

Scoring Guidelines: Answers should encompass knowledge from text and class discussion. Scoring can be adapted to fit individual classroom use.

CHAPTER 1—HISTORICAL PERSPECTIVES

CASE STUDY

It was only five o'clock in the morning, but Emily was already awake. She had to help her mother make breakfast for her younger siblings before heading out into the pre-dawn streets of London to her job at the mill. She was just 12 years old, and though she would rather go to school, she needed this job to help support her family. Only a few years before, a man in the far-off land of America had invented something called the "cotton gin." This new-fangled invention, along with the spinning jenny and the power loom, had changed the face of the textile industry. Emily's family had been forced to sell their small farm and move to the city because their home-based loom, which had supported her family for generations, could no longer remain competitive with the big city textile manufacturers. A revolution was sweeping through Britain and America—an Industrial Revolution.

1. What were some of the innovations in the process and organization of production that the Industrial Revolution brought?
2. While Emily was hard at work, she accidentally sliced open her hand. Explain how the three doctrines of common law might have protected her employer.
3. If Emily were alive today (and many years older) she might help in the development of a joint union-management safety and health committee at the textile mill where she worked. What are some of the guidelines to follow when developing such a team?
4. Merely establishing a joint safety and health committee is not enough. During the early development stages, it is important to secure commitments and guarantees from both Management and Workers if the committee is to be successful. What might some of these commitments and guarantees be?

CHAPTER 2—THE SAFETY, HEALTH, AND ENVIRONMENTAL PROFESSIONAL

CASE STUDY

Clean air, pure water, uncontaminated ground and a safe place to live and work--these were the goals that Cristina worked toward along with the other members of her university environmental club. Now Cristina is about to graduate with a degree in Safety, Health, and Environmental Management, and she will have the chance to pursue her goals in a viable career. In this respect, she has chosen to follow in her mother's, Janet's, footsteps. Janet had only recently retired from her job as a loss control specialist. In the last 50 years or so, the duties of a safety, health, and environmental (SH&E) practitioner have broadened, and Cristina has many more options than her mother did.

1. What are some of the issues, effects, and opportunities that are helping to expand the role of an SH&E?

2. Cris's education does not end with a diploma. What are some of the major training needs an SH&E professional will most likely have to undertake?

3. What are some of the future opportunities and challenges that Cris will likely encounter during her career?

CHAPTER 3—SAFETY CULTURE

CASE STUDY

Steven is the safety professional for Harris, Inc., a company that manufactures a wide range of agricultural products, including herbicides, pesticides, and fertilizers. Since he took the job two years ago, Steven has worked long hours to improve the safety record for Harris, Inc., and he has become a model for how to get things done. Yet he feels that even more can be done to achieve a companywide safety culture, and he has approached management with some of his ideas.

1. In the simplest terms, what is a safety culture and what are the components that should be included?
2. There are many ways to describe what comprises a safety culture. What elements should be included?
3. Steven has managed to win many of the plant managers to his side. What should management's role be in developing a safety culture?
4. In his work, Steven has discovered that many people won't act in a safe manner because they don't think accidents can happen to them. Steven is considering using the SMART System to address this thinking. What are the components of the SMART System?

CHAPTER 4—REGULATORY HISTORY

CASE STUDY

As a young man, Ron had studied weaving with a master craftsman. After years of learning his craft, Ron started his own business, creating custom-made, hand woven textiles. His shop, initially comprised of himself and two other weavers, now has 12 employees. Ron has always taken great care to ensure a safe and healthy working environment. He feels confident that his shop is safe, but some of his safety measures may not be exactly what the applicable OSHA standards spell out.

1. Is it possible to work something out with OSHA for this kind of situation?
2. Would OSHA consider Ron's situation a temporary arrangement?
3. What type of employer might be able to get a more permanent arrangement?
4. What specific information is required for a permanent arrangement?

CHAPTER 6—LOSS CONTROL PROGRAMS

CASE STUDY

Over the past year, the Atlas Steel Door Company has made significant efforts to improve its safety program and, as a result, has seen a reduction in the number of injuries on the job. The amount of lost time, however, hasn't decreased as much as expected. Upper management is looking for suggestions on other steps to take. Anna, director of Human Resources, thinks one step that could help would be for the company to get involved in an off-the-job safety program.

1. How should Anna describe this type of program to management? What is off-the-job safety?
2. What statistics can she provide to convince management that this subject merits attention?
3. What are three benefits a company can realize from expanding its safety program to include off-the-job safety?

CHAPTER 7—SAFETY, HEALTH, AND ENVIRONMENTAL AUDITING

CASE STUDY

Joe recently joined the American Biscuit & Cookie Company as vice president of operations. The ABC Company has been in business for many years and has a solid reputation. Joe is somewhat concerned about the age of some of the equipment in the older plants, however, and also feels that he would like to have an up-to-date assessment of the company's safety, health, and environmental performance. One of his priorities will be to revitalize the company's S/H/E auditing program. After all, in this litigious age, a company can't afford to be complacent.

1. Is Joe's concern about litigation reasonable?
2. Are there any particular legal issues that the audit team should consider?
3. If the audit should discover some regulatory violations, must the audit results be reported to the appropriate government agency?

CHAPTER 8—WORKERS' COMPENSATION

CASE STUDY

A gas leak recently occurred at your factory and one of your employees, Brent Jones, is applying for workers' compensation because he claims he has health problems as a result of the leak, but you are not sure. While Mr. Jones has been a reliable employee, you recall that he has had medical problems in the past. You know that workers' compensation is intended to provide coverage only for certain work-related conditions—not for all of an employee's health problems. You also know that statutory definitions and tests have been adopted to distinguish between conditions that are compensable and those that are not. The statutes usually limit benefits to personal injury caused by accidents “arising out of and in the course of employment.” This test, applied by almost every jurisdiction, is meant to clearly define the relationship between employment and injury or illness for an employee to be eligible for workers' compensation. Unfortunately, it lacks precision and you are having a difficult time deciding whether or not Mr. Jones should receive workers' compensation for his problems. Before making a final recommendation, you decide to review the issues surrounding the “arising out of and in the course of employment” test.

1. What is the definition of course of employment?
2. What problems does the definition pose?
3. What is the purpose of the “arising out of” portion of the test?
4. What legal theories have been developed to determine whether a personal injury is related to employment?

CHAPTER 10—INCIDENT INVESTIGATION, ANALYSIS, AND COSTS

CASE STUDY

Goreman Manufacturing has decided to do a pilot study of Class 3 incidents at its plant and asked you to be in charge. The purpose of the pilot study is to determine average uninsured costs for incidents involving Class 3 injuries. You know that these incidents are difficult to analyze from the standpoint of cost because the time lost is likely to occur repeatedly and only for short periods. The plant dispensary has kept track of these cases and the cost of the first aid supplies associated with each case. Looking through the records, you see that quite a large number of cases have been reported over the past year. Unfortunately, this has increased costs for the supervisor because she must file a report after every incident, no matter how minor. Files in hand, you start your analysis.

1. First, list what information is essential to a cost analysis of Class 3 injuries.

2. Next, explain the steps you would need to follow to determine this information and complete your analysis.

CHAPTER 11—INJURY AND ILLNESS RECORD KEEPING, INCIDENCE RATES, AND ANALYSIS

CASE STUDY

Michael is a safety, health, and environmental specialist. He has recently been hired by Sunrise Enterprises, a manufacturer and distributor of pots, pans, and baking supplies, as a full time employee—a position only recently created by the company. He was shocked to find the company in violation of the Williams-Steiger Act, and sadly behind the times in terms of record keeping. He needs to convince his employer of the need for keeping accurate and up-to-date incident and injury reports.

1. Help Michael develop an argument in favor of good record keeping. What are some of the uses for such records?

2. What types of records and reports should Sunrise Enterprises keep and maintain?

CHAPTER 12—OCCUPATIONAL HEALTH PROGRAMS

CASE STUDY

Max works rotating shifts in the office at Packard Williams, the local refinery. He says there are many advantages to working the late shift. He can play baseball with his son in the afternoon, shop when the stores aren't too crowded, and work on his antique radio collection during the day. He also says working the late shift is less stressful because there are fewer people in the office, he can wear whatever he wants, and he doesn't have to deal with customers. Unfortunately, when he switches to the day shift his troubles begin. Each week his body must adjust to a new sleep-wake schedule. The time changes and irregular schedule that shift workers experience makes them more susceptible to a wide variety of potential problems.

1. What are some of these problems?
2. Some effects of shiftwork can be reduced by relatively simple administrative solutions. What are some of these easy fixes?
3. The management at Packard Williams is thinking of adopting a 12-hour shift schedule. What are some of the advantages of 12-hour shifts?
4. What are the disadvantages of 12-hour shifts?

CHAPTER 13—INDUSTRIAL HYGIENE PROGRAM

CASE STUDY

The Zimmer Chemical Company is a small company serving a local market of manufacturers. The company's safety and health program has functioned reasonably well for some time now, but chemicals pose a wide range of potential health hazards. As the safety director, John would like to do more than simply comply with the necessary standards. He would like to have a full-time industrial hygienist on staff to help anticipate problem areas, but that's more than the budget can cover.

1. Does John have another option for getting the help he wants?

2. Are there any drawbacks to that kind of arrangement, and if so, what can be done to improve the situation?

3. What qualifications are necessary?

CHAPTER 14—ENVIRONMENTAL MANAGEMENT

CASE STUDY

Nunbetter Pesticides has been providing agricultural products in the southeastern states for more than 60 years. Ned, the president and son of the founder, has seen a lot of changes in the business. It's much more complicated now to try to keep up with all the regulations. In fact, Ned just heard that one of his competitors got a large fine for having mislabeled containers of hazardous materials and having leaking containers. That has Ned thinking about his company's environmental management and whether the program is as good as it should be.

1. Should Ned consider bringing in an outside consulting firm?
2. Would it be worth the expense?
3. Is there anyone else who should be involved with the environmental management status of Nunbetter Pesticides?

CHAPTER 15—INDOOR AIR QUALITY

CASE STUDY

Roy is the building engineer at a small, six-story office building in the downtown area, constructed in the late 1960s before the term *indoor air quality* had come into existence. The building was renovated about seven years ago, so the HVAC system is reasonably up to date and functions well.

Roy has recently learned about the importance of IAQ. Recently, some tenants have been complaining about getting itchy eyes and sore throats at work as well as frequent headaches. Some have also mentioned noticing unpleasant odors. Roy stays informed about the building and its occupants, but he can't think of any explanation.

1. Should Roy assume that the tenants' problems must be caused by the indoor air quality in their workplace?
2. Should Roy get some outside assistance in solving this problem?

CHAPTER 16—ERGONOMICS YESTERDAY, TODAY, AND TOMORROW

CASE STUDY

Kettler Group Inc. has decided to implement an ergonomics program. A large number of the company's employees work with displays and keyboards and are at risk for work-related musculoskeletal disorders (WMSDs). Management is committed to the idea and has already set goals for the program and allocated resources to it. A team of safety professionals has been created to manage cases and help identify and treat any WMSDs that come to light.

1. What needs to be done next?
2. What is the most important component of setting up an ergonomics program and how does it work?
3. What other issues does a program usually address?
4. What makes a program successful?

CHAPTER 17—EMPLOYEE ASSISTANCE PROGRAMS

CASE STUDY

The management at Sterns & Bridgman Manufacturing has been contemplating setting up an EAP for the last year. It just finished reviewing a report about employee assistance programs that asserted most companies save between \$5 and \$7 for every \$1 they invest in their EAP. Management knows some of the other benefits of an EAP, such as improved employee morale and lower training costs, but it wants to know the steps involved in setting up a program. It also wonders what kind of plans are available. As a health and safety professional, it is up to you to gather information and answer management's questions about EAPs.

1. How is a program created?
2. Who should be involved?
3. What are the major types of EAPs?

CHAPTER 18—EMERGENCY PREPAREDNESS

CASE STUDY

Polika Systems Group, a chemical processing company, has just completed a risk assessment of potential emergencies that could affect its plant. Because it is located along the Florida coast, it has taken hurricanes and floods into consideration along with other potential emergencies. Now the management needs to draft an emergency manual and establish a chain of command for emergency situations. In particular, it has to choose a crisis manager from among the ranking managers at the plant.

1. What are some issues Polika System's emergency manual needs to cover?

2. What are some factors to keep in mind when setting up a chain of command?

3. How should a crisis manager be chosen?

CHAPTER 19—WORKPLACE VIOLENCE

CASE STUDY

Because she wants to be home for her kids in the afternoon, Sara has decided to work the night shift at the local Quick Stop convenience store. On weekends, there are two clerks on duty because of the increase in customers, but during the week Sara is the only one on duty. Her husband, Lahab, worries about her safety and has read articles in the paper about workplace violence.

1. How does the National Institute for Occupational Safety and Health (NIOSH) define workplace violence?
2. What are the types of workplace violence that can occur, and how are these incidents categorized?
3. Lahab is right to be concerned for his wife's safety. There are several factors that tend to increase a worker's risk for workplace assault. What are these factors?

CHAPTER 20—PRODUCT SAFETY MANAGEMENT

CASE STUDY

Bundle of Joy is a company that designs infant cribs, cradles, and playpens. Their design team has developed a new wooden crib in the Art Deco style, and plan to introduce it at the next trade show. They are excited about the product, because, if it is a hit, they will introduce an entire line of products based on period-styles baby furniture to fit in any decor. The management of Bundle of Joy is aware that other furniture manufacturers have faced liability suits because of poor workmanship or design flaws that have resulted in injury and death. They have turned to their product safety program coordinator for help.

1. What are some of the major responsibilities of a program coordinator?
2. The program coordinator has decided that a product safety departmental audit is called for. What is a product safety departmental audit?
3. The program coordinator has called together the senior managers of each of the following departments to participate in the product safety departmental audit: engineering/design, manufacturing, service, legal, marketing, purchasing, human resources, insurance, and public relations. In a sentence or two, briefly describe what each of these managers would have to do to ensure that the crib Bundle of Joy produces will be reasonably safe.
4. Even when it appears everything has been taken into account, once the crib is released on the market, it will go through the ultimate testing laboratory: the home of the consumer. Complaints may arise, and information on incidents and accidents will need to be compiled. For this, a complaint form should be developed. What are some of the general questions that Bundle of Joy might ask the consumer?

CHAPTER 21—INDUSTRIAL SANITATION AND PERSONNEL FACILITIES

CASE STUDY

Marleck's Inc. has just completed repairs to its water pipes. The pipes were rather old and, in fact, some of the repairs were fairly extensive. Now the whole system must be disinfected before it can be put back into use. The disinfecting procedure is going to be complicated, especially because of the reservoirs and wells Marleck's has at its plant. Marleck's uses water not only in its manufacturing processes, but also in employee restrooms and locker rooms and in the company cafeteria. Cafeteria employees use large amounts of water to prepare meals and clean dishes. Marleck's management is interested in finding a way to reduce the amount of hot water used for cleaning. It has decided to look into using chemicals to sanitize utensils.

1. How can Marleck's disinfect its drinking water system?
2. How will it know the system has been successfully cleaned?
3. What does it need to know about the chemical method of sanitizing utensils?

CHAPTER 22—OCCUPATIONAL MEDICAL SURVEILLANCE

CASE STUDY

Carver Controls is considering incorporating biological monitoring into its medical surveillance program. It knows that biological monitoring can provide useful evidence about the ways in which hazardous substances affect employee health. For example, a biomarker of exposure might indicate the phenol level in an employee's body following exposure to benzene, a chemical Carver Controls often uses. However, the company knows biological monitoring is still evolving, and there are legal and ethical issues associated with it. Before making a final decision, Carver Controls wants to know if there are other drawbacks to biological monitoring.

1. In addition to the legal and ethical issues Carver Controls already knows of, are there other limitations to biological monitoring?

CHAPTER 23—WORKERS WITH DISABILITIES

CASE STUDY

The Hamilton County Health Department has interviewed Paula for a position as lab technician. Paula is a qualified individual with a disability; she has diabetes and a prosthetic leg. The personnel department has called on safety and health manager Tim for assistance.

1. What is the role of the safety and health professional in job placement for qualified disabled individuals?

2. What will Tim’s responsibilities be in this case?

3. Will Tim be involved in the issue of reasonable accommodation?

CHAPTER 24—RETAIL/SERVICE FACILITIES LOGISTICS

CASE STUDY

Cola Cola of Kansas City, Kansas, makes a delicious soda pop that is giving the “Big Three” a run for their money. Cola Cola is now being served in restaurants and movie theatres across the country. The company has grown more quickly than expected, and management has invested time and money in creating a safe work environment. OSHA standard 29 CFR, Subpart D, 1910.21-.32 requires the development of a comprehensive program to identify and address the facility physical hazards.

1. What are some of the components of such a program in regards to walking and working surfaces?
2. Because the plant is located in “Tornado Alley,” the company has a recovery plan should a tornado strike the facility. Cola Cola also has manufacturing and bottling facilities in six other states. What are some of the other types of emergencies/incidents for which Cola Cola should develop a contingency plan?
3. Although no recovery plan can cover all aspects of a situation, what recovery procedures should be considered mandatory for all emergencies?

CHAPTER 25—TRANSPORTATION SAFETY PROGRAMS

CASE STUDY

Sharee works for the public transportation department of a mid-sized city. She doesn't work in an office, however; Sharee's job is in the vehicle maintenance facility, handling lubrication and service operations. Sharee is pleased when her supervisor introduces a new employee and asks Sharee to help him get acclimated. The young man has some experience, but Sharee isn't sure he realizes just how many hazards exist in automotive repair. Some are obvious; others aren't.

1. What are some hazards in the lubrications area that she can point out?

2. Is there any area that calls for special precautions?

3. What other steps can management take?

CHAPTER 26—OFFICE SAFETY

CASE STUDY

Hamer & Taang, a management consulting firm, will be moving to new offices later in the year. The move provides a good opportunity to make some improvements in the working environment. It seems that computers have proliferated in the workplace so quickly that they're perched on almost every flat surface—hardly an ideal arrangement. Marian, supervisor of the word processing department, has been asked to prepare a list of any new furniture and equipment that will be needed in her area.

1. What are the primary components of an individual workstation in Marian's area?

2. The workers in word processing come in all sizes. What is the correct height at which to position a computer monitor?

3. A few of the word processing employees complain occasionally at the end of the day about backaches. What can be done to relieve this problem?

CHAPTER 27—LABORATORY SAFETY

CASE STUDY

Luis is a laboratory technician at the Westside Medical Clinic. The lab performs a variety of diagnostic and clinical support services for the healthcare facility, many of which involve blood and other potentially infectious materials. Luis is going to participate in a Career Day at his daughter's high school. He will be talking to students about the kind of work he does, as well as the education and training required. He also plans to explain a bit about the safety requirements in labs because that is an important part of the job.

1. What OSHA standard will Luis refer to when he's talking about processing blood samples and other types of medical tests?

2. What kinds of control measures are used at the lab to ensure the technicians' safety?

3. 3. Luis will explain that he received safety training when he started his job and receives refresher training each year. What must be included in the training?

CHAPTER 28—CONTRACTOR AND CUSTOMER SAFETY

CASE STUDY

Cornelia Manufacturing has decided to hire a contractor to install an electronic monitoring system in its outbuildings, a job expected to take several months. It has awarded the job to H.G. Electrix. Unfortunately, Cornelia has had negative experiences with previous contractors and safety issues. This time it wants to be very careful about how it handles safety and has drawn up a contract specifying how safety will be managed and monitored and how it will affect costs. Periodic safety inspections and weekly safety progress reviews are covered in the contract. H.G. Electrix has agreed to the contract and is supposed to begin work in the next month. In the interim, Cornelia would like to conduct a safety orientation for H.G. and review its safety-monitoring program for contractors.

1. What issues does Cornelia need to cover in the orientation?

2. In addition to periodic inspections and weekly progress reviews, what else can be included in a program to monitor contractor safety?

CHAPTER 30—MOTIVATION

CASE STUDY

The Human Resources Director and the health and safety staff at Pipestone Manufacturing are meeting to discuss how to encourage Pipestone employees to learn and follow safety guidelines. The human resources director explains that when his staff interviews job applicants, it looks for people with physical characteristics and personality features that will complement a job. The director feels this helps ensure safety because it takes human-machine interaction into consideration. He believes in Theory Y when it comes to motivating workers and feels that frequency is essential to having employees learn safe practices. The health and safety staff agrees with the director but wants to be sure that new employees have a positive experience with safety from the beginning. The staff feels the law of primacy is important in this case and that frequency and recall can be used as part of follow-up activities.

1. Explain Theory Y and how it can apply to safety.

2. Why does the Human Resources Director feel that frequency is essential to learning safe practices?

3. How does the law of primacy affect safety?

CHAPTER 31—SAFETY AND HEALTH TRAINING

CASE STUDY

Greg has just been hired to replace the safety director of Fagin’s Food Service Company, who has retired and moved to North Carolina to live near her grandchildren. Fagin’s is a large wholesale grocery supplier servicing a tri-city area, but Greg was surprised that it did not have a new employee training and orientation program. Most employees were “thrown into the deep end of the pool” on their first day, and it was either sink or swim.

1. Greg has always felt that orientation was an excellent opportunity to begin training workers in safety policies and safe work practices, and is working hard to develop a better orientation program. What are some of the subjects that should be covered as part of an orientation program?
2. Along with the management team, Greg has decided that all employees could benefit from ongoing training programs. What are some of the group training methods companies have used in the past, and that Fagin’s Food Service might consider adopting?
3. What are some individual training methods?
4. What is the four-point method of job instruction training?

CHAPTER 33—SAFETY AWARENESS PROGRAMS

CASE STUDY

The health and safety staff at Hollander Manufacturing has had many safety programs in recent years, some of which have been more successful than others. The staff has decided to take a serious look at its programs, including the contests and meetings it organizes. It would like to renew employee interest in these activities and has formed a committee to look into the matter. Knowing that safety programs can be beneficial, the management has given the committee sufficient funds to make improvements as they see fit. The committee is going to start by reviewing basic human interests and the safety activities that might be based on them. Then it will look into setting up safety circles and improve awards presentations. As a member of the committee, you need to do your own research into these issues.

1. What are the various categories of basic human interest factors and how can they be used to build safety awareness?
2. How are safety circles used?
3. What makes a successful awards presentation?