

BLUEPRINT FOR THE CANADIAN REGISTERED SAFETY PROFESSIONAL EXAMINATION

June 2010

Developed by the Board of Canadian Registered Safety Professionals. All rights reserved. No part of this document may be reproduced, stored in a retrieval system, or transcribed, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without written permission of the publisher.

© Board of Canadian Registered Safety Professionals
6519-B Mississauga Road
Mississauga, Ontario
L5N 1A6

Tel: (905) 567-7198 or 1-888-279-2777
E-mail: info@bcrsp.ca
www.bcrsp.ca

CONTENTS

EXECUTIVE SUMMARY	2
PREFACE	3
INTRODUCTION	4
TECHNICAL SPECIFICATIONS	5
COMPETENCIES	5
DEVELOPING THE SET OF COMPETENCIES	5
COMPETENCY CATEGORIES.....	6
COMPETENCY GROUPS AND WEIGHTINGS.....	7
COMPETENCY SAMPLING.....	7
GUIDELINES.....	8
STRUCTURAL VARIABLES.....	8
CONTEXTUAL VARIABLES	9
CONCLUSION.....	10
Summary Chart: CRSPEX Development Guidelines	11
GLOSSARY	12
BIBLIOGRAPHY	13
APPENDIX.....	14
ACCIDENT THEORY (AT)	14
ENVIRONMENTAL PRACTICES (EP).....	14
ERGONOMICS (ERG)	14
FIRE PREVENTION AND PROTECTION (FPP).....	15
HEALTH AND WELLNESS (HW).....	15
HSE AUDITING (AUD)	16
LAW AND ETHICS (LE)	16
OCCUPATIONAL HYGIENE (OH)	17
OHS&E MANAGEMENT SYSTEMS (OES).....	18
RISK MANAGEMENT (RM).....	18
SAFETY TECHNIQUES AND TECHNOLOGY (STT).....	19

EXECUTIVE SUMMARY

As part of its commitment to ongoing testing excellence, the BCRSP is pleased to provide this revalidated blueprint document that will serve as the basis for the Canadian Registered Safety Professional Examination (CRSPEX). This document outlines the content domain that will be tested on the national examination beginning in 2011.

Compared to the 2005 CRSPEX Blueprint, the following document differs in a number of ways. First, several content domains have been enhanced to provide additional guidance to item writers and to candidates who are preparing to write the CRSPEX. This is particularly evident in the HSE Auditing and Risk Management domains. In addition, the former Health Promotion domain has been renamed “Health and Wellness.” Second, the content areas of HSE Auditing, Risk Management, Health and Wellness, and Environmental Practices figure more prominently in this document compared to 2005, and as a consequence, are given more weight on the CRSPEX.

Third, the Accident Theory domain now mirrors the learning outcomes from the updated Accident Theory Study Guide that was published in 2009. Finally, although the basic structure of this document remains consistent with the 2005 document, a number of new content areas have been included to reflect evolving practice. These additions include a focus on various ISO quality standards and several other content areas that were added due to technological advances.

PREFACE

The Board of Canadian Registered Safety Professionals (BCRSP) is pleased to present the *Blueprint for the Canadian Registered Safety Professional Examination (CRSPEX)*. Administration of the first examination developed from the new Blueprint is targeted for May 2011.

The Blueprint was developed to guide those involved in the development of the *Canadian Registered Safety Professional Examination* and to provide the public (e.g., examinees, educators, administrators) with practical information about the examination.

The Blueprint has two major components: (1) the content domain to be measured and (2) the explicit guidelines on how this content is to be measured. The content domain consists of the CRSPEX set of competencies (i.e., the competencies expected of entry-level registered safety professionals), and the guidelines are expressed as structural and contextual variables. The Blueprint also includes: a *Summary Chart* that summarizes the examination guidelines; a *Glossary* that provides definitions of terms appearing in bold throughout the document; and a *Bibliography* of references which were used in creating the Blueprint, or which may interest readers who wish to study certain topics in greater depth.

BCRSP wishes to thank all the individuals who have contributed to the creation of this Blueprint. In particular, thanks are extended to CRSP certificate holders who responded to the competency validation survey.

A comprehensive review of this edition of the *Blueprint for the Canadian Registered Safety Professional Examination* is planned for 2015. In addition, the Blueprint will be evaluated annually to reaffirm that the competencies and the guidelines for examination development continue to reflect what is expected of an entry-level registered safety professional.

BCRSP encourages all users of this document to provide feedback which may be useful in future revisions of the Blueprint. Please forward all such comments to:

Executive Director
Board of Canadian Registered Safety Professionals
6519-B Mississauga Road
Mississauga, Ontario
L5N 1A6

INTRODUCTION

The Board Canadian Registered Safety Professionals develops the Canadian Registered Safety Professional Examination (subsequently referred to as the CRSPEX) for registering purposes. It fulfills this service by working in collaboration with Canadian Registered Safety Professionals (CRSPs) from across Canada who serve as the content experts in developing and validating the examinations.

Registration/licensure/certification examinations have a well-defined purpose: to protect the public by ensuring that those who are licensed possess sufficient knowledge and skills to perform important occupational activities safely and effectively (Canadian Psychological Association, 1987). In the case of the CRSPEX, the purpose is to determine whether or not examinees are prepared to practice occupational health and safety, without risk to the public and to the environment.

The purpose of this Blueprint is to describe how the examination is to be developed.

The primary function of the Blueprint for the Canadian Registered Safety Professional Examination is to describe how the examination is to be developed. Specifically, this Blueprint provides explicit instructions and guidelines on how the **competencies**¹ (e.g., knowledge, abilities, skills, attitudes and judgment) are to be expressed within the examination in order for accurate decisions to be made on the ability of examinees to practice safely and effectively.

Prior to producing this Blueprint, the BCRSP undertook an extensive study to identify the competencies required for the safe and effective practice of registered safety professionals in Canada. CRSP certificate holders from across the country were active participants in all phases of the investigation, which served to identify and validate a comprehensive set of 147 competencies expected of the registered safety professional. With this set of competencies, and the validation data obtained, the essential components of the CRSPEX could be clearly described.

The periodic and comprehensive review of the competencies measured by the CRSPEX assists the BCRSP in maintaining the validity of the CRSPEX, and to develop psychometrically sound and legally defensible registration examinations. Because of changes that occur in the practice of health and safety professionals, a validation study of the competencies is conducted at least every five years, or as needed. In addition to the periodic comprehensive review and validation study, the competencies are reviewed and evaluated annually by content experts.

¹ The terms appearing in bold are defined in the Glossary.

TECHNICAL SPECIFICATIONS

The following section presents the technical specifications that are to guide the development of the CRSPEX. In the first part, issues related to the competencies are addressed. The second part describes the guidelines to be followed in addressing the structural and contextual variables of the CRSPEX.

COMPETENCIES

The CRSPEX is a **criterion-referenced examination**. That is, a fundamental component of the development of the CRSPEX is a comprehensive description of the content domain being measured. In the case of the CRSPEX, the content domain of interest consists of the competencies a registered safety professional is required to possess in order to practice safely and effectively. These competencies form the basis of the CRSPEX.

This section describes the competencies that were obtained as a result of the validation process, the way they have been grouped, and the manner in which they are to be sampled in the examination development process.

DEVELOPING THE SET OF COMPETENCIES

The competencies were evaluated by approximately 1,000 Canadian Registered Safety Professionals.

As a starting point for developing a set of competencies, a Committee on Competencies was formed that was representative of all areas of practice of registered safety professionals in Canada. This committee reviewed various competency lists prepared for health and safety professionals. Using the competency lists, the committee developed a preliminary national set of competencies and an eleven-category classification to group these competencies. The competencies in this initial set were then evaluated by a sample of approximately 1,000 Canadian Registered Safety Professionals (CRSPs), including practitioners, educators and administrators, who were asked to rate each competency in terms of its applicability, importance and frequency for the registered safety professional. The Committee on Competencies reviewed the results of the survey and eliminated two competencies which were rated nationally as less applicable or were considered redundant with other competencies or eligibility requirement. In addition, three competencies were revised based on the survey results. The final set of competencies approved by the Certification and Examination Committee consisted of 147 competencies. The CRSPEX Set of Competencies has the primary purpose of providing the content domain for the examination.

COMPETENCY CATEGORIES

The initial classification of the competencies consisted of the following eleven categories defined below (the number and the percentage of competencies are indicated in parentheses following the category name):

1. Accident Theory (4 competencies or 3% of the set of competencies)
2. Environmental Practices (7 competencies or 5% of the set of competencies)
3. Ergonomics (9 competencies or 6% of the set of competencies)
4. Fire Prevention and Protection (14 competencies or 10% of the set of competencies)
5. Health and Wellness (12 competencies or 8% of the set of competencies)
6. HSE Auditing (12 competencies or 8% of the set of competencies)
7. Law and Ethics (19 competencies or 13% of the set of competencies)
8. Occupational Hygiene (18 competencies or 12% of the set of competencies)
9. Occupational Health Safety and Environment Systems (17 competencies or 12% of the set of competencies)
10. Risk Management (8 competencies or 5% of the set of competencies)
11. Safety Techniques and Technology (27 competencies or 18% of the set of competencies)

Some of the competencies lend themselves to being placed in one or more of the categories, so these eleven categories should be viewed simply as an organizing framework. It should be recognized that the competency statements vary in scope, with some representing global activities and others more discrete and specific actions.

The CRSPEX Set of Competencies (By Group) is presented in the Appendix. The competencies have been grouped using the importance and frequency ratings obtained in the competency validation study.

The CRSPEX Set of Competencies presents the competencies grouped on the basis of the ratings from the validation survey.

COMPETENCY GROUPS AND WEIGHTINGS

To ensure that the examination accurately reflects the profile of the registered safety professional, the competencies were grouped according to their relative importance and frequency based on the survey ratings and a quantitative review by content experts.

Group 1 consists of the 80 competencies identified as very important; Group 2 consists of the 67 competencies identified as important for the safe and effective practice of registered safety professionals.

These groups were used to establish the relative weights the competencies will receive on the examination.

COMPETENCY SAMPLING

Based on the applicability, importance and frequency data extracted from the 2010 Competency Survey, and with the guideline that the CRSPEX will consist of between 190 and 210 questions (see "Examination Length and Format"), the sampling scheme presented in Table 1 was developed. The distribution of weights in this sampling scheme was selected: (1) to provide differentiation on the rating variables (importance and frequency); and (2) to conform with the examination length requirement.

TABLE 1: COMPETENCY GROUPING AND SAMPLING

Very Important Competencies Group 1: 80 competencies	65-75% of the CRSPEX
Important Competencies Group 2: 67 competencies	25-35% of the CRSPEX

GUIDELINES

In addition to the specifications related to the competencies, other variables must be considered during the development of the CRSPEX. This section presents the guidelines for the following two types of variables:

Structural Variables: Structural variables include those characteristics that determine the general appearance and design of the examination. They define the length of the examination, the format/presentation of the examination questions (e.g., multiple-choice format). The weightings of the eleven categories are also included as structural variables.

Contextual variables: Contextual variables qualify the content domain by specifying the contexts in which the examination questions will be set (i.e., professional context).

There will be 190 to 210 operational multiple choice questions on the Canadian Registered Safety Professional Examination.

STRUCTURAL VARIABLES

1. Examination Length and Format: The examination will consist of between 190 and 210 operational multiple choice questions.
 - a. With 147 competencies to measure and a sound sampling approach for these competencies, an examination of between 190 and 210 operational questions is sufficient to make both reliable and valid decisions about an examinee's readiness to practice safely and effectively.
2. Question Presentation: The multiple choice questions of the CRSPEX are presented in one of two formats, case-based or independent questions.
3. Weighting of Competencies by Category: For the purpose of this Blueprint, the eleven categories of the competencies are: (1) Accident Theory; (2) Environmental Practices; (3) Ergonomics; (4) Fire Prevention and Protection; (5) Health and Wellness; (6) HSE Auditing; (7) Law and Ethics; (8) Occupational Hygiene; (9) Occupational Health Safety and Environment Systems; (10) Risk Management; and (11) Safety Techniques and Technology

Table 2 presents the percentage range of questions in each of the ten categories of competencies.

TABLE 2: WEIGHTING OF COMPETENCIES BY CATEGORY

Categories for the Competencies	Percentage of Questions on the CRSPEX
Accident Theory	2-4%
Environmental Practices	3-5%
Ergonomics	4-8%
Fire Prevention and Protection	6-10%
Health and Wellness	5-7%
HSE Auditing	6-10%
Law and Ethics	10-14%
Occupational Hygiene	12-16%
Occupational Health Safety and Environment Systems	12-16%
Risk Management	4-8%
Safety Techniques and Technology	18-22%

CONTEXTUAL VARIABLES

The Canadian Registered Safety Professional Examination represents the different focus of practice of registered safety professionals.

Professional Context: It is recognized that the practice environment of entry-level registered safety professionals may be any setting of circumstance within which occupational health and safety can be practiced. The competencies assessed by the examination are not setting dependent. The practice environment will be specified when necessary.

In each setting, the CRSP may act as a consultant or as an in-house safety professional. This will be considered in forming the context of examination items.

CONCLUSION

The *Blueprint for the Canadian Registered Safety Professional Examination* is the product of a collaborative effort between the BCRSP and Canadian Registered Safety Professionals (CRSPs). Their efforts have resulted in a compilation of the competencies required of the entry level registered safety professional to practice and of the guidelines on how the competencies will be measured on the CRSPEX. A summary of these guidelines can be found in the Summary Chart: CRSPEX Development Guidelines.

It is recognized that the health and safety profession will continue to evolve. As this occurs, the Blueprint (i.e., the competencies and the test development guidelines) may require revision so that it accurately reflects the scope of practice, roles, and responsibilities of the entry level safety professional. The BCRSP will ensure this revision takes place in a timely manner and will communicate it in updated editions of this document.

Summary Chart: CRSPEX Development Guidelines

COMPETENCIES																							
Group 1 -Very important competencies 65-75% of the CRSPEX	Group 2 -Important competencies 25-35% of the CRSPEX																						
STRUCTURAL VARIABLES																							
Examination Length and Format	190–210 operational multiple choice questions. Three and a half (3.5) hours will be allocated for the completion of the examination.																						
Question Presentation	<table> <tr> <td>Independent questions</td> <td>70-90% of questions</td> </tr> <tr> <td>Case-based questions</td> <td>10-30% of questions</td> </tr> </table>	Independent questions	70-90% of questions	Case-based questions	10-30% of questions																		
Independent questions	70-90% of questions																						
Case-based questions	10-30% of questions																						
Competency Categories and Weightings	<table> <tr> <td>Accident Theory</td> <td>2-4%</td> </tr> <tr> <td>Environmental Practices</td> <td>3-5%</td> </tr> <tr> <td>Ergonomics</td> <td>4-8%</td> </tr> <tr> <td>Fire Prevention and Protection</td> <td>6-10%</td> </tr> <tr> <td>Health and Wellness</td> <td>5-7%</td> </tr> <tr> <td>HSE Auditing</td> <td>6-10%</td> </tr> <tr> <td>Law and Ethics</td> <td>10-14%</td> </tr> <tr> <td>Occupational Hygiene</td> <td>12-16%</td> </tr> <tr> <td>Occupational Health Safety and Environment Systems</td> <td>12-16%</td> </tr> <tr> <td>Risk Management</td> <td>4-8%</td> </tr> <tr> <td>Safety Techniques and Technology</td> <td>18-22%</td> </tr> </table>	Accident Theory	2-4%	Environmental Practices	3-5%	Ergonomics	4-8%	Fire Prevention and Protection	6-10%	Health and Wellness	5-7%	HSE Auditing	6-10%	Law and Ethics	10-14%	Occupational Hygiene	12-16%	Occupational Health Safety and Environment Systems	12-16%	Risk Management	4-8%	Safety Techniques and Technology	18-22%
Accident Theory	2-4%																						
Environmental Practices	3-5%																						
Ergonomics	4-8%																						
Fire Prevention and Protection	6-10%																						
Health and Wellness	5-7%																						
HSE Auditing	6-10%																						
Law and Ethics	10-14%																						
Occupational Hygiene	12-16%																						
Occupational Health Safety and Environment Systems	12-16%																						
Risk Management	4-8%																						
Safety Techniques and Technology	18-22%																						

GLOSSARY

The following is a list of definitions of health and safety, and testing terms as used in the Blueprint.

case-based questions: A set of questions associated with a brief scenario.

competencies: The behaviour statements which reflect the combined knowledge, abilities, skills, attitudes, and judgment expected of an entry level registered safety professional.

criterion-referenced (C-R) examination: A test that measures the degree of command of a specified content/skills domain or list of instructional objectives. Scores are interpreted in comparison to a predetermined performance standard, or as a degree of mastery of a defined domain (e.g., percent correct and mastery scores), independently of the results obtained by other candidates. (Brown, 1983)

independent items: Stand-alone objective examination items which contain the information necessary for responding.

operational questions: Questions appearing on the examination that have been pre-tested and that are suitable for the examination. The answer to these questions count in the candidate's score.

BIBLIOGRAPHY

The following is a list of references which were used in creating the Blueprint, or which may interest readers.

Allen, M. J., & Yen, W. M. (1979). *Introduction to measurement theory*. Belmont, CA: Wadsworth.

Angoff, W. H. (1971). Scales, norms, and equivalent scores. In R. L. Thorndike (Ed.), *Educational measurement* (pp. 508-600). Washington, DC: American Council on Education.

Board Canadian Registered Safety Professionals (2009). *Survey on the Competencies Required of Canadian Registered Safety Professionals in Canada*.

Brown, F. G. (1983). *Principles of educational and psychological testing* (3rd ed.). New York: Holt, Rinehart & Winston.

APPENDIX

THE CRSPEX

SET OF COMPETENCIES (BY GROUP)

G1:65-75% CRSPEX G2:25-35% CRSPEX

ACCIDENT THEORY (AT) (4 competencies)		
AT1	Possess a basic understanding of why the theories and models are important in the practice of OHS&E.	G1
AT2	Possess a basic understanding of the various theories and models (e.g. ergonomics, engineering, psychology).	G2
AT3	Possess a basic understanding of how accident theories may influence the development of an OHS&E management system.	G1
AT4	Possess a basic understanding between accident theory and the Internal Responsibility System (joint worker/management responsibility and accountability), a philosophy underlying some OHS&E legislation in Canada.	G1
ENVIRONMENTAL PRACTICES (EP) (7 competencies)		
EP1	Possess a basic knowledge of the fundamental objectives, principles and components of an Environmental Management System (EMS).	G2
EP2	Possess basic knowledge of ISO 14001 requirements.	G2
EP3	Have a basic knowledge of Federal environmental and related legislation such as the Canadian Environmental Protection Act; the Hazardous Products Act; the Transportation of Dangerous Goods Act.	G2
EP4	Understand the fundamental concepts and principles of environmental auditing including roles, responsibilities and activities involved.	G2
EP5	Understand what emergency preparedness is with respect to the management of hazardous chemicals and material.	G1
EP6	Possess basic knowledge of site contamination and environmental assessments.	G2
EP7	Possess basic knowledge of sustainable development as it relates to resource conservation and management, and environmental monitoring and reporting.	G2
ERGONOMICS (ERG) (9 competencies)		
ERG1	Possess a basic knowledge of the anatomical, physiological and biomechanical principles of ergonomics.	G2
ERG2	Identify the common signs, symptoms that contribute to workplace musculoskeletal injuries.	G1
ERG3	Possess the basic knowledge of the human cognitive, sensory and psychomotor abilities and limitations so that the CRSP may understand how mental workload, stress and other factors can affect human abilities and work performance.	G2
ERG4	Be able to recognize and evaluate ergonomic hazards and identify appropriate ergonomic control measures.	G1

ERG5	Understand the range of government intervention in ergonomics; regulations, guidelines and enforcement.	G2
ERG6	Select and apply ergonomic methodologies such as surveys, checklists, psychophysical scales, direct observation and interviews.	G2
ERG7	Describe the components of a successful ergonomics program.	G2
ERG8	Demonstrate an understanding of the basic principles of ergonomic models.	G2
ERG9	Be able to identify and describe when ergonomics should be applied in the workplace.	G1
FIRE PREVENTION AND PROTECTION (FPP) (14 competencies)		
FPP1	Identify the major roles played by the National Fire Prevention Association, Underwriters Laboratory, Factory Mutual and Canadian Standards Association.	G2
FPP2	Articulate the purpose of the National Building Code and the National Fire Code.	G2
FPP3	Possess basic knowledge of fire chemistry and fire behaviour allowing the CRSP to understand how fires start, burn and spread, and how fires can be prevented and extinguished.	G1
FPP4	Understand the essential elements of a fire safety program and demonstrate how the program may be integrated with the OHS&E management system.	G1
FPP5	Understand the roles of industrial fire brigades and how fire prevention fits into emergency planning.	G2
FPP6	Demonstrate an understanding of the safe use, handling, storage, disposal and the associated risks in a fire condition with chemicals, explosives and radioactive material in the workplace.	G1
FPP7	Understand the importance of hazard determination and the proper procedures for the handling of combustible solids, combustible metals, and plastics in the workplace, as it relates to fire safety.	G1
FPP8	Possess knowledge of the basic principles of building construction and understand the importance of considering life safety factors such as facility location, layout and building materials in the early stages of building planning.	G2
FPP9	Understand approaches for assuring life safety and understand the building codes and facility practices.	G2
FPP10	Have a basic understanding of the different types of fire detection systems, their advantages and disadvantages.	G2
FPP11	Possess basic knowledge of the fire control systems.	G2
FPP12	Understand the basic principles of fire sprinkler and portable extinguisher maintenance and inspection.	G2
FPP13	Understand the basic principles of the fire department incident command system (ICS), and outline the ways that safety professionals interact with fire officials during emergency situations.	G2
FPP14	Understand elements of an emergency preparedness and response plan, identify major types of natural and man-made emergencies and plan for business continuity before, during and after an emergency.	G1
HEALTH AND WELLNESS (HW) (12 competencies)		
HW1	Possess a basic understanding of health promotion (e.g. blood pressure screening, weight loss, stress management, etc.) in the workplace.	G2

HW2	Possess a basic understanding of health protection programs (e.g. flu vaccines, blood borne pathogen vaccine, etc.).	G2
HW3	Possess a basic knowledge of Employee Assistance programs.	G2
HW4	Possess a basic knowledge of some components of a wellness program (e.g. stress management, physical fitness and weight management).	G2
HW5	Be able to identify key features of a violence prevention program.	G2
HW6	Possess a basic understanding of the effects of shift work on the health of some workers.	G2
HW7	Identifies key features of a disability management program (e.g. modified work, rehabilitation, etc.).	G1
HW8	Identify some key features of addiction control programs (e.g. smoking, drugs, alcohol, gambling).	G2
HW9	Understand the factors that lead to health and wellness (e.g. environmental, genetic, social, economic, physiological and lifestyle).	G2
HW10	Possess an understanding of how factors in the workplace can impact employee well being (e.g. culture, multiple generations, diversity, and aging workforce).	G2
HW11	Understand how the psychosocial work environment influences employee health.	G2
HW12	Understand how work/life balance influences employee health.	G2
HSE AUDITING (AUD) (12 competencies)		
AUD1	Possess knowledge of established OHS&E audit principles and techniques.	G1
AUD2	Demonstrate the application of audit data collection techniques (e.g. interviews, records, sample size).	G1
AUD3	Understand the components of an OHS&E management system.	G1
AUD4	Possess the ability to interpret and analyze audit data to generate recommendations and drive continuous improvement.	G1
AUD5	Understand the difference between an internal and external audit.	G1
AUD6	Demonstrate a broad knowledge of facility operations including equipment and processes.	G1
AUD7	Possess basic knowledge of interviewing, verifying, evaluating, communicating and reporting skills.	G1
AUD8	Possess knowledge required to develop, apply and improve auditing tools and processes.	G2
AUD9	Understand the difference between a compliance audit and a management system audit.	G1
AUD10	Understand the difference between an inspection and an audit.	G1
AUD11	Understand the audit process (e.g. preparation, opening and closing meetings, communication and final report, etc.).	G1
AUD12	Understand the requirements of CSA Z1000, OHSAS 18001 when developing an audit tool.	G2
LAW AND ETHICS (LE) (19 competencies)		
LE1	Possess a basic understanding of occupational health and safety law in Canada (e.g. due diligence).	G1
LE2	Possess a basic understanding of the principles of Common Law.	G2
LE3	Possess a basic understanding of the principles of Compensation Law.	G2

LE4	Demonstrate an understanding of environmental legislation.	G2
LE5	Demonstrate an understanding of the duties of workplace parties in all applicable jurisdictions.	G1
LE6	Possess a basic understanding of liability related to property ownership.	G2
LE7	Possess a basic understanding of product liability as it relates to OHS&E.	G2
LE8	Demonstrate an understanding of the roles and functions of health and safety committees and representatives.	G1
LE9	Possess a basic understanding of ethical theories.	G2
LE10	Possess an understanding of the right to refuse unsafe work and the right to know.	G1
LE11	Possess an understanding of the powers of the inspectors, the Orders to Comply, the appeal process and prosecutions.	G1
LE12	Understand the obligations to employers and co-workers.	G1
LE13	Understand the obligations to the public.	G1
LE14	Understand the obligations to fellow professionals.	G1
LE15	Understand the BCRSP's <i>Code of Ethics</i> .	G1
LE16	Understand the consequences of professional errors or omissions.	G1
LE17	Understand the principles and obligations relating to conflict of interest.	G1
LE18	Able to apply codes of professional conduct.	G1
LE19	Understand the limits of the CRSP professional practice.	G1
OCCUPATIONAL HYGIENE (OH) (18 competencies)		
OH1	Possess basic knowledge of anatomy, physiology and some pathology related to occupational hygiene (e.g. lungs, ears, eyes and skin).	G1
OH2	Possess basic knowledge of occupational toxicology and routes of entry of toxic materials into the body.	G1
OH3	Possess basic knowledge of the physical characteristics and hazards associated with gases, vapours, solvents, fumes, mists and dusts.	G1
OH4	Possess basic knowledge of physical hazards including industrial noise, ionizing and non-ionizing radiation, thermal stress and vibration.	G1
OH5	Maintain knowledge of emerging technology and trends (e.g. nanotechnology).	G2
OH6	Possess basic knowledge of biological hazards.	G1
OH7	Possess basic knowledge of indoor air quality.	G1
OH8	Demonstrate an understanding of the evaluation process of occupational hygiene (e.g. air, noise and radiation sampling).	G1
OH9	Possess basic knowledge of ventilation; local, general, supply and exhaust.	G2
OH10	Possess basic knowledge of a respiration protection program.	G1
OH11	Understand the role of the occupational hygienist.	G2
OH12	Possess knowledge of Occupational Exposure Limits (OELs), Threshold Limit Values (TLVs), Biological Exposure Indices (BEIs), action levels and ALARA.	G1
OH13	Understand the concepts around the hierarchy of controls (e.g. administrative, engineering).	G1
OH14	Able to use basic sampling equipment in order to measure ambient and baseline levels.	G2
OH15	Possess basic knowledge of lasers.	G2
OH16	Possess basic knowledge of biohazards (e.g. H1N1, anthrax) management, infection transmission and control.	G2
OH17	Possess basic knowledge of mould and mycotoxins.	G2

OH18	Possess basic knowledge of occupational disease (e.g. asthma, chemical and environmental sensitivity, dermatitis and cancer).	G2
OHS&E MANAGEMENT SYSTEMS (OES) (17 competencies)		
OES1	Possess a basic knowledge of organizational structure and function.	G1
OES2	Possess a basic knowledge of total quality management.	G2
OES3	Identifies key features of management processes (e.g. planning, organizing, leading, measuring performance and controlling).	G1
OES4	Possess basic knowledge of budgeting, economic decision making and long range planning.	G2
OES5	Demonstrate an understanding of problem solving process.	G1
OES6	Demonstrate an understanding of how to manage conflict.	G1
OES7	Demonstrate a basic understanding of labour relations including union/ management committees.	G2
OES8	Understand the need for effective planning, including strategic and long range planning.	G1
OES9	Identify key features of different leadership and communication styles.	G2
OES10	Understand the basic concepts of innovation and change.	G2
OES11	Understand the basic methods of motivation.	G1
OES12	Possess knowledge of training needs analysis development, delivery and evaluation.	G1
OES13	Demonstrate an understanding of adult learning principles.	G1
OES14	Possess a basic knowledge of mediation and facilitation as it relates to OHS&E issues.	G2
OES15	Identify key features of ISO 9000 and other quality standards.	G2
OES16	Understand basic concepts around current safety management principles.	G1
OES17	Demonstrate an understanding of how to develop, implement, evaluate and continuously improve an OHS&E management system (e.g. CSA Z1000, OHSAS 18001).	G1
RISK MANAGEMENT (RM) (8 competencies)		
RM1	Possess knowledge of risk management principles.	G1
RM2	Demonstrate an understanding of how to conduct a risk assessment (e.g. estimation, evaluation)	G1
RM3	Demonstrate an understanding of controlling identified risks.	G1
RM4	Understand the difference between hazard and risk.	G1
RM5	Possess knowledge of Process Safety Management.	G2
RM6	Possess knowledge of CSA Z1000, OHSAS 18001, CSA Z731-03 (R2009) as they relate to risk management.	G2
RM7	Understand the guiding principles for decision making in risk management (e.g. weight of evidence, precautionary principle, ALARA).	G2
RM8	Possess an understanding of the steps used to implement, monitor, evaluate and continuously improve a workplace health and safety risk management program.	G1

SAFETY TECHNIQUES AND TECHNOLOGY (STT) (27 competencies)		
STT1	Demonstrate an understanding of the basic principles of workplace inspections.	G1
STT2	Demonstrate an understanding of the basic principles of incident/accident investigation.	G1
STT3	Demonstrate an understanding of the basic principles of task analysis.	G1
STT4	Demonstrate an understanding of the basic principles of material/process flow analysis.	G2
STT5	Demonstrate an understanding of the basic principles of process hazard analysis (e.g. fault tree and event tree analysis).	G2
STT6	Possess a basic knowledge of facilities, from their general design, layout, construction and maintenance.	G2
STT7	Able to address all safety requirements through involvement at the design stage of projects.	G1
STT8	Possess basic knowledge of safeguard systems such as: point-of-operation protective devices, point-of-operation safeguards, the guarding of power transmission, robotics safeguarding, control of hazardous sources and the maintenance and servicing of such devices.	G1
STT9	Possess basic knowledge of personal protective equipment.	G1
STT10	Possess basic knowledge of electrical safety.	G1
STT11	Possess basic knowledge of materials handling and storage.	G1
STT12	Possess basic knowledge of hoisting and conveying equipment, including ropes, chains and slings.	G1
STT13	Possess basic knowledge of powered industrial trucks.	G1
STT14	Possess basic knowledge of heavy vehicle safety.	G2
STT15	Possess basic knowledge of hand and portable tools.	G1
STT16	Possess basic knowledge of maintenance shop machinery (e.g. wood, plastics and metalworking).	G2
STT17	Possess basic knowledge of hot work (e.g. welding and cutting).	G1
STT18	Possess basic understanding of electrical bonding and grounding.	G1
STT19	Possess basic knowledge of hazardous energy control program (e.g. lockout and tagout).	G1
STT20	Possess basic knowledge of hazards associated with automated systems, equipment or processes (e.g. robotics, conveyors).	G2
STT21	Possess basic knowledge of chemical process safety.	G1
STT22	Possess basic knowledge of confined spaces.	G1
STT23	Possess basic knowledge of fall protection.	G1
STT24	Possess basic knowledge of pressure hazards and protection (e.g. hydraulic, pneumatic, steam, etc.).	G1
STT25	Able to identify design deficiencies based on past performance in order to improve workplace OHS&E.	G1
STT26	Able to apply the knowledge to design record keeping systems allowing for collection, storage, maintenance and retrieval.	G2
STT27	Possess a basic knowledge of laboratory safety.	G2