
Occupational Information Included in the Handbook

The *Occupational Outlook Handbook* is a career guidance resource that provides information on hundreds of occupations that comprise 9 out of 10 jobs in the United States. Each occupation is presented in its own chapter, or “statement,” that discusses the type of work that is performed, the work environment, the education and training requirements, the possibilities for advancement, and the typical earnings. Each statement is presented in a standard format, making it easy to compare occupations.

Because the *Handbook* covers so many occupations, it is best used as a reference, and is not meant to be read from cover to cover. Readers should begin by looking at the table of contents, in which similar occupations are grouped in clusters, or by looking at the index, in which occupations are listed alphabetically.

About those numbers at the beginning of each statement

The numbers in parentheses that appear just below the title of every detailed occupational statement are from the Occupational Information Network (O*NET)—a system used by State employment service offices to classify applicants and job openings, and by some career information centers and libraries to file occupational information.

You can use O*NET to search for occupations that match your skills, or you may search by keyword or O*NET code. For each occupation, O*NET reports information about different aspects of the job, including tasks performed, knowledge, skills, abilities, and work activities. It also lists interests, work styles, such as independence, and work values, such as achievement, that are well suited to the occupation. O*NET ranks and scores the descriptors in each category by their importance to the occupation.

Occupational Information Network Coverage, a section beginning on page 859, cross-references O*NET codes to occupations covered in the *Handbook*. O*NET codes are based on the 2000 Standard Occupational Classification (SOC) system. You can access O*NET on the Internet at <http://www.online.onetcenter.org>.

Sections of Occupational Statements

Significant Points

This section highlights key occupational characteristics discussed in the statement.

Nature of the Work

What workers do on the job, what tools and equipment they use, and how closely they are supervised is discussed in this section. The statement on fire fighting occupations, for example, gives a detailed account of the responsibilities of a firefighter, which

include operating the fire hose, providing emergency medical care, and cleaning and maintaining equipment. Some statements mention common alternative job titles or occupational specialties. The statement on accountants and auditors, for example, discusses several specialties, including public accountants, management accountants, and internal auditors.

The *Handbook* is revised every 2 years. This section may be revised for several reasons. One is the emergence of occupational specialties. For instance, webmasters—who are responsible for the technical aspects of operating a Web site—constitute a specialty within computer scientists and database administrators. Another reason for revision is a change in technology that affects the way in which a job is performed. The Internet, for example, allows purchasers to acquire supplies with a click of the mouse, saving time and money. Furthermore, job duties may be affected by modifications to business practices, such as organizational restructuring or changes in response to new government regulations. An example is paralegals and legal assistants, who are increasingly being used by law firms in order to lower costs and increase the efficiency of legal services.

Work environment. This subsection discusses the workplace, physical activities, and typical hours of workers in the occupation. It also describes opportunities for part-time work, the extent of travel required, any special equipment that is used, and the risk of injury that workers may face.

In many occupations, people work regular business hours—40 hours a week, Monday through Friday—but many do not. Waiters and waitresses, for example, often work evenings and weekends. The work setting can range from a hospital, to a mall, to an offshore oil rig. Truck drivers might be susceptible to injury, while paramedics have high job-related stress. Semiconductor processors may wear protective clothing or equipment, some construction laborers do physically demanding work, and top executives may travel frequently.

Information on various worker characteristics, such as the average number of hours worked per week, is obtained from the Current Population Survey (CPS)—a survey of households conducted by the U.S. Census Bureau for the Bureau of Labor Statistics (BLS).

Economists in BLS consult many sources before making changes to the nature of the work section, or any other section, of a *Handbook* statement. Usual sources include articles from newspapers, magazines, and professional journals, as well as the Web sites of professional associations, unions, and trade groups. Information found on the Internet or in periodicals is verified through interviews with individuals employed in the occupation, professional associations, unions, and others with occupational knowledge, such as university professors and career counselors.

Training, Other qualifications, and Advancement

After gathering your initial impressions of what a job is all about, it is important to understand how to prepare for it. The training, other qualifications, and advancement section explains all of the steps necessary to enter and advance in an occupation.

Education and training. This subsection describes the most significant sources of education and training, the type education or training preferred by employers, and the typical length of training. Some common forms of training include a high school diploma, informal on-the-job training, previous work experience, and a college degree. Other types of training include, but are not limited to, formal training (including internships), the U.S. Armed Forces, and graduate or professional degrees. The type of education or training required for each occupation in the *Handbook* varies, and two similar occupations can have very different requirements. For example, sales experience is particularly important for many sales jobs, but other sales jobs require formal postsecondary education, such as a bachelor's degree.

Licensure. The kinds of mandatory licenses or certifications associated with an occupation are described in this subsection. To be certified or licensed, a worker usually is required to complete one or more training courses and pass one or more examinations. Most occupations do not have mandatory licensure or certification requirements, but those that do, for example, include lawyers, pharmacists, and social workers. Some occupations have numerous professional credentials granted by different organizations, in which case the most widely recognized organizations are listed in the *Handbook*.

Other qualifications. Any additional qualifications that are not included in the previous subsections, such as the desirable skills, aptitudes, and personal characteristics that employers look for would be discussed in this section. For example, meeting and convention planners must have excellent interpersonal and organizational skills, the ability to work under pressure, and must pay attention to detail. For some entry-level jobs, personal characteristics are more important than formal training. Employers generally seek people who read, write, and speak well; compute accurately; think logically; learn quickly; get along with others; and demonstrate dependability. This subsection also includes information about voluntary, entry-level certifications.

Advancement. This subsection details possible advancement opportunities after gaining experience in an occupation. Advancement can come in several forms, including advancement within the occupation, such as promotion to a management position; advancement into other occupations, such as leaving a job as a lawyer to become a judge; and advancement to self-employment, such as an automotive technician opening his or her own repair shop.

Certain types of certification can also serve as a form of advancement. Voluntary certification often demonstrates a level of competency to employers, and can result in more responsibility, higher pay, or a new job. Accountants, for example, generally begin their careers without the Certified Public Accountant (CPA) designation. Many choose to pursue a CPA, however, because it increases their chances for advancement.

Information in the training, other qualifications, and advancement section comes from personal interviews with individuals employed in the occupation, Web sites, published training materials, and interviews with the organizations that grant degrees, certifications, or licenses, or are otherwise associated with the occupation.

Employment

This section reports the number of jobs that the occupation provided in 2006, the key industries in which those jobs were found, and, if significant, the number or proportion of self-employed workers in the occupation.

The source of estimated employment in a particular occupation in the *Handbook* is the Bureau's National Employment Matrix, which presents current and projected employment for 311 detailed industries and 754 detailed occupations over the 2006-2016 period. Data in the matrix come primarily from the establishment-based Occupational Employment Statistics (OES) Survey, which reports employment of wage and salary workers only for each occupation in every industry except agriculture and private households. Matrix data also come from the household-based Current Population Survey (CPS), which provides estimates of the number of self-employed and unpaid family workers in each occupation. The matrix also incorporates CPS data on total employment—wage and salary, self-employed, and unpaid family workers—in the agriculture and private household industries.

The estimate of total employment in each *Handbook* occupation combines data from several different sources. Furthermore, some *Handbook* occupations combine several matrix occupations. For these reasons, employment numbers cited in the *Handbook* often differ from employment data provided by the OES, CPS, and other employment surveys.

When significant, the geographic distribution of jobs is mentioned, reflecting CPS data. On the basis of OES survey data, some *Handbook* statements, such as textile, apparel, and furnishings occupations, list States that employ substantial numbers of workers in the occupation.

Job Outlook

In planning for the future, it is important to consider potential job growth and job opportunities. This section describes the factors that affect employment growth or decline, and in some instances, describes the relationship between the number of job seekers and the number of job openings.

Employment change. This subsection reflects the occupational projections in the National Employment Matrix. Each occupation is assigned a descriptive phrase based on its projected percent change in employment over the 2006-2016 period. This phrase describes the occupation's projected employment change relative to the projected average employment change for all occupations combined. (These phrases are listed at the end of *Occupational Information Included in the Handbook*.)

Many factors are examined in projecting the employment change for each occupation. One such factor is changes in technology. New technology can either create new job opportunities or eliminate jobs by making workers obsolete. The Internet has increased the demand for workers in the computer and information technology fields, such as computer support specialists

and systems administrators. However, the Internet also has adversely affected travel agents, because many people now book tickets, hotels, and rental cars online.

Another factor that influences employment trends is demographic change. By affecting the services demanded, demographic change can influence occupational growth or decline. For example, an aging population will demand more health care services, leading to occupational growth in health care occupations.

Another factor affecting job growth or decline is changes in business practices, such as restructuring businesses or outsourcing (contracting out) work. Corporate restructuring has made many organizations “flatter,” resulting in fewer middle management positions. Also, in the past few years, insurance carriers have been outsourcing sales and claims adjuster jobs to large, 24-hour call centers in order to reduce costs. Jobs in some occupations, such as computer programmers and customer service representatives, have been “offshored”—moved to low-wage foreign countries.

The substitution of one product or service for another can also affect employment projections. For example, consumption of plastic products has grown as they have been substituted for metal goods in consumer and manufactured products in recent years. The process is likely to continue and should result in stronger demand for machine operators in plastics than in metal.

Competition from foreign trade usually has a negative affect on employment. Often, foreign manufacturers can produce goods more cheaply than they can be produced in the United States, and the cost savings can be passed on in the form of lower prices with which U.S. manufacturers cannot compete. Increased international competition is a major reason for the decline in employment among textile, apparel, and furnishings workers.

Another factor is job growth or decline in key industries. If an occupation is concentrated in an industry that is growing rapidly, it is likely that that occupation will grow rapidly as well. For example, the growing need for business expertise is fueling demand for consulting services. This is expected to cause rapid growth in the management, scientific, and technical consulting services industry, which, in turn, will lead to rapid growth in the employment of management analysts.

Job prospects. In some cases, the *Handbook* mentions that an occupation is likely to provide numerous job openings or, in others, that an occupation likely will have relatively few openings. This information reflects the projected change in employment, as well as replacement needs. Large occupations in which workers frequently enter and leave, such as food and beverage serving occupations, generally provide the most job openings—reflecting the need to replace workers who transfer to other occupations or who stop working.

Some *Handbook* statements discuss the relationship between the number of job seekers and the number of job openings. (The phrases used to describe that relationship appear at the end of *Occupational Information Included in the Handbook*.) Job opportunities are affected by several factors, including the creation of new jobs, the number of people who apply for jobs, and the number of people who leave the occupation. In some oc-

cupations, there is a rough balance between job seekers and job openings, resulting in *good* opportunities. In other occupations, employers may report difficulty finding qualified applicants, resulting in *excellent* job opportunities. Still other occupations are characterized by a surplus of applicants, leading to *keen* competition for jobs. Variation in job opportunities by industry, educational attainment, size of firm, or geographic location also may be discussed. Even in crowded occupations, job openings do exist. Good students or highly qualified individuals should not be deterred from undertaking training for, or seeking entry into, those occupations.

Employment projections table. The employment projections table lists employment statistics from the National Employment Matrix. It includes 2006 employment, projected 2016 employment, and the 2006-2016 change in employment in both numerical and percent forms. Numbers below ten thousand are rounded to the nearest hundred, numbers above ten thousand are rounded to the nearest thousand, and percents are rounded to the nearest whole number. Numerical and percent changes are calculated using non-rounded 2006 and 2016 employment figures, and then are rounded for presentation in the employment projections table.

Earnings

This section discusses typical earnings and how workers are compensated—by means of annual salaries, hourly wages, commissions, piece rates, tips, or bonuses. Within every occupation, earnings vary by experience, responsibility, performance, tenure, and geographic area. Almost every statement in the *Handbook* contains 2006 OES-survey earnings data for wage and salary workers. Information on earnings in the major industries in which the occupation is employed, also supplied by the OES survey, may be given as well.

In addition to presenting earnings data from the OES survey, some statements contain additional earnings data from non-BLS sources. Starting and average salaries of Federal workers are based on 2007 data from the U.S. Office of Personnel Management. The National Association of Colleges and Employers supplies information on average salary offers in 2007 for students graduating with a bachelor’s, master’s, or Ph.D. degree in certain fields. A few statements contain additional earnings information from other sources, such as unions, professional associations, and private companies. These data sources are cited in the text.

Benefits account for a significant portion of total compensation costs to employers. Benefits such as paid vacation, health insurance, and sick leave may not be mentioned, because they are widespread. In some occupational statements, the absence of these traditional benefits is pointed out. Although not as common as traditional benefits, flexible hours and profit-sharing plans may be offered to attract and retain highly qualified workers. Less common benefits also include childcare, tuition for dependents, housing assistance, summers off, and free or discounted merchandise or services. For certain occupations, the percentage of workers affiliated with a union is listed. These data come from the CPS survey.

Unless otherwise noted, the source of employment and earnings data presented in the *Handbook* is the Bureau of

Labor Statistics. Nearly all *Handbook* statements cite employment and wage data from the OES survey, and some include data from outside sources. OES data may be used to compare wages among occupations; outside data, however, may not be used in this manner, because characteristics of these data vary widely.

Related occupations

Occupations involving similar duties, skills, interests, education, and training are listed.

Sources of additional information

No single publication can describe all aspects of an occupation. Thus, the *Handbook* lists the mailing addresses of associations, government agencies, unions, and other organizations that can provide occupational information. In some cases, toll free telephone numbers and Internet addresses also are listed. Free or relatively inexpensive publications offering more information may be mentioned; some of these publications also may be available in libraries, in school career centers, in guidance offices, or on the Internet. Most of the organizations listed in this section were sources of information on the nature of the work, training, and job outlook discussed in the *Handbook*.

For additional sources of information, also read the earlier chapters, “Sources of Career Information” and “Sources of Education, Training, and Financial Aid.”

Key phrases in the *Handbook*

This box explains how to interpret the key phrases used to describe projected changes in employment. It also explains the terms used to describe the relationship between the number of job openings and the number of job seekers. The description of this relationship in a particular occupation reflects the knowledge and judgment of economists in the BLS Office of Occupational Statistics and Employment Projections.

Changing employment between 2006 and 2016

If the statement reads:	Employment is projected to:
Grow much faster than average	increase 21 percent or more
Grow faster than average	increase 14 to 20 percent
Grow about as fast as average	increase 7 to 13 percent
Grow more slowly than average	increase 3 to 6 percent
Little or no change	decrease 2 percent to increase 2 percent
Decline slowly or moderately	decrease 3 to 9 percent
Decline rapidly	decrease 10 percent or more

Opportunities and competition for jobs

If the statement reads:	Job openings compared with job seekers may be:
Very good to excellent opportunities	More numerous
Good or favorable opportunities	In rough balance
May face, or can expect, keen competition	Fewer