Mt. Diablo Unified School District
Pilot Course Proposal Application Form

Title of proposed course: **Construction One**

Department: Industrial Arts

DESCRIPTION OF COURSE:
Construction One will be an overview of the construction trades. Since modern systems and technology serve to move the industry into the next generation, students will be exposed to the vocabulary and processes involved in construction technology, engineering, and architectural design. Green construction, geometry, and career exploration will be woven throughout the course. Students will master measurement systems, safe use of hand and power tools, calculation and characteristics of materials, carpentry, framing, basic electrical wiring, basic plumbing. Coursework is project-based, developing teamwork and project management skills

Duration: Semester [ ] Year [X]

Grade level(s): 9, 10, 11

Prerequisite(s): None

Proposed credit: 10

Target students: Any student wishing to pursue/explore a career in Building Trades

Projected enrollment: 25

This course is intended to meet (check all that apply):

[X] high school graduation requirement in (content area) CTE
[ ] A-G university entrance requirement
[ ] standard elective
[ ] both graduation and A-G requirement
[X] part graduation and/or A-G requirement, part standard elective

This course is:

[X] new/unique
[ ] an alternative to _____(course title and number)

Existing site resources to support this pilot:
The existing woodshop with computer lab and construction yard will provide all the site resources required to teach this course.

Evidence of need:
The current course offering, Woodworking Technology, does not meet our pathway requirements. Woodworking Technology is the introductory course for the Cabinetry, Millwork, and Woodworking Pathway. Construction One will be the introductory course and our existing ROP Construction Technology will be the capstone course for the Residential and Commercial Construction Pathway.
The Construction pathway will meet the needs of students as well as industry needs in the local, regional, and state Built Trades.

Expected -student outcomes and goals:

Students will engage with a hands-on, project-based approach to content focused on learning basic computer aided design (CAD), hand and machinery tool use and safety, basic building systems, building codes and regulations. Students will master measurement systems with integrated geometry content, calculation and characteristics of materials, basic carpentry, framing, introduction to electrical wiring and plumbing. Students will learn scale modeling, sketching, and basic blueprinting. Students learn about construction careers. Students demonstrate responsibility for personal, occupational safety on the job site and will obtain OSHA10 certification. The culminating project is a house design project: scale modeling, sketches, blueprints, materials lists and pricing, personnel needed, and in- class presentation.

Content:
Coursework is project-based to include:

- Introduction to Safety and Materials Handling
- Measurement and Estimation
- CAD and Print Reading
- Basic Hand and Power Tool Use
- Materials and Fasteners
- Overview of Phases of Construction
- Fundamentals of Building Systems and Materials
- Construction Industry Knowledge and Career Exploration
- Basic Job Skills and Ethics

Activities:

- Design a Tiny House.
- Estimate the materials and labor hours required for the design assignment

- Create small projects per scale drawings using industry specific hand and power tools
- Layout and frame full size mock-up walls and wall systems per the designed Tiny House assignment
- Layout, install, and test electrical wiring and fixtures
- Layout, install, and test both copper and Pex piping systems
- Modify and then layout and frame to scale the redesigned Tiny House assignment
- Create a resume
- Research and present a case study focused on business ethics.

Assessment Methods:
Exams, Project Based Rubrics, Presentation Rubrics

SIGNATURES

Date: 11/01/2021 School: Concord High

Title of Proposed Course: Construction One

Submitted by: Tom Trowbridge Position: Teacher

Teacher(s) who will pilot: Trowbridge

The required signatures below indicate an understanding of and support for the proposed pilot course of study identified above.

Department(s) name(s): Industrial Arts

Name of chair: (print) Tom Trowbridge

Signature(s): Date 11/01/2021

Name of Curriculum Committee/Council Chair: (print)

Signature: Date: 11/01/2021

Name of Site Council Chair: (print) Abhiram Mokkapati

Signature: Date: 11/01/2021

Name of Principal: (print) Rianne Pfaltzgraff

Signature: Date: 11/01/2021

Approved by:

Director of Secondary Support: _____

Date: _____

Assistant Superintendent School Achievement and School Support: _____

Date: _____

Assistant Superintendent Personnel: _____

Date: _____

Assigned Course ID _____ Assigned Short Title _____ Assigned Long Title_____