

*career*tech

Manufacturing Computer Aided Drafting and Design

Career Cluster: Manufacturing

ODCTE
Division: Trade and Industrial Education

Course Number: TBA

Locations: Oklahoma *CareerTech* locations

Length: 120 Hours

Course Description: This course is a Manufacturing focused Drafting course utilizing Computer-Aided Drafting and Design (CADD) software that develops computer skills and electronic skills and applications within the field of drafting within manufacturing. Topics covered are advanced computer operations, introduction to manufacturing drafting, CAD application software, bill of materials for drawings, manufacturing treatments of materials in drawings, shop processes, precision measuring equipment, revision drawings and notes, fasteners, tolerances and fits, geometric dimensioning and tolerancing, working, assembly, and development drawings, spur, bevel, and worm gear drawings, cam drawings, weldment drawings, casting drawings, forging drawings, spring drawings, jig and fixture drawings, tool and die drawings, assembly drawings of bearings and seals, mechanical power transmission drawings, application software for mechanical drafting, intersections, revolution drawings, sheet metal assembly drawings, bend allowances, and preparation of geometry for exporting/translation for manufacturing processes

Knowledge and Skills:

Advanced Computer Operations – 35 hrs	
Advanced Computer Configuration	Advanced Computer Properties
Desktop and Taskbar Customization	Plot parameters
Advanced Hardware	Integrate other software with CAD applications
Networking	Advanced Media Reproduction
Configure CAD workstation	Customize application software

Utilities Development	Online Development
Storage devices	Media Reproduction
System Configuration	Software Customization
Drawing management standards	CAD system variables
Fonts	Symbols, text based information, and libraries
Manipulate CAD drawings	
Computerized Mechanical Drafting – 85 hrs	
Computer Application Software	Types of drawings
Measuring instruments	English and Metric Conversion
Site Conditions	Plot Plans
Preliminary presentation sketches	Calibration
Manufacturing treatments of materials in drawings	Bill of materials for drawings
Sections	Blueprints
Interpret drawings	Interpret symbols
Revision drawings	Structural Systems
Shop processes	Lettering and Tools
Precision measuring equipment	Geometric dimensioning and tolerancing
Fasteners	Tolerances and fits
Working, assembly, and development drawings	Spur, bevel, and worm gear drawings
Cam drawings	Weldment drawings
Casting drawings	Forging drawings
Spring drawings	Jig and fixture drawings
Tool and die drawings	Assembly drawings of bearings and seals
Mechanical power transmission drawings	Prepare intersections
Prepare revolution drawings	Sheet metal assembly drawings
Bend allowances	

Required
Certifications: None

Course Standards: American Design Drafting Association (ADDA) Standards—
<http://www.adda.org/>

Resources:

Software

AutoCAD

Solidworks

AutoCAD and its Applications-Basics and Advanced by Terence M. Shumaker and David A. Madison

Practical Problems in Mathematics by Larkin

Basic Technical Drafting by Dygdon

Solidworks Training Manual

Engineering, Drawing, and Design by Cecil Jensen, Jay D. Helsel, and Dennis Short