# CAD262 3D Printing

## Course Description

Provides the student with the ability to blend the virtual and real design worlds together through the use of 3D CAD Modeling, and 3D Printing.

## Course Competencies

1. Identify the types of 3D printing equipment used in the industry.
2. Compare and contrast the different 3D printers used in the industry.
3. Discuss the history of 3D printing and the advancement of the technology in the industry.
4. Identify the materials used in the construction of printed 3D models given the technology provided.
5. Establish proper safety requirements per the technology and materials used.
6. Construct CAD models with varying thicknesses and scales to analyze strengths and weaknesses of 3D printed models.
7. Analyze the strengths of models printed in various linear angles.
8. Produce a basic 3D model using computer aided drafting and design software.
9. Generate and or export 3D model files using STL, VRML, WRL, DXF, RVT, MAX, DWG, etc. (3d printing compatible) file formats.
10. Import 3D model file formats within the software program necessary to 3D print from specific technology.
11. Edit a 3D model using the 3D printer software provided.
12. Design and create advanced 3D software generated models in various CAD software programs.
13. Revise CAD models when necessary for generating 3D printed usable models.
14. Prepare printed models for various techniques required in the post printing methods.
15. Discuss proper handling of 3D printed models.
16. Discuss proper disposal of unused materials which may be hazardous or require proper end use elimination.
17. Maintain proper procedures for changing out materials and cleaning of the equipment.
18. Perform regular maintenance on the equipment used to create 3D models