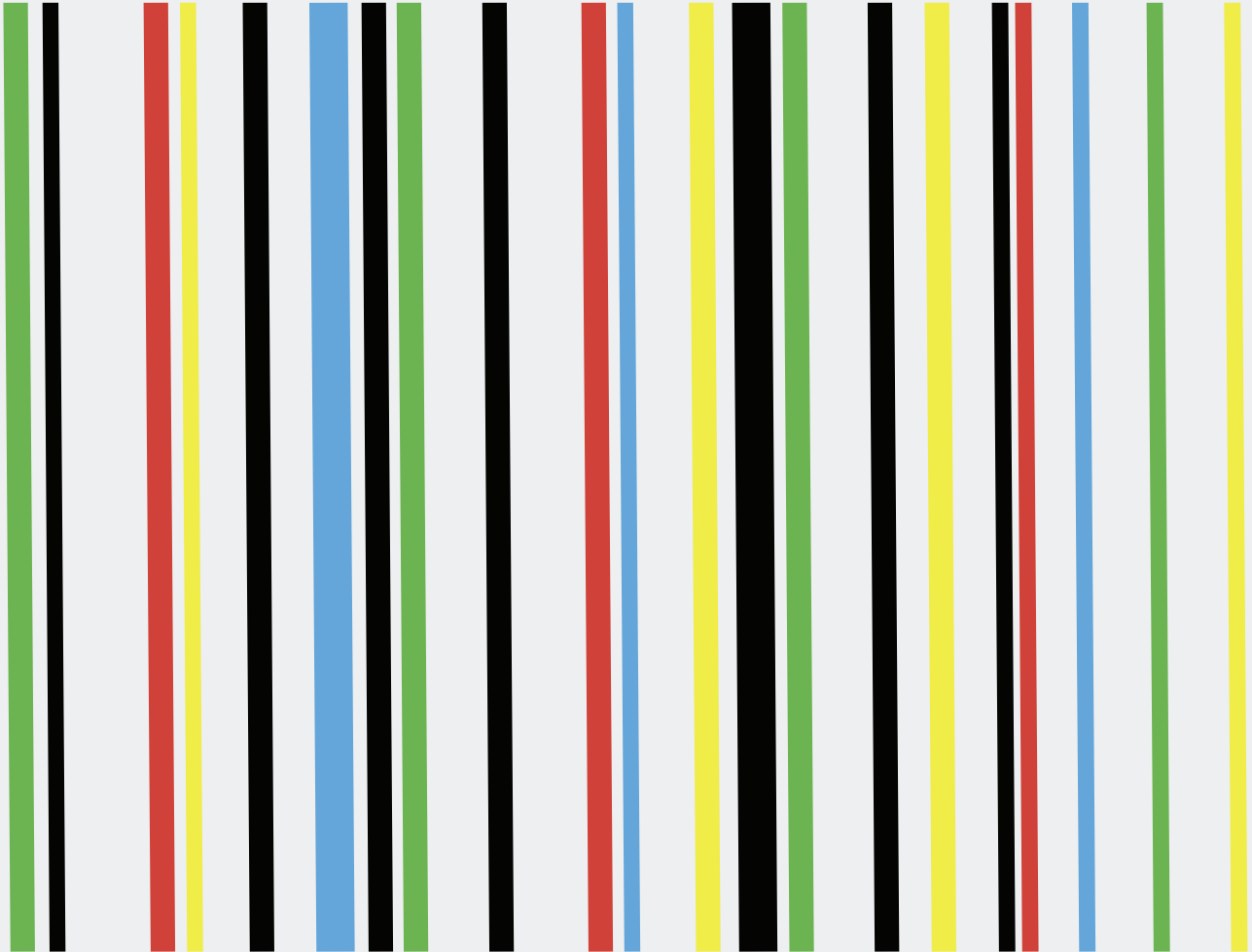


# Paving the occupational path:

A new system for assigning education and training



**H**ow should you prepare to enter an occupation? It depends, of course, on the occupation. Training and education paths vary widely. But knowing the most common ways people prepare for an occupation helps you identify which one you might pursue—and helps guide you in that pursuit.

For career-guidance purposes, the U.S. Bureau of Labor Statistics (BLS) assigns education and training categories to occupations. Students, educators, jobseekers, and others use the information to prepare or learn about occupations in the U.S. workforce. This information is not used, however, to establish an occupation's education, licensing, or practicing standards.

Along with developing the upcoming 2010–20 projections, BLS is implementing a new system of assigning education and training categories. This new system includes categories for education, experience, and training assignments that give a detailed explanation of the usual requirements for entering and attaining competency in an occupation.

This article provides an overview of the new categories, with examples of each. The first section summarizes each of the three categories of education and training: typical education needed for entry, work experience in a related occupation, and typical on-the-job training needed to attain competency in an occupation. The second section explains how BLS developed the system and how economists determined an occupation's category assignments. Sources of additional information are at the end.

## Understanding the new system

The new education and training system defines what is typically needed to enter and become competent in an occupation. Eighteen assignments across three categories provide specifics about an occupation's education, experience, and training. The box on page 15



uses sample occupations to illustrate the new system.

The first two categories—typical education needed for entry into an occupation and work experience in a related occupation—are preemployment requirements, meaning that workers have completed them before they can get a job in an occupation. The third category—typical on-the-job training needed to attain competency in the occupation—is usually a postemployment requirement, occurring after workers are hired.

### Typical education

Each occupation is assigned to 1 of 8 education levels, from doctoral or professional degree to less than a high school diploma. The assignment in this category indicates the typical level of education that most workers need to enter an occupation.

**Doctoral or professional degree.** A doctoral degree (Ph.D.) or first professional degree, such as in law or medicine, usually requires the completion of 3 years or more of

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full-time academic study beyond a bachelor's degree. Examples of occupations in which workers must have these types of degrees are postsecondary teachers, lawyers, and dentists.

**Master's degree.** A master's degree usually requires the completion of 1 or 2 years of full-time academic study beyond a bachelor's degree. Occupations in this category include physician assistants; educational, vocational, and school counselors; and statisticians.

**Bachelor's degree.** Completion of a bachelor's degree usually involves at least 4 years, but not more than 5 years, of full-time academic study beyond high school. Budget analysts, dietitians, and petroleum engineers are among the occupations in which workers need a bachelor's degree.

**Associate's degree.** Occupations in which workers need an associate's degree have this assignment. Completion of an associate's degree usually involves at least 2 years,

but not more than 4 years, of full-time academic study beyond high school. Programs are offered at community colleges, technical colleges, and other educational institutions. Occupations include dental hygienists, respiratory therapists, and mechanical drafters.

**Postsecondary nondegree award.** Occupations with this assignment usually require workers to have completed a formal program after high school that leads to a certificate or other award but does not lead to a degree. These programs are offered only at educational institutions; certification programs run by professional organizations or certifying bodies are not included. Examples of occupations that require a postsecondary nondegree award are emergency medical technicians and paramedics, nursing aides, and hairstylists.

**Some college, no degree.** Few occupations have this assignment. It includes

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# Sample education and training assignments

Compared with the previous system for assigning education and training categories to occupations, the new system gives a more complete picture of the requirements for entering and attaining competency in an occupation.

As the following examples illustrate, assignments in two categories cover the typical education and related work experience usually required prior to employment, and assignments in a third category include the types of on-the-job training that generally

occur during employment. The rose-colored shading identifies the category assignments for the sample occupations.

Economists in the U.S. Bureau of Labor Statistics (BLS) base these assignments on research they conduct for the *Occupational Outlook Handbook*. This information is provided to help students, educators, jobseekers, and others interested in careers. BLS does not have a role in establishing standards for education, licensing, or practice in any occupation.

Hydrologists	Preemployment		During employment	Categories	
	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency		
	Doctoral or professional degree	More than 5 years	Internship/Residency	Assignments	
	Master's degree		1 to 5 years		Apprenticeship
	Bachelor's degree	Less than 1 year			Long-term on-the-job training
	Associate's degree				None
	Postsecondary nondegree award	None	Short-term on-the-job training		
	Some college, no degree				None
	High school diploma or equivalent				
	Less than high school diploma				

Hazardous materials removal workers	Preemployment		During employment	Categories
	Typical education needed for entry	Work experience in a related occupation	Typical on-the-job training needed to attain competency	
	Doctoral or professional degree	More than 5 years	Internship/Residency	Assignments
	Master's degree	1 to 5 years	Apprenticeship	
	Bachelor's degree		Less than 1 year	
	Associate's degree	None		
	Postsecondary nondegree award		None	
	Some college, no degree			
	High school diploma or equivalent			
	Less than high school diploma			



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occupations in which workers usually need a high school diploma or its equivalent plus the completion of one or more postsecondary courses that do not result in a degree or other award. Actors, for example, typically need some postsecondary dramatic instruction, but they need not earn a degree or award as a result.

***High school diploma or equivalent.***

This assignment covers occupations in which workers need a high school diploma or its equivalent, such as the General Educational Development (GED) credential. Occupations include social and human service assistants and pharmacy technicians.

***Less than high school.*** Occupations with this assignment are those in which workers have completed a level of primary or secondary education that did not result in the award of a high school diploma or its equivalent. Cashiers, carpet installers, and janitors and cleaners are among these occupations.

## **Related work experience**

To enter many occupations, it's helpful to have work experience in a related occupation. However, assignments in this category apply only to occupations in which such experience is required or in which related experience is a commonly accepted substitute for formal education or training.

***More than 5 years.*** Some occupations require significant work experience. For example, computer and information systems managers might need more than 5 years of work experience in a computer-related occupation, such as computer systems analyst, programmer, computer software engineer, or computer support specialist.

***1 to 5 years.*** Marketing manager is an example of an occupation in which workers typically need 1 to 5 years of work experience, usually in marketing or a related field, to qualify for their positions.

***Less than 1 year.*** For occupations with this assignment, entry-level workers typically need less than 1 year of related work

experience. Restaurant cooks are an example of an occupation with this assignment.

***None.*** Most occupations have this assignment. For example, audiologists usually do not need work experience in a related occupation to enter their field.

## **On-the-job training**

Some workers receive training on the job that helps them acquire the skills they need to become competent in the occupation. As mentioned previously, this on-the-job training usually begins after a worker is hired. But there are some exceptions. Most elementary school teachers, for example, must complete an internship to attain competency in the occupation, but they usually get this training while they are in school and before they are employed as teachers.

Keep in mind that the on-the-job training assignments described here are occupation specific, not job specific. This distinction is important because occupation-specific training allows workers to transfer skills they learn in one job to another job in the same occupation. In contrast, job-specific training helps workers perform a particular job—learning about an individual employer's procedures or equipment, for example—but is not necessarily transferrable to another job.

***Internship/residency.*** Internships and residencies provide supervised training in a professional setting. These programs give prospective workers the opportunity to apply what they have learned in school to a real-world setting. Internships and residencies may be paid or unpaid, and they generally occur after the completion of a degree program or required coursework.

This assignment includes only programs that are required for workers to be employed in an occupation. It does not cover optional internships that help workers gain experience or advance in a field. Doctors, high school teachers, and marriage and family therapists, for example, all must complete an internship or residency program before they can be licensed to work in their occupations. Internship and residency programs vary in length.



Teaching internships often last 1 year, for example, but medical internship and residency programs may take between 3 and 8 years.

**Apprenticeship.** An apprenticeship combines paid on-the-job training with occupation-specific instruction. Apprenticeships are formal relationships between workers and sponsors, which may be individual employers, joint employer and labor groups, or employer associations. These programs typically provide at least 2,000 hours of training on the job and 144 hours of occupation-specific technical instruction per year—and most programs last between 3 and 5 years. Electricians and structural iron and steel workers are two examples of occupations that have an apprenticeship.

**Long-term on-the-job training.** This assignment designates training that lasts more than 12 months and either occurs on the job or combines work experience with formal classroom instruction. For example, nuclear power reactor operators often begin

as trainees and take formal courses to prepare for their required licensing exams. Occupational training programs that are sponsored by employers, such as those offered by police and fire academies, also are included.

**Moderate-term on-the-job training.** Moderate-term on-the-job training allows workers to develop skills for competency in 1 to 12 months of informal training and on-the-job experience. Employer-sponsored occupational training programs are included in this assignment. Advertising sales agents, geological and petroleum technicians, and home appliance repairers are among the occupations that require moderate-term on-the-job training.

**Short-term on-the-job training.** Occupations with this assignment require 1 month or less of informal training and on-the-job experience for workers to gain the skills that they need to become competent. The assignment includes occupation-specific training that is

sponsored by employers, such as programs that teach taxi drivers about equipment, safety, and other topics. Retail salespersons and maids and housekeeping cleaners are other examples of occupations that require short-term on-the-job training.

*None.* Some occupations do not require any occupation-specific on-the-job training. Professional occupations, which usually have educational requirements, are especially likely to have this assignment. For example, geographers and pharmacists can perform their work competently without getting any additional training on the job.

## Developing the new system

When BLS was developing the new education and training system, its goal was to provide

a more complete summary of how a worker enters and becomes competent in an occupation. For some occupations, the most common path to entry involves a combination of education and training, such as a high school diploma and an apprenticeship. The new system allows an occupation to be assigned to multiple categories—unlike the previous system, which allowed assignment to just one.

But no classification system is perfect. Because many occupations have multiple paths to entry, assigning only the most common path in each category necessarily leaves out other, often important, ways that people enter occupations. In the education category, for example, registered nurses have the assignment of associate's degree because it is the most common education for entry-level registered nurses; however, some registered nurses enter the occupation with a higher degree, such as a bachelor's.





**Development process.** The process of developing a new education and training system began with a team of BLS economists who met to discuss possible alternatives to the previously existing categories. The team also considered input from reviewers outside BLS, including comments received from *Federal Register* notices in 2008 and 2010. After much discussion, the team developed a system involving three categories of education and training as previously described:

- Typical education needed for entry
- Work experience in a related occupation
- Typical on-the-job training needed to attain competency.

Each of these categories would offer multiple assignments. The additional information should be even more helpful to career seekers, educators, and others interested in occupational entry requirements.

#### **Education and training resources.**

Assigning education and training categories involved considerable effort: BLS provides information on about 750 occupations.

To make category assignments for each occupation, BLS economists researched and analyzed a variety of information. Two sources of data important for the analyses were the American Community Survey and the Occupational Information Network (O\*NET).

The American Community Survey, conducted by the U.S. Census Bureau, is a household survey that measures the educational attainment of people currently in an occupation. Economists used information from this survey to look at workers' educational attainment for three groups—18 to 29 years old, 30 years and older, and all workers in an occupation. They compared the distribution of educational attainment among workers in an occupation, mindful that educational attainment differs from educational requirements. These comparisons helped economists get a glimpse into whether an occupation might have multiple paths to entry.

The surveys conducted for O\*NET asked workers and occupational experts questions

related to education, work experience, and training. These O\*NET surveys are produced by the U.S. Department of Labor's Employment and Training Administration.

After considering all of their research, economists determined category assignments for each occupation. In cases with more than one path to entry within an occupation, economists assigned the education, experience, or training categories that best described the path that most workers need to enter or gain competency in the occupation.

## For more information

To learn more about the new system, see "Education and Training Classification System Update—Final System" online at [www.bls.gov/emp/ep\\_finaledtrain.htm](http://www.bls.gov/emp/ep_finaledtrain.htm). The page includes links to the *Federal Register* notices, answers to frequently asked questions, and system codes representing the new assignments.

As mentioned previously, education and training requirements vary significantly from one job to another, even within an occupation. And some occupations require licensure, which is not covered in these categories or assignments.

State-specific requirements, such as licensure, can be obtained by contacting state licensing boards. In addition, the 2012–13 edition of the *Occupational Outlook Handbook (OOH)*, available in spring 2012, will include licensure information along with discussions of the education and training assignments.

The current *OOH* provides information about the many paths to entry that an occupation might have. Read the *OOH* online at [www.bls.gov/ooh](http://www.bls.gov/ooh), or look for it in your local library or career center.

The new education and training category assignments will be published in a table in fall 2011 and as a searchable database with additional tables in winter 2012. Visit the BLS Employment Projections website, [www.bls.gov/emp](http://www.bls.gov/emp), for announcements about publication.

