**PMOSH Course 5**

**Special Topics: BCP 8843/6500: Advanced Safety Principles**

**Instructors:** Daniel Castro, Myrtle Turner, Jim Howry

**Course Description:**

Safety and health performance requires much more than programs and regulatory compliance and is defined by more than injuries and illnesses. Gain a deeper understanding of safety performance and how to implement leading-edge safety systems.

The knowledge gained from this course will prepare both general industry and construction participants to take their organizations to the next level of safety performance.

# Prerequisites: BCP 8833/6400

# Textbooks: Advanced Safety Management; Manuele, Fred 2nd edition (2014) (Wiley Press), OHSAS 1802 (Standard), Investigating Human Error: Incidents, Accidents, and Complex Systems; Strauch, Barry (Ashgate), Pre-Accident Investigations: Conklin, Todd, and selected literature readings and case studies

# Occupational Safety and Health for Technologists, Engineers, and Managers; Goetsch, David 8th edition (2014) (Prentice Hall)

# Learning Outcomes:

By the end of this course, a student should be able to:

1. Implement modern safety management principles
2. Define safety manager roles, responsibilities and legal liabilities
3. Measure safety performance more effectively with leading indicators
4. Evaluate safety management system effectiveness
5. Apply modern theories of accident causation to complex events

**Grading:**

Assignments: 40 %

Quiz (1): 5 %

Midterm Exam: 15 %

Research Paper (2): 25%

Final Exam: 15%

1. Students are required to participate in the online learning platform through discussion boards, Q&A sessions, and online debates. Instructors will monitor participation and engage online with students.
2. The course contains one unit assessments (quiz) – to be completed at the ends of units IV.
3. Assignments include independent research to conduct analysis, determine objectives, and develop implementation plans, and share findings with the cohort through the online discussion boards.
4. There will be two course projects: a written report on an independent research study in an area of accident causation/human failure, and a scenario based case study. In the case study, questions related to the scenario will encompass occupational health and safety principles and prevention strategies introduced throughout the course.

Exams will test student understanding of chapter content, reading assignments, and course instruction and will include a combination of true/false, fill-in-the-blank, short essay, and multiple choice

# Learning Accommodations:

# If needed, we will make accommodations for students with documented disabilities. These accommodations must be arranged in advance and in accordance with the Office of Disability Services (http://disabilityservices.gatech.edu).

# Academic Integrity:

Students are encouraged to study together and collaborate on case studies, but each student must submit their own work unless the assignment is specifically structured as a group assignment/project. Any reference sources (including online sources) used to prepare written assignments must be paraphrased in your own words and cited. Students are to neither receive nor provide help to others during exams. Any student suspected of behavior in violation of the Georgia Tech Honor Code will be referred to the Office of Student Integrity. The Georgia Tech Honor Code is available on the Office of Student Integrity website ([http://www.osi.gatech.edu](http://www.osi.gatech.edu/))

**Lectures:**

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| **Week** | **Topic** | **Assessments** |
| 1 | Safety Management Systems I   * Deming/ PDCA * SMS & Continual Improvement * Comparison to QMS/ EMS * Safety roles and responsibilities * Employee involvement     Manuele, Chapters 1, 2, 5  Goetsch, Chapter 27 | Students will be required to write a research paper on the history and evolution of management systems outlining their perceived benefits to organizations. |
| 2 | Safety Management Systems II   * Policy statements * Gap analysis * Planning process * Objectives * Implementation process   Manuele, Chapters 7,11-13,15-20 | Students will be assigned to conduct a SMS gap analysis on a/ their company. Findings will be documented and used to formulate a series of objectives and written implementation plans. |
| 3 | Safety Management Systems III   * Management of change * Hierarchy of controls * Legal and other requirements * Document control * Procurement * Training * Monitoring and measuring/ metrics * Management review   Manuele, Chapters 7,11-13,15-20 | Students will write a detailed process document for one of the subject covered.  Based on the previously conducted gap analysis the students will outline appropriate metrics for assessing performance for their company’s SMS in a one page paper. |
| 4 | Safety Management in a TQM Setting   * What is TQM? * TQM & TSM (Total Safety Management) * TSM   Goetsch, Chapter 28 | Quiz 1- Multiple choice quiz related to information covered in units 1-4 |
| 5 | Environmental Safety and ISO 14000 (EMS)  An overview of environmental safety management systems.  Goetsch, Chapter 25 | Students will be required to prepare a research paper on the impact of EMS/ ISO 1400 on industry including environmental and financial impacts (case study accepted). |
| 6 | Injury Prevention & Human Error Reduction  Manuele, Chapters 4-5 | Students will be assigned case studies that will require them to apply the week’s lectures. |
| 7 | Modern Theories of Accident Causation I   * Domino theory * Human factors * Incident theory * Epidemiological theory * Systems theory * Combination theory * Behavioral theory   Goestsch, Chapter 3 | Midterm  Students will be required to independently research a catastrophic incident and to apply multiple theories to determine failure/ potential causation and prevention.    Findings will be reported in an independent research paper due week 8.  Final Exam |
| 8 | Modern Theories of Accident Causation II   * A new perspective on failure * Incident/ accident investigation as inputs to a safety management system. * Prevention strategies   Conklin, 1-4 |