NOTE:

For the most current version of this publication please visit www.bcsp.org.

As a candidate or certificant you are solely responsible to keep BCSP informed of your current mail and email address. If either address changes, you must notify BCSP. You could lose your credential or eligibility status if you miss important notifications related to your designation.
The Certified Safety Professional® (CSP®) Certification

Thank you for your support and acknowledgment of the value of certification. Whether your career goals include seeking a new position, moving up in your current organization or moving to private practice, you can accelerate your opportunities by achieving the Certified Safety Professional (CSP) certification. You can improve your chances for success, being selected for leadership and senior positions, and increased salary through the CSP credential. BCSP offers you the opportunity to rise above the competition by adding the CSP certification to your portfolio.

Purpose of This Guide

The purpose of this guide is to walk you through the process of applying for and taking the examination leading to the CSP certification. This guide is the first step to help you achieve the credential.

How to Use This Guide

This guide provides you with in-depth information regarding the application process, examination process and the rules and procedures essential in retaining the CSP certification after you achieve it. Reading and following the suggestions and rules in this guide will help you navigate your path to the CSP certification.

Visit bcsp.org and click on “My Profile” to create an account and apply for your desired certification(s). If you need further assistance you may contact the Certification Services Department at +1 217-359-9263 or by email at bcsp@bcsp.org.

Overview of the Certification Process
Certified Safety Professional®
- has been in operation for more than 40 years with 25,000 CSPs certified
- is the premier certification in the safety profession
- covers a wide range of safety, health and environmental (SH&E) practice disciplines

Associate Safety Professional®
- demonstrates a broad scope of knowledge of SH&E practice
- serves as one of several approved credentials meeting requirements for the CSP; recognized as a full certification as of 2014

Occupational Health and Safety Technologist®
- provides practitioners with partial responsibility in SH&E with a high quality certification

Construction Health and Safety Technician®
- offers a certification for individuals who work in a construction craft or are construction safety specialists

Safety Trained Supervisor®
- provides a quality certification for work group leaders in various industries who are responsible for the safety and health of their workers
- is a leading indicator of safety performance
- has led to reductions in injuries and workers’ compensation claims and has created productivity gains in participating companies

Safety Trained Supervisor Construction
- holds the same requirements and benefits as the Safety Trained Supervisor certification but provides a quality certification for work group leaders working specifically in construction

Certified Environmental, Safety and Health Trainer®
- certifies those who have experience and expertise in developing, designing, and delivering SH&E training

About BCSP
BCSP is recognized as the leader in high-quality credentialing for SH&E practitioners. BCSP establishes standards for and verifies competency in professional safety practice and evaluates certificants for compliance with recertification requirements. BCSP also operates technician, technologist, and supervisory certifications that provide additional career paths for safety practitioners.

Since 1969, over 40,000 individuals have achieved the CSP, ASP, OHST, CHST, STS, STSC or CET credential. BCSP is a not-for-profit corporation chartered in Illinois with headquarters in Champaign.

Career Information
For details on careers in SH&E, download from the BCSP website:
- Career Guide to the Safety Profession (booklet)
- Career Paths in Safety (brochure)

For a comprehensive list of accredited U.S. academic programs, search the BCSP Academic Database. If you have questions, please email us: bcsp@bcsp.org.

Accreditation and Recognition
BCSP’s certifications are accredited by independent, third-party organizations (listed below) that evaluate certification requirements on a regular basis.

- National Commission for Certifying Agencies (NCCA), www.credentialingexcellence.org
- Council of Engineering and Scientific Specialty Boards (CESB), www.cesb.org

BCSP has been granted special consultative status with the United Nations Economic and Social Council (ECOSOC) since 2014.
Chapter Abstract
This chapter provides general information about the Certified Safety Professional (CSP) credential. You may download this chapter as well as other chapters of the Complete Guide to the CSP from the Board of Certified Safety Professionals (BCSP) website at www.bcsp.org.

An overview of the CSP certification is presented along with qualifications, requirements, time limits, degree evaluations and the Graduate Safety Practitioner® (GSP®) path.

Visit www.bcsp.org for the most current version of this guide.

Overview of the CSP Certification
The CSP is a certification awarded by BCSP to individuals who meet all of the Board-established requirements.

The CSP Process
One of the most common questions by potential candidates is “What do I have to do to become a CSP?” The process has several stages, each one building on the other.

1.) Are You Eligible?

Academic Requirement:
All individuals applying for the CSP must have a bachelor’s degree or higher in any field from an accredited institution; or an associate degree in safety, health, or environmental from an accredited institution.

There is no waiver of the academic requirement and proof of a minimum qualifying degree must be provided. For U.S. degrees, BCSP requires the school hold institutional accreditation recognized by the Council for Higher Education Accreditation (CHEA) (www.chea.org) and/or the U.S. Department of Education (www.ed.gov).

Continuing education courses, seminars, and certificate programs are not a substitute for, and do not receive credit toward, the academic requirement.

A degree achieved from a Qualified Academic Program accredited by the Accreditation Board for Engineering and Technology-Applied Science Accreditation Commission (ABET-ASAC) or the Aviation Accreditation Board International (AABI) may qualify for the Graduate Safety Practitioner (GSP) program. The GSP designation meets the qualification of holding a BCSP-credential (detailed in this section).

Unaccredited degrees are a growing concern and some states have laws making it illegal to use unaccredited degrees. Applicants and certificants cannot use unaccredited degrees and the use is a violation of the BCSP Code of Ethics.

Experience Requirement:
CSP candidates must have four years professional safety experience to sit for the CSP exam. Professional safety experience must meet the following criteria to qualify:

- Professional safety must be the primary function of the position. Collateral duties in safety are not counted.
- The position’s primary responsibility must be the prevention of harm to people, property, or the environment, rather than responsibility for responding to harmful events.
- Professional safety functions must be at least 50% of the position duties. BCSP defines full-time as at least 35 hours per week. Part-time safety experience is allowed if the applicant has the equivalent of at least 900 hours of professional safety work during any year (75 hours per month or 18 hours per week) for which experience credit is sought.
- The position must be at a professional level. This is determined by evaluating the degree of professional charge by which there is a reliance of employees, employers or clients on the person’s ability to identify, evaluate and control hazards through engineering and/or administrative approaches.
- The position must have breadth of professional safety duties. This is determined by evaluating the variety of hazards about which the candidate must advise and the range of skills involved in recognizing, evaluating, and controlling hazards.

BCSP-Approved Credential Requirement (applicant must hold one of the following credentials at the time they apply for the CSP):

- Associate Safety Professional (ASP)
- Graduate Safety Practitioner (GSP)
- Certified Industrial Hygienist (CIH)
- Chartered Member of the Institution of Occupational Safety and Health (CMIOSH)**
- Canadian Registered Safety Professional (CRSP)**
- Professional Member of Singapore Institution of Safety Officers (SISO)**
- Diploma in Industrial Safety by Government of India**

* Credential offered by BCSP
** Must meet eligibility requirements when pursuing CSP
Associate Safety Professional

The Associate Safety Professional® (ASP®) is a permanent certification awarded by BCSP and is one of several approved credentials that can qualify an individual to sit for the CSP examination. A list of this and other qualifying credentials is included in the next section of this chapter. To learn more about the ASP certification, please see The Complete Guide to the ASP.

Graduate Safety Practitioner

The Graduate Safety Practitioner® (GSP®) is an additional path to the CSP available to safety degree graduates from degree programs which meet BCSP Qualified Academic Program (QAP) standards. Those awarded the GSP designation meet the requirement of holding a BCSP approved credential. To learn more about the GSP and what degree programs qualify, please see Chapter 8, “The GSP Designation.”

2.) Submit Your Application

BCSP reviews all application materials to determine eligibility for the CSP examination. Candidates must meet all requirements in order to be made eligible to sit for the CSP examination. More information about the application process can be found in Chapter 3, “Application Instructions.”

3.) Purchase Your Exam

Anytime during the one-year eligibility period, candidates may pay for their examination through “My Profile” at www.bcsp.org or by calling Certification Services at +1 217-359-9263. The examination authorization period begins the day a candidate purchases an exam (within their one-year eligibility period) and ends once he/she has sat for the examination or on the day their eligibility ends, whichever comes first.

Active or retired military may qualify for a reimbursement of the examination fee through the VA. The VA Brochure is located on the BCSP website for more information.

4.) Schedule Your Exam

Once BCSP has processed your examination fee, you will then be able to schedule your examination with Pearson VUE. Pearson VUE is the official computer-based testing proctor for all BCSP examinations. More information about scheduling your examination can be found in Chapter 5, “Examination Overview.”

5.) Sit For Your Exam

Candidates eligible for the CSP examination must pass the examination within their one-year of eligibility.

BCSP allows candidates to extend their eligibility time limit once during their term and the extension is valid for one year. Extensions are available for purchase within the last 60 days of a candidate’s eligibility period and the candidate cannot have an outstanding exam authorization. Extensions can be purchased through “My Profile” at www.bcsp.org, as long as the candidate is eligible.

Those who do not meet this time limit nor purchase the eligibility extension must reapply as a new candidate and meet the current application requirements. A detailed outline of eligibility is provided once an application has been approved.

BCSP’s examination provider, Pearson VUE (www.pearsonvue.com/BCSP), has hundreds of test centers located around the world and operates every business day. Examinations are delivered via computer at the test center. Candidates will be given their examination results at the center immediately after submitting their exam. Candidates that fail may purchase a new examination authorization as long as they remain eligible.

For a list of current fees, visit www.bcsp.org/Certifications/Safety-Certifications-at-a-Glance.

6.) Maintain Certification

Annual Renewal Fees:

After completing all of the requirements, BCSP awards candidates who pass the CSP exam the CSP credential. Certificants will need to pay annual renewal fees in order to maintain certification. A prorated renewal fee will be applied for the remainder of the year in which the candidate passes the exam.

Recertification:

CSPs must remain up-to-date with changes in professional practice by earning 25 Recertification points every five years.

Additional information regarding Recertification can be found in the Recertification Guide, located at www.bcsp.org/Recertification.
Chapter Abstract
This chapter provides detailed instructions and information about how to apply to become a CSP. You may download this chapter as well as other chapters of the Complete Guide to the CSP from the Board of Certified Safety Professionals (BCSP) website at www.bcsp.org.

Visit www.bcsp.org for the most current version of this guide.

Application Instructions
Individuals who wish to pursue the CSP must create a profile through “My Profile” at www.bcsp.org. Once you have created your profile, you may select the certification application you are interested in and follow the online instructions. Candidates for certification apply only once, provided they follow all policies and stay within their eligibility time limit.

A complete application requires candidates to provide:

1. Contact Information
2. A Qualifying Credential
3. Experience Information
4. Education Information
5. Application Agreement and Validation (acknowledging truthful information has been provided, informing BCSP of any criminal convictions or unethical behavior, and agreeing to adhere to BCSP Code of Ethics)
6. Payment of Application

Do not send resumes, professional papers, continuing education course certificates, or any other items that are not specifically requested.

After you submit your application, BCSP Certification Services will contact you with any questions or once your application review has been completed.

The application fee is nonrefundable and nontransferable. For a list of current fees, visit www.bcsp.org/Certifications/Safety-Certifications-at-a-Glance. You will be prompted to include payment along with your application. Your application will not be complete until payment for the application fee and any additional requested materials have been received.

Submitting Transcripts
Information on submitting transcripts will be provided as you fill out your application online.

International transcripts must be evaluated by BCSP’s approved third party degree evaluators so that U.S. equivalency may be determined. The evaluation must be completed by a member of the National Association of Degree Evaluation Services (NACES). A list of NACES members can be found at www.naces.org.

Validation
BCSP requires applicants to disclose criminal convictions, disciplinary actions, and denial or revoked certifications, licenses and professional registrations taken against the applicant by the issuing certification board or agency. BCSP uses its policy relating to criminal convictions to determine whether the application can proceed or whether it will be terminated. In some cases, a BCSP attorney may contact the applicant to clarify information about the conviction. A copy of the BCSP criminal conviction policy appears on each BCSP certification webpage under the Resources tab “Policies and Forms.”

Applicants are required to provide disclosure of:

• All felony convictions
• All misdemeanor convictions within the past five (5) years (Minor traffic violations and petty offenses DO NOT have to be reported)
• Any record of unethical behavior
• Information related to having a professional license or certification denied, suspended or revoked for reasons other than not meeting qualifications, failure of examination, or failure to pay renewal fees

Auditing
BCSP randomly selects 5% of applications for audit. If your application is selected, you will be required to provide experience documents and an official university transcript in a sealed envelope. Acceptable forms of validation documentation for experience are:

1. A copy of the Experience Form(s) submitted with your application signed by supervisor or manager of the company;
2. A letter on company letterhead from employer validating employment dates, job title and percentage of job duties which are/were Safety/Health/Environmental;
3. BCSP Experience Validation Form completed by employer (ONLY IF YOUR APPLICATION IS SELECTED FOR AUDIT).
Chapter Abstract
This chapter provides information about BCSP examinations and suggestions for preparation. You may download this chapter as well as other chapters of the Complete Guide to the CSP from the Board of Certified Safety Professionals (BCSP) website at www.bcsp.org.

Visit www.bcsp.org for the most current version of this guide.

Preparing for the Examination
You may use various approaches to prepare for the examination:

- Complete Self-Assessment examination
- Perform individual study
- Participate in informal study groups
- Attend formal review courses

Some keys to success include:

- Knowing your strengths and weaknesses
- Having an examination preparation plan
- Developing a test-taking strategy
- Understanding how to use your calculator

Having an Examination Study Plan
The examination blueprint shows how the items on an examination are distributed across domains and tasks/topics. The percentage of items per domain is noted on the examination blueprint.

Converting your subject strengths and weaknesses into a study plan is likely to increase your overall examination score. Scoring well in one subject area can compensate for a weaker score in another subject area. However, there may not be enough items in your strong areas to achieve a passing score.

Note that knowledge and understanding are essential in passing the examination. Relying only on simulated examination items is not the best way to increase knowledge and understanding. Use simulated items to provide insight into the areas in which you should engage in additional study.

Developing a Test-Taking Strategy
Knowing how to take the examination will help improve your score. The examination uses multiple-choice items with only one correct answer and three incorrect answers. Remember, the goal is to get as many items correct as possible. There is no penalty for selecting an incorrect answer. However, only correct answers count toward reaching the passing score.

• Read the items carefully
• Consider the context
• Use examination time wisely
• Go back to troublesome items
• Complete all items

Using Your Authorized Calculator(s)
You may bring two calculators into the secure testing room as long as they both are among the brands and models listed below:

- Casio models FX-100, 200 or 300 series
- Hewlett Packard models HP 10, 12, or 17 series
- Texas Instruments models TI-30 series

Make sure you know how to use your calculator(s) so you don’t waste valuable time trying to understand how to use it once the examination clock starts. It is a good idea to practice working solutions and to be able to recall the correct calculator procedures.

Remember, solutions to computational items usually are rounded. You should select the answer closest to the computed value.

Obtaining Information on the Body of Knowledge
Draw on your experience and on professional and study references in your own library, a company library, or a public library. BCSP maintains a list of examination references for each certification at www.bcsp.org/Resources/Review-and-Study-Sources. Examination items are not necessarily taken directly from these sources. However, BCSP believes these references represent the breadth and depth of coverage of safety, health, and environmental practice.

BCSP-Published Self-Assessment Examination
It is essential for you to compare your knowledge against what is contained in the examination blueprint. One way to do this is by using a self-evaluation method. A self-evaluation helps determine how well you know various subjects.

BCSP publishes a self-assessment examination for all certifications. The self-assessment examination can help diagnose how well you know the body of knowledge, as well as to help refresh your test-taking skills.

The self-assessment examination is based on the blueprint described in this guide and is half the length of a full examination. The self-assessment examination includes a scoring sheet and correct answers. It also includes solutions to computational items, along with references for each item.
To order a self-assessment examination, please log on to “My Profile” at www.bcsp.org to make the purchase.

Other Review and Study Sources

A number of professional membership organizations, trade organizations, colleges, and universities, and private companies offer study courses, software, and materials to assist candidates when preparing for BCSP examinations. Because candidates for BCSP examinations often ask where to locate review courses and materials, BCSP maintains an online list strictly as a courtesy at www.bcsp.org/Resources/Review-and-Study-Sources.

Beyond the written materials BCSP publishes, BCSP has no involvement in the development, content, or distribution of any courses or materials associated with preparing for BCSP examinations or evaluating readiness. BCSP neither endorses the providers shown on the online list nor evaluates the providers or the providers’ materials for consistency with BCSP examination blueprints or with any aspect of any BCSP examination.

Candidates must contact the sources directly about materials, course schedules, fees, or matters related to satisfaction with their products or services.

Examination Integrity

A key to a successful and respected credentialing program is examination security. Without it, a peer-operated credentialing program has little value. BCSP relies on the ethical behavior of candidates and certificants to maintain the security of BCSP examinations.

When those who hold credentials or those who are pursuing credentials reveal information about the content of BCSP examinations, they violate the agreement all candidates accept when they apply for certification and when they take an examination. Applicants, examination candidates, or certificants who reveal confidential information about the content of BCSP examinations through any means also violate the BCSP Disciplinary Action Policy and the BCSP Code of Ethics.

BCSP pursues legal actions against organizations, individuals not seeking certification, and individuals who fraudulently claim or misrepresent their intent to seek certification, who reveal information about the content of BCSP examinations. Penalties include permanently barring individuals from pursuing the credential and revoking the certifications and interim designations of those who have status with BCSP, in addition to other legal remedies.
Chapter 5
Examination Overview

Chapter Abstract
This chapter provides detailed information about the CSP examination leading to the CSP credential. You may download this chapter as well as other chapters of the Complete Guide to the CSP from the Board of Certified Safety Professionals (BCSP) website at www.bcsp.org.

An overview of the CSP examination is presented along with its respective examination blueprint. Sample items typical of the examination can be found in Chapter 6 with solutions and explanations.

Visit www.bcsp.org for the most current version of this guide.

General Description of the CSP Examination

All candidates for the CSP must pass the CSP examination to earn the credential.

The CSP examination contains 200 multiple-choice items with four possible answers and only one correct answer. Data necessary to answer items are included in the item or in a scenario shared by several items. Each item is independent and does not rely on the correct answer to any other item. Formulas will be embedded into each item that requires one.

CSP Examination Blueprint

BCSP examination blueprints are based on surveys of what safety professionals do in practice. The CSP examination is required for candidates to demonstrate knowledge of professional safety practice at the CSP level.

The top levels, called domains, represent the major functions performed by safety professionals at the CSP level. Each domain is divided among several tasks. Within each task are lists of knowledge areas and skills necessary for carrying out the task in that domain. The knowledge areas for the CSP examination build upon the knowledge candidates have already demonstrated by virtue of having achieved the ASP certification, GSP designation, or other BCSP-approved credential. Each domain heading is accompanied by a percentage label which represents the proportion of the actual CSP examination devoted to that domain. The following pages describe the subject matter covered by the CSP examination.

Examination Content Development and Revision

BCSP updates examinations continuously. Most items come from safety professionals in practice. Before items are accepted into item banks, they go through rigorous technical, psychometric, and grammatical editing. Also, 10–15% of the items on BCSP examinations are experimental, and do not contribute to a candidate’s pass/fail decision. BCSP analyzes the performance of these experimental items before including them as scored items.

How BCSP Establishes the Minimum Passing Score

BCSP uses a criterion-referenced procedure (the modified Angoff technique) to establish minimum passing scores for examinations. This procedure ensures that the passing score is independent of scores for other candidates sitting for the examination and involves having a panel of experts rate each examination item with respect to the minimally qualified candidate. As examinations are modified on a regular basis, the minimum passing score is adjusted for the difficulty of items on the examination. Item performance is also evaluated regularly to ensure that BCSP examinations maintain the highest testing standards.

Computer-Based Testing

The CSP examination uses computer-based testing, with one item appearing on the screen at a time. You will simply use a mouse to point to the desired answer and click on it to select it. Answers can be changed the same way.

You can mark items to return to later or simply skip them and move to the next item. At the end of the examination, there is a table of items and answers selected. The table also shows skipped and marked items. You can return to any item by simply clicking on the item number.

Prior to beginning the actual examination, there is a tutorial. Your examination clocks begins when you officially commence with the examination itself. After completing the examination, you will log off to formally submit your examination for scoring. You will receive results before you leave the testing center facility.

You will have FIVE AND A HALF (5.5) hours to complete the CSP examination. Examinations are closed book, and accessing external reference materials during your examination is not permitted. For use during the examination, the testing center will provide you with materials for working out calculations by hand.

Refer to the Pearson VUE Computer-Based Testing Brochure located at www.bcsp.org for more details and requirements.

Scheduling Your Exam

Once you have purchased your examination, BCSP will send you information on scheduling your examination with a Pearson VUE testing center. It is important that when you schedule, you do so on Pearson VUE’s website or by calling their national number. Local testing centers do not schedule examinations.

For a complete list of testing center rules and procedures, visit www.PearsonVUE.com/BCSP.
## Domain 1
### Collecting Safety, Health, Environmental, and Security Risk Information • 28.6%

### Task 1 — Identify and characterize hazards, threats, and vulnerabilities using equipment and field observation methods in order to evaluate safety, health, environmental, and security risk.

**Knowledge of:**
1. Types, sources, and characteristics of hazards, threats, and vulnerabilities
2. Job safety analysis and task analysis methods
3. Hazard analysis methods
4. Qualitative, quantitative, deductive, and inductive risk assessment methods
5. Incident investigation techniques
6. Methods and techniques for evaluating facilities, products, systems, processes, and equipment
7. Methods and techniques for measurement, sampling, and analysis
8. Sources of information on hazards, threats, and vulnerabilities (e.g., subject matter experts, relevant best practices, published literature)
9. Competencies of other professionals with whom the safety professional interact
10. Information security and confidentiality requirements
11. Internet resources

**Skill in:**
1. Identifying hazards associated with equipment, manufacturing systems, and production processes
2. Recognizing external and internal threats to facilities, systems, processes, equipment, and employees
3. Conducting job safety analyses and task analyses
4. Performing hazard analyses
5. Leading incident investigations
6. Interviewing witnesses to incidents
7. Interpreting plans, specifications, technical drawings, and process flow diagrams
8. Using monitoring and sampling equipment
9. Communicating with subject matter experts
10. Consulting with equipment manufacturers and commodity suppliers
11. Finding sources of information on hazards, threats, and vulnerabilities
12. Interviewing people
13. Using the Internet to find information

### Task 2 — Design and use data management systems for collecting and validating risk information in order to evaluate safety, health, environmental, and security risk.

**Knowledge of:**
1. Mathematics and statistics
2. Qualitative, quantitative, deductive, and inductive risk assessment methods
3. Chain of custody procedures
4. Electronic data logging and monitoring equipment
5. Data management software
6. Electronic data transfer methods and data storage options
7. Information security and confidentiality requirements

**Skill in:**
1. Calculating statistics from data sources
2. Determining statistical significance
3. Comparing statistics to benchmarks
4. Preserving evidence from incident investigations
5. Calibrating and using data logging and monitoring equipment
6. Using data management software
7. Creating data collection forms
8. Maintaining data integrity

### Task 3 — Collect and validate information on organizational risk factors by studying culture, management style, business climate, financial conditions, and the availability of internal and external resources in order to evaluate safety, health, environmental, and security risk.

**Knowledge of:**
1. Mathematics and statistics
2. Qualitative, quantitative, deductive, and inductive risk assessment methods
3. Incident investigation techniques
4. Sources of information on hazards, threats, and vulnerabilities (e.g., subject matter experts, relevant best practices, published literature)
5. Organizational and behavioral sciences
6. Group dynamics
7. Management sciences
8. Management principles of authority, responsibility, and accountability
9. Budgeting, finance, and economic analysis techniques
10. Business planning
11. Competencies of other professionals with whom the safety professional interacts
12. Internet resources

**Skill in:**
1. Calculating statistics from data sources
2. Determining statistical significance
3. Comparing statistics to benchmarks
4. Leading incident investigations
5. Interviewing witnesses to incidents
6. Developing surveys to capture data related to organizational culture
7. Communicating with subject matter experts
8. Interviewing people
9. Using the Internet to find information
## Task 4 — Research applicable laws, regulations, consensus standards, best practices, and published literature using internal and external resources to develop benchmarks for assessing an organization’s safety, health, environmental, and security performance and to support the evaluation of safety, health, environmental, and security risk.

### Knowledge of:
1. Benchmarks and performance standards
2. Mathematics and statistics
3. Sources of information on hazards, threats, and vulnerabilities (e.g., subject matter experts, relevant best practices, published literature)
4. Sources of information related to local laws, regulations, and consensus codes and standards
5. Product certification and listing agencies
6. Qualitative, quantitative, deductive, and inductive risk assessment methods
7. Competencies of other professionals with whom the safety professional interacts
8. Internet resources

### Skill in:
1. Calculating statistics from data sources
2. Determining statistical significance
3. Using statistics to define benchmarks and performance standards
4. Comparing statistics to benchmarks
5. Interpreting local laws, regulations, and consensus codes and standards
6. Communicating with subject matter experts
7. Obtaining information on product certification and listing requirements
8. Using the Internet to find information

## Domain 2

**Assessing Safety, Health, Environmental, and Security Risk • 36.6%**

### Task 1 — Evaluate the risk of injury, illness, environmental harm, and property damage to which the public or an organization is exposed associated with the organization’s facilities, products, systems, processes, equipment, and employees by applying quantitative and qualitative threat, vulnerability, and risk assessment techniques.

### Knowledge of:
1. Qualitative, quantitative, deductive, and inductive risk assessment methods
2. Root cause analysis methods
3. Mathematics and statistics
4. Basic sciences: anatomy, biology, chemistry, physics, physiology
5. Applied sciences: fluid flow, mechanics, electricity
6. Organizational and behavioral sciences
7. Agriculture safety (including food supply safety)
8. Biological safety
9. Business continuity and contingency planning
10. Chemical process safety
11. Community emergency planning
12. Construction safety
13. Dispersion modeling
14. Emergency/crisis/disaster management
15. Emergency/crisis/disaster response planning
16. Environmental protection and pollution prevention
17. Epidemiology
18. Equipment safety
19. Ergonomics and human factors
20. Facility safety
21. Facility security and access control
22. Facility siting and layout
23. Fire prevention, protection, and suppression
24. Hazardous materials management
25. Hazardous waste management
26. Healthcare safety (including patient safety)
27. Industrial hygiene
28. Infectious diseases
29. Insurance/risk transfer principles
30. Maritime safety
31. Mining safety
32. Multi-employer worksite issues
33. Mutual aid agreements
34. Physical and chemical characteristics of hazardous materials
35. Pressure relief systems
36. Product safety
37. Public safety and security
38. Radiation safety
39. System safety
40. Toxicology
41. Transportation safety and security
42. Ventilation systems
43. Workplace violence
44. Sources of information on risk (e.g., subject matter experts, relevant best practices, published literature)
45. Information security and confidentiality requirements

### Skill in:
1. Leading comprehensive risk assessments
2. Leading threat and vulnerability assessments
3. Facilitating chemical process hazard analyses
4. Conducting root cause analyses
5. Estimating organizational risk
6. Estimating public risk
7. Estimating the risk of human error
8. Using statistics to estimate risk
9. Interpreting plans, specifications, technical drawings, and process flow diagrams
10. Evaluating facility fire risk
11. Evaluating life safety features in facilities
12. Calculating maximum occupancy and egress capacity
13. Calculating required containment volumes and hazardous materials storage requirements
14. Determining how released hazardous materials migrate through the air, surface water, soil, and water table
15. Determining occupational exposures (e.g., hazardous chemicals, radiation, noise, biological agents, heat)
16. Evaluating emergency/crisis/disaster management and response plans
17. Using chemical process safety information
18. Using dispersion modeling software
19. Communicating with subject matter experts
20. Consulting with equipment manufacturers and commodity suppliers
21. Interviewing people
### Domain 2 (Continued)
**Assessing Safety, Health, Environmental, and Security Risk • 36.6%**

#### Task 2 — Audit safety, health, environmental, and security management systems using appropriate auditing techniques to compare an organization’s management systems against established standards for identifying the organization’s strengths and weaknesses.

##### Knowledge of:
1. Safety, health, and environmental management and audit systems (e.g., ANSI/AIHA Z10, ISO 14000 series, OHSAS 18000 series, ISO 19011, U.S. Occupational Safety and Health Administration Voluntary Protection Programs)
2. Management system auditing techniques
3. Benchmarks and performance standards
4. Methods and techniques for evaluating facilities, products, systems, processes, and equipment
5. Methods and techniques for measurement, sampling, and analysis
6. Qualitative, quantitative, deductive, and inductive risk assessment methods
7. Root cause analysis methods
8. Mathematics and statistics
9. Basic sciences: anatomy, biology, chemistry, physics, physiology
10. Applied sciences: fluid flow, mechanics, electricity
11. Organizational and behavioral sciences
12. Management sciences
13. Management principles of authority, responsibility, and accountability
14. Budgeting, finance, and economic analysis techniques
15. Business continuity and contingency planning
16. Business planning
17. Business software
18. Change management
19. Emergency/crisis/disaster management
20. Emergency/crisis/disaster response planning
21. Group dynamics
22. Hazardous materials management
23. Hazardous waste management
24. Job safety analysis and task analysis methods
25. Multi-employer worksite issues
26. Report presentation strategies
27. Competencies of other professionals with whom the safety professional interacts
28. Sources of information on hazards, threats, and vulnerabilities (e.g., subject matter experts, relevant best practices, published literature)
29. Information security and confidentiality requirements
30. Internet resources

##### Skill in:
1. Leading management system audits
2. Comparing management systems with benchmarks
3. Comparing documented procedures and tasks with actual operations
4. Evaluating safety, health, environmental, and security plans, programs, and policies
5. Evaluating risk assessments
6. Evaluating the results of root cause analyses
7. Recognizing external and internal threats to facilities, systems, processes, equipment, and employees
8. Interpreting plans, specifications, technical drawings, and process flow diagrams
9. Recognizing management system changes
10. Using monitoring and sampling equipment
11. Determining statistical significance
12. Comparing statistics to benchmarks
13. Performing facility and equipment inspections
14. Evaluating business continuity and contingency plans
15. Communicating with subject matter experts
16. Consulting with equipment manufacturers and commodity suppliers
17. Using business software to present reports
18. Interviewing people
19. Using the Internet to find information

#### Task 3 — Analyze trends in leading and lagging performance indicators related to safety, health, environmental, and security management systems using historical information and statistical methods to identify an organization’s strengths and weaknesses.

##### Knowledge of:
1. Types of leading and lagging safety, health, environmental, and security performance indicators
2. Benchmarks and performance standards
3. Safety, health, and environmental management and audit systems (e.g., ANSI/AIHA Z10, ISO 14000 series, OHSAS 18000 series, ISO 19011, U.S. Occupational Safety and Health Administration Voluntary Protection Programs)
4. Management system auditing techniques
5. Mathematics and statistics
6. Organizational and behavioral sciences
7. Management sciences
8. Management principles of authority, responsibility, and accountability
9. Budgeting, finance, and economic analysis techniques
10. Business planning
11. Business software
12. Change management
13. Competencies of other professionals with whom the safety professional interacts
14. Training assessment instruments (e.g., written tests, skill assessments)

##### Skill in:
1. Using statistics to show trends in performance indicators
2. Calculating statistics from data sources
3. Using statistics to define benchmarks and performance standards
4. Communicating with subject matter experts
5. Comparing statistics to benchmarks
6. Determining statistical significance
7. Evaluating management system audits
8. Evaluating risk assessments
9. Evaluating safety, health, environmental, and security plans, programs, and policies
10. Evaluating the results of root cause analyses
11. Interpreting organizational culture surveys and perception surveys
12. Measuring training program effectiveness
13. Recognizing management system changes
14. Using business software to present reports
15. Interviewing people
16. Obtaining meaningful feedback

CSP Examination Blueprint – 06/2014
Domain 3  
Managing Safety, Health, Environmental, and Security Risk • 34.8%

**Task 1** — Design effective risk management methods using the results of risk assessments to eliminate or reduce safety, health, environmental, and security risks.

### Knowledge of:

1. Engineering controls
2. Principles of managing risk throughout the design process
3. Administrative controls
4. Personal protective equipment
5. Qualitative, quantitative, deductive, and inductive risk assessment methods
6. Root cause analysis methods
7. Risk-based decision-making tools
8. Mathematics and statistics
10. Basic sciences: anatomy, biology, chemistry, physics, physiology
11. Organizational and behavioral sciences
12. Management sciences
13. Management principles of authority, responsibility, and accountability
14. Budgeting, finance, and economic analysis techniques
15. Business planning
16. Business software
17. Adult learning
18. Cultural norms and population stereotypes
19. Training methods
20. Training assessment instruments (e.g., written tests, skill assessments)
21. Agriculture safety (including food supply safety)
22. Biological safety
23. Business continuity and contingency planning
24. Change management
25. Chemical process safety
26. Community emergency planning
27. Construction safety
28. Education and training methods
29. Emergency/crisis/disaster management
30. Emergency/crisis/disaster response planning
31. Employee assistance programs
32. Employee/stakeholder incentive programs
33. Environmental protection and pollution prevention
34. Epidemiology
35. Equipment safety
36. Ergonomics and human factors
37. Facility safety
38. Facility security and access control
39. Facility siting and layout
40. Fire prevention, protection, and suppression
41. Hazardous materials management
42. Hazardous waste management
43. Healthcare safety (including patient safety)
44. Incident command methods
45. Industrial hygiene
46. Infectious diseases
47. Insurance/risk transfer principles
48. Labels, signs, and warnings (including international symbols)
49. Maritime safety
50. Mining safety
51. Multi-employer worksite issues
52. Mutual aid agreements
53. Physical and chemical characteristics of hazardous materials
54. Pressure relief systems
55. Product safety
56. Public safety and security
57. Radiation safety
58. System safety
59. Toxicology
60. Transportation safety and security
61. Ventilation systems
62. Workplace violence
63. Competencies of other professionals with whom the safety professional interacts
64. Sources of information on risk management options (e.g., subject matter experts, relevant best practices, published literature)

### Skill in:

1. Recommending effective engineering controls
2. Developing effective administrative controls
3. Developing procedures that incorporate risk management controls
4. Developing safety, health, environmental, and security plans, programs, and policies
5. Designing effective labels, signs, and warnings
6. Performing training needs assessments
7. Developing training programs
8. Developing training assessment instruments
9. Applying risk-based decision-making tools for prioritizing risk management options
10. Interpreting plans, specifications, technical drawings, and process flow diagrams
11. Creating emergency/crisis/disaster management and response plans
12. Performing financial analyses of risk management options
13. Evaluating the costs and benefits of risk management options
14. Organizing chemical process safety information
15. Performing gap analyses
16. Determining hazardous materials storage requirements
17. Recommending facility life safety features
18. Recommending methods to reduce the risk of occupational exposures (e.g., hazardous chemicals, radiation, noise, biological agents, heat)
19. Reducing the risk of error-likely situations
20. Selecting appropriate personal protective equipment
21. Using sampling and measurement devices
22. Using statistics to understand risk
23. Using the results of risk assessments to support risk management options
24. Using the results of root cause analyses to support risk management options
25. Communicating with subject matter experts
26. Consulting with equipment manufacturers and commodity suppliers
27. Interviewing people

CSP Examination Blueprint – 06/2014
## Domain 3 (Continued)

**Managing Safety, Health, Environmental, and Security Risk • 34.8%**

### Task 2 — Educate and influence decision makers to adopt effective risk management methods by illustrating the business-related benefits associated with implementing them to eliminate or reduce safety, health, environmental, and security risks.

<table>
<thead>
<tr>
<th>Knowledge of:</th>
<th>Skill in:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Risk-based decision-making tools</td>
<td>1. Applying risk-based decision-making tools for prioritizing risk management options</td>
</tr>
<tr>
<td>2. Budgeting, finance, and economic analysis techniques</td>
<td>2. Creating plans for implementing risk management options</td>
</tr>
<tr>
<td>3. Business planning</td>
<td>3. Describing the costs and benefits of risk management options</td>
</tr>
<tr>
<td>4. Business software</td>
<td>4. Describing the effects of implementing safety, health, and environmental plans, programs, and policies</td>
</tr>
<tr>
<td>5. Education and training methods</td>
<td>5. Describing trends to support risk management options</td>
</tr>
<tr>
<td>6. Interpersonal communications</td>
<td>6. Explaining risk management options to decision makers</td>
</tr>
<tr>
<td>7. Mathematics and statistics</td>
<td>7. Making presentations to decision makers</td>
</tr>
<tr>
<td>8. Organizational and behavioral sciences</td>
<td>8. Presenting financial analyses of risk management options</td>
</tr>
<tr>
<td>10. Management principles of authority, responsibility, and accountability</td>
<td>10. Using statistics to explain the effects of risk management options</td>
</tr>
<tr>
<td>11. Organizational protocols</td>
<td>11. Using the results of risk assessments to support risk management options</td>
</tr>
<tr>
<td>12. Presentation media and technologies</td>
<td>12. Using the results of root cause analyses to support risk management options</td>
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<tr>
<td>13. Presentation strategies</td>
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<tr>
<td>14. Project management concepts</td>
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<tr>
<td>15. Target audience background</td>
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</tbody>
</table>

### Task 3 — Lead projects to implement the risk management methods adopted by decision makers using internal and external resources to eliminate or reduce safety, health, environmental, and security risks.

<table>
<thead>
<tr>
<th>Knowledge of:</th>
<th>Skill in:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Project management concepts</td>
<td>1. Implementing project management plans</td>
</tr>
<tr>
<td>2. Management sciences</td>
<td>2. Applying management principles of authority, responsibility, and accountability</td>
</tr>
<tr>
<td>3. Management principles of authority, responsibility, and accountability</td>
<td>3. Using project management software</td>
</tr>
<tr>
<td>4. Methods of achieving project stakeholder acceptance of project goals</td>
<td>4. Developing systems to track project implementation</td>
</tr>
<tr>
<td>5. Financial management principles</td>
<td>5. Leading people</td>
</tr>
<tr>
<td>7. Risk-based decision-making tools</td>
<td>7. Making presentations to stakeholders</td>
</tr>
<tr>
<td>8. Organizational and behavioral sciences</td>
<td>8. Motivating project stakeholders</td>
</tr>
<tr>
<td>10. Project management software</td>
<td>10. Supervising people</td>
</tr>
<tr>
<td>11. Change management</td>
<td>11. Communicating with subject matter experts</td>
</tr>
<tr>
<td>12. Group dynamics</td>
<td>12. Consulting with equipment manufacturers and commodity suppliers</td>
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<tr>
<td>13. Interpersonal communications</td>
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<tr>
<td>15. Organizational protocols</td>
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<tr>
<td>16. Presentation media and technologies</td>
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<td>17. Presentation strategies</td>
<td></td>
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<tr>
<td>18. Principles of supervising people</td>
<td></td>
</tr>
<tr>
<td>19. Competencies of other professionals with whom the safety professional interacts</td>
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</tbody>
</table>
**Task 4 — Promote a positive organizational culture that is conscious of its safety, health, environmental, and security responsibilities by communicating these responsibilities to all stakeholders and by training all stakeholders as part of the organization’s overall risk management program.**

<table>
<thead>
<tr>
<th><strong>Knowledge of:</strong></th>
<th><strong>Skill in:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Management sciences</td>
<td>1. Explaining risk concepts to stakeholders and the public</td>
</tr>
<tr>
<td>2. Management principles of authority, responsibility, and accountability</td>
<td>2. Explaining risk management options to stakeholders and the public</td>
</tr>
<tr>
<td>3. Methods of achieving project stakeholder acceptance of project goals</td>
<td>3. Applying management principles of authority, responsibility, and accountability</td>
</tr>
<tr>
<td>4. Organizational and behavioral sciences</td>
<td>4. Encouraging participation in risk management processes</td>
</tr>
<tr>
<td>5. Organizational protocols</td>
<td>5. Influencing stakeholder behavior</td>
</tr>
<tr>
<td>6. Cultural norms and population stereotypes</td>
<td>6. Developing and using lesson plans</td>
</tr>
<tr>
<td>7. Group dynamics</td>
<td>7. Conducting training</td>
</tr>
<tr>
<td>8. Interpersonal communications</td>
<td>8. Administering training assessment instruments</td>
</tr>
<tr>
<td>9. Labels, signs, and warnings (including international symbols)</td>
<td>9. Providing an effective learning environment</td>
</tr>
<tr>
<td>10. Multi-employer worksite issues</td>
<td>10. Delivering motivational presentations</td>
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<tr>
<td>11. Organized labor/management relations</td>
<td>11. Creating motivational literature</td>
</tr>
<tr>
<td>12. Presentation media and technologies</td>
<td>12. Facilitating stakeholder participation committees</td>
</tr>
<tr>
<td>15. Public communication techniques</td>
<td>15. Making presentations to stakeholders and the public</td>
</tr>
<tr>
<td>16. Risk communication techniques</td>
<td>16. Negotiating with political entities</td>
</tr>
<tr>
<td>17. Stakeholder participation committees</td>
<td>17. Resolving conflicts</td>
</tr>
<tr>
<td>18. Target audience background</td>
<td>18. Soliciting stakeholder feedback</td>
</tr>
<tr>
<td>19. Adult learning</td>
<td>19. Working with organized labor unions and management</td>
</tr>
<tr>
<td>20. Education and training methods</td>
<td>20. Motivating stakeholders</td>
</tr>
<tr>
<td>22. Training methods</td>
<td>22. Leading teams</td>
</tr>
<tr>
<td>23. Training assessment instruments (e.g., written tests, skill assessments)</td>
<td>23. Exchanging information over the Internet</td>
</tr>
<tr>
<td>24. Business communication software</td>
<td>24. Communicating with subject matter experts</td>
</tr>
<tr>
<td>25. Competencies of other professionals with whom the safety professional interacts</td>
<td>25. Interviewing people</td>
</tr>
<tr>
<td>27. Information security and confidentiality requirements</td>
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</tr>
</tbody>
</table>
Chapter 6
Examination Sample Items

Chapter Abstract
This chapter provides sample examination items and their solutions for the CSP examination. You may download this chapter as well as other chapters of the Complete Guide to the CSP from the Board of Certified Safety Professionals (BCSP) website at www.bcsp.org.

Visit www.bcsp.org for the most current version of this guide.

Examination Question Samples
The following questions illustrate only the style and format typical of items on the CSP examination. Not all CSP examination task areas are represented by these sample items. Please note it is essential for you to read and understand the CSP examination blueprint found in Chapter 5 so you have a complete awareness of the depth and breadth of all of the subject matter appearing on the actual CSP examination.

1. An employee fell from a broken ladder and sustained a fractured arm. In evaluating the management system in place when the accident occurred, which is considered a root cause?
   A. The ladder had a broken rung.
   B. The ladder’s repair log was not attached to the ladder.
   C. The employee was not trained in ladder use and how to recognize unsafe ladder conditions.
   D. The maintenance employee did not inspect the ladder before issuing the ladder to the employee.

2. In the development of an incident data collection and management system, what is the most important first step?
   A. To differentiate between human error and design error
   B. To define the subsequent use of the data
   C. To establish accident-reporting responsibilities
   D. To codify data to conform to existing data sources

3. A control system contains a subsystem having series elements A and B. The subsystem will perform as intended if both elements A and B function properly. Failures by A and B are mutually exclusive. Failure rates of the two elements are equal at a long-term value of one failure per 10,000 trials. What is the long-term failure rate of the subsystem?
   A. One per 5,000 trials
   B. One per 10,000 trials
   C. One per 20,000 trials
   D. One per 100,000 trials

4. A solvent mixture contains, by volume, 50% Solvent A, 25% Solvent B, and 25% Solvent C. The mixture evaporates into the work atmosphere, and an air sampling has revealed a vapor concentration of 20 ppm of Solvent C. The eight-hour time-weighted average Threshold Limit Values for Solvents A, B, and C are 100 ppm, 50 ppm, and 50 ppm, respectively. Assuming that the effects are additive and that the concentrations in air are of the same proportions as in the solvent mixture, is the eight-hour time-weighted average Threshold Limit Value exceeded in the work atmosphere?
   A. No. The vapor concentration of any component does not exceed its Threshold Limit Value.
   B. Yes. The sum of the vapor concentration of the components exceeds the sum of their Threshold Limit Values.
   C. No. The sum of the fractions of the solvent components in ratio of concentration to the Threshold Limit Value is less than unity.
   D. Yes. The sum of the fractions of the solvent components in ratio of concentration to Threshold Limit Value exceeds 1.0.

5. What is the calculated probability of occurrence of the fatal accident?
   A. $1.2 \times 10^{-4}$
   B. $1.3 \times 10^{-6}$
   C. $6.9 \times 10^{-6}$
   D. $3.1 \times 10^{-10}$

The probabilities of occurrence for events $X^1$, $X^2$, $X^3$, and $X^4$ are shown below.

- $X^1 = 0.0025$
- $X^2 = 0.050$
- $X^3 = 0.0050$
- $X^4 = 0.00050$

Examining the diagram:

- Fatal Accident
  - $X^1$
  - $X^2$

The two events are independent, so the probability of the fatal accident is:

$$P(X^1 \text{AND} X^2) = P(X^1) \times P(X^2) = 0.0025 \times 0.050 = 0.000125$$
6. When calculating the coefficient of correlation between facility audit scores and facility injury rates, what does a positive coefficient of correlation indicate?

A. That high audit scores tend to be associated with low injury rates
B. That high audit scores tend to be associated with high injury rates
C. That low audit scores tend to be associated with low injury rates
D. That there is an increase in correlation between audit scores and injury rates

7. Construction sites frequently have multiple companies working concurrently on a single work site, each with the responsibility for ensuring the safety of their employees. Which is the first step for ensuring that owners, prime contractors, and subcontractors work together to achieve a safe work site?

A. Hold planning meetings with all parties involved in each phase of the work in order to go over safety requirements.
B. Review all contracts to ensure that safety responsibilities are clearly identified.
C. Inspect the work, work areas and equipment of all parties on a regular basis.
D. Hold each contractor or subcontractor responsible for the daily activities of its workers.

8. A company plans to retrofit a storage building with a sprinkler system because the facility will soon be storing a high density of ordinary combustibles. In conducting a feasibility study, a safety professional determines that the 4-in (10-cm) water main in the street must be extended to the storage building. Relevant data are presented below.

- Storage area to be sprinkled: 200,000 ft² (18 580 m²)
- Area covered per sprinkler head: 125 ft² (11.6 m²)
- Distance from street water line to the plant: 500 ft (150 m)

Cost Data:
- $1,200 / ft ($3,940 / m) to lay a 4-in (10-cm) water main
- $310 per installed sprinkler
- $200,000 for miscellaneous plumbing
- $100,000 for the control system

What is the best estimate of the direct cost of this project?

A. $510,000
B. $830,000
C. $1,000,000
D. $1,400,000

Answers to the Sample Items

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Correct Answer</th>
<th>Item Number</th>
<th>Correct Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>C</td>
<td>5</td>
<td>A</td>
</tr>
<tr>
<td>2</td>
<td>B</td>
<td>6</td>
<td>A</td>
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<tr>
<td>3</td>
<td>A</td>
<td>7</td>
<td>B</td>
</tr>
<tr>
<td>4</td>
<td>D</td>
<td>8</td>
<td>D</td>
</tr>
</tbody>
</table>
Solutions to the Sample Items

1. The lack of training is a root cause because the lack of training is a management system deficiency that directly led to the causal factor of the employee falling from a broken ladder.

2. The designer of an incident data management system should be aware of the function and subsequent use that the data managed by the system will serve.

3. Since both elements must function for the subsystem to function, the failure of any one element will cause the subsystem to fail (i.e., the subsystem will fail if either A or B fails). Because the failures are also mutually exclusive, the probability of failure of the subsystem is $P(A) + P(B) - \left(\frac{1}{10,000} \times \frac{1}{10,000}\right)$.

Since the last term (the minus term) is so small with respect to the other terms, it can be considered equal to zero; therefore,

$$P(A) + P(B) = \frac{1}{10,000} + \frac{1}{10,000} = \frac{1}{5,000}$$

4. For a mixture, assuming additive effects, the sum of the concentrations divided by the Threshold Limit Values for each component of the mixture must not exceed unity (1.0).

$$\frac{C_1}{T_1} + \frac{C_2}{T_2} + \ldots + \frac{C_n}{T_n} < 1.0$$

Assuming proportionate evaporation, if solvent C = 20 ppm and is 25% of the mixture, then

$$A = \left[\frac{0.50}{0.25}\right] (20 \text{ ppm})$$

$$A = 40 \text{ ppm}$$

$$B = \left[\frac{0.25}{0.25}\right] (20 \text{ ppm})$$

$$B = 20 \text{ ppm}$$

40 ppm / 100 ppm + 20 ppm / 50 ppm + 20 ppm / 50 ppm = 1.2

1.2 exceeds 1.0; therefore the limit has been exceeded.

5. The top event is represented by $B_2 \cdot A_1$. $B_2 = X_1 \cdot X_2$, and $A_1 = X_3 + A_4 + X_5$, $A_1 = X_3 \cdot X_4 \cdot X_5$. The calculated probability of occurrence of the fatal accident (top event) is therefore 

$$(X_1 \cdot X_2) \cdot (X_3 + (X_4 \cdot X_5)) = (X_1 \cdot X_2 \cdot X_3 \cdot X_4) + (X_1 \cdot X_2 \cdot X_5) \cdot (X_1 \cdot X_2 \cdot X_4) \cdot (X_1 \cdot X_2 \cdot X_3) \cdot (X_1 \cdot X_2 \cdot X_5)$. This simplifies to $(X_1 \cdot X_2) + (X_1 \cdot X_2 \cdot X_3) + (X_1 \cdot X_2 \cdot X_4) + (X_1 \cdot X_2 \cdot X_5)$. This further simplifies to $(X_1 \cdot X_2)(1 + X_3 + X_4)$. Thus, the probability of the fatal accident (top event) is $0.0025 \times 0.050 = 0.000125 = 1.2 \times 10^{-4}$.

6. A positive coefficient of correlation means a positive relationship between the two sets of ranked data. A negative coefficient means a negative relationship.

7. In order to ensure that safety responsibilities are clearly established, the contract for each company must define those responsibilities. Other factors help ensure that the responsibility is implemented effectively.

8. Cost of water main = 500 feet x $1,200/foot = $600,000

Cost of sprinkler installation

= 200,000 square feet/125 square feet x $310

= $496,000

Total cost = $600,000 + $496,000 + $200,000 + $100,000

= $1,396,000 = $1,400,000
Chapter 7
After You Achieve Your Certification

Chapter Abstract
This chapter provides detailed information needed after earning your credential. You may download this chapter as well as other chapters of the Complete Guide to the CSP from the Board of Certified Safety Professionals (BCSP) website at www.bcsp.org.

An overview of the rules and procedures essential in retaining the CSP credential is presented as well as proper use of the title. It also defines discipline procedures, contains guidelines for helping promote the value of the CSP credential, and provides information on ordering seals, stamps, jewelry, certificate frames, and other logo products.

Visit www.bcsp.org for the most current version of this guide.

Features and Benefits of Obtaining BCSP Credentials

Wallet Card. Each year when you pay the required annual renewal fee, a wallet card is made available which shows you are certified as well as your Recertification date for your certification. The card identifies you as a title holder for the calendar year (unless declared invalid).

Wall Certificate. When you achieve the CSP credential, BCSP issues a wall certificate suitable for framing. Should you lose or damage your wall certificate, BCSP will replace it for a nominal fee. Visit “My Profile” on the BCSP website to order.

Access to BCSP’s Career Center. Many employers post open job positions seeking qualified safety professionals. With a BCSP credential, you may post your resume online and employers have access to view your resume and contact you if you wish.

BCSP eNewsletter Subscription. As a BCSP certificant, you will receive the quarterly BCSP eNewsletter. The BCSP eNewsletter contains information about important changes which may affect BCSP certifications and designations, information about certificate holders, and professional safety practice information. Current issues and back issues are located on the BCSP website.

BCSP Annual Report. The BCSP Annual Report is another important publication you will receive electronically. It contains summarized data about CSPs and the annual audited financial report and can be found on the BCSP website at www.bcsp.org/About.

BCSP Directories. BCSP publishes directories of individuals who currently hold BCSP certifications and designations. An abbreviated format, containing names, cities, and states, appears on the BCSP website and allows viewers to confirm if a person currently holds a BCSP certification or designation.

eSafetySource Registration. BCSP offers the opportunity for BCSP certification and designation holders to register on the electronic safety source registry, indicating their areas of specialization.

Mail Lists. Organizations and companies providing valuable services to safety professionals may purchase a list of BCSP certificant names and addresses. Use of the list is restricted and all list sales are approved by BCSP. Restrictions limit the sale to uses which are of value in professional safety practice (i.e. notices of upcoming conferences or professional publications). Sales are not approved for promotion of general merchandise or services or for resale or distribution to third-party organizations. CSPs may specify at any time that their names not be included on mail lists by selecting that option in “My Profile” online.

Membership Level. Individuals may use the CSP credential to qualify for the highest level of membership in professional safety societies. After achieving the CSP credential, check with the safety and health organizations in which you hold memberships to see if you qualify for a status change. For example, the CSP credential qualifies members of the American Society of Safety Engineers (ASSE) for “Professional Member” status.

Title Protection and Laws Involving the BCSP Credentials. Some states have enacted title protection laws which restrict anyone from claiming to hold a BCSP certification without having duly obtained them from BCSP. Additionally, several states have enacted laws or regulations which specify that CSPs may provide loss control services for insurance companies. Check your state government website for more details.

Use of the CSP Title
It is important to know how to use your CSP title correctly. The “Certified Safety Professional” title and the letters “CSP” are registered certification marks issued to BCSP by the U.S. Patent and Trademark Office. They can only be used when authorized for a period specifically designated by BCSP. Additionally, several states have enacted laws or regulations which specify that CSPs may provide loss control services for insurance companies. Check your state government website for more details.

Examples of correct use:
- Robert A. Smith, CSP
- Robert A. Smith, Certified Safety Professional

The CSP credential is awarded to individuals, not companies, and should only be used with individual names.

The CSP credential may be used only for the period for which use is authorized. Use expires if you have not paid the annual renewal fee or have not met Recertification requirements for the CSP. Use of these titles beyond the authorized
period (without complying with renewal or Recertification requirements) constitutes unauthorized use of the credential.

You may use these credential on your business cards, resume, and correspondence or with your signature. You may use your CSP credential virtually anywhere you use your name.

Example of proper company use:
ABC Safety Company provides the latest safety services. Employees holding the Certified Safety Professional® (CSP®) certification include Robert A. Smith, CSP and Mary A. Jones, CSP.

Example of improper company use:
ABC Safety Company, providing safety services by Certified Safety Professionals.

Maintaining Your Certification
In order to retain your certification, you must:
- Inform BCSP when your mail or email address changes
- Pay your annual fee
- Complete Recertification requirements

Changing Your Name. If you change your name through marriage or other court proceedings, you may request a name change by contacting bcsp@bcsp.org. Additionally, you must provide a copy of the court record or marriage certificate in order for BCSP to register the change.

Paying Your Annual Renewal Fee. The authority to use the CSP title is valid for one year. It must be renewed annually. You will receive a prorated fee for the remainder of the year in which you pass the examination. Each following year, BCSP will send you a notice when your annual renewal fee is due. BCSP gives you several options for paying the fee online via a credit card or by phone. After receiving your payment, BCSP will send you a wallet card and a receipt. For a list of current fees, visit www.bcsp.org/Certifications/Safety-Certifications-at-a-Glance.

Meeting Recertification Requirements. The Recertification program helps CSPs keep up with changes affecting professional safety practice. The program complies with requirements of BCSP’s national accrediting organizations.

Every five years (one cycle) you must achieve 25 points. There are eleven categories of activities, each providing points toward meeting that goal. Keep in mind, there is no limit to the number of points in some categories, while other categories have annual and/or total point limits.

At the end of the five-year period, you must submit the points you earned during that cycle. Only points earned during a Recertification cycle count toward that cycle. BCSP randomly selects 5% of those who submit their points for an audit. While documentation to prove points is not required with the initial submission, the audit procedure requires you have proof of the points claimed. It is important that you keep records to verify your Recertification activities.

Additional details of the Recertification program appear in the Recertification Guide. You may download the Recertification Guide on the BCSP website to help you through the process. You will want to refer to the website regularly for the most up-to-date information.

Reinstatement
If you fail to pay your annual renewal fee on time or fail to achieve the required Recertification points every five years, BCSP will send you a notice that your credential has been invalidated and you no longer hold the CSP.

You may seek reinstatement by contacting BCSP. Reinstatement must be by 12/31 of the same year you are invalidated. Reinstatement includes paying a reinstatement fee and complying with the current Recertification requirements. Otherwise, you will be required to apply as a new candidate and meet all of the requirements in place at the time of your application.

Career Interruptions
While holding the CSP credential, you may face situations which affect your ability to maintain your certification. You may experience an interruption in your safety career, such as moving to a job which is not in the safety profession, taking time out to be a parent, student or soldier, having an extended health problem, or being unemployed. BCSP has established some options to help deal with these types of situations.

Leave of Absence and Extensions. You may seek a leave of absence or an extension if a career interruption will affect your ability to meet Recertification requirements. Please refer to the Recertification Guide for detailed information.

Annual Renewal Fee Waiver While Unemployed. If you become unemployed and are unable to pay your annual renewal fee, you may request in writing a one-time waiver of the annual renewal fee.

Retired CSPs
There is not a retired status for the CSP, however, retired CSPs can list the certification and the dates that they held it behind their name.

Examples:
- Robert A. Smith, Retired, CSP 1981-2012
- Robert A. Smith, Retired, Certified Safety Professional from 1981-2012

CSPs who have retired may not actively use the Certified Safety Professional credential.

Protecting the CSP Credential and Logo
Because BCSP has registered its logos and titles, it has a solid position for challenging BCSP title and/or logo infringement. There are several legal theories and considerations involved. Registration itself does not provide absolute protection from others using similar acronyms or titles. BCSP does not have exclusive use of the acronym. BCSP continually challenges those uses which can be confusing to the public or for which there are legal grounds to make such challenges.

Individuals Using the CSP Credential Without Authority
BCSP has established procedures for challenging individuals known to use the Certified Safety Professional credential without having obtained it or after they lost it for failure to pay annual renewal fees or meet Recertification requirements.

In order to establish someone is using the credential without authority, BCSP must have the original document (or a copy)
showing where the individual is using the title. Most often the unauthorized use occurs online, on a business card, resume, business letterhead, brochure or similar publication, or with a signature. To initiate action against the individual using the credential without authority, BCSP also needs the individual’s current mailing address.

BCSP relies on those finding potential unauthorized uses to report them and provide the documentation showing the use of these titles. BCSP will not disclose the name of the person or organization reporting potential unauthorized uses.

After receiving documentation of a potential unauthorized use case, BCSP takes steps to challenge that individual and seeks to correct any record-keeping error on the part of BCSP. Legal counsel for BCSP may participate in the procedures.

Those who have used BCSP titles without authority may be barred from pursuing the CSP certification for five years. Their names are also published on the BCSP website. Other penalties may be applied. BCSP reserves the right to use the courts in protecting use of the CSP credential.

Criminal Convictions
BCSP’s criminal conviction policy appears on the BCSP website. It applies to certificate holders. The policy also covers convictions by other certifications and licensing bodies for unauthorized use of designations. It requires CSPs to report new convictions which can result in BCSP disciplinary proceedings.

Discipline Procedures
BCSP authorizes individuals to use the CSP credential when they meet requirements for achieving and retaining the credential. BCSP also has a responsibility to withdraw that authorization when individuals fail to pay annual renewal fees, fail to meet Recertification requirements, or when they violate BCSP Disciplinary Action Policy or the BCSP Code of Ethics. The BCSP Disciplinary Action Policy contains rules on disciplinary procedures and grounds for action. The complete BCSP Disciplinary Action Policy is on the BCSP website.

Appeals
You may appeal decisions related to earning and maintaining BCSP credentials. Requests for appeal must be submitted to the Chief Executive Officer in writing and in accordance to the current appeals policy located online at www.bcsp.org/About.

Promoting the CSP
BCSP uses several methods to promote the CSP credential and to encourage safety professionals to pursue it. You may volunteer to assist in these activities. Please contact BCSP or visit the BCSP website to determine available materials.

Request a Returnable Banner Display. Use of BCSP banner displays helps promote BCSP and the CSP certification. They are ideal for meetings, local and regional conferences or educational programs of local professional groups and companies. BCSP pays for shipping to and from events. Some instances may earn Recertification credit for promoting the CSP. To request a display, fill out the Display and Literature Request Form located on the BCSP web page or contact BCSP to determine availability of these displays.

Promotional Materials. There is a variety of complimentary literature about all of the BCSP credentials, qualifications and procedures, and examinations. Most BCSP publications are available on the BCSP website as downloadable PDFs. To request literature, please fill out the Display and Literature Request Form located on the BCSP web page or contact BCSP.

To encourage individuals to pursue a career in safety, BCSP offers a PDF of the Career Guide to the Safety Profession, co-produced with the ASSE Foundation, and a Career Paths in Safety brochure in PDF and print. These PDFs are available on the BCSP website.

Presentation Materials. PowerPoint presentations about the safety profession and the BCSP credentials are located on the BCSP website at www.bcsp.org.

Mentor Program. Created specifically to recognize certificants’ roles in assisting the career development of others, the mentor program helps bring current credential holders and those looking to pursue certification together.

The mentor program rewards those who become mentors and ensures safety professionals who perform quality work are certified. By having your mentee fill out the Professional Advancement Mentor Form and submit it by fax or email at the time that they apply online, BCSP recognizes sponsors and their work with their peers, colleagues, and other safety professionals. More information can be found at www.bcsp.org.

Maintaining Your Mail and Email Address
As a CSP, you are solely responsible to keep BCSP informed of your current mail and email address. If either address changes, you must notify BCSP. You could lose the CSP certification if annual renewal notices and other important information do not reach you.
Chapter Abstract
This chapter provides detailed information about the GSP designation and how it can assist in achieving the CSP certification. You may download this chapter as well as other chapters of the Complete Guide to the CSP from the Board of Certified Safety Professionals (BCSP) website at www.bcsp.org.

Visit www.bcsp.org for the most current version of this guide.

GSP General Information

Understanding the Graduate Safety Practitioner Program
The Graduate Safety Practitioner® (GSP®) is an additional path to the CSP available to safety degree graduates from degree programs which meet BCSP Qualified Academic Program (QAP) standards. Those awarded the GSP designation meet the requirement of holding a BCSP approved credential. The GSP designation is not a certification. It denotes graduation from a QAP and indicates progress toward the CSP certification.

Purpose of the GSP Program
The purpose of the GSP program is to recognize that an independently accredited academic program in safety, health and environmental practices meets BCSP QAP standards and that its graduates are prepared for entry into (or advancement in) professional safety practice.

Benefits for Qualified Students
- Meets the CSP eligibility requirement of holding a BCSP-approved credential.
- Recognition for the level of preparation for professional safety practice.
- A certificate awarding the GSP designation.

How to Apply
If you have graduated from a QAP during its accreditation period, you must submit a GSP Application and a copy of your transcript using 'My Profile' at www.bcsp.org. For information on QAP’s visit www.bcsp.org/GSP.

Qualifications
GSP program qualifications include the following.

- You must have graduated from a QAP during its accreditation period. A full list of QAP’s eligible to participate in the GSP program are on the BCSP website at www.bcsp.org/GSP
- You must fill out a GSP application through ‘My Profile’ at www.bcsp.org
- You must submit an official copy of a conferred transcript with degree awarded and date conferred

Time Limits
The following time limits apply to the GSP designation:

- Those holding the GSP designation must meet the experience requirements and apply for the CSP within ten years of receiving the GSP.
- Once a GSP has applied for and become eligible for the CSP, they must then meet the time limits associated with the CSP certification.
- Once a GSP has achieved the CSP, the GSP designation expires.
- GSPs must maintain active status until the CSP is achieved.

Definitions

Graduate Safety Practitioner. The Graduate Safety Practitioner (GSP) designation is not a certification. It is awarded to qualified individuals to mark their completion of an independently accredited academic program meeting BCSP QAP standards. The GSP designation recognizes students graduating from QAP’s who develop suitable knowledge and skills for entry into (or advancement in) professional safety practice. The GSP designation also denotes participation in a path leading to the CSP certification.
• GSP candidates who lose their GSP status will have to achieve the ASP certification or another BCSP-approved credential to qualify for the CSP certification, but cannot reapply for the GSP.

Retaining the GSP
The following conditions will result in the loss of the GSP designation:
• Failure to pay an annual renewal fee ($140).
• Failing to complete the CSP within the 10-year time limit.
• Violating the BCSP Code of Ethics (see www.bcsp.org/pdf/BCSPcodeofethics.pdf)

Maintaining Your Mail and Email Address
As a GSP, you are solely responsible to keep BCSP informed of your current mail and email address. If either address changes, you must notify BCSP. You could lose the GSP designation if annual renewal notices and other important information do not reach you.

Protecting the GSP and CSP Credentials
BCSP acts to challenge those who use the GSP and CSP credentials without authority from BCSP. Penalties may include being barred from pursuing BCSP certifications and publishing the names of violators.

A directory of those holding certification from BCSP, and those who have used BCSP designations without authority, appear at www.bcsp.org.

Disciplinary Action
BCSP has a disciplinary action policy. Disciplinary actions may include any of the following:
• Reject or suspend an application
• Terminate or suspend a candidate’s eligibility
• Issue a reprimand
• Suspend, refuse to renew or revoke the ASP or CSP
• Terminate or suspend any status with BCSP

The Disciplinary Action Policy is located at www.bcsp.org/About and provide detailed procedures for bringing charges and for hearings related to disciplinary charges.

Annual Renewal Fees
All who achieve the GSP must pay a GSP annual renewal fee that is pro-rated for the remainder of the year that their GSP designation was awarded. The current GSP annual renewal fee is listed at www.bcsp.org/Certifications/Safety-Certifications-at-a-Glance.

Other fees may apply upon achieving the CSP designation. For example, individuals who pay their annual renewal fee late may incur a late charge or a reinstatement fee if BCSP has acted to terminate certification.

Unemployed certificants may request a one-year waiver of the annual renewal fee in writing only once during their history with BCSP.

Features and Benefits of Obtaining BCSP Credentials
Wall Certificate. When you achieve the GSP designation, BCSP issues a wall certificate suitable for framing. Should you lose or damage your wall certificate, BCSP will replace it for a nominal fee. Visit “My Profile” on the BCSP website to order.

Access to BCSP’s Career Center. Many employers post open job positions seeking qualified safety professionals. With a BCSP credential, you may post your resume online and employers have access to view your resume and contact you if you wish.

BCSP eNewsletter Subscription. As a BCSP certificant, you will receive the quarterly BCSP eNewsletter. The BCSP eNewsletter contains information about important changes which may affect BCSP certifications and designations, information about certificate holders, and professional safety practice information. Current issues and back issues are located on the BCSP website. GSP candidates can also sign up for BCSP’s Collegiate eNewsletter, which includes articles appealing to faculty, students and recent graduates.

BCSP Annual Report. The BCSP Annual Report is another important publication you will receive electronically. It contains summarized data about BCSP certifications and the annual audited financial report and can be found on the BCSP website at www.bcsp.org/About.

BCSP Directories. BCSP publishes directories of individuals who currently hold BCSP certifications and designations. An abbreviated format, containing names, cities, and states, appears on the BCSP website and allows viewers to confirm if a person currently holds a BCSP certification or designation.

eSafetySource Registration. BCSP offers the opportunity for BCSP certification and designation holders to register on the electronic safety source registry, indicating their areas of specialization.

Mail Lists. Organizations and companies providing valuable services to safety professionals may purchase a list of BCSP certificant names and addresses. Use of the list is restricted and all list sales are approved by BCSP. Restrictions limit the sale to uses which are of value in professional safety practice (i.e. notices of upcoming conferences or professional publications). Sales are not approved for promotion of general merchandise or services or for resale or distribution to third-party organizations. GSPs may specify at any time that their names not be included on mail lists by selecting that option in under “My Profile” online.

Moving Beyond the GSP Designation
Qualifying for the CSP Examination
CSP candidates must have four years professional safety experience to sit for the CSP exam. Professional safety experience must meet the following criteria to qualify:

☐ Professional safety must be the primary function of the position. Collateral duties in safety are not counted.
☐ The position’s primary responsibility must be the prevention of harm to people, property, or the
environment, rather than responsibility for responding to harmful events.

- Professional safety functions must be at least 50% of the position duties. BCSP defines full-time as at least 35 hours per week. Part-time safety experience is allowed if the applicant has the equivalent of at least 900 hours of professional safety work during any year (75 hours per month or 18 hours per week) for which experience credit is sought.

- The position must be at a professional level. This is determined by evaluating the degree of professional charge by which there is a reliance of employees, employers or clients on the person’s ability to identify, evaluate and control hazards through engineering and/or administrative approaches.

- The position must have breadth of professional safety duties. This is determined by evaluating the variety of hazards about which the candidate must advise and the range of skills involved in recognizing, evaluating, and controlling hazards.

Once a GSP has met the above criteria for the CSP, they can fill out an application online by following the instructions provided in Chapter 3, “Application Instructions”.

Professional Advancement Mentor Program

Over the years, many certificants encouraged, assisted, or required fellow safety professionals to pursue certification to advance their careers. BCSP has a program that traces the role certificants play in assisting aspiring safety professionals’ career development and then recognizing their contributions. Applicants and mentors can participate in this program by completing a Professional Advancement Mentor Program Form and submitting it around the time the candidate’s application is submitted. Forms and more information are located at www.bcsp.org.
This code sets forth the code of ethics and professional standards to be observed by holders of documents of certification conferred by the Board of Certified Safety Professionals. Certificants shall, in their professional activities, sustain and advance the integrity, honor, and prestige of the profession by adherence to these standards.

Standards:

1. HOLD paramount the safety and health of people, the protection of the environment and protection of property in the performance of professional duties and exercise their obligation to advise employers, clients, employees, the public, and appropriate authorities of danger and unacceptable risks to people, the environment, or property.

2. BE honest, fair, and impartial; act with responsibility and integrity. Adhere to high standards of ethical conduct with balanced care for the interests of the public, employers, clients, employees, colleagues and the profession. Avoid all conduct or practice that is likely to discredit the profession or deceive the public.

3. ISSUE public statements only in an objective and truthful manner and only when founded upon knowledge of the facts and competence in the subject matter.

4. UNDERTAKE assignments only when qualified by education or experience in the specific technical fields involved. Accept responsibility for their continued professional development by acquiring and maintaining competence through continuing education, experience, professional training and keeping current on relevant legal issues.

5. AVOID deceptive acts that falsify or misrepresent their academic or professional qualifications. Not misrepresent or exaggerate their degree of responsibility in or for the subject matter of prior assignments. Presentations incident to the solicitation of employment shall not misrepresent pertinent facts concerning employers, employees, associates, or past accomplishments with the intent and purpose of enhancing their qualifications and their work.

6. CONDUCT their professional relations by the highest standards of integrity and avoid compromise of their professional judgment by conflicts of interest. When becoming aware of professional misconduct by a BCSP certificant, take steps to bring that misconduct to the attention of the Board of Certified Safety Professionals.

7. ACT in a manner free of bias with regard to religion, ethnicity, gender, age, national origin, sexual orientation, or disability.

8. SEEK opportunities to be of constructive service in civic affairs and work for the advancement of the safety, health and well-being of their community and their profession by sharing their knowledge and skills.