COURSE: MACHINE CAD
Grade Level:10-12

MAIN/ GENERAL TOPIC	SUB-TOPIC:	ESSENTIAL QUESTIONS:	WHAT THE STUDENTS WILL KNOW:	WHAT THE STUDENT WILL BE ABLE TO DO:	Assessments:	WHEN STUDENT DOES IT:
Review the basic drawing environment Using modification tools	Drawing setup and organization AutoCAD display and selection operations Modify commands Geometric constructions Add text to drawings Object grips and properties	What is the basis of your drawing What basic modifications will help you master introductory and advanced drawings	Basic drawing environment and how to use it Detail the setup process for drawing creation Maximize the use of display tools to make drawing manipulation easier Modify commands to remove, change, or create entities Create geometric shapes to form a foundation of design Create and add text to your drawings	Identify areas of AutoCAD screen interface Set up drawings and types of measurement units Use the display tools to make drawings manipulation easier Use break,trim,move,scale,rotate,stretch,explode,array,copy,fillet,chamfer,extend,mirror, and offset Create boundary lines using basic drawing commands Create text through both dynamic and multiline options	Develop a series of templates Create drawings using absolute, relative polar, and direct methods Develop a series of problems that use modify commands with text	Sept. and Oct.
Add advance modifications and tools	Multiple document environment LTSscale Base point copying Associative dimensions Design center applications	How will advance techniques reduce time spent creating drawings	Advance modify commands for time reduction in drawing production LTSscale and applying it when needed How to apply copybase commands How to use the design center to apply common symbols and parts to a project	Apply modification techniques that shorten drawing time Change line scale to fit the drawing Base point copy from one project to another Use advance applications from the design center	Draw a series of projects applying advance modification techniques	Nov. thru Jan.
Advance sectional views	Full section Half section Assembly section Aligned section Offset section Sectioning ribs Broken out section Revolved section Removed section Isometric section	Why and where are sectional views needed	Applying the need of section views to a project How to create drawings using various types of section views	Choose and apply the appropriate section view within a project	Draw projects with the appropriate sectional view application	Feb.

Auxiliary views applications	Placement of features at true size Frontal projection	When is an auxiliary needed for explanation of details	How to create an auxiliary view in a primary multiview drawing Set up snap to assist in the development of auxiliary views Understand the relationship between orthographic views and auxiliary views	Create auxiliary views in proper application Use Auto-CAD applications in creating auxiliary views	Draw auxiliary view in different applications	March
Advance drawing problems	American standard threads Acme and Square threads Cap screws Modified uniform cams Harmonic motion cams Spur gears	How to apply Auto-CAD to advance drawing projects	Application of advance drawing techniques Application of math problem sets to solve drawing solutions Mechanical applications of machine parts	Apply advance drawing applications in Auto-CAD Research and apply math solutions in projects	Research and draw a series of advance problems	March to April
Working drawings	Detail drawings Assembly drawings Solid modeling Utilizing multiple view ports Add all notations	What is makes up a full set of working drawings	Break a machine in individual parts Select all views necessary to draw parts and dimension fully Apply all necessary viewports Assemble all parts using all learned techniques (such as crossections, solid modeling, ect.) Apply all necessary information	Draw and dimension all parts with in proper viewports Draw assembly drawing Provide all information necessary to build and assemble the complete machine	Draw a complete set of working drawings	May thru June