

§130.402. Engineering Design & Presentation I (One Credit), Adopted 2015. – Abridged Version

DOMAIN 1 – PROFESSIONAL PRACTICE

(1A) demonstrate knowledge of how to dress, speak, and conduct oneself in a manner appropriate for the profession

(1B) show the ability to cooperate, contribute, and collaborate as a member of a group in an effort to achieve a positive collective outcome

(1E) demonstrate punctuality, dependability, reliability, and responsibility in performing assigned tasks as directed

(2D) demonstrate teamwork

(2E) use appropriate work habits

(2I) appropriate actions & consequences relating to discrimination, harassment, & inequality

(5E) maintain, safely handle, and properly store tools, equipment, & machines

DOMAIN 2 – OFFICE PRACTICE

(1C) present written and oral communication in a clear, concise, and effective manner

(1D) demonstrate time-management skills in prioritizing tasks, following schedules, and performing goal-relevant activities in a way that produces efficient results

(2H) demonstrate respect for diversity

(2J) effective oral & written communication (e.g., using software)

(3A) demonstrate an understanding of teamwork

(3B) apply teamwork to solve problems

(3C) Serve in various roles as a team member

(7C) use rational thinking to develop or improve a product

(7E) use an engineering notebook to record the process

(7G) use an engineering notebook to record the final design

(8D) produce engineering drawings to industry standards

DOMAIN 3 – CAREER RESEARCH

(2A) compare and contrast engineering technician, engineering technologist, & engineer

(2B) identify employment & career opportunities

(2C) work toward industry certification

(2K) explore career prep opportunities

(8C) research different CADD software

(8E) describe the patent process

DOMAIN 4 – PROJECT ORGANIZATION

(4A) Implement project management methodologies

(4B) develop a project schedule and work according to established criteria

(4C) organize & operate a simulated engineering project

(4D) plan an individual plan to create a product

(6A) identify and describe the fundamental processes needed for a project, including the design process and prototype development and initiating, planning, executing, monitoring and controlling, and closing a project

(6C) use problem-solving techniques to develop technological solutions

(6E) assess the risks and benefits of a design solution

(7A) demonstrate ideation

(7B) demonstrate critical thinking and make fact-based decisions

(7D) apply decision strategies

(8C) improve a product design

(10A) identify the steps needed to produce a prototype

(10B) identify appropriate tools, equipment, and machines to produce a prototype

(10C) present a prototype using various media

DOMAIN 5 – INDUSTRY MATERIALS & METHODS

(2F) demonstrate knowledge of government regulations (incl. health and safety)

(2G) discuss the ethical issues of engineering & technology

(5A) master relevant safety tests

(5B) follow lab safety guidelines as prescribed by instructor in compliance with local, state, and federal regulations

(5C) recognize the classification of hazardous materials and wastes

(5D) dispose of hazardous materials and wastes appropriately

(5F) describe the implications of negligent or improper maintenance

(5G) describe the results of neglect

(6A) use multi-view projections

(6B) use orthographic and pictorial views

(6C) use auxiliary views

(6D) use section views

(6E) use construction techniques

(6F) create a multi-dimensional drawing (CADD)

(6G) demonstrate file management techniques

(6I) create a 3D parametric object

(6J) create a prototype drawing for presentation

(8A) use technology to design components

DOMAIN 6 – MATHEMATICS & PHYSICS PRINCIPLES

(8B) demonstrate the use of precision measuring instruments