five years, used for course registration. Official transcripts needed for transferring college credit(s) and for financial aid purposes.*

### APPROXIMATE COSTS

\$149.50 per credit tuition (WI resident) plus \$8.97 per credit student activity fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### SPECIAL NOTE

Learn when you want. Progress at your own pace. Receive personalized coaching and support. The full CBE definition may be found at [gotoltc.edu/cbe](http://gotoltc.edu/cbe).

### CONTACT

Lakeshore Admissions Advisor  
 920.693.1366 • [Admissions@gotoltc.edu](mailto:Admissions@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10606100	2D Design Standards*	1
10606201	2D Design-AutoCAD*	2
10606208	3D Design-SolidWorks 1*	2
10606202	Product Design & Rapid Prototyping*	2
10606204	Manufacturing Processes and Materials*	2
<b>9</b>		
<b>Term 2</b>		
10606206	Tolerancing and GD&T*	3
10606209	3D Design-SolidWorks 2-Part Drawings*	2
10606210	3D Design-SolidWorks 3-Assembly & Drawings*	2
10606211	3D Design-SolidWorks 4-Advanced*	2
<b>9</b>		

**TOTAL 18**

\*Denotes CBE classes

*Curriculum and program acceptance requirements are subject to change. Program start dates vary; check with your program counselor for details. The tuition and fees are approximate based on 2024-2025 rates and are subject to change prior to the start of the academic year.*

**2D DESIGN STANDARDS**...develops skills for creating engineering designs through the application of standards and procedures. Principles covered include view selection, orthographic projection, section and auxiliary views, and their utilization in working drawings. These skills will be reinforced using AutoCAD as the main software platform. PREREQUISITE: 10606101 AutoCAD 2D Computer Aided Design or COREQUISITE: 10606201 2D Design-AutoCAD

**2D DESIGN-AUTOCAD**...provides the learner with the best practice skills to utilize AutoCAD drawing editor, viewing commands; apply coordinate entry methods, AutoCAD file commands; utilize draw commands, modify commands; create and edit text, prints & plots; apply geometric construction to solve a drawing problem; utilize selection sets, duplicating modify commands, layers & objects properties, blocks; apply principles of orthographic and multi view projection.

**3D DESIGN-SOLIDWORKS 1**...introduces the students to the concepts and commands of parametric solid modeling. Students create sketches and add relationships to the sketch segments, extrude the sketches to create models, and add features such as fillets, cut extrude, chamfers, holes, draft, shell, lofts and sweeps. Emphasis is placed on the design intent of the parametric solid models and best practices to ensure robust engineering designs. PREREQUISITE: 10606101 AutoCAD 2D Computer Aided Design or COREQUISITE: 10606201 2D Design-AutoCAD

**3D DESIGN-SOLIDWORKS 2-PART DRAWINGS**...introduces students to the process of creating 2D documentation from the 3D models and adding details to those drawings. This includes projection views, section views, auxiliary views, and annotation applications. PREREQUISITE: 10606108 SolidWorks1-Parametric Modeling or COREQUISITE: 10606208 3D Design-SolidWorks 1

**3D DESIGN-SOLIDWORKS 3-ASSEMBLY & DRAWINGS**...continues the path of 2D documentation in SolidWorks with an emphasis on assemblies and drawings. The students will learn assembly creation (top-down vs bottom-up), adding fasteners, drawing creation, BOM creation, cut lists and other best practices. PREREQUISITE: 10606109 SolidWorks 2-Modeling/Details for Designers or COREQUISITE: 10606209 3D Design-SolidWorks 2-Part Drawings

**3D DESIGN-SOLIDWORKS 4-ADVANCED**...introduces students to advanced modeling and design techniques for part design in sheet metal, weldments, castings, and mold design. PREREQUISITE: 10606110 SolidWorks 3-Working Drawings for Designers or COREQUISITE: 10606210 3D Design-SolidWorks 3-Assembly & Drawings

**MANUFACTURING PROCESSES AND MATERIALS**...introduces the learner to various manufacturing processes (casting/molding, injection molding, sheet metal forming/die cutting); machining processes (milling, turning, and drilling); assembly processes (welding, fasteners); and advanced manufacturing technology (3D printing, laser sintering, laser cutting). The learner will also learn how to properly use and read dial and digital micrometers; dial, digital and vernier calipers.

**PRODUCT DESIGN AND RAPID PROTOTYPING**...introduces students to product design and rapid prototyping methods. Students will discover the product design process, then utilizing the various equipment available in the MDET program's Fab Lab, produce an actual product they designed. PREREQUISITE: 10606108 SolidWorks 1-Parametric Modeling or COREQUISITE: 10606208 3D Design-SolidWorks 1

**TOLERANCING AND GD&T**...provides the learner with the skills to apply and interpret tolerancing standards for both rectangular and geometric tolerancing (ASME 14.5M-2018) on part drawings, including form, profile, orientation, runout, and positional tolerances. Additionally, the learning will design mating parts and tolerance stack ups with and without GD&T.