



## Rapid Prototyping and Design Certificate - 14 credits

Program Area: Integrated Manufacturing Machine Tool (Fall 2020)

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

### 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**

\*Requires a prerequisite or a concurrent course

### 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 250 or higher on the reading 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 250 or higher on the Arithmetic portion of the Accuplacer.

There are other ways to qualify. Visit [LSC Accuplacer](http://lsc.edu/Accuplacer) (lsc.edu/Accuplacer) 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:pat@lsc.edu) (pat@lsc.edu) or 218-733-7601



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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 [Max Udovich](mailto:max.udovich@lsc.edu) (max.udovich@lsc.edu) or 218-733-7732



MINNESOTA STATE

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