



## Rapid Prototyping and Design Certificate - 14 credits

Program Area: Integrated Manufacturing Machine Tool (Fall 2024)

### Program Description

Rapid Prototyping and Reverse Engineering is an emerging field that uses high tech tools, software, equipment, and processes to build a 3D working model of an idea or much needed part in a short period of time. This offers many versatile advantages compared to traditional methods of manufacturing. This certificate will complement skills learned and developed in the Integrated Manufacturing programs (Machine Tool, Engineering CAD, and Welding Diploma). Students will have the skills necessary to take a concept through the design, manufacture, and testing phases of the product upon completion of this certificate.

### Program Outcomes

- Analyze product specifications
- Inspect, measure, and test existing mechanical component
- Produce computer-aided drawing and assembly as needed
- Create prototype of product
- Set up and operate various prototyping equipment
- Make simple changes in models to achieve a working product
- Select proper processes used for the prototype
- Test product and make any revisions
- Present working finished product

### Required Courses

Number	Name	Credits	Term
CADE 1468	Solidworks I	3	
CADE 1474	Reverse Engineering	3	
INMG 1450	Prototyping Processes	3	
MTCC 1432	Quality Methods	2	
MTCC 2504	CAD CAM	3	

**Total Credits** **14**

### 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:

- Eligible for ENGL 1106 - College Composition I, or
- Completion of ENGL/READ 0950/0955 (or equivalent or higher). ENGL/READ 0950/0955 may be taken concurrently with Semester I coursework.

#### Mathematics:

- A score of 250 or higher on the Arithmetic portion of the Accuplacer.

There are other ways to qualify. Visit [Course Placement](https://lsc.edu/course-placement) (lsc.edu/course-placement) to find out more.

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:advising@lsc.edu) (advising@lsc.edu) or 218-733-7601



**Rapid Prototyping and Design Certificate - 14 credits**  
Program Area: Integrated Manufacturing Machine Tool (Fall 2024)

---

For more information about the Rapid Prototyping and Design Certificate including course descriptions, course prerequisites, the program report, and potential career opportunities, see the [program website](https://degrees.lsc.edu/3d-printing/) (<https://degrees.lsc.edu/3d-printing/>)

or

Contact Faculty Advisor [Nathan Zobel](mailto:nathan.zobel@lsc.edu) (nathan.zobel@lsc.edu) or 218-733-7732



CIP Code: 48.0510  
Minnesota State Program ID: 13-013-0509  
LSC Major ID: 5694

Created: 2/4/13  
AASC Approval: 3/4/15  
Updated: 5/30/24

*All courses in diploma and/or certificate programs are acceptable for credit toward Lake Superior College degree programs as indicated on individual program planners. This is not a contract; Lake Superior College reserves the right to change the planner as necessary. This document is available in alternative formats upon request, by contacting [Disability Services](#) or (218) 733-7650 or MRS/TTY (800) 627-3529.*