



EAST TROY COMMUNITY SCHOOL DISTRICT

Committed to the Growth & Success of Each Student, Each Year

Drafting CAD 1-2D (Grades 10-12)

Course Description:

The curriculum for this course is developed from the [Wisconsin Standards for Technology and Engineering](#). Knowledge of drafting is essential for anyone who plans to enter into a technical field. The ability to produce and read drawings allows for communication between people in technical fields across the world.

Essential Understandings:

1. Knowledge of equipment and safety procedures are essential to responsible use of equipment and tools. (AC1.c, AC1.d, AC1.e, AC1.f, MNF1.a)
2. Understanding and knowledge of tools and materials is requisite for analyzing sound choices in methods and materials. (BB1.b)
3. Quality design, engineering, and construction require accurate knowledge and application of measuring systems. (AC1.a, AC1.b)
4. Experience applying design theory allows for stronger analysis of plans and designs before investment of resources in final production. (ENG1.a, ENG2.a, ENG2.b, ENG3.a, ENG3.b-ENG4.a)
5. Executing and receiving evaluations and feedback on projects is vital to learning and improving skills. (ENG4.c, ENG5.a)
6. Specific tasks require experience and knowledge to correctly identify, select, and safely use appropriate tools, machines, products, systems, and techniques. (MNF1.a, MNF1.b, MNF1.c, MNF1.d, MNF1.e, MNF1.f, MNF1.g, MNF1.h)

Unit	Description of Unit and Learning Targets
Basic Board Drafting Tools • How do people draft without using computers?	Students are familiarized with non-electronic board drafting tools and how they were used before computer aided drafting programs. <u>Learning Targets:</u> • I can demonstrate proficiency in the use of simple hand tools such as hammers, screwdrivers, handsaws, planes, sandpaper, nail sets, tin shears, framing squares, utility knives, chalk lines, etc. • I can explain that tools are used to design, make, use, assess technology and extend human capabilities such as holding, lifting, carrying, fastening, separating, and computing. • I can select appropriate resources and explain how trade-offs between competing values, such as availability, cost, desirability and waste influenced their decision. • I can discuss that all tools must be properly cared for.
Measurement Information • How do you apply measurement skills and knowledge when drafting?	Students review and apply measurement skills in project work. <u>Learning Targets:</u> • I can use appropriate tools to measure and layout a piece of material (e.g. length, width, thickness, angles, circles, arcs and volume) within tolerances. • I can demonstrate use of the Standard Measuring System to the 1/16" and the Metric Measuring System to millimeters. • I can explore both customary and metric systems of

	measurement and conversions. • I can apply conventional construction measurement processes accurately. • I can use conventional construction formulas to determine production requirements. • I can select and apply the appropriate units and scales for situations involving measurement.
Introduction to SolidWorks • How do you draft on a computer?	Students connect basic board drafting on paper to electronic drawings they will need to read and create. <u>Learning Targets:</u> • I can demonstrate basic dimensioning skills including the use of: dimension, extension, center and leader lines. • recognize construction blueprints and specifications. • I can interpret and use residential construction blueprints and specifications.
Create a variety of 2D parts and drawings using SolidWorks • How do you create a 2D technical drawing using the commands from SolidWorks program?	Students use SolidWorks program to generate required 2D drawings. <u>Learning Targets:</u> • I can demonstrate two-dimensional and three-dimensional representations of the designed solution. • I can examine how the design needs to continually be evaluated and the ideas of the design must be redefined and improved. • I can evaluate the design solution using conceptual, physical and mathematical models at various intervals of the design process in order to check for proper design and to note areas where improvements are needed.