Course Information:

Topic:	INTRO to CADD - (Recommend changing the name to CAD Design & Software to align with CTE state PATHWAYS)
Grade Level:	10, 11, or 12
Length:	Semester
Period/s Per Day:	1 period, 50 minutes

Essential Understanding:

CAD 1 is designed as an introductory course covering the operation of a typical CAD system. Content stresses CAD graphic commands, proper manipulation, industrial CAD software and hardware to produce engineering drawings. Emphasis is placed on developing entry-level CAD user skills using the current version of the AutoCAD software. The class is designed to prepare students for the world of work, advancement to the local community college, or a four-year university.

Course Objectives and Expectations:

- Accurate application of correct mathematical methods and techniques in various applications such as contextual sciences, theoretical mathematics, physics, natural sciences, and other contextual sciences.
- Understand the physical world.
- Use academic technology including finding, evaluating and utilizing appropriate information sources.
- Use critical and analytical thinking.

Student Objectives:

- Create, Save and Edit CAD drawings •
- Perform basic file management functions, and use prototype drawings.
- Use layers, line-types, and color for clarity and to show function in drawings.
- Draw accurately typed input and the various User Coordinate Systems.
- Prepare and use a set of title blocks in standard sizes (for use with all drawings).
- Use the Inquiry, Help, Undo and other commands (to manage the drawing session).
- Produce simple assembly drawings using block and xref techniques.
- Use attributes to add verbal information to symbols.

Pertinent Montana Content Standard:

This set of curriculum goals meets the following CTE. PATHWAY.2 Career and Technical Education Standards for the Ninth through the Twelfth grade Effective as of July 1, 2021

CTE.9-12.1.6.a, CTE.9-12.1.6.b, CTE.9-12.1.8, CTE.9-12.1.8.a, CTE.9-12.1.9.c, CTE.9-12.1.10, CTE.9-12.1.11, CTE.9-12.1.10.c, CTE.9-12.1.11.c, CTE.9-12.1.11.d

Course Outline and Assessments:

Timeline:

Week: 1 & 2

GOALS: Introductions, File Management, CAD Lab procedures, Syllabus, DWG Checklist

Chapter 1 - Introduction to AutoCAD Features

Chapter 2 - Working with Drawings and Templates

Chapter 3 - Intro to Drawing & Editing

Exercises: Coordinate Entry, Coordinate Input Worksheet

Drawings: P03-3 Family Tree: Snap

Homework: Read over Chapter 1 & All Questions:

Read over Chapter 2 & All Questions:

Read and Do Chapter 3 Questions:

Read and Do Chapter 5 Questions:

QUIZ: First week & Chapters 1 & 2 Homework Test Questions

Week: 3 & 4

GOALS: Review file management and review work from chapters 1 & 2.

Continue work on Chapters 3 & 5 Intro to Drawing & Editing and line standards. Review and Turn in Chapters 3 & 5 Homework Test Questions.

Chapter 3 - Intro to Drawing & Editing

Chapter 5 - Line Standards, Drawing Format, and Printing

Exercises: Create TBAL-MS

Add layers & Text Style

Drawings: P03-13, TBAP-MS, Family Tree, P03-3

Homework: Read and Do Chapter 4 Questions:

Read and Do Chapter 7 Questions:

QUIZ: Chapters 3 & 5 Homework Test Questions

Week: 5 & 6

GOALS: Review coordinate entry and line standards and complete work on Chapters 3 & 5, including Object Selection Sets. Begin work on Chapters 4 & 7 Drawing Shapes, Object Snaps, and Auto Tracking. Discuss Polar & Object Tracking alignment paths.

Review and turn in Chapters 4 & 7 Homework Test Questions.

Chapter 4 - Drawing Basic Shapes

Chapter 7 - Object Snap and Auto Tracking

Exercises: Student - Shape Worksheet, Student - Osnap Worksheet, P07-2

Drawings: P08-07, P04-1, P07-08, P04-9, and P04-16

Homework: Read and Do Chapter 11 Questions:

Read and Do Chapter 12 & 13 Questions:

Quiz: Chapters 4 & 7 Homework Test Questions

Week 7 & 8

GOALS: Review drawing basic shapes and object snaps and complete work on Chapters 4 & 7, Osnaps & Shapes worksheet. Begin work on Chapters 11, 12, & 13 Editing Tools, Grips, & Properties.

Review and turn in Chapters 11 & 12 Homework Test Questions.

Chapter 11 – Modifying Objects

Chapter 12 – Arranging and Patterning Objects

Chapter 13 – Grips, Properties, and Additional Selection Techniques

Exercises: Student - Edit Commands WS, Student - Grips worksheet, Student – Array Worksheet, Scale & Rotate by Ref.

Drawings: Latch Plate, Friction Plate, Terminal Board, P13-03, P13-04

Homework: Read and Do Chapter 6 & 8 Questions:

QUIZ: Chapters 11, 12, 13

Week: 9

GOALS: Review and time to catch up on drawings

EXAM: Mid-term written test and Mid-Term drawing

Week: 10 & 11

GOALS: Review editing commands and Grips and complete work on Chapters 11, 12, & 13.

Begin work on Chapters 6 & 8 Display options and Construction Tools. Discuss Architectural

Input Units. Review and turn in Chapters 6 & 8 Homework Test Questions.

Chapter 6 – View Tools and Basic Plotting

Chapter 8 – Construction Tools & Multi-view Drawings

Exercises: Room Elevation, Multi-view Worksheet

Drawings: P08-2, P08-14

Homework: Go over the e-Scaling Topic Handouts.

QUIZ: Chapters 6 & 8 Homework Questions

Week 12 & 13

GOALS: Begin work on eScaling for model space and final correction of drawings for portfolio

Electronic Scaling (Instructor based lecture, hand-outs, study guide, & quiz)

Exercises: eScale Ex - Floor Plan 01, eScale Ex - Floor Plan 02

Homework: Read and Do Chapter 9 Questions:

Read and Do Chapter 10 Questions:

Read and Do Chapter 21 Questions: (Instr. Key)

Week: 14 & 15

GOALS: Begin work on eScaling for model space and final correction of drawings for portfolio

Electronic Scaling (Instructor based lecture, hand-outs, study guide, & quiz)

Exercises: eScale Ex - Floor Plan 01, eScale Ex - Floor Plan 02

Drawings: Garage 1 (Ltscale – Override), Garage 2 (Ltscale - Global)

Homework: Read and Do Chapter 9 Questions:

Read and Do Chapter 10 Questions:

Read and Do Chapter 21 Questions: (Instr. Key)

QUIZ: e-Scaling

Week: 16 & 17

GOALS: Review work on eScaling for model space, begin work on Text and Tables, and final correction of drawings for portfolio

Exercises: Special Text Characters and Spell, Find, and Replace

Drawings: P09-08A Parragraph, P09-08B Paragraph, and P21-14 Table

Homework: Read and Do Chapter 9 Questions:

Read and Do Chapter 14 Questions:

Read and Do Chapter 15 Questions: (Instr. Key)

QUIZ: Chapters 9, 10, & 21

Week: 18

GOALS: final exam written and drawing and final correction of drawings for portfolio

Complete Final written and drawing exam

Resources:

AutoCAD and Its Applications Basics 2020 Twenty-seventh Edition, Revised, Textbook

ISBN-13: 978-1635638646

ISBN-10: 163563864X

AutoCAD 2020 educational version: AutoCAD 2020

HPS Technology Curriculum: HPS Technology Curriculum