

TECHNOLOGY EDUCATION

CURRICULUM

MECHANICAL DRAFTING

(Elective Course)

Supports Academic Learning Expectation # 3

Students and graduates of Ledyard High School will employ problem-solving skills effectively

**Approved by Instructional Council
4/28/08**

STUDENT LEARNING OBJECTIVES
Mechanical Drafting

As a result of Technology Education, students independently and collaboratively will be able to:

<p>GOAL: District Goal #1 (State Standard #1) The Nature & Evolution of Technology</p> <p>Understand the nature of technology, how it has evolved and its influence on its own evolution</p>	
LEARNING OBJECTIVES	SAMPLE INDICATORS/ASSESSMENTS OF LEARNING
<p><i>Students will know how to:</i></p> <p>1.1 Critically analyze a given technology against a perceived need or want</p> <p>1.2 Research how, social, economic, and political forces influence innovation, invention and adaptation</p> <p>1.5 Use the systems model to analyze a complex technological system;</p> <p>1.6 Investigate the universal characteristics of systems and sub-systems;</p>	<p><i>Students will be able to:</i></p> <p>a. Design and construct drawings based on their own needs or wants utilizing appropriate technology</p> <p>a. Compare and contrast in writing how economic forces influence design</p> <p>a. Develop two and three dimensional drawings progressing to solid rendering</p> <p>a. Identify and apply the universal characteristics of the systems and sub-systems such as three-view scaled drawings and measuring needed to produce various products</p>

STUDENT LEARNING OBJECTIVES
Mechanical Drafting

As a result of Technology Education, students independently and collaboratively will be able to:

<p>GOAL: District Goal #2 (State Standard #2) The Impacts of Technology</p> <p>Understand the impact that technology has on the personal, social, cultural, economic, political and environmental aspects of their lives.</p>	
LEARNING OBJECTIVES	SAMPLE INDICATORS/ASSESSMENTS OF LEARNING
<p><i>Students will know how to:</i></p> <p>2.1 Analyze technologies based on their positive and negative impacts;</p> <p>2.2 Describe the evolution of a technological system and its influence on the economy, culture, society and environment;</p> <p>2.4 Select and demonstrate ethical solutions to technological problems;</p> <p>2.5 Identify and explore career opportunities in the areas of technology;</p> <p>2.6 Describe and evaluate how society's expectations drive technological development;</p>	<p><i>Students will be able to:</i></p> <p>a. Select the most effective drafting tools needed to perform a task</p> <p>a. Describe how computer aided drafting has influenced design</p> <p>b. Compare and contrast the pros and cons of hand drawing versus CADD</p> <p>a. Explain cost versus quality analysis</p> <p>a. Identify drafting career opportunities that could be pursued using their developed skills</p> <p>a. Describe the impact of societal expectations on product design</p> <p>b. Research and share information in written form on the impact of societal economic expectations on product design quality</p>

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As a result of Technology Education, students independently and collaboratively will be able to:

<p>GOAL: District Goal #3 (State Standard #3) The Research, Design & Engineering</p> <p>Recognize that technology is the result of a creative act, and will be able to apply formal problem-solving strategies to enhance invention and innovation.</p>	
LEARNING OBJECTIVES	SAMPLE INDICATORS/ASSESSMENTS OF LEARNING
<p><i>Students will know how to:</i></p> <p>3.1 Use research techniques to support design development;</p> <p>3.2 Investigate multiple solutions to a design problem;</p> <p>3.3 Use a communication technologies to visualize a design idea;</p> <p>3.5 Document a design to facilitate replication;</p>	<p><i>Students will be able to:</i></p> <p>a. Utilize internet information to facilitate product design</p> <p>a. Select appropriate drawing formats to create specific working plans/drawings</p> <p>a. Create a drawing to facilitate the manufacturing of a product</p> <p>a. Create a set of design drawings to facilitate the replication of a product</p>

STUDENT LEARNING OBJECTIVES
Mechanical Drafting

As a result of Technology Education, students independently and collaboratively will be able to:

<p>GOAL: District Goal #4 (State Standard #) 4 The Creation & Use of Technology</p> <p>Know the origins, properties and processing techniques associated with the material building blocks of technology as demonstrated by effective application of the methods producing usable products and by effectively using those products.</p>	
LEARNING OBJECTIVES	SAMPLE INDICATORS/ASSESSMENTS OF LEARNING
<p><i>Students will know how to:</i></p> <p>4.4 Create a product demonstrating the application of technological processes;</p> <p>4.5 Use tools and procedures safely;</p> <p>4.6 Select appropriate tools and procedures for a given task;</p> <p>4.7 Identify and describe methods used in manufacturing products</p>	<p><i>Students will be able to:</i></p> <p>a. Design a set of working drawings used to produce a product</p> <p>a. Use computers, printers and plotters properly and safely</p> <p>a. Utilize problem solving skills when designing 2D and 3D working drawings</p> <p>a. Use 2-D and 3-D drawings to enhance and direct manufacturing processes</p>

STUDENT LEARNING OBJECTIVES
Mechanical Drafting

As a result of Technology Education, students independently and collaboratively will be able to:

<p>GOAL: District Goal #5 (State Standard #5) The Future of Technology</p> <p>Demonstrate the ability to take known principles of technological innovation and apply them to hypothetical scenarios effectively.</p>	
LEARNING OBJECTIVES	SAMPLE INDICATORS/ASSESSMENTS OF LEARNING
<p><i>Students will know how to:</i></p> <p>5.1 Forecast trends in new and emerging technologies (e.g. nanotechnology, electromagnetic radiation in communications, bio-related and alternative energy sources) and their potential impacts;</p> <p>5.2 Explore future labor market trends and educational needs</p> <p>5.6 Explore how human beings use technology to increase the carrying capacity of their environment</p>	<p><i>Students will be able to:</i></p> <p>a. Explore the role of computerized drafting (CAD) and computerized manufacturing (CAM)</p> <p>a. Research related careers of interest and necessary skills needed</p> <p>a. Select and use technologies such as CAD that are less harmful to the environment</p>