A GUIDE FOR DEVELOPING COMPETENCY MODELS

GUIDELINES FOR INCLUSION OF CUSTOM-DEVELOPED MODELS ON THE COMPETENCY MODEL CLEARINGHOUSE

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Contents

Purpose of this Guide

The U.S. Department of Labor, Employment and Training Administration (ETA) convenes industry partners and representatives of the workforce system, education, and labor, and related subject matter experts from relevant associations to develop models that lay out the full array of cross-cutting competencies in an industry or sector from foundational to industry-wide, to technical competencies within a specific sub-sector. These models are used for a variety of purposes, discussed below, but the primary benefit is to widely publicize industry skill needs to inform efforts to develop a skilled and prepared workforce. These industry competency models are made readily available within an online portal--the [Competency Model Clearinghouse](#) (CMC). The competency models help identify the knowledge, skills, and abilities needed by a globally competitive workforce, and the Employment and Training Administration (ETA) encourages organizations to customize and use the models found on the CMC and provides worksheets and tools on the site to assist in that effort. ETA also can provide technical assistance and support to organizations that would like to develop their own industry-based models, and encourages them to use the format and structure of the CMC models. By doing so, model developers help ensure a level of consistency and quality across models.

This guide is designed for organizations that would like to develop industry-based competency models for inclusion on the CMC. The guide outlines:

- *Benefits of Competency Model Development:* Industry competency models have many benefits for employers, workers, labor representatives, students, educators, and workforce development professionals. This section describes these benefits.
- *Guidelines for Model Inclusion:* These are the requirements for the development process for the model and for the model itself in order for it to be considered for inclusion on the CMC.
- *CMC Style Guide:* This section provides the requirements for the style and format of the competency model.

- *Model Submission:* This section of the guide describes the submission process and the documents to be included as part of the submission for placement of a model on the CMC.

Benefits of Competency Model Development

The industry competency models on the Competency Model Clearinghouse are developed and maintained in partnership with industry leaders to promote an understanding of the skill sets and competencies that are essential to educate and train a globally competitive workforce. They represent dynamic models of the foundation and technical competencies that are necessary in economically vital industries and sectors of the American economy. They promote an understanding of the skill sets and competencies that are essential to educate and train a globally competitive workforce.

The models serve as a resource to inform discussions among industry leaders, educators, economic developers, and public workforce investment professionals as they collaborate to:

- Identify specific employer skill needs
- Define career pathways and stackable credentials
- Develop competency-based curricula and training models
- Develop industry-defined performance indicators and certifications
- Develop resources for career exploration and guidance.

Guidelines for Model Inclusion on the Competency Model Clearinghouse

Guidance for development and inclusion of models on the CMC is provided below and covers the model rationale, scope, and characteristics, as well as the steps in the development process. Technical assistance in model development is available by contacting the CMC staff at competency@careeronestop.org

Guidance for Model Development

Model Scope and Focus

- ☐ The scope of the model is national and cross-cutting, representing either an entire industry or major cluster of occupations in the U.S.
- ☐ The industry model should be designed to support entry and access to employment for occupations that cover a span of educational requirements and

industry-recognized credentials that include the sub-Baccalaureate level as well as any higher levels.

☐ The projected demand for jobs in the industry should be either trending upward or steadily high.

☐ The industry should provide a pathway of occupations that lead to wages that are family-sustaining.

The Model's Development

☐ If it is an update to an existing model, the update is based on the model for that industry/field currently on the CMC.

☐ If it is a new model, the model development uses as a template and resource either the CMC Building Blocks model (first three foundational tiers) or a CMC industry model related to the new industry model under development

☐ The development of the model reflects a review of the current literature related to competencies, certifications, assessments, curricula and other sources of information on industry competency requirements.

The Model's Competency Descriptions

☐ Competency statements are in the format and style used on the CMC (see page 6).

☐ Competency statements are directly related to the job requirements across the industry, are justified by business necessity, and are written in such a way that they promote access to employment.

Model Sections

☐ The model includes a graphic display of the competency information in the CMC tiered pyramid format.

☐ The model includes a listing of the competencies and related key behaviors that form the foundation for worker success in the industry.

☐ The model document includes a section providing an overview of the industry and its employment outlook and another section describing the development and validation process and timeline.

☐ A list of resources reviewed is included as part of the model document.

The Model's Validation

☐ The validation process includes subject matter experts from industry, industry associations, labor (where applicable), education (particularly at the community college level), and workforce development. Ideally, at least 12-15 SMEs are involved, but in no case less than six.

☐ SMEs should represent the full range of stakeholders and provide a national perspective, representing a variety of regions of the country.

☐ The validation process is collaborative and iterative and may include polls, webinars, teleconferences and/or in-person meetings. The goal for revisions is to attain agreement from 80% of the SMEs that the model accurately represents industry competency requirements (80/20 rule).

Process for Initiating Collaboration on a Competency Model

☐ Submit the proposal for competency model inclusion on the CMC to DOL *prior to the model's development* and describe the proposer's plan to follow the guidance provided in this document.

☐ Share at least one interim draft and one proposed final draft of the model with DOL for feedback.

☐ Indicate agreement to serve as the industry champion for the model, or identify a model champion.

☐ Be sure to include a description of the validation process as part of the model submission package. A useful tool in competency model validation is sharing and obtaining feedback on a draft of the model with a wider audience through a variety of means, such as e-mail correspondence, voting processes, presentations at conferences or other convenings, etc. Often an organization has mechanisms it can use to canvass their membership or otherwise reach out to a wider audience.

Attribution and Citation of CMC Content

☐ All competency information produced in collaboration with DOL and published on the Competency Model Clearinghouse, whether in hard copy or electronic form, is in the public domain. Persons or organizations submitting models and model-related information for inclusion on the Competency Model Clearinghouse agree to have the submitted materials in the public domain and free to use by all users of the CMC without their specific permission. Working or interim materials that are used only during the development of the model will not be considered public domain and will not be made available to CMC users unless otherwise specified by the person or organization submitting the material.

☐ Users of CMC content are requested to cite the Competency Model Clearinghouse as the information source. [e.g., U.S. Department of Labor, Employment and Training Administration. *Engineering Competency Model*. Retrieved from the Competency Model Clearinghouse website: https://www.careeronestop.org/competencymodel/competency-models/Engineering.aspx.]

☐ The logos of organizations that are "industry champions," i.e., the primary sponsors and participants in the development of each model, will be shown on pages of the CMC with their respective models. The logos will include links to the organizations' websites.

Style Guide

This Style Guide is designed to assist model developers in replicating the format and language of industry competency models as they appear on the Competency Model Clearinghouse. For more information on the model development process, refer to the *Criteria for Model Inclusion in Competency Model Clearinghouse*. For background information on US DOL competency models, including potential audiences and uses, visit the Competency Model Clearinghouse at https://www.careeronestop.org/competencymodel/getstarted/userguide_competency.aspx.

Model Structure

Model developers should use the tiered pyramid structure found in models on the CMC. The pyramid shape conveys the increasing level of specificity and specialization of the content, and includes Foundational Competencies on Tiers 1-3 and Industry Competencies on Tiers 4 and 5. Competencies should represent successful work performance in the target industry or industry-sector, as validated by subject matter experts. Competencies that are narrower in scope than industry sector competencies, i.e., occupation-specific and management competencies, can be developed, but will not be presented on the CMC. Instead, the CMC will host a link to the developer's website which may present these additional competencies. For more information on the pyramid structure, please visit https://www.careeronestop.org/CompetencyModel/Competency-Models/industry-models-help.aspx.

Scope of Foundational Tiers (Tiers 1, 2, and 3)

Tiers 1-3 represent foundational tiers and should include personal, academic, and workplace competencies common across all workers. The [US DOL Building Blocks](#) model (https://www.careeronestop.org/CompetencyModel/Competency-Models/building-blocks-model.aspx) provides model developers with a starting point for these tiers, and it is recommended that developers use them to allow comparability to other CMC models and to facilitate career pathways across industries.

Model developers wishing to customize the Building Blocks model should include any changes in the content reviewed and validated by subject matter experts.

Scope of Industry Tiers (Tiers 4 and 5)

Tier 4: The competencies on Tier 4 should apply to most, if not all, occupations in the model's target industry. As a result of their "cross-cutting" nature, these competencies typically contain key behavior statements that deal with comprehension, awareness, or analysis.

Tier 5: Competencies on Tier 5 should include key behavior statements that are more action- or task-oriented than those on Tier 4, as these competencies are more specialized. Competency models on the CMC offer some flexibility as to the scope of Tier 5. Model developers can choose one of the following Tier 5 formats:

- Single Industry sub-sector: The competency blocks on this tier deal with only one sector of the industry. The competencies included in the blocks are common across all occupations within that sector.

Figure 1. Example, Single-Sector Tier 5: Residential Construction Model

Tier 5: Industry-Sector Technical Competencies				
Construction of Specific Home Components	Specialty Skills	Business Fundamentals	Customer Service & Homeowner Relations	Green Building Practices

Tier 4: Industry-Wide Technical Competencies				
Building & Construction Design	Material Resources	Operation, Installation & Repair	Regulations & Quality Assurance	Health & Safety

- Multiple Industry sub-sectors: Each block on the tier represents an entire sub-sector within the industry and includes the competencies common to that sector. The more blocks the tier has, the more sectors are represented.

Figure 2. Example, Multiple-Sector Tier 5: Bioscience Model (Four sectors)

Tier 5: Industry-Sectors Technical Competencies			
Agricultural Feedstock & Chemicals	Drugs & Pharmaceuticals	Medical Devices & Equipment	Research, Testing, & Medical Laboratories

Tier 4: Industry-Wide Technical Competencies				
Bioscience Fundamentals	Research & Development	Manufacturing & Production	Quality Control & Assurance	Health, Safety, & Security

Structure of Competency Blocks

Competencies in the model are portrayed as "blocks" sitting on tiers. Each competency block has a title, definition, and multiple key behavior statements. Block titles, block definitions, and key behaviors are formatted uniformly across all tiers of the model, while Tier 4 and 5 blocks may include additional "knowledge areas" within which groupings of important knowledge, skills and abilities are delineated.

- All Tiers: Related key behavior description statements are typically grouped under key behavior titles.
  Example:

- Tiers 4-5: At these levels, information or knowledge needed for the exercise of a block's key behaviors are often grouped under knowledge area titles. See the Tier 4 and 5 images above for examples of the knowledge areas identified for the residential construction and bioscience models.

Grammar and Syntax:

All key behavior statements should begin with a plural action verb appropriate to the tier (See Scope of Industry Tiers, above) and should use end punctuation.

Character Limits:

The Competency Model Clearinghouse uses a database that limits the number of characters in each part of the competency block. The following character limits apply to competency model content:

Competency Title	100
Competency Definition	315
Key Behavior Title	380
Key Behavior Description	3000

Numbering

For greater readability and easier user navigation, each competency model tier, competency block, key behavior title, key behavior description, critical work function, and knowledge area is numbered sequentially. The numbering system employed goes four levels deep (four digits separated by decimal points) as

demonstrated in the example shown below (taken from the Engineering Competency Model). If there is a fifth level, it is shown as a bullet point and not numbered.

Tier 1 – Personal Effectiveness Competencies

1.1 Interpersonal Skills: Displaying skills to work effectively with others from diverse backgrounds.

1.1.1 Demonstrating sensitivity/empathy

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

1.1.2 Demonstrating insight into behavior

1.1.2.1	Recognize and accurately interpret the communications of others as expressed through various formats (e.g., writing, speech, American Sign Language, computers, etc.).
1.1.2.2	Recognize when relationships with others are strained.
1.1.2.3	Show understanding of other's behaviors and motives by demonstrating appropriate responses.
1.1.2.4	Demonstrate flexibility for change based on the ideas and actions of others.
1.1.2.5	Understand the impact of unconscious bias.

1.1.3 Maintaining open relationships

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

1.1.4 Showing Cultural Awareness

1.1.4.1	Demonstrate respect for coworkers, colleagues, and clients.
1.1.4.2	Interact respectfully and cooperatively with others who are of a different race, religion, nationality, ethnicity, culture, or age, or have different abilities, gender, sexual orientation, linguistics, or marital or family status.
1.1.4.3	Demonstrate sensitivity, flexibility, open-mindedness, and inclusivity when dealing with different values, beliefs, perspectives, customs, or opinions.
1.1.4.4	Value an environment that supports and accommodates a diversity of people and ideas.

1.2 Integrity: Displaying strong moral principles and work ethic

1.2.1 Taking responsibility and being accountable

1.2.1.1	Accept responsibility and accountability for one's decisions and actions and for those of one's group, team, or department.
1.2.1.2	Demonstrate global, social, intellectual, and technological responsibility.

1.2.2 Behaving ethically

1.2.2.1	Encourage others to behave ethically.
1.2.2.2	Understand that behaving ethically goes beyond what the law requires.

1.2.2.3	Respect the need for confidentiality, when appropriate.

1.2.3 Acting fairly

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

Model Tiers - Overview

Tier	Number of Blocks per Tier	Description	Block Content
Tier 1 – Personal Effectiveness	8-10	"Soft skills" essential for all life roles, personal effectiveness competencies are generally learned in the home or community and reinforced at school and in the workplace.	Key behaviors
Tier 2 – Academic		Critical competencies primarily learned in a school setting. They include cognitive functions and thinking styles, and are likely to apply to most industries and occupations.	
Tier 3 – Workplace		Motives and traits, as well as interpersonal and self-management styles honed in the workplace. They are generally applicable to a large number of occupations and industries.	
Tier 4 – Industry-Wide	6-8	"Cross-cutting" competencies common to most occupations within the industry. Typically these competencies deal with comprehension, awareness, or analysis.	Key behaviors and content areas
Tier 5 – Industry-Sector(s)		Models can treat Tier 5 in two ways: Single sector: The competency blocks on this tier deal with only **one** sector. They are common across all occupations within that sector. Multiple sectors: Each block on the tier represents an entire sector (or sub-sector) within the industry and includes the competencies common to that sector. The more blocks the tier has, the more sectors are represented.	

Industry Overview

Model documents should include a brief description of the industry and/or industry sectors which includes the following information:

- Rationale/need for a competency model in the proposed industry/industry sector
- Existing career pathways
- Current employment data and projections
- Top 10-20 occupations by projected employment, with annual mean wage
- Average hourly earnings in the industry and key occupations

The Bureau of Labor Statistics website (https://www.bls.gov/) offers many helpful datasets.

Methodology

Model documents should include a methodology section which briefly describes the development process used to produce the model, from initial research through final validation. This section should be covered in one or two paragraphs, and include an acknowledgement of all partner organizations that contributed to the model's development.

Resources Reviewed

Model documents should include a Resources Reviewed section at the end that identifies the sources consulted to identify competencies. This information should be in the form of a table which includes the following columns:

Developer	Resource	URL (if appropriate)

US DOL Competency Model Submission Requirements

Organizations planning to develop competency models and have them placed on the Competency Model Clearinghouse should send their proposed plans in a document to competency@careeronestop.org. The proposed model should follow the Guidelines on pages 3-11 of this document. The proposed model cannot involve changes to the basic structure of the competency pyramid as then the new model could not be hosted on the online customization tool within the CMC and used by others for tailoring to local sector strategy initiatives.

If management or occupation-specific competencies are included, the developer organization will need to host them as a PDF on its website and the Clearinghouse will link to it.

Please be sure to follow the "Process for Initiating Collaboration on a Competency Model" as detailed on page 5. For further information on model submission or assistance in model development, contact: competency@careeronestop.org.

Model submissions should include the following materials:

1. A brief description of the model's scope and purpose, as well as an acknowledgement of all partner organizations that contributed to the model's development, including the model champion. This item should be about two paragraphs. (See example in the attachment.)

2. A high-quality JPEG image of the model champion's logo and a URL address to the champion's website.

3. A list of links to related resources organized into the following categories. There do not need to be links in every category, only those that are applicable.
    a. National Associations
    b. Industry Sector-Specific
    c. Regional or State-Specific
    d. Federal government or military

    For an example of related resources, visit
    https://www.careeronestop.org/CompetencyModel/competency-models/industry-links.aspx?industry=cybersecurity

4. A list of related credentials that includes the following information for each:
    a. Credential name
    b. Developer
    c. Resource location, i.e., URL address
    d. Model block or blocks to which the credential applies

For questions or further information contact:
> Competency Model Clearinghouse
> Tel: 202-693-3787
> Email: competency@careeronestop.org

ATTACHMENT

Brief Summary for Model Landing Page:
Two Examples

Allied Health Competency Model

The Employment and Training Administration (ETA) has worked with technical and subject matter experts from education, business, and industry to develop a comprehensive competency model for the Allied Health industry sector. While the model identifies the knowledge, skills, and abilities needed for workers to perform successfully in the field of Allied Health, it is not intended that Allied Health workers possess all of the competencies listed. The model is rather a compilation of competencies that can be included as a basis for preparation in an Allied Health occupation. The Health Professionals Network (HPN) and the National Network of Health Career Programs (NN2) provided input and will ensure that the model evolves to accommodate changing skill requirements.

Cybersecurity Competency Model

The Employment and Training Administration (ETA) has worked with the Department of Homeland Security and the more than 20 federal departments and agencies that make up the National Initiative for Cybersecurity Education (NICE) to develop a comprehensive competency model for cybersecurity. Technical and subject matter experts from education, business, and industry also contributed to the model's development.

The DOL Cybersecurity Industry Model defines the latest skill and knowledge requirements needed by individuals whose activities impact the security of their organization's cyberspace. The model incorporates competencies identified in the NICE National Cybersecurity Workforce Framework and complements the Framework by including both the competencies needed by the average worker who uses the Internet or the organization's computer network, as well as cybersecurity professionals. The ETA model will be updated to reflect future changes to the Framework.