

SAFM 552: Safety and Health Training

West Virginia University Benjamin M. Statler College of Engineering and Mineral Resources
Department of Industrial Management and Systems Engineering
Safety Management Program

Spring: January 13, 2020 – May 08, 2020
Regularly Scheduled Class Meeting Time
T,R 109 MRB 11:00 – 12:15 P.M.

Instructor

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Office Hours by Appointment in Room 345-E Mineral Resources Bldg., WVU

General Course Information

The Mission of the Safety Management program is to develop Safety Leaders to preserve and protect the people, property, and efficacy of the organization.

Training is essential for an effective and efficient safety, health, and environmental [SHE] effort. Therefore, professionals who have SHE responsibilities must be knowledgeable of the various training approaches and techniques to improve the safe behavior of the organization's work force and how these techniques can be used to control losses and provide business continuity. They must be able to identify SHE performance discrepancies and decide if those discrepancies are the result of inadequate knowledge and/or skills that can be improved by training. When safety and health training programs are needed to improve the workers' performance,

The Program Goal of SAFM 552: Safety Leaders must be able to develop needs-based training projects to address performance discrepancies and provide effective and cost beneficial business continuity.

Textbook & Course Information

Recommended but not required:

1. Mager, R.F. #1) *Making Instruction Work*; #2) *Preparing Instructional Objectives*; #3) *Measuring Instructional Results*; #4) *Goal Analysis*; and #5) *How to Turn Learners On....* Atlanta: Center for Effective Performance.
2. Mager, R.F., and Pipe, P. #6) *Analyzing Performance Problems*, Atlanta: Center for Effective Performance
3. American National Standard, ANSI/ASSE Z490.1-2009, Criteria for Accepted Practices In Safety, Health, and Environmental Training, Available from ASSE (847) 699-2929 or www.asse.org

Grading

Grading is based on a point and percent system. Points are earned from a variety of activities including tests, a project paper, presentation, class participation, and other assignments. Note: All assignments are expected to be turned in on time. Late assignments are not accepted. Homeworks are due one week after they are assigned.

Graded Activity

Percent

Class Participation/Assignments/Feedback forms	5
All homeworks (e.g., OSHA training list)	15
Instructor (trainer) and participant manuals complete	25
Presentation of training, 20 minutes	25
Midterm Exam	15
Final Exam	15
Total	100

Grading scale

91 – 100 percent	A
81 - 90 percent	B
71 – 80 percent	C
61 – 70 percent	D
Below 61 percent	F

Topics by week:

Week 1: introduction to the course and training;

OSHA and ANSI training requirements; your role in training

Discuss term project: two manuals:

Manual 1: Trainer manual

Manual 2: Participant manual

Class Presentation of your project summarizing Manual 1 and 2

Homework: read ANSI Z-490 (supplied by instructor) and list the major training requirements (topics) (needs assessment, writing objectives, writing test items, etc). Hand in list next week (due TR Week 2)

Week 2: Needs assessments;

Mager flow chart (p.6 in *Analyzing Performance Problems*).

Homework: Determine topic for your training manual; this may be OSHA-based (required training) or optional training. Hand in one-page sheet briefly describing need for this training based on industry data, Bureau of Labor statistics, or other data source (Due TR).

Homework: read Mager and Pipe, Chapters 1-6 in *Preparing Instructional Objectives*

Homework: find and review material on the internet about who uses the *Thayer teaching method* now and then turn in a one-page summary of why the Thayer method might be useful in safety training. (due TR).

Homework for Extra Credit: Find OSHA's training requirements for construction. Just list them by name and CFR location and hand in the list (hint: there are roughly a dozen and a half). (Due TR; label this paper "Extra Credit").

Week 3: Performance-based objectives (PBOs)

Homework: Hand in one-page sheet with 5-8 PBOs you intend to use in your Trainer manual, and a second one-page sheet with 5-8 PBOs you intend to meet in your Participant manual. (due TR).

Homework: Mager and Pipe, Chapters 11 – 17 in *Making Instruction Work*

Week 4: Criterion-referenced testing (CRTs)

Homework: Hand in one-page sheet with 10-15 CRTs you intend to meet in your Trainer manual, and a second one-page sheet with 10-15 CRTs you intend to meet in your Participant manual. (Due TR).

Week 5: Writing lesson plans (audience, room, materials, time allocation)

Homework: ANSI Z-490 and OSHA training guide (supplied)

Homework: Hand in one to two pages with a two or three page Master Trainer Lesson Plan that you intend to use in your Instructor training, and one to two pages with a two or three page Participant Lesson Plan that you intend to use in your Participant training (Due TR).

Read Winn, Rozman and Dean, 2015 for next week; supplied by instructor.

Week 6: Experiential training

Homework: Find one article of 3-10 pages on the Internet about uses of experiential or hands-on training in extremis or life-or-death situations. Bring two copies to class and hand in one copy with your name on it (Due TR).

Prepare to address experiential and hand-on training in your manual(s).

Week 7: Audio-visuals and the adult learner

Homework: read handout supplied by instructor

Homework: Find one article of 3-10 pages on the Internet about good or bad uses of audio visuals including PowerPoint. Bring two copies to class and hand in one copy with your name on it (Due TR).

Homework: Find one article of 3-10 pages on the Internet about meeting the needs of the adult learner. Bring two copies to class: use one in class, and hand in the other copy, both with your name on it.

Prepare to address the needs of adult learners in your Trainer and Participant manuals.

Week 8: Midterm exam

Week 9: Evaluating results of training: administrative, impact and cost assessments

Homework: Mager and Pipe, Chapters 1 -4, *Measuring Instructional Objectives*

Homework: supplied reading and discussed in class

Homework: outline a rough administrative and impact model for training assessment for your Trainer and Participant manuals (Due TR).

Prepare to address the evaluation of training in your Trainer and Participant manuals

Week 10: Cost assessments of training; cost-benefit assessments; making training interesting

Homework: Mager and Pipe, Chapters 5 -8, *Measuring Instructional Objectives*

Homework: read-in-class: ROI handout (supplied by instructor)

Week 11-15: Trainer presentations

Homework: Each student will present a complete summary of his or her entire Trainer and Participant manuals including sample handouts and sample PowerPoint slides. Maximum length 20 minutes plus or minus one minute. You will present a review (not the full set of Trainer or Participant materials) as if you are presenting the case for training to your boss. Requirements include:

- Needs assessment(s) review
- Performance based objective review
- Criterion based test review
- Lesson plan review
- Uses of experiential training (review only and how it improves effectiveness)
- Adult learner considerations (review only)
- How you intend to evaluate effectiveness (administrative and impact assessments)
- How you intend to evaluate cost; estimate ROI for your training
- Wrap up and summary

Week 15: Final examination

Deliverables (2)

1. Instructor (Trainer) manual
 - a. Scenario (OSHA-required or optional); background, descriptive statistics
 - b. Needs assessment complete
 - c. Pretests/posttests
 - d. Performance based objectives
 - e. Criterion referenced tests with description of methods
 - f. Lesson plans for each day, and each hour
 - g. Full content (this is the heart of the training e.g., training material on lockout/tagout) broken up into 2-4 modules)
 - h. Administrative assessment (time allocated; budget; delivery methods, more)
 - i. Exit survey (1 page)
 - j. Impact assessment , short term on knowledge
 - k. Cost assessment and ROI estimates
 - l. Addressing special groups (adult learners at a minimum)
 - m. Audio/visual needs
 - n. Other as needed (room ; instruments; equipment)
 - o. Probably 80-100 pages in a separate manual

2. Participant manual
 - a. PBOs for each module of content
 - b. CRT for each module of content
 - c. Content
 - d. Pre-post tests
 - e. Exit survey
 - f. Probably 30 pages in a separate manual

Additional Notes:

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.

Please also note that the Safety Management program has a zero-tolerance policy on cheating and plagiarism. The faculty are committed to detect and prosecute each and every case of cheating and plagiarism, and to the protection of students who, like the faculty, do not tolerate these acts.

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 any 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.

MASTERS OF SCIENCE, SAFETY MANAGEMENT

The mission of the safety management program is to prepare program graduates to meet the safety mission of any enterprise. This is stated simply as: The safety mission of an organization is to protect, conserve, and improve the resources—people, property, and efficacy—of the organization. The Master's of Science with a major in Safety Management is accredited by the Applied Science Accreditation Commission of ABET.

PROGRAM EDUCATIONAL OBJECTIVES

Drawing from the university's mission, the program mission, the needs of our constituents, and the Applied Science Accreditation Commission Criteria of ABET, the following educational objectives were developed for the Masters of Science program in Safety Management:

A graduate of the Safety Management program will be able to:

1. Communicate effectively, orally and in writing, including the transmission of safety data to management and employees.
2. Demonstrate knowledge and skills in the area of safety management.
3. Demonstrate knowledge of ethical and professional responsibilities and knowledge of applicable legislation and regulations.
4. Demonstrate the ability to apply various research activities through the decision-making process used in safety management.

STUDENT OUTCOMES

In order to meet Program Educational Objectives of the Safety Management program, students must be able to meet the following outcomes at the time of their graduation:

1. Demonstrate knowledge and skills to build a comprehensive Safety and Health program based on loss control and regulations
2. Demonstrate knowledge and skills to use analytical techniques in the Safety and Health function
3. Demonstrate knowledge and skills with federal, state, and non-governmental Safety and Health program standards and best practices
4. Demonstrate skills in written and oral communications at the level of professionals in safety and health positions
5. Demonstrate knowledge and skills in writing and evaluating safety and health research proposals
6. Demonstrate knowledge and skills in using management tools to implement and evaluate Safety and Health programs

SAFM 552. Safety and Health Training. 3 Hours.

Analysis of safety and health performance discrepancies, developing and conducting training programs to eliminate those discrepancies and the evaluation of program effectiveness in terms of cost effectiveness and organizational impact.

ABET/ASAC Table 3-8. SAFM 552: Safety and Health Training

Primary Performance Indicator for SAFM 552: Student will be able to write useable performance based objectives after successfully completing SAFM 552. Assessment: Midterm test, training manual and final grade.

SAFM 552 CLOs	Safety Management Program Outcomes					
	Outcome 1	Outcome 2	Outcome 3	Outcome 4	Outcome 5	Outcome 6
1. Techniques/approaches of S&H training	X					
2. Steps of a safety or health training program.	X					
3. Conduct a training needs assessment.		X	X			
4. Conduct a performance analysis		X				
5. Develop training objectives (PBOs).		X				
6. Develop criterion referenced tests (CRTs).		X				
7. Develop / conduct an effective training session,				X		
8. Evaluate others' training efforts.	X					
9. Plan a training evaluation procedure					X	X
10. Cost benefits analysis of training.	X					X