



## Engineering CAD Technology Diploma - 60 credits

Program Area: Integrated Manufacturing CAD (Fall 2019)

**\*\*\*REMEMBER TO REGISTER EARLY\*\*\***

### Program Description

The Integrated Manufacturing - Engineering CAD Technology program provides students with an engineering technology which incorporates computer graphics and technical illustrations. The program prepares students for advanced computer applications emerging in the fields of engineering, graphics, and design. Students will learn to use engineering technology in determining exact specifications for new product design, modification, or redesign of present products. This course begins with instruction in basic drafting skills and advances to more complex technological areas. Major emphasis will be on the application and use of computer aided design.

*This 60-credit Diploma seamlessly transfers to the Engineering CAD Technology AAS (67 credits).*

### Program Outcomes

- Illustrate orthographic viewing and dimensioning techniques
- Demonstrate section and auxiliary detailing
- Display dimensioning and tolerance techniques
- Outline an understanding of manufacturing principles and practices
- Create mechanical component details
- Illustrate sheet metal development drawings
- Demonstrate basic through advanced principles of CAD applications
- Create and engineer electrical/electronic drawings
- Create and engineer industrial piping layouts
- Create and engineer fluid power drawings
- Present technical illustrations using 3-dimensional design
- Provide a cumulative final design project
- Create engineering drawings using advanced CAD applications

### Required Courses

Number	Name	Credits	Term
CADE 1468	SolidWorks I	3	
FYE 1000	First Year Experience	1	
INMG 1400	Introduction to Manufacturing Technology	4	
INMG 1410	Mechanical Blueprint Reading	3	
INMG 1420	Design Application Concepts I	3	
WLDG 1560	Gas Metal Arc Welding I	3	
CADE 1407	AutoCAD	3	
CADE 1450*	Mechanical Details	3	
CADE 1470	SolidWorks II	3	
CADE 1480*	Industrial/Mechanical CAD Applications I	3	
INMG 1412*	Advanced Mechanical Blueprint Reading	3	
CADE 1482*	Industrial/Mechanical CAD Applications II	3	
CADE 1490*	Revit Industrial/Structural (BIM) Applications	3	
CADE 2452	PTC Creo Fundamentals	3	
CADE 2472*	AutoCAD Design Project	3	
CADE 2492	Revit Industrial/Mechanical (BIM) Applications	3	
COMM 1601	Interviewing Procedure and Practice	1	
Choose 12 credits from the following:			
INMG 1422*	Design Application Concepts II	12	
CADE 1474*	Reverse Engineering		
CADE 2407	Engineering Technology Internship (variable credits)		
CADE 2420*	Electrical/Electronic Drawings		
CADE 2430*	Industrial Piping Layout		

**Total Credits 60**

\*Requires a prerequisite or a concurrent course



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### Pre-program Requirements

Successful entry into this program requires a specific level of skill in the areas of English, mathematics, and reading. Program entry will depend, in part, on meeting the prerequisites listed below:

#### English/Reading:

- A score of 78 or higher on the reading comprehension portion of the Accuplacer, or
- Completion of ENGL/READ 0950 or 0955 (or equivalent course or higher). ENGL/READ 0955 may be taken concurrently with Semester I coursework.

#### Mathematics:

- A score of 33 or higher on the Elementary Algebra Skills portion of the Accuplacer, or
- Completion of MATH 0520 (or equivalent course or higher). MATH 0520 may be taken concurrently with Semester I coursework.

For interpretation of test results and selection of appropriate coursework;  
or general information about the program, admissions, financial aid, and getting started at LSC,  
contact the [professional advising team](mailto:pat@lsc.edu) (pat@lsc.edu) at 218-733-7601

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For more information about the Integrated Manufacturing – Engineering CAD Technology Diploma including course descriptions, course prerequisites, and potential career opportunities, see the [program website](https://degrees.lsc.edu/engineering/) (https://degrees.lsc.edu/engineering/)

or

Contact Faculty Advisors, [Rich Kresky](mailto:richard.kresky@lsc.edu) (richard.kresky@lsc.edu) at 218-733-7630 or [Rick Steel](mailto:richard.steel@lsc.edu) (richard.steel@lsc.edu) at 218-733-6931



MINNESOTA STATE

CIP Code: 15.1302  
Minnesota State Program ID: 4710  
LSC Major ID: 5308

Created: 6/10/06  
AASC Approval: 12/12/2018  
Updated: 2/1/19

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