**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

Fall: January 07, 2019 – May 08, 2019

Regularly Scheduled Class Meeting Time

T, R, 205 MRBTinsausma5: 2:00 – 3:15

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 an efficient safety, heath, 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

**Reccomended 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 (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 (Week 3).

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

Homework: read and review material on the internet about use of the *Thayer teaching method*.

Turn in a one-page summary of why the Thayer method might be useful in safety training. (Week 3).

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. (Week 4).

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. (Week 5).

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 (Week 6).

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 (Week 7).

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

Guest Lecturer ***TBA***: *Experiential Training in the Real World of Safety*

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 (Week 7).

Homework: Find one article of 3-10 pages on the Internet about meeting the needs of the adult learner. Bring two copies to class and hand in one copy with your name on it (No.8).

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 and discussed in class

Homework: outline a rough administrative and impact model for training assessment for your Trainer and Participant manuals (Week 10).

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

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 materials) as if you are presenting the case for training to your boss:

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

How you intend to evaluate cost; estimate ROI

Wrap up and summary

Week 15: Final examination

Deliverables (2)

1. Instructor (Trainer) manual
   1. Scenario (OSHA-required or optional); background, descriptive statistics
   2. Needs assessment complete
   3. Pretests/posttests
   4. Performance based objectives
   5. Criterion referenced tests with description of methods
   6. Lesson plans for each day, and each hour
   7. Full content (this is the heart of the traininge.g., training material on lockout/tagout) broken up into 2-4 modules)
   8. Administrative assessment (time allocated; budget; delivery methods, more)
   9. Exit survey (1page)
   10. Impact assessment , short term on knowledge
   11. Cost assessment and ROI estimates
   12. Addressing special groups (adult learners at a minimum)
   13. Audio/visual needs
   14. Other as needed (room ; instruments; equipment)
2. Participant manual
   1. PBOs for each module of content
   2. CRT for each module of content
   3. Content
   4. Pre-post tests
   5. Exit survey

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.

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| 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 |  |  |  |  |  |
| 1. Steps of a safety or health training program. | X |  |  |  |  |  |
| 1. Conduct a training needs assessment. |  | X | X |  |  |  |
| 1. Conduct a performance analysis |  | X |  |  |  |  |
| 1. Develop training objectives (PBOs). |  | X |  |  |  |  |
| 1. Develop criterion referenced tests (CRTs). |  | X |  |  |  |  |
| 1. Develop / conduct an effective training session, |  |  |  | X |  |  |
| 1. Evaluate others' training efforts. | X |  |  |  |  |  |
| 1. Plan a training evaluation procedure |  |  |  |  | X | X |
| 1. Cost benefits analysis of training. | X |  |  |  |  | X |

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