



# Bridging the Gap between Skills and Occupations:

## A Concept Note to Identify the Skills Associated with NOC

### Overview, Rationale, and Objective

- The skills required to succeed in today's world of work are rapidly changing. Workers experience pressure to continuously improve their skills, and employers struggle to find workers with the right skills to achieve their goals.
- Developing a pan-Canadian mapping system that links skills to occupations is an important step towards improving our understanding of the changing nature of jobs.
- A five-phase plan is proposed to assess, develop, and maintain a mapping between the recently developed Skills and Competencies Taxonomy of Employment and Social Development Canada and the National Occupational Classification (NOC) system.
- The various approaches for achieving such a mapping will be evaluated against a number of established criteria, including, among others, data collection requirements, their statistical rigour, utility in supporting people to make informed decisions, as well as the cost of establishing and maintaining these different approaches.
- To ensure the Skills and Competencies Taxonomy and its mapping to the NOC system continue to evolve to meet the needs of stakeholders, external input and feedback will be sought throughout the process.
- To ensure the credibility, rigour, and integrity of the final mapping, Statistics Canada and Employment and Social Development Canada will manage and oversee the statistical infrastructure required to maintain and update the mapping.

## Introduction

Current and future **skill shortages** in Canadian labour markets have been a major concern of policy makers in recent years. There is a critical need to better understand the underlying skills and training needs of employers and workers, and to help education and training providers better prepare and support workers in navigating the changing world of work. Labour market experts **have long called** for improved clarity in the definition and measurement of skills and their relation to the job market.

Canada, however, lacks an open, credible data source that contains reliable information on the skills associated with jobs. There is a need to enrich and refresh efforts previously undertaken in this space. To ameliorate this situation, some relatively straightforward steps can be taken to leverage existing infrastructure, notably the National Occupational Classification (NOC) and recent initiatives to develop a richer skills and competencies framework. Accordingly, **Employment and Social Development Canada** (ESDC), **Statistics Canada** (STC), and the **Labour Market Information Council** (LMIC) have partnered to address this key labour market information gap. Together, and with continuous stakeholder engagement, the three entities will work to create a shared and open Canadian framework linking ESDC's Skills and Competencies Taxonomy (see **Appendix A**) to the NOC system of occupations in a manner that conveys the evolving skill requirements of work.

A statistically robust linkage — or mapping — between the well-defined ESDC Skills and Competencies Taxonomy to the NOC system will enable us to better articulate the composition and distribution of skills across jobs (e.g., occupations and industries) and worker characteristics (e.g., their education level).

### Box 1: Skills Measurement: Caveats and Considerations

Any project to document the skills associated with NOC will need to consider skills measurements and any inherent trade-offs with each approach (see Table 1; *LMI Insight No. 14*). This is true for the measurement of both the supply and demand of skills. For instance, psychometric and competency-based skill assessments can lead to very granular insights at the individual level (the supply of skills), but these tests are costly to undertake and can lead to ambiguous results as to what is being measured. Similarly, having job analysts monitor and evaluate the tasks of people in the 500 NOC occupations may be accurate in terms of skill requirements but would be time consuming and any results would be at risk of being out of date by the time this information is validated and published. Other more aggregated or big data-driven means to capture skills (the demand of skills) may be efficient and cost effective but lack specificity. These measurement considerations will be borne in mind, along with other criteria (discussed below), when evaluating the various approaches linking skills to NOC.

## Background

In designing education, training, and employment-support programs, various levels of government and private sector entities have developed a variety of standards and frameworks to talk about workers and job characteristics, including skills, knowledge domains, tasks, etc. These classifications tend to be specific to the program or policy being monitored or evaluated, or are the intellectual property of the private sector firm in question.

Moving forward, given the increasing importance of and focus on skills, we need better data and insights to inform our decision-making. The NOC system is the framework for describing the world of work in Canada and is the basis from which we should start to develop and layer new labour market information. In particular, we need to build on the established statistical system of occupations to structure and organize skills information. Such a system should also consider how to capture, directly or indirectly, the measurement of skills (see **Box 1**).

Leveraging the structure of the NOC system and linking NOC to the ESDC Skills and Competencies Taxonomy requires a mapping from NOC-based occupations to specific skills. Such a mapping connects each occupational category to a set of skills and, in this sense, the mapping to skills deepens the current NOC framework without changing its foundation.

A robust and sustainable mapping of this nature will be a first step towards helping guide individuals, employers, education and training providers, policy makers, researchers, career practitioners, and others to understand the skills needed today and tomorrow.

## **A Canadian Skills and Competencies Taxonomy**

In an effort to link skills with occupations, ESDC has identified nine **essential skills** “for learning, work and life” and developed 372 **Essential Skills Profiles representing 361 occupations** to inform training providers about skill needs and to better monitor skills development funding (see **Appendix B**). These skills, and the profiles are being reviewed, to determine how they can be modernized to better reflect changes in the labour market. There is also the **ESDC Career Handbook**, a more detailed source of NOC-based skills

information (930 occupational profiles) that acts as a career-counselling component of the NOC.

To enrich and complement these efforts, in 2017, ESDC began developing a Skills and Competencies Taxonomy (see **Appendix A**) that streamlines terminology across a number of domains and concepts. The Skills and Competencies Taxonomy provides, in addition to skills, a comprehensive framework to characterize both workers and jobs across six other mutually exclusive categories. Exclusive categories are important to avoid duplication of terms and definitions (see **Figure 1**). In the skills component of the Taxonomy, there are 47 distinct skills (known as descriptors), each accompanied by definitions and organized into five skill groups: foundational, analytical, technical, resource management, and interpersonal.

The Skills and Competencies Taxonomy was developed using a variety of internal resources, quantitative and qualitative research, and stakeholder consultations. An initial goal was to establish consistency in the way occupational and skills information was presented, while bearing in mind several rich sources of data to inform ESDC tools, including the **Essential Skills Profiles**, the **Career Handbook**, and the Skills and Knowledge Checklist available in **Job Bank**. With respect to the skills category, the Taxonomy leverages existing efforts in defining skills. The Taxonomy builds on the **O\*NET system**, developed by the US Bureau of Labor Statistics (BLS).<sup>1</sup> It is also informed by pan-Canadian information sources, including **Red Seal Occupational Standards** and the national occupational standards. Following extensive reviews of these and other international frameworks, descriptors were identified, compiled, and organized into the ever-green Skills and Competencies Taxonomy. These well-defined categories and sub-categories will help improve the intuitive nature and understanding of the skill in question.

<sup>1</sup> O\*NET is an open data source that includes a skills taxonomy, variables describing work and worker characteristics, and a mapping to the Standard Occupational Classification (SOC).

**Figure 1: ESDC Skills and Competencies Taxonomy Framework**

SKILLS	PERSONAL ABILITIES & ATTRIBUTES	KNOWLEDGE	INTERESTS	WORK CONTEXT	WORK ACTIVITIES	TOOLS & TECHNOLOGY
Foundational	Cognitive	Business, Finance & Management	<b>Holland/RIASEC</b> <ul style="list-style-type: none"> <li>• Realistic</li> <li>• Investigative</li> <li>• Artistic</li> <li>• Social</li> <li>• Enterprising</li> <li>• Conventional</li> </ul>	Structural Job Characteristics	Information Input	Cleaning Equipment & Supplies
Analytical	Physical	Communications & Transport		Environmental Conditions	Work Output	Consumer Electronic Products
Technical	Psychomotor	Education & Training	<b>Canadian Work Preference Inventory (CWPI)</b> <ul style="list-style-type: none"> <li>• Directive</li> <li>• Innovative</li> <li>• Methodical</li> <li>• Objective</li> <li>• Social</li> </ul>	Physical Demands	Mental Processes	IT Broadcasting & Telecom
Resource Management	Sensory	Engineering & Technology		Interpersonal Relations	Interacting with Others	Medical Equipment
Interpersonal	Personal Qualities	Health Services		Work Values	Service/Care Provision	Mining & Well Drilling Machinery
		Law, Government & Public Safety				Tools & General Machinery
		Math & Science				etc.
		Manufacturing & Production				
		etc.				

Note: “Skills,” “ability,” and “competency” are often used interchangeably in common language. However, the literature suggests nuanced differences between the terms. Competencies involve the use of skills, abilities, and attributes to complete a task or successfully meet demands. See also [Appendix A](#) for the definitions of these various terms.

### Connecting the Skills and Competencies Taxonomy to NOC

Measuring and defining skills in the context of the world of work, from both the supply and demand perspective, is complex. One means by which we can improve labour market information and insights in this regard is to build a mapping from the ESDC Skills and Competencies Taxonomy to the NOC system. Such a mapping would essentially document the skills associated with each occupation — the form and manner of how this is to be done is the purpose of this note.

To that end, ESDC, STC, and LMIC are collaborating — along with provincial and territorial counterparts — to implement a phased approach to the development and evaluation of such a skills-to-NOC mapping. A phased approach will ensure that the development, rollout, and maintenance of the skills mapping to occupations

is statistically robust, methodical, client-oriented, and operationally sustainable. The five phases of the mapping project are as follows:

1. Ongoing consultation and improvement of the Skills and Competencies Taxonomy
2. Identifying and evaluating mapping approaches
3. Conducting various pilot tests
4. Assessing and validating the pilot tests using pre-defined criteria
5. Dissemination, administration, and implementation

Although Phase 4 is specific to assessment and validation, each phase will be undertaken with a critical lens. Throughout the process, we will engage stakeholders in each phase of the project through direct consultations and requests for feedback. Details of the five phases are discussed below.

### **Phase 1: Ongoing Consultation and Improvement of the Skills and Competencies Taxonomy**

The Skills and Competencies Taxonomy presented here is only the first iteration for input and feedback. In particular, the Skills and Competencies Taxonomy will remain ever-green as ESDC continues consultation efforts with provincial and territorial governments, national sectoral organizations, worker organizations, educators and training providers, career practitioners, the private sector, as well as other federal agencies and external experts (see **Box 2** for more information on efforts related to digital skills). This process is important, not only to receive direct feedback on the Skills and Competencies Taxonomy but to enable the collection of more accurate and relevant descriptors.

### **Phase 2: Identifying and Evaluating Mapping Approaches**

In Phase 2, we will research, identify, and assess various methods for linking skills to all occupations in a consistent manner. This will focus first on the potential nature of the relationship between skills and occupations and the appropriate data collection methods required. There are a number of prevailing approaches, including, but not limited to, the following: (i) consulting occupation experts; (ii) seeking direct input from workers and employers; (iii) obtaining input indirectly through online job posting/CV data; and (iv) hybrid approaches. Current methods range from reliance on occupational analysts, as is the case for the **O\*NET** system, to quantitative methods preferred by private organizations. LinkedIn, for example, uses text supplied in job postings to identify **in-demand skills**, while **Nesta**, a UK-based innovation foundation, has built **a list of skills in demand** and linked them to occupations based on machine-learning algorithms. These and other approaches to skills data collection and mapping

### **Box 2: Digital Skills**

Innovation, Science and Economic Development Canada (ISED) has created an Interdepartmental Working Group on Skills and Talent to bring together representatives from across government to discuss a range of skill-related policy issues. A sub-working group has been established to study and advance concepts related to digital skills and help support policy, programming, and statistical objectives across government.

The existing structure of the Skills and Competencies Taxonomy defines digital skills as follows: “Understanding and using digital systems, tools and applications, and to process digital information.” This definition is currently organized within the skills category and foundational skills sub-category.

Discussion is currently underway within the interdepartmental sub-working group on how to build on the digital skills framework as it pertains to the ESDC Skills and Competencies Taxonomy. Specifically, the goal for 2019 is to focus on the study of digital skills, based on nationally and internationally recognized standards, practices, and concepts, and to reach consensus on a definition that meets the needs of membership.

to occupations will be explored during this phase of the project.

It will be important at this stage to establish the criteria for evaluating the benefits and challenges, and inherent trade-offs, of various approaches. **Table 1** summarizes seven broad criteria that will help evaluate the approaches. For example, the use of occupational analysts to map skills to NOC is likely to be statistically sound and granular, but such approaches are costly to sustain and

less responsive to the ever-changing world of work. Conversely, using data from online sources is inexpensive to maintain, highly flexible, and provides insights in (almost) real time; however, the statistical robustness of using only online data is questionable. A hybrid solution that draws

on the best of a variety of methods may also be possible. One example of a hybrid method is a baseline skills-to-NOC mapping based on expert analysis, regularly adjusted in a robust manner to real-world signals that might be drawn from online data.

**Table 1: Key Criteria to Evaluate the Mapping Project**

Benchmark	Description
Flexible	Managed and executed in a way that enables it to be modified, augmented, or adapted to respond to changing labour market conditions and to capture emerging skills
Sustainable and cost-effective	Adequate resources to maintain and update the mapping
Representative	Reflects the different ways employers, workers, and training providers express skill requirements
Granular	Incorporates greater specificity of skills and occupation-specific data
Responsive	Enables policy makers, career and employment counsellors, curriculum developers, and others to make better informed decisions about skills training and education
Measurable	Allows for the reasonable measurement of skills
Statistically sound	Sound empirical techniques ensure the resulting estimates of skills levels and distributions are representative of Canadian labour markets

There are also considerations regarding what defines the link between skills and occupations, e.g., the importance of a skill for a job, or the complexity of using that skill in the job. For example, in the O\*NET system, skills are mapped to occupations through an importance rating on a scale from 1 to 5, where 1 represents “not important” and 5, “extremely important.” The **European Skills/Competences, Qualifications and Occupation**, on the other hand, maps skills to occupations through binary classifications — a skill is either “essential” or “non-essential” for the job. Evaluating the approaches of mapping skills to NOC will also involve careful consideration about the manner in which the relationship is being mapped.

**Phase 3: Conducting Various Pilot Tests**

Following an evaluation of these various approaches and the recommended potential

way forward, a set of occupations to use in a pilot study will be identified. The number of NOC occupations used in this pilot testing phase will depend on the methodology identified in Phase 2. More qualitative and labour-intensive methods would suggest that a small subset of NOC be used, whereas highly automated methods could be easily scaled to a large number of NOC.

**Phase 4: Assessing and Validating the Pilot Tests using Pre-defined Criteria**

After conducting the pilot test, we will gather further information and data from qualified sources to address issues that are likely to arise during the testing phase. It will be important to conduct a quality control review to ensure compliance with a set of pre-determined validation criteria. At this stage, and throughout the life cycle of this project, we will assess whether the skills-to-

NOC mapping is on track to meet the key criteria as established in [Table 1](#) (see above).

### ***Phase 5: Dissemination, Administration, and Implementation***

The final phase of this project is the publication and promotion of the Skills and Competencies Taxonomy and its mapping to occupations. At this phase, key considerations are credibility, accessibility, and capacity to evolve. First, with respect to credibility, the mapping and the Skills and Competencies Taxonomy will be managed and overseen by Statistics Canada and Employment and Social Development Canada. Second, as with the NOC system, the Skills and Competencies Taxonomy and its mapping to the NOC will be a public good that will be open and available online in a machine-readable format, accompanied with clear and complete descriptions of the methodology and metadata. Third, both the Skills and Competencies Taxonomy and its mapping to the NOC must be flexible and responsive to the needs of stakeholders and the availability of new technologies. Evidently, changes to the Skills and Competencies Taxonomy will require revisions to its mapping. Yet, we should not assume that the selected approach to mapping would remain the best option available. As new technologies and data emerge, the infrastructure established to maintain an ever-green Skills and Competencies Taxonomy and mapping to occupations must respond with new analyses, pilot testing, and, ultimately, implementation of more efficient and robust techniques.

Finally, the scope of this endeavour should not be underestimated. It will therefore be crucial to establish a clear operational plan — along with costs and responsibilities — that ensures this project is sustainable in the long term. The skill profiles of Canadian workers and employers will continue to be an essential piece of labour market information well into the future. We are committed

to ensuring that Canadians will have access to the skills information and insights they need and want.

## **The Way Forward**

Jobs are evolving rapidly as workplaces innovate and adopt new technologies. The skills required for these jobs are shifting at a similar pace. In an effort to improve our understanding of the skills associated with jobs, this Concept Paper puts forth a phased approach to evaluate and develop a pan-Canadian mapping to link skills to occupations. This is an important first step towards improving our collective understanding of the links between skills and jobs.

However, a mapping of this nature is not a panacea. Indeed, this mapping is intended to help complement other initiatives whose aim is to ensure that, in a changing and dynamic world of work, Canadians have the right skills to succeed and employers have access to the right talent to grow their businesses.

Our aim is to ensure that the Skills and Competencies Taxonomy and its association with NOC are transparent and accessible to all (as we intend this process to be). This is particularly relevant given the varying, often conflicting or inaccurate, definitions of skills, and multiple mappings that require fee-for-access. In this regard, a key objective is to build alignment towards a widely recognized taxonomy — or at the very least to ensure some general convergence — when speaking about skills and occupations.

Finally, we will demonstrate accountability and transparency by engaging with our partners and stakeholders and disclosing our progress throughout the project life cycle and providing information that is timely, accurate, and relevant to the wider public. Indeed, the success of this project rests fundamentally on continual engagement with all actors through an open and inclusive consultation process.

## **Acknowledgements**

This Concept Note has been prepared jointly by the staff of the Labour Market Information Council, Statistics Canada (Labour Statistics Division) and Employment and Social Development Canada (Labour Market Information Directorate).

Your feedback is welcome. We invite you to provide your input and views on how best to approach this exercise by sending us an email at [info@lmic-cimt.ca](mailto:info@lmic-cimt.ca).



## Appendix A. ESDC's Skills and Competencies Taxonomy

In order to complement other federal, provincial and territorial employment programming efforts around skills identification and utilization, Employment and Social Development Canada has developed a Skills and Competencies Taxonomy to help facilitate a pan-Canadian dialogue on skills.

The Taxonomy serves to streamline terminology across a number of competency domains and concepts (e.g., skills, personal abilities and attributes, knowledge, interests) and occupational work context, work activities and tools and technology information, while aiming to improve the comparability of their incidence and application throughout occupations and sectors. The Taxonomy also complements ESDC's development of a range of LMI products, such as the Canadian Skills Profiles, which will detail the competency requirements for entry into specific occupations, as well as provide other skills utilization indicators (e.g., the importance of a skill within a particular occupation, and/or the frequency of its use).

The Taxonomy was constructed based on internal products (e.g., the Career Handbook, Skills and Knowledge Checklist, and Essential Skills profiles) as well as a variety of national and international competency-based frameworks, including the US O\*NET system.

ESDC continues to consult with internal and external stakeholders, including the provinces and territories, in order to validate and improve the content of the Skills and Competencies Taxonomy.

### ***Note on the nuance between “skills” and “competencies”:***

The literature on skills and competencies suggests a nuance between the two concepts, namely, that competencies involve the use of skills, abilities, and attributes to complete a task or successfully meet demands.

Consistent with the existing literature, ESDC proposes the following definitions for the Skills and Competencies Taxonomy:

**Competencies:** The combined utilization of personal abilities and attributes, skills and knowledge to effectively perform a job, role, function, task, or duty.

Source: Adapted from the International Society for Performance Improvement, and the Organization for Economic Co-operation and Development

**Skills:** Developed capacities that an individual must have to be effective in a job, role, function, task, or duty.

Source: Adapted from the US O\*Net definition of Skills

**Personal Abilities and Attributes:** Inherent and developed aptitudes that facilitate the acquisition of knowledge and skills to perform at work.

Source: Adapted from the US O\*Net definition of Abilities and Work Styles

### Note on Digital Skills

One of the outstanding challenges of the Taxonomy is the integration of the digital skills concept. To ensure this concept is properly integrated in the taxonomy ESDC is conducting a number of activities in order to perfect its Taxonomy for instance by performing the secretariat role for the Sub-Working Group on Classification of Skills & Competencies, of the ISED-ESDC-Statistics Canada Working Group on Skills and Talent. The Sub-Working Group is currently exploring the terms, definitions and placement of digital skills in the Taxonomy (see also [Box 2](#)).

### Sources

Framework / Report / Article Title	Author(s)/Disseminator	Code
Global Competency Framework	Council of Ministers of Education, Canada (CMEC)	CMEC
The definition and selection of key competencies: Executive Summary	Program for International Student Assessment (PISA)	PISA
Program for the International Assessment of Adult Competencies (PIAAC)	Program for the International Assessment of Adult Competencies (PIAAC)	PIAAC
International Symposium 2017 – Canada Paper	International Centre for Career Development and Public Policy (ICCDPP)	ICCDPP
21st Century Competencies	Ontario Public Service – Learning Partnership	ON
Atlantic Canada Framework for Essential Graduation	Atlantic Provinces Education Foundation (now Council of Atlantic Ministers of Education and Training – CAMET)	CAMET
Potential hires coming up short in ‘soft skills’, employers say	Canadian Broadcasting Corporation (CBC)	CBC
O*Net	National Center for O*NET Development (US Department of Labor)	O*NET
Ontario Skills Passport (OSP)	Ontario Ministry of Education	ON EDU
New Work Smarts and New Work Order Reports	Foundation for Young Australians	FYA
COPS / CAPS / COPES-Interest Inventory, CAPS-Abilities, and COPES-Work Values.	COPS / CAPS / COPESystem (EdITS)	COPS/ CAPS/ COPES
BC Public Service Competencies	British Columbia Public Service	BC
Career Handbook (CH), Skills & Knowledge Checklist (S&K), Essential Skills (ES)	Employment and Social Development Canada	ESDC: CH, S&K, ES
Employability Skills 2000+ and General Innovation Skills Aptitude Test 2.0	Conference Board of Canada	CBoc: ES2K/ GISAT
Hazards Database	Canadian Centre for Occupational Health and Safety	GoC: CCOHS
Nos Compétences Fortes	Institut de coopération pour l'éducation des adultes	ICÉA
Classification of Instructional Programs	Statistics Canada	Stats Can
It's human skills – not technical skills	The Globe and Mail	GM
Let's stop calling them ‘soft skills’	It's Your Turn	YT

Framework / Report / Article Title	Author(s)/Disseminator	Code
Occupational Information System Project	Social Security Administration (U.S.)	SSA
United Nations Standard Products and Services Code	The United Nations Standard Products and Services Code® (UNSPSC®), managed by GS1 US™ for the UN Development Programme (UNDP)	UNSPSC
Making Vocational Choices: a theory of careers (complete version not available online)	John L. Holland	Holland

## Details of the Skills and Competencies Taxonomy

Employment and Social Development Canada has worked closely with internal and external stakeholders, including the provinces and territories, to develop the initial Skills and Competencies Taxonomy presented in this Appendix. The Labour Market Information Council will continue to work with ESDC and Statistics Canada to ensure alignment of ongoing work related to the mapping of the skills listed here to the National Occupational Classification (NOC) system as described in this Concept Note. It is important to note that the Skills and Competencies Taxonomy presented here is only the first iteration. The Taxonomy is an ever-green product subject to on-going revisions. Displayed here is the July 2019 version.

Categories, Sub-categories, Descriptors	Definitions	Descriptors Sources Abbreviations
<b>Skills</b>	<i>Developed capacities that an individual must have to be effective in a job, role, function, task, or duty.</i>	
<b>Foundational Skills</b>	<i>Developed capacities that facilitate the more rapid acquisition of other skills and knowledge.</i>	
Reading Comprehension <sup>i</sup>	The capacity to understand written words, sentences and paragraphs in work-related documents.	ESDC: ES, O*NET, PIAAC
Writing <sup>ii</sup>	The capacity to communicate effectively in writing as appropriate for the needs of the audience.	ESDC: ES, O*NET, CMEC
Numeracy <sup>iii</sup>	The capacity to understand and use numbers and other mathematical concepts.	ESDC: ES, O*NET, PIAAC
Oral Communication: Active Listening <sup>iv</sup>	The capacity to give full attention to what other people are saying, take time to understand the points being made, ask questions as appropriate, and not interrupt at inappropriate times.	ESDC: ES, O*NET, CMEC
Oral Communication: Oral Comprehension <sup>v</sup>	The capacity to listen to and understand information and ideas presented through spoken words and sentences.	ESDC: ES, O*NET, CMEC
Oral Communication: Oral Expression <sup>vi</sup>	The capacity to talk to others to convey information effectively.	ESDC: ES, O*NET, CMEC
Digital Skills <sup>vii</sup>	The capacity to understand and use digital systems, tools and applications, and to process digital information.	ESDC: ES
<b>Analytical Skills</b>	<i>Developed capacities that people need to process information and data logically to produce usable results.</i>	
Critical Thinking <sup>viii</sup>	The capacity to use logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.	ESDC: ES, O*NET, CMEC, ICCDPP, ON, CBoC: GISAT
Decision Making <sup>ix</sup>	The capacity to analyze information and choices and thereafter, evaluate results to choose the best solutions.	ESDC: ES, O*NET, ON
Evaluation	The capacity to identify measures or indicators of system performance and the actions needed to improve or correct performance, relative to the goals of the system.	O*NET
Learning Strategies	The capacity to select and use training/instructional methods and procedures appropriate for the situation when learning or teaching new things.	O*NET
Operations Analysis	The capacity to analyze needs and product requirements to create a design.	O*NET

*The Skills and Competencies Taxonomy presented here is only the first iteration. The Taxonomy is an ever-green product subject to on-going revisions. Displayed here is the August 2019 version.*

Categories, Sub-categories, Descriptors	Definitions	Descriptors Sources Abbreviations
Problem Solving*	The capacity to identify problems and review related information to develop and evaluate options for implementing solutions.	ESDC: ES, PIAAC, CMEC, O*NET, ICCDPP, ON, CAMET
Quality Control Analysis	The capacity to conduct tests and inspections of products, services, or processes to evaluate quality or performance.	O*NET
Researching and Investigating	The capacity to conduct studies to increase knowledge and understanding and exam data and facts to find cause, support for ideas or draw conclusions.	ESDC: S&K
Systems analysis	The capacity to determine how a system should work and how changes in conditions, operations, and the environment will affect outcomes.	O*NET
<b>Technical Skills</b>	<i>Developed capacities used to design, develop, integrate, set-up and operate machines and technological systems, and correct malfunctions involving their application.</i>	
Equipment Maintenance	The capacity to perform routine maintenance on equipment and determine when and what kind of maintenance is needed.	O*NET
Equipment Selection	The capacity to determine the kind of tools and equipment needed to do a job.	O*NET
Installing	The capacity to install equipment, machines, wiring, or programs to meet specifications.	O*NET
Operation and Control	The capacity to control operations of equipment, machines, vehicles or systems.	ESDC: CH, O*NET
Operation Monitoring	The capacity to watch gauges, dials, or other indicators to make sure a machine is working properly.	ESDC: CH, O*NET
Repairing	The capacity to replace worn or broken parts, restore or adjust, and test for function, appearance, operation or safety.	ESDC: S&K, O*NET
Setting up	The capacity to adjust machines or equipment by replacing or altering tools, jigs, fixtures and attachments to prepare them for proper operation.	ESDC: CH
Technology Design <sup>xi</sup>	The capacity to generate or adapt equipment and technology to satisfy users' needs.	ESDC: CH, O*NET
Troubleshooting	The capacity to determine causes of operating errors and decide what to do about it.	O*NET
<b>Resource Management Skills</b>	<i>Developed capacities to plan, organize, monitor and control the resources to achieve goals.</i>	
Change Management	The capacity to support an initiative of change that has been mandated, involve helping others understand what the change means to them, and provide ongoing guidance and support that will maintain commitment to the change.	BC, CBoC: GISAT
Crisis Management	The capacity to plan for and deal with emergency situations.	GM, YT & CBoC: ES2K
Job Task Planning and Organizing	The capacity to plan and organize one's own tasks. It does not refer to involvement in the planning function for the organization in which they work.	ESDC: ES
Management of Financial Resources	The capacity to determine how money will be spent to get the work done, and account for these expenditures.	ESDC: S&K, O*NET

*The Skills and Competencies Taxonomy presented here is only the first iteration. The Taxonomy is an ever-green product subject to on-going revisions. Displayed here is the August 2019 version.*

Categories, Sub-categories, Descriptors	Definitions	Descriptors Sources Abbreviations
Management of Material Resources	The capacity to obtain and monitor the appropriate use of equipment, facilities, and materials needed to do certain work.	ESDC: S&K, O*NET
Management of Personnel Resources	The capacity to motivate, develop and direct employees, identify the best person for the tasks to be performed and establish their work objectives in relation to the objectives of the organization.	ESDC: S&K, O*NET
Monitoring	The capacity to monitor/assess performance of yourself, other individuals, or organizations to make improvements or take corrective action.	O*NET
Operational Planning	The capacity to determine phases and steps, define activities and tasks, and establish schedules to complete objectives on time and within budget.	ESDC: S&K
Projecting Outcomes	The capacity to estimate the results of an action or a series of actions.	ESDC: S&K, CBoC: GISAT
Risk Management	The capacity to estimate risk and identify procedures to minimize or avoid impact.	ON, CBoC: GISAT
Strategic Planning	The capacity to envision a future state and develop strategies, goals, objectives and action plans to achieve it.	ESDC: S&K
Talent Management	The capacity to recruit, retain and develop talent with the goal of meeting organizational needs.	BC, CBoC: GISAT
Time Management	The capacity to manage one's own time and the time of others.	O*NET
<b>Interpersonal Skills</b>	<i>Developed capacities used to work with people to achieve goals.</i>	
Coordinating	The capacity to adjust actions in relation with others' actions.	ESDC: CH, O*NET
Instructing	The capacity to teach others how to do something.	O*NET
Intercultural Skill	The capacity to communicate, interact and work effectively and appropriately with people from different cultural backgrounds.	GM, YT & CBoC: ES2K
Managing Conversation	The capacity to lead and facilitate dialogue between two or more people.	GM, YT & CBoC: ES2K
Negotiating	The capacity to bring others together and try to reconcile differences.	ESDC: CH, S&K, O*NET,
Persuading	The capacity to convince others to change their minds or behaviour.	ESDC: CH, O*NET ON
Service Orientation	The capacity to actively look for ways to help people.	ESDC: CH, S&K, O*NET
Social Perceptiveness	The capacity to be aware of others' reactions and understand why they react as they do.	O*NET
Working with others	The capacity to interact with others to carry out tasks.	ESDC: ES, O*NET, CMEC, ICCDPP, ON, CBoC: GISAT
<b>Personal Abilities<sup>xii</sup> and Attributes</b>	<i>Innate and developed aptitudes that facilitate the acquisition of knowledge and skills to perform at work.</i>	
<b>Cognitive Abilities</b>	<i>Abilities that influence the acquisition and application of knowledge in performing various mental processes at work.</i>	
Categorization Flexibility	The ability to generate or use different sets of rules for combining or grouping things in different ways.	O*NET

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Categories, Sub-categories, Descriptors	Definitions	Descriptors Sources Abbreviations
Deductive Reasoning	The ability to apply general rules to produce logical answers for specific problems.	O*NET
Fluency of Ideas	The ability to come up with a number of ideas about a topic (the number of ideas is important, not their quality, correctness, coherence and creativity).	O*NET
Form Perception	The ability to perceive pertinent detail in objects and graphic materials, to make visual comparisons, and to see slight differences in pictorial figures such as shapes, shadings, widths and lengths of lines.	ESDC: CH
General Learning Ability	The ability to 'catch on' or understand instructions and underlie principles to reason and make judgments.	ESDC: CH
Inductive Reasoning	The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events).	O*NET
Information Ordering	The ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations).	O*NET
Mathematical Reasoning	The ability to choose the right mathematical methods or formulas to solve a problem.	O*NET
Memorizing <sup>xiii</sup>	The ability to remember information such as words, numbers, pictures, and procedures.	ESDC: ES, O*NET
Multitasking <sup>xiv</sup>	The ability to shift back and forth between two or more activities or sources of information during the same time period (such as speech, sounds, touch, or other sources).	O*NET, GM, YT & CBoC: ES2K
Numerical Ability	The ability to carry out arithmetical processes (such as additions, subtractions, multiplications or divisions) accurately.	ESDC: CH, O*NET
Pattern Identification	The ability to identify or detect a known pattern (a figure, object, word, or sound) that is hidden in other distracting material.	O*NET
Pattern Organization Speed <sup>xv</sup>	The ability to quickly combine and organize information into meaningful patterns.	O*NET
Perceptual Speed	The ability to quickly and accurately compare similarities and differences among sets of letters, numbers, objects, pictures, or patterns. The things to be compared may be presented at the same time or one after the other. This ability also includes comparing a presented object with a remembered object.	O*NET
Problem Sensitivity	The ability to identify a problem or potential problem. It does not involve solving the problem, only recognizing its presence.	O*NET
Selective Attention	The ability to concentrate on a task over a period of time without being distracted.	O*NET
Spatial Orientation	The ability to know your location in relation to the environment or to know where other objects are in relation to you.	O*NET, GM, YT & CBoC: ES2K
Spatial Perception <sup>xvi</sup>	The ability to think visually about geometric forms and comprehend the two-dimensional representation of three-dimensional objects; to recognize the relationships resulting from the movement of objects in space.	ESDC: CH, O*NET

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Categories, Sub-categories, Descriptors	Definitions	Descriptors Sources Abbreviations
Verbal Ability <sup>xvii</sup>	The ability to understand the meaning and precise use of words as well as the ideas associated with them, and to use them effectively; to comprehend language, to understand relationships between words and to understand the meaning of whole sentences and paragraphs; to present information or ideas clearly.	ESDC: CH, O*NET, COPS/ CAPS/ COPEs
Written Comprehension	The ability to read and understand information and ideas presented in writing.	O*NET
Written Expression	The ability to communicate information and ideas in writing so others will understand.	O*NET
<b>Physical Abilities</b>	<i>Abilities that influence strength, endurance, flexibility, balance and coordination.</i>	
Body Flexibility <sup>xviii</sup>	The ability to bend, stretch, twist, or reach with your body, arms, and/ or legs.	O*NET
Dynamic Flexibility	The ability to quickly and repeatedly bend, stretch, twist, or reach out with your body, arms, and/or legs.	O*NET
Dynamic Strength	The ability to exert muscle force repeatedly or continuously over time. This involves muscular endurance and resistance to muscle fatigue.	O*NET
Explosive Strength	The ability to use short bursts of muscle force to propel oneself (as in jumping or sprinting), or to throw an object.	O*NET
Gross Body Coordination	The ability to coordinate the movement of your arms, legs, and torso together when the whole body is in motion.	O*NET, SSA
Gross Body Equilibrium	The ability to keep or regain your body balance or stay upright when in an unstable position.	O*NET
Multi-limb Coordination	The ability to coordinate two or more limbs (for example, two arms, two legs, or one leg and one arm) while sitting, standing, or lying down. It does not involve performing the activities while the whole body is in motion.	ESDC: CH, O*NET
Stamina	The ability to exert yourself physically over long periods of time without getting winded or out of breath.	O*NET
Static Strength	The ability to exert muscle force to lift, push, pull, or carry objects.	ESDC: CH, O*NET
Trunk Strength	The ability to use your abdominal and lower back muscles to support part of the body repeatedly or continuously over time without 'giving out' or fatiguing.	O*NET
<b>Psychomotor Abilities</b>	<i>Abilities that influence the capacity to manipulate and control objects.</i>	
Arm-Hand Steadiness	The ability to keep your hand and arm steady while moving your arm or while holding your arm and hand in one position.	O*NET
Control Precision	The ability to adjust quickly and repeatedly the controls of a machine or a vehicle to exact positions.	ESDC: CH, O*NET
Finger Dexterity	The ability to make precisely coordinated movements of the fingers of one or both hands to grasp, manipulate, or assemble very small objects.	ESDC: CH, O*NET
Manual Dexterity	The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate, or assemble objects.	ESDC: CH, O*NET
Motor Coordination	The ability to coordinate eyes, hands and fingers accurately when required to respond with precise movements.	ESDC: CH

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Categories, Sub-categories, Descriptors	Definitions	Descriptors Sources Abbreviations
Multi-Signal Response	The ability to choose quickly between two or more movements in response to two or more different signals (lights, sounds, pictures). It includes the speed with which the correct response is started with the hand, foot, or other body part.	O*NET
Rate Control	The ability to time your movements or the movement of a piece of equipment in anticipation of changes in the speed and/or direction of a moving object or scene.	O*NET
Reaction Time	The ability to quickly respond (with the hand, finger, or foot) to a signal (sound, light, picture) when it appears.	O*NET
Speed of Limb Movement	The ability to quickly move the arms and legs.	O*NET
Wrist-Finger Speed	The ability to make fast, simple, repeated movements of the fingers, hands, and wrists.	O*NET
<b>Sensory Abilities</b>	<i>Abilities that influence visual, auditory and speech perception.</i>	
Auditory Attention	The ability to focus on a single source of sound in the presence of other distracting sounds.	O*NET
Depth Perception	The ability to judge which of several objects is closer or farther away from you, or to judge the distance between you and an object.	ESDC: CH, O*NET
Far Vision	The ability to see details at a distance.	O*NET
Glare Tolerance	The ability to see objects in the presence of glare or bright lighting.	O*NET
Hearing Sensitivity	The ability to detect or tell the differences between sounds that vary in pitch and loudness.	ESDC: CH, O*NET
Near Vision	The ability to see details at close range.	ESDC: CH
Night Vision	The ability to see under low light conditions.	O*NET
Peripheral Vision	The ability to see objects or movement of objects to one's side when the eyes are looking ahead.	ESDC: CH, O*NET
Smell	The ability to perceive odours through the nose.	ESDC
Speech Clarity	The ability to speak clearly so others can understand you.	ESDC: CH, O*NET
Speech Recognition	The ability to identify and understand the speech of another person.	O*NET
Sound Localization	The ability to identify the direction from which a sound originated.	O*NET
Taste	The ability to perceive flavour in the mouth on contact with a substance.	ESDC
Touch	The ability to acquire information about the environment through skin contact.	ESDC
Visual Color Discrimination	The ability to match or detect differences between colors, including shades of color and brightness.	ESDC: CH, O*NET
<b>Personal Qualities</b>	<i>Personal characteristics, most often developed from social context, background and individual experiences, which can make a difference to work performance.</i>	
Accountability	The personal characteristic of taking responsibility for one's own actions and the actions of a group.	GM, YT & CBoC: ES2K: GISAT
Achievement*ix	The personal characteristic of establishing and maintaining goals and exerting effort to accomplish them successfully.	O*NET

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Categories, Sub-categories, Descriptors	Definitions	Descriptors Sources Abbreviations
Active Learning	The personal characteristic of pro-actively looking to understand the implications of new information in the current and changing workplace.	ESDC: ES, CBoC: ES2K
Adaptability	The personal characteristic of adapting oneself to change and to considerable variety in the workplace.	O*NET, 21CC, CBoC: GISAT
Attention to Detail (Including Clerical Perception) <sup>xx</sup>	The personal characteristic of being careful about details and thorough in completing work tasks.	ESDC: CH, O*NET
Charisma	The personal characteristic of possessing charm, attracting and arousing the interest, attention or admiration of others through speeches, attitudes, temperament or actions.	GM, YT & CBoC: ES2K
Creativity <sup>xxi</sup>	The personal characteristic of coming up with unusual or clever ideas about a given topic or situation, or to develop original ways to solve a problem.	CMEC, O*NET, ICCDPP, ON, CBoC: GISAT
Competitiveness	The personal characteristic of possessing a strong desire to compete and to be better or more successful than others.	GM, YT & CBoC: ES2K
Concern of Others <sup>xxii</sup>	The personal characteristic of having empathy towards others' feelings and needs and being understanding and helpful on the job.	O*NET
Continuous Learning <sup>xxiii</sup>	The personal characteristic of desire to continually develop and improve one's skills and knowledge in order to adapt to changes and work effectively.	ESDC: ES, O*NET, CBoC: GISAT
Cooperation	The personal characteristic of having a good and cooperative attitude in order to achieve a common objective.	O*NET, ON, NCG, CBoC: GISAT
Dependability	The personal characteristic of being reliable and fulfilling obligations.	O*NET
Entrepreneurial Mindset	The personal characteristic of identifying and seizing opportunities and moving from idea to achievement.	CMEC
Independence	The personal characteristic of developing one's own ways of doing things, guiding oneself with little or no supervision, and depending on oneself to get things done.	O*NET
Initiative	The personal characteristic of taking on responsibilities and challenges, proposing, doing or organizing something by oneself without being prompted by others.	O*NET, CBoC: GISAT
Innovation	The personal characteristic of alternative thinking to develop new ideas, to make improvement or to develop a new approach that will benefit the organization.	CMEC, O*NET, ICCDPP, ON, CBoC: GISAT
Integrity	The personal characteristic of being honest, ethical and authentic.	O*NET, ON
Judgment	The personal characteristic of making considered decisions or come to sensible conclusions.	ESDC
Leadership	The personal characteristic of leading others towards a common goal by guiding, influencing and inspiring them.	O*NET, ON, CBoC: GISAT
Motivation	The personal characteristic of being driven by interest, need or reason to achieve something or to reach goals.	ON
Perseverance <sup>xxiv</sup>	The personal characteristic of voluntarily and deliberately providing the effort required to accomplish a task or activity despite difficulties, failure or opposition.	O*NET, NCG

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Categories, Sub-categories, Descriptors	Definitions	Descriptors Sources Abbreviations
Resilience	The personal characteristic of recovering from difficulties or changes – to function as well as before and then move forward.	ICCDP, ON
Risk-Taking	The personal characteristic of being willing to make a choice (action or inaction), calculated or not, involving a state of uncertainty in which some of the possibilities involve loss, disaster or other undesirable outcome, in the hope of achieving a desired result.	ON, GM, YT & CBoC: ES2K, CBoC: GISAT
Self-Awareness	The personal characteristic of being aware of one's own personality, character and feelings including strengths, weaknesses, thoughts, behaviours, beliefs, motivation, and emotions.	CMEC, ICCDP, ON
Self-Confidence	The personal characteristic of trust in one's ability to achieve goals, believing in one's potential and abilities, and knowing that one is capable of achieving goals when facing challenges.	CBC, ON EDU, CBoC: GISAT
Self-Control	The personal characteristic of maintaining composure, keeping emotions in check, controlling anger, and avoiding aggressive behaviour, even in very difficult situations.	O*NET, ICCDPP, ON
Stress Tolerance <sup>xv</sup>	The personal characteristic of being able to remain calm, without being carried away by high stress situations and to deal effectively with such situations.	GoC: CCOHS, O*NET
Tolerance of Ambiguity	The personal characteristic of being able to function in an environment where there is uncertainty, unpredictability, conflicting directions or multiple demands.	
Trust in Others	The personal characteristic of establishing and maintaining a sense of trust in one's work colleagues allowing for the exchange of information and delegation of tasks.	NCG, CBoC: GISAT
<b>Knowledge<sup>xvi</sup></b>	<i>Organized sets of information used for the execution of tasks and activities within a particular domain.</i>	Stats Can, O*NET, ESDC: S&K
<b>Business, Finance and Management</b>	<i>Organized sets of principles and facts applying in business, finance and management.</i>	Stats Can, O*NET, ESDC: S&K
Accounting	Knowledge of accounting principles and practices. This includes recording, analyzing and reporting of financial information.	Stats Can, O*NET, ESDC: S&K
Business Administration	Knowledge of the principles and practices of managing businesses.	Stats Can, O*NET, ESDC: S&K
Business Management	Knowledge related to the planning, organizing, staffing, leading or directing of organizations including principles and practices of accounting, the disposition of human and material resources, public relations, evaluation, sales and marketing, and economics.	Stats Can, O*NET, ESDC: S&K
Clerical	Knowledge of administrative and clerical procedures and systems such as word processing, managing files and records, stenography and transcription, designing forms, and other office procedures and terminology.	Stats Can, O*NET, ESDC: S&K
Client Service	Knowledge of principles and practices of providing service to clients to maintain and build organizational success.	Stats Can, O*NET, ESDC: S&K
Economics	Knowledge of economic theories, principles and methods of analysis including simulation and forecasting techniques.	Stats Can, O*NET, ESDC: S&K
Finance	Knowledge of principles and practices of financial management, monitoring and accountability frameworks, reporting procedures, banking, and markets.	Stats Can, O*NET, ESDC: S&K

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Categories, Sub-categories, Descriptors	Definitions	Descriptors Sources Abbreviations
Marketing	Knowledge of principles and practices for determining consumers' wants and needs, assessing and developing business opportunities and advertising products and services.	Stats Can, O*NET, ESDC: S&K
Personnel and Human Resources	Knowledge of principles and procedures for personnel recruitment, selection, training, compensation and benefits, relations and negotiation, and personnel information systems.	Stats Can, O*NET, ESDC: S&K
Sales	Knowledge of principles and practices for displaying, promoting and selling products or services.	Stats Can, O*NET, ESDC: S&K
<b>Communications and Transportation</b>	<i>Organized sets of principles and facts applying in communication and transportation.</i>	Stats Can, O*NET, ESDC: S&K
Communications and Media	Knowledge of media production, communication, and dissemination techniques and methods. This includes alternative ways to inform and entertain via written, oral, and visual media.	Stats Can, O*NET, ESDC: S&K
Telecommunications	Knowledge of transmission, broadcasting, switching, control, and operation of telecommunications systems.	Stats Can, O*NET, ESDC: S&K
Transportation	Knowledge of the principles, methods and systems for moving people and goods by air, sea, rail or ground transportation, including relative costs, advantages, risks and limitations.	Stats Can, O*NET, ESDC: S&K
<b>Education and Training</b>	<i>Organized sets of principles and facts applying in education and training.</i>	Stats Can, O*NET, ESDC: S&K
Education and Training	Knowledge of principles and methods for curriculum and training design, teaching and instruction for individuals and groups, and the measurement of training effects.	Stats Can, O*NET, ESDC: S&K
<b>Engineering and Technology</b>	<i>Organized sets of principles and facts applying in engineering and technology.</i>	Stats Can, O*NET, ESDC: S&K
Building and Construction	Knowledge of materials, methods, and the tools involved in the construction or repair of houses, buildings, or other structures such as highways and roads.	Stats Can, O*NET, ESDC: S&K
Computer and Information Systems	Knowledge of computer programming, hardware and software.	Stats Can, O*NET, ESDC: S&K
Design	Knowledge of design techniques, tools, and principles involved in production of precision technical plans, blueprints, drawings, and models.	Stats Can, O*NET, ESDC: S&K
Electricity (Electrical and Electronics)	Knowledge of the design, techniques and tools applied in electronic and electrical applications.	Stats Can, O*NET, ESDC: S&K
Engineering and Applied Technologies	Knowledge of engineering principles and the techniques used in the planning, development and application of technology for specific goods and services.	Stats Can, O*NET, ESDC: S&K
Mechanics and Machinery	Knowledge of machines, equipment and tools including their design, uses, repair and maintenance.	Stats Can, O*NET, ESDC: S&K
<b>Health Services</b>	<i>Organized sets of principles and facts applying in health services.</i>	Stats Can, O*NET, ESDC: S&K
Medicine and Dentistry	Knowledge of the information and techniques needed to diagnose and treat human injuries, diseases, and deformities. This includes symptoms, treatment alternatives, drug properties, drug interactions, and preventive health-care measures.	Stats Can, O*NET, ESDC: S&K

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Categories, Sub-categories, Descriptors	Definitions	Descriptors Sources Abbreviations
Therapy and Counselling	Knowledge of principles, methods, and procedures for diagnosis, treatment and rehabilitation of physical and mental dysfunctions, and for career counseling and guidance.	Stats Can, O*NET, ESDC: S&K
<b>Law, Government and Public Safety</b>	<i>Organized sets of principles and facts applying in law and public safety.</i>	Stats Can, O*NET, ESDC: S&K
Government	Knowledge of the government regulations, executive orders and the functioning of government.	Stats Can, O*NET, ESDC: S&K
Law	Knowledge of the legal system, laws, legal codes, court procedures and precedents.	Stats Can, O*NET, ESDC: S&K
Public Safety and Security	Knowledge of public safety and security operations and systems, of policy, regulations and procedures for the protection of people, data and property.	Stats Can, O*NET, ESDC: S&K
<b>Mathematics and Science</b>	<i>Organized sets of principles and facts applying in mathematics and science.</i>	Stats Can, O*NET, ESDC: S&K
Biology	Knowledge of living organisms including their structure, function, growth, origin, evolution, distribution and classification and their interdependencies and interactions with each other and the environment.	Stats Can, O*NET, ESDC: S&K
Chemistry	Knowledge of the chemical composition, structure, and properties of substances and of the chemical processes and transformations that they undergo. This includes uses of chemicals and their interactions, danger signs, production techniques, and disposal methods.	Stats Can, O*NET, ESDC: S&K
Earth Sciences (Geosciences)	Knowledge of the integration of chemistry, physics, biology, chronology and mathematics to study the earth and its atmosphere.	Stats Can, O*NET, ESDC: S&K
Mathematics and Statistics	Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications, principles, methods and function.	Stats Can, O*NET, ESDC: S&K
Physics	Knowledge and prediction of physical principles, laws, their interrelationships, and applications to understanding fluid, material, atmospheric dynamics, mechanical, electrical, atomic and sub-atomic structures and processes.	Stats Can, O*NET, ESDC: S&K
<b>Manufacturing and Production</b>	<i>Organized sets of principles and facts applying in manufacturing and production.</i>	Stats Can, O*NET, ESDC: S&K
Food Production and Agriculture	Knowledge of techniques, materials and equipment for raising, planting, growing, harvesting, storing, preparing and preserving food products of animal and plant.	Stats Can, O*NET, ESDC: S&K
Processing and Production	Knowledge of production methods, inputs, outputs, work flow and industrial processes including safety, quality control and cost estimation.	Stats Can, O*NET, ESDC: S&K
<b>Natural resources and conservation</b>	<i>Organized sets of principles and facts applying in natural resources and conservation fields.</i>	Stats Can, O*NET, ESDC: S&K
Forestry	Knowledge of techniques and equipment for forestry resources. This includes trees, forest lands, wood, paper, processing technologies, tree species, landscaping, and urban management.	Stats Can, O*NET, ESDC: S&K
Other natural resources sciences and conservation	Knowledge of techniques and equipment for various natural resources exploitation and conservation related to wildlife, fishing, water ecosystems, nature, parks and outdoor recreation.	Stats Can, O*NET, ESDC: S&K

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Categories, Sub-categories, Descriptors	Definitions	Descriptors Sources Abbreviations
<b>Personal and Culinary Services</b>	<i>Organized sets of principles and facts applying in personal and culinary services</i>	Stats Can, O*NET, ESDC: S&K
Culinary Services	Knowledge of principles and facts applying in culinary services related to cooking, baking, meat cutting, bartending, and food preparation.	Stats Can, O*NET, ESDC: S&K
Recreation, Leisure and Fitness	Knowledge of principles and practices for displaying, promoting and selling products or services.	Stats Can, O*NET, ESDC: S&K
Other Personal Services	Knowledge of principles and practices for personal services such as grooming, cosmetology, funeral related activity and mortuary science.	Stats Can, O*NET, ESDC: S&K
<b>Social Sciences and Arts</b>	<i>Organized sets of principles and facts applying in social sciences and arts.</i>	Stats Can, O*NET, ESDC: S&K
Fine and Applied Arts	Knowledge of theory and techniques required to create, design, compose and perform works of music, dance, visual art, drama and sculpture.	Stats Can, O*NET, ESDC: S&K
Geography	Knowledge of principles and methods for describing the features of land, sea, and air masses, including their physical characteristics, locations, interrelationships, and distribution of plant, animal, and human life.	Stats Can, O*NET, ESDC: S&K
History and Archeology	Knowledge of historical events and methods of studying their causes, indicators, archaeological remains and effects on civilizations and cultures.	Stats Can, O*NET, ESDC: S&K
Library and Heritage	Knowledge of the principles and practices in the classification, storage, retrieval, display and management of documentation and records in various media, museum artifacts and works of fine art.	Stats Can, O*NET, ESDC: S&K, PISA
Non-Official Languages	Knowledge of the structure and content of a non-official language including the meaning and spelling of words, rules of composition and grammar, and pronunciation.	Stats Can, O*NET, ESDC: S&K
Official Languages	Knowledge of the structure and content of the official language(s), including the meaning and the spelling of words, rules of grammar and composition and pronunciation.	Stats Can, O*NET, ESDC: S&K
Philosophy and Theology	Knowledge of different philosophical systems and religions. This includes their basic principles, values, ethics, ways of thinking, customs, practices, and their impact on human culture.	Stats Can, O*NET, ESDC: S&K
Psychology	Knowledge of principles, methods, practices, underlying physiology and neurology of mental processes and behaviours, and of assessment and treatment of psychological disorders.	Stats Can, O*NET, ESDC: S&K
Sociology, Anthropology and Other Social sciences	Knowledge of group behaviour and dynamics, societal trends and influences, human migrations, ethnicity, cultures and their history and origins.	Stats Can, O*NET, ESDC: S&K
<b>Interests</b>	<i>Preferences for work environments and outcomes.</i>	
<b>Holland Codes</b> <sup>xxvii</sup>	<i>(also known as RIASEC)</i>	Holland, O*NET

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Categories, Sub-categories, Descriptors	Definitions	Descriptors Sources Abbreviations
Realistic	Realistic occupations are characterized by the dominance of activities that entail the explicit, ordered or systematic manipulation of objects, tools, machines and animals. Many of these occupations do not involve a lot of paperwork or working closely with others. They fosters technical competencies and achievements. Workers in these occupations have mechanical ability, and see the world in simple, tangible, and traditional terms. They are rewarded in their work environment for the display of conventional values and goods: money, power, and possessions.	Holland; O*NET
Investigative	Investigative occupations are characterized by the dominance of activities that entail the observation and symbolic, systematic, creative investigation of physical, biological, or cultural phenomena. These occupations require an extensive amount of thinking and frequently involve working with ideas, searching for facts and figuring out problems mentally. They encourage scientific competencies and achievements. Workers in those occupations are erudite, have mathematical and scientific abilities, and see the world in complex, abstract, independent and original terms. They are rewarded in their work environment for the display of scientific values.	Holland; O*NET
Artistic	Artistic occupations are characterized by the dominance of free activities to create art products. These occupations frequently involve working with forms, designs and patterns and often require self-expression and the accomplishment of work without following a clear set of rules. They foster artistic competencies and achievements. Workers in those occupations are expressive, original, intuitive, nonconforming and independent. They have artistic abilities (acting, writing, speaking), and see the world in complex, independent, unconventional, and flexible terms. They are rewarded in their work environment for the display of artistic values.	Holland; O*NET
Social	Social occupations are characterized by the dominance of activities that entail the interaction with others to inform, train, develop, cure, or enlighten. These occupations often require helping or providing service to others and frequently involve working with, communicating with and teaching people. They foster social competencies and achievements. Workers in those occupations like to help others, understand others, and are cooperative and social. They see the world in flexible terms. They are rewarded in their work environment for the display of social values.	Holland; O*NET
Enterprising	Enterprising occupations are characterized by the dominance of activities that entail the interaction with others to attain organizational or self-interest goals. They frequently involve starting up and carrying out projects, influencing, leading or mobilizing people and making decisions, and sometimes require risk taking and dealing with business. They foster enterprising competencies and achievements. Workers in those occupations are audacious, popular, self-confident, sociable and possess leadership and speaking abilities. They see the world in terms of power, status, responsibility, and in stereotyped, dependent, and simple terms. They are rewarded in their work environment for the display of enterprising values and goals: money, power and status.	Holland; O*NET

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Categories, Sub-categories, Descriptors	Definitions	Descriptors Sources Abbreviations
Conventional	Conventional occupations are characterized by the dominance of activities that entail the explicit, ordered, systematic manipulation of data, such as keeping records, filing materials, reproducing materials, organizing written and numerical data according to a prescribed plan, and operating business and data processing machines. They often require following a clear line of authority or set procedures and routines, and usually involve working with data and details more than with ideas. They foster clerical competencies and achievements. Workers in those occupations are conforming, orderly and methodical. They see the world in conventional, stereotypes, constricted, simple and dependent terms. They are rewarded in their work environment for the display of conventional values: money, dependability, conformity.	Holland; O*NET
<b>Canadian Work Preference Inventory</b>	<i>(CWPI or DIMOS codes)</i>	ESDC: CH
Directive (D)	Directive persons like to take charge and control situations. They like to take responsibility for projects that require planning, decision making and coordinating the work of others. They are able to give direction and instructions easily. They enjoy organizing their own activities. They see themselves as independent and self-directing.	ESDC: CH
Innovative (I)	Innovative persons like to explore things in depth and arrive at solutions to problems by experimenting. They are interested in initiating and creating different ways to solve questions and present information. They enjoy scientific subjects. Innovative persons prefer to be challenged with new and unexpected experiences. They adjust to change easily.	ESDC: CH
Methodical (M)	Methodical persons like to have clear rules and organized methods to guide their activities. They prefer working under the direction or supervision of others according to given instructions, or to be guided by established policies and procedures. Methodical persons like to work on one thing until it is completed. They enjoy following a set routine and prefer work that is free from the unexpected.	ESDC: CH
Objective (O)	Objective persons enjoy working with tools, equipment, instruments and machinery. They like to repair and/or fabricate things from various materials according to specifications and using established techniques. Objective persons are interested in finding out how things operate and how they are built.	ESDC: CH
Social (S)	Social persons like dealing with people. They enjoy caring for and assisting others in identifying their needs and solving their concerns. Social persons like working and co-operating with others. They prefer to be involved in work that requires interpersonal contact.	ESDC: CH
<b>Work Context</b>	<i>Physical, environmental and social factors that influence the nature of work.</i>	
<b>Structural Job Characteristics</b>	<i>The components which define the structural aspects of the job.</i>	
Automation <sup>xxviii</sup>	The degree to which the job is automated.	O*NET
Competition <sup>xxix</sup>	The extent to which the job requires the worker to compete or to be aware of competitive pressures.	O*NET
Consequence of Error	The impact on outcomes of a mistake which is not readily correctable, made by the worker.	O*NET

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Categories, Sub-categories, Descriptors	Definitions	Descriptors Sources Abbreviations
Freedom to Make Decisions	The extent to which the job allows the worker to make decisions without supervision.	O*NET
Frequency of Decision Making	The extent to which the job requires the worker to make decisions that affect other people, the financial resources, and/or the image and reputation of the organization.	O*NET
Impact of Decisions <sup>xxx</sup>	The impact on the organization or colleagues of the decisions made by the worker.	O*NET
Pace Determined by Speed of Equipment	The importance for the worker to keep pace with the speed of the equipment or machines. This does not refer to being occupied at all times in the position.	O*NET
Precision <sup>xxxi</sup>	The importance to be exact or accurate in performing the job.	O*NET
Structured versus Unstructured Work	The extent to which is the job structured for the worker, rather than allowing the worker to determine tasks, priorities, and goals.	O*NET
Tasks Repetition <sup>xxxii</sup>	The extent to which the same tasks are repeated in the performance of the work.	O*NET
Time Pressure	The extent to which the job requires the worker to meet strict deadlines.	O*NET
Type of Work Schedules <sup>xxxiii</sup>	The type of schedule usually required for the job.	O*NET
Work Week Duration <sup>xxxiv</sup>	Number of hours typically worked over a period of 7 days.	O*NET
<b>Physical Work Environment</b>	<i>The physical surroundings in which the worker performs the job.</i>	
Biological Agents	The worker is exposed to bacteria and viruses as a result of indirect contact with, or direct handling of, infectious materials or micro-organisms that may cause illness.	ESDC: CH, O*NET, GoC: CCOHS
Dangerous Chemical Substances	The worker is exposed to contaminants, such as pollutants, gases, dust or odors, through inhalation, ingestion, or contact with skin.	ESDC: CH, GoC: CCOHS, SSA
Dangerous Locations	The job requires working in locations that are inherently treacherous and are potential sources of injury. Such work locations include construction sites, underground sites, erected support structures and marine environments.	ESDC: CH
Electricity	The worker is exposed to electrical circuitry, high tension wires, transformers or other equipment that may be a potential source of electrical shock.	ESDC: CH, GoC: CCOHS
Extremely Bright or Inadequate Lighting	The job requires working in extremely bright or inadequate lighting conditions.	GoC: CCOHS, O*NET
Extreme Temperatures <sup>xxxv</sup>	The worker is exposed to very hot (above 32.2°C degrees) or very cold (below 0°C degrees) temperatures.	O*NET
Falling	The worker is exposed to risks of slipping, tripping, tumbling or falling resulting from an unexpected change in the contact between the feet and the ground or walking surface.	GoC: CCOHS
Fire, Steam, Hot Surfaces	The worker is exposed to fire (rather than exposure to flammable substances that may ignite), to emissions of steam or to intensely hot surfaces that are potential sources of injury.	ESDC: CH

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Flying Particles, Falling Objects	The worker is exposed to flying particles and falling objects or materials in the work environment that pose the risk of bodily injury. Flying particles refer to particles such as wood chips, metal particles and rock chips generated by the handling, crushing, grinding, rapid impact or explosion of materials.	ESDC: CH
Hazardous Conditions	The worker is exposed to conditions that involves risks of accident or personal injury.	O*NET
Hazardous Equipment, Machinery, Tools	The job requires working near or with equipment, instruments, machinery or power/hand tools that may be a potential source of accident or injury.	ESDC
High Places	The job requires working in elevated places.	O*NET
In an Enclosed Vehicle or Equipment	The job requires working in a closed vehicle or equipment (e.g., car, truck or heavy equipment).	ESDC: CH, O*NET
In an Open Vehicle or Equipment	The job requires working in an open vehicle or equipment (e.g., tractor).	O*NET
Indoors, Environmentally Controlled	The job requires working inside a building with controlled temperature and humidity conditions.	ESDC: CH, O*NET, GoC: CCOHS
Indoors, Not Environmentally Controlled	The job requires working inside a building where the temperature and humidity are not controlled (e.g., warehouse without heat).	ESDC: CH, O*NET, GoC: CCOHS, SSA
Limited Hearing	The job requires working in conditions where hearing is limited to short and/or infrequent verbal interactions.	ESDC
Mold	The worker is exposed to the presence of fungi that causes a chemical modification of the environment on which it grows.	GoC: CCOHS
Non-Toxic Dusts	The worker is exposed to non-poisonous airborne particles such as textile dust, flour, sand, sawdust and feathers in the environment.	ESDC: CH
Odours	The worker is exposed to noxious, intense or prolonged odours.	O*NET
Outside, Exposed to Weather <sup>xxxvi</sup>	The job requires working outdoors and being subject to variations in weather conditions and seasonal weather patterns.	ESDC: CH, O*NET, GoC: CCOHS
Outside, Under Cover <sup>xxxvii</sup>	The job requires working outdoors, protected from variations in weather conditions and seasonal weather patterns by a covered space (e.g., structure with roof but no walls).	O*NET
Physical Proximity	The job requires performing tasks while being physically close to other people.	O*NET
Radiation	The worker is exposed to ionizing radiation such as X-rays and radioactive substances or non-ionizing radiation such as radio frequencies and infrared, ultraviolet or visible light that may affect health adversely.	ESDC: CH, O*NET, GoC: CCOHS
Skin Injury	The worker is exposed to the risks of minor burns, cuts, bites, or stings.	O*NET
Sound and Noise <sup>xxxviii</sup>	The worker is exposed to sound and noise levels that are distracting or uncomfortable.	ESDC: CH, O*NET, GoC: CCOHS, SSA
Specialized Safety Equipment <sup>xxxix</sup>	The job requires wearing specialized protective or safety equipment such as breathing apparatus, safety harness, full protection suits, or radiation protection.	O*NET

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Categories, Sub-categories, Descriptors	Definitions	Descriptors Sources Abbreviations
Standard Safety Equipment <sup>xi</sup>	The job requires wearing common protective or safety equipment such as safety shoes, glasses, gloves, hard hats or life jackets.	O*NET
Vibration	The worker is exposed to oscillating or quivering motion of the body while performing tasks (e.g., while operating a jackhammer).	ESDC: CH, O*NET, SSA
<b>Physical Demands</b>	<i>The physical activities the job requires the worker to do.</i>	
Bending or Twisting the Body	The job requires leaning forwards or backwards or moving the body torsionally.	O*NET
Carrying	The job requires holding things while moving.	GoC: CCOHS, SSA
Climbing	The job requires going up and down ladders, scaffolds, or poles.	O*NET
Cramped Work Space, Awkward Positions	The job requires working in confined space that requires getting into uncomfortable positions.	O*NET
Crawling	The job requires moving in a prone position, with the body resting on or close to the ground, on the hands and knees.	ESDC: CH, O*NET, SSA
Crouching	The job requires powering the body stance by bending the legs.	ESDC: CH, O*NET, SSA
Handling Material Manually <sup>xii</sup>	The job requires using your hands to handle, control, or feel objects, tools or controls.	O*NET
Keeping or Regaining Balance	The job requires maintaining your body in a steady position or recovering balance.	O*NET
Keyboarding	The job requires using a panel of keys for typing on an electronic device or computer.	SSA
Kneeling	The job requires positioning the body so that one or both knees rest on the floor.	ESDC: CH, O*NET, SSA
Lifting	The job requires raising an object using the hands and arms.	GoC: CCOHS, SSA
Making Repetitive Motions	The job requires repeating the same movement.	O*NET
Pulling	The job requires taking hold of an object to move it toward oneself.	GoC: CCOHS, SSA
Pushing	The job requires exerting force in order to move an object forward.	GoC: CCOHS, SSA
Reaching	The job requires extending an arm in order to grasp or touch an object.	GoC: CCOHS, SSA
Sitting	The job requires being in a position in which one's weight is supported by one's buttocks rather than one's feet.	ESDC: CH, O*NET
Speaking	The job requires conveying information or expressing one's thought in spoken language.	SSA
Standing	The job requires maintaining an upright position supported by one's feet.	ESDC: CH, O*NET
Stooping	The job requires standing or walking with an inclination of the head, body, or shoulders.	ESDC: CH, O*NET, SSA
Visual Acuity	The job requires distinguishing fine details on things or in the environment.	SSA
Walking and Running	The job requires lifting and setting down each foot in turn, in order to move forward at a certain pace.	O*NET
<b>Interpersonal Relations<sup>xiii</sup></b>	<i>The human interactions required to perform the job.</i>	

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Categories, Sub-categories, Descriptors	Definitions	Descriptors Sources Abbreviations
Conflict Situations <sup>xliii</sup>	The worker is exposed to the possibility of facing conflict situations.	O*NET
Contact With Others	The job requires to be in contact with others (face-to-face, by telephone, or otherwise) in order to perform tasks.	O*NET
Coordinating or Leading Others	The job requires organizing and guiding others in accomplishing work activities.	O*NET
Deal With External Customers	The job requires working with members outside of the organization, including clients and members of the public.	O*NET
Deal With Physically Aggressive People	The job requires dealing with individuals that have violent behaviour.	O*NET
Dealing With Unpleasant or Angry People	The job requires dealing with disagreeable, furious or discourteous individuals.	O*NET
Electronic Mail	The job requires using an electronic written communication software to send messages.	O*NET
Face-to-Face Discussions	The job requires having in-person discussions with individuals or teams.	O*NET
Letters and Memos	The job requires producing administrative written communications.	O*NET
Public Speaking	The job requires delivering speeches to an audience.	O*NET
Responsibility for Outcomes and Results	The job requires assuming the responsibility for the end product and effects of other workers' work.	O*NET
Responsible for Others' Health and Safety	The job requires ensuring the health and security of others.	O*NET
Telephone	The job requires having telephone conversations.	O*NET
Videoconference	The job requires having videoconference meetings and conversation.	
Work With Work Group or Team	The job requires working with others in a group or team.	O*NET
<b>Work Values</b>	<i>Global aspects of work that are important to a person's satisfaction.</i>  <i>Note: This section is under review</i>	
Achievement	Occupations that satisfy this work value are results oriented and allow employees to use their strongest abilities, giving them a feeling of accomplishment. Corresponding needs are ability utilization and achievement.	O*NET
Independence	Occupations that satisfy this work value allow employees to work on their own and make decisions. Corresponding needs are creativity, responsibility and autonomy.	O*NET
Recognition	Occupations that satisfy this work value offer advancement, potential for leadership, and are often considered prestigious. Corresponding needs are advancement, authority, recognition and social status.	O*NET
Relationships	Occupations that satisfy this work value allow employees to provide service to others and work with co-workers in a friendly non-competitive environment. Corresponding needs are co-workers, moral values and social service.	O*NET

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Categories, Sub-categories, Descriptors	Definitions	Descriptors Sources Abbreviations
Support	Occupations that satisfy this work value offer supportive management that stands behind employees. Corresponding needs are company policies, supervision of human relations and technical supervision.	O*NET
Working conditions	Occupations that satisfy this work value offer job security and good working conditions. Corresponding needs are activity, compensation, independence, security, variety and working conditions.	O*NET
<b>Work Activities</b>	<i>General types of work-related activities.</i>	
<b>Information Input</b>	<i>Obtaining information and data needed to fulfill the requirements of the job.</i>	
Document Use <sup>xliv</sup>	Read, understand, retain and use relevant information from texts, numbers, symbols, graphics and images in electronic or paper format.	ESDC: ES
Estimating the Quantifiable Characteristics of Products, Events, or Information	Estimating sizes, distances, and quantities; or determining time, costs, resources, or materials needed to perform a work activity.	O*NET
Getting Information	Observing, receiving or obtaining information from all relevant sources.	O*NET
Identifying Objects, Actions, and Events	Identifying information by categorizing, estimating, recognizing differences or similarities, and detecting changes in circumstances or events.	O*NET
Inspecting Equipment, Structures, or Material	Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects.	O*NET
Material Feeding – Offbearing	Inserting, throwing, dumping or placing materials in or removing them from machines or equipment that are automatic or operated by other workers.	ESDC: CH
Monitoring Processes, Materials, or Surroundings	Tracking and reviewing information from materials, events, or the environment, to detect or assess problems and progress.	O*NET
<b>Work Output</b>	<i>The physical activities that are performed, equipment and vehicles that are operated/controlled, and the complex/technical activities that are accomplished as job outputs.</i>	
Calculating	Performing, interpreting and reporting mathematical operations as part of work tasks.	ESDC: CH
Constructing	Shaping, forming and joining building materials into a structure, or product according to specifications and plans.	ESDC: S&K
Controlling <sup>xlv</sup>	Using either control mechanisms or direct physical activity to operate machines or processes (not including computers or vehicles).	O*NET
Debugging and Reprogramming	Modifying systems through upgrading, amending procedures, or correcting faults.	ESDC: S&K
Designing	Creating a drawing or a plan to meet a design objective, while taking aesthetic or functional aspects or constraints into account.	ESDC: S&K
Developing Technical Instructions <sup>xlvi</sup>	Providing documentation, detailed instructions, drawings, or specifications to tell others about how devices, parts, equipment, or structures are to be fabricated, constructed, assembled, modified, maintained, or used.	O*NET

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Categories, Sub-categories, Descriptors	Definitions	Descriptors Sources Abbreviations
Documenting Information <sup>xlvii</sup>	Entering, transcribing, recording, storing, or maintaining all types of information in written or electronic form.	ESDC: ES, O*NET
Electronic Maintenance <sup>xlviii</sup>	Servicing, repairing, calibrating, regulating, fine-tuning, or testing machines, devices, and equipment that operate primarily on the basis of electrical or electronic (not mechanical) principles.	O*NET
Finishing Building Interior/Exterior	Applying interior and exterior finishes manually or mechanically.	ESDC: S&K
Following instructions	Reading and understanding instructions or information necessary to perform work.	ESDC: CH
Handling and Moving Objects	Using hands and arms to control, install, stack, position, and move materials, and to manipulate things.	ESDC: CH, S&K, O*NET, GoC: CCOHS
Information Management	Setting up manual or electronic systems for controlling, selecting, organizing, retrieving, distributing and safeguarding information.	FYA
Installing Interior Infrastructure	Assembling, placing and testing interior building systems and their components.	ESDC: S&K
Interacting with Computers	Using computers and computer systems (including hardware and software) to program, write software, set up functions, enter data, or process information.	O*NET
Managing Resources <sup>xlix</sup>	Monitoring and controlling any kind of resources and overseeing the spending of money.	O*NET
Mechanical Maintenance <sup>l</sup>	Servicing, repairing, adjusting, and testing machines, devices, moving parts, and equipment that operate primarily on the basis of mechanical (not electronic) principles.	ESDC, O*NET
Operating – Manipulating	Using tools or special devices to move, guide, install and place objects or materials.	ESDC: CH
Operating Vehicles, Mechanized Devices, or Equipment	Manoeuvring, navigating, or driving vehicles or mechanized equipment, such as forklifts, passenger vehicles, aircraft, or water craft.	ESDC, O*NET
Processing Information	Compiling, categorizing, calculating, tabulating, auditing, or verifying information or data.	ESDC: CH, O*NET
Sorting	Handling, retrieving, sorting, separating or arranging materials or informations, according to established patterns or procedures.	ESDC: S&K
Writing	Writing or composing original material with regard to format, order, clarity, conciseness, style, terminology and creativity.	ESDC: S&K
<b>Mental Processes</b>	<i>The processing, planning, problem-solving, decision-making, and innovating activities that are performed with job-relevant information.</i>	
Analyzing Data or Information	Identifying the underlying principles, reasons, or facts of information by breaking down information or data into separate parts.	ESDC, O*NET
Comparing	Determining the functional or structural characteristics (in terms of similarities or differences from established standards) of data, people and things.	ESDC: CH
Developing Objectives and Strategies	Establishing long-range objectives and specifying the strategies and actions to achieve them.	O*NET

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Categories, Sub-categories, Descriptors	Definitions	Descriptors Sources Abbreviations
Evaluating Information to Determine Compliance with Standards	Using relevant information and individual judgment to determine whether events or processes comply with laws, regulations, or standards.	O*NET
Examining and Diagnosing	Assessing the human, interpersonal, technical or scientific dimensions of a problem through examination or diagnostic testing in order to determine its root cause and appropriate intervention.	ESDC: S&K, CBoC: GISAT
Identifying resources	Identifying appropriate resources and support to perform tasks.	ON EDU
Judging the Qualities of Things, Services, or People	Assessing the value, importance, or quality of things, services or people.	O*NET
Making Decisions <sup>ii</sup>	Analyzing information and evaluating results to choose the best solution.	O*NET
Planning and Organizing <sup>iii</sup>	Developing specific goals and plans to prioritize and organize tasks to accomplish the work.	O*NET
Scheduling Work and Activities	Scheduling events, programs, and activities, as well as the work of others.	O*NET
Synthesize	Bringing various elements of knowledge concerning a particular field together in a coherent, structured and homogeneous whole.	ESDC: CH
Thinking Creatively	Developing, designing, or creating new applications, ideas, relationships, systems, or products, including artistic contributions.	O*NET
Using New Relevant Knowledge <sup>iii</sup>	Keeping up-to-date technically and applying new knowledge at work.	O*NET
<b>Interacting With Others</b>	<i>The type of interactions with other persons necessary to fulfill the requirements of the job.</i>	
Assisting and Caring for Others	Providing personal assistance, medical attention, emotional support, or other care to others such as coworkers, customers, or patients.	ESDC: CH, O*NET, S&K
Coaching and Developing Others	Identifying the developmental needs of others and coaching, mentoring, or otherwise helping others to improve their knowledge or skills.	O*NET
Communicating with Persons Outside Organization	Sharing or exchanging information with people outside the organization, representing the organization; to customers, the public, government, or other external sources.	O*NET
Communicating with Supervisors, colleagues, or Subordinates	Sharing and providing information to supervisors, co-workers, and subordinates.	O*NET
Coordinating the Work and Activities of Others	Getting members of a group to work together to accomplish tasks.	O*NET
Entertaining	Providing entertainment in one or more performing arts or sports.	ESDC: CH S&K
Establishing and Maintaining Interpersonal Relationships	Developing respectful, constructive and cooperative working relationships with others, and maintaining them over time.	ESDC: S&K, CBoC: GISAT
Facilitating Group Discussion	Diagnosing and intervening in group discussion in order to improve dialogue, decision making and problem solving.	

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Interpreting the Meaning of Information for Others	Translating or explaining what information means and how it can be used.	O*NET
Interviewing	Questioning someone in a formal way to collect information or to determine opinions.	ESDC: S&K
Performing Clerical Activities <sup>iv</sup>	Performing day-to-day administrative tasks such as maintaining information files and processing paperwork.	O*NET
Performing for or Working Directly with the Public	Working with or for the public. This includes serving customers in restaurants and stores, and receiving clients or guests.	O*NET
Providing Consultation and Advice	Providing guidance and expert advice to management or other groups on technical, systems, or process related topics.	ESDC: S&K, O*NET
Resolving Conflicts and Negotiating with Others	Handling complaints, settling disputes, and resolving grievances and conflicts, or otherwise negotiating with others.	ESDC: CH, O*NET
Selling or Influencing Others	Convincing others to buy goods or services, or to otherwise change their minds or actions.	ESDC: CH, O*NET
Staffing <sup>iv</sup>	Recruiting, interviewing, selecting, hiring, and promoting employees in an organization.	ESDC: S&K, O*NET
Supervising Subordinates <sup>vi</sup>	Providing guidance and direction to subordinates, including setting performance standards and monitoring performance.	ESDC: CH, S&K
Team Building	Encouraging and building mutual trust, respect, and cooperation among team members.	O*NET
Training and Teaching	Identifying the educational needs of others, developing formal educational or training programs or classes, and teaching or instructing others.	ESDC: CH, S&K, O*NET
<b>Service/Care Provision</b>	<i>The type of services that workers have to provide while performing this job.</i>	
Catering	Providing and serving a supply of food and beverage. This includes the preparation and cooking of food.	ESDC: S&K
Cleaning and House/Shop Keeping	Providing janitorial services.	ESDC: S&K
Client Service	Assisting the public by answering questions, making recommendations, and providing information or support in response to requests.	ESDC: S&K
Protecting and Enforcing	Responding to public safety and security needs and ensuring compliance to rules, standards or laws.	ESDC: S&K
Tending to Daily Needs	Responding to the personal care needs of people or animals.	ESDC: S&K
Treating People/Animals	Providing emergency care, therapy or other prescribed treatment for people and animals.	ESDC: S&K
<b>Tools and Technology<sup>vii</sup></b>	<i>Category of tools and technology used to perform tasks.</i>	UNSPSC

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<b>Building and Construction Machinery and Accessories</b>		UNSPSC
	Heavy construction machinery and equipment	UNSPSC
<b>Cleaning Equipment and Supplies</b>		UNSPSC
	Cleaning and janitorial supplies	UNSPSC
	Industrial laundry and dry cleaning equipment	UNSPSC
	Janitorial equipment	UNSPSC
	Water and wastewater treatment supply and disposal	UNSPSC
<b>Commercial and Private Vehicles and their Accessories and Components</b>		UNSPSC
	Aerospace systems and components and equipment	UNSPSC
	Aircraft	UNSPSC
	Marine transport	UNSPSC
	Motor vehicles	UNSPSC
	Non motorized cycles	UNSPSC
	Railway and tramway machinery and equipment	UNSPSC
	Spacecraft	UNSPSC
	Transportation services equipment	UNSPSC
	Vehicle bodies and trailers	UNSPSC
<b>Consumer Electronic Products</b>		UNSPSC
	Consumer electronics	UNSPSC
<b>Defense and Law Enforcement and Security and Safety Equipment and Supplies</b>		UNSPSC
	Fire protection	UNSPSC
	Law enforcement	UNSPSC
	Light weapons	UNSPSC
	Public safety and control	UNSPSC
	Security surveillance and detection	UNSPSC
<b>Distribution and Conditioning Systems and Equipment and Components</b>		UNSPSC
	Fluid and gas distribution	UNSPSC
	Heating and ventilation and air circulation	UNSPSC
	Industrial filtering and purification	UNSPSC
	Industrial pumps and compressors	UNSPSC
<b>Farming and Fishing and Forestry and Wildlife Machinery and Accessories</b>		UNSPSC
	Agricultural and forestry and landscape machinery and equipment	UNSPSC
	Fishing and aquaculture equipment	UNSPSC
<b>Industrial Manufacturing and Processing Machinery and Accessories</b>		UNSPSC
	Chicken processing machinery and equipment	UNSPSC
	Electronic manufacturing machinery and equipment and accessories	UNSPSC
	Foundry machines and equipment and supplies	UNSPSC
	Industrial food and beverage equipment	UNSPSC

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Industrial machine tools		UNSPSC
Industrial process machinery and equipment and supplies		UNSPSC
Lapidary machinery and equipment		UNSPSC
Leatherworking repairing machinery and equipment		UNSPSC
Mass transfer equipment		UNSPSC
Metal cutting machinery and accessories		UNSPSC
Metal forming machinery and accessories		UNSPSC
Metal treatment machinery		UNSPSC
Petroleum processing machinery		UNSPSC
Rapid prototyping machinery and accessories		UNSPSC
Raw materials processing machinery		UNSPSC
Sawmilling and lumber processing machinery and equipment		UNSPSC
Textile and fabric machinery and accessories		UNSPSC
Welding and soldering and brazing machinery and accessories and supplies		UNSPSC
<b>Information Technology Broadcasting and Telecommunications</b>		UNSPSC
Communications Devices and Accessories		UNSPSC
Computer Equipment and Accessories		UNSPSC
Data Voice or Multimedia Network Equipment or Platforms and Accessories		UNSPSC
Software		UNSPSC
<b>Laboratory and Measuring and Observing and Testing Equipment</b>		UNSPSC
Laboratory and scientific equipment		UNSPSC
Measuring and observing and testing instruments		UNSPSC
<b>Material Handling and Conditioning and Storage Machinery and their Accessories and Supplies</b>		UNSPSC
Material handling machinery and equipment		UNSPSC
Packing supplies		UNSPSC
<b>Medical Equipment and Accessories and Supplies</b>		UNSPSC
Clinical nutrition		UNSPSC
Dental equipment and supplies		UNSPSC
Dialysis equipment and supplies		UNSPSC
Emergency and field medical services products		UNSPSC
Intravenous and arterial administration products		UNSPSC
Medical diagnostic imaging and nuclear medicine products		UNSPSC
Medical facility products		UNSPSC
Medical sterilization products		UNSPSC
Medical training and education supplies		UNSPSC
Orthopedic and prosthetic and sports medicine products		UNSPSC
Patient care and treatment products and supplies		UNSPSC

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	Patient exam and monitoring products	UNSPSC
	Physical and occupational therapy and rehabilitation products	UNSPSC
	Postmortem and mortuary equipment and supplies	UNSPSC
	Respiratory and anesthesia and resuscitation products	UNSPSC
	Surgical products	UNSPSC
	Veterinary equipment	UNSPSC
	<b>Mining and Well Drilling Machinery and Accessories</b>	UNSPSC
	Mining and quarrying machinery and equipment	UNSPSC
	Oil and gas drilling and exploration equipment	UNSPSC
	Oil and gas operating and production equipment	UNSPSC
	Well drilling and operation equipment	UNSPSC
	<b>Musical Instruments and Games and Toys and Arts and Crafts and Accessories and Supplies</b>	UNSPSC
	Arts and crafts equipment and accessories and supplies	UNSPSC
	Musical Instruments and accessories	UNSPSC
	Toys and games	UNSPSC
	<b>Office Equipment and Accessories and Supplies</b>	UNSPSC
	Office and desk accessories	UNSPSC
	Office machines and their supplies and accessories	UNSPSC
	Office supplies	UNSPSC
	<b>Power Generation and Distribution Machinery and Accessories</b>	UNSPSC
	Atomic and nuclear energy machinery and equipment	UNSPSC
	Batteries and generators and kinetic power transmission	UNSPSC
	Power generation	UNSPSC
	Power sources	UNSPSC
	<b>Printing and Photographic and Audio and Visual Equipment and Supplies</b>	UNSPSC
	Audio and visual presentation and composing equipment	UNSPSC
	Photographic filmmaking supplies	UNSPSC
	Photographic or filming or video equipment	UNSPSC
	Printing and publishing equipment	UNSPSC
	<b>Sports and Recreational Equipment and Supplies and Accessories</b>	UNSPSC
	Field and court sports equipment	UNSPSC
	Fishing and hunting equipment	UNSPSC
	Fitness equipment	UNSPSC
	Gymnastics and boxing equipment	UNSPSC
	Other sports	UNSPSC
	Target and table games and equipment	UNSPSC
	Watersports equipment	UNSPSC
	Winter sports equipment	UNSPSC

*The Skills and Competencies Taxonomy presented here is only the first iteration. The Taxonomy is an ever-green product subject to on-going revisions. Displayed here is the August 2019 version.*

Categories, Sub-categories, Descriptors	Definitions	Descriptors Sources Abbreviations
<b>Tools and General Machinery</b>		UNSPSC
Automotive specialty tools		UNSPSC
Hand tools		UNSPSC
Hydraulic machinery and equipment		UNSPSC
Pneumatic machinery and equipment		UNSPSC

*The Skills and Competencies Taxonomy presented here is only the first iteration. The Taxonomy is an ever-green product subject to on-going revisions. Displayed here is the August 2019 version.*

## Appendix B. The Essential Skills Framework

All the Essential Skills components listed below are captured in the ESDC Skills and Competencies Taxonomy.

*Note:* The Office of Literacy and Essential Skills (OLES), ESDC, is undertaking the task of renewing the Essential Skills Framework in 2019-20, with particular attention to 'soft skills' (e.g., oral communication, working with others). Discussions with key stakeholders will result in recommendations for a renewal of the ES framework.

Essential Skills	Essential skills provide the foundation for learning all other skills and enable people to better prepare for, get and keep a job, and adapt and succeed at work.
Descriptors	Definitions
<b>Continuous Learning</b> <i>(appears as one of 4 dimensions of "Learning" in the Taxonomy and is under Personal Abilities and Attributes/Personal Qualities)</i>	Continuous learning refers to the skills needed to continually develop and improve one's skills and knowledge in order to work effectively and adapt to changes.
<b>Digital Technology</b>	Digital technology refers to the skills needed to understand and use digital systems, tools and applications, and to process digital information.
<b>Document Use</b>	Document use refers to the skills needed to find, enter and use letters, numbers, symbols and images in electronic and paper formats.
<b>Numeracy</b> <i>(sub-components appear as distinct descriptors in the Taxonomy)</i>	Numeracy refers to the skills needed to make sense of and apply mathematical concepts and information.
<b>Oral Communication</b> <i>(appears as Oral Communication: Oral Expression, Oral Comprehension, and Active Listening in the Taxonomy)</i>	Oral communication refers to the skills needed to exchange thoughts and information with other people by speaking, listening and using non-verbal cues, such as body language.
<b>Reading</b>	Reading refers to the skills needed to understand and apply information found in sentences and paragraphs.
<b>Thinking: Critical Thinking</b> <i>(appears as Critical Thinking under Skills/Analytical Skills in the Taxonomy)</i>	Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
<b>Thinking: Decision Making</b> <i>(appears as Decision Making under Skills/Analytical Skills in the Taxonomy)</i>	Decision making refers to making a choice among options.
<b>Thinking: Finding information</b> <i>(appears as Getting Information under Work Activities/ Information Input in the Taxonomy)</i>	Finding Information involves using any of a variety of sources including text, people, computerized databases or information systems.
<b>Thinking: Job task planning and organizing</b> <i>(appears as Job Task Planning and Organizing under Skills/ Resource Management Skills in the Taxonomy)</i>	Job task planning and organizing refers to the extent to which the workers plan and organize their own tasks. It does not refer to involvement in the planning function for the organization in which they work.

Essential Skills	Essential skills provide the foundation for learning all other skills and enable people to better prepare for, get and keep a job, and adapt and succeed at work.
<i>Descriptors</i>	<i>Definitions</i>
<b>Thinking: Problem solving</b> <i>(appears as Problem Solving under Skills/Analytical Skills in the Taxonomy)</i>	Identifying problems and reviewing related information to develop and evaluate options and implement solutions.
<b>Thinking: Significant Use of Memory</b> <i>(appears as Memorization under Personal Abilities and Attributes/ Cognitives Abilities in the Taxonomy)</i>	Significant use of memory includes any significant or unusual use of memory for workers in the occupational group. It does not include normal memory use that is a requirement for every occupation.
<b>Working with others</b>	Working with others refers to the skills needed to interact with other people (one or more).
<b>Writing</b>	Writing refers to the skills needed to compose handwritten or typed text to communicate information and ideas.

## End Notes

- <sup>i</sup> This descriptor comes from ESDC's Office of Literacy and Essential Skills.
- <sup>ii</sup> This descriptor comes from ESDC's Office of Literacy and Essential Skills.
- <sup>iii</sup> This descriptor comes from ESDC's Office of Literacy and Essential Skills.
- <sup>iv</sup> This descriptor is a component of the Essential Skill – Oral Communication. In order to ensure specificity and mutual exclusivity throughout the Taxonomy, the Essential Skill “Oral Communication” is spread out across the three descriptors for Oral Communication in the Taxonomy: “Active Listening”, “Oral Comprehension”, and “Oral expression”.
- <sup>v</sup> This descriptor is a component of the Essential Skill – Oral Communication. In order to ensure specificity and mutual exclusivity throughout the Taxonomy, the Essential Skill “Oral Communication” is spread out across the three descriptors for Oral Communication in the Taxonomy: “Active Listening”, “Oral Comprehension”, and “Oral expression”.
- <sup>vi</sup> This is a component of the Essential Skill – Oral Communication. In order to ensure specificity and mutual exclusivity throughout the Taxonomy, the Essential Skill “Oral Communication” is spread out across the three descriptors for Oral Communication in the Taxonomy: “Active Listening”, “Oral Comprehension”, and “Oral expression”.  

While nonverbal communication is not explicitly referenced in the Essential Skill Oral Communication, the definition supposes the use of nonverbal encoding and decoding practices. Nonverbal encoding is understood as: “Consciously applying/utilising nonverbal communication, which includes body language (kinesics), distance (proxemics), voice (paralanguage), and touch (haptics), to convey information.” Nonverbal decoding is understood as: “Reading and interpreting nonverbal communication, which includes body language (kinesics), distance (proxemics), voice (paralanguage), and touch (haptics).”
- <sup>vii</sup> This descriptor is a component of the Essential Skill Framework. One of the outstanding challenges of the taxonomy is the integration of the digital skill concept. In doing so, ESDC is conducting a number of activities in order to perfect its taxonomy for instance by performing the secretariat role for the Sub-Working Group on Classification of Skills & Competencies, of the ISED-ESDC-Statistics Canada Working Group on Skills and Talent. The Sub-Working Group is currently exploring the terms, definitions and placement of digital skills in the Taxonomy.
- <sup>viii</sup> This descriptor is a component of the Essential Skill – Thinking, which comes from ESDC's Office of Literacy and Essential Skills.
- <sup>ix</sup> This descriptor is a component of the Essential Skill – Thinking, which comes from ESDC's Office of Literacy and Essential Skills.
- <sup>x</sup> This descriptor is a component of the Essential Skill – Thinking, which comes from ESDC's Office of Literacy and Essential Skills.
- <sup>xi</sup> This descriptor will remain in this sub-category pending further review by the Interdepartmental Sub Working Group on the Classification of Skills and Competencies (including digital skills).
- <sup>xii</sup> “Aptitudes” and “abilities” are understood as synonyms by professionals in career and vocational counselling. For the purpose of consistency, the Taxonomy uses the term “Abilities”.
- <sup>xiii</sup> “Memorization” covers “Significant Use of Memory” (Essential Skills descriptor).
- <sup>xiv</sup> O\*NET uses the descriptor title “Time Sharing”. For the purpose of the taxonomy, this title was changed to “Multitasking”.
- <sup>xv</sup> O\*NET defines this terms as “Speed of Closure”. For the purpose of the taxonomy, this title was changed to “Pattern Organization Speed”.
- <sup>xvi</sup> Spatial Perception (General Aptitude Test Battery descriptor) was considered to include the component of Visualisation (O\*NET descriptor) for this Taxonomy, as visualisation is understood as a component of spatial perception.
- <sup>xvii</sup> Verbal ability is understood as a precursor to oral communication (seen as the “potential” a client has to be able to effectively communicate).
- <sup>xviii</sup> O\*NET uses the descriptor title “Extent Flexibility”. For the purpose of the taxonomy, this title was changed to “Body Flexibility”.

- xix O\*NET uses the descriptor title “Achievement/Effort”. For the purpose of the taxonomy, this title was changed to “Achievement”.
- xx For the purpose of the taxonomy this O\*NET definition was adapted to include the component of “Clerical Perception”, as defined by the Career Handbook. (Ability to perceive pertinent detail in verbal or tabular material; to observe differences in copy, to proofread words and numbers, and to avoid perceptual errors in arithmetical computation).
- xxi O\*NET uses the descriptor title “Originality”. For the purpose of the taxonomy, the title was changed to “Creativity”.
- xxii Emotional Intelligence (EI) as defined by Daniel Goleman (1998) consists of five skills/personal attributes listed in this Taxonomy: Self-awareness, Self-regulation, Social, Empathy, and Motivation. For the purpose of the taxonomy, the component of Empathy was added to the definition of “Concern for Others”.
- xxiii This descriptor comes from ESDC’s Office of Literacy and Essential Skills.
- xxiv O\*NET uses the descriptor title “Persistence”. For the purpose of the taxonomy, the title was changed to “Perseverance”.
- xxv This descriptor includes the concept of stress management.
- xxvi Knowledge category contains descriptors based on the Classification of Instructional Programs Canada (CIP Canada) 2016 modified with information from the US O\*NET system, Skills and Knowledge Checklist and PISA Science Performance.
- xxvii The definitions provided for the Holland codes were inspired from the ones proposed by Holland in *Making Vocational Choices: a Theory of Careers* (1997), Prentice Hall, New Jersey, pp. 29-33. O\*NET’s definitions for RIASEC codes were consulted.
- The Holland codes are not presented in alphabetical order to respect the R-I-A-S-E-C sequence and the relationships between the six elements, as represented in Holland’s hexagon.
- xxviii O\*NET uses the descriptor title “Degree of Automation”. For the purpose of the taxonomy, the title was changed to “Automation”.
- xxix O\*NET uses the descriptor title “Level of Competition”. For the purpose of the taxonomy, the title was changed to “Competition”.
- xxx O\*NET uses the descriptor title “Impact of Decisions on Co-workers or Company Results’. For the purpose of the taxonomy, the title was changed to “Impact of Decisions”.
- xxxi O\*NET uses the descriptor title “Importance of Being Exact or Accurate”. For the purpose of the taxonomy, the title was changed to “Precision”.
- xxxii O\*NET uses the descriptor title “Importance of Repeating Same Tasks”. For the purpose of the taxonomy, the title was changed to “Tasks Repetition”.
- xxxiii O\*NET uses the descriptor title “Work Schedules/Shiftwork”. For the purpose of the taxonomy, the title was changed to “Type of Work Schedule”.
- xxxiv O\*NET uses the descriptor title “Duration of Typical Work Week”. For the purpose of the taxonomy, the title was changed to “Work Week Duration”.
- xxxv O\*NET uses the descriptor title “Very Hot or Cold Temperatures”. For the purpose of the taxonomy, the title was changed to “Extreme Temperatures”.
- xxxvi O\*NET uses the descriptor title “Outdoor, Exposed to Weather”. For the purpose of the taxonomy, the title was changed to “Outside, Exposed to Weather”.
- xxxvii O\*NET uses the descriptor title “Outdoor, Under Cover”, which was, for the purpose of the taxonomy, changed to “Outside, Under Cover”.
- xxxviii O\*NET uses the descriptor title “Sounds, Noise Levels Are Distracting or Uncomfortable”. For the purpose of the taxonomy, the title was changed to “Sound and Noise”.
- xxxix O\*NET uses the descriptor title “Wear Specialized Protective or Safety Equipment such as Breathing Apparatus, Safety Harness, Full Protection Suits, or Radiation Protection”. For the purpose of the taxonomy, the title was changed to “Specialized Safety Equipment”.



- xi O\*NET uses the descriptor title “Wear Common Protective or Safety Equipment such as Safety Shoes, Glasses, Gloves, Hearing Protection, Hard Hats, or Life Jackets”. For the purpose of the taxonomy, the title was changed to “Standard Safety Equipment”.
- xii O\*NET uses the descriptor title “Using Your Hands to Handle, Control, or Feel Objects, Tools”. For the purpose of the taxonomy, the title was changed to “Handling Material Manually”.
- xliii O\*NET uses the category title “Interpersonal Relationship”. For the purpose of the taxonomy, the title was changed to “Interpersonal Relations”.
- xliv O\*NET uses the descriptor title “Frequency of Conflict Situations”. For the purpose of the taxonomy, the title was changed to “Conflict Situations”.
- xlv This descriptor comes from ESDC’s Office of Literacy and Essential Skills.
- xlvi O\*NET uses the descriptor title “Controlling Machine and Processes”. For the purpose of the taxonomy, the title was changed to “Controlling”.
- xlvii O\*NET uses the descriptor title “Drafting, Laying Out, and Specifying Technical Devices, Parts, and Designing Technical Equipment”. For the purpose of the taxonomy, the title was changed to “Developing Technical Instructions”.
- xlviii O\*NET uses the descriptor title “Recording Information”. For the purpose of the taxonomy, the title was changed to “Documenting Information”.
- l O\*NET uses the descriptor title “Repairing and Maintaining Electronic Equipment”. For the purpose of the taxonomy, the title was changed to “Electronic Maintenance”.
- li O\*NET uses the descriptor title “Monitoring and controlling resources and overseeing the spending of money”. For the purpose of the taxonomy, the title was changed to “Managing Resources”.
- lii O\*NET uses the descriptor title “Repairing and Maintaining Mechanical Equipment”. For the purpose of the taxonomy, the title was changed to “Mechanical Maintenance”.
- liii O\*NET uses the descriptor title “Making Decisions and Solving Problems”. For the purpose of the taxonomy, the title was changed to “Making Decisions”.
- liiii O\*NET uses the descriptor title “Organizing, Planning and Prioritizing Work”. For the purpose of the taxonomy, the title was changed to “Planning and Organizing”.
- liiii O\*NET uses the descriptor title “Updating and Using Relevant Knowledge”. For the purpose of the taxonomy, the title was changed to “Using New Relevant Knowledge”.
- liiii O\*NET uses the descriptor title “Performing Administrative Activities”. For the purpose of the taxonomy, the title was changed to “Performing Clerical Activities”.
- liiii O\*NET uses the descriptor title “Staffing Organizational Units”. For the purpose of the taxonomy, the title was changed to “Staffing”.
- liiii O\*NET uses the descriptor title “Guiding, Directing, and Motivating Subordinates”. For the purpose of the taxonomy, the title was changed to “Supervising Subordinates”.
- liiii The Tools and Technology category is based on the United Nations Standard Products and Services Code (UNSPSC).