

MAYWOOD PUBLIC SCHOOL

Industrial Technology Curriculum

Industrial Technology Philosophy

The philosophy of the Industrial Technology program is to provide students with a performance based education that incorporates technology awareness and career preparation and exploration. This will help lead students to enter, maintain, and advance in a career or post-secondary program. Industrial Technology promotes the synthesis and application of academic knowledge and life skills.

Applying the knowledge with “hands-on” activities, the instructor becomes the facilitator connecting the learner with different areas of study. The instructor should stimulate and model appropriate working skills that would be typical of the work force in our region, state, and country.

Students will develop and enhance thinking and problem-solving skills by working on projects both as individuals and as a group. Industrial Technology encourages students to develop a positive work ethic and be responsive to change with the needs of the community and its environment.

Industrial Technology Exit Outcomes

By the end of the twelfth grade, students at Maywood Public School will be able to....

1. Communicate person to person, person to machine, and machine to machine using writing, reading, listening, and technology skills.
2. Apply problem solving skills in the design process and graphically illustrate the solution to real world mechanical or architectural problem.
3. Demonstrate the ability to apply technical skills in the application of design proposals and sketches into production working drawings.
4. Demonstrate a general and working knowledge of the processes, tools, and systems used in the construction industry.
5. Apply technical skills in the application of design proposals and sketches into production working drawings, plan of procedure, and completed projects using safe and appropriate techniques.
6. Demonstrate the use of common measuring instrument.
7. Apply concepts used in the Arc, MIG, and oxyacetylene welding process. Students will be able to demonstrate safe set up and use applied to each welding unit.
8. Apply concepts learned in Industrial Technology and other disciplines to develop individual potentials.

Industrial Technology Strands

1. Communication
2. Design
3. Construction
4. Woodworking
5. Metals

Industrial Technology Curriculum Matrix

By the end of the twelfth grade, students at Maywood Public School will be able to....

Identifier	Objective									
		IITE 6	IITE 7	IITE 8	Metals	Woods	Construction I	Construction II	CAD I	CAD II
1.	Communicate an idea by creating a line drawing.	<i>I</i>	<i>D</i>	<i>D</i>	<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>
2.	Employ problem solving strategies in creating various structures, vehicles, etc., within established criteria.	<i>I</i>	<i>D</i>	<i>D</i>	<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>	
3.	Learn the proper tools and techniques associated with the drafting industry.	<i>I</i>	<i>D</i>	<i>D</i>	<i>D</i>	<i>D</i>	<i>D</i>	<i>M</i>	<i>M</i>	<i>M</i>
4.	Complete an orthographic drawing (3-view).	<i>I</i>	<i>D</i>	<i>D</i>		<i>D</i>			<i>M</i>	<i>M</i>
5.	Complete an isometric drawing.	<i>I</i>	<i>D</i>	<i>D</i>		<i>D</i>			<i>M</i>	<i>M</i>
6.	Demonstrate the ability to identify drafting and architectural lines and symbols.	<i>I</i>	<i>D</i>	<i>D</i>	<i>M</i>	<i>M</i>	<i>D</i>	<i>M</i>	<i>D</i>	<i>M</i>
7.	Learn basic computer drafting commands using the CAD programs SolidWorks and SketchUp.			<i>I</i>		<i>D</i>			<i>M</i>	<i>M</i>
8.	Create and print a drawing using a computer, SolidWorks or SketchUp, and a printer.			<i>I</i>		<i>M</i>			<i>M</i>	<i>M</i>
9.	Produce and print engineering and architectural drawings using CAD software.								<i>I</i>	<i>M</i>
10.	Product and print a simple publication.			<i>I</i>	<i>M</i>	<i>M</i>				
11.	Create and illustrate a specific design for a bridge, vehicle, etc.		<i>I</i>	<i>D</i>	<i>M</i>	<i>M</i>	<i>M</i>			
12.	Construct individual structural members and assemble a bridge, vehicle, etc. according to design specifications.		<i>I</i>	<i>D</i>	<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>		
13.	Recognize shapes and designs that promote strength.	<i>I</i>	<i>D</i>	<i>D</i>	<i>M</i>	<i>M</i>	<i>D</i>	<i>M</i>		
14.	Predict and analyze forces applied to a structure.		<i>I</i>	<i>D</i>	<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>		
15.	Visualization of objects through orthographic and isometric drawings - identification of points, lines, and surfaces.	<i>I</i>	<i>D</i>	<i>D</i>		<i>M</i>			<i>D</i>	<i>M</i>
16.	Sketch objects using basic principles, orthographic projections, and various pictorial drawing techniques.	<i>I</i>	<i>D</i>	<i>D</i>	<i>D</i>	<i>M</i>			<i>M</i>	<i>M</i>
17.	Develop correct technique in the use of drafting tools; tool identification, tool care, and tool manipulation.		<i>I</i>	<i>D</i>		<i>M</i>			<i>M</i>	<i>M</i>
18.	Apply competence in basic CAD operations (e.g., basic program navigation, display options, drawing commands, procedures).	<i>I</i>	<i>D</i>	<i>D</i>		<i>D</i>			<i>M</i>	<i>M</i>

Identifier	Objective									
		ITE 6	ITE 7	ITE 8	Metals	Woods	Construction I	Construction II	CAD I	CAD II
19.	Demonstrate the measuring whole numbers, decimals, and fractions.	<i>I</i>	<i>D</i>	<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>
20.	Develops habits of neatness and accuracy.	<i>I</i>	<i>D</i>	<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>
21.	Exhibit understanding of architectural styles and characteristics (e.g., plans, elevations, roofing styles, materials, symbols, and site plans).						<i>I</i>	<i>M</i>	<i>I</i>	<i>M</i>
22.	Construct a scaled model of a residential structure to specified criteria.						<i>I</i>	<i>M</i>		
23.	Exhibit skill and correct technique in the use of woodworking tools - tool identification, tool care, tool use and manipulation, and correct and safe technique.	<i>I</i>	<i>D</i>	<i>D</i>		<i>M</i>	<i>M</i>	<i>M</i>		
24.	Exhibit skill and competence in basic woodworking operation; follow a plan of procedure; cutting boring, routing; assembly; painting, staining, and finishing.	<i>I</i>	<i>D</i>	<i>D</i>		<i>M</i>	<i>M</i>	<i>M</i>		
25.	Recognize applications of construction in a variety of career paths.			<i>I</i>	<i>D</i>	<i>D</i>	<i>M</i>	<i>M</i>		
26.	Construction of a project to specified criteria exhibiting skills and competencies in advanced woodworking equipment and operations producing bill of materials; determining project cost; assembly.		<i>I</i>	<i>D</i>	<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>		
27.	Construction of pre-approved independent project.			<i>I</i>	<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>
28.	Identification of parts, equipment and adjustment of oxyacetylene welding to neutral flame- Parts; setting pressure; igniting; bleeding system.				<i>I, M</i>					
29.	Adjustment of the Arc welder - parts; placement of electrode; producing an arc.				<i>I, M</i>					
30.	Adjustment or the MIG welder - parts; placement of electrode; producing an arc.				<i>I, M</i>					
31.	Awareness of tools using proper application and safe usage - eye protection; clothing; hand tools .	<i>I</i>	<i>D</i>	<i>D</i>	<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>		
32.	Hand tool and their safe application - cutting, drilling, forming, fabrication.	<i>I</i>	<i>D</i>	<i>D</i>	<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>		

Identifier	Objective	ITE 6	ITE 7	ITE 8	Metals	Woods	Construction I	Construction II	CAD I	CAD II
33.	Stationary tools and their safe application - drill press; bench grinder; welders; chop saws; band saw.				<i>I, M</i>		<i>M</i>	<i>M</i>		
34.	Exhibit knowledge of hazards associated with welding and welding equipment - electrical shock; burns; infrared and ultraviolet rays; fumes.				<i>I, M</i>					
35.	Exhibit skill and competence in arc, MIG, and oxyacetylene welding common joints in the flat position.				<i>I, M</i>					
36.	Demonstrate the ability to cut different types of metal with an oxyacetylene torch and a plasma cutting system.				<i>I, M</i>					
37.	Work in groups and contribute to the successful completion of assigned projects.	<i>I</i>	<i>D</i>	<i>D</i>	<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>
38.	Demonstrate the ability of reading, interpreting, and performing technical operations.	<i>I</i>	<i>D</i>	<i>D</i>	<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>

Approved: June 2013