

ARCHITECTURAL DESIGN

Grade Level:	10-11-12
Length:	1 Semester
Period(s) Per Day:	1
Credit:	2
Credit Requirement Fulfilled:	Vocational/Elective
Career Tracking:	Carpenter, architectural engineering, architectural draftsman

Course Description

The student will complete a set of house plans using computer drafting. These will include all views necessary to construct a building. Views included are: plot plan, elevations, and wall sections, framing plans, floor and electrical plans. Work will be plotted and blueprints made, along with a scale model. Includes components of CAD and computer design

Student Objectives

After completing this course the student will be able:

1. Provide exercises that will reflect the importance of drafting in relation to technology in our society today.
2. Develop and refine graphics skills in:
 - A. Lettering
 - B. Freehand sketching
 - C. Drawing layout
 - D. Graphic skills and techniques.
3. Conduct classroom activities and architectural exercises in a manner, which emphasizes an appreciation on the relationship of time and its effect on costs.
4. Introduce the student to architectural symbols, standards, metrification, and codes.
5. Perform exercises in multi-view drawings and geometric construction.
6. Complete exercises, which emphasize terminology, operational configurations, and standards.
7. Develop an understanding and appreciation of dimensioning and in graphics and design.
8. Develop an understanding for tolerances of the contents of the working drawing.

ARCHITECTURAL DRAFTING

Quarter I/First 9 Weeks

Career and Education Exploration

MTCIS-Career and Learning Exploration
Personal Portfolio/Interest Surveys
Multiple Intelligences/Holland Personality Comparison

Week 1

Technology

What is Technology?
How is Technology used in society and architectural Drafting?
Technology and Human Knowledge

Week 1

UNIT TWO - INTRODUCTION TO ARCHITECTURE

The Story of Architecture
Architecture Styles
Forms in Architecture
Architects and builders

Week 2

UNIT THREE – THE SITE

Builders Code
Orientation/Site /Plot Plans

Week 3

UNIT FOUR – THE PLANNING OF A HOUSE

Area Planning
Room Planning
Exterior House Forms

Week 3, 4

UNIT FIVE – BASIC DRAFTING SKILLS

Computer Aided Drafting (CAD)
Drafting Equipment and Procedures
The Architect's Scale
Architectural Lettering
Architectural Symbols
Architectural Line Work
Architectural Dimensioning
Sheet Layout

Week 2, 3, 4, 5

Quarter II/ Second 9 Weeks

UNIT SIX – ARCHITECTURAL DESIGN AND DRAFTING

Computer Aided Drafting (CAD)
Drawing Floor Plans
Drawing the Plot Plan
Drawing Elevations
Drawing Slab Foundations
Drawing T-Foundations
Drawing Roof Plans
Drawing Floor Framing Plans

Week 10, 11, 12, 13, 14,

Drawing Wall Framing Plans
Drawing Roof Framing Plans
Drawing Electrical Plans
Set of Plans

UNIT SEVEN – PRESENTATION DRAWINGS AND MODELS

Week 14, 15, 16, 17, 18, 19

Presentation Drawings
Architectural Models

Montana Content Standards/RST

The grades 6–12 literacy standards in history/social studies, science, and technical subjects are not meant to replace content standards in those areas but rather to supplement them. The Standards set requirements not only for English language arts (ELA) but also for literacy in History/social studies, science, and technical subjects.

RST 11.12 .3

RST 11.12 .9

MONTANA STANDARDS FOR CAREER AND VOCATIONAL TECHNICAL EDUCATION

Content Standards indicate what all students should know, understand and be able to do in a specific content area. Benchmarks define our expectations for students' knowledge, skills and abilities along a developmental continuum in each content area. That continuum is focused at three points—at the end of grade 8, the end of one high school course, and the completion of six units of vocational coursework.

CS1 BM 1 2 3
CS2 BM 2 34
CS3 BM 1 2 3
CS4 BM 1 2 345
CS5 BM 1 2 34

MONTANA STANDARDS FOR WORKPLACE COMPETENCIES

Content Standards indicate what all students should know, understand and be able to do in a specific content area. Benchmarks define our expectations for students' knowledge, skills and abilities along a developmental continuum in each content area. That continuum is focused at three points—at the end of grade 4, the end of grade 8, and grade 12.

CS1 BM 2 3
CS2 BM 12 345
CS3 BM 1 2 34
CS4 BM
CS5 BM 1 2 345
CS6 BM 1 2 346

Evaluation

Career and Vocational/Technical Education Performance Standards: A Profile of Four Levels

The Career and Vocational/Technical Education Performance Standards describe students' knowledge, skills, and abilities in the Career and Vocational/Technical content areas on a continuum from kindergarten through grade 12. These descriptions provide a picture or profile of student achievement at the four performance levels: advanced, proficient, nearing proficiency, and novice.

Advanced This level denotes superior performance.

Proficient This level denotes solid academic performance for each benchmark. Students reaching this level have demonstrated competency over challenging subject matter, including subject-matter knowledge, application of such knowledge to real-world situations, and analytical skills appropriate to the subject matter.

Nearing This level denotes that the student has partial mastery or prerequisite knowledge and **Proficiency** skills fundamental for proficient work at each benchmark.

Novice This level denotes that the student is beginning to attain the prerequisite knowledge and skills that are fundamental for work at each benchmark.

Upon Graduation Workplace Competencies

Advanced A graduating student at the advanced level in Workplace Competencies demonstrates superior performance. He/she: (a) independently identifies, organizes, plans and allocates workplace resources of time, money, human resources, material and facilities; (b) consistently practices workplace skills to identify, analyze, and evaluate procedures, policies, and individual team members' strengths; (c) competently communicates, interprets, and evaluates information; (d) independently evaluates and redesigns a variety of complex systems to improve system performance; (e) consistently selects, uses, and evaluates appropriate technologies and troubleshooting protocol in all learning situations; and (f) purposefully develops, evaluates and adjusts life and career plans and effectively demonstrates workplace readiness skills.

Proficient A graduating student at the proficient level in Workplace Competencies demonstrates solid academic performance. He/she: (a) identifies, organizes, plans and allocates workplace resources of time, money, human resources, material and facilities; (b) practices workplace skills to identify, analyze, and evaluate procedures, policies, and individual team members' strengths; (c) competently communicates, interprets, and evaluates information; (d) evaluates and redesigns a variety of complex systems to improve system performance; (e) selects, uses, and evaluates appropriate technologies and troubleshooting protocol in all learning situations; and (f) develops, evaluates and adjusts life and career plans and demonstrates workplace readiness skills.

Nearing Proficiency A graduating student at the nearing proficiency level in Workplace Competencies demonstrates partial mastery of the prerequisite knowledge and skills fundamental for proficiency in Workplace Competencies. He/she: (a) sometimes identifies, organizes and plans workplace resources of time, money, human resources, material and facilities, but has difficulty allocating these resources effectively; (b) sometimes practices workplace skills to identify and analyze procedures, policies, and individual team members' strengths; and, with assistance, evaluates the results; (c) communicates basic workplace information and, with assistance, interprets and evaluates basic workplace information; (d) sometimes evaluates and with assistance redesigns a system to improve system performance; (e) sometimes selects and uses appropriate technologies in learning situations and, with assistance, uses troubleshooting protocol; and (f) develops life and career plans and, with assistance, evaluates and makes adjustments; demonstrates workplace readiness skills.

Novice A graduating student at the novice level in Workplace Competencies is beginning to attain the prerequisite knowledge and skills that are fundamental in Workplace Competencies. He/she: (a) identifies, but has difficulty organizing, planning, or allocating workplace resources of time, money, human resources, material and facilities; (b) seldom practices workplace skills; (c) seldom communicates, interprets, or evaluates information; (d) seldom evaluates and has difficulty redesigning a basic system to improve system performance; (e) seldom selects or uses technologies or troubleshooting protocol in learning situations; and (f) rarely develops, evaluates, or adjusts life and career plans; but, with assistance, demonstrates workplace readiness skills.

Resources**Montana Content Standards/RST**

English Language Arts and Literacy in History/Social Studies, Science, and
Technical Subjects Grade-Level November 2011

Grades 11-12

Reading Standards for Literacy in Science and Technical Subjects

MONTANA STANDARDS FOR CAREER AND VOCATIONAL TECHNICAL EDUCATION

Career and Technical Education (CTE)

http://opi.mt.gov/Programs/CTAE/CTE.html#gpm1_13

MONTANA STANDARDS FOR WORKPLACE COMPETENCIES

Career and Technical Education (CTE)

<http://opi.mt.gov/pdf/Standards/ContStds-Workplace.pdf>