

Mine Trainer Competency Model

September 26, 2016

The Mine Trainer Competency Model was specifically developed to help identify the necessary knowledge, skills, and abilities of training-related personnel in the mining industry. We believe this model will help fill a critical gap by providing a clear path for development of new training curriculum and program development, evaluation of existing curriculum and programs, creation of certification programs, and provide operators and individuals with a tool to evaluate and assess current knowledge, skills and abilities.

BACKGROUND

In 2015, using the National Survey of the Mining Population and MSHA Fatality Investigation Reports, Custos Fratrís, L3C and the University of Arizona set out to answer the following three questions:

1. Who needs training?
2. What type of training do they need?
3. Does the training currently exist?

Our study focused on the answering these questions not from a “compliance” perspective (who does the regulation says needs training) but from a data perspective (who does the demographic data and fatality data suggest needs training). In attempting to answer these questions we made the following findings.

- Frequently the fatally-injured miner had task training but the investigation revealed that some critical part of the training content was “missing”. For example, the miner was trained on operating a hopper, but not on how to clear an obstruction from the hopper.
- MSHA Fatality Investigation Reports are mostly silent on the quality of the trainer and training materials.
- Each year training was identified less often as contributing factor, but was being identified more often as a corrective action.
- The majority of mine operators use their own in-house personnel to conduct training.
- The most frequently used training “method” is lecture.

Combining the above findings with the Human Resource Development (HRD) research literature, we were able to propose the following answers our questions.

1. Who needs training? The HRD research literature suggests that “the way training is **designed**, **delivered**, and **implemented** can greatly influence its effectiveness” (Salas, Tannenbaum, Kraiger, and Smith-Jentsch, 2012). So who is “designing” the training the fatally-injured miners received, especially those who were task trained, but missing some critically important content in the training? Since the majority of mine operators are conducting their training using in-house personnel, it’s likely that that the training is also being “designed” by in-house personnel, mostly subject matter experts (i.e. the “best” equipment operator, the “best” mechanic). Our

team's experience working in the industry validates this assumption. Moreover, these subject matter experts are serving not only as the training "designers" but they are also frequently "delivering" the training, as well. This suggests that two of the necessary elements for effective training are likely being performed by subject matter experts, not learning and development professionals, and led our team to answer this question thusly – Mining personnel involved in any aspect of training are in need of training. These individuals include on-the-job trainers, task trainers, safety trainers, technical trainers, training developers, training managers, etc.

2. What type of training do they need? Our findings align closely with the HRD research in that mine training personnel need training in the areas of **design** (the right content is an integral part of a training design), **delivery** (assessing student learning while training rather than just signing off), and **implementation** (several fatally injured miners were task trained immediately before their deaths).
3. Does this type of training currently exist? Our study found few instances of mining-specific design, delivery and implementation training. Those courses we did identify were found to be narrowly focused on only some aspects of training delivery and design. We did not identify any complete training programs specifically focused on mine training personnel.

During our study it became apparent that we needed to more fully explore the type of training needed so we could then assess the existing training to determine if it was adequate. Therefore, Custos Fratrís, L3C and the University of Arizona, in working with our industry partners set out to create the industry's first Mine Trainer Competency Model for those employees serving in a learning and development role.

WHAT IT IS

A competency is defined as "an integrated set of skills, knowledge, and attitudes that enables one to effectively perform the activities of a given occupation or function to the standards expected" (www.ibstpi.org). We consider a competency model to be a graphic representation of the "collection of multiple competencies that together define successful performance in a defined work setting. A model provides a clear description of what a person needs to know and be able to do – the knowledge, skills and abilities – to perform well in a specific job, occupation or industry" US Department of Labor, <http://www.careeronestop.org/CompetencyModel/faq.aspx#q1>).

Our model is focused on a specific occupation - training (or learning and development). We considered this occupation to include trainers (i.e., safety, technical, on-the-job, field trainers, task trainers), training managers (i.e., supervisors, superintendents, chief learning officers), instructional designers (i.e., curriculum developers, trainer developer), etc.

WHAT BENEFIT IT PROVIDES

Our prior research shows the training was identified in the majority of corrective actions in fatalities from 2010 to 2015. Moreover, training research tells us for training to be effective it must be properly **designed, delivered, and implemented**; therefore, if we in the industry wish training-related corrective actions to be effective then we must ensure our training includes these three components. So what knowledge, skills and attitudes do our training employees need to have to be effective?

Foundational Competencies

The base of the model is comprised of Tiers 1 through 3, Foundational Competencies or Work Readiness Competencies, that were developed by the Department of Labor Employment and Training Administration (DOL ETA) in collaboration with industrial/organization psychology experts and represent the essential knowledge and skills for success in school and entry into the workforce. Based on work by the DOL ETA, employers found that foundational competencies “are a prerequisite for workers to learn industry-specific skills” (<http://www.careeronestop.org/CompetencyModel/CareerPathway/CPWGenInstructions.aspx>).

Tier 1 – Personal Effectiveness – These competencies are essential life skills or “soft skills” and are generally learned in the home or community, but many are reinforced in school and the workplace.

Tier 2 – Academic – These competencies are learned in school and include cognitive functions and thinking styles that are applicable to a variety of industries and occupations.

Tier 3 – Workplace – The Workplace Competencies are also applicable to a variety of industries and occupations and represent the traits and interpersonal styles necessary for success.

Mining Industry Competencies

Tiers 4 and 5 are mining industry specific – across all commodity sectors and were developed by Custos Fratrís, L3C and the University of Arizona mining experts.

Tier 4 – Industry-Wide – This tier presents the knowledge and skills that are common across the mining industry.

Tier 5 – Industry-Sector – These competencies are specific to sectors within the broader mining industry.

Occupation Competencies

During our research, we did not identify any existing occupational standards or competency models that were specific to the mining industry. While many organizations such as MSHA, speak of competencies, no competencies or competency models were readily available. Therefore, we sought standards from training-specific professional organizations and found that the Association for Talent Development (ATD) (formerly known as the American Society for Training & Development (ASTD)) and the International Board of Standards for Training, Performance, and Instruction (ibstpi) both had established standards for training professionals that cut across industries. Because of the nature of this project, we chose to use the ATD standard for two reasons: 1) longevity – the ATD standard/competency model has been in use for more than 30 years and is systemically validated with diverse industry input; and 2) fair use – the ibstpi standard/model is proprietary and not available for wide distribution. “The major benefit of the 2013 ASTD Competency Model is that it provides a clearly defined set of knowledge areas, skills, abilities, and behaviors for the entire training and development profession” (Arneson, Rothwell, & Naughton, 2013, p. 4).

Tiers 6-9 – Learning and Development - Tiers 6 through 9 are training (or learning and development)-related competencies. The DOL ETA and some industries separate the occupation-specific knowledge and skills into four distinct tiers, however, our approach relies on

an existing validated model from ASTD/ATD, therefore, for our purposes, we combined the four tiers and provide the validated competencies from the ASTD/ATD model.

HOW TO USE IT

The Mine Trainer (Learning & Development) Competency Model is not designed to be a one-size fits-all model – the industry is diverse and our model reflects that diversity and is customizable by organization.

Leaders and Organizations

We know the mining industry is diverse and the Mine Trainer Competency Model provides a powerful tool for leaders to use in both large and small operations, across all commodity sectors. Firstly, the model allows leaders and organizations to determine which competencies are appropriate for their structure. For example, if the operation purchases all their training materials from a highly qualified learning and development vendor, and mine site training personnel only deliver the training (no changes or design responsibilities), that operation may choose to not include the Instructional Design competency. Additionally, if site trainers are not part of the talent management process, organizational leaders may choose to exclude this competency as well.

The Mine Trainer Competency Model also provides an avenue for organizational leaders to evaluate the current knowledge, skills and attitudes of their training workforce in order to establish pathways or plans for professional development. The model can help leaders focus their professional development dollars to develop specific competencies that are in alignment with business strategy, not be subject to the whim of what training providers have to offer.

Individuals

Historically in the mining industry highly skilled employees were asked to become trainers for new or inexperienced employees. These trainers typically have deep subject matter expertise in their area of specialty, but frequently have no formal training or education around how to teach or train others or how to design training materials. These trainers may find that using the Mine Trainer Competency Model will provide them a pathway to developing their knowledge, skills, abilities and behaviors.

Training Providers and Educators

The Mine Trainer Competency Model provides training providers and educators with a tool to evaluate their current teaching and training curricula and to help plan new teaching and training materials. Moreover, the model offers training providers and educators an excellent guide to “assess learner needs by measuring current skills against competencies” (Arneson, Rothwell & Naughton, 2013).

Need Help?

If you need help learning to customize the model for your organization, contact Laurie Wilson, Sr. Research Specialist at the University of Arizona (lauriewilson@email.arizona.edu).



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**Western Mining Safety
and Health Training
Resource Center**

**LOWELL INSTITUTE FOR
MINERAL RESOURCES**

Mine Trainer Competency Model

Western Mining Safety and Health Training Resource Center
The University of Arizona

Tier 9 - Leadership and Management Competencies									
Tier 6 - Learning & Development Knowledge Competencies									
Learning Theory and Psychology of Learning	Learning Technologies	Legal, Regulatory, & Ethical Issues	Instructional Design	Training Delivery	Evaluating Learning Impact	Performance Improvement	Change Management	Knowledge Management	Talent Management
Tier 5 - Industry-Sector Technical Competencies									
		Metal	Nonmetal	Stone	Sand & Gravel	Coal			
Tier 4 - Industry-Wide Technical Competencies									
		Geological Concepts	Exploration	Mining Methods	Processing and Refining	Business of Mining			
Tier 3 - Workplace Competencies									
Teamwork	Customer Focus	Planning & Organizing	Creative Thinking	Problem Solving & Decision Making	Scheduling & Coordinating	Checking, Examining & Recording	Business Fundamentals	Sustainable Practices	Health, Safety & Environment
Tier 2 - Academic Competencies									
Reading	Writing	Mathematics	Science & Technology	Communication	Critical & Analytical Thinking	Basic Computer Skills			
Tier 1 - Personal Effectiveness Competencies									
Interpersonal Skills	Integrity	Professionalism	Initiative	Dependability & Reliability	Adaptability & Flexibility	Lifelong Learning			



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Foundational Competencies

Tier 1: Personal Effectiveness Competencies

101. Interpersonal Skills – Displaying the skills to work effectively with others from diverse backgrounds.

Demonstrating sensitivity/empathy

- o Show sincere interest in others and their concerns.
- o Demonstrate sensitivity to the needs and feelings of others.
- o Look for ways to help people and deliver assistance.

Demonstrating insight into behavior

- o Recognize and accurately interpret the communications of others as expressed through various formats (e.g., writing, speech, American Sign Language, computers, etc).
- o Recognize when relationships with others are strained.
- o Show understanding of others' behaviors and motives by demonstrating appropriate responses.
- o Demonstrate flexibility for change based on the ideas and actions of others.

Maintaining open relationships

- o Maintain open lines of communication with others.
- o Encourage others to share problems and successes.
- o Establish a high degree of trust and credibility with others.

Respecting diversity

- o Interact respectfully and cooperatively with others who are of a different race, culture, or age, or have different abilities, gender, or sexual orientation.
- o Demonstrate sensitivity, flexibility, and open-mindedness when dealing with different values, beliefs, perspectives, customs, or opinions.
- o Value an environment that supports and accommodates a diversity of people and ideas.

102. Integrity – Displaying strong moral principles and work ethic.

Behaving ethically

- o Abide by a strict code of ethics and behavior, even in the face of opposition.
- o Encourage others to behave ethically.
- o Understand that behaving ethically goes beyond what the law requires.

Foundational Competencies

- o Use company time and property responsibly.
- o Perform work-related duties according to laws, regulations, contract provisions, and company policies.

Acting fairly

- o Treat others with honesty, fairness and respect.
- o Make decisions that are objective and reflect the just treatment of others.

Taking responsibility

- o Take responsibility for accomplishing work goals within accepted timeframes.
- o Accept responsibility for one's decisions and actions and for those of one's group, team, or department.

103. Professionalism – Maintaining a professional presence.

Demonstrating self-control

- o Maintain composure and keep emotions in check.
- o Deal calmly and effectively with stressful or difficult situations.
- o Accept criticism tactfully and attempt to learn from it.

Professional appearance

- o Maintain a professional demeanor.
- o Dress appropriately for occupational and worksite requirements.
- o Maintain appropriate personal hygiene.

Social responsibility

- o Refrain from lifestyle choices which negatively impact the workplace and individual performance.
- o Remain free from substance abuse.

Maintaining a positive attitude

- o Project a professional image of oneself and the organization.
- o Demonstrate a positive attitude towards work.
- o Take pride in one's work and the work of the organization.

Foundational Competencies

104. **Initiative** – Demonstrating a commitment to effective job performance by taking action on one's own and following through to get the job done.

Persisting

- o Pursue work with drive and a strong accomplishment orientation.
- o Persist to accomplish a task despite difficult conditions, tight deadlines, or obstacles and setbacks.

Taking initiative

- o Go beyond the routine demands of the job to increase its variety and scope.
- o Provide suggestions and/or take actions that result in improved work processes, communications, or task performance.
- o Take initiative to seek out new work challenges, influence events, or originate action.

Setting challenging goals

- o Establish and maintain personally challenging but realistic work goals.
- o Exert effort toward task mastery.
- o Bring issues to closure by pushing forward until a resolution is achieved.

Working independently

- o Develop own ways of working effectively and efficiently.
- o Perform effectively even with minimal direction, support, or approval.
- o Take responsibility for completing one's own work assignments.

Achievement motivation

- o Strive to exceed standards and expectations.
- o Exhibit confidence in capabilities and an expectation to succeed in future activities.

105. **Dependability and Reliability** – Displaying responsible behaviors at work.

Fulfilling obligations

- o Behave consistently and predictably.
- o Is reliable, responsible, and dependable in fulfilling obligations.
- o Diligently follow through on commitments and consistently complete assignments by deadlines.

Attendance and punctuality

- o Come to work on time and as scheduled.
- o Arrive on time for meetings or appointments.

Foundational Competencies

- o Dial in to phone calls and web conferences on time.

Attending to details

- o Diligently check work to ensure that all essential details have been considered.
- o Notice errors or inconsistencies and take prompt, thorough action to correct them.

Following directions

- o Follow directions as communicated in a variety of ways such as writing, speech, American Sign Language, computers, or other formats.
- o Comply with organizational rules, policies, and procedures.
- o Ask appropriate questions to clarify any instructional ambiguities.

106. Adaptability and Flexibility – Displaying the capability to adapt to new, different or changing requirements.

Entertaining new ideas

- o Is open to considering new ways of doing things.
- o Actively seek out and carefully consider the merits of new approaches to work.
- o Embrace new approaches when appropriate and discard approaches that are no longer working.

Dealing with change

- o Take proper and effective action when necessary without having all the necessary facts in hand.
- o Easily adapt plans, goals, actions, or priorities in response to unpredictable or unexpected events, pressures, situations, and job demands.
- o Effortlessly shift gears and change direction when working on multiple projects or issues.

107. Lifelong Learning – Demonstrating a commitment to self-development and improvement of knowledge and skills.

Demonstrating an interest in learning

- o Take actions showing an interest in personal and professional lifelong learning and development.
- o Seek feedback from multiple sources about how to improve and develop.
- o Modify behavior based on feedback or self-analysis of past mistakes.
- o Learn and accept help from supervisors and co-workers.

Participating in learning activities

- o Identify when it is necessary to acquire new knowledge and skills.
- o Take steps to develop and maintain knowledge, skills, and expertise necessary to perform one's role successfully by participating in relevant training and professional development programs.

Foundational Competencies

- o Actively pursue opportunities to broaden knowledge and skills through seminars, conferences, professional groups, reading publications, job shadowing, and/or continuing education.

Using change as a learning opportunity

- o Anticipate changes in work demands and search for and participate in assignments or training that address these changing demands.
- o Treat unexpected circumstances as opportunities to learn.

Identifying career interests

- o Take charge of personal career development by identifying occupational interests, strengths, options, and opportunities.
- o Make insightful career planning decisions that integrate others' feedback.

Integrating and applying learning

- o Integrate newly learned knowledge and skills with existing knowledge and skills.
- o Use newly learned knowledge and skills to complete tasks, particularly in new or unfamiliar situations.

Tier 2 – Academic Competencies

201. **Reading** – Understanding written sentences, paragraphs, and figures in work-related documents on paper, on computers, or adaptive devices.

Comprehension

- o Locate and understand written information in prose and in documents such as manuals, reports, memos, letters, forms, graphs, charts, tables, calendars, schedules, signs, notices, applications, contracts, regulations, and directions.
- o Understand the purpose of written materials.
- o Comprehend the author's meaning and identify the main ideas expressed in the written material.

Attention to detail

- o Note details and facts.
- o Detect inconsistencies.
- o Identify implied meaning and details.
- o Recognize missing information.

Information analysis

- o Critically evaluate and analyze information in written materials.
- o Review written information for completeness and relevance.

Foundational Competencies

- o Distinguish fact from opinion.
- o Identify trends.
- o Synthesize information from multiple written materials.

Information integration

- o Integrate what is learned from written materials with prior knowledge.
- o Use what is learned from written material to follow instructions and complete tasks.
- o Apply what is learned from written material to new situations.

202. **Writing** – Using standard business English to compile information and prepare written documents on paper, on computers, or adaptive devices.

Organization and development

- o Create documents such as letters, directions, manuals, reports, graphs, spreadsheets, and flow charts.
- o Communicate thoughts, ideas, information, messages and other written information, which may contain technical material, in a logical, organized, and coherent manner.
- o Present well-developed ideas supported by information and examples.
- o Proofread finished documents for errors.
- o Tailor content to appropriate audience and purpose.
- o Distribute written materials appropriately for intended audiences and purposes.

Mechanics

- o Use standard syntax and sentence structure.
- o Use correct spelling, punctuation, and capitalization.
- o Use correct grammar (e.g., correct tense, subject-verb agreement, no missing words).
- o Write legibly when using handwriting to communicate.

Tone

- o Use language appropriate for the target audience.
- o Use a tone and word choice appropriate for the industry and organization (e.g., writing is professional and courteous).
- o Show insight, perception, and depth in writing.

203. **Mathematics** – Using principles of mathematics to express ideas and solve problems on paper, on computers, or adaptive devices.

Foundational Competencies

Computation

- o Add, subtract, multiply, and divide with whole numbers, fractions, decimals, and percents.
- o Calculate averages, ratios, proportions, and rates.
- o Convert decimals to fractions and fractions to decimals.
- o Convert fractions to percents and percents to fractions.
- o Convert decimals to percents and percents to decimals.
- o Understand relationships between numbers and identify and understand patterns.

Measurement and estimation

- o Take measurements of time, temperature, distances, length, width, height, perimeter, area, volume, weight, velocity, and speed.
- o Use and report measurements correctly.
- o Correctly convert from one measurement to another (e.g., from English to metric or International System of Units (SI), or Fahrenheit to Celsius).

Application

- o Use appropriate mathematical formulas and techniques to solve problems.
- o Translate practical problems into useful mathematical expressions.

204. **Science and Technology** – Using scientific rules and methods to express ideas and solve problems on paper, on computers, or adaptive devices.

Comprehension

- o Understand basic scientific principles and uses appropriate technology.
- o Understand the scientific method (i.e., identify problems, collect information, form opinions and draw conclusions).
- o Understand overall intent and proper procedures for set-up and operation of equipment.

Application

- o Apply basic scientific principles and technology to complete tasks.

205. **Communication** – Listening, speaking, and signaling so others can understand using a variety of methods, including hearing, speech, American Sign Language, instant messaging, text-to-speech devices, etc.

Communicating

- o Express relevant information appropriately to individuals or groups taking into account the audience and the nature of the information (e.g., technical or controversial).
- o Convey information clearly, correctly, and succinctly.

Foundational Competencies

- o Use common English conventions including proper grammar, tone, and pace.
- o Effectively establish interpersonal contact with one or more individuals using eye contact, body language and non-verbal expression as appropriate to the person's culture.

Receiving information

- o Attend to, understand, interpret, and respond to messages received in a variety of ways, including hearing, American Sign Language, instant messaging, text-to-speech devices, and other methods.
- o Comprehend complex instructions.
- o Identify feelings and concerns communicated in various formats, such as writing, speech, American Sign Language, computers, etc. and responds appropriately.
- o Consider others' viewpoints and alter opinion when it is appropriate to do so.
- o Apply active interpersonal communication skills using reflection, restatement, questioning, and clarification.
- o Effectively answer questions of others or communicate an inability to do so and suggest other sources of answers.

Observing carefully

- o Notice nonverbal cues and respond appropriately.
- o Attend to visual sources of information (e.g., video).
- o Ascertain relevant visual information and use appropriately.

Persuasion/Influence

- o Influence others.
- o Persuasively present thoughts and ideas.
- o Gain commitment and ensure support for proposed ideas.

206. Critical and Analytic Thinking – Using logical thought processes to analyze information and draw conclusions.

Reasoning

- o Possess sufficient inductive and deductive reasoning ability to perform job successfully.
- o Critically review, analyze, synthesize, compare, and interpret information.
- o Draw conclusions from relevant and/or missing information.
- o Understand the principles underlying the relationship among facts and apply this understanding when solving problems.
- o Use logic and reasoning to identify strengths and weaknesses of alternative solutions or approaches to a problem.

Foundational Competencies

Mental agility

- o Identify connections between issues.
- o Quickly understand, orient to, and integrate new information.

207. Basic Computer Skills – Using information technology and related applications, including adaptive devices and software, to convey and retrieve information.

Computer basics

- o Understand the basic functions and terminology related to computer hardware, software, information systems, and communication devices.
- o Use basic computer software, hardware, and communication devices to perform tasks.

Using software

- o Use word processing software to compose, organize, edit, and print documents and other business communications.
- o Use spreadsheet software to enter, manipulate, edit, and format text and numerical data.
- o Use presentation software to create, manipulate, edit, and present digital representations of information to an audience.
- o Use database software to manage data.
- o Create and maintain a well-organized electronic file storage system.

Using the Internet and email

- o Use the Internet to search for online information and interact with Web sites.
- o Use the Internet and web-based tools to manage basic workplace tasks (e.g., calendar management, contacts management, and timekeeping).
- o Use electronic mail to communicate in the workplace.
- o Understand the different types of social media and their appropriate workplace and non-workplace uses, and the impact that various social media activities can have on one's personal and professional life.
- o Employ collaborative/groupware applications to facilitate group work.

Ensuring computer security

- o Understand and comply with the organization's privacy policy and information security guidelines.
- o Defend against potential abuses of private information.
- o Recognize and respond appropriately to suspicious vulnerabilities and threats.
- o Use the most recent security software, web browser, and operating system to protect against online threats.
- o Utilize strong passwords, passphrases, and basic encryption.
- o Recognize secure Web addresses.

Foundational Competencies

Tier 3 – Workplace Competencies

301. Teamwork – Working cooperatively with others to complete work assignments.

Identifying team membership and role

- o Serve as a leader or a follower, depending on what is needed to achieve the team’s goals and objectives.
- o Identify and draw upon team members’ strengths and weaknesses to achieve results.
- o Instruct others in learning new skills and learn from other team members.
- o Assist others who have less experience or have heavy workloads.
- o Encourage others to express their ideas and opinions.

Establishing productive relationships

- o Develop constructive and cooperative working relationships with others.
- o Exhibit tact and diplomacy and strive to build consensus.
- o Deliver constructive criticism and voice objections to others’ ideas and opinions in a supportive, non-accusatory manner.
- o Respond appropriately to positive and negative feedback.
- o Effectively communicate with all members of the group or team to achieve team goals and objectives.

Meeting team objectives

- o Work as part of a team, contributing to the group’s effort to achieve goals.
- o Identify and commit to the goals, norms, values, and customs of the team.
- o Choose behaviors and actions that best support the team and accomplishment of work tasks.
- o Use a group approach to identify problems and develop solutions based on group consensus.

Resolving conflicts

- o Bring others together to reconcile differences.
- o Handle conflicts maturely by exercising “give and take” to achieve positive results for all parties.
- o Reach formal or informal agreements that promote mutual goals and interests, and obtain commitment to those agreements from individuals or groups.

Foundational Competencies

302. Customer Focus – Efficiently and effectively addressing the needs of clients/customers.

Understanding customer needs

- o Identify internal and external customers.
- o Attend to what customers are saying and ask questions to identify customer needs, interests, and goals.
- o Anticipate the future needs of the customer.

Providing personalized service

- o Provide prompt, efficient, and personalized assistance to meet the requirements, requests, and concerns of customers.
- o Provide thorough, accurate information to answer customers' questions and inform them of commitment times or performance guarantees.
- o Address customer comments, questions, concerns, and objections with direct, accurate, and timely responses.
- o Identify and propose appropriate solutions and/or services.
- o Establish boundaries as appropriate for unreasonable customer demands.

Acting professionally

- o Is pleasant, courteous, and professional when dealing with internal or external customers.
- o Develop constructive and cooperative working relationships with customers.
- o Is calm and empathetic when dealing with hostile customers.

Keeping customers informed

- o Follow up with customers during projects and following project completion.
- o Keep customers up to date about decisions that affect them.
- o Seek the comments, criticisms, and involvement of customers.
- o Adjust services based on customer feedback.

303. Planning and Organizing – Planning and prioritizing work to manage time effectively and accomplish assigned tasks.

Planning

- o Approach work in a methodical manner.
- o Plan and schedule tasks so that work is completed on time.
- o Keep track of details to ensure work is performed accurately and completely.
- o Anticipate obstacles to project completion and develop contingency plans to address them.
- o Find new ways of organizing work area or planning work to accomplish work more efficiently.

Foundational Competencies

Prioritizing

- o Prioritize multiple competing tasks.
- o Perform tasks correctly, quickly, and efficiently according to their relative urgency and importance.

Managing projects

- o Estimate personnel and other resources needed for project completion (e.g., financial material or equipment).
- o Manage activities to meet plans, allocating time and resources effectively.
- o Keep track of and document plans, assignments, changes, and deliverables.
- o Plan for dependencies of one task on another.
- o Coordinate efforts with all affected parties, keeping them informed of progress and all relevant changes to project timelines.
- o Take necessary corrective action when projects go off track.
- o Assure job accommodations are made for personnel who need or request them.

304. Creative Thinking – Generating innovative and creative solutions.

Employing unique analyses

- o Use original analyses and generate new, innovative ideas in complex areas.
- o Develop innovative methods of obtaining or using resources when insufficient resources are available.

Generating innovative solutions

- o Integrate seemingly unrelated information to develop creative processes or solutions.
- o Reframe problems in a different light to find fresh approaches.
- o Entertain wide-ranging possibilities and perspectives to develop new solutions.
- o Find new ways to add value to the efforts of a team and organization.

Seeing the big picture

- o Understand the pieces of a system as a whole and appreciate the consequences of actions on other parts of the system.
- o Monitor patterns and trends to see a bigger picture.
- o Modify or design systems to improve performance.

305. Problem Solving and Decision-Making – Generating, evaluating, and implementing solutions to problems.

Identifying the problem

- o Anticipate or recognize the existence of a problem.
- o Identify the true nature of the problem and define critical issues.

Foundational Competencies

- o Evaluate the importance and criticality of the problem.
- o Use all available reference systems to locate and obtain information relevant to understanding the problem.
- o Recall previously learned information that is relevant to the problem.

Locating, gathering, and organizing relevant information

- o Effectively use both internal resources (e.g., internal computer networks, company filing systems) and external resources (e.g., internet search engines) to locate and gather information relevant to solving the problem.
- o Examine information obtained for relevance and completeness.
- o Recognize important gaps in existing information and take steps to eliminate those gaps.
- o Organize/reorganize information as appropriate to gain a better understanding of the problem.

Generating alternatives

- o Integrate previously learned and externally obtained information to generate a variety of high-quality alternative approaches to the problem.
- o Skillfully use logic and analysis to identify the strengths and weaknesses, the costs and benefits, and the short- and long-term consequences of different solutions or approaches.

Choosing a solution

- o Decisively choose the best solution after evaluating the relative merits of each possible option.
- o Make difficult decisions even in highly ambiguous or ill-defined situations.

Implementing the solution

- o Commit to a solution in a timely manner.
- o Develop a realistic approach for implementing the chosen solution.
- o Document the problem and corrective actions taken and their outcomes and communicate these to the appropriate parties.
- o Observe and evaluate the outcomes of implementing the solution to assess the need for alternative approaches and to identify lessons learned.

306. **Working with Tools and Technology** – Selecting, using, and maintaining tools and technology, including adaptive tools and technology, to facilitate work activity (with accommodation when necessary).

Using tools

- o Operate tools, technology, and equipment in accordance with established operating procedures and safety standards.
- o Demonstrate appropriate use of tools and technology to complete work functions.

Foundational Competencies

Selecting tools

- o Select and apply appropriate tools or technological solutions to the problem at hand.

Keeping current on tools and technology

- o Demonstrate an interest in learning about new and emerging tools and technologies.
- o Adapt quickly to changes in process or technology.
- o Seek out opportunities to improve knowledge of tools and technologies that may assist in streamlining work and improving productivity.

Troubleshooting and maintenance

- o Learn how to maintain and troubleshoot tools and technologies.
- o Perform routine maintenance on tools, technology, and equipment.
- o Determine causes of errors and take the appropriate corrective action.
- o Develop alternatives to complete a task if desired tool or technology is not available.

307. Scheduling and Coordinating –Making arrangements that fulfill all requirements as efficiently and economically as possible.

Arranging and informing

- o Make arrangements (e.g. for meetings or travel) that fulfill all requirements as efficiently and economically as possible.
- o Inform others of arrangements, giving them complete, accurate, and timely information.
- o Ensure that others receive needed materials in time.
- o Handle all aspects of arrangements thoroughly and completely.
- o Respond to the schedules of others affected by arrangements, resolve schedule conflicts or travel issues, and take corrective action.

Coordinating in distributed environments

- o Coordinate schedules of colleagues, co-workers, and clients in regional locations. (i.e., across time zones) to ensure that inconvenience is minimized and productivity is enhanced.
- o Leverage technology (e.g., internet, teleconference) to facilitate information sharing in distributed work environments.
- o Take advantage of team member availability throughout business hours in multiple time zones to enhance productivity.

Shiftwork

- o Effectively coordinate the transition of staff at the beginning and end of each work shift.
- o Disseminate crucial information in an organized manner to rapidly bring staff up to speed at the start of their shifts.
- o Ensure that staff is updated on work completed on past shifts and work that still needs to be completed.

Foundational Competencies

308. **Checking, Examining, and Recording** – Entering, transcribing, recording, storing, or maintaining information in written or electronic/digital format, including adaptive devices and software.

Detecting errors

- o Detect and correct errors or inconsistencies, even under time pressure.
- o Identify vague or ambiguous documentation.
- o Route errors to appropriate person to correct documentation.

Completing forms

- o Select and complete appropriate forms quickly and completely.
- o Forward or process forms in a timely and accurate manner.
- o Attend to and follow through on important items requiring action.
- o Expedite forms, orders, or advances that require immediate attention.

Obtaining information

- o Obtain appropriate information, signatures, and approvals promptly.
- o Verify that all information is present and accurate before forwarding materials.
- o Compile, categorize, and verify information or data.
- o Apply systematic techniques for observing and gathering data.

Maintaining logs, records, and files

- o Organize records and files to maintain data.
- o Keep logs, records, and files that are up-to-date and readily accessible (e.g., driver logs, flight records, repair records).
- o Update logs, records, and files, noting important changes.
- o File data and documentation in accordance with organization's requirements.

309. **Business Fundamentals** – Using information on basic business principles, trends, and economics.

Situational awareness

- o Understand the mission, structure, and functions of the organization.
- o Recognize one's role in the functioning of the organization and understand the potential impact one's own performance can have on the success of the organization.
- o Grasp the potential impact of the company's well-being on employees.

Foundational Competencies

Business ethics

- o Demonstrate respect for coworkers, colleagues, and customers.
- o Act in the best interest of the company, the community, and the environment.
- o Comply with applicable laws and rules governing work and report loss, waste, or theft of company property to appropriate personnel.

Market knowledge

- o Understand market trends in the industry and the company's position in the market.
- o Know who the company's primary competitors are and stay current on organizational strategies to maintain competitiveness.
- o Uphold the organization through building and maintaining customer relations.
- o Recognize major challenges faced by the organization and industry, and identify key strategies to address challenges.

310. **Sustainable Practices** – Meeting the needs of the present without compromising the ability of future generations to meet their own needs.

Minimizing environmental impact

- o Use equipment, processes, and systems that minimize environmental impact.
- o Seek to upgrade processes beyond pollution control to pollution prevention.
- o Utilize advances in science and technology to upgrade levels of efficiency and environmental protection.
- o Strive to minimize waste through reuse and recycling, improve efficiency, and reduce resource use.

Complying with standards, laws, and regulations

- o Comply with federal, state, and local laws, regulations, and policies related to environmental impact.
- o Use sustainable business practices consistent with ISO 14001 International Environmental Management Guidance.

311. **Health and Safety** – Complying with procedures for a safe and healthy work environment.

Maintaining a safe environment

- o Follow established personal and jobsite safety practices.
- o Comply with federal, local, and company health and safety regulations.
- o Identify unsafe conditions and take corrective action.
- o Properly handle and dispose of hazardous materials.
- o Follow organizational procedures and protocols for safe evacuation and emergency response.
- o Maintain a sanitary and clutter-free work environment
- o Administer first aid or CPR or summon assistance as needed.

Foundational Competencies

Safeguarding one's person

- o Use equipment and tools safely.
- o Use appropriate personal protective equipment.

Industry Competencies

Tier 4: Industry-Wide Technical Competencies

401. Geological Concepts - Understand where and how economic deposits are formed based on fundamental geological concepts and processes that shape the earth.

Earth processes

- o Understand the structure of the earth.
- o Why economic deposits are where they are
- o Earth's history

Basic Rocks and minerals - Understand the relationship between chemical elements, compounds, minerals and rocks.

- o Elements, chemical compounds, minerals
- o Common rock-forming minerals
- o Types of rocks

Economic deposits - Understand the processes that form different types of deposits and how they interact with the environment

- o Types of deposits and how they are formed
- o How rocks are changed by environmental interactions and how these changes affect mining activities
- o What negative impacts (Risks) are possible from different types of deposits

402. Exploration - Understand how economic deposits are found, identified and evaluated for their development potential.

Prospecting - Methodological, high risk hunt for economic deposits

- o Decide on the commodity needed
- o Level of acceptable risk in the following areas: political, environmental, infrastructure, transportation, geological, mineralogical that will determine where on earth to start looking
- o Library search to gather available geological, mineralogical, and geographic data
- o Look from the large course scale and decrease the scale and increase the resolution on the areas of interest found in the previous activity
- o Ground confirmation
- o After each round of data collection and interpretation a business decision is made as to either continue or to fund other more promising projects

Industry Competencies

Remote large scale - Geophysics, space, airborne and land based

- o Satellite data looking for indicator mineralogy and geologic structures
- o Airborne surveys of geophysical properties, like: magnetic, density, electric and electromagnetic responses which provide clues about the minerals and rocks present below the ground as well as their depth of burial and areal extent
- o Ground confirmation: collect dense geophysical data based on the airborne results

Sampling - Collection of geochemical samples

- o Mapping of indicator mineralogy, faults, and folds using the previously collected data as a guide
- o Survey of geochemical properties from rock, soil and plant material

Drilling - Drilling sampling of areas of interest

- o Drilling samples of representative areas of the rock mass
- o Different types of drill samples are collected for mineralogical, rock mechanic properties and chemical analysis
- o All data collected to this point are placed into a three dimensional block model of the property for mine planning purposes
- o After every step map data correlations and a continue/non-continue decision is made

403. Mineral Economics

- o Mineral deposits have different types of risks that impact whether the resource can be mined
- o Development of a mineral resource depends on the financial calculations that determine profitability
- o Price of the mineral is an important part of whether a resource is developed and prices are set different ways for different minerals
- o Minerals have different markets
- o Companies have different structures to develop resources at different stages - prospectors focus on exploration, junior companies prove the resource is profitable, small to medium companies have 1 or 2 mines, large diversified senior companies have multiple mines, often in many countries and may mine many different types of minerals
- o Discuss global trends that impact the mining industry

404. Mining Methods, Operations, and Equipment - Understand a variety of methods and equipment used in both underground and surface mining operations.

Industry Competencies

Mining cycle

- o Explain the typical stages in mining operations - drill, load, blast, muck, haul, dump

Underground mines

- o Recognize basic underground mining methods
- o Know basic underground mining terminology - stopes, adits, drift, raise, sump, etc.
- o Identify common underground mining equipment

Surface mines

- o Recognize basic surface mining methods
- o Identify common surface mining equipment
- o Know basic surface mining terminology - slopes, pushbacks, strip ratio, etc.

405. Processing and Refining - Understand the basic steps in processing and refining a variety of materials.

Blasting

- o Most economic method to break rock to the correct size for the mining methods used

Crushing particle size reduction

- o Know the typical crushing equipment - gyratory, jaw, and cone crusher, etc.
- o Understand what happens to the material during this stage of the process

Grinding even smaller particals

- o Know the typical grinding equipment - AG mills, SAG mills, ball mills, etc.
- o Understand what happens to the material during this stage of the process

Specific processes retrieving the commodity of interest

- o Leaching: Pads or insitu
- o Commodity extraction from leaching fluids
- o Floatation, for ore concentration or cleaning
- o Smelting for metal extraction from concentrates

406. Business of Mining - is the deposit economic with everything considered

- o Junior exploration companies conduct high risk exploration to identify and confirm significant economic deposits

Industry Competencies

- o Junior exploration companies sell mineral rights to mining company (typically larger) with capital, skills and resources to mine and process the ore
- o Define geometry of deposit - identify economically viable approaches to mining and processing methods (optimized mine design)
- o Economic analysis of project - Social license, capital cost, operational cost, projected revenue, and the tax liability
- o Mining of materials of monetary value - mineral products, by-products, and co-products costs from guange minerals
- o Processing of mined materials to commercial products of value (commodity)
- o Permitting, time required, operations, closure, long term monitoring and maintenance costs

407. Health, Safety, Environment, and Communities

- o Mining companies often have community health programs in developing countries and remote locations
- o Mining companies take measures to protect workers from exposures that could be harmful to long-term and short-term health
- o Mining companies have comprehensive safety programs to protect workers
- o Mining companies take steps to prevent contamination of watersheds from such things as acid mine drainage or chemical spills
- o Mining companies engineer structures and processes to impound mining residues such as tailings and rock storage facilities
- o Mining companies take measures to be compliant with air quality standards including reducing release of CO2
- o Mining companies take measures to protect ecosystems
- o Mining companies work with local and indigenous communities to ensure development projects are compatible with the community and help obtain social license to operate

Tier 5: Industry-Sector Technical Competencies

501. Metal

- o Types of metallic resources and geographic distribution
- o Major types of metallic mineral deposits
- o Major producers and producing countries
- o Prices of metals
- o Types of mining methods - surface and underground - and implications for cost, maintenance, safety
- o Types of mining equipment - surface and underground - implications for cost, maintenance, safety
- o Types of processing methods
- o Critical risks - analysis of safety data
- o Mine life
- o Environmental stewardship
- o Social license to operate including federal, vs state vs private land and permitting processes

Industry Competencies

- o Workforce - types of jobs, skills, education, demographics

502. Nonmetal

- o Industrial minerals - types and distribution
- o Markets and transportation issues - including role of changing technologies (e.g. lithium)
- o Types of mining methods
- o Types of mining equipment
- o Types of processing methods
- o Critical risks
- o Mine life
- o Environmental stewardship
- o Health and safety
- o Social license to operate including federal vs state vs private land and permitting processes
- o Workforce - types of jobs, skills, education, demographics

503. Stone, Sand, Gravel & Cement

- o Uses of products and required standards for products
- o How cement and concrete are made
- o Types of mining methods
- o Types of mining equipment
- o Markets and transportation issues
- o Permitting issues
- o Environmental stewardship - working in urban areas
- o Health and Safety
- o Social license to operate - community engagement
- o Workforce - types of jobs, skill, education, demographics

504. Coal, Gas & Oil Sands

- a. Types of resources and classification (e.g. peat, lignite, bituminous, anthracite) and quality measures
- b. Locations of coal basins and relationship to natural gas and oil

Industry Competencies

- c. Market differences for steam coal, metallurgical coal, natural gas, oil and market trends
- d. Surface and underground mining methods and equipment
- e. Critical Risks - safety data and health issues
- f. Permitting issues
- g. Environmental stewardship - reclamation, "clean coal", natural gas
- h. Health and safety management
- i. Social license to operate
- j. Workforce

505. Coal

- o Surface versus underground operational considerations (i.e., mining and processing methods and technologies)
- o Equipment and associated maintenance (present/future)
- o Critical risk management
- o Workforce - demographic (i.e., education/training/skillset needs present/future), attrition projections/planning, and in-house versus contracting
- o Mining method and processing optimization, strategic innovation investments
- o Coal pricing structures - producer prices, negotiated prices, independent prices, commodity exchange prices
- o Reserves available, explorations/acquisitions for next project(s), cash availability versus needs

Occupational Competencies

Tier 6, 7 & 8: Trainer Knowledge, Technical Competencies, and Requirements

601. Instructional Design - Design and develop informal and formal learning content using a variety of methods.

Conducts a needs assessment

- o Identifies organizational objectives and the learning opportunity
- o Identifies target population characteristics and characteristics of the environment
- o Gathers and evaluates resources and information, analyzes findings, and incorporates or synthesizes information into the design and development process
- o Identifies anticipated constraints or problems affecting design success or failure, such as equipment deficiencies or lack of support
- o Defines basic outcomes of the learning solution to solve the problem or meet the opportunity

Identifies appropriate learning approach

- o Selects learning approaches that best address the needs of the learners and the organization

Applies learning theory

- o Incorporates sound principles of current learning theory to the practice of instructional design

Collaborates with others

- o Builds partnerships and relationships among the participants in a learning design project and establishes sign-off and approval processes for each step of the design process

Designs a curriculum, program, or learning solution

- o Uses a variety of techniques for determining instructional content
- o Creates or partners with others to plan and design the curriculum, program, or learning solution
- o Designs an experience that enables informal learning

Designs instructional material

- o Selects, modifies, or creates an appropriate design and development model or plan for a given project
- o Identifies and documents measurable learning objectives
- o Selects and uses a variety of techniques to define, structure, and sequence the instructional content and strategies
- o Designs instructional content to reflect an understanding of the diversity of learners or groups of learners

Occupational Competencies

Analyzes and selects technologies

- o Analyzes the characteristics, benefits, and pros/cons associated with existing and emerging technologies, including online learning, blended learning, and informal learning options and their possible application in an instructional environment
- o Considers online learning options such as extended books and lectures, extended community, extended expert access, simulations, and embedded help
- o Selects technologies based on a needs-driven approach in order to accomplish learning goals and objectives

Integrates technology options

- o Integrates existing and emerging technologies to achieve learning goals
- o Integrates new material and technologies with existing learning resources to produce a coherent blended solution

Develops instructional materials

- o Selects or modifies existing instructional materials or develops new instructional materials
- o Conducts review of materials with appropriate parties, such as subject matter experts, design team, and the target audience
- o Creates logical learning units/objects as appropriate
- o Designs or builds assets to support the learning experience and meet objectives as appropriate
- o Develops instructional content to reflect an understanding of the diversity of learners or groups of learners

Evaluates learning design

- o Proactively identifies appropriate evaluation techniques and applies them, such as summative and formative evaluation, the four levels, and usability testing
- o Conducts appropriate test and revision cycles to assess and test the learning design solution and its impact
- o Assesses whether the learning design solution produces positive results, such as a change in learner attitude, skill, knowledge, and/or behavior

602. Training Delivery - Deliver informal and formal learning solutions in a manner that is both engaging and effective.

Manages the learning environment

- o Schedules events and users/participants
- o Selects facilities conducive to learning
- o Prepares agenda/learning objectives in advance
- o Organizes materials and multimedia equipment
- o Ensures access and supplies resources for learning users/participants
- o Provides for breaks/refreshments

Occupational Competencies

Prepares for training delivery

- o Reviews participant and facilitator materials prior to delivery
- o Gathers information about the participants and their characteristics
- o Tailors examples and analogies to ensure relevance to participants

Conveys objectives

- o Informs users/ participants of the goals and purpose of the learning solution
- o Ensure that learners have a realistic understanding of what the solution can accomplish

Aligns learning solutions with course objectives and learner needs

- o Monitors needs and learning preferences of users/ participants to ensure that the learning solutions meet learner and course objectives
- o Responds to feedback from learners and make adjustments or enhancements to the learning solution based on this feedback

Establishes credibility as an instructor

- o Demonstrates understanding of course content and its relationship to business needs
- o Uses appropriate terminology and relevant business examples
- o Provides useful information when responding to questions
- o Helps participants apply learning to on-the-job situations

Creates a positive learning climate

- o Establishes a learning environment where learners feel safe to try new skills and behaviors, where individual differences are respected and confidentiality is supported
- o Personally models behavior that is consistent with the goals of the program

Delivers various learning methodologies

- o Facilitates learning by using various learning delivery methodologies that achieve learning objectives and ensure application, including a combination of lectures, role plays, simulations, technology-delivered training, online learning, and learning technology support tools
- o Encourages informal learning approaches such as the development of personal learning networks
- o Follows facilitator materials to ensure effective and consistent delivery

Facilitates learning

- o Varies delivery style to fit the audience
- o Adapts to the needs of learners and adjusts curriculum as needed
- o Presents information in a logical sequence
- o Uses appropriate visual aids

Occupational Competencies

- o Listens and responds to questions and objections
- o Leverages the knowledge and experience of participants to facilitate learning
- o Manages group dynamics
- o Manages time on learning topics

Encourages participation and builds learner motivation

- o Uses techniques and skills to engage all participants in the learning experience
- o Adapts own style to different learner and group styles
- o Makes effort to "bring in" passive participants
- o Creates excitement and commitment to the learning experience
- o Engages learners by providing opportunities for participation and experimentation in the learning process
- o Capitalizes on participant diversity to maximize learning
- o Builds a collaborative learning environment

Delivers constructive feedback

- o Provides behavioral feedback on learners' performance during or after the learning experience
- o Maintains or enhances learners' self-esteem
- o Supports feedback with specific examples of behavior and possible alternatives for improving performance
- o Provides a balance of positive and constructive feedback
- o Creates opportunities for self-discovery and insight

Enhances learning outcomes

- o Ensures the learning objectives are met
- o Integrates or embeds appropriate performance support and assessment techniques to check learner's understanding and to ensure skill and/or knowledge acquisition, on-the-job application, and intended business results

Evaluates solutions

- o Monitors the impact of learning solution to ensure its effectiveness
- o Summarizes and communicates evaluation results

Occupational Competencies

603. Evaluating Learning Impact - Use learning metrics and analytics to measure the impact of learning and performance solutions.

Identifies customer expectations

- o Works with customers or stakeholders to determine why they are interested in measurement and what they hope to accomplish with the results
- o Clearly defines research questions, expectations, resources available, and desired outcomes of the evaluation project
- o Manages unrealistic expectations

Selects appropriate strategies, research design, and measures

- o Uses customer questions and expectations to guide the selection of appropriate strategies, research designs, and quantitative and qualitative measurement tools
- o Employs a variety of measures and methods to reduce bias and ensure objective conclusions
- o Identifies appropriate sample sizes, data tracking methods, and reporting formats
- o Balances practical implications of rigor, effort, real-life constraints, and objectivity to create a workable approach
- o Identifies information that indicates whether the program is on track

Communicates and gains support for the evaluation plan

- o Summarizes measurement approach into a clear plan that can be communicated to a wide range of customers and stakeholders and linked to business goals
- o Communicates timelines, roles/responsibilities, and identifies other project management needs
- o Gains buy-in for the plan from key partners
- o Ensures that all parties understand the approach and their responsibilities

Manages data collection

- o Ensures that all data collection methods are applied consistently and objectively
- o Monitors ongoing data collection to ensure that assumptions required for statistical inference are being met
- o Manages and documents data in a format that can be adequately manipulated during the analysis process

Analyzes and interprets data

- o Creates summaries of data in a format that can be readily understood and communicated in order to facilitate decision making
- o Adheres to rules of statistical analysis to reduce bias and provide adequate support for conclusions
- o Uses a process of creative inquiry to fully explore the data and all of its possible implications and meaning

Occupational Competencies

Applies learning analytics

- o Uses a variety of human resource data available through integrated talent management platforms to identify where talent management has the greatest potential for strategic impact
- o Uses data to connect learning and development practices to organizational results

Reports findings and makes recommendations to aid decision making

- o Presents information in a way that is both clear and compelling to customers and stakeholders (different customers may require different information)
- o Bases recommendations and conclusions on sound analysis methods
- o Clarifies customer questions and the meaning of the data

604. Managing Learning Programs - Plans, monitors, and adjusts learning and development projects or activities.

Establishes a vision

- o Creates a picture of how the learning function can improve the performance of the business and enable execution of the organization's strategy
- o Partners with business unit leaders to advocate for improving human performance through the learning function

Establishes strategies

- o Develops long-range learning, development, and human performance strategies to implement the vision
- o Understands what drives the business and determines how the learning function can best add value

Implements action plans

- o Converts the learning and development strategies into action plans
- o Balances or reconciles strategy with real-life constraints of the workplace
- o Creates a reasonable timeline that conforms to the expectations of customers/stakeholders

Develops and monitors the budget

- o Ensures budgets are prepared and followed
- o Prepares budget or project reports on a scheduled or as needed basis

Manages staff

- o Recruits, selects, and manages people in the learning function
- o Assigns roles, responsibilities, and projects
- o Conducts performance appraisals
- o Makes compensation decisions

Occupational Competencies

Models leadership in developing people

- o Serve as a role model in own function
- o Provides coaching and mentoring to individuals or groups
- o Supports continuous learning and staff development that enhances performance
- o Builds team capabilities in effectively partnering with line functions to improve business performance

Manages others

- o Directs, assigns, or manages the work of others on the design team to accomplish project goals and objectives

Manages and implements projects

- o Identifies sponsors or champions to help ensure successful project implementation
- o Sources work, budgets, plans and organizes, manages activities, and executes learning design projects

Manages external resources

- o Identifies which training-related activities can be outsourced
- o Determines external resources available for providing learning and development solutions
- o Selects the most appropriate resources for the solution being provided
- o Negotiates and manages contracts with external partners
- o Maintains contacts with external partners to ensure effective delivery

Ensures compliance with legal, ethical, and regulatory requirements

- o Ensures that all delivery complies with relevant legal, ethical, and regulatory requirements
- o Monitors compliance and creates reports as needed

605. Performance Improvement - Applies a systematic process of discovering and analyzing human performance gaps.

Identifies the customer

- o Identifies the customer and stakeholders
- o Determines all groups affected by the performance issue and ensures that each group has a stakeholder representing it
- o Determines which stakeholders have resources and decision-making authority

Conducts performance analysis

- o Identifies business and performance goals by partnering with appropriate clients
- o Compares actual and ideal performance

Occupational Competencies

- o Identifies performance gaps or opportunities
- o Identifies who is affected by the performance gap and conditions that affect performance

Conducts cause analysis

- o Identifies the root cause of a past, present or future performance gaps
- o Clarifies the real problem underlying the need for the performance improvement
- o Breaks down the components of a larger whole
- o Examines work environment for issues or characteristics that affect human performance

Analyzes systems

- o Identifies inputs, throughputs, and outputs of a subsystem, system, or suprasystem and applies that information to improve human performance
- o Realizes the implications of solutions on many parts of an organization, process, or individual, and takes steps to address any side effects of human performance improvement solutions
- o Evaluates how organizational politics may affect performance

Gathers data

- o Gathers pertinent information to stimulate insight in individuals and groups through use of general research methods, interviews, and other data-generating techniques

Incorporates customer and stakeholder needs

- o Partners with the customer/stakeholder to clarify needs, business goals, and the objectives
- o Agrees on desired results and gains agreement on how those results can be achieved efficiently and effectively

Selects solutions

- o Recommends appropriate human performance improvement solutions that address the root cause(s) of performance gaps rather than symptoms or side effects
- o Presents recommended changes to the client and helps them assess cost, time, and risk considerations

Manages and implements projects

- o Identifies key sponsors or champions to help ensure successful project implementation
- o Creates a project management plan and ensure stakeholder buy-in while also adhering to cost, schedule, and performance requirements
- o Gathers formative evaluation data

Occupational Competencies

Builds and sustains relationships

- o Builds credibility and trust with the client based on knowledge and understanding of the business
- o Partners and collaborates with the client on an ongoing basis to maintain a sustained business relationship

Evaluates results against organizational goals

- o Assesses how well the results of a human performance improvement solution match intentions
- o Ensures that goals are converted effectively into actions to close existing or pending performance gaps
- o Obtains results despite conflicting priorities, lack of resources, or ambiguity
- o Links human performance improvement to organizational goals

Monitors change

- o Monitors the human performance improvement solutions as they are being implemented
- o Notifies client of any emerging issues and recommends course change/correction

606. Integrated Talent Management - Builds an organization's culture, engagement, capability, and capacity through the implementation and integration of talent acquisition, employee development, retention, and deployment processes.

Aligns talent management to organizational objectives

- o Works with leaders and business unit heads to ensure that talent management supports key organizational objectives
- o Aligns and integrates learning and development with key talent management processes

Uses talent management systems

- o Uses technologies designed to improve talent management processes (for recruiting, developing, training) in order to meet current and future organizational needs
- o Stays current on emerging technologies and understands how they work together

Equips managers to develop their people

- o Develops managers' performance management skills
- o Provides development tools for managers
- o Helps managers promote employee engagement
- o Holds managers accountable for developing talent
- o Enables employees to take responsibility for their own development

Occupational Competencies

Organizes delivery of developmental resources

- o Provides flexible access to multiple vehicles for developing talent
- o Selects and manages training suppliers and consultants
- o Monitors delivery of solutions to ensure successful implementation
- o Plans and manages resources to ensure adequate coverage

Promotes high-performance workplaces

- o Facilitates recognition and reward of high performance
- o Leverages learning opportunities for improving performance
- o Balances the investment in developing high-potential talent with providing learning and growth opportunities to all employees

Coordinates workforce and succession planning

- o Works with internal clients/stakeholders to design, develop, and implement succession planning or talent mobility programs to fill key positions now and in the future
- o Aligns succession plans with business needs and goals
- o Uses techniques such as scenario planning and forecasting, job analysis, and competency modeling

Facilitates the career development planning process

- o Provides support for identifying skills, aptitudes, interests, values, accomplishments, career goals, realistic opportunities, and preparing developmental plans
- o Orchestrates challenging assignments that build skill, knowledge, confidence, and credibility
- o Monitors alignment between success profiles and individual development plans
- o Manages or conducts career counseling sessions

Facilitates career transitions

- o Works with internal customers to provide consulting services and tools to facilitate individual career transitions such as onboarding, job changes, promotions or outplacement
- o Prepares managers to carry out employee terminations

Supports engagement and retention efforts

- o Integrates learning and development opportunities into the organization's retention strategy
- o Measures employee engagement
- o Involves experienced employees in coaching and mentoring programs
- o Recognizes and leverages generational differences

Occupational Competencies

Implements individual and organizational assessments

- o Provides tools and resources to assess individual strengths, development needs, and limits
- o Aggregates data to evaluate organizational capabilities
- o Offers tools for the enhancement of skills and potential
- o Arranges for testing by qualified professionals

Uses talent management analytics to show results and impact

- o Selects measurement and evaluation criteria that reflects business goals
- o Links talent management efforts to key metrics on organizational scorecards

607. Coaching - Uses an interactive process to help individuals develop rapidly and produce results.

Establishes coaching agreement

- o Understands what is required in the specific coaching interaction and comes to agreement with the prospective and new client about the coaching process and relationship
- o Identifies how the coaching goals link to enhanced business performance

Establishes trust and intimacy with the client

- o Creates a safe, supportive environment that produces ongoing mutual respect and trust

Displays coaching presence

- o Is fully conscious and creates spontaneous relationship with the client, employing a style that is open, flexible, and confident

Demonstrates active listening

- o Focuses completely on what the client is saying and is not saying to understand the meaning of what is said in the context of the client's desires and to support client self-expression

Asks powerful questions

- o Asks questions that reveal the information needed for maximum benefit to the coaching relationship and the client

Uses direct communication

- o Communicates effectively during coaching sessions and uses language that has the greatest positive impact on the client

Occupational Competencies

Creates awareness

- o Integrates and accurately evaluates multiple sources of information and makes interpretations that help the client to gain awareness and thereby achieve agreed-upon results

Designs learning opportunities

- o Creates with the client opportunities for ongoing learning, during coaching and in work/life situations, and for taking new actions that will most effectively lead to agreed-upon coaching results

Develops goals and plans

- o Develops and maintains an effective coaching plan with the client

Manages progress and accountability

- o Holds attention on what is important for the client and leaves responsibility with the client to take action

Meets ethical guidelines and professional standards

- o Understands coaching ethics and standards and applies them appropriately in all coaching situations

608. Knowledge Management (KM) - Captures, distributes, and archives intellectual capital in a way that encourages knowledge sharing and collaboration in the

Advocates knowledge management (KM)

- o Develops the KM vision and strategy ensuring it integrates with the organization's business strategy
- o Helps the organization understand the concept and value of effective knowledge creation, sharing, and reuse

Uses talent management systems

- o Uses technologies designed to improve talent management processes (for recruiting, developing, training) in order to meet current and future organizational needs
- o Stays current on emerging technologies and understands how they work together

Equips managers to develop their people

- o Develops managers' performance management skills
- o Provides development tools for managers
- o Helps managers promote employee engagement
- o Holds managers accountable for developing talent
- o Enables employees to take responsibility for their own development

Occupational Competencies

Organizes delivery of developmental resources

- o Provides flexible access to multiple vehicles for developing talent
- o Selects and manages training suppliers and consultants
- o Monitors delivery of solutions to ensure successful implementation
- o Plans and manages resources to ensure adequate coverage

Promotes high-performance workplaces

- o Facilitates recognition and reward of high performance
- o Leverages learning opportunities for improving performance
- o Balances the investment in developing high-potential talent with providing learning and growth opportunities to all employees

Coordinates workforce and succession planning

- o Works with internal clients/stakeholders to design, develop, and implement succession planning or talent mobility programs to fill key positions now and in the future
- o Aligns succession plans with business needs and goals
- o Uses techniques such as scenario planning and forecasting, job analysis, and competency modeling

Facilitates the career development planning process

- o Provides support for identifying skills, aptitudes, interests, values, accomplishments, career goals, realistic opportunities, and preparing developmental plans
- o Orchestrates challenging assignments that build skill, knowledge, confidence, and credibility
- o Monitors alignment between success profiles and individual development plans
- o Manages or conducts career counseling sessions

Facilitates career transitions

- o Works with internal customers to provide consulting services and tools to facilitate individual career transitions such as onboarding, job changes, promotions or outplacement
- o Prepares managers to carry out employee terminations

Supports engagement and retention efforts

- o Integrates learning and development opportunities into the organization's retention strategy
- o Measures employee engagement
- o Involves experienced employees in coaching and mentoring programs
- o Recognizes and leverages generational differences

Occupational Competencies

Implements individual and organizational assessments

- o Provides tools and resources to assess individual strengths, development needs, and limits
- o Aggregates data to evaluate organizational capabilities
- o Offers tools for the enhancement of skills and potential
- o Arranges for testing by qualified professionals

Uses talent management analytics to show results and impact

- o Selects measurement and evaluation criteria that reflects business goals
- o Links talent management efforts to key metrics on organizational scorecards

609. Change Management (CM) - Applies structured approaches to shift individuals, teams, and organization from a current state to a desired state.

Establishes sponsorship and ownership for change

- o Clarifies case for change and desired outcomes
- o Facilitates client sponsorship of expected outcomes
- o Engages stakeholders to build critical mass of support

Build involvement

- o Involves people to raise awareness and gathers input on the best course of action
- o Helps clients and change leaders build involvement and ownership in the change process
- o Helps clients create a communication plan that generates buy-in and commitment
- o Facilitates effective two-way communications to ensure understanding, commitment, and behavior change

Creates a contract for change

- o Helps clients contract for change, clarify outcomes, and establish realistic expectations for change
- o Identifies boundaries for change
- o Clarifies relationships, roles, and ethical parameters
- o Creates conditions for success

Conducts diagnostic assessments

- o Determines which data are needed to clarify issues, including stakeholder expectations
- o Collects information to pinpoint initial steps
- o Diagnoses problems as well as perceptions favoring change

Occupational Competencies

- o Assesses current reality against business/organizational strategy and desired outcomes to define change efforts needed
- o Identifies formal and informal power networks
- o Establishes design requirements for future state

Provides feedback

- o Prepares clients/stakeholders for receiving the results of data gathering and diagnosis
- o Provides feedback to people in position to influence with course corrections on change strategy
- o Articulates what is happening and what needs to happen in a complex system
- o Builds an impetus to support change

Facilitates strategic planning for change

- o Facilitates creation of overall change strategy with sponsor and key change leaders
- o Clarifies what must change, how to minimize the human impact and optimize buy-in
- o Helps identify all technical, organizational, cultural, and people-related change initiatives
- o Shapes the best process and conditions to accomplish results
- o Designs appropriate change process plans to be time efficient and responsive to needs

Supports the change intervention

- o Helps clients design, assess impacts, plan and implement the change effort and strategy
- o Identifies innovative ways to structure the system
- o Creates new approaches or models of programs as appropriate
- o Offers advice and support for managing complex projects as needed
- o Refines change strategy
- o Supports learning and course correction

Encourages integration of change into organizational culture

- o Fosters shared mindset in support of change
- o Supports alignment of all systems, policies, and processes of the organization to match and support the change
- o Supports integration and mastery of change effort so that it becomes the norm

Manages consequences

- o Creates strategy to reduce human trauma
- o Manages reactions to the change and the unanticipated consequences of the change
- o Surfaces and resolves conflict

Occupational Competencies

- o Helps clients overcome resistance
- o Influences those who react negatively to support the change

Evaluates change results

- o Facilitates information sharing during the change to ensure that results match intentions
- o Collects information about the impact of the change
- o Communicates results and best practices to interested stakeholders

Management Competencies

Tier 9: Management Competencies

901. Staffing

Planning

- o Effectively engage in staff planning and help to ensure that work unit is appropriately staffed to accomplish its goals.
- o Anticipate obstacles to staff planning, such as shifting economic and political climates, and make appropriate contingency plans for these possibilities.
- o Understand how to provide reasonable accommodations to jobseekers and workers with disabilities during the hiring process and in the workplace.

Identifying required skills

- o Accurately and comprehensively identify candidate skills needed to perform in vacant positions.

Assessing qualifications

- o Assess candidate qualifications thoroughly and accurately, recognizing and hiring /promoting those who possess the skills needed to fulfill vacant positions.

902. Informing

Gathering and disseminating

- o Continually gather data from diverse sources to determine what information employees need to perform their work.
- o Disseminate information to employees in a timely, efficient manner.

Keeping employees informed

- o Keep employees well-informed through a variety of means, including productive and informative group and individual meetings and targeted written communications.
- o Highlight important information in communications and avoid flooding employees with irrelevant information.

Updating information

- o Monitor internal and external environments to determine if additional information is required for employees to perform tasks.
- o Inform employees when changes occur that affect them and distribute updated information when necessary.
- o Provide information to peers and subordinates in a timely way that maintains cooperative relationships among people.

Management Competencies

903. Delegating

Delegating efficiently

- o Efficiently delegate tasks so that organizational goals are met within established timelines.
- o Delegate tasks that are not central to the leader's role and which allow the leader to use his/her time more effectively.

Delegating appropriately

- o Make delegation decisions that take into account the size of the task, whether an employee has the necessary background and skills to complete the task, and the sensitivity and importance of the task.
- o Delegate tasks that are challenging but not overwhelming.
- o Delegate tasks that develop and extend employee skills.

Monitoring

- o Monitor accomplishment of delegated tasks, and provides constructive, timely feedback.
- o Provide support and assistance for goal accomplishment, and make mistakes a learning experience.

904. Networking

Building relationships

- o Seek opportunities to make contacts and build relationships, including through organizational events, social events, external organizations, and professional activities.

Partnering

- o Establish strong and lasting partnerships with business contacts.
- o Proactively seek ways of increasing business opportunities with contacts.
- o Skillfully influence and negotiate with partners to create opportunities that increase the competitive position of both parties.

Leveraging contacts

- o Leverage contacts to obtain information relevant to the health and continued growth of the organization, including enhanced perspectives and feedback on organizational performance.

Management Competencies

905. Monitoring Work

Identifying performance criteria

- o Identify work-related performance criteria that need to be measured for individual and team performance, and determine a means of measuring these criteria.

Measuring progress

- o Measure progress against timelines set for performance of tasks.
- o Ask questions of subordinates and team members to check for problems in work processes.
- o Encourage subordinates and team members to report problems and mistakes by creating a non-threatening environment for discussion of problems.

Reviewing work

- o Conduct frequent progress review meetings with subordinates and team members to discuss progress and any barriers to progress.
- o Conduct after-reviews upon task completion to identify lessons learned and generate ideas for more effective task completion in the future.

Soliciting feedback

- o Solicit feedback from multiple sources during and following task completion to ensure employee tasks are performed correctly, and to learn how employee and team performance can be improved.
- o Conscientiously monitor downstream consequences of work to ensure tasks are completed correctly and have intended consequences.

906. Entrepreneurship

Thinking innovatively

- o Constantly search for new ways of improving existing processes and doing things more efficiently.
- o Strive to understand what is missing from current product stream, and search for new ideas for product improvement everywhere.
- o Attempt to address product gaps and build the business by creating innovative and unique solutions.

Influencing decision makers

- o Know which organizational leaders to influence to win support for new ideas and skillfully persuade key decision makers to invest appropriate resources to transform new ideas into reality.
- o Woo venture capitalists, and other extra-organizational constituents to seek financial support for new ideas.

Management Competencies

Encouraging entrepreneurial activity

- o Encourage innovation and entrepreneurial activity in team members.
- o Challenge teams to take calculated risks for innovation, and ensure teams have time to pursue their ideas for new and improved products or processes.
- o Hold regular team meetings to solicit bold new ideas.

Championing great ideas

- o Advance and promote the best ideas, even in the face of organizational resistance.
- o Shield the team from bureaucratic processes that interfere with an innovative climate, and work to change processes that interfere with growth and innovation.

Rewarding innovation

- o Recognize the contributions of those who have enabled positive change, and give appropriate rewards for extraordinary achievements.

907. Supporting Others

Demonstrating positive regard

- o Show acceptance and positive regard for employees.
- o Maintain a pleasant, cheerful disposition.
- o Provide support and sympathy when others are anxious or upset.

Counseling

- o Counsel and encourage employees who have motivational or performance problems.
- o Indicate a desire to help subordinates learn from mistakes and overcome performance problems.

Advocating

- o Publicly affirm the importance and value of individual and group tasks in order to minimize the effect of budget cuts or other constraints on resources.
- o Skillfully advocate on behalf of employees, teams, and their work.
- o Work hard to increase the prominence of employee's or team's work within organization.

Helping

- o Pitch in to help support subordinates when workload is high.
- o Minimize disruptions and help employees overcome bureaucratic work obstacles.

Management Competencies

- o Work with leaders in other organizational units to keep work flowing smoothly.

908. Motivating and Inspiring

Generating enthusiasm

- o Generate enthusiasm for task objectives and team accomplishment through standard and creative-influence techniques.
- o Focus team effort and enthusiasm on goal attainment.
- o Secure behavioral commitment of team members for goal attainment.

Recognizing

- o Recognize contributions and achievements of all types, among people in high- and low-visibility jobs alike.
- o Actively search for contributions to recognize.
- o Recognize improvements in performance as well as commendable efforts that failed.

Rewarding

- o Reward employees for high performance.
- o Take the time to determine what is rewarding for individual employees, and fairly and objectively dispense rewards based on performance indicators that reflect a person's effort and competence.

Setting an example

- o Set an example for others by acting in ways that are consistent with organizational goals and objectives.
- o Confront behavior that undermines the reputation of the organization.

909. Developing and Mentoring

Encouraging self-assessment

- o Help employees identify skill deficiencies.
- o Create a safe environment that promotes self disclosure of a disability to request a reasonable accommodation if needed.
- o Develop mechanisms that elicit feedback from multiple perspectives, and encourage employees to solicit feedback from others about strengths and weaknesses.
- o Mentor employees by giving specific, constructive feedback on how performance can be improved.

Management Competencies

Enhancing skills on the job

- o Provide opportunities for skill development on the job.
- o Plan for and seek out developmental opportunities and stretch assignments that simultaneously develop employees and help the organization reach its goals.
- o When appropriate, give employees opportunities to mentor more junior employees.

Promoting training

- o Encourage employees to attend relevant training and workshops to broaden skills.
- o Explain why training is relevant to employee's career and work with employees to identify training goals.

Supporting learning

- o Provide support and encouragement during learning process.
- o Express confidence that employees will be able to learn a new procedure or skill.

Preparing for the future

- o Anticipate future changes in work tasks due to changing economic and/or political climates.
- o Provide employees with developmental opportunities that prepare them for these changes.

Identifying career issues

- o Provide career advice.
- o Help employees identify career problems including lack of advancement, interpersonal conflicts, and burnout.
- o Help employees identify career paths and promotion opportunities in the organization.

910. Strategic Planning/Action

Establishing objectives

- o Establish long-range objectives and specify the strategies and actions necessary to achieve those objectives.
- o Identify the most probable short- and long-term consequences of implementing various strategies.
- o Strategically analyze the risks, benefits, and opportunities of various strategies.

Implementing strategies

- o Confidently implement chosen strategies, despite difficulty and resistance from others.
- o Collaborate across organizational units to ensure buy-in and follow-through on strategies.
- o Skillfully obtain commitment from affected parties to transform strategic vision into reality.

Management Competencies

Capitalizing on alliances

- o Recognize alliances, either internal or external to the organization, that are complementary and benefit the competitive position of multiple parties.
- o Strategically shifts orientation to capitalize on these alliances.

Recognizing and dealing with obstacles

- o Comprehensively consider a wide range of problems that could affect the entire work unit.
- o Strategically identify ways to address or capitalize on these problems.

Identifying emerging trends

- o Identify emerging trends and form strategic plans to address them.

911. Preparing and Evaluating Budgets

Gathering information

- o Study all relevant budget material and anticipate future needs by gathering data on forthcoming plans.
- o Ensure that budget proposals incorporate all elements.
- o Translate organizational objectives, priorities, and analysis of current resources into accurate budget proposals.

Preparing

- o Prepare highly accurate and precise estimates of costs.
- o Obtain the most recent cost estimates from vendors or catalogs.

Ensuring accuracy

- o Recognize and correct misstatements or errors of omission in budget proposals.
- o Effectively consolidate budget requests and proposals of multiple units.

Ensuring completeness

- o Prepare budget justifications and proposals that reflect the needs of the office.
- o Submit proposals that are thorough and accurate, and that receive management acceptance with little or no questioning.

Management Competencies

912. Clarifying Roles and Objectives

Explaining job duties

- o Clearly explain job duties, responsibilities, and priorities.
- o Inform employees of the work for which they will be responsible and help them establish priorities.
- o Check to ensure that employees understand duties and responsibilities.

Instructing

- o Provide instruction on how to accomplish an assignment.
- o Explain correct and incorrect ways to accomplish tasks.
- o Provide timely and effective feedback about whether task is being performed correctly.

Setting performance goals

- o Help employees set performance goals.
- o In consultation with employees, set goals that are clear, specific, and attainable.
- o Inform employees of deadlines for goal attainment.

Linking tasks to organizational objectives

- o Explain relationship between individual work tasks and overall organizational objectives.
- o Continually rethink job duties and responsibilities as organizational objectives shift, and communicate new roles and responsibilities to employees as appropriate.

913. Managing Conflict and Team Building

Gathering information

- o Identify sources of conflicts, and provide parties with an opportunity to express their point of view.
- o Remain impartial in gathering and verifying information relevant to the conflict.

Encouraging resolution

- o Make healthy use of conflict and disagreement to promote learning and expand team perspectives.
- o Encourage parties to work together towards problem resolution.
- o Work with parties to identify a range of acceptable solutions.
- o When appropriate, propose effective compromises that satisfy some of each parties' needs.
- o Ensure mutual commitment to a solution.

Management Competencies

Discouraging unproductive behavior

- o Express concern for improving relations among team members.
- o Explain how dispute is affecting others.
- o Discourage non-productive behavior such as threats, insults, stereotyping, or exaggerations.

Building cooperative teams

- o Encourage and build mutual trust, respect, and cooperation among team members.
- o Seize opportunities and utilize creative methods to build team cooperation and cohesion.

914. Developing an Organizational Vision

Developing a vision

- o Develop a strategic vision for the future of the organization or unit.

Generating excitement

- o Identify fundamental values and beliefs to guide the organization into the future.
- o Generate excitement, enthusiasm, and commitment for the vision.

Gaining commitment

- o Skillfully gain commitment to make organizational vision a reality.
- o Create a belief that vision can be achieved.

Inspiring others

- o Embody organizational vision and demonstrate conviction in vision in order to inspire others.

915. Monitoring and Controlling Resources

Identifying resources

- o Continually seek to identify resources (e.g. staffing, training, and monetary resources), both internal and external, that can be useful to unit and assist in work accomplishment.
- o Proactively work to secure additional resources for work unit.

Management Competencies

Informing

- o Develop strategic plans for making a wide array of resources available.
- o Ensure that knowledge of those resources is spread throughout organization.

Monitoring

- o Develop strategic plans to anticipate future resource needs, and accurately identifies, tracks, and prioritizes existing resource needs.
- o Monitor resource availability and make contingency plans to ensure the availability of adequate resources in the event of unforeseen circumstances.

Creating efficiencies

- o Consistently seek to perform work unit tasks in a cost-efficient manner.
- o Identify ways to produce the same level and quality of work while utilizing fewer resources.
- o Create an organizational climate in which cost effectiveness is valued and rewarded.