
Procedures for O*NET Job Zone Assignment: Updated to Include Procedures for Developing Preliminary Job Zones for New O*NET-SOC Occupations

David Rivkin
National Center for O*NET Development

Denise E. Craven
North Carolina State University

Prepared for

U.S. Department of Labor
Employment and Training Administration
Office of Workforce Investment
Division of Workforce System Support
Washington, DC

Submitted by

National Center for O*NET Development
December 2021



www.onetcenter.org

Table of Contents

Introduction 4

History 4

 Table 1: The 5 Job Zones Defined 5

Job Zone Assignment Procedure for Occupations with O*NET Data..... 5

 Table 2: Required Education Level Response Options and Aggregate Categories.. 6

 Table 3: Guideline for Assigning Job Zones Based on Education Data 6

 Table 4: Related Work Experience Response Options and Aggregate Categories.. 7

 Table 5: On-The-Job Training Response Options and Aggregate Categories..... 7

 Table 6: Analyst Review of Job Zones within Physical Therapy Field 8

 Table 7: Analyst Review of Job Zones for Postsecondary Teachers..... 9

Preliminary Job Zone Assignment Procedure for New O*NET-SOC Occupations..... 9

 Table 8.a. Relationship of BLS-OES Education Categories to O*NET Job Zones . 11

 Table 8.b. Relationship of BLS-OES Experience Categories to O*NET Job Zones 11

 Table 8.c. Relationship of BLS-OES On-the-Job Training Categories to O*NET Job Zones..... 12

 Exhibit 1. Burning Glass® Minimum Education Level and Experience Requirements Specified in Job Postings for Security Management Specialists..... 13

References..... 16

Appendix A: Job Zone Descriptions..... 17

Appendix B: 20

 O*NET-SOC 2019 Break-Outs of More General O*NET-SOC 2010 Classifications 20

Executive Summary

The Job Zone classification provides O*NET users a guide to the vocational preparation levels of O*NET-SOC occupations. Creation of the Job Zone system met the need for education, training, and experience information in the transition from the Dictionary of Occupational Titles to the O*NET database. Use of incoming incumbent and OE data to assign or reassign occupations to Job Zones maintains this classification as an up-to-date vocational preparation guide for job seekers, career counselors, and others making informed vocational choices.

Annually, approximately 100 occupations are classified or re-classified within the five-level Job Zone system, based on data from job incumbents and occupational experts (OEs) regarding the levels of education, experience, and training needed for work in their occupations. When new occupations are added to the taxonomy for which OE and job incumbent data have not yet been collected, Preliminary Job Zones are assigned based on expert reviews of existing O*NET data and sources outside the O*NET Data Collection Program. Preliminary Job Zones are updated using the standardized job zone assignment procedure, when the occupation has gone through data collection. This document provides a detailed description of the procedures by which incoming O*NET data and other information contribute to the assignment of occupations to Job Zones.

Assigning each O*NET occupation to a Job Zone involves consideration of five classes of information: (1) the occupation's main duties and tasks, (2) incoming O*NET data on the occupation's education, training, and experience levels, (3) the occupation's previously assigned Job Zone, (4) Job Zones of other O*NET-SOCs, and (5) external information, such as the occupation's Bureau of Labor Statistics (BLS) education and training classification. Two trained analysts independently consider these factors and make a tentative Job Zone assignment. The two analysts' assignments are then compared and discordant assignments reviewed and resolved by a senior analyst/manager.

Introduction

The O*NET database contains a rich set of variables that describe work and worker characteristics, including skill requirements. Currently, the database is updated quarterly, with a primary update occurring in the third quarter of each year. Data is updated from a variety of sources, including job incumbents, occupational experts (OE), analyst ratings, employer job postings, government programs, transactional data, and other sources. For Content Model domain variables ([Peterson, N., Mumford, M., Borman, W., Jeanneret, P., & Fleishman, E., 1995](#)) and tasks, aggregate data from incumbents, occupational experts (OE), or analysts contribute directly to published estimates. Data from incumbents and OEs also contribute to occupations' values on a variable known as the Job Zone, a means of stratifying occupations based on their associated levels of education, experience, and training. Two trained analysts assign each occupation to one of 5 Job Zones, based on incumbent or OE data on the levels of education, experience, and training needed for their occupations. A brief history of the Job Zone assignment process and the 7 steps of the standard Job Zone assignment procedure are described in the following paragraphs. The Preliminary Job Zone assignment procedure is also described for new O*NET-SOC occupations that have not been in data collection. This procedure uses expert review of existing O*NET data, and data sources outside the O*NET data collection program. Once an occupation completes data collection, its Preliminary Job Zone assignment is updated using the standard Job Zone assignment procedure.

History

The Dictionary of Occupational Titles (DOT, U.S. Department of Labor, 1991) provided the data element Specific Vocational Preparation (SVP) as a means of stratifying occupations by level of required vocational preparation. In the transition from the DOT to the O*NET® database, SVP categorization guided development of the Job Zone system. Assignment of Job Zone classifications to the 1,122 occupational units (OUs) comprising O*NET 98 (U.S. Department of Labor, 1998) involved (a) mapping over 12,000 DOT classifications to 1,122 O*NET OUs; (b) averaging the SVP ratings for each OU's core DOT codes to provide an aggregated SVP rating for the OU; and (c) use of aggregated SVP ratings to sort the OUs into five Job Zones (Table 1). For additional information on this process, please see [Oswald, Campbell, McCloy, Rivkin, and Lewis \(1999\)](#).

Table 1: The 5 Job Zones Defined

Job Zone	Preparation Level
1	Little or No Preparation Needed
2	Some Preparation Needed
3	Medium Preparation Needed
4	Considerable Preparation Needed
5	Extensive Preparation Needed

Complete Job Zone definitions may be found in Appendix A or at <http://online.onetcenter.org/help/online/zones>.

Once data collection began to populate O*NET 5.0, incoming job incumbent and OE data became available for assignment of occupations to Job Zones. Specifically, data collected on questionnaire items capturing the levels of needed education, training and experience provided a suitable basis for occupation assignment or re-assignment to Job Zones. An analyst-rating procedure was developed to apply these data to Job Zone assignment. This procedure is described in the next section.

Job Zone Assignment Procedure for Occupations with O*NET Data

The procedure for assigning occupations to Job Zones involves 7 steps conducted by trained analysts. Herein, the term “analysts” refers to Master’s and Ph.D. level industrial-organizational psychologists with extensive background in occupational analysis. Analysts use data from 3 items of the O*NET Education and Training questionnaire (<https://www.onetcenter.org/questionnaires.html>) to make occupations’ Job Zone assignments. Education level, as indicated by job incumbents and occupational experts, serves as the primary criterion for assigning an occupation to a Job Zone. Related work experience, on-the-job training, the occupation’s previously assigned Job Zone, and other factors also contribute to Job Zone assignment.

Step 1) Review Occupation Characteristics

Two analysts review each occupation’s description, tasks, and other information to develop an understanding of the responsibilities and other characteristics of the occupation

Step 2) Review Education Levels

Job incumbent or OE data on the 12 response options of the Education item are aggregated in correspondence with the education level(s) associated with each of the 5 Job Zones (Table 2). Table 3 presents the correspondence of each aggregate category to a Job Zone.

Table 2: Required Education Level Response Options and Aggregate Categories

Questionnaire Response Option	Aggregate Category
Less than High School	Less than High School
High School Diploma	High School Diploma
Post-Secondary Certificate	High School Plus
Some College	
Associate's Degree	
Bachelor's Degree	Bachelor's Degree
Post-Baccalaureate Certificate	Bachelor's Degree Plus
Master's Degree	
Post-Master's Certificate	
First Professional Degree	
Doctoral Degree	
Post-Doctoral Training	

Table 3: Guideline for Assigning Job Zones Based on Education Data

Job Zone	Education Category
1	Less than High School
2	High School Diploma
3	High School Plus
4	Bachelor's Degree
5	Bachelor's Degree Plus

Each analyst reviews the percentage of survey responses in each aggregate category and assigns an initial Job Zone. For difficult cases, the analysts may review the non-collapsed data.

Step 3) Review Related Work Experience and Training

Analysts supplement their initial judgments with a review of related work experience and on-the-job training. Data on these variables may or may not lead the analyst to modify his or her initial Job Zone assignment. For instance, if the data suggest that a long duration of related work experience and/or training are associated with an occupation, the analyst may raise its Job Zone. A high level of related work experience is more likely to influence Job Zone assignments of occupations associated with lower education levels.

Table 4 presents the 11 response options comprising the item Related Work Experience, along with the aggregate categories corresponding to Job Zones. Table 5 presents each of the 9 response options of the item On-The-Job Training and the aggregate categories.

Table 4: Related Work Experience Response Options and Aggregate Categories

Questionnaire Response Option	Aggregate Category
None	None
Up to and including 1 month	≤ 1 month
Over 1 month to 3 months	> 1 month – 2 years
Over 3 months to 6 months	
Over 6 months to 1 year	
Over 1 year to 2 years	
Over 2 years to 4 years	> 2 years – 6 years
Over 4 years to 6 years	
Over 6 years to 8 years	> 6 years
Over 8 years to 10 years	
Over 10 years	

Table 5: On-The-Job Training Response Options and Aggregate Categories

Questionnaire Response Option	Aggregate Category
None or short demonstration	None, short demonstration, or training up to 6 months.
Anything beyond short demonstration, up to and including 1 month	
Over 1 month, up to and including 3 months	
Over 3 months, up to and including 6 months	
Over 6 months, up to and including 1 year	> 6 months – 1 year
Over 1 year, up to and including 2 years	> 1 year – 2 years
Over 2 years, up to and including 4 years	> 2 years
Over 4 years, up to and including 10 years	
Over 10 years	

Step 4) Compare Job Zone Assignment with Previous Assignment and BLS Data

Each analyst then compares each occupation's resulting Job Zone assignment with its previously assigned Job Zone. Each new Job Zone assignment differing from the occupation's previous assignment is flagged for additional review. This step does not apply to occupations with no previously assigned Job Zones.

The analyst-assigned Job Zone is also compared to the occupation's Bureau of Labor Statistics (BLS) education and training classification (Chao & Utgoff, 2006). Although the BLS rating system differs from the Job Zone system in the number of categories (11 BLS categories versus 5 Job Zones), as well as the means of stratification (BLS also considers 3 levels of on-the-job training), it provides Job Zone analysts additional perspective.

Step 5) Review Job Zone Assignments from a Career Ladder Perspective

Each analyst examines occupations' new Job Zone assignments from a career ladder, or organization hierarchy, perspective. Occupations lower on the career ladder or within the organization hierarchy should, in most cases, be assigned to lower Job Zones than occupations higher on the same ladder/hierarchy. One example of a career ladder is for physical therapy, as illustrated by Table 6, below.

Table 6: Analyst Review of Job Zones within Physical Therapy Field

O*NET-SOC Code	O*NET-SOC Title	Job Zone
29-1123.00	Physical Therapists	5
31-2021.00	Physical Therapist Assistants	3
31-2022.00	Physical Therapist Aides	2

Step 6) Review Assigned Job Zones from an Occupation Similarity Perspective

Each analyst also examines assigned Job Zones based on the similarity of occupations. For instance, the analysts will examine Job Zones across engineering occupations or across post-secondary teaching occupations (Table 7).

Table 7: Analyst Review of Job Zones for Postsecondary Teachers

O*NET-SOC Code	O*NET-SOC Title	Job Zone
25-1011.00	Business Teachers, Postsecondary	5
25-1021.00	Computer Science Teachers, Postsecondary	5
25-1022.00	Mathematical Science Teachers, Postsecondary	5
25-1031.00	Architecture Teachers, Postsecondary	5
25-1032.00	Engineering Teachers, Postsecondary	5
25-1041.00	Agricultural Sciences Teachers, Postsecondary	5
25-1042.00	Biological Science Teachers, Postsecondary	5
25-1043.00	Forestry and Conservation Science Teachers, Postsecondary	5

Step 7) Comparison of Analysts’ Job Zone Assignments

After each analyst has completed his/her Job Zone assignments, the two sets are compared. Disagreements are highlighted for detailed review by a senior analyst/manager. This review includes all relevant data for occupations on which analysts disagree and for which the new Job Zone deviates from the previously assigned Job Zone. The senior analyst/manager may also question other assignments, based on their independent review.

Preliminary Job Zone Assignment Procedure for New O*NET-SOC Occupations

With the changing economy and advances in technology, new occupations emerge in the world of work. The 2018 Standard Occupational Classification (SOC) was updated to reflect these new occupations (Office of Management and Budget, 2018). As part of the O*NET Program’s continuous improvement efforts, the O*NET-SOC taxonomy is updated to align with the SOC, enabling O*NET users to take advantage of data linked to the SOC system. For example, the O*NET-SOC 2019 taxonomy (Gregory, Lewis, Frugoli & Nallin, 2019) was updated to reflect the 2018 SOC.

To provide interim Job Zone data on new O*NET-SOC occupations (before they enter O*NET data collection), a Preliminary Job Zone assignment procedure has been developed. As occupations complete O*NET data collection, their Preliminary Job Zones will be replaced by data-driven values, using the standard Job Zone assignment procedure.

Developing a Preliminary Job Zone assignment requires consideration of occupation-related education, experience, and training data from existing O*NET data, and sources outside the O*NET Data Collection Program. This section describes the data sources, rationale, and procedure for assigning new O*NET-SOC occupations to Preliminary Job Zones.

New O*NET-SOCs, which vary in taxonomic history, may be categorized as follows:

- 1) Break-outs of more general previous O*NET-SOC classifications;
- 2) Detailed SOC-system occupations new to the current O*NET-SOC; and
- 3) Data-level occupations unique to the current O*NET-SOC, e.g., New and Emerging Occupations.

Assigning New O*NET-SOC Occupations to Preliminary Job Zones: Data Sources and Processes

As described above, new O*NET-SOC occupations requiring Preliminary Job Zone assignment vary in background. Some may have data-level predecessors within the previous O*NET-SOC Taxonomy, whereas others may not. New O*NET-SOC occupations with data-level O*NET-SOC predecessors (category 1) are updated according to their predecessors' Job Zones, with confirmation or adjustment based on external sources and other processes, as described below. Appendix B provides examples of occupations with O*NET-SOC predecessors, that were considered new to the 2019 O*NET-SOC Taxonomy.

Assigning new O*NET-SOCs without predecessors to Preliminary Job Zones relies more heavily on occupation-level information on education, experience, and training levels external to the O*NET Data Collection Program. There exist several nationwide sources of information on occupation- and job-related education, experience, and training levels using the SOC, O*NET-SOC, and related taxonomies. The following section describes these data sources.

Alternative Data Sources for Preliminary Job Zone Assignment

1. Bureau of Labor Statistics Occupational Employment Statistics (BLS-OES) Education and Training Assignments by Detailed Occupation. The classification structure employed to collect these data adheres closely to the federal classification system that forms the basis of the O*NET taxonomy: the SOC system. This shared structure makes BLS-OES education and training data an ideal resource for assigning O*NET-SOC occupations to Job Zones. One caveat of BLS-OES is that many occupational units on which these data are collected are higher than the SOC system. BLS-OES education and training data are published on 790 occupational classifications, by contrast to 867 in the 2018 SOC system and 923 in the 2019 O*NET-SOC system. Tables 8 a. b., and c. show the relationship of the BLS-OES Education, Training, and Experience levels to O*NET Job Zones.

Table 8.a. Relationship of BLS-OES Education Categories to O*NET Job Zones

BLS-OES	O*NET Job Zone
Doctoral or professional degree. Completion of a doctoral degree (Ph.D.) or professional degree usually requires at least 3 years of full-time academic work beyond a bachelor's degree.	Five
Master's degree. Completion of this degree usually requires 1 or 2 years of full-time academic study beyond a bachelor's degree.	Five
Bachelor's degree. Completion of this degree generally requires at least 4 years, but not more than 5 years, of full-time academic study beyond high school.	Four
Associate's degree. Completion of this degree usually requires at least 2 years but not more than 4 years of full-time academic study beyond high school.	Three
Postsecondary nondegree award. These programs lead to a certificate or other award, but not a degree. The certificate is awarded by the educational institution and is the result of completing formal postsecondary schooling. Certification, issued by a professional organization or certifying body, is not included here. Some postsecondary nondegree award programs last only a few weeks, while others may last 1 to 2 years.	Three
Some college, no degree. This category signifies the achievement of a high school diploma or equivalent plus the completion of one or more postsecondary courses that did not result in a degree or award.	Three
High school diploma or equivalent. This category indicates the completion of high school or an equivalent program resulting in the award of a high school diploma or an equivalent, such as the General Education Development (GED) credential.	Two
No formal educational credential. This category signifies that a formal credential issued by an educational institution, such as a high school diploma or postsecondary certificate, is not typically needed for entry into the occupation.	One

Table 8.b. Relationship of BLS-OES Experience Categories to O*NET Job Zones

BLS-OES	O*NET Job Zone(s)
<i>5 years or more</i>	Four, Five
<i>Less than 5 years</i>	One, Two, Three
<i>None</i>	One

Table 8.c. Relationship of BLS-OES On-the-Job Training Categories to O*NET Job Zones

BLS-OES	O*NET Job Zone(s)
<i>None</i>	One, Five
<i>Short-term on-the-job training</i>	One, Two
<i>Moderate-term on-the-job training</i>	Three
<i>Long-term on-the-job training</i>	Four, Five
<i>Internship/Residency</i>	Five
<i>Apprenticeship</i>	Two, Three

2. Burning Glass® Technologies Web Application. This application-programming interface (API) generates demand-oriented reports of job postings relating to an occupation, with filtering options such as industry, employer, skills, and education, as well as job posting time period. The Burning Glass® job-posting database represents jobs nationwide, with the option of narrowing a search to a specific region, state, or metropolitan area.

The Burning Glass® API uses several different occupational taxonomies to classify jobs in its posting database, including the O*NET-SOC Taxonomy. This allows the matching of job postings to O*NET-SOC occupations. Exhibit 1 shows an example of a Burning Glass® report summarizing minimum education and experience levels specified in job postings for the O*NET-SOC occupation 13-1199.07 Security Management Specialists.

Exhibit 1. Burning Glass® Minimum Education Level and Experience Requirements Specified in Job Postings for Security Management Specialists

<u>Education level</u>	<u>Job Postings (N/%)</u>
Bachelor's degree	6,184/88.2%
Associate's degree	524/7.5%
Master's degree	301/4.3%
<u>Experience</u>	<u>Job Postings (N/%)</u>
3 to 5 years	2,942/43.6%
0 to 2 years	1,297/36.1%
6 to 8 years	907/11.7%
9+ years	744/8.6%

Note: The Burning Glass® report has been modified for formatting within this paper.

Procedure for Assigning Occupations to Preliminary Job Zones

Because both BLS-OES and Burning Glass® data are based on some form of the SOC and are nationally based, both serve as valid external sources of information on vocational preparation levels for O*NET-SOC occupations. BLS-OES, like the O*NET program, is a U.S. Department of Labor program and uses a frame of reference similar to O*NET data collection to assign education, experience, and training levels. BLS-OES considers the entry-level requirement; similarly, the O*NET items elicit the levels needed of someone hired to perform the job. BLS-OES data therefore serves as the primary external source of data for occupations in categories 2 and 3 (no predecessor Job Zone).

Burning Glass® job-posting data serves as the secondary source. For each occupation, a report can be run on the most recent 12 months of job postings under the SOC or O*NET occupation closest to the O*NET-SOC occupation of interest. The report includes Education Level-Minimum Advertised and Experience Requirements. Note that not all job postings found under an occupation title includes information on these variables.

The hierarchy of consideration of source data is therefore:

1. Existing Job Zone(s);
2. BLS Education and Training Levels; and
3. Burning Glass® Education and Experience Requirements from Job Postings.

The two-phase procedure for using these data to assign Preliminary Job Zones to new O*NET-SOC occupations is described below.

Phase 1. Two trained analysts assign independent ratings.

Step 1: Review the code, title, description, and tasks for the occupation.

Step 2:

Category 1: Occupations with predecessor Job Zones.

- 1) For O*NET-SOC break-outs at the same level of responsibility and/or complexity, e.g., Managers, assign the O*NET-SOC 2010 predecessor Job Zone to the O*NET-SOC break-outs.
- 2) For O*NET-SOC break-outs at different levels of responsibility and/or complexity, e.g., Technologists and Technicians:
 - a) Use the O*NET-SOC predecessor Job Zone as a starting point;
 - b) Consider BLS-OES data.
 - i) If these data are at the O*NET-SOC level, assign the Job Zone corresponding to the BLS-OES levels of education and experience.
 - ii) If the data are not at the O*NET-SOC level, supplement BLS-OES data with Burning Glass® job-posting data. Assign a Preliminary Job Zone based on the predominant education and experience levels indicated by these sources.

Categories 2 and 3: Occupations new to the O*NET-SOC Taxonomy.

- 1) Consider BLS-OES data.
 - i) If these data are at the O*NET-SOC level, assign the Job Zone corresponding to the BLS-OES levels of education and experience.
 - ii) If the data are not at the O*NET-SOC level, supplement BLS-OES data with Burning Glass® job-posting data. Assign a Preliminary Job Zone based on the predominant education and experience levels indicated by these sources.

Step 3: Review the Preliminary Job Zone (assignment resulting from Steps 1 and 2) from a career ladder perspective. For example, engineering occupations generally have a higher Job Zones than engineering technologist or technician occupations. If the Preliminary Job Zone assignment does not match the Job Zone expected from this perspective, consider revising accordingly.

Step 4: Review the Preliminary Job Zone from an occupation similarity perspective. Similar types of occupations frequently have similar Job Zones. For example, teachers of the same or similar grade level have the same or similar Job Zone. Physician occupations, regardless of specialty, tend to have the same Job Zone.

Phase 2. Independent analysts' ratings are combined and compared.

For each matching rating, that rating becomes the occupation's Preliminary Job Zone. For occupations whose ratings differ, analysts discuss their respective rationales for their Job Zone assignments. If analysts did not agree on a final Preliminary Job Zone at this stage, additional information from sources such as CareerOneStop <https://www.careeronestop.org/> and the BLS Occupational Requirements Survey (ORS) <https://www.bls.gov/ors/data.htm> inform a final Preliminary Job Zone. CareerOneStop provides job ads that describe job preparation requirements similar to those included in O*NET Job Zones. ORS survey data also present education and training requirements for occupations. Analysts use this additional information to reach agreement on Preliminary Job Zone assignments.

The Preliminary Job Zone assignment procedure for new O*NET-SOC uses well-established existing sources of data and trained analysts. As new O*NET data are collected for these occupations, Preliminary Job Zone assignments will be updated according to the standardized Job Zone assignment procedure.

References

- Chao, E. L. & Utgoff, K. P. (2006). *Occupational projection and training data, 2006-2007 edition*. (Bulletin 2602). U.S. Department of Labor and Bureau of Labor Statistics, 1-11.
- Gregory, C., Lewis, P., Frugoli, P., & Nallin, A. (2019). *Updating the O*NET-SOC Taxonomy: Incorporating the 2018 SOC Structure*.
<https://www.onetcenter.org/reports/Taxonomy2019.html>
- National Center for O*NET Development (2008). Procedures for O*NET Job Zone Assignment. https://www.onetcenter.org/dl_files/JobZoneProcedure.pdf
- Office of Management and Budget. (2018). Standard Occupational Classification (SOC) System. https://www.bls.gov/soc/2018/soc_2018_manual.pdf
- Oswald, F., Campbell, J., McCloy, R., Rivkin, D., & Lewis, P (1999). *Stratifying Occupational Units by Specific Vocational Preparation*. Raleigh, NC: National Center for O*NET Development. <https://www.onetcenter.org/reports/SVP.html>
- Peterson, N., Mumford, M., Borman, W., Jeanneret, P., & Fleishman, E. (1995). *Development of prototype Occupational Information Network (O*NET) Content Model* (Vols. 1–2). Salt Lake City, UT: Utah Department of Workforce Services.
<https://www.onetcenter.org/reports/Prototype.html>
- U.S. Department of Labor (1991). *Dictionary of Occupational Titles Fourth Edition, Revised 1991*. Washington, DC: U.S. Government Printing Office.
- U.S. Department of Labor (1998). *O*NET 98: Viewer user's guide*. Washington, DC: U.S. Government Printing Office.

Appendix A: Job Zone Descriptions

Job Zone One: Little or No Preparation Needed

Overall Experience No previous work-related skill, knowledge, or experience is needed for these occupations. For example, a person can become a cashier even if he/she has never worked before.

Job Training Employees in these occupations need anywhere from a few days to a few months of training. Usually, an experienced worker could show you how to do the job.

Job Zone Examples These occupations involve following instructions and helping others. Examples include taxi drivers, amusement and recreation attendants, counter and rental clerks, cashiers, and waiters/waitresses.

SVP Range (Below 4.0)

Education These occupations may require a high school diploma or GED certificate. Some may require a formal training course to obtain a license.

Job Zone Two: Some Preparation Needed

Overall Experience Some previous work-related skill, knowledge, or experience may be helpful in these occupations, but usually is not needed. For example, a teller might benefit from experience working directly with the public, but an inexperienced person could still learn to be a teller with little difficulty.

Job Training Employees in these occupations need anywhere from a few months to one year of working with experienced employees.

Job Zone Examples These occupations often involve using your knowledge and skills to help others. Examples include sheet metal workers, forest fire fighters, customer service representatives, pharmacy technicians, salespersons (retail), and tellers.

SVP Range (4.0 to < 6.0)

Education These occupations usually require a high school diploma and may require some vocational training or job-related course work. In some cases, an associate's or bachelor's degree could be needed.

Job Zone Three: Medium Preparation Needed

Overall Experience Previous work-related skill, knowledge, or experience is required for these occupations. For example, an electrician must have completed three or four years of apprenticeship or several years of vocational training, and often must have passed a licensing exam, in order to perform the job.

Job Training Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers.

Job Zone Examples These occupations usually involve using communication and organizational skills to coordinate, supervise, manage, or train others to accomplish goals. Examples include funeral directors, electricians, forest and conservation technicians, legal secretaries, interviewers, and insurance sales agents.

SVP Range (6.0 to < 7.0)

Education Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree. Some may require a bachelor's degree.

Job Zone Four: Considerable Preparation Needed

Overall Experience A minimum of two to four years of work-related skill, knowledge, or experience is needed for these occupations. For example, an accountant must complete four years of college and work for several years in accounting to be considered qualified.

Job Training Employees in these occupations usually need several years of work-related experience, on-the-job training, and/or vocational training.

Job Zone Examples Many of these occupations involve coordinating, supervising, managing, or training others. Examples include accountants, human resource managers, computer programmers, teachers, chemists, and police detectives.

SVP Range (7.0 to < 8.0)

Education Most of these occupations require a four - year bachelor's degree, but some do not.

Job Zone Five: Extensive Preparation Needed

Overall Experience Extensive skill, knowledge, and experience are needed for these occupations. Many require more than five years of experience. For example, surgeons must complete four years of college and an additional five to seven years of specialized medical training to be able to do their job.

Job Training Employees may need some on-the-job training, but most of these

occupations assume that the person will already have the required skills, knowledge, work-related experience, and/or training.

Job Zone These occupations often involve coordinating, training, supervising, or managing the activities of others to accomplish goals. Very advanced communication and organizational skills are required. Examples include librarians, lawyers, aerospace engineers, physicists, school psychologists, and surgeons.

SVP Range (8.0 and above)

Education A bachelor's degree is the minimum formal education required for these occupations. However, many also require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).

**Appendix B:
O*NET-SOC 2019 Break-Outs of More General O*NET-SOC 2010
Classifications**

O*NET-SOC 2019	O*NET-SOC 2010
11-2032.00 Public Relations Managers	11-2031.00 Public Relations and Fundraising Managers
11-2033.00 Fundraising Managers	
11-3013.00 Facilities Managers	11-3011.00 Administrative Services Managers
13-2051.00 Financial and Investment Analysts	13-2051.00 Financial Analysts
13-2054.00 Financial Risk Specialists	
19-3039.02 Neuropsychologists	19-3039.01 Neuropsychologists and Clinical Neuropsychologists
19-3039.03 Clinical Neuropsychologists	
25-2055.00 Special Education Teachers, Kindergarten	25-2052.00 Special Education Teachers, Kindergarten and Elementary School
25-2056.00 Special Education Teachers, Elementary School	
25-9042.00 Teaching Assistants, Preschool, Elementary, Middle, and Secondary School, Except Special Education	25-9041.00 Teacher Assistants
25-9043.00 Teaching Assistants, Special Education	
29-1242.00 Orthopedic Surgeons, Except Pediatric	29-1067.00 Surgeons
29-1243.00 Pediatric Surgeons	
29-2011.04 Histotechnologists	29-2011.03 Histotechnologists and Histologic Technicians
29-2012.01 Histology Technicians	
29-2042.00 Emergency Medical Technicians	29-2041.00 Emergency Medical Technicians and Paramedics
29-2043.00 Paramedics	
29-2072.00 Medical Records Specialists	29-2071.00 Medical Records and Health Information Technicians
29-9021.00 Health Information Technologists and Medical Registrars	
39-1014.00 First-Line Supervisors of Entertainment and Recreation Workers, Except Gambling Services	39-1021.00 First-Line Supervisors of Personal Service Workers
53-1044.00 First-Line Supervisors of Passenger Attendants	
53-3051.00 Bus Drivers, School	53-3022.00 Bus Drivers, School or Special Client
53-3053.00 Shuttle Drivers and Chauffeurs	
53-3054.00 Taxi Drivers	53-3041.00 Taxi Drivers and Chauffeurs