COURSE OUTLINE

SOET 349 – Industrial Safety and Health

Prepared By: Stephen E. Frempong

SCHOOL OF ENGINEERING TECHNOLOGY
ELECTRICAL ENGINEERING & ENGINEERING SCIENCE
DEPARTMENT
FALL 2017
SOET 349—Industrial Safety & Health

A. TITLE: Industrial Safety & Health

B. COURSE NUMBER: SOET 349

C. CREDIT HOURS: 3

D. WRITING INTENSIVE COURSE: No

E. COURSE LENGTH: 15 Weeks

F. SEMESTER(S) OFFERED: Fall

G. HOURS OF LECTURE, LABORATORY, RECITATION, TUTORIAL, ACTIVITY: 3 lecture hours per week

H. CATALOG DESCRIPTION: This course explores key issues of engineering safety and health in workplace environments. Topics covered include historical perspective; laws and regulations; the human element; hazard assessment; prevention; control; management of safety & health.

I. PRE-REQUISITES: Junior level status or permission of instructor.

J. ABET-Student Outcomes / Institutional Learning Outcomes

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<tr>
<th>Course Objective</th>
<th>ABET – Student Outcomes</th>
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<tr>
<td>1. Evaluate hazard assessment, prevention, and control</td>
<td>(f) An ability to identify, analyze, and solve broadly-defined engineering technology problems</td>
<td>Communication &amp; Critical Thinking</td>
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<td>2. Analyze ergonomic hazards, stress and safety, and health training</td>
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<td>Communication &amp; Critical Thinking</td>
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<td>3. Demonstrate the knowledge of the Occupational Safety and Health laws and regulations, safety-first corporate culture, and competition in the global marketplace.</td>
<td>(j) Knowledge of the impact of engineering technology solutions in a societal and global context.</td>
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K. TEXTS:

L. EQUIPMENT: None

M. GRADING METHOD: A, B, C, D, F

N. MEASUREMENT CRITERIA/METHODS: Weekly Quizzes and Final Examination

O. DETAILED TOPICAL OUTLINE:

I. HISTORICAL PERSPECTIVE & OVERVIEW
   • Safety and Health Movement
   • Accidents and Their Effects
   • Theories of Accident Causation
   • Role of Professional Certifications
   • Safety, Health, and Competition in the Global Marketplace

II. LAWS AND REGULATIONS
   • The Occupational Safety and Health Act (OSHA), Standards, and Liability
   • Workers Compensation
   • Accident Investigation and Reporting
   • Product Safety and Liability

III. HUMAN ELEMENT
   • Ergonomic Hazards
   • Stress and Safety
   • Safety and Health Training
   • Violence in the Workplace

IV. HAZARD ASSESSMENT, PREVENTION, AND CONTROL
   • Mechanical Hazards and Machine Safeguarding
   • Falling
   • Hazards of Temperature Extremes
   • Pressure Hazards
   • Electrical Hazards
   • Fire Hazards
• Industrial Hygiene
• Radiation Hazards
• Noise and Vibration Hazards
• Computers, Automation, and Robots

V. MANAGEMENT OF SAFETY AND HEALTH
• Preparing for Emergencies
• Ethics and Safety
• Hazard Analysis, Prevention and Safety Management
• Promoting Safety
• Environmental Safety and International Organization for Standardization (ISO) 14000 (Environmental Management)
• Total Safety Management (TSM)
• Establishing a Safety-First Corporate Culture