

## SAFETY FUNDAMENTALS EXAMINATION BLUEPRINT

BCSP examination blueprints are based on surveys of what safety professionals do in practice. The Safety Fundamentals examination is required for candidates to demonstrate knowledge of professional safety practice at the Associate Safety Professional (ASP) level. The table beginning below and continuing on the next several pages describes the subject matter covered by the Safety Fundamentals examination.

The top four levels, called domains, represent major areas of practice that safety professionals at the ASP level must understand. Within each domain are knowledge topics. For most knowledge topics, there is a list of knowledge areas.

Each domain heading in this table is accompanied by a percentage label. This percentage represents the proportion of the actual Safety Fundamentals examination devoted to that domain.

| <b>Safety Fundamentals Examination</b><br><b>Domain 1</b><br><i>Recognizing Safety, Health, and Environmental Hazards</i><br><b>35.4%</b> |  |
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| <b>Topic 1</b><br>Biological Hazards  |  |
| <b>Topic 2</b><br>Chemical Hazards  |  |
| <b>Topic 3</b><br>Electrical Hazards  |  |
| <b>Topic 4</b><br>Natural Hazards   |  |
| <b>Topic 5</b><br>Radiation Hazards   | <b>Knowledge Areas</b> <ol style="list-style-type: none"> <li>1. Ionizing radiation</li> <li>2. Nonionizing radiation</li> </ol>   |
| <b>Topic 6</b><br>Structural and Mechanical Hazards   |  |
| <b>Topic 7</b><br>Hazards Related to Fires and Explosions   |  |
| <b>Topic 8</b><br>Hazards Related to Human Factors and Ergonomics   | <b>Knowledge Areas</b> <ol style="list-style-type: none"> <li>1. Fitness for duty</li> <li>2. Manual materials handling</li> <li>3. Organizational, behavioral, and psychological influences</li> <li>4. Physical and mental stressors</li> <li>5. Repetitive activities</li> <li>6. Workplace violence</li> </ol> |

**Safety Fundamentals Examination  
Domain 2**

*Measuring, Evaluating, and Controlling Safety, Health, and Environmental Hazards*

**30.9%**

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| <p><b>Topic 1</b><br/>Measurement and Monitoring</p>    | <p><b>Knowledge Areas</b></p> <ol style="list-style-type: none"> <li>1. Methods and techniques for measurement, sampling, and analysis</li> <li>2. Uses and limitations of monitoring equipment</li> </ol>   |
| <p><b>Topic 2</b><br/>Engineering Controls</p>          | <p><b>Knowledge Areas</b></p> <ol style="list-style-type: none"> <li>1. Dust control</li> <li>2. Equipment and material handling</li> <li>3. Excavation shoring</li> <li>4. Facility physical security</li> <li>5. Fall protection</li> <li>6. Fire prevention, protection, and suppression</li> <li>7. Hazardous energy control</li> <li>8. Human factors and ergonomic design</li> <li>9. Mechanical and machine guarding</li> <li>10. Segregation and separation</li> <li>11. Substitution and selection of alternative design strategies</li> <li>12. Ventilation</li> </ol> |
| <p><b>Topic 3</b><br/>Administrative Controls</p>       | <p><b>Knowledge Areas</b></p> <ol style="list-style-type: none"> <li>1. Accountability</li> <li>2. Behavior modification</li> <li>3. Decontamination processes</li> <li>4. Exposure limitation</li> <li>5. Fitness for duty</li> <li>6. Housekeeping</li> <li>7. Labels</li> <li>8. Material safety data sheets</li> <li>9. Safe work permits</li> <li>10. Training and education</li> <li>11. Warnings and signs</li> <li>12. Work zone establishment</li> <li>13. Written plans, procedures, and work practices</li> </ol>   |
| <p><b>Topic 4</b><br/>Personal Protective Equipment</p> | <p><b>Knowledge Areas</b></p> <ol style="list-style-type: none"> <li>1. Assessment of need for personal protective equipment</li> <li>2. Selection and testing of personal protective equipment</li> <li>3. Usage of personal protective equipment</li> <li>4. Maintenance of personal protective equipment</li> </ol>   |

**Safety Fundamentals Examination  
Domain 3**

***Safety, Health, and Environmental Training and Management***

**20.6%**

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| <p><b>Topic 1</b><br/>Training and Communication Methods</p>                   | <p><b>Knowledge Areas</b></p> <ol style="list-style-type: none"> <li>1. Adult learning techniques</li> <li>2. ANSI/ASSE Z490.1 (<i>American National Standard: Criteria for Accepted Practices in Safety, Health, and Environmental Training</i>)</li> <li>3. Behavior modification</li> <li>4. Methods of training delivery</li> <li>5. Methods of training evaluation</li> <li>6. Presentation tools</li> </ol>  |
| <p><b>Topic 2</b><br/>Management Processes</p>                                 | <p><b>Knowledge Areas</b></p> <ol style="list-style-type: none"> <li>1. Emergency/crisis/disaster planning and response</li> <li>2. Identification of expert resources</li> <li>3. Incident data collection and analysis</li> <li>4. Techniques for performing incident investigation and root cause analysis</li> </ol>   |
| <p><b>Topic 3</b><br/>Inspections and Auditing</p>                             | <p><b>Knowledge Areas</b></p> <ol style="list-style-type: none"> <li>1. Elements of an inspection and auditing program</li> <li>2. Reasons to perform inspections and audits</li> <li>3. Purpose and objective of ISO 19011 (<i>Guidelines for quality and/or environmental management systems auditing</i>)</li> </ol>  |
| <p><b>Topic 4</b><br/>Group Dynamics</p>                                       | <p><b>Knowledge Areas</b></p> <ol style="list-style-type: none"> <li>1. Conflict resolution</li> <li>2. Methods of facilitating teams</li> <li>3. Multidisciplinary teamwork</li> <li>4. Negotiation procedures</li> </ol>   |
| <p><b>Topic 5</b><br/>Project Management</p>                                   | <p><b>Knowledge Areas</b></p> <ol style="list-style-type: none"> <li>1. Evaluation of cost, schedule, performance, and risk</li> <li>2. Project management terminology</li> <li>3. Review of specifications and designs against requirements</li> </ol>  |
| <p><b>Topic 6</b><br/>Risk Management</p>                                      | <p><b>Knowledge Areas</b></p> <ol style="list-style-type: none"> <li>1. The risk management process</li> <li>2. Risk analysis methods (e.g., job safety analysis, hazard and operability analysis, failure mode and effects analysis, fault tree analysis, what-if/checklist analysis, change analysis)</li> </ol>   |
| <p><b>Topic 7</b><br/>Safety, Health, and Environmental Management Systems</p> | <p><b>Knowledge Areas</b></p> <ol style="list-style-type: none"> <li>1. Purpose and objective of ANSI/AIHA Z10 (<i>American National Standard for Occupational Health and Safety Management Systems</i>)</li> <li>2. Purpose and objective of the ISO 14000 series of environmental management system standards</li> <li>3. Purpose and objective of the OHSAS 18000 series of occupational health and safety management system standards</li> <li>4. Purpose and objective of the U.S. Occupational Safety and Health Administration Voluntary Protection Programs</li> </ol> |

**Safety Fundamentals Examination  
Domain 4**

*Business Principles, Practices, and Metrics in Safety, Health, and Environmental Practice*

**13.1%**

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| <p><b>Topic 1</b><br/>Basic Financial Principles</p>         | <p><b>Knowledge Areas</b></p> <ol style="list-style-type: none"> <li>1. Cost benefit analysis (e.g., calculating, evaluating, and selecting the best alternative)</li> <li>2. Definition and use of life cycle cost</li> <li>3. Definition and use of net present value</li> <li>4. Definition and use of return on investment</li> </ol>   |
| <p><b>Topic 2</b><br/>Probability and Statistics</p>         | <p><b>Knowledge Areas</b></p> <ol style="list-style-type: none"> <li>1. Concepts of probability</li> <li>2. Normal (Gaussian) distribution: description, calculations, and interpretations</li> <li>3. Poisson distribution: description, calculations, and interpretations</li> <li>4. Descriptive statistics: description, calculations, and interpretations (e.g., mean, mode, median, standard deviation, standard error of measurement, variance)</li> <li>5. Inferential statistics: description, calculations, and interpretations (e.g., t-test, z-test, chi-square test, Pearson product-moment correlation, Spearman's rank correlation, linear regression techniques, confidence intervals, control limits)</li> </ol> |
| <p><b>Topic 3</b><br/>Performance Metrics and Indicators</p> | <p><b>Knowledge Areas</b></p> <ol style="list-style-type: none"> <li>1. Lagging indicators (e.g., incidence rates, lost time, direct costs of incidents)</li> <li>2. Leading indicators (e.g., inspection frequency, number of safety interventions, employee performance evaluations, training frequency, near miss/near hit reporting)</li> <li>3. Economic effects of losses (e.g., cost per incident)</li> <li>4. Relationship between cost of losses and the effect on profitability</li> </ol>  |