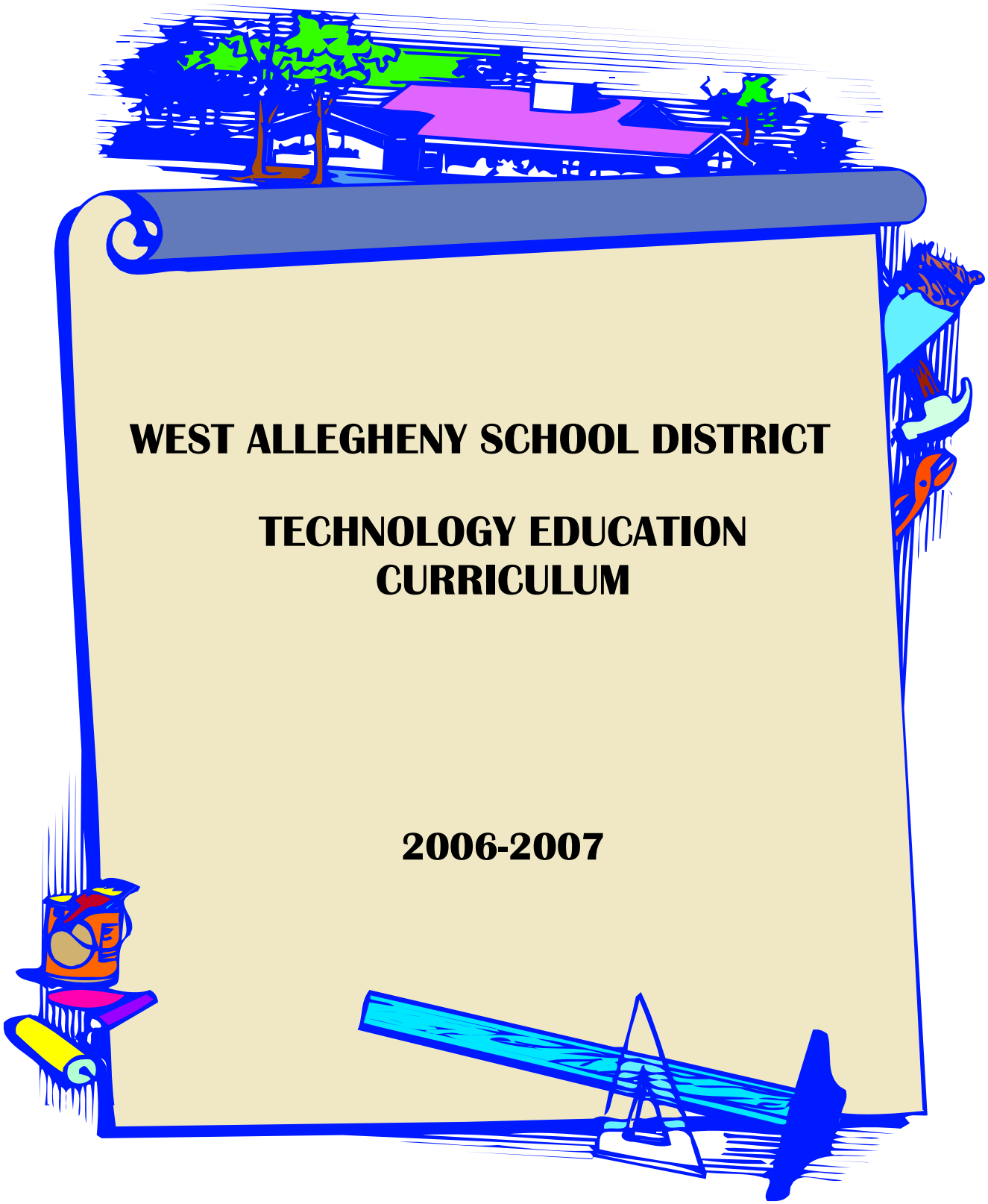

WEST ALLEGHENY SCHOOL DISTRICT

TECHNOLOGY EDUCATION CURRICULUM

2006-2007

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Technology Education

Philosophical Orientation

Technology education is an integral part of basic education. It assists individuals in developing an understanding of the evolution, application, and significance of technology in society and culture. The attainment of technological knowledge, skills, and attitudes is emphasized in order to develop, produce, use, and assess technological products and systems.

Technology education courses enable students to participate in activity-based experiences related to technological systems, products, and services. Students who experience technological education activities learn to:

- apply the technological method of inquiry and problem solving.
- develop basic skills in the safe and effective use of tools, machines, materials, and processes for technological problem solving.
- utilize interpersonal skills to make decisions in a cooperative learning environment.
- communicate technological information and ideas through written, oral, graphic, and computer-based methods.
- identify relevant occupations, careers, and educational programs in technological fields.
- research, plan, design, produce, and evaluate technological products and services.
- apply and reinforce math, science, and communication skills in practical situations and in life skills development.
- perform computer applications in technological areas.
- explore solutions to environmental and ecological problems utilizing technology.

Technology education provides all levels of students with the in-depth foundation necessary for the development of technological literacy and continuing academic preparation, employability preparation, and/or life-long skills.

WEST ALLEGHENY SCHOOL DISTRICT

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CURRICULUM

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WEST ALLEGHENY SCHOOL DISTRICT
TECHNOLOGLY EDUCATION
CURRICULUM

GRADE 6

WEST ALLEGHENY SCHOOL DISTRICT

Subject: **TECHNOLOGY EDUCATION**
GRADE - 6

ACADEMIC STANDARDS

3.6.7 B,C
3.7.7 A,B

COURSE DESCRIPTION:

Sixth grade technology education is an introductory course designed to introduce communication systems and manufacturing systems to the 6th grade learner. Its main focus is to provide students with the skills to safely use tools and machines to convey information and manufacture a product.

BASIC TEXT/PUBLISHER AND INSTRUCTIONAL RESOURCES:

- PA State Safety Guide
- Teacher made materials

ASSESSMENT:

- Safety tests
- Technical drawings
- Manufacturing project

TECHNOLOGY USED:

- Basic hand tools
- Band saw
- Drill press
- Belt sander
- Table top router
- Computer
- Basic drafting tools

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: TECHNOLOGY EDUCATION	**GRADE: 6**
UNIT FOCUS: Mechanical Drawing	

Unit Content	Student Outcomes	Standards
	The student will:	
▪ Communication system model	▪ recognize and understand a systems model sender, channel, message, and receiver.	3.6.7 B
▪ Introduction to drawing tools	▪ utilize mechanical drawing tools to convey information about the size and shape of an object.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: TECHNOLOGY EDUCATION	**GRADE: 6**
UNIT FOCUS: Tool and Machine Safety	

Unit Content	Student Outcomes	Standards
	The student will:	
▪ Introduction to hand tools	▪ be able to safely use the basic hand tools (hammer, awl, screwdriver, numbering dies, sand paper, pliers, and nail set).	3.7.7 A
▪ Introduction to power tools	▪ use the internet as a resource to research band saw, drill press, and belt sander, draw a diagram of each, and list safety statements associated with each machine.	
▪ Power machine safety	▪ safely operate the band saw, drill press and belt sander.	

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STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: TECHNOLOGY EDUCATION	**GRADE: 6**
UNIT FOCUS: Manufacturing	

Unit Content	Student Outcomes	Standards
	The student will:	
▪ The manufacture of a specific project	▪ identify the basic tools and machinery for material processing in manufacturing.	3.6.7 C
	▪ develop creative abilities and technical skills through hands-on experiences in the production process of separating, assembling, finishing, and measuring.	3.7.7 B
	▪ process wood.	
	▪ safely and efficiently use a variety of tools, machines, and equipment in a manufacturing laboratory.	

WEST ALLEGHENY SCHOOL DISTRICT
TECHNOLOGLY EDUCATION
CURRICULUM

GRADE 7

WEST ALLEGHENY SCHOOL DISTRICT

Subject: **TECHNOLOGY EDUCATION**
GRADE - 7

ACADEMIC STANDARDS

3.6.7 B,C
3.7.7 A,B
3.8.7 A,C

COURSE DESCRIPTION:

Seventh grade technology education is an exploratory course in transportation and construction systems. Seventh grade students will develop a basic understanding of transportation and construction technology, while successfully producing, using, and assessing a transportation and construction system

BASIC TEXT/PUBLISHER AND INSTRUCTIONAL RESOURCES:

- PA Safety Guide
- Pitsco CO_2 Dragster kits
- Teacher made materials

ASSESSMENT:

- Safety tests
- Transportation system performance tests

TECHNOLOGY USED:

- Computer
- Band saw
- Drill press
- Basic hand tools
- Pitsco impulse race system

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STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: TECHNOLOGY EDUCATION	**GRADE: 7**
UNIT FOCUS: Transportation Systems	

Unit Content	Student Outcomes	Standards
	The student will:	
▪ Basic transportation concepts	▪ identify a land transportation system. ▪ identify a fixed route transportation system.	3.6.7 C
▪ Technical subsystems o Propulsion o Suspension o Guidance o Control o Support	▪ describe examples of the five technical subsystems found in transportation vehicles.	3.8.7 C

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: TECHNOLOGY EDUCATION	**GRADE: 7**
UNIT FOCUS: Transportation Systems	

Unit Content	Student Outcomes	Standards
	The student will:	
▪ Manufacture a CO_2 dragster	▪ develop, produce, use, and assess a transportation system.	3.7.7 A
	▪ produce a transportation system using tools, material resources, and production processes safely and efficiently.	
▪ Calculate speed and average speed	▪ use mathematics to solve problems related to transportation systems.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: TECHNOLOGY EDUCATION	**GRADE: 7**
UNIT FOCUS: Transportation Research and Dragsters	

Unit Content	Student Outcomes	Standards
	The student will:	
▪ Research CO_2 dragsters	▪ investigate CO_2 dragsters using internet as a resource.	3.7.7 E
▪ Design process	▪ demonstrate knowledge of the design process by successfully completing the process. o thumb nail drawings o rough sketches o final drawing o prototype	3.6.7 B 3.7.7 B
▪ Design the transportation system	▪ communicate transportation system design ideas with 2-dimensional sketches and drawings.	3.8.7 A

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: TECHNOLOGY EDUCATION	**GRADE: 7**
UNIT FOCUS: Tool and Machine Safety	

Unit Content	Student Outcomes	Standards
	The student will:	
▪ Power machine safety	▪ demonstrate the proper use of the band saw and drill press.	3.7.7 A
▪ Lab safety	▪ demonstrate an understanding of the lab safety policies.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: TECHNOLOGY EDUCATION	**GRADE: 7**
UNIT FOCUS: CO_2 Dragster Construction	

Unit Content	Student Outcomes	Standards
▪ The construction of the transportation	The student will: ▪ identify the basic tools and machines for material processing in the construction of the Transportation System. ▪ develop creative abilities and technical skills through hands-on experiences in the production process of separating, assembling, finishing, and measuring. ▪ safely and efficiently use a variety of tools, machines, and equipment in a manufacturing laboratory.	3.6.7 C 3.7.7 A,B

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: TECHNOLOGY EDUCATION	**GRADE: 7**
UNIT FOCUS: Construction Systems	

Unit Content	Student Outcomes	Standards
▪ Construction unit	The student will: ▪ describe various types of structures. ▪ identify rigid and non-rigid elements in various structures. ▪ design and test various structures. ▪ differentiate among compression and tension and torsion forces.	3.6.7 C 3.7.7 B

WEST ALLEGHENY SCHOOL DISTRICT
TECHNOLOGLY EDUCATION
CURRICULUM

GRADE 8

WEST ALLEGHENY SCHOOL DISTRICT

Subject: **TECHNOLOGY EDUCATION**
GRADE - 8

ACADEMIC STANDARDS

3.6.10 C
3.7.10 A,B

COURSE DESCRIPTION:

Eighth grade technology education is an exploratory course in manufacturing systems. Eighth grade students will examine the various inputs required for manufacturing and participate in various aspects of the production process in a manufacturing technology laboratory.

BASIC TEXT/PUBLISHER AND INSTRUCTIONAL RESOURCES:

- Pennsylvania Safety Guides
- Tools
- Machines
- Equipment

ASSESSMENT:

- Safety tests
- Manufacturing system project

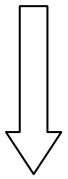
TECHNOLOGY USED:

- Basic hand tools
- Band saw
- Drill press
- Belt sander
- Table saw
- Planer/jointer
- Power miter saw
- Shaper

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

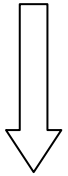
COURSE: TECHNICAL EDUCATION	**GRADE: 8**
UNIT FOCUS: Manufacturing Production	

Unit Content	Student Outcomes	Standards
	The student will:	
▪ Clock manufacturing project	▪ identify the basic tools and machines for material processing in a manufacturing system. ▪ develop creative abilities and technical skills through hands-on experiences in the production process of forming, separating, assembling, and measuring. ▪ process wood. ▪ safely and efficiently use a variety of tools, machines, and equipment in a manufacturing laboratory.	3.6.10 C 3.7.10 B
▪ Game board manufacturing project	▪ identify the basic tools and machines for material processing in a manufacturing system. ▪ develop creative abilities and technical skills through hands-on experiences in the production process of forming, separating, assembling, and measuring. ▪ process wood. ▪ safely and efficiently use a variety of tools, machines, and equipment in a manufacturing laboratory.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: TECHNICAL EDUCATION	**GRADE: 8**
UNIT FOCUS: Safety	

Unit Content	Student Outcomes	Standards
	The student will:	
▪ Laboratory safety	▪ demonstrate an understanding of the laboratory safety policies.	3.7.10 A
▪ Hand tool safety	▪ demonstrate an understanding of basic hand tool safety procedures.	
▪ Power machine safety	▪ demonstrate the safe and proper use of the: o band saw o drill press o belt sander o table saw o planer o jointer o power miter saw o shaper	

WEST ALLEGHENY SCHOOL DISTRICT
TECHNOLOGLY EDUCATION
CURRICULUM

ARCHITECTURAL DESIGN

WEST ALLEGHENY SCHOOL DISTRICT

Subject: **TECHNOLOGY EDUCATION**
ARCHITECTURAL DESIGN

ACADEMIC STANDARDS

3.6.10 A,B,C
3.7.10 A,B,C,D,E
3.8.10 A,B,C

COURSE DESCRIPTION:

ARCHITECTURAL DESIGN [0713] --- 10,11,12 --- YEAR ---- 1 CREDIT

This course is an activity-based course with CADD (Computer Aided Drafting and Design) and construction influences that focuses on the style, structure, and design of houses throughout history and the present. Students will study the design, structure, and materials and solve problems associated with designing and building a house. The student will complete both a small and large-scale model of a self-designed house.
Prerequisite: *Architectural Drawing & Design with a "C" or higher*

BASIC TEXT/PUBLISHER AND INSTRUCTIONAL RESOURCES:

- Architecture Drafting and Design

ASSESSMENT:

- Quizzes
- Worksheets
- Projects

TECHNOLOGY USED:

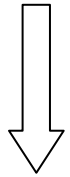
- Computers
- Broder Bund – Architecture deluxe

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: ARCHITECTURAL DESIGN	**GRADE: 10-12**
UNIT FOCUS: Introduction to Architecture	

Unit Content	Student Outcomes	Standards
	The student will:	
▪ Architectural history	▪ investigate the historical architectural styles and identify several distinct characteristics of each style. ▪ describe how the development of materials and construction methods influenced architectural styles.	3.6.10 A,B,C 3.7.10 A,B,C,D,E 3.8.10 A,B,C
▪ Fundamentals of design	▪ identify design concepts to architecture. ▪ identify six elements of design. ▪ apply design principles to a work of architecture.	
▪ Environmental design factors	▪ illustrate the orientation of a house on a lot to take best advantage of solar energy and features of the lot. ▪ illustrate how to design structures ergonomically. ▪ illustrate ways to prevent pollution (ecology).	

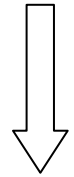


WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: ARCHITECTURAL DESIGN	**GRADE: 10-12**
UNIT FOCUS: Introduction to Architecture	

Page 2

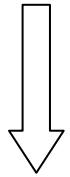
Unit Content	Student Outcomes	Standards
	The student will:	
▪ Indoor living areas	▪ describe the functions of indoor living area. ▪ design the location, décor, size, and shape of indoor living. ▪ illustrate how a room's orientation, walls, floors, windows, ceilings, lighting, and furniture can contribute to room function and appearance. ▪ illustrate design of an indoor living area and work it into a convenient floor plan.	3.6.10 A,B,C 3.7.10 A,B,C,D,E 3.8.10 A,B,C
▪ Outdoor living areas	▪ design and illustrate a porch, patio, and lanai. ▪ design and illustrate a swimming pool. ▪ calculate the area and volume of swimming pools.	
▪ Traffic areas and patterns	▪ determine the effectiveness of a traffic pattern in a house. ▪ plan hallways that function efficiently. ▪ investigate guidelines for designing stairs.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: ARCHITECTURAL DESIGN	**GRADE: 10-12**
UNIT FOCUS: Introduction to Architecture	

Page 3

Unit Content	Student Outcomes	Standards
	The student will:	
▪ Traffic areas and patterns (continued)	▪ calculate the correct space needed for stairways and stairwells. ▪ illustrate kinds and functions of entrances. ▪ apply guidelines for entrance design. ▪ design a foyer and entry.	3.6.10 A,B,C 3.7.10 A,B,C,D,E 3.8.10 A,B,C
▪ Kitchens	▪ apply guidelines to efficient kitchen design. ▪ determine the best shape, size, and location for the kitchen. ▪ plan and draw a work triangle for a kitchen. ▪ design an aesthetically consistent décor for a kitchen. ▪ illustrate small and large kitchens of the basic kitchen shapes.	
▪ General service area	▪ determine what kinds of equipment are included in a utility room. ▪ evaluate the best location for a utility room.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: ARCHITECTURAL DESIGN	**GRADE: 10-12**
UNIT FOCUS: Introduction to Architecture	

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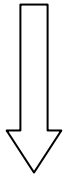
Unit Content	Student Outcomes	Standards
	The student will:	
▪ General service area (continued)	▪ illustrate a garage and carport. ▪ design storage facilities for a garage. ▪ calculate the area needed for garages and driveways. ▪ design and illustrate an efficient and safe workshop area. ▪ design and illustrate storage facilities.	3.6.10 A,B,C 3.7.10 A,B,C,D,E 3.8.10 A,B,C
▪ Sleeping area	▪ plan and illustrate bedrooms for a sleeping area. ▪ plan and illustrate bath appropriate to the size and arrangement of the floor plan. ▪ design an efficient bath.	
▪ Designing floor plans	▪ gather information from a client that is needed to design an architectural project. ▪ analyze a building site.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: ARCHITECTURAL DESIGN	**GRADE: 10-12**
UNIT FOCUS: Introduction to Architecture	

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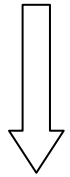
Unit Content	Student Outcomes	Standards
	The student will:	
▪ Designing floor plans (continued)	▪ use the design process to prepare for drawing accurate and functional floor plans. ▪ create floor plan illustrations. ▪ design floor plans to accommodate the needs of people with physical impairments.	3.6.10 A,B,C 3.7.10 A,B,C,D,E 3.8.10 A,B,C
▪ Pictorial drawing	▪ differentiate between isometric, oblique, and perspective drawings. ▪ apply geometric principles involved in projecting lines to create 3D images. ▪ apply principles of perspective drawings to create interior and exterior pictorial drawings.	
▪ Architectural rendering	▪ evaluate when to use which media to achieve an artistic effect. ▪ add realism to drawing by the use of shading, texture, entourage, and landscapes.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: ARCHITECTURAL DESIGN	**GRADE: 10-12**
UNIT FOCUS: Introduction to Architecture	

Page 6

Unit Content	Student Outcomes	Standards
▪ Architectural models	The student will: ▪ describe architectural models made for design study purposes. ▪ explain the differences between presentation and design study models. ▪ tell what input is needed to create a computer model. ▪ construct an architectural model.	3.6.10 A,B,C 3.7.10 A,B,C,D,E 3.8.10 A,B,C

WEST ALLEGHENY SCHOOL DISTRICT
TECHNOLOGLY EDUCATION
CURRICULUM

CADD I
Computer Aided Drafting and Design

WEST ALLEGHENY SCHOOL DISTRICT

Subject: **TECHNOLOGY EDUCATION**
ADVANCED CADD I

ACADEMIC STANDARDS

3.6.10 A,B,C
3.7.10 A,B,C,D,E
3.8.10 A,B,C

COURSE DESCRIPTION:

ADVANCED CADD [712] --- 10,11,12 ---- YEAR ---- 1 CREDIT

This course is an activity-based course that further focuses on CADD (Computer-Aided Drafting and Design) and its application in the architecture, art, and engineering industries. Students will concentrate on three-dimensional objects and their drawings for each industry.
Prerequisite: *Engineering Drawing and Design*

BASIC TEXT/PUBLISHER AND INSTRUCTIONAL RESOURCES:

- Micro-station workbook
- Micro-station software

ASSESSMENT:

- Tests
- Quizzes
- Projects

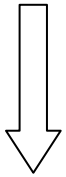
TECHNOLOGY USED:

- Computer
- Plotter/printer
- Micro-station software

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: CADD I	**GRADE: 10-12**
UNIT FOCUS: CADD 2-D and 3-D Elements	

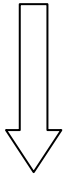
Unit Content	Student Outcomes	Standards
	The student will:	
▪ Input devices	▪ demonstrate the use of the keyboard with the CADD program. ▪ operate the mouse, to handle all of its 3 input procedures.	3.6.10 A,B,C 3.7.10 A,B,C,D,E 3.8.10 A,B,C
▪ File controls	▪ explain the use of micro-station managing. ▪ create a new file in manager. ▪ establish the correct seed file.	
▪ Micro-station screen layout	▪ identify the primary, main menu, standard, view, and status tool bars. ▪ operate the different view controls. ▪ utilize the different snap modes.	
▪ Setting up a drawing	▪ assemble drawing into a functioning file by setting the view attributes and adjusting the working units of the file.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: CADD I	**GRADE: 10-12**
UNIT FOCUS: CADD 2-D and 3-D Elements	

Page 2

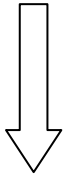
Unit Content	Student Outcomes	Standards
	The student will:	
▪ Setting up a drawing (continued)	▪ set the text attributes to operate the text controls to meet the drawing specifications. ▪ set the elements of the drawings to allow the dimension placement and readings to be correct. ▪ save settings.	3.6.10 A,B,C 3.7.10 A,B,C,D,E 3.8.10 A,B,C
▪ Floating tool bar	▪ demonstrate how to open, drag, and dock the tool bar. ▪ operate the key in browser, while docking it to a position of their choice.	
▪ Drawing line	▪ apply lines, circles, ellipses, arcs, and polygons onto the view area. ▪ apply the 3 ways of applying these shapes onto the screen through the place line box, DI & DX keys, and by using Accu-Draw.	
▪ View controls	▪ demonstrate the use of the view controls by being able to zoom in and out, pen the drawing, and fit the drawing to the screen.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: CADD I	**GRADE: 10-12**
UNIT FOCUS: CADD 2-D and 3-D Elements	

Page 3

Unit Content	Student Outcomes	Standards
	The student will:	
▪ Undo/redo	▪ apply the use of the undo and redo control buttons.	3.6.10 A,B,C 3.7.10 A,B,C,D,E 3.8.10 A,B,C
▪ Help control	▪ explain how to use the help control button. ▪ apply the use of the tool index button.	
▪ Manipulating tool bar	▪ demonstrate the use of the copy and move tool. ▪ apply the use of the rotate, parallel, array, and scale tools to a drawing.	
▪ Change element attributes	▪ operate the change attributes tools to a drawing.	
▪ Modify elements	▪ identify which modify element, break shapes, trim tools, create chamfers, and fillets tool to use for their drawing.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: CADD I	**GRADE: 10-12**
UNIT FOCUS: CADD 2-D and 3-D Elements	

Page 4

Unit Content	Student Outcomes	Standards
	The student will:	
▪ Measure tool bar	▪ operate the measuring tool bar; this includes measuring distance, radius, angles, and measuring lengths to check and identify component size on a drawing.	3.6.10 A,B,C 3.7.10 A,B,C,D,E 3.8.10 A,B,C
▪ Place text	▪ generate text on their drawing by using the place text tool. ▪ edit placed text into new text. ▪ demonstrate how to match active text.	
▪ Snap modes	▪ describe the use of the different snap modes. ▪ create the key point, mid point, tangent, center, and intersection snaps. ▪ adjust the key point snaps into different segments.	
▪ Fence	▪ operate the fence tool to encompass the specific section of the drawing. ▪ apply the fence delete tool.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: CADD I	**GRADE: 10-12**
UNIT FOCUS: CADD 2-D and 3-D Elements	

Page 5

Unit Content	Student Outcomes	Standards
	The student will:	
▪ Dimensional	▪ illustrate how a drawing should be dimension. ▪ apply dimension tools, such as dimension elements, dimension size, and dimension radial object, to a drawing. ▪ demonstrate how to update dimensions, locate dimensions, stock dimensions and dimension angles.	3.6.10 A,B,C 3.7.10 A,B,C,D,E 3.8.10 A,B,C
▪ Construct line at acute angles	▪ operate this tool to make lines from drawn lines and different angles.	
▪ 3-D setup	▪ explain the difference between 2-D and 3-D seed files. ▪ operate the different new controls. ▪ demonstrate the use of the view dialogue box. ▪ operate the minimize and maximize controls of the viewing area.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: CADD I	**GRADE: 10-12**
UNIT FOCUS: CADD 2-D and 3-D Elements	

Page 6

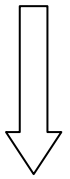
Unit Content	Student Outcomes	Standards
	The student will:	
▪ Levels	▪ produce different levels on their drawings. ▪ generate levels through the use of level manager. ▪ retrieve levels being used through level display.	3.6.10 A,B,C 3.7.10 A,B,C,D,E 3.8.10 A,B,C
▪ Groups	▪ demonstrate how to drop elements, create complex chains and shapes, and how to use the group hole tool.	
▪ 3-D Construct	▪ explain the use of the 3-D construct tools using the tools; extrude, construct revolution, extrude along the path, shell solid, and thicken to solid.	
▪ 3-D Modify	▪ apply modifying tools to a drawing and be able to: o modify a solid o remove face o tapes solids o construct unions o construct intersections o construct differences o cut solid, fillet, and chamfer edges	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: CADD I	**GRADE: 10-12**
UNIT FOCUS: CADD 2-D and 3-D Elements	

Page 7

Unit Content	Student Outcomes	Standards
▪ Rendering	The student will: ▪ apply different rendering techniques to their 3-D drawing. ▪ describe the benefits to use coordinate layouts. ▪ operate global lighting.	3.6.10 A,B,C 3.7.10 A,B,C,D,E 3.8.10 A,B,C
▪ Flythrough	▪ produce complex paths for a flythrough. ▪ generate movies of their computer 3-D drawings.	

WEST ALLEGHENY SCHOOL DISTRICT
TECHNOLOGLY EDUCATION
CURRICULUM

CADD II
Computer-Aided Drafting and Design

WEST ALLEGHENY SCHOOL DISTRICT

Subject: **TECHNOLOGY EDUCATION**
ADVANCED CADD II

ACADEMIC STANDARDS

3.6.12 B, C
3.7.12 A,B,C,D,E
3.8.12 A,C

COURSE DESCRIPTION:

This course is an activity-based course that further focuses on CADD (Computer-Aided Drafting and Design) and its application in the architecture, art, and engineering industries. Students will concentrate on three-dimensional objects and their drawings for each industry.
Prerequisite: *Advanced CADD I*

BASIC TEXT/PUBLISHER AND INSTRUCTIONAL RESOURCES:

- Micro-station workbook
- Micro-station software

ASSESSMENT:

- Tests
- Quizzes
- Projects

TECHNOLOGY USED:

- Computer
- Plotter/printer
- Micro-station software

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: CADD II	**GRADE: 11-12**
UNIT FOCUS: Presentation Methods	

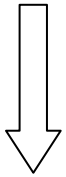
Unit Content	Student Outcomes	Standards
	The student will:	
▪ Input devices	▪ demonstrate the use of the keyboard with the CADD program. ▪ operate the mouse, to handle all 3 of its input procedures.	3.6.12 B,C 3.7.12 A,B,C,D,E 3.8.12 A,C
▪ File controls	▪ demonstrate the use of micro-station manager. ▪ create a new file in manager. ▪ establish the correct seed file.	
▪ Micro-station screen layout	▪ identify the primary, main, menu, standard, view, and status tool bars. ▪ operate the different view controls. ▪ utilize the different snap modes.	
▪ Setting up a drawing	▪ assemble their drawing into a functioning file by setting the view attributes and adjusting the working units of the file. ▪ set the text attributes to operate the text controls to meet the drawing specifications.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: CADD II	**GRADE: 11-12**
UNIT FOCUS: Presentation Methods	

Page 2

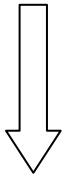
Unit Content	Student Outcomes	Standards
	The student will:	
▪ Setting up a drawing (continued)	▪ set the elements of the drawings for the correct dimension placement and readings. ▪ save settings.	3.6.12 B,C 3.7.12 A,B,C,D,E 3.8.12 A,C
▪ Floating tool bar	▪ demonstrate how to open, drag, and dock the tool bar. ▪ operate the key in browser, while docking it, to a position of their choice.	
▪ Drawing line	▪ apply lines, levels, ellipses, arcs, and polygons onto the view area. ▪ apply the 3 ways of applying these shapes onto the screen through the place line box, DI and DX keys, and by using ACCU-draw.	
▪ View controls	▪ demonstrate the use of the view controls by zooming in and out, panning the drawing, and fitting the drawing to the screen.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: CADD II	**GRADE: 11-12**
UNIT FOCUS: Presentation Methods	

Page 3

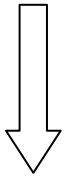
Unit Content	Student Outcomes	Standards
	The student will:	
▪ Undo/redo	▪ apply the use of the undo and redo control buttons.	3.6.12 B,C 3.7.12 A,B,C,D,E 3.8.12 A,C
▪ Help control	▪ explain how to use the help control button.	
	▪ apply the use of the tool index button.	
▪ Manipulating tool bar	▪ demonstrate the use of the copy and move tool.	
	▪ apply the use of the rotate, parallel, array, and scale tools to a drawing.	
▪ Change element attributes	▪ operate the change attributes tools to a drawing.	
▪ Modify elements	▪ identify which modify element, break shapes, trim tools, create chamfers and fillets tool to use for the drawing.	
▪ Measure tool bar	▪ operate the measuring tool bar which includes measuring distance, radius, angles, and lengths to check and identify component size on a drawing.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: CADD II	**GRADE: 11-12**
UNIT FOCUS: Presentation Methods	

Page 4

Unit Content	Student Outcomes	Standards
	The student will:	
▪ Place text	▪ generate text on their drawing by using the place text tool. ▪ edit placed text into new text. ▪ demonstrate how to match active text.	3.6.12 B,C 3.7.12 A,B,C,D,E 3.8.12 A,C
▪ Snap modes	▪ describe the use of the different snap modes. ▪ create the key point, mid point, tangent, center, and intersection snaps. ▪ adjust the key point snaps into different segments.	
▪ Fence	▪ operate the fence tool to encompass the specific section of the drawing. ▪ apply the fence delete tool.	
▪ Dimensional	▪ illustrate how a drawing should be dimensional.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: CADD II	**GRADE: 11-12**
UNIT FOCUS: Presentation Methods	

Page 5

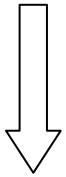
Unit Content	Student Outcomes	Standards
	The student will:	
▪ Dimensional (continued)	▪ apply dimension tools such as dimension element, size, and radial abject to a drawing. ▪ demonstrate how to update dimensions, locate dimensions, stack dimensions, and dimension angles.	3.6.12 B,C 3.7.12 A,B,C,D,E 3.8.12 A,C
▪ Construct line at acute angles	▪ operate the construct line tool to make lines from drawn lines ad different angles.	
▪ 3-D setup	▪ explain the difference between 2-D and 3-D seed files. ▪ operate the different view controls. ▪ demonstrate the use of the view dialog box. ▪ operate the minimize and maximize controls of the viewing area.	
▪ Levels	▪ produce different levels on their drawings. ▪ generate levels through the use of level manager. ▪ retrieve levels being used through level display.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: CADD II	**GRADE: 11-12**
UNIT FOCUS: Presentation Methods	

Page 6

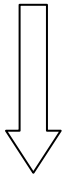
Unit Content	Student Outcomes	Standards
	The student will:	
▪ Groups	▪ demonstrate how to drop elements, create complex chains and shapes, and use the group hole tool.	3.6.12 B,C 3.7.12 A,B,C,D,E 3.8.12 A,C
▪ 3-D construct	▪ explain the use of the 3-D construct tools which are: extrude, construct revolution, extrude along the path, and shell solid and thicken to solid.	
▪ 3-D modify	▪ apply modifying tools to a drawing and be able to: o modify a solid o remove face o tapes solids o construct unions o construct intersections o construct differences o cut solid, fillet, and chamfer edges	
▪ Rendering	▪ apply different rendering techniques to their 3-D drawing. ▪ describe the benefits to use coordinate layouts. ▪ operate global lighting.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: CADD II	**GRADE: 11-12**
UNIT FOCUS: Presentation Methods	

Page 7

Unit Content	Student Outcomes	Standards
	The student will:	
▪ Flythrough	▪ produce complex paths for flythrough. ▪ generate movies for their computer 3-D drawings.	3.6.12 B,C 3.7.12 A,B,C,D,E 3.8.12 A,C
▪ B-spine surface	▪ generate irregular lines using spines. ▪ develop irregular surfaces from the irregular lines.	
▪ Advanced fly through	▪ merge multi-movie files to make one advanced fly through.	
▪ Assigning material	▪ create their own student pallets to assign materials. ▪ generate picture files to adhere to objects in the drawing box.	

WEST ALLEGHENY SCHOOL DISTRICT
TECHNOLOGLY EDUCATION
CURRICULUM

CADD III
Computer-Aided Drafting and Design

WEST ALLEGHENY SCHOOL DISTRICT

Subject: **TECHNOLOGY EDUCATION**
ADVANCED CADD III

ACADEMIC STANDARDS

3.6.12 B,C
3.7.12 A,B,C,D,E
3.8.12 A,C

COURSE DESCRIPTION:

This course is an activity-based course that further focuses on CADD (Computer-Aided Drafting and Design) and its application in the architecture, art, and engineering industries. Students will concentrate on three-dimensional objects and their drawings for each industry.
Prerequisite: *Advanced CADD II*

BASIC TEXT/PUBLISHER AND INSTRUCTIONAL RESOURCES:

- Micro-station workbook
- Micro-station software

ASSESSMENT:

- Tests
- Quizzes
- Projects

TECHNOLOGY USED:

- Computer
- Plotter/printer
- Micro-station software

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: CADD III	**GRADE: 12**
UNIT FOCUS: CADD Design and Problem Solving	

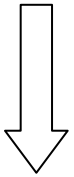
Unit Content	Student Outcomes	Standards
	The student will:	
▪ Input devices	▪ demonstrate the use of the keyboard with the CADD program. ▪ operate the mouse to handle all 3 of its input procedures.	3.6.12 B,C 3.7.12 A,B,C,D,E 3.8.12 A,C
▪ File controls	▪ understand the use of micro-station manager. ▪ create a new file in manager. ▪ establish the correct seed file.	
▪ Micro-station screen layout	▪ identify the primary, main, menu, standard, view, and status tool bars. ▪ operate the different view controls. ▪ utilize the different snap modes.	
▪ Setting up a drawing	▪ assemble their drawing into a functioning file by setting the view attributes and adjusting the working units of the file.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: CADD III	**GRADE: 12**
UNIT FOCUS: CADD Design and Problem Solving	

Page 2

Unit Content	Student Outcomes	Standards
	The student will:	
▪ Setting up a drawing (continued)	▪ set the text attributes to operate the text controls to meet the drawing specifications. ▪ set the elements of the drawings to get the correct dimension placement and readings. ▪ save settings.	3.6.12 B,C 3.7.12 A,B,C,D,E 3.8.12 A,C
▪ Drawing line	▪ demonstrate how to open, drag, and dock the tool bar. ▪ operate the key in browser while docking it to a position of their choice.	
▪ View controls	▪ demonstrate the use of the view controls by zooming in and out, pan the drawing, and fit the drawing to the screen.	
▪ Undo/redo	▪ apply the use of the undo and redo control buttons.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: CADD III	**GRADE: 12**
UNIT FOCUS: CADD Design and Problem Solving	

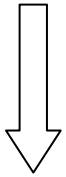
Unit Content	Student Outcomes	Standards
	The student will:	
▪ Help control	▪ explain how to use the help control button. ▪ apply the use of the tool index button.	3.6.12 B,C 3.7.12 A,B,C,D,E 3.8.12 A,C
▪ Manipulating the tool bar	▪ demonstrate the use of the copy and move tool. ▪ apply the use of the rotate, parallel, array, and scale tools to a drawing.	
▪ Change element attributes	▪ operate the change attributes tools to a drawing.	
▪ Modify elements	▪ identify which modify element, break shapes, trim tools, create chamfers and fillets tool to use for their drawing.	
▪ Measure tool bar	▪ operate the measuring tool bar by measuring the distance, radius, angles, and lengths to check and identify component size on a drawing.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: CADD III	**GRADE: 12**
UNIT FOCUS: CADD Design and Problem Solving	

Page 4

Unit Content	Student Outcomes	Standards
	The student will:	
▪ Place text	▪ generate text on their drawing by using the place text tool. ▪ edit placed text into new text. ▪ demonstrate how to match active text.	3.6.12 B,C 3.7.12 A,B,C,D,E 3.8.12 A,C
▪ Snap modes	▪ describe the use of the different snap modes. ▪ create the key point, mid point, tangent, center, and intersection snaps. ▪ adjust the key point snaps into different segments.	
▪ Fence	▪ operate the fence tool to encompass the specific section of the drawing. ▪ apply the fence delete tool.	
▪ Dimensioning	▪ illustrate how to add dimension to a drawing. ▪ apply dimension tools, such as dimension elements, dimension size, and dimension radial abject to a drawing.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: CADD III	**GRADE: 12**
UNIT FOCUS: CADD Design and Problem Solving	

Page 5

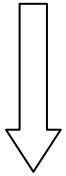
Unit Content	Student Outcomes	Standards
	The student will:	
▪ Dimensioning (continued)	▪ demonstrate how to update dimensions, locate dimensions, stock dimensions, and apply dimension angles.	3.6.12 B,C 3.7.12 A,B,C,D,E 3.8.12 A,C
▪ Construct line at acute angle	▪ operate the tool to make lines from drawn lines at different angles.	
▪ 3-D setup	▪ explain the difference between 2-D and 3-D seed files. ▪ operate the different view controls. ▪ demonstrate the use of the view dialog box. ▪ operate the minimize and maximize controls of the viewing area.	
▪ Levels	▪ produce different levels on their drawings. ▪ generate levels through the use of level manager. ▪ retrieve levels being used through level display.	
▪ Groups	▪ demonstrate how to drop elements, create complex chains and shapes, and how to use the group hole tool.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: CADD III	**GRADE: 12**
UNIT FOCUS: CADD Design and Problem Solving	

Page 6

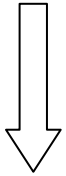
Unit Content	Student Outcomes	Standards
	The student will:	
▪ 3-D construct	▪ explain the use of the 3-D construct tools which include the extrude, construct revolution, extrude along the path, shell solid, and thicken to solid.	3.6.12 B,C 3.7.12 A,B,C,D,E 3.8.12 A,C
▪ 3-D modify	▪ apply modifying tools to a drawing and be able to: o modify a solid o remove face o tapes solids o construct unions o construct intersections o construct differences o cut solid, fillet, and chamfer edges	
▪ Rendering	▪ apply different rendering techniques to their 3-D drawing. ▪ describe the benefits to use coordinate layouts. ▪ operate global lighting.	
▪ Flythrough	▪ produce complex paths for flythrough. ▪ generate movies of their computer 3-D drawings.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: CADD III	**GRADE: 12**
UNIT FOCUS: CADD Design and Problem Solving	

Page 7

Unit Content	Student Outcomes	Standards
	The student will:	
▪ B-spine surface	▪ generate irregular lines using spines. ▪ develop irregular surfaces from the irregular lines.	3.6.12 B,C 3.7.12 A,B,C,D,E 3.8.12 A,C
▪ Assigning materials	▪ create their own student pallets to assign materials. ▪ generate picture files to adhere to objects in the drawing box.	
▪ Advanced 3-D modeling	▪ generate complex 3-D models, using the CADD system to its full potential. ▪ produce animation models of drawings done in class.	
▪ Advanced flythrough	▪ merging of multi movie files to make one advanced flythrough. ▪ assemble different flythrough to make a movie of a part to be marketed.	

WEST ALLEGHENY SCHOOL DISTRICT
TECHNOLOGLY EDUCATION
CURRICULUM

COMMERCIAL CONSTRUCTION

WEST ALLEGHENY SCHOOL DISTRICT

Subject: **COMMERCIAL CONSTRUCTION**
GRADE – 9-12

ACADEMIC STANDARDS

3.6.10 C
3.7.10 A,B,C,D
3.8.10 A,B,C

COURSE DESCRIPTION:

COMMERCIAL CONSTRUCTION [0708] 9,10,11,12 2ND SEMESTER .5 CREDIT

This course is an activity based course that focuses on the principles of design and engineering of commercial construction. Students will design and test commercial structures for strength, craftsmanship, and appearance.

BASIC TEXT/PUBLISHER AND INSTRUCTIONAL RESOURCES:

- Exploring construction
- Glencoe

ASSESSMENT:

- Hands on projects
- Project testing
- Quizzes
- Tests

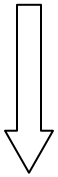
TECHNOLOGY USED:

- Computer testing device

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: COMMERCIAL CONSTRUCTION	**GRADE: 9-12**
UNIT FOCUS: Large Structure Construction	

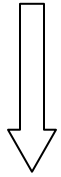
Unit Content	Student Outcomes	Standards
	The student will:	
▪ Mechanical properties	▪ explain how tensile and compressive forces affect a material. ▪ explain what happens to a material when it is under strain or stress. ▪ explain how elasticity, plasticity, brittleness, and toughness affect a materials property.	3.6.10 C 3.7.10 A,B,C,D 3.8.10 A,B,C
▪ Structural elements	▪ identify which structural element is being used. ▪ explain the difference between rigid structural elements and non-rigid structural elements. ▪ explain what a beam is and list the many types. ▪ explain what a column is and explain a column's characteristics. ▪ identify the components of an arch. ▪ explain the two types of arches and understand the thrust of an arch. ▪ identify the frequency of a geodesic dome. ▪ identify the use of a plate and how to strengthen it. ▪ list the characteristics of a truss. ▪ explain the use of space frame, mass, bearing wall, and frame construction. ▪ identify what type of cable is being used in the structure. ▪ explain the advantages to membrane construction.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: COMMERCIAL CONSTRUCTION	**GRADE: 9-12**
UNIT FOCUS: Large Structure Construction	

Page 2

Unit Content	Student Outcomes	Standards
▪ Loads on a structure	The student will: ▪ define what a load is on a structure. ▪ explain how to make a structure more stable. ▪ understand the strength and rigidity of a structure. ▪ clarify a load on a structure. ▪ explain the purpose of building codes. ▪ identify construction principles applied to a structure so that it can handle live loads from a natural element. ▪ explain why we engineer buildings from the top down. ▪ design and construct a bridge to be tested.	3.6.10 C 3.7.10 A,B,C,D 3.8.10 A,B,C 

WEST ALLEGHENY SCHOOL DISTRICT
TECHNOLOGLY EDUCATION
CURRICULUM

DIGITAL IMAGE GRAPHICS

WEST ALLEGHENY SCHOOL DISTRICT

Subject: **TECHNOLOGY EDUCATION**
DIGITAL IMAGE GRAPHICS

ACADEMIC STANDARDS

3.6.10 B
3.7.10 A,B,C,D,E
3.8.10 A,B,C

COURSE DESCRIPTION:

DIGITAL IMAGE GRAPHICS [700] --- 9,10,11,12 --- 1st SEMESTER ---- .5 CREDIT

This course is an activity-based course introducing digital imaging. The students will produce images using traditional photography and digital photography. They will work with scanning and Adobe Photoshop to produce quality images as well as creative art work ready for multi-media presentation and print.
No Prerequisite *Art 1 will greatly help, but it is not required.*

BASIC TEXT/PUBLISHER AND INSTRUCTIONAL RESOURCES:

- Teacher made resources

ASSESSMENT:

- Quizzes
- Worksheets
- Design project

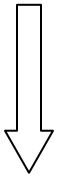
TECHNOLOGY USED:

- Computers
- Scanners
- Digital camera
- Software – Adobe Photoshop

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: DIGITAL IMAGE GRAPHICS	**GRADE: 9-12**
UNIT FOCUS: Digital Photography and Darkroom	

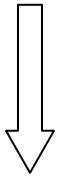
Unit Content	Student Outcomes	Standards
	The student will:	
▪ Scanning	▪ identify the proper type of scanner for the digital image and its use. ▪ scan pictures with the proper resolution and file format for different media.	3.6.10 B,E 3.7.10 A,B,C,D,E 3.8.10 A,B,C
▪ Digital photography	▪ identify and operate the proper type of digital camera. ▪ photograph a quality photo using proper technique.	
▪ Basic photo corrections	▪ be able to duplicate original image or scans. ▪ be able to check scan quality and make sure resolution is appropriate for the way an image is used. ▪ crop the image to final size and orientation. ▪ repair flaws in scans of damaged photographs. ▪ adjust the overall contrast or tonal range of the image. ▪ remove any color casts. ▪ adjust color and tone in specific parts of an image. ▪ sharpen the overall focus of an image.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: DIGITAL IMAGE GRAPHICS	**GRADE: 9-12**
UNIT FOCUS: Digital Photography and Darkroom	

Page 2

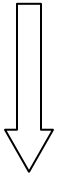
Unit Content	Student Outcomes	Standards
	The student will:	
▪ Retouching and repairing of photos	▪ be able to use the clone stamp tool to eliminate an unwanted part of an image. ▪ be able to use the spot healing brush tool to repair part of an image. ▪ use the healing brush and patch tool to blend in corrections. ▪ make corrections on a duplicate layer and adjust it for a natural look.	3.6.10 B,E 3.7.10 A,B,C,D,E 3.8.10 A,B,C
▪ Selection tools	▪ make specific areas of an image active using various tools. ▪ reposition a selection marquee. ▪ move duplicate contents of a selection. ▪ deselect a selection. ▪ constrain the movement of a selected area. ▪ adjust the position of a selected area using the arrow keys. ▪ add to and subtract from a selection.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: DIGITAL IMAGE GRAPHICS	**GRADE: 9-12**
UNIT FOCUS: Digital Photography and Darkroom	

Page 3

Unit Content	Student Outcomes	Standards
	The student will:	
▪ Selection tools (continued)	▪ rotate a selection. ▪ use multiple selection tools to make a complex selection. ▪ erase pixels within a selection.	3.6.10 B,E 3.7.10 A,B,C,D,E 3.8.10 A,B,C
▪ Layer basics	▪ organize artwork on layers. ▪ create, view, hide, and select layers. ▪ rearrange layers to change the stacking order of artwork in the image. ▪ apply blending modes to layers. ▪ link layers to work on them simultaneously. ▪ apply a gradient to a layer. ▪ add text and layer effects to a layer.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: DIGITAL IMAGE GRAPHICS	**GRADE: 9-12**
UNIT FOCUS: Digital Photography and Darkroom	

Page 4

Unit Content	Student Outcomes	Standards
	The student will:	
▪ Masks and channels	▪ refine a selection using a channel mask. ▪ save a selection using a channel mask. ▪ view a mask using channel and palette. ▪ load a saved mask and apply effects. ▪ paint in a mask and apply effects. ▪ make an intricate selection using the extract command. ▪ create and use a gradient mask.	3.6.10 B,E 3.7.10 A,B,C,D,E 3.8.10 A,B,C
▪ Correcting and enhancing digital photographs	▪ process a proprietary camera raw image and save it as an industry standard digital negative. ▪ make typical correction to a digital photograph, including removing red eye and nose and bringing out shadow and highlighting detail. ▪ adjusting the visual perspective of objects in an image using vanishing point filter.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: DIGITAL IMAGE GRAPHICS	**GRADE: 9-12**
UNIT FOCUS: Digital Photography and Darkroom	

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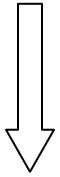
Unit Content	Student Outcomes	Standards
	The student will:	
▪ Correcting and enhancing digital photographs (continued)	▪ apply optical lens corrections to an image. ▪ prepare a PDF presentation of your corrected images.	3.6.10 B,E 3.7.10 A,B,C,D,E 3.8.10 A,B,C
▪ Typographic design	▪ use guides to position text in a composition. ▪ make a clipping mask from type. ▪ merge type with other layers. ▪ use layer styles with text. ▪ preview typefaces interactively to choose them for a composition. ▪ control type and positioning using advanced type palette features. ▪ warp a layer around a 3D object.	
▪ Vector drawing techniques	▪ differentiate between bitmap and vector graphics. ▪ draw straight and curved paths using the pen tool.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: DIGITAL IMAGE GRAPHICS	**GRADE: 9-12**
UNIT FOCUS: Digital Photography and Darkroom	

Page 6

Unit Content	Student Outcomes	Standards
	The student will:	
▪ Vector drawing techniques (continued)	▪ convert a path to a selection, and convert a selection to a path.	3.6.10 B,E 3.7.10 A,B,C,D,E 3.8.10 A,B,C
	▪ save paths.	
	▪ draw and edit layer shapes.	
	▪ draw custom layer shapes.	
	▪ import and edit a smart object from Adobe Illustrator.	
▪ Advanced layer techniques	▪ create clipping groups so that an image on one layer can be a mask for artwork on other layers.	
	▪ create layer sets to organize and manage layers.	
	▪ add adjustment layers to an image, and use them to apply color and tonal adjustments without permanently changing pixel data.	
	▪ create knockout layers to use one layer selectively to reveal others.	
	▪ import layers from other photo shop files.	
	▪ work with type layers.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: DIGITAL IMAGE GRAPHICS	**GRADE: 9-12**
UNIT FOCUS: Digital Photography and Darkroom	

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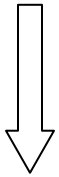
Unit Content	Student Outcomes	Standards
	The student will:	
▪ Advanced layer techniques (continued)	▪ duplicate and clip layers. ▪ add layer styles to a layer, and apply the effects to multiple layers. ▪ rasterize layers. ▪ convert clipping paths to masks. ▪ liquefy a layer, giving it a melted appearance. ▪ flatten and save a layered file, greatly reducing its file size.	3.6.10 B,E 3.7.10 A,B,C,D,E 3.8.10 A,B,C
▪ Advanced composting	▪ record and play back an action to automate a series of steps. ▪ add guides to help place and align image precisely. ▪ save selections and load them as masks. ▪ apply color effects only to unmasked areas of an image. ▪ add an adjustment layer to color-correct a selection.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: DIGITAL IMAGE GRAPHICS	**GRADE: 9-12**
UNIT FOCUS: Digital Photography and Darkroom	

Page 8

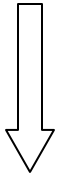
Unit Content	Student Outcomes	Standards
	The student will:	
▪ Advanced composting (continued)	▪ apply filters to selections to create various ▪ add layer styles to create editable special effects.	3.6.10 B,E 3.7.10 A,B,C,D,E 3.8.10 A,B,C
▪ Creating links for web within an image	▪ create image slices using the slice tool. ▪ distinguish between user slices and auto slices. ▪ link user slices to other HTML pages or locations. ▪ define image-map areas using three different methods. ▪ link image-map areas to other HTML pages and locations. ▪ generate an HTML page that contains the sliced image. ▪ learn the difference between GIF and JPEG optimization.	
▪ Creating rollover web visuals	▪ define a rollover state that results in warped text. ▪ define rollover states that affect layer visibility.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: DIGITAL IMAGE GRAPHICS	**GRADE: 9-12**
UNIT FOCUS: Digital Photography and Darkroom	

Page 9

Unit Content	Student Outcomes	Standards
	The student will:	
▪ Creating rollover web visuals (continued)	▪ preview rollover effects. ▪ create a remote rollover. ▪ generate an HTML page that contains the sliced image in a table.	3.6.10 B,E 3.7.10 A,B,C,D,E 3.8.10 A,B,C
▪ Animating GIF images for the web	▪ use a multilayered GIF image as the basis for an animation. ▪ use layers and animation palettes to create animation sequences. ▪ create animation based on changes in position, layer visibility, and layer effects. ▪ make changes to single frames, multiple frames, and an entire animation. ▪ use tween command to create smooth transitions between different settings for layer opacity and position. ▪ preview animations in image ready and in a web browser. ▪ optimize the animation using the optimize palette.	

WEST ALLEGHENY SCHOOL DISTRICT
TECHNOLOGLY EDUCATION
CURRICULUM

DRAWING AND DESIGN
ARCHITECTURAL

WEST ALLEGHENY SCHOOL DISTRICT

Subject: **TECHNOLOGY EDUCATION**
DRAWING AND DESIGN (ARCHITECTURAL)

ACADEMIC STANDARDS

3.6.10 B,C
3.7.10 A,B,D,E
3.8.10 A,B,C

COURSE DESCRIPTION:

ARCHITECTURAL DAWING & DESIGN [706] - 9,10,11,12 - 2ND SEMESTER - 5 CREDIT

This course is an activity based course focusing on the basic technical drawing techniques commonly used for the Architectural field. Students will acquire skills in two and three dimensional drawing and designing of residential houses with traditional drawing and CADD (Computer Aided Drafting and Design) drawing emphasized.

BASIC TEXT/PUBLISHER AND INSTRUCTIONAL RESOURCES:

- Architecture Drafting and Design/ Donald E. Helper, Paul Ross; Donna J. Helpe
- Architectural Design Software

ASSESSMENT:

- Quizzes
- Worksheets
- Projects

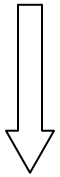
TECHNOLOGY USED:

- Computer
- Plotter/printer
- Architectural design software

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: DRAWING & DESIGN (ARCHITECTURAL)	**GRADE: 9-12**
UNIT FOCUS: Floor Plan Layout	

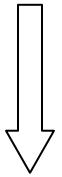
Unit Content	Student Outcomes	Standards
	The student will:	
▪ Measuring	▪ explain the importance of being able to convey measurements to the real world from a drawing.	3.6.10 B,C 3.7.10 A,B,C,D,E 3.8.10 A,B,C
▪ Measuring using a scale	▪ demonstrate how to use a scale to keep a building proportional in size onto a sheet of paper.	
▪ Drawing regular lines	▪ generate lines using the drawing tools. ▪ identify which tool/tools must be used to draw that line. ▪ safely use tools and equipment found throughout the lab.	
▪ Drawing irregular lines	▪ generate irregular lines using drawing tools. ▪ identify which tool/tools are used to create the irregular line.	
▪ Drawing house symbols, mechanical	▪ compare symbols and what they mean and how they are interrelated. ▪ develop a house symbol sheet. ▪ illustrate what symbol can be used for the current application.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: DRAWING & DESIGN (ARCHITECTURAL)	**GRADE: 9-12**
UNIT FOCUS: Floor Plan Layout	

Page 2

Unit Content	Student Outcomes	Standards
▪ Sketching	The student will: ▪ sketch ideas of a one floor house.	3.6.10 B,C 3.7.10 A,B,C,D,E
▪ Room layout and size	▪ explain size recognition of house plans. ▪ solve problems of room layout with their plans.	3.8.10 A,B,C
▪ House flowchart	▪ develop a house plan with smooth flow from room to room.	
▪ Mechanical drawing of house layout	▪ generate a mechanical drawing of a house floor plan. ▪ identify doors and windows throughout the drawing. ▪ illustrate their ideas onto a clear floor plan. ▪ describe different wall sections for their insulation qualities.	
▪ Dimensioning a house plan	▪ illustrate sizes on the plan for construction of the plan. ▪ establish finished plan for a ranch home.	
▪ Apply drawing onto CADD system	▪ apply finished house plan into 3-D home architect.	

WEST ALLEGHENY SCHOOL DISTRICT
TECHNOLOGLY EDUCATION
CURRICULUM

DRAWING AND DESIGN
ENGINEERING

WEST ALLEGHENY SCHOOL DISTRICT

Subject: **TECHNOLOGY EDUCATION**
DRAWING AND DESIGN (ENGINEERING)

ACADEMIC STANDARDS

3.6.10 A,B,C
3.7.10 A,B,C,D,E
3.8.10 A,B,C

COURSE DESCRIPTION:

ENGINEERING DRAWING & DESIGN [701] - 9,10,11,12 - 1st SEMESTER - .5 CREDIT

This course is an activity course focusing on the basic technical drawing techniques commonly used for the engineering field. Students will acquire skills in two and three dimensional drawing and designing of products with traditional drawing and CADD (Computer Aided Drafting and Design) drawing being emphasized.

BASIC TEXT/PUBLISHER AND INSTRUCTIONAL RESOURCES:

- Micro-station software
- Mechanical drawing – CADD – Communications 11th Edition; Glencoe

ASSESSMENT:

- Tests
- Quizzes
- Projects

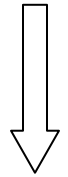
TECHNOLOGY USED:

- Computer
- Plotter/printer
- Micro-station software

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

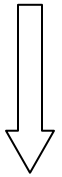
COURSE: DRAWING & DESIGN (MECHANICAL)	**GRADE: 9-12**
UNIT FOCUS: Technical Drawing	

Unit Content	Student Outcomes	Standards
	The student will:	
▪ Measuring o English system o importance	▪ be able to measure an object size and also make an object to a given size. ▪ learn the importance of having a measuring system.	3.6.10 A,B,C 3.7.10 A,B,C,D,E 3.8.10 A,B,C
▪ Lettering	▪ apply the correct lettering styles to their finished project.	
▪ Tools used for straight lines o board o computer	▪ identify what tool or tools are to be used for the type of line being drawn. ▪ demonstrate the correct procedure in drawing the line. ▪ utilize the X,Y,Z coordinate system so that they can operate the DX command of the computer. ▪ compare the 3 types of line commands to draw a line on the computer.	
▪ Drawing straight lines o board o computer	▪ communicate the size of a drawing through the dimensions that they apply to the drawing.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: DRAWING & DESIGN (MECHANICAL)	**GRADE: 9-12**
UNIT FOCUS: Technical Drawing	

Unit Content	Student Outcomes	Standards
	The student will:	
▪ Drawing straight lines (continued) o board o computer	▪ utilize which tools should be used to communicate the dimensions. ▪ generate a drawing on the CADD system, utilizing the correct dimension/icons for each dimension applied.	3.6.10 A,B,C 3.7.10 A,B,C,D,E 3.8.10 A,B,C
▪ Drawing arcs, circles, and fillets o board o computer	▪ explain which tools would be used, and why the student would pick that tool. ▪ draw arcs, circles, and fillets using the drawing tools and boards. ▪ generate fillets, circles, and arch on the CADD system. ▪ identify the importance of engineering fillets into an object.	
▪ Dimensions, irregular shapes o board o computer	▪ demonstrate the proper way of dimensioning a circle, arc, or fillet by using drawing tools ▪ utilize the dimension radial tool to complete the dimensions of a computer drawing.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: DRAWING & DESIGN (MECHANICAL)	**GRADE: 9-12**
UNIT FOCUS: Technical Drawing	

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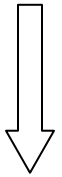
Unit Content	Student Outcomes	Standards
	The student will:	
▪ Multi-view drawings o board o computer	▪ analyze an object to complete an orthographic drawing of that object. ▪ operate the CADD system to achieve an orthographic drawing. ▪ illustrate what a specific object would look like in multi-view drawing.	3.6.10 A,B,C 3.7.10 A,B,C,D,E 3.8.10 A,B,C
▪ Dimensioning multi-view drawings o board o computer	▪ establish where dimensions will be located to show the dimensions of the object in an orthographic drawing.	
▪ Isometric drawings o board	▪ generate an isometric drawing of an object by analyzing an orthographic.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: DRAWING & DESIGN (MECHANICAL)	**GRADE: 9-12**
UNIT FOCUS: Technical Drawing	

Page 4

Unit Content	Student Outcomes	Standards
▪ Introduction to 3-D CADD shapes	The student will: ▪ utilize the 3-D tools palette of the CADD system. ▪ recognize the tool to be used to extrude shapes into 3-D objects. ▪ generate rendered drawings of the objects. ▪ communicate different machines that use 3-D imaging. ▪ calculate the volume of a 3-D object on the CADD system.	3.6.10 A,B,C 3.7.10 A,B,C,D,E 3.8.10 A,B,C

WEST ALLEGHENY SCHOOL DISTRICT
TECHNOLOGLY EDUCATION
CURRICULUM

ENERGY/POWER SYSTEMS

WEST ALLEGHENY SCHOOL DISTRICT

Subject: **ENERGY/POWER SYSTEMS**
GRADE 9-12

ACADEMIC STANDARDS

3.6.10 A,B,C
3.7.10 A,B,C,D,E
3.8.10 A,B,C

COURSE DESCRIPTION:

ENERGY/POWER SYSTEMS [0709] 9,10,11,12 2ND SEMESTER .5 CREDIT

This course is an activity-based course that focuses on the systems that power vehicles and their energy sources. Students will concentrate on small gas engines, electric motor, solar motors, hydraulics and pneumatics.

BASIC TEXT/PUBLISHER AND INSTRUCTIONAL RESOURCES:

- Transportation, Energy, and Power Technologies
- Delmar Technology Services
- Anthony Schwaller

ASSESSMENT:

- Quizzes
- Tests
- Hands on projects

TECHNOLOGY USED:

- Computer
- Power point

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: ENERGY/POWER SYSTEMS	**GRADE: 9-12**
UNIT FOCUS: Engine and Electrical Design and Applications	

Unit Content	Student Outcomes	Standards
	The student will:	
▪ Electrical power	▪ explain basic electricity components. ▪ explain the structure of an atom. ▪ list 3 things all materials must be; conductor, insulator, or semiconductor. ▪ define electricity, amperage, voltage, and resistance. ▪ explain the difference between the two methods of electricity – electron theory and conventional theory. ▪ design the three types of circuits. ▪ explain what an open, short, or ground is. ▪ identify the electric symbols. ▪ identify and explain the different types of components they will be working with. ▪ build a small circuit board.	3.6.10 A,B,C 3.7.10 A,B,C,D,E 3.8.10 A,B,C
▪ Mechanical probabilities	▪ identify the difference between torque and horse power. ▪ explain the advantages that levers give the user. ▪ list the different class of levers. ▪ describe the advantage of gears in a system. ▪ explain how the braking system of a car operates.	3.6.10 A,B,C 3.7.10 A,B,C,D,E 3.8.10 A,B,C

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: ENERGY/POWER SYSTEMS	**GRADE: 9-12**
UNIT FOCUS: Engine and Electrical Design and Applications	

Page 2

Unit Content	Student Outcomes	Standards
▪ Heat engine design	The student will: ▪ list the different types of engine classifications. ▪ identify and explain the different parts and component of an engine system. ▪ explain how the cooling system of a car operates. ▪ explain the movement of the piston in the engine. ▪ list the 4 stages an engine must. ▪ explain what a rotary engine is and how it operates. ▪ build a Lego system to move components from part A to B. ▪ build a roller coaster and look at the forces and design the coaster must go through.	3.6.10 A,B,C 3.7.10 A,B,C,D,E 3.8.10 A,B,C

WEST ALLEGHENY SCHOOL DISTRICT
TECHNOLOGLY EDUCATION
CURRICULUM

GRAPHIC DESIGN

WEST ALLEGHENY SCHOOL DISTRICT

Subject: **TECHNOLOGY EDUCATION**
GRAPHIC DESIGN

ACADEMIC STANDARDS

3.6.10 B
3.7.10 A,B,C,D,E
3.8.10 A,B,C

COURSE DESCRIPTION:

GRAPHIC DESIGN [710] ----- 9,10,11,12 ---- 2nd SEMESTER ----- .5 CREDIT

This course is an activity-based course introducing multimedia design for printed material. The students will use Adobe programs integrated with digital photography, scanning, and printing to produce commercial type art for publishing. Screen printing, cartooning, folding and binding are all included in the course.
No Prerequisite *Art I will greatly help, but is not required..*

BASIC TEXT/PUBLISHER AND INSTRUCTIONAL RESOURCES:

- Teacher made resources

ASSESSMENT:

- Quizzes
- Worksheets
- Design projects

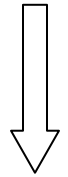
TECHNOLOGY USED:

- Computers
- Scanners
- Digital cameras
- Programs/software
  - Adobe Photoshop
  - Adobe Illustrator
  - Adobe In Design
  - Adobe Flash
  - Adobe Dream Weaver
- Screen printing

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: GRAPHIC DESIGN	**GRADE: 9-12**
UNIT FOCUS – Publication Design	

Unit Content	Student Outcomes	Standards
	The student will:	
▪ Publication design history	▪ be able to explain how written language and publishing evolved over time. ▪ be able to describe how changing technologies have affected publication design. ▪ describe how important publication designers influence the development of publication design.	3.6.10 B 3.7.10 A,B,C,D,E 3.8.10 A,B,C
▪ Principles and elements of publication design	▪ generate a publications goal, audience and other considerations to determine its design. ▪ illustrate how design principles dictate how to work with design elements in a page or cover layout. ▪ illustrate how the elements of design operate as components in a page or cover layout. ▪ develop a basic layout that organizes design elements and creates harmonious spatial relationships using proportional systems and grids.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: GRAPHIC DESIGN	**GRADE: 9-12**
UNIT FOCUS – Publication Design	

Page 2

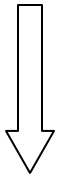
Unit Content	Student Outcomes	Standards
▪ Using color effectively	The student will: ▪ describe how a color can help establish a mood for a publication, cover, or article design. ▪ analyze various color combinations and understand why certain colors work well together, and others do not. ▪ produce a piece that demonstrates how color can help create hierarchy and control space in a layout. ▪ produce a layout showing how color can work as a unifying element in a publication. ▪ describe how color is perceived and used in the digital realm and in print. ▪ apply the color system to a layout for the publication design and production.	3.6.10 B 3.7.10 A,B,C,D,E 3.8.10 A,B,C
▪ Typography	▪ define typographic terms ▪ apply the measurement system. ▪ demonstrate how to select type faces appropriate to a project's design and communication goals.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: GRAPHIC DESIGN	**GRADE: 9-12**
UNIT FOCUS – Publication Design	

Page 3

Unit Content	Student Outcomes	Standards
	The student will:	
▪ Typography (continued)	▪ explore ways that type can lead expression to a design.	3.6.10 B 3.7.10 A,B,C,D,E
	▪ apply type judiciously when legibility is a factor.	3.8.10 A,B,C
	▪ generate a piece showing how basic design principles are applied to type in a layout.	
▪ Page layout	▪ describe the importance of grids in providing unity and flow in a publication.	
	▪ demonstrate the ways grids can be adapted to support the format, goal, and content of a publication.	
	▪ demonstrate effective use of typography within a grid.	
	▪ demonstrate ways that typography works to create hierarchy and organize content in a page layout.	
	▪ describe factors that affect the readability of text type.	
	▪ demonstrate effective ways to combine typefaces harmoniously.	
	▪ demonstrate how imagery and text work together in page layout.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

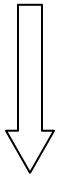
COURSE: GRAPHIC DESIGN	**GRADE: 9-12**
UNIT FOCUS – Publication Design	

Unit Content	Student Outcomes	Standards
	The student will:	
▪ Imagery	▪ compare and contrast the differences between photography and illustration. ▪ demonstrate how photography and illustration are used in a publication design. ▪ describe opportunities for cropping and using imagery creatively in a page layout. ▪ compare and contrast the differences between different illustration style and media. ▪ explain production issues as they relate to imagery.	3.6.10 B 3.7.10 A,B,C,D,E 3.8.10 A,B,C
▪ Format in publication	▪ investigate the importance of format in publication design. ▪ demonstrate how size and color can support a publication's communication goal. ▪ describe the role that paper and binding play in publication's design and format.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: GRAPHIC DESIGN	**GRADE: 9-12**
UNIT FOCUS – Publication Design	

Unit Content	Student Outcomes	Standards
	The student will:	
▪ Format in publication (continued)	▪ investigate unusual formats that go beyond traditional perceptions of publication design. ▪ describe the role that a cover plays in a publication's design. ▪ demonstrate how content is organized to aid reader navigation.	3.6.10 B 3.7.10 A,B,C,D,E 3.8.10 A,B,C
▪ Design principles at work	▪ investigate how design elements and principles discussed are applied to examples of award winning design. ▪ describe how a publication's communication goals and audience affect its design. ▪ compare and contrast the differences between magazine, newspaper, book, annual report, and promotional brochure design. ▪ investigate how content purpose drives the design of magazines, newspapers, books, annual reports, and promotional brochures.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: GRAPHIC DESIGN	**GRADE: 9-12**
UNIT FOCUS – Publication Design	

Page 6

Unit Content	Student Outcomes	Standards
▪ Professional opportunities in publication design	The student will: ▪ establish the general qualifications and demands common to most publication design jobs. ▪ investigate the differences between specialized areas of publication design. ▪ describe the variety or roles designers can assume in publication design. ▪ investigate the work and careers of successful publication design professionals.	3.6.10 B 3.7.10 A,B,C,D,E 3.8.10 A,B,C

WEST ALLEGHENY SCHOOL DISTRICT
TECHNOLOGLY EDUCATION
CURRICULUM

MANUFACTURING TECHNOLOGY I

WEST ALLEGHENY SCHOOL DISTRICT

Subject: **MANUFACTURING TECHNOLOGY I**
GRADE 9-12

ACADEMIC STANDARDS

3.6.10 A,B,C
3.7.10 A,B
3.8.10 A,B,C

COURSE DESCRIPTION:

MANUFACTURING TECHNOLOGY I [0703] 9,10,11,12 1st SEMESTER .5 CREDIT

This course is an activity-based course that focuses on the manufacturing industry. Students will work with common wood working tools and know their safety. A common and individual project will be built.
No Prerequisite

BASIC TEXT/PUBLISHER AND INSTRUCTIONAL RESOURCES:

- Wood Technologies and Processes / Glencoe

ASSESSMENT:

- Projects
- Quizzes
- Worksheets

TECHNOLOGY USED:

N/A

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: MANUFACTURING TECHNOLOGY I	**GRADE: 9-12**
UNIT FOCUS: Wood Technology	

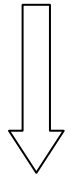
Unit Content	Student Outcomes	Standards
	The student will:	
▪ Wood working industry	▪ explain how wood is harvested and processed. ▪ describe the different classifications for wood and wood materials. ▪ identify and apply the problem-solving process. ▪ describe several wood working careers.	3.6.10 A,B,C 3.7.10 A,B 3.8.10 A,B,C
▪ Safety practices	▪ explain why safety is really an attitude. ▪ describe woodshop hazards and how to prevent problems. ▪ describe and use different types of personal safety gear and tell their purposes. ▪ illustrate how to set up a safe workshop. ▪ explain the use of first aid for common workshop injuries.	
▪ Measuring and cutting	▪ read measurements accurately on customary and metric rule. ▪ select and use the correct measuring tool for a specific measuring task. ▪ correctly measure and mark stock for cutting. ▪ name the basic types of cuts made with saws. ▪ properly use an appropriate hand saw or portable power saw for a specific cutting task.	
▪ Nailing	▪ identify the proper types of nails. ▪ demonstrate the correct technique for driving nails into wood.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: MANUFACTURING TECHNOLOGY I	**GRADE: 9-12**
UNIT FOCUS: Wood Technology	

Page 2

Unit Content	Student Outcomes	Standards
	The student will:	
▪ Drilling	▪ drill holes with a variety of hand tools as well as with a power drill.	3.6.10 A,B,C 3.7.10 A,B
▪ Planing, chiseling, and sanding	▪ plane the surface of a piece of stock using proper planing techniques. ▪ use a chisel correctly. ▪ sand the surface of a piece of stock.	3.8.10 A,B,C
▪ Butt, biscuit and dowel joints	▪ make an edge biscuit joint. ▪ make an edge dowel joint.	
▪ Rabbet joint	▪ layout a rabbet joint. ▪ make a rabbet joint using hand tools. ▪ make a rabbet joint using power tools. ▪ assemble a rabbet joint.	
▪ Dado joint	▪ layout and cut a dado joint.	
▪ Lap joint	▪ cut out and make a cross-lap joint. ▪ make a half-lap joint. ▪ make a full-lap joint. ▪ make a finger-lap joint.	

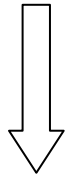
WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: MANUFACTURING TECHNOLOGY I	**GRADE: 9-12**
UNIT FOCUS: Wood Technology	

Page 3

Unit Content	Student Outcomes	Standards
	The student will:	
▪ Miter joint	▪ layout, cut, and assemble a miter joint to create a picture frame.	3.6.10 A,B,C 3.7.10 A,B
▪ Mortise and tenon joint	▪ assemble a mortise-and-tenon joint.	3.8.10 A,B,C
▪ Gluing and clamping	▪ select the correct adhesive and clamp. ▪ properly glue and clamp an edge joint.	



WEST ALLEGHENY SCHOOL DISTRICT
TECHNOLOGLY EDUCATION
CURRICULUM

MANUFACTURING TECHNOLOGY II

WEST ALLEGHENY SCHOOL DISTRICT

Subject: **MANUFACTURING TECHNOLOGY II**
GRADE – 9-12

ACADEMIC STANDARDS

3.6.10 A,B,C
3.7.10 A,B
3.8.10 A,B,C

COURSE DESCRIPTION:

MANUFACTURING TECHNOLOGY II [0711] 9,10,11,12 2nd SEMESTER .5 CREDIT

This course is an activity-based course that focuses on the manufacturing industry. The students will design and manufacture a product via a mass production. The class will be structured as a company. During the course the student will establish a governing board, do market analysis, sell stock, and finally, dissolve the company.

BASIC TEXT/PUBLISHER AND INSTRUCTIONAL RESOURCES:

- Wood Technologies and Processes / Glencoe

ASSESSMENT:

- Projects
- Quizzes
- Worksheets

TECHNOLOGY USED:

N/A

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: MANUFACTURING TECHNOLOGY II	**GRADE: 9-12**
UNIT FOCUS: Wood Technology Machines	

Unit Content	Student Outcomes	Standards
	The student will:	
▪ Planer	▪ surface a board to thickness.	3.6.10 A,B,C 3.7.10 A,B
▪ Jointer	▪ joint an edge. ▪ joint a face.	3.9.10 A,B,C
▪ Table saw	▪ rip wood to width. ▪ crosscut wood to length. ▪ make a miter, bevel, and chamfer cut.	
▪ Band saw	▪ cut simple and compound curves on a band saw. ▪ cut a circle on the band saw.	
▪ Scroll saw	▪ cut external and internal curves.	
▪ Drill press	▪ operate a drill press correctly.	
▪ Sander	▪ operate a stationary belt and drum sander.	
▪ Lathe	▪ identify common turning tools. ▪ describe two basic methods of turning. ▪ demonstrate both rough turning and finish turning.	
▪ Applying stains and clear finishes	▪ use an oil based stain on wood. ▪ apply a wood sealer.	

WEST ALLEGHENY SCHOOL DISTRICT
TECHNOLOGLY EDUCATION
CURRICULUM

MULTIMEDIA DESIGN

WEST ALLEGHENY SCHOOL DISTRICT

Subject: **MULTIMEDIA DESIGN**
GRADE – 10-12

ACADEMIC STANDARDS

3.6.10 B
3.7.10 A,B,C,D,E
3.8.10 A,B,C

COURSE DESCRIPTION:

MULTIMEDIA DESIGN 10,11,12 YEAR 1 CREDIT

This course is an activity based course exploring multimedia design as it applies to the computer interface. The students will use computer software programs to create multimedia interfaces using animation, web design, and program design for video, video games, and computers.

BASIC TEXT/PUBLISHER AND INSTRUCTIONAL RESOURCES:

- Exploring Interface Design / Thompson-Delmar
- Exploring Story Boarding / Thompson-Delmar
- Teacher made worksheets

ASSESSMENT:

- Quizzes
- Projects
- Worksheets

TECHNOLOGY USED:

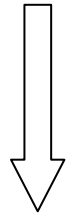
- Adobe Photoshop
- Illustrator
- Dreamweaver
- Flash

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: MULTI MEDIA DESIGN	**GRADE: 10-12**
UNIT FOCUS: Storyboarding	

Unit Content	Student Outcomes	Standards
	The student will:	
▪ Visual storytelling and storyboards	▪ describe how visual stories are told. ▪ identify the elements of a story. ▪ explore industries that use storyboards.	3.6.10 B 3.7.10 A,B,C,D,E 3.8.10 A,B,C
▪ Origins of storyboards and aspect ratios	▪ describe the early history of story board. ▪ describe where storyboards fit in the visual storytelling process. ▪ describe the history of aspect ratios. ▪ compare and contrast the difference between pan and scan and letterboxing. ▪ calculate aspect ratio.	
▪ Fundamentals of the shot	▪ contrast the differences between scenes and shots. ▪ illustrate a scene in terms of framing, angle, and movement. ▪ illustrate camera and character movement with directional arrows.	
▪ Form script to final storyboard	▪ describe the function of the shooting script, shot list, and overhead diagram. ▪ demonstrate camera and character movement. ▪ describe the psychological impact of specific camera angles, framing, and movement. ▪ demonstrate the storyboard approach from creating thumbnails to rough to final storyboards.	

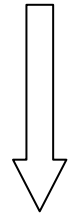


WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: MULTI MEDIA DESIGN	**GRADE: 10-12**
UNIT FOCUS: Storyboarding	

Page 2

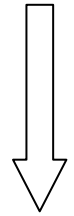
Unit Content	Student Outcomes	Standards
	The student will:	
▪ Composition	▪ describe how the elements of design affect shot arrangement. ▪ express the mood and intent of a story line with two-dimensional images. ▪ describe the emotional and psychological impact of geometric form and lines. ▪ apply the rule of thirds to storyboard panels.	3.6.10 B 3.7.10 A,B,C,D,E 3.8.10 A,B,C
▪ Perspective	▪ describe the difference between one-point, two-point, and three-point perspective. ▪ define horizontal line, picture plane, and the vanishing point. ▪ describe and draw bird's-eye, worm's-eye, high-angle, and low-angle views.	
▪ Continuity	▪ apply the basic rules of continuity. ▪ illustrate how continuity establishes order. ▪ describe how shots are combined to create meaning. ▪ demonstrate non-continuous shots such as the montage and jump cut.	
▪ Animation, film, and special effects	▪ describe the difference between live action and animation storyboards. ▪ explain the relationship between the storytelling process and story art. ▪ demonstrate the process for creating storyboards for television animation.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: MULTI MEDIA DESIGN	**GRADE: 10-12**
UNIT FOCUS: Storyboarding	

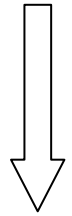
Page 3

Unit Content	Student Outcomes	Standards
	The student will:	
▪ Commercials	▪ describe the advertising campaign process. ▪ explain the difference between presentation and production storyboards.	3.6.10 B 3.7.10 A,B,C,D,E 3.8.10 A,B,C
▪ New media	▪ describe storyboarding for multimedia. ▪ demonstrate the development of storyboard sequences for illustrating navigation options and the graphic look. ▪ identify elements of the game design document for storyboarding.	
▪ Animatics	▪ describe the kinetic experience that is the nature of animatics. ▪ demonstrate the importance of animatics in the studio and usage during on-site shoots. ▪ demonstrate timing a story for pacing, dialogue, and special effects shots.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: MULTI MEDIA DESIGN	**GRADE: 10-12**
UNIT FOCUS: Interface Design	

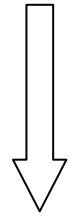
Unit Content	Student Outcomes	Standards
	The student will:	
▪ Realizing the power of multimedia and the web	▪ explain how multimedia and websites can use the power of interactivity to persuade, sell, create a sense of community, teach, and entertain. ▪ describe the importance of researching audience requirements prior to beginning to design a multimedia software project or website. ▪ describe the importance of creating designs on paper before beginning coding. ▪ describe some of the costs associated with poor user interface design. ▪ explain the difference between being creative and being a good designer.	3.6.10 B 3.7.10 A,B,C,D,E 3.8.10 A,B,C
▪ The art of designing elegant software	▪ analyze a simple design problem. ▪ examine several solutions to the design problem and describe their advantages and disadvantages. ▪ demonstrate the importance of design principles to user interface design. ▪ describe the principle made by Donald Norman including visibility, mapping, feedback and affordance. ▪ describe Fitts Law and its application to user interface design.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: MULTI MEDIA DESIGN	**GRADE: 10-12**
UNIT FOCUS: Interface Design	

Page 2

Unit Content	Student Outcomes	Standards
▪ The user interface design process	The student will: ▪ summarize the reasons for adhering to a user interface design process. ▪ illustrate the steps of the waterfall development model. ▪ explain the step of repeating waterfall development model. ▪ explain the steps of the spiral development model. ▪ describe the characteristics of agile software development methodologies. ▪ analyze which development models work best in which circumstances.	3.6.10 B 3.7.10 A,B,C,D,E 3.8.10 A,B,C
▪ Goal setting and needs assessment	▪ describe how to gather ideas to help formulate goals for a new or revised system. ▪ analyze and represent existing websites or software using site/software flow diagrams and site/software maps. ▪ illustrate the steps of a process using a flowchart. ▪ create personas to represent different user types. ▪ analyze tasks using essential use cases.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: MULTI MEDIA DESIGN	**GRADE: 10-12**
UNIT FOCUS: Interface Design	

Page 3

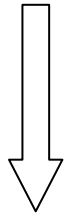
Unit Content	Student Outcomes	Standards
	The student will:	
▪ Creativity and idea generation	▪ explore obstacles to creativity and how to break them. ▪ analyze and practice useful techniques for generating new ideas. ▪ apply techniques to solve interface problems and add value to software. ▪ evaluate ideas to determine which offer the best chance of success. ▪ describe how to conduct and participate in group brain storming sessions.	3.6.10 B 3.7.10 A,B,C,D,E 3.8.10 A,B,C
▪ Menus and contracts	▪ identify the component parts of menus. ▪ identify the common interface controls. ▪ analyze the capabilities of menus and controls. ▪ select the appropriate control for a given situation	
▪ Designing usable navigation	▪ describe the elements of navigation. ▪ analyze various types of navigational systems, including menus, tabs, sitemaps, categories, and search. ▪ compare good and bad menu and tab designs. ▪ apply navigational elements such as menus, bread crumb trails, links, and image maps. ▪ explore advanced search systems. ▪ explore specialized navigation design.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: MULTI MEDIA DESIGN	**GRADE: 10-12**
UNIT FOCUS: Interface Design	

Page 4

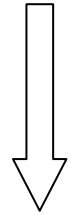
Unit Content	Student Outcomes	Standards
▪ Solving design problems	The student will: ▪ explore a number of design challenges. ▪ analyze possible solutions to each challenge. ▪ compare various approaches to each design. ▪ evaluate each design solution to determine how well it suits the intended purpose.	3.6.10 B 3.7.10 A,B,C,D,E 3.8.10 A,B,C
▪ Visual considerations	▪ demonstrate grids use to help organize a site content. ▪ describe how technique of unfocused attention can help you review a screen or page design. ▪ align screen controls, label, and other elements. ▪ describe what elements to include above and below the “fold” of a web page. ▪ increase the readability of text. ▪ explore how to select graphics for a website.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: MULTI MEDIA DESIGN	**GRADE: 10-12**
UNIT FOCUS: Interface Design	

Page 4

Unit Content	Student Outcomes	Standards
▪ Writing for usability	The student will: ▪ analyze how web visitors are different from most other types of readers. ▪ explain how the inverted pyramid structure helps users read control efficiently. ▪ explore how carefully worded titles and headings can help users scan your page's content. ▪ analyze techniques to reduce amount of text on your pages. ▪ describe how to keep users from prematurely leaving your site.	3.6.10 B 3.7.10 A,B,C,D,E 3.8.10 A,B,C
▪ Designing for accessibility	▪ explore different types of impairments and the affects on page design. ▪ explore how people with sight impairment see the world. ▪ explore the two accessibility initiatives. ▪ analyze specific techniques for assuring compliance with accessibility guidelines. ▪ apply tools that are available to help test and ensure the accessibility of your websites and software.	

WEST ALLEGHENY SCHOOL DISTRICT
TECHNOLOGLY EDUCATION
CURRICULUM

RESIDENTIAL CONSTRUCTION

WEST ALLEGHENY SCHOOL DISTRICT

Subject: **RESIDENTIAL CONSTRUCTION**
GRADE – 9-12

ACADEMIC STANDARDS

3.6.10 A,C
3.7.10 A,B
3.8.10 A,B,C

COURSE DESCRIPTION:

RESIDENTIAL CONSTRUCTION [704] 9,10,11,12 1ST SEMESTER .5 CREDIT

This course is an activity based course that focuses on the principles and technique of residential construction. Students will work with the application, design, and tools used in the field.

BASIC TEXT/PUBLISHER AND INSTRUCTIONAL RESOURCES:

- Exploring Construction
- Glencoe

ASSESSMENT:

- Tests
- Quizzes
- Hand on projects

TECHNOLOGY USED:

N/A

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: RESIDENTIAL CONSTRUCTION	**GRADE: 9-12**
UNIT FOCUS: House Construction	

Unit Content	Student Outcomes	Standards
	The student will:	
▪ Measuring	▪ identify the different units of measurement. ▪ apply knowledge of measuring to cutting out material to the correct size.	3.6.10 A,C 3.7.10 A,B 3.8.10 A,B,C
▪ Principles of house construction	▪ identify the different components of framing. ▪ explain the use of a termite block in construction. ▪ describe how fire blocks work in house construction.	
▪ Tools used in residential construction	▪ explain the difference between a hand tool, power hand tool, and machine. ▪ describe which tool would be used for a certain job. ▪ identify a tool by how it looks and also explain the purpose of that tool.	
▪ House materials	▪ explain the complete cost of a material. ▪ identify the advantages and disadvantages of materials. ▪ explain why one material might be chosen over another. ▪ explain why some materials may be chosen over other materials for the environmental and insulating properties.	

WEST ALLEGHENY SCHOOL DISTRICT
TECHNOLOGLY EDUCATION
CURRICULUM

TRANSPORTATION TECHNOLOGY

WEST ALLEGHENY SCHOOL DISTRICT

Subject: **TRANSPORTATION TECHNOLOGY**
GRADE – 9-12

ACADEMIC STANDARDS

3.6.10 B,C
3.7.10 A,B,C,D,E
3.8.10 A,B,C

COURSE DESCRIPTION:

TRANSPORTATION TECHNOLOGY [0705] 9,10,11,12 1st SEMESTER .5 CREDIT

This course is an activity-based course that focuses on the four modes of transportation: land, air, water, and space. Students will design, build, and test a vehicle for each mode.

BASIC TEXT/PUBLISHER AND INSTRUCTIONAL RESOURCES:

- Transportation, Energy, and Power Technology
- Delmar Technology Services
- Anthony Schwaller

ASSESSMENT:

- Hands on projects
- Project testing and designing
- Tests and quizzes

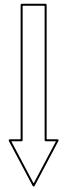
TECHNOLOGY USED:

- Computer flight simulator
- Power point presentations

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: TRANSPORTATION TECHLNOLOGY	**GRADE: 9-12**
UNIT FOCUS: Land and Air Transportation	

Unit Content	Student Outcomes	Standards
	The student will:	
▪ Transportation, engines and power	▪ define what transportation is. ▪ define what energy is. ▪ explain the use of the universal systems model. ▪ explain outside influences on the transportation system.	3.6.10 B,C 3.7.10 A,B,C,D,E 3.8.10 A,B,C
▪ Introduction to transportation	▪ list the categories of transportation. ▪ explain the technological systems in transportation. ▪ identify the increases of transportation efficiency over the years.	
▪ Introduction to land transportation	▪ describe the type of transportation that should be used. ▪ compare the different transportation forms for moving people. ▪ explain the benefits of mass transportation.	
▪ Modes of land transportation	▪ identify the advantages and disadvantages of bus transportation. ▪ explain ways to make bus transportation faster. ▪ list how the car just hasn't affected us but the entire work population. ▪ explain how modern car technologies work and function on a daily basis. ▪ explain measures that are done to cars to make them more efficient. ▪ list the advantages to pipeline transportation. ▪ design a car to be tested for aerodynamics, rolling capabilities, and race time. ▪ test their projects off of ramps, in wind tunnels, and on the race track to see how efficient a vehicle they can make.	

WEST ALLEGHENY SCHOOL DISTRICT

STUDENT OUTCOME STATEMENTS – INDICATOR OF ACHIEVEMENT

COURSE: TRANSPORTATION TECHLNOLOGY	**GRADE: 9-12**
UNIT FOCUS: Land and Air Transportation	

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Unit Content	Student Outcomes	Standards
▪ Air transportation	The student will: ▪ list impacts that air transportation has on us socially and economically. ▪ list regulations, agencies, and associations that help monitor the air transportation system. ▪ explain the aviation principles, forces on an aircraft, and the air foils of an aircraft. ▪ identify the different wing types. ▪ explain the use of flaps on an aircraft. ▪ explain the control and parts used for controlling an aircraft. ▪ build and fly a small plane that they will alter to achieve maximum flight. ▪ fly a plane for two flight patterns on the simulator.	3.6.10 B,C 3.7.10 A,B,C,D,E 3.8.10 A,B,C