

Advanced Design for Manufacturing Certificate – 782
Requirements Effective Spring 2018
Program Planning Guide

Program Description: This program has been designed for the student who wants to pursue a career in Mechanical Engineering as a Mechanical Drafter, or as a Commercial/Industrial Designer. The student will use computer programs that relate to CAD (Computer Aided Design) including SolidWorks to construct rapid prototypes from basic 3D part creation to advanced surfacing models used in industries such as Aerospace.

Prerequisites: Many classes have prerequisites. Prerequisites are those classes that prove eligibility for entry-level classes by testing or by having satisfied prior course work. Course work earned at other institutions must be unofficially evaluated or approved by a program advisor before registering. Courses in this degree with pre-requisites are marked with an asterisk (*). See catalog for more information.

Program Prerequisites: None

Note: Advanced placement testing, work experience, and transfer of credits may result in course waivers, credit transfer, and advanced placement.

Program Requirements		
Course Number	Certificate Requirements (20 credits)	
TDR 170	Introduction to Design for 3D Printing	5
TDR 171	Introduction to SolidWorks	5
TDR 172*	Intermediate SolidWorks	5
TDR 173*	Advanced Design for 3D Printing	5
		Total Credits: 20 (excluding pre-requisites)

Program Outcomes:

- Demonstrate the ability to identify, formulate and solve engineering problems.
- Complete a comprehensive design project using advanced engineering design programs as required by industry standards.
- Describe the role and purpose of codes and standards as they pertain to the life, health, and safety of the public.
- Perform the necessary steps to transform an idea or need into a completed project.
- Perform and support design and estimating functions, including, costs, labor requirements, equipment, and scheduling functions.

What Skills do I need to be successful in this field?

- Mechanical Drafter- <http://www.onetonline.org/link/summary/17-3013.00>
- Commercial and Industrial Designers- <http://www.onetonline.org/link/summary/27-1021.00>
- Engineering Drafters – <http://www.onetonline.org/link/summary/17-3019.00>

What are some potential job titles?

- Mechanical Drafter
- Commercial/Industrial Designer
- Engineering Drafter

Wages, employment trends and pathways

- Mechanical Drafter- <http://www.onetonline.org/link/summary/17-3013.00>
- Commercial and Industrial Designers- <http://www.onetonline.org/link/summary/27-1021.00>
- Engineering Drafters- <http://www.onetonline.org/link/summary/17-3019.00>

Suggested Course Sequence: This program of study is outlined by quarter, and the two SolidWorks courses, as well as the two 3D Printing courses, should be taken in the indicated sequence. However, it should not be concluded that students will always proceed through their program of study exactly as prescribed here. The number of quarters listed here is minimal. Not all courses are offered every quarter. Individual student experiences, educational and training background, and personal schedules and demands all may affect the time it takes to finish this program. Also, in general, summer quarter is not considered one of the full-time quarters in the program.

1st quarter:	TDR 170	Introduction to Design for 3D Printing
2nd quarter:	TDR 171	Introduction to SolidWorks
3rd quarter:	TDR 172	Intermediate SolidWorks
4th quarter:	TDR 173	Advanced Design for 3D Printing

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