

## Advanced Engineering Graphics

One Year (1 Credit)

11<sup>th</sup> – 12<sup>th</sup> grades

Prerequisite: Engineering Graphics

Texts:

The student will expand their knowledge of techniques used to illustrate threaded parts, cams, gears, developments and intersections. The student will construct working drawings then use those drawings to produce a part using various industrial machines.

### Advanced Engineering Graphics

1. Use of tools, equipment, and CAD system
  - a. Continue use of drafting tools and equipment
  - b. Continue use of precision measuring instruments
  - c. Construct a set of drawings for a project using CAD system
2. Sketching and shape description pages 35, 37, 38
  - a. Construct various types of pictorial drawings
  - b. Construct various types of presentation drawings
3. Working drawings pages 93 – 94, 96
  - a. Construct a complete set of plans
  - b. Construct drawings using information from various metalworking processes
4. Manufacturing processes
  - a. Identify and use various types of metalworking processes including: casting, forging, welding, machining, and sheet metal bending
  - b. Demonstrate the ability to use Computer Numerical Control machinery
5. Dimensioning and tolerances pages 74-77
  - a. Use tolerance dimensioning in a drawing
  - b. Properly dimension a set of drawings
6. Power Transmission Engineering Design Graphics page 347 – problem 6; page 374 – problem 1
  - a. Calculate a gear ratio and speeds
  - b. Construct a drawing of cam and follower
7. Project

- a. Design and draw a project using CAD
- b. Construct the project that was drawn using various metalworking processes
- c. Use one of the CNC machines on the project