

Revised: 1/5/05
Revised 1/10/08
Revised 1/8/14
Revised 1/7/19

Safety and Environmental Management 470

Gary Winn, Ph.D., CHST

Course Syllabus

Managing Construction Safety
Spring, 2020

Class Meets: T, R: 12:30 – 1:45
Room: MRB- 205
Instructor: Gary L. Winn, Ph.D.
Office: 345-E MRB
Phone/e-mail 293-9476
gary.winn@mail.wvu.edu

Office Hours:
10:00 - 2:00 Tuesday
10:00 - 2:00 Thursday
Others by appointment

Required textbook: The required textbook is: Construction Jobsite Management by Mincks and Johnston, Delmar Pubs.

You must also purchase a bound copy of 29CFR1926, the safety regulations for the construction industry. *Bring the CFR to every class.* You can use the online CFR later on the job, but I want you to have the bound version for this class.

I also recommend you purchase *Developing Managerial Skills in Engineers and Scientists* by M.K. Badawy, 1995, Van-Nostrand Reinhold, New York. This is a good general reference on management techniques.

You should also immediately locate OSHA's construction regulation homepage: <http://www.osha.gov/doc/>

Method of Instruction: This course is taught through lecture, readings in and outside of class, individual research activities- some at libraries, and other with CDs and Internet work, as appropriate. The goal of the course is to learn what practical problems lay in store for those who enter and manage construction safety, with particular reference to *hazard awareness and avoidance, and*

regulatory compliance.

Program Goal of Course: The goal of this course is for students to demonstrate skills and knowledge of construction safety necessary for safety managers or civil engineers.

Grading: Grading is based on a system of accumulated points on a variety of measures including written tests, class projects, class participation and attendance, as follows:

Midterm	25%
Final Exam	25%
Class participation	15%
Homework cumulative	25%
Attendance	10%

The grading scale follows:

92 - 100 percent earns	A
82 - 91 percent earns	B
72 - 81 percent earns	C
62 - 71 percent earns	D
below 62 percent earns	F

Homework: Various assignments are made on weekly schedules. None are difficult, but all will require time expenditure. Unless noted, all homework is due on the second class-day of that week. Late homework will not be accepted.

Calendar of Classes:

Week 1: SAFM mission; program goal of this course

Introduction to problems, issues and terms

Brief history of safety management

An OSHA definition of “construction”

Why construction is unique as a human endeavor

Construction has a poor safety record

Construction statistics and databases; SIC and NAICS codes

Safety program management

Homework : Locate OSHA’s homepage and it’s Focused Inspection initiative. Find the four leading hazards in construction (the four “focused initiatives.”) Identify them and identify the number of fatalities per year in 2018. (Use BLS.gov to find the fatality numbers) and hand in one sheet with this information (due Tuesday of Week 2).

Week 2: Contemporary solutions; contemporary players

OSHA focused inspections discussion

Worker Compensation discussion

The Occupational Safety and Health Act of 1970
Construction safety as loss control; costs of accidents

Homework : look for OSHA construction penalties on the OSHA homepage. What was the most frequently cited OSHA standard in 2016; which company got the highest penalty for that violation? How much was that penalty? Hand in that sheet.

Additional Homework: Text: Ch 1-3

Additional Homework: read 29CFR1926 Subpart A-D.

Week 3:

Using the CFR (class exercise)

The definition of “competent person” and “qualified person” and “authorized person”; other definitions.

Inspection priorities

Worker rights and responsibilities under OSHA

What to expect during an OSHA inspection (Kaletsky)

General OSHA Construction requirements: Subpart C and D

Homework: Find five places in 29CFR1926 where

“competent person” is used. Cite the CFR location, precise definition of each, and hand in a sheet with those locations listed.

Homework: locate Subpart C; turn in two- to- three-page

abstract using attached model as a basic guide.

[note: if you save copies and organize these abstracts, you will create a very useful resource file by the end of the term which you will find extremely useful in the field].

Text: Chapters 4 and 5

Week 4: Trenching and excavation:

Subpart P, 29CFR1926.650, 651, 652

Homework: locate Subpart P, turn in two-three-page abstract using attached model as a basic guide.

Text: Chapter 6

Week 5: Welding and Cutting:

Subpart J, 29CFR350, 351, 352, 354

Homework: locate Subpart J, turn in two-page abstract

Week 6: Tools, Hand and Power

Subpart I, 29CFR300 - 307

Homework: locate Subpart I, turn in two-page abstract

Week 7: Scaffolds:

Subpart L, 29CFR450, 451, 452; field activity

Homework: locate Subpart L, turn in two-page abstract

Text: Chapters 7 - 8

Week 8: Midterm exam

Week 9 and 10: Fall Protection

Subpart M, 29CFR1926.500, 501, 502, 503; field trip

Homework: locate Subpart M, turn in two-page abstract

Text: Ch. 9

Spring Break:

Week 11 and 12: Electrical Hazards

Subpart K, 29CFR1926.400, 40; lab activity

note: bring a VOM and small screwdrivers

Homework: locate Subpart K, turn in two-page abstract

Homework: Text: Ch. 10, 11

Bring all tools to class for Weeks 11 and 12.

Week 13: Contractor Issues and Multi-Employer worksites

Homework: Create a two-page *equipment inspection* protocol to ensure compliance with Subpart M above, complete with instructions for users.

Additional homework: Review text Ch. 9, also 14, 15

Week 14: Guest Speaker: new ANSI rules in fall protection or confined space

Week 15: Final Exam:

Academic Integrity/Dishonesty Policy:

For this and all classes I teach, I invoke WVU's Academic Integrity/Dishonesty policy which regards cheating and plagiarism. Please review this policy in the WVU Undergraduate Bulletin pp 48 - 49 or see me about specific details

Statement on Social Justice:

West Virginia University is committed to social justice. I concur with that commitment. I expect to foster a nurturing learning environment that is based upon open communication, mutual respect, and non-discrimination. Our University does not discriminate on the basis of race, sex, age, disability, veteran status, religion, sexual orientation, color or national origin. Any suggestions as to how to further such a positive and open environment in this class will be appreciated and given serious consideration.

Statement on Persons with Disabilities:

If you are a person with a disability and anticipate needing a type of accommodation in order to participate in this class, you must make appropriate arrangements through Disability Services (293-6700). They will identify the nature of the accommodation your disability requires.

Construction Safety
Abstract Protocol for CFR Subparts
Dr. Gary Winn

In a maximum of three pages, prepare an abstract (summary of key points) of a federal regulatory standard from construction (1926), for example, Subpart M, fall protection, including the following items below. Your abstract will not necessarily contain every detail of a particular standard, but your abstract will become a very useful tool to guide you on key compliance issues. In fact, you will want to keep a running library of abstracts. **Please note that you must use the following format below: 1, 1.1, 1.2, and so forth including numbering, heading title, and heading description.**

1. Full title and purpose of standard
 - 1.1. Simple CFR reference
 - 1.2. Simple purpose of standard

2. Scope of standard (what conditions and what classes of employees are affected?)
 - 2.1. Are all persons on site within the scope of this standard or only those whose job classifications require working in, on or around the specific activity? Visitors? Contractors and subcontractors?
 - 2.2. What construction conditions are call for the application and compliance with this standard? (For example, open-ditch excavation for domestic water pipes)
 - 2.3. What specialized equipment may be required to be in compliance with this standard, if any?

3. Definitions (there may be none and there may be dozens of definitions. Create a subset of at least 6 important definitions, even if none are listed). If dozens are listed, list at least 6 of the critical definitions. If none listed, find six from the standard.

4. Responsibilities: Setting up an ideal model
These below are a minimum you must use
 - 4.1 Owner's safety responsibilities are:
 - 4.1.1 Provide non-site specific training (eg, OSHA 10 hour)
 - 4.1.2 Provide resources and policy guidance to the safety function
 - 4.1.3 (Others that your company may do)

4.2 General Contractor's safety responsibilities are:

- 4.2.1 Determine scope and application of standard
- 4.2.2 Interpret safety and health policy for subcontractors
- 4.2.3 Site-specific training for his own employees and his own tasks
- 4.2.4 Require additional task-specific training for subcontractors
- 4.2.5 Others that your company may do

4.3 Safety and Health Program working for the General Contractor

- 4.3.1 Establish comprehensive safety and health program for contractors and subs
- 4.3.2 Select competent person, authorized person, qualified person, for GC
- 4.3.3 (Others that your company may do)

4.4 Employee safety responsibilities

- 4.4.1 Follow all safety and health policies, rules and procedures
- 4.4.2 (Others that your company may do)

5. Procedures (testing, inspections, surveys, etc. which may be required by the CFR; for example, soil sampling or air monitoring which may be required to meet the standard for compliance in Subpart P, Excavations). List at least two.

6. FAQ: What one question will an employee most likely ask his supervisor about this standard, with your correct answer.

7. Electronic resources: Example: websites or e-resources with information about this standard. (Three maximum)