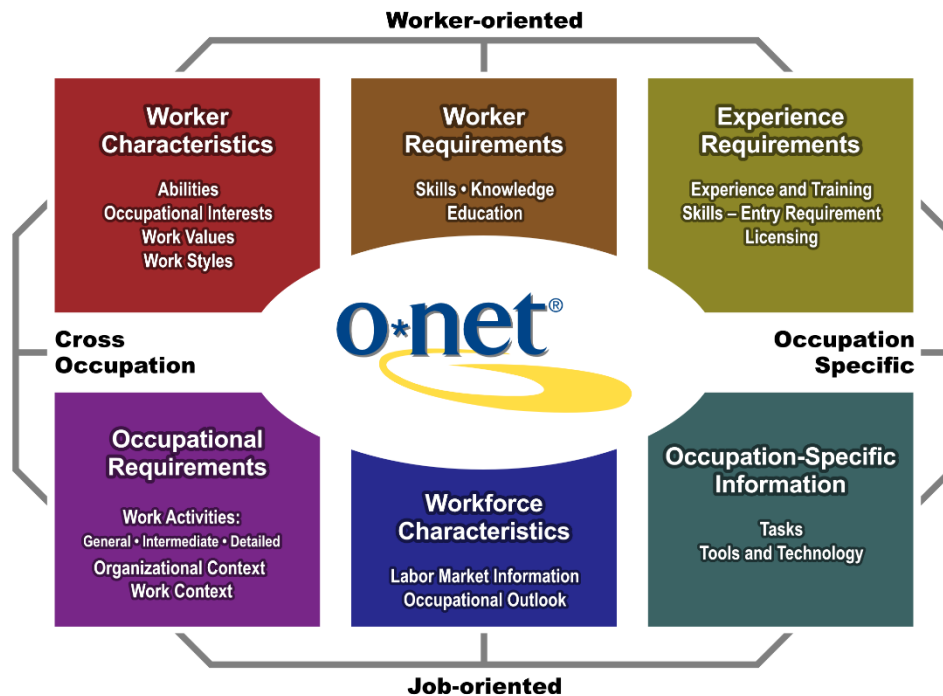# The O*NET® Content Model

Detailed Outline

The Content Model is the conceptual foundation of O*NET. The Content Model provides a framework that identifies the most important types of information about work and integrates them into a theoretically and empirically sound system.

The Content Model was developed using research on job and organizational analysis. It embodies a view that reflects the character of occupations (via job-oriented descriptors) and people (via worker-oriented descriptors). The Content Model also allows occupational information to be applied across jobs, sectors, or industries (cross-occupational descriptors) and within occupations (occupational-specific descriptors). These descriptors are organized into six major domains, which enable the user to focus on areas of information that specify the key attributes and characteristics of workers and occupations.

Worker Characteristics — enduring characteristics that may influence both work performance and the capacity to acquire knowledge and skills required for effective work performance.

Worker characteristics comprise enduring qualities of individuals that may influence how they approach tasks and how they acquire work-relevant knowledge and skills. Traditionally, analyzing abilities has been the most common technique for comparing jobs in terms of worker characteristics. However, recent research supports the inclusion of other types of worker characteristics. In particular, interests, values, and work styles have received support in the organizational literature. Interests and values reflect preferences for work environments and outcomes. Work style variables represent typical procedural differences in the way work is performed.

- Abilities — Enduring attributes of the individual that influence performance
    - Cognitive Abilities
        - Verbal Abilities
            - Oral Comprehension
            - Written Comprehension
            - Oral Expression
            - Written Expression
        - Idea Generation and Reasoning Abilities
            - Fluency of Ideas
            - Originality
            - Problem Sensitivity
            - Deductive Reasoning
            - Inductive Reasoning
            - Information Ordering
            - Category Flexibility
        - Quantitative Abilities
            - Mathematical Reasoning
            - Number Facility
        - Memory
            - Memorization
        - Perceptual Abilities
            - Speed of Closure
            - Flexibility of Closure
            - Perceptual Speed
        - Spatial Abilities
            - Spatial Orientation
            - Visualization
        - Attentiveness
            - Selective Attention
            - Time Sharing
    - Psychomotor Abilities
        - Fine Manipulative Abilities
            - Arm-Hand Steadiness
            - Manual Dexterity
            - Finger Dexterity
        - Control Movement Abilities
            - Control Precision
            - Multilimb Coordination
            - Response Orientation
            - Rate Control
        - Reaction Time and Speed Abilities
            - Reaction Time
            - Wrist-Finger Speed

- Speed of Limb Movement
- Physical Abilities
- Physical Strength Abilities
  - Static Strength
  - Explosive Strength
- Dynamic Strength
- Trunk Strength
- Endurance
  - Stamina
- Flexibility, Balance, and Coordination
  - Extent Flexibility
  - Dynamic Flexibility
  - Gross Body Coordination
  - Gross Body Equilibrium
- Sensory Abilities
  - Visual Abilities
    - Near Vision
    - Far Vision
    - Visual Color Discrimination
    - Night Vision
    - Peripheral Vision
    - Depth Perception
    - Glare Sensitivity
  - Auditory and Speech Abilities
    - Hearing Sensitivity
    - Auditory Attention
    - Sound Localization
    - Speech Recognition
    - Speech Clarity

- Occupational Interests — Preferences for work environments. Occupational Interest Profiles (OIPs) are compatible with Holland's (1985, 1997) model of personality types and work environments.
  - Realistic
  - Investigative
  - Artistic
  - Social
  - Enterprising
  - Conventional

- Work Values — Global aspects of work composed of specific needs that are important to a person's satisfaction. Occupational Reinforcer Patterns (ORPs) are based on the Theory of Work Adjustment (Dawis & Lofquist, 1984).
  - Achievement
    - Ability Utilization
    - Achievement

- Working Conditions
  - Activity
  - Independence
  - Variety
  - Compensation
  - Security
  - Working Conditions
- Recognition
  - Advancement
  - Recognition
  - Authority
  - Social Status
- Relationships
  - Co-workers
  - Social Service
  - Moral Values
- Support
  - Company Policies and Practices
  - Supervision, Human Relations
  - Supervision, Technical
- Independence
  - Creativity
  - Responsibility
  - Autonomy

- Work Styles — Personal characteristics that can affect how well someone performs a job.
  - Achievement Orientation
    - Achievement/Effort
    - Persistence
    - Initiative
  - Social Influence
    - Leadership
  - Interpersonal Orientation
    - Cooperation
    - Concern for Others
    - Social Orientation
  - Adjustment
    - Self Control
    - Stress Tolerance
    - Adaptability/Flexibility
  - Conscientiousness
    - Dependability
    - Attention to Detail

- Integrity
- Independence
- Practical Intelligence
  - Innovation
  - Analytical Thinking

Primary occupational information source for Content Model items:
U.S. Department of Labor O*NET Data Collection Program

Supplemental sources of information:	
U.S. Department of Labor Bureau of Labor Statistics	U.S. Department of Labor CareerOneStop
U.S. Department of Labor Office of Apprenticeship	U.S. Department of Education Classification of Instructional Programs

Other indicators:
Not collected by federal sources

Worker Requirements — descriptors referring to work-related attributes acquired and/or developed through experience and education.

Worker requirements represent developed or acquired attributes of an individual that may be related to work performance such as work-related knowledge and skill. Knowledge represents the acquisition of facts and principles about a domain of information. Experience lays the foundation for establishing procedures to work with given knowledge. These procedures are more commonly known as skills. Skills may be further divided into basic skills and cross-functional skills. Basic skills, such as reading, facilitate the acquisition of new knowledge. Cross-functional skills, such as problem solving, extend across several domains of activities

- Basic Skills — Developed capacities that facilitate learning or the more rapid acquisition of knowledge
    - Content
        - Reading Comprehension
        - Active Listening
        - Writing
        - Speaking
        - Mathematics
        - Science
    - Process
        - Critical Thinking
        - Active Learning
        - Learning Strategies
        - Monitoring

- Cross-Functional Skills — Developed capacities that facilitate performance of activities that occur across jobs
    - Social Skills
        - Social Perceptiveness
        - Coordination
        - Persuasion
        - Negotiation
        - Instructing
        - Service Orientation
    - Complex Problem Solving Skills
        - Complex Problem Solving
    - Technical Skills
        - Operations Analysis
        - Technology Design
        - Equipment Selection
        - Installation
        - Programming
        - Operation Monitoring
        - Operation and Control
        - Equipment Maintenance

- Troubleshooting
- Repairing
- Quality Control Analysis
- Systems Skills
  - Judgment and Decision Making
  - Systems Analysis
  - Systems Evaluation
- Resource Management Skills
  - Time Management
  - Management of Financial Resources
  - Management of Material Resources
  - Management of Personnel Resources

- Knowledge — Organized sets of principles and facts applying in general domains
  - Business and Management
    - Administration and Management
    - Clerical
    - Economics and Accounting
    - Sales and Marketing
    - Customer and Personal Service
    - Personnel and Human Resources
  - Manufacturing and Production
    - Production and Processing
    - Food Production
  - Engineering and Technology
    - Computers and Electronics
    - Engineering and Technology
    - Design
    - Building and Construction
    - Mechanical
  - Mathematics and Science
    - Mathematics
    - Physics
    - Chemistry
    - Biology
    - Psychology
    - Sociology and Anthropology
    - Geography
  - Health Services
    - Medicine and Dentistry
    - Therapy and Counseling
  - Education and Training
  - Arts and Humanities

- English Language
- Foreign Language
- Fine Arts
- History and Archeology
- Philosophy and Theology
- Law and Public Safety
  - Public Safety and Security
  - Law and Government
- Communications
  - Telecommunications
  - Communications and Media
- Transportation

- Education — Prior educational experience required to perform in a job
  - Required Level of Education
  - Instructional Program Required
    Source: U.S. Department of Education, Classification of Instructional Programs
  - Education Level in Specific Subjects
    - Technical Vocational
    - Business Vocational
    - English/language Arts
    - Oral Communication
    - Languages
    - Basic Math
    - Advanced Math
    - Physical Science
    - Computer Science
    - Biological Science
    - Applied Science
    - Social Science
    - Arts
    - Humanities
    - Physical Education

Primary occupational information source for Content Model items:

U.S. Department of Labor
O*NET Data Collection Program

Supplemental sources of information:

U.S. Department of Labor
Bureau of Labor Statistics

U.S. Department of Labor
CareerOneStop

U.S. Department of Labor
Office of Apprenticeship

U.S. Department of Education
Classification of Instructional Programs

Other indicators:

Not collected by federal sources

Experience Requirements — requirements related to previous work activities and explicitly linked to certain types of work activities.

This domain includes information about the typical experiential backgrounds of workers in an occupation or group of occupations including certification, licensure, and training data. For example, information about the professional or organizational certifications required for entry and advancement in an occupation, preferred education or training, and required apprenticeships will be documented by this part of the model.

- Experience and Training — If someone were being hired to perform this job, how much of the following would be required?
    - Related Work Experience
    - On-Site or In-Plant Training
    - On-the-Job Training
    - Apprenticeship
      Source: U.S. Department of Labor, Office of Apprenticeship

- Basic Skills - Entry Requirement — Entry requirement for developed capacities that facilitate learning or the more rapid acquisition of knowledge
    - Content - Entry Requirement
        - Reading Comprehension - Entry Requirement
        - Active Listening - Entry Requirement
        - Writing - Entry Requirement
        - Speaking - Entry Requirement
        - Mathematics - Entry Requirement
        - Science - Entry Requirement
    - Process - Entry Requirement
        - Critical Thinking - Entry Requirement
        - Active Learning - Entry Requirement
        - Learning Strategies - Entry Requirement
        - Monitoring - Entry Requirement

- Cross-Functional Skills - Entry Requirement — Entry requirement for developed capacities that facilitate performance of activities that occur across jobs
    - Social Skills - Entry Requirement
        - Social Perceptiveness - Entry Requirement
        - Coordination - Entry Requirement
        - Persuasion - Entry Requirement
        - Negotiation - Entry Requirement
        - Instructing - Entry Requirement
        - Service Orientation - Entry Requirement
    - Complex Problem Solving Skills - Entry Requirement
        - Problem Identification - Entry Requirement
        - Information Gathering - Entry Requirement
        - Information Organization - Entry Requirement
        - Synthesis/Reorganization - Entry Requirement

- Idea Generation - Entry Requirement
- Idea Evaluation - Entry Requirement
- Implementation Planning - Entry Requirement
- Solution Appraisal - Entry Requirement
- Technical Skills - Entry Requirement
  - Operations Analysis - Entry Requirement
  - Technology Design - Entry Requirement
  - Equipment Selection - Entry Requirement
  - Installation - Entry Requirement
  - Programming - Entry Requirement
  - Testing - Entry Requirement
  - Operation Monitoring - Entry Requirement
  - Operation and Control - Entry Requirement
  - Product Inspection - Entry Requirement
  - Equipment Maintenance - Entry Requirement
  - Troubleshooting - Entry Requirement
  - Repairing - Entry Requirement
- Systems Skills - Entry Requirement
  - Visioning - Entry Requirement
  - Systems Perception - Entry Requirement
  - Identifying Downstream Consequences - Entry Requirement
  - Identification of Key Causes - Entry Requirement
  - Judgment and Decision Making - Entry Requirement
  - System Evaluation - Entry Requirement
- Resource Management Skills - Entry Requirement
  - Time Management - Entry Requirement
  - Management of Financial Resources - Entry Requirement
  - Management of Material Resources - Entry Requirement
  - Management of Personnel Resources - Entry Requirement

- Licensing — Licenses, certificates, or registrations that are awarded to show that a job holder has gained certain skills. This includes requirements for obtaining these credentials, and the organization or agency requiring their possession.
  - License, Certificate, or Registration Required
    Source: U.S. Department of Labor, CareerOneStop
  - Specific License or Certificate Required
    - Post-Secondary Degree
    - Graduate Degree
    - On-the-Job Training
    - Examination
    - Character References
  - Additional Education and Training
    Source: U.S. Department of Labor, CareerOneStop
  - Organization and Agency Requirements

- Legal Requirement
- Employer Requirement
- Union, Guild, or Professional Association

Primary occupational information source for Content Model items:	
U.S. Department of Labor O*NET Data Collection Program	
Supplemental sources of information:	
U.S. Department of Labor Bureau of Labor Statistics	U.S. Department of Labor CareerOneStop
U.S. Department of Labor Office of Apprenticeship	U.S. Department of Education Classification of Instructional Programs
Other indicators:	
Not collected by federal sources	

Occupation-Specific Information — variables or other Content Model elements of selected or specific occupations.

Occupation-specific information details a comprehensive set of elements that apply to a single occupation or a narrowly defined job family. This domain parallels other Content Model domains because it includes requirements such as work-related knowledge, skills, and tasks in addition to the machines, equipment, tools, software, and information technology workers may use in their workplace. Labor market information defined by the industry or occupation is also provided here. This domain is particularly important when developing specific applications of O*NET information. For example, it is necessary to refer to occupation-specific descriptive information to specify training, develop position descriptions, or redesign jobs.

Tasks — Occupation-Specific Tasks
- Task List

Tools and Technology — Machines, equipment, tools, software, and information technology workers may use for optimal functioning in a high performance workplace.
- Tools and Technology List

Primary occupational information source for Content Model items:

U.S. Department of Labor
O*NET Data Collection Program

Supplemental sources of information:

U.S. Department of Labor	U.S. Department of Labor
Bureau of Labor Statistics	CareerOneStop
U.S. Department of Labor	U.S. Department of Education
Office of Apprenticeship	Classification of Instructional Programs

Other indicators:

Not collected by federal sources

Workforce Characteristics — variables that define and describe the general characteristics of occupations that may influence occupational requirements.

Organizations do not exist in isolation. They must operate within a broader social and economic structure. To be useful, an occupational classification system must incorporate global contextual characteristics. O*NET provides this information by linking descriptive occupational information to statistical labor market information. This includes compensation and wage data, employment outlook, and industry size information. Much of this information is collected outside of O*NET program's immediate scope. Collaborative efforts with organizations such as the Bureau of Labor Statistics, the Department of Commerce, The Department of Defense, Career One Stop, The U. S. Bureau of the Census, and The Employment and Training Administration facilitate these labor market information linkages.

Labor Market Information — Current labor force characteristics of occupations

      Occupational Statistics
      Source: U.S. Department of Labor, Bureau of Labor Statistics

Occupational Outlook — Future labor force characteristics of occupations

      Occupational Projections
      Source: U.S. Department of Labor, Bureau of Labor Statistics

Primary occupational information source for Content Model items:	
U.S. Department of Labor O*NET Data Collection Program	
Supplemental sources of information:	
U.S. Department of Labor Bureau of Labor Statistics	U.S. Department of Labor CareerOneStop
U.S. Department of Labor Office of Apprenticeship	U.S. Department of Education Classification of Instructional Programs
Other indicators:	
Not collected by federal sources	

Occupational Requirements — a comprehensive set of variables or detailed elements that describe what various occupations require.

This domain includes information about typical activities required across occupations. Task information is often too specific to describe an occupation or occupational group. The O*NET approach is to identify generalized work activities (GWAs), intermediate work activities (IWAs) and detailed work activities (DWAs) to summarize the broad, intermediate, and more specific types of job behaviors and tasks that may be performed within multiple occupations. Using this framework makes it possible to use a single set of descriptors to describe many occupations. Contextual variables such as the physical, social, or structural context of work that may impose specific demands on the worker or activities are also included in this section.

- Generalized Work Activities — Work activities that are common across a very large number of occupations. They are performed in almost all job families and industries.
    - Information Input
        - Looking for and Receiving Job-Related Information
            - Getting Information
            - Monitor Processes, Materials, or Surroundings
        - Identify and Evaluating Job-Relevant Information
            - Identifying Objects, Actions, and Events
            - Inspecting Equipment, Structures, or Material
            - Estimating the Quantifiable Characteristics of Products, Events, or Information
    - Mental Processes
        - Information and Data Processing
            - Judging the Qualities of Things, Services, or People
            - Processing Information
            - Evaluating Information to Determine Compliance with Standards
            - Analyzing Data or Information
        - Reasoning and Decision Making
            - Making Decisions and Solving Problems
            - Thinking Creatively
            - Updating and Using Relevant Knowledge
            - Developing Objectives and Strategies
            - Scheduling Work and Activities
            - Organizing, Planning, and Prioritizing Work
    - Work Output
        - Performing Physical and Manual Work Activities
            - Performing General Physical Activities
            - Handling and Moving Objects
            - Controlling Machines and Processes
            - Operating Vehicles, Mechanized Devices, or Equipment
        - Performing Complex and Technical Activities
            - Interacting With Computers
            - Drafting, Laying Out, and Specifying Technical Devices, Parts, and Equipment

- Repairing and Maintaining Mechanical Equipment
- Repairing and Maintaining Electronic Equipment
- Documenting/Recording Information
- Interacting With Others
    - Communicating and Interacting
        - Interpreting the Meaning of Information for Others
        - Communicating with Supervisors, Peers, or Subordinates
        - Communicating with Persons Outside Organization
        - Establishing and Maintaining Interpersonal Relationships
        - Assisting and Caring for Others
        - Selling or Influencing Others
        - Resolving Conflicts and Negotiating with Others
        - Performing for or Working Directly with the Public
    - Coordinating, Developing, Managing, and Advising
        - Coordinating the Work and Activities of Others
        - Developing and Building Teams
        - Training and Teaching Others
        - Guiding, Directing, and Motivating Subordinates
        - Coaching and Developing Others
        - Provide Consultation and Advice to Others
    - Administering
        - Performing Administrative Activities
        - Staffing Organizational Units
        - Monitoring and Controlling Resources

- Intermediate Work Activities — Work activities that are common across many occupations. They are performed in many job families and industries.
    - Intermediate Work Activities List

- Detailed Work Activities — Specific work activities that are performed across a small to moderate number of occupations within a job family.
    - Detailed Work Activities List

- Organizational Context — Characteristics of the organization that influence how people do their work
    - Structural Characteristics
        - Organizational Structure
            - Decision Making System
                - Decentralization and Employee Empowerment
                    - Have Control Over Unit or Department
                    - Have Influence Over Decisions
                    - Monitor Data on Quality/costs/Waste/etc.
                    - Determine Work Flow or Order of Tasks
                    - Invest in New Equipment and Technology
                    - Develop New Products, Services, and Procedures

- Individual versus Team Structure
  - Percent of Time in Intact Team
- Job Characteristics
  - Skill Variety
    - Job Variety
    - Complex or High Level Skills Required
    - Variety of Tasks Required
  - Task Significance
    - Significance or Importance of Job
    - Job Quality Affects Lots of People
    - Job Itself Is Very Significant
  - Task Identity
    - Job Involves Whole Piece of Work
    - Can Do Entire Piece of Work
    - Can Finish What You Start
  - Autonomy
    - Autonomy and Freedom in Job
    - Chance for Initiative and Judgment
    - Opportunity for Independence and Freedom
  - Feedback
    - Extent of Feedback From Doing Job Itself
    - Doing Job Provides Chances for Feedback
    - After Finishing Job, Know Own Performance
- Job Stability and Rotation
  - Number of Supervisors in Past Year
  - Number of Work Teams in Past Year
  - Number of Work Group Reorganizations in Past Year
  - Number of Times Nature of Job Changed
  - Job Rotation Practices
- Human Resources Systems and Practices
  - Recruitment and Selection
    - Recruitment Operations
      - Sources of People for Current Job
    - Selection Assessment Methods Used
      - Assessment Methods Used to Select for Job
  - Training and Development
    - Training Methods
      - Training Methods Used in Company
    - Training Topics and Content
      - Areas of Recent Formal Training
    - Extent and Support of Training Activities
      - Recent Technical Skill Training
  - Reward System

- Basis of Compensation
  - Compensation Package Components
- Benefits
  - Benefit Components
- Social Processes
  - Goals — Individual goal setting.
    - Individual Goal Characteristics
      - Achieve Most Important Individual Goal
      - How Many Quantitative Individual Goals
    - Goal Feedback
      - How Many Specific Individual Goals
      - When Get Information on Individual Goals
      - Informal, Job-Relevant Feedback
      - Meet One-on-One With Supervisor on Goals, Training, and Development
  - Roles
    - Role Conflict
      - Often Receive Conflicting Requests
      - Work With Groups With Different Focuses
      - You and Your Supervisor Agree About Job
      - Supervisor Makes Conflicting Requests
  - Role Negotiability
    - Negotiate Changes in Role with Supervisor
    - Significant Input Into Way You Do Job
  - Role Overload
    - Get Assignments without Adequate Resources
    - Given Enough Time to Do Work
    - Too Much for One Person to Do
  - Culture
    - Organizational Values
      - Guiding Principles of Organization
        - Taking Chances; Going Out on a Limb
        - Fairness; Justice
        - Precision
        - Stability
        - Getting Things Done
        - Caring About Employees
        - Innovation
        - Aggressiveness
        - Valuing Customers
        - Providing High Quality Products
        - Openness and Honesty
        - Flexibility, Adapting to Change

- Supervisor Role
    - Supervisor Friendly and Supportive
    - Supervisor Takes Active Role
    - Supervisor Provides Clear Vision
    - Supervisor Solves Problems

- Work Context — Physical and social factors that influence the nature of work
    - Interpersonal Relationships
        - Communication
            - Communication Methods
                - Public Speaking
                - Telephone
                - Electronic Mail
                - Letters and Memos
                - Face-to-Face Discussions
            - Contact With Others
        - Role Relationships
            - Job Interactions
                - Work With Work Group or Team
                - Deal With External Customers
                - Coordinate or Lead Others
        - Responsibility for Others
            - Responsible for Others' Health and Safety
            - Responsibility for Outcomes and Results
        - Conflictual Contact
            - Frequency of Conflict Situations
            - Deal With Unpleasant or Angry People
            - Deal With Physically Aggressive People
    - Physical Work Conditions
        - Work Setting
            - Frequency Required to Work:
                - Indoors, Environmentally Controlled
                - Indoors, Not Environmentally Controlled
                - Outdoors, Exposed to Weather
                - Outdoors, Under Cover
                - In an Open Vehicle or Equipment
                - In an Enclosed Vehicle or Equipment
            - Physical Proximity
        - Environmental Conditions
            - Frequency in Environmental Conditions
                - Sounds, Noise Levels Are Distracting or Uncomfortable
                - Very Hot or Cold Temperatures
                - Extremely Bright or Inadequate Lighting

- Exposed to Contaminants
- Cramped Work Space, Awkward Positions
- Exposed to Whole Body Vibration
- Job Hazards
  - Frequency of Exposure to Job Hazards
    - Exposed to Radiation
    - Exposed to Disease or Infections
    - Exposed to High Places
    - Exposed to Hazardous Conditions
    - Exposed to Hazardous Equipment
    - Exposed to Minor Burns, Cuts, Bites, or Stings
  - Likelihood of Injury From Job Hazards
  - Degree of Injury
- Body Positioning
  - Time Spent in Body Positions
    - Spend Time Sitting
    - Spend Time Standing
    - Spend Time Climbing Ladders, Scaffolds, or Poles
    - Spend Time Walking and Running
    - Spend Time Kneeling, Crouching, Stooping, or Crawling
    - Spend Time Keeping or Regaining Balance
    - Spend Time Using Your Hands to Handle, Control, or Feel Objects, Tools, or Controls
    - Spend Time Bending or Twisting the Body
    - Spend Time Making Repetitive Motions
- Work Attire
  - Frequency of Wearing Work Attire
    - Wear Common Protective or Safety Equipment such as Safety Shoes, Glasses, Gloves, Hearing Protection, Hard Hats, or Life Jackets
    - Wear Specialized Protective or Safety Equipment such as Breathing Apparatus, Safety Harness, Full Protection Suits, or Radiation Protection
- Structural Job Characteristics
  - Criticality of Position
    - Consequence of Error
    - Impact of Decisions
      - Impact of Decisions on Co-workers or Company Results
      - Frequency of Decision Making
    - Freedom to Make Decisions
  - Routine versus Challenging Work
    - Degree of Automation
    - Importance of Being Exact or Accurate
    - Importance of Repeating Same Tasks

- Structured versus Unstructured Work
- Competition
  - Level of Competition
- Pace and Scheduling
  - Time Pressure
  - Pace Determined by Speed of Equipment
  - Work Schedules
  - Duration of Typical Work Week

Primary occupational information source for Content Model items:

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O*NET Data Collection Program

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Other indicators:

Not collected by federal sources