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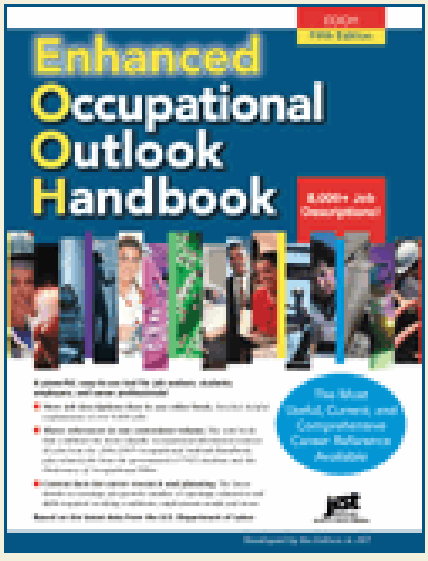

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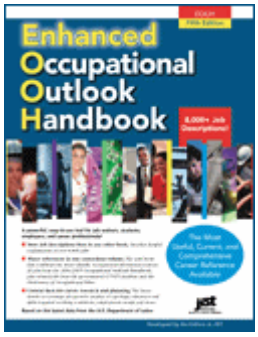

Enhanced Occupational Outlook Handbook, Fifth Edition

Softcover, 5th Ed.
Developed under the direction of Michael Farr, with database work by Laurence Shatkin, Ph.D.

Format: Softcover or Hardcover, 8.5 x 11, 784 pp.
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Interest Level: Adults
Four-Star, Top Rating: "One of the most thorough and comprehensive career description guides....The incorporation of additional data is highly beneficial. It gives readers lots of options to explore in their field(s) of interest....This is a fantastic resource!"
—David Goodenough, Editor, Career Transitions: The Best Resources to Help You Advance

♦ The most useful, current, and comprehensive career reference available!
♦ More job descriptions than any other book—nearly 8,000!
♦ Easy to use—organized around the user-friendly structure of the Occupational Outlook Handbook!
Readers can find virtually everything under the sun with respect to job descriptions and details in this fifth edition of the Enhanced Occupational Outlook Handbook. That's because the EOOH combines information from the three most authoritative occupational data sources.

Access is easy because the EOOH uses the same user-friendly clusters of related jobs as the Occupational Outlook Handbook, 2004-2005 Edition. The complete, well-written narratives from the OOH are included (270+). Then related job descriptions from the government's latest O*NET database (more than 750) are appended to the OOH descriptions, as are titles and brief descriptions from the Dictionary of Occupational Titles (nearly 7,000).

The result? Readers can easily find current facts for career research and planning that include the latest details on earning, job growth, number of openings, education and skills required, working conditions, employment trends, related personality type, and more.

Click on one to Visit the page!

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Introduction. Provides details on this book's information sources; tips for job seekers, students, career changers, and employers on using this book; and pointers for interpreting the job descriptions. *Begins on page 1.*

The Job Descriptions. The book's main section, presenting nearly 8,000 job descriptions. It organizes all descriptions under the major job titles in the "List of Major Jobs" (starting at right). *Begins on page 7.*

Appendix: Tomorrow's Jobs. Gives a brief overview of major trends in occupations and industries. *Begins on page 719.*

Indexes. This book has two indexes—one for major job titles and one for more-specific job titles. The "Index of Major Job Titles" lists all *Occupational Outlook Handbook* jobs described in this book. For most readers, this is the only index you need to find major jobs along with their complete descriptions. An example of a major job title is "computer software engineers." The "Index of More-Specific Job Titles" lists all jobs described in this book from the Occupational Information Network (O*NET) database and the *Dictionary of Occupational Titles*. This second index is helpful when you are researching very specific jobs or need brief job descriptions. Examples of more-specific jobs are "computer software engineers, applications," and "computer software engineers, systems software." *The indexes start on page 727.*

List of Major Jobs

The major job titles that follow are arranged in groupings of related jobs. Find one or more jobs that interest you, and then turn to the page indicated for a complete description, followed by brief descriptions of more-specific related jobs.

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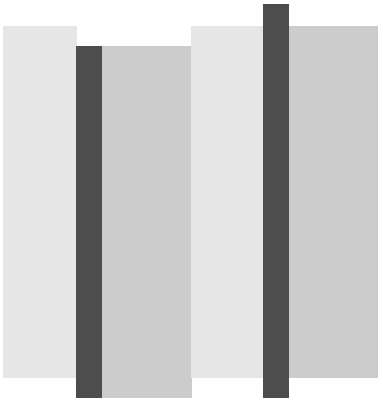

Introduction

Too many people let their careers, training, and education "happen" almost by accident. It is wise, however, to get good information when planning your educational and career options. For example, knowing the skills required for a given job—or its training requirements, growth potential, and average earnings—is very important for helping you make decisions. The more information you have, the more likely you are to choose a satisfying, rewarding career.

We think this book will help. The *Enhanced Occupational Outlook Handbook* is one of the best resources available for occupational information. It provides a unique combination of three major career reference sources from the U.S. Department of Labor: the *Occupational Outlook Handbook (OOH),* the *Dictionary of Occupational Titles (DOT),* and the very latest Occupational Information Network (O*NET) data. This book, therefore, is one of the most comprehensive publications using government occupational data. With all these sources in one book, you can conveniently obtain an enormous amount of information.

Following are some additional facts on the sources of information used in this book.

Occupational Outlook Handbook

The *OOH* is published by the U.S. Department of Labor and is updated every two years. The *OOH* provides detailed, readable descriptions for more than 270 major occupations covering about 88 percent of the workforce. The full text of each *OOH* job description appears in the *Enhanced Occupational Outlook Handbook.* Each *OOH* job description covers the nature of the work, working conditions, training and education needed, job outlook, earnings, related jobs, and sources of additional information.

Jobs in the *OOH* are grouped into clusters of related jobs, including a special section presenting opportunities in the armed forces. This structure allows you to explore jobs in general groups that might be interesting.

Occupational Information Network—O*NET

The O*NET is not a book. It is a database of information on occupations developed and continuously updated by the U.S. Department of Labor. The O*NET replaces an older occupational database that was the basis for the *Dictionary of Occupational Titles.* JIST developers were able to cross-reference about 800 O*NET job titles to the more general titles in the *OOH.* Descriptions for each of these O*NET jobs are included in the *Enhanced Occupational Outlook Handbook,* immediately following their related *OOH* job description.

Another JIST book, titled the *O*NET Dictionary of Occupational Titles,* was the first publication to present information on all O*NET jobs in printed form and gives more detailed information than contained here. You can obtain additional information about the O*NET database on the Internet at www.onetcenter.org.

Dictionary of Occupational Titles

The granddaddy of occupational reference books, the *DOT,* was first published in 1939 and has been revised many times since. The most recent edition of the *DOT* is about 1,400 pages long and can be found in most libraries. It was compiled by the U.S. Department of Labor's Employment Service and includes brief descriptions on all but the most minor occupations in this country.

The most recent (and final) version of the *DOT* was published in 1991. It provides descriptions for 12,741 occupations that represented virtually all jobs in our economy at that time. Many *DOT* jobs are very specialized and of little interest for career exploration. We include brief descriptions for the nearly 7,000 *DOT* jobs that can be linked to related *OOH* job descriptions.

While the *DOT* was and is an important reference tool, it was not designed to be user-friendly for career exploration. Also, the new O*NET was designed to replace the older *DOT* database, and no *DOT* updates are planned. Many of the more-specialized *DOT* jobs were merged into more-general O*NET descriptions, making the O*NET more useful as a career exploration tool but losing the richness of the more-specialized jobs found in the *DOT.*

Combining the *OOH,* O*NET, and *DOT*

The *Enhanced Occupational Outlook Handbook* combines all three information sources into one user-friendly reference. This is a big deal, because doing so provides a practical way to obtain and use a vast range of information that was previously not easy to get. Without this book, you would have to begin with the *OOH,* go to the Internet for information on the O*NET jobs, and then try to locate the related *DOT* occupations in a very big book that uses a different organizational structure. While this is possible, trust us—you don't want to try.

Instead, the *Enhanced Occupational Outlook Handbook* organizes the information from the three sources into an easy-to-use format. Each occupation begins with the detailed description from the *OOH* and is followed by the more-specific descriptions from the O*NET. Finally, the most specific descriptions from the *DOT* are given. In total, this provides almost 7,000 job descriptions, including about 800 O*NET descriptions and 6,000 *DOT* descriptions.

Tips for Using the Book

This book can be used in many ways by many people. The following sections offer you some suggestions.

For Employers: Writing Job Descriptions, Comparing Pay Rates, and Dealing with Other Situations

The job descriptions provide substantial, specific content to help employers write job descriptions and identify paths of upward mobility. For employers who want to upgrade or retrain their employees, this book clearly identifies skills and tasks needed for related or new occupations. This information can help define what training topics and outcomes to emphasize. The earnings information provides guidance on pay rates, though local rates may be significantly higher or lower. Finally, employers can use this book when selecting new employees by reviewing the skills needed for a specific job.

For Job Seekers: Writing Resumes, Preparing for Interviews, and Identifying Job Targets

The *Enhanced Occupational Outlook Handbook* can be very helpful in your job search in a variety of ways, including the following.

Writing Resumes. On your resume, it is important to describe major tasks performed on a job and the skills that you developed. This book makes the task much easier. Begin by locating descriptions of jobs you've held. The descriptions list the skills and aptitudes you most likely used on these jobs. Compare those skills to the skills needed in the job you are seeking and emphasize skills that are similar.

Preparing for Interviews. It is essential to emphasize to interviewers why they should hire you over someone else. To help you do so, look up the descriptions for the job you are interviewing for and note the skills and other attributes it requires. Then, in interviews, emphasize the skills you have that are similar. Provide examples from past jobs or other life situations that support your ability to handle the new job. Doing your homework in this way often results in getting job offers over people with better credentials but inferior interview preparation.

Identifying Job Targets. As an example, perhaps you are looking for an administrative assistant job. In so doing, however, you may miss out on the enormous range of interesting jobs that someone with good administrative and office skills can do. Whatever your situation, more jobs are out there for you than you may have imagined. So browse the Table of Contents to find job titles that sound interesting. As you browse, ask yourself, "Could a person with my skills do this job?" If the answer is yes, and if the job sounds interesting, it is a potential target. Read the descriptions to find out more about the job, and then consider it in your job search or career planning. You may also identify previously overlooked job targets by carefully reviewing jobs related to those you have held or are considering. Often, related O*NET or *DOT* jobs are more specific than those you may have considered.

For Exploring Career and Educational Options

People need good information when making decisions about careers, education, and training. Typically, this need first occurs during the high school and college years, when young people are deciding on careers to pursue after completing school and entering early adulthood. Adults also need occupational information during transition points in their careers. These transitions occur when people lose jobs, become dissatisfied with career choices, want to experience more personal growth, develop a physical or mental impairment that inhibits work, or want higher earnings.

Career counselors have found that certain categories of information are most important in making good career decisions. These are presented here, along with brief comments on each.

Information on the Nature of the Work. Each *OOH* description in this book includes a section titled "Nature of the Work." This section provides an easy-to-read summary about the tasks typically performed by workers. The description also reviews issues like the amount of supervision, variety in daily routine, and level of responsibility. This information helps you develop a good feel for what the job is really like. The O*NET and *DOT* descriptions also contain useful information about the job duties workers typically perform. This information is often used by organizations when writing job descriptions. In reviewing this information, you may find it useful to compare things you like to do or are good at with the experience, skills, aptitudes, and preferences required for a job that interests you.

Information on Working Conditions. You should carefully consider the working conditions for a job that interests you. Each *OOH* job description includes a section titled "Working Conditions" that provides information on the physical environment, work hours, and potential for occupational injury or illness. For example, suppose that you are interested in managing a restaurant. In reading the *OOH* description, you will learn that restaurant managers often work 50 or more hours a week and often on evenings and weekends. You may be willing to accept this, but it is important information to consider before enrolling, say, in a restaurant management training program. The O*NET database includes additional facts on working conditions. You can find this information in the more-detailed descriptions in the book titled the *O*NET Dictionary of Occupational Titles.*

Information on Experience, Training, or Education Required. Many people do not pursue a career that interests them because they do not have the training, education, or experience it requires. We suggest that you do not dismiss any job that interests you for these reasons. Remember that there are often creative ways to enter an occupation that do not require all the credentials normally needed. And, when certain credentials are required, you should consider ways to get them. If you really want to do something, you have many options to accomplish it.

So first identify jobs that interest you, and then find out the typical entry requirements. The *OOH* descriptions in this book give this information in the "Training, Other Qualifications, and Advancement" section. Here you can learn about the schooling, certifications, degrees, and licenses workers need in an occupation. You'll discover that many occupations have multiple entry points. For example, a firefighter might only require some basic training beyond high school, whereas a college degree is often required for command-level firefighting positions. Additional information on requirements can be found in the *O*NET Dictionary of Occupational Titles* in the sections titled Knowledge, Abilities, Skills, and General Work Activities.

Information on Employment Outlook. Many career counselors suggest that the projected demand for a given job is an important measure to consider. For example, a job that is projected to grow rapidly may present better employment opportunities in the future. Their suggestions are based on the fact that people may obtain training or education for a job only to discover that they can't find employment in their chosen career.

This is an important consideration. But we also suggest that positions will almost always be available for good people in almost every occupation in almost every community at almost any time. Our experience is that your ability to get hired in your chosen occupation is more frequently related to your job-seeking skills than to the employment outlook. For this reason, we encourage you to consider jobs that interest you even if their growth projections are not that favorable—just do so knowing the facts.

Each *OOH* description in this book provides solid information on employment opportunities under a section titled "Job Outlook." It offers facts on the number of job openings expected to result from newly created jobs. It also gives details on projected openings resulting from people retiring or leaving the job for other reasons.

Information on Earnings Potential. How much you are likely to earn is obviously important in making career decisions. Typically, higher-paying occupations require higher levels of education, training, responsibility, or risk. Money, though, may not be as important to you if you end up in a job you hate. Even so, we think you should know as much as you can before making important career and educational decisions—and earnings should be a consideration.

You can obtain information on the earnings for a job in the "Earnings" section of the *OOH* job descriptions in this book. Normally the median ("average") annual earnings for each occupation are given. Sometimes a broader range of data indicates the entry-level earnings and/or earnings for highly educated and experienced workers. Keep in mind that this information is based on national data. Earnings for those entering the occupation will typically be significantly lower, and earnings in your geographical area may be lower or higher than average.

Detailed Information on the Job Descriptions

As you now know, this book includes job descriptions from three major sources. The first and longest description for each major occupation is from the *OOH*. Following each of those job descriptions are brief descriptions for related jobs from the O*NET. Then come related descriptions from the *DOT*. The information that follows gives you details to interpret the job descriptions from the three major sources used in compiling this book.

Understanding the OOH Descriptions

OOH job descriptions follow a standard format. The following information will help you interpret each section. As you read this, it will help if you refer to an *OOH* job description in this book.

Job Title and O*NET Job Numbers. The job title is the one most often used in describing the job. This is followed by one or more O*NET numbers for jobs most closely related to the *OOH* job title. Note that we give descriptions for each O*NET job number listed here immediately following each *OOH* description.

We also provide additional information in this section—GOE Interest Areas, GOE Work Group names, and Personality Types—that is not included in the *OOH* descriptions. This information allows you to easily cross-reference other career exploration systems based on the *Guide for Occupational Exploration*'s arrangement that organizes jobs by interests and based on the Holland personality types that are used in the Self Directed Search (SDS) and other career assessment inventories and information systems.

Significant Points. This section contains highlights about key occupational characteristics. Normally, several points are provided for each description.

Nature of the Work. This section discusses what workers do on the job. Duties vary by industry or employer. For instance, workers in larger firms tend to be more specialized, whereas those in smaller firms often have a wider variety of duties. Most jobs have several levels of skills and responsibilities through which workers can progress. Beginners may begin as trainees performing routine tasks under close supervision. Experienced workers usually undertake more difficult tasks and are expected to perform with less supervision.

The influence of technological advances on the way work is done is mentioned. For example, the Internet allows purchasers to buy supplies with the click of a mouse, saving time and money. This section of the description also discusses emerging specialties. For example, Webmasters—who are responsible for all technical aspects involved in operating a Web site—comprise a specialty within computer systems analysts, database administrators, and computer scientists.

Working Conditions. This section identifies the typical hours worked, workplace environment, possibility of injury, special equipment, physical activities, and extent of travel required. In many occupations people work regular business hours—40 hours a week, Monday through Friday—but many do not. For example, waiters and waitresses often work evenings and weekends. A 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, some construction laborers do physically demanding work, and top executives may travel frequently.

Employment. This section reports the number of jobs the occupation provides and the key industries where these jobs are found. When significant, the geographic distribution of jobs and the proportion of part-time (less than 35 hours a week) and self-employed workers in the occupation are mentioned. Self-employed workers account for nearly 8 percent of the workforce, but they are concentrated in a small number of occupations, such as farmers and ranchers, childcare workers, lawyers, health practitioners, and the construction trades.

Training, Other Qualifications, and Advancement. After knowing what a job is all about, it is important to understand how to train for it. This section describes the most significant sources of training, including the training preferred by employers, the typical length of training, and advancement possibilities. Job skills are sometimes acquired through high school, informal on-the-job training, formal training (including apprenticeships), the armed forces, home study, hobbies, or previous work experience. For example, sales experience is particularly important for many sales jobs. Many professional jobs, on the other hand, require formal postsecondary education—postsecondary vocational or technical training or college, postgraduate, or professional education.

In addition to training requirements, the *OOH* descriptions mention desirable skills, aptitudes, and personal characteristics. 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.

Some occupations require certification or licensing to enter the field, to advance, or to practice independently. Certification or licensing generally involves completing courses and passing examinations. Many occupations increasingly have continuing education or skill improvement requirements to keep up with the changing economy or to improve advancement opportunities.

Key Phrases Used in the *OOH* Descriptions

The following information explains how to interpret the key phrases that 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 descriptions of this relationship in a particular occupation reflect the knowledge and judgment of economists in the U.S. Department of Labor's Office of Occupational Statistics and Employment Projections.

Changing employment between 2002 and 2012

If the statement reads:	Employment is projected to:
Grow much faster than average	Increase 36 percent or more
Grow faster than average	Increase 21 to 35 percent
Grow about as fast as average	Increase 10 to 20 percent
Grow more slowly than average	Increase 3 to 9 percent
Little or no change	Increase 0 to 2 percent
Decline	Decrease 1 percent or more

Opportunities and competition for jobs	
If the statement reads:	**Job openings compared to 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

Job Outlook. This section describes the factors that will result in growth or decline in the number of jobs. In some cases, this book mentions the relative number of job openings an occupation is likely to provide. Occupations that are large and have high turnover rates, such as food and beverage service occupations, generally provide the most job openings, reflecting the need to replace workers who transfer to other occupations or stop working.

Some descriptions discuss the relationship between the number of job seekers and job openings. In some occupations, there is a rough balance between job seekers and openings, resulting in good opportunities. In some occupations, employers may report difficulty finding qualified applicants, resulting in excellent job opportunities. Other occupations are characterized by a surplus of applicants, leading to keen competition for jobs. Limited training facilities, salary regulations, or undesirable aspects of the work—as in the case of private household workers—can result in an insufficient number of entrants to fill all job openings. On the other hand, glamorous or potentially high-paying occupations, such as actors or musicians, generally have surpluses of job seekers. Variation in job opportunities by industry, size of firm, or geographic location also may be discussed. Even in crowded fields, job openings exist. Good students or well-qualified individuals should not be deterred from undertaking training or seeking entry.

Susceptibility to layoffs due to imports, slowdowns in economic activity, technological advancements, or budget cuts are also addressed in this section. For example, employment of construction trades workers is sensitive to slowdowns in construction activity, while employment of government workers is sensitive to budget cuts.

Earnings. This section discusses typical earnings and how workers are compensated—annual salaries, hourly wages, commissions, piece rates, tips, or bonuses. Within every occupation, earnings vary by experience, responsibility, performance, tenure, and geographic area. Earnings data from the Bureau of Labor Statistics and, in some cases, from outside sources are included. Data may cover the entire occupation or a specific group within the occupation.

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. Though not as common as traditional benefits, employers may offer flexible hours and profit-sharing plans to attract and retain highly qualified workers. Less common benefits also include child care, tuition for dependents, housing assistance, summers off, and free or discounted merchandise or services.

Related Occupations. Occupations involving similar aptitudes, interests, education, and training are listed.

Sources of Additional Information. No single publication can completely describe all aspects of an occupation. Thus, each job description includes mailing addresses for associations, government agencies, unions, and other organizations that can provide occupational information. In some cases, toll-free phone numbers and Internet addresses also are listed. Free or relatively inexpensive publications offering more information may be mentioned; some of these may also be available in libraries, school career centers, or guidance offices or on the Internet.

Understanding the O*NET Descriptions

For each of the jobs in its database, the O*NET provides detailed information on more than 450 data elements. This is entirely too much material to put into printed form, and much of it is not all that useful for exploring career options. We carefully considered what information would be most helpful and have included several key elements, including each O*NET occupation's number, education or training typically required for entry, and a short summary description. Overall, we think the information given in each O*NET description will be useful for most readers. Following is a sample O*NET description and brief comments on each element included in the description.

Sample O*NET Job Description

ACCOUNTANTS (O*NET 13-2011.01)—**Preparation:** Bachelor's degree. **Description:** Analyze financial information and prepare financial reports to determine or maintain record of assets, liabilities, profit and loss, tax liability, or other financial activities within an organization.

O*NET Number. This provides a unique identification for each occupation. The number can be used to locate the job in a computer database or in other references such as the *O*NET Dictionary of Occupational Titles* book.

Preparation. This lists the level of training, education, or experience typically needed to qualify for entry into this job.

Description. This gives a brief summary description of the job and its basic duties.

Understanding the *DOT* Descriptions

In order to include the nearly 7,000 *DOT* job descriptions that cross-reference to the O*NET jobs, we had to present them in a very compact format. An example of these descriptions follows. The *DOT* job titles are presented in bold capital letters, and each title is followed by a brief summary description.

Sample DOT Job Descriptions

ACCOUNTANT: Applies principles of accounting to analyze financial information and prepare financial reports. **ACCOUNTANT, BUDGET:** Applies principles of accounting to analyze past and present financial operations and estimates future revenues and expenditures to prepare budget. **ACCOUNTANT, COST:** Applies principles of cost accounting to conduct studies which provide detailed cost information not supplied by general accounting systems. **ACCOUNTANT, PROPERTY:** Identifies and keeps record of company owned or leased equipment, buildings, and other property. **ACCOUNTANT, SYSTEMS:** Devises and installs special accounting systems and related procedures in establishment which cannot use standardized system. **ACCOUNTANT, TAX:** Prepares federal, state, or local tax returns of individual, business establishment, or other organization.

according to descriptions of victims and witnesses, and prepares schematic drawings depicting scenes of crimes. **PRINTMAKER:** Conceives and develops drawings and other art work and prepares printmaking medium used to print fine arts graphics. **PRODUCTION MANAGER, ADVERTISING:** Coordinates activities of design, illustration, photography, pasteup, and typography personnel to prepare advertisements for publication, and supervises workers engaged in pasting up advertising layouts in art department or studio. **QUICK SKETCH ARTIST:** Sketches likeness of customers. **SCULPTOR:** Designs and constructs three-dimensional art works, utilizing any combination of mediums, methods, and techniques. **SILHOUETTE ARTIST:** Cuts silhouettes of customers.

Designers

O*NET: 27-1021.00, 27-1022.00, 27-1023.00, 27-1024.00, 27-1025.00, 27-1026.00, 27-1027.01, and 27-1027.02; **GOE Interest Area(s):** 01 Arts, Entertainment, and Media; **GOE Work Group(s):** 01.04 Visual Arts; **Personality Type(s):** Artistic

Significant Points

- ▲ Nearly one-third of designers were self-employed—almost five times the proportion for all professional and related occupations.
- ▲ Creativity is crucial in all design occupations; most designers need a bachelor's degree, and candidates with a master's degree hold an advantage.
- ▲ Keen competition is expected for most jobs, despite average projected employment growth, because many talented individuals are attracted to careers as designers.

Nature of the Work

Designers are people with a desire to create. They combine practical knowledge with artistic ability to turn abstract ideas into formal designs for the merchandise we buy, the clothes we wear, the Web sites we use, the publications we read, and the living and office space we inhabit. Designers usually specialize in a particular area of design, such as automobiles, industrial or medical equipment, home appliances, clothing and textiles, floral arrangements, publications, Web sites, logos, signage, movie or TV credits, interiors of homes or office buildings, merchandise displays, or movie, television, and theater sets.

The first step in developing a new design or altering an existing one is to determine the needs of the client, the ultimate function for which the design is intended, and its appeal to customers or users. When creating a design, designers often begin by researching the desired design characteristics, such as size, shape, weight, color, materials used, cost, ease of use, fit, and safety.

Designers then prepare sketches or diagrams—by hand or with the aid of a computer—to illustrate the vision for the design. After consulting with the client, a creative director, or a product development team, designers create detailed designs, using drawings, a structural model, computer simulations, or a full-scale prototype. Many designers use computer-aided design (CAD) tools to create and better visualize the final product. Computer models allow ease and flexibility in exploring a greater number of design alternatives, thus reducing design costs and cutting the time it takes to deliver a product to market. Industrial designers use computer-aided industrial design (CAID) tools to create designs and machine-readable instructions that communicate with automated production tools.

Designers sometimes supervise assistants who carry out their creations. Designers who run their own businesses also may devote a considerable amount of time to developing new business contacts, examining equipment and space needs, and performing administrative tasks, such as reviewing catalogues and ordering samples. The need for up-to-date computer and communications equipment is an ongoing consideration for many designers, especially those in industrial and graphic design.

Design encompasses a number of different fields. Many designers specialize in a particular area of design, whereas others work in more than one area.

Commercial and industrial designers develop countless manufactured products, including airplanes; cars; children's toys; computer equipment; furniture; home appliances; and medical, office, and recreational equipment. They combine artistic talent with research on the use of a product, on customer needs, and on marketing, materials, and production methods to create the most functional and appealing design that will be competitive with others in the marketplace. Industrial designers typically concentrate in a subspecialty such as kitchen appliances, auto interiors, or plastic-molding machinery.

Fashion designers design clothing and accessories. Some high-fashion designers are self-employed and design for individual clients. Other high-fashion designers cater to specialty stores or high-fashion department stores. These designers create original garments, as well as clothing that follows established fashion trends. Most fashion designers, however, work for apparel manufacturers, creating designs of men's, women's, and children's fashions for the mass market.

Floral designers cut and arrange live, dried, or artificial flowers and foliage into designs, according to the customer's order. They design arrangements by trimming flowers and arranging bouquets, sprays, wreaths, dish gardens, and terrariums. They may either meet with customers to discuss the arrangement or work from a written order. Floral designers make note of the occasion, the customer's preference with regard to the color and type of flower involved, the price of the completed order, the time at which the floral arrangement or plant is to be ready, and the place to which it is to be delivered. The variety of duties performed by floral designers depends on the size of the shop and the number of designers employed. In a small operation, floral designers may own their shops and do almost everything, from growing and purchasing flowers to keeping financial records.

Graphic designers plan, analyze, and create visual solutions to communications problems. They use a variety of print, electronic, and film media and technologies to execute a design that meet clients' communication needs. They consider cognitive, cultural, physical, and social factors in planning and executing designs appropriate for a given context. Graphic designers use computer software to develop the overall layout and production design of magazines, newspapers, journals, corporate reports, and other publications. They also produce promotional displays and marketing brochures for products and services, design distinctive logos for products and businesses, and develop signs and signage systems—called environmental graphics—for business and government. An increasing number of graphic designers are developing material for Internet Web pages, computer interfaces, and multimedia projects. Graphic designers also produce the credits that appear before and after television programs and movies.

Interior designers enhance the function, safety, and quality of interior spaces of private homes, public buildings, and business or institutional facilities, such as offices, restaurants, retail establishments, hospitals, hotels, and theaters. They also plan the interiors of existing structures that are undergoing renovation or expansion. Most interior designers specialize. For example, some may concentrate on residential design, while others focus on business design. Still others may specialize further by focusing on particular rooms, such as kitchens or baths. With a client's

tastes, needs, and budget in mind, interior designers prepare drawings and specifications for non-load-bearing interior construction, furnishings, lighting, and finishes. Increasingly, designers are using computers to plan layouts, because computers make it easy to change plans to include ideas received from the client. Interior designers also design lighting and architectural details–such as crown molding, built-in bookshelves, or cabinets–coordinate colors, and select furniture, floor coverings, and window treatments. Interior designers must design space to conform to federal, state, and local laws, including building codes. Designs for public areas also must meet accessibility standards for the disabled and the elderly.

Merchandise displayers and window dressers, or *visual merchandisers*, plan and erect commercial displays, such as those in windows and interiors of retail stores or at trade exhibitions. Those who work on building exteriors erect major store decorations, including building and window displays and lights. Those who design store interiors outfit store departments, arrange table displays, and dress mannequins. In large retail chains, store layouts typically are designed corporately, through a central design department. To retain the chain's visual identity and ensure that a particular image or theme is promoted in each store, designs are distributed to individual stores by e-mail, downloaded to computers equipped with the appropriate design software, and adapted to meet the size and dimension requirements of each individual store.

Set and exhibit designers create sets for movie, television, and theater productions and design special exhibition displays. Set designers study scripts, confer with directors and other designers, and conduct research to determine the historical period, fashion, and architectural styles appropriate for the production on which they work. They then produce sketches or scale models to guide in the construction of the actual sets or exhibit spaces. Exhibit designers work with curators, art and museum directors, and trade-show sponsors to determine the most effective use of available space.

Working Conditions

Working conditions and places of employment vary. Designers employed by manufacturing establishments, large corporations, or design firms generally work regular hours in well-lighted and comfortable settings. Designers in smaller design consulting firms, or those who freelance, generally work on a contract, or job, basis. They frequently adjust their workday to suit their clients' schedules and deadlines, meeting with the clients during evening or weekend hours when necessary. Consultants and self-employed designers tend to work longer hours and in smaller, more congested, environments.

Designers may transact business in their own offices or studios or in clients' homes or offices. They also may travel to other locations, such as showrooms, design centers, clients' exhibit sites, and manufacturing facilities. Designers who are paid by the assignment are under pressure to please clients and to find new ones in order to maintain a steady income. All designers sometimes face frustration when their designs are rejected or when their work is not as creative as they wish. With the increased speed and sophistication of computers and advanced communications networks, designers may form international design teams, serve a geographically more dispersed clientele, research design alternatives by using information on the Internet, and purchase supplies electronically, all with the aid of a computer in their workplace or studio.

Occasionally, industrial designers may work additional hours to meet deadlines. Similarly, graphic designers usually work regular hours, but may work evenings or weekends to meet production schedules. In contrast, set and exhibit designers work long and irregular hours; often, they are under pressure to make rapid changes. Merchandise displayers and window trimmers may spend much of their time designing displays in their office or studio, but those who also construct and install the displays may have to move lumber and heavy materials and perform some carpentry and painting. Fashion designers may work long hours to meet production deadlines or prepare for fashion shows. In addition, fashion designers may be required to travel to production sites across the United States and overseas. Interior designers generally work under deadlines and may put in extra hours to finish a job. Also, they typically carry heavy, bulky sample books to meetings with clients. Floral designers generally work regular hours in a pleasant work environment, but holiday, wedding, and funeral orders often require overtime.

Employment

Designers held about 532,000 jobs in 2002. Approximately one-third were self-employed. Employment was distributed as follows:

Graphic designers	212,000
Floral designers	104,000
Merchandise displayers and window trimmers	77,000
Interior designers	60,000
Commercial and industrial designers	52,000
Fashion designers	15,000
Set and exhibit designers	12,000

Salaried designers worked in a number of different industries, depending on their design specialty. Graphic designers, for example, worked primarily in specialized design services; newspaper, periodical, book, and directory publishers; and advertising and related services. Floral designers were concentrated in retail florists or floral departments of grocery stores. Merchandise displayers and window trimmers were dispersed across a variety of retailers and wholesalers. Interior designers generally worked in specialized design services or in retail furniture stores. Most commercial and industrial designers were employed in manufacturing or architectural, engineering, and related services. Fashion designers generally worked in apparel manufacturing or wholesale distribution of apparel, piece goods, and notions. Set and exhibit designers worked primarily for performing arts companies, movie and video industries, and radio and television broadcasting.

In 2002, a large proportion of designers were self-employed and did freelance work–full time or part time–in addition to holding a salaried job in design or in another occupation.

Training, Other Qualifications, and Advancement

Creativity is crucial in all design occupations. People in this field must have a strong sense of the esthetic–an eye for color and detail, a sense of balance and proportion, and an appreciation for beauty. Designers also need excellent communication and problem-solving skills. Despite the advancement of computer-aided design, sketching ability remains an important advantage in most types of design, especially fashion design. A good portfolio–a collection of examples of a person's best work–often is the deciding factor in getting a job.

A bachelor's degree is required for most entry-level design positions, except for floral design and visual merchandising. Esthetic ability is important in floral design and visual merchandising, but formal preparation typically is not necessary. Many candidates in industrial design pursue a master's degree to increase their chances of selection for open positions.

Interior design is the only design field subject to government regulation. According to the American Society of Interior Designers, 22 states and the District of Columbia register or license interior designers. Passing the National Council for Interior Design qualification examination is required for registration or licensure in these jurisdictions. To be eligible to take the exam, an applicant must have at least 6 years of combined education and experience in interior design, of which at least 2 years constitute postsecondary education in design. Because registration or licensure is not mandatory in all states, membership in a professional association is an indication of an interior designer's qualifications and professional standing–and can aid in obtaining clients.

In fashion design, employers seek individuals with a 2- or 4-year degree who are knowledgeable in the areas of textiles, fabrics, and ornamentation, and about trends in the fashion world. Set and exhibit designers typically have college degrees in design. A Master of Fine Arts degree from an accredited university program further establishes one's design credentials. For set designers, membership in the United Scenic Artists, Local 829, is recognized nationally as the attainment of professional standing in the field.

Most floral designers learn their skills on the job. When employers hire trainees, they generally look for high school graduates who have a flair for arranging and a desire to learn. The completion of formal design training, however, is an asset for floral designers, particularly those interested in advancing to chief floral designer or in opening their own businesses. Vocational and technical schools offer programs in floral design, usually lasting less than a year, while 2- and 4-year programs in floriculture, horticulture, floral design, or ornamental horticulture are offered by community and junior colleges, colleges, and universities. The American Institute of Floral Designers offers an accreditation examination to its members as an indication of professional achievement in floral design.

Formal training for some design professions also is available in 2- and 3-year professional schools that award certificates or associate degrees in design. Graduates of 2-year programs normally qualify as assistants to designers, or they may enter a formal bachelor's degree program. The Bachelor of Fine Arts degree is granted at 4-year colleges and universities. The curriculum in these schools includes art and art history, principles of design, designing and sketching, and specialized studies for each of the individual design disciplines, such as garment construction, textiles, mechanical and architectural drawing, computerized design, sculpture, architecture, and basic engineering. A liberal arts education or a program that includes training in business or project management, together with courses in merchandising, marketing, and psychology, along with training in art, is recommended for designers who want to freelance. In addition, persons with training or experience in architecture qualify for some design occupations, particularly interior design.

Employers increasingly expect new designers to be familiar with computer-aided design software as a design tool. For example, industrial designers use computers extensively in the aerospace, automotive, and electronics industries. Interior designers use computers to create numerous versions of interior space designs–images can be inserted, edited, and replaced easily and without added cost–making it possible for a client to see and choose among several designs.

The National Association of Schools of Art and Design accredits more than 200 postsecondary institutions with programs in art and design. Most of these schools award a degree in art, and some award degrees in industrial, interior, textile, graphic, or fashion design. Many schools do not allow formal entry into a bachelor's degree program until a student has successfully finished a year of basic art and design courses. Applicants may be required to submit sketches and other examples of their artistic ability.

The Foundation for Interior Design Education Research also accredits interior design programs that lead to a bachelor's degree. There are about 120 accredited professional programs in the United States, located primarily in schools of art, architecture, and home economics.

Individuals in the design field must be creative, imaginative, and persistent and must be able to communicate their ideas in writing, visually, and verbally. Because tastes in style and fashion can change quickly, designers need to be well read, open to new ideas and influences, and quick to react to changing trends. Problem-solving skills and the ability to work independently and under pressure are important traits. People in this field need self-discipline to start projects on their own, to budget their time, and to meet deadlines and production schedules. Good business sense and sales ability also are important, especially for those who freelance or run their own business.

Beginning designers usually receive on-the-job training and normally need 1 to 3 years of training before they can advance to higher level positions. Experienced designers in large firms may advance to chief designer, design department head, or other supervisory positions. Some designers leave the occupation to become teachers in design schools or in colleges and universities. Many faculty members continue to consult privately or operate small design studios to complement their classroom activities. Some experienced designers open their own firms.

Job Outlook

Overall employment of designers is expected to grow about as fast as the average for all occupations through the year 2012 as the economy expands and consumers, businesses, and manufacturers continue to rely on the services provided by designers. However, designers in most fields–with the exception of floral design–are expected to face keen competition for available positions. Many talented individuals are attracted to careers as designers. Individuals with little or no formal education in design, as well as those who lack creativity and perseverance, will find it very difficult to establish and maintain a career in the occupation.

Among the design specialties, graphic designers are projected to provide the most new jobs. Demand for graphic designers should increase because of the rapidly expanding market for Web-based information and expansion of the video entertainment market, including television, movies, video, and made-for-Internet outlets.

Rising demand for interior design of private homes, offices, restaurants and other retail establishments, and institutions that care for the rapidly growing elderly population should spur employment growth of interior designers. New jobs for floral designers are expected to stem mostly from the relatively high replacement needs in retail florists that result from comparatively low starting pay and limited opportunities for advancement. The majority of new jobs for merchandise displayers and window trimmers will also result from the need to replace workers who retire, transfer to other occupations, or leave the labor force for other reasons.

Increased demand for industrial designers will stem from continued emphasis on the quality and safety of products, demand for new products that are easy and comfortable to use, and the development of high-technology products in medicine, transportation, and other fields. Demand for fashion designers should remain strong, because many consumers continue to seek new fashions and fresh styles of apparel. Employment growth for fashion designers will be slowed, however, by declines in the apparel manufacturing industries. Despite faster-than-average growth for set and exhibit designers, few job openings will result because the occupation is small.

Earnings

Median annual earnings for commercial and industrial designers were $52,260 in 2002. The middle 50 percent earned between $39,240 and $67,430. The lowest 10 percent earned less than $28,820, and the highest 10 percent earned more than $82,130. Median annual earnings were $61,530 in architectural, engineering, and related services.

Median annual earnings for fashion designers were $51,290 in 2002. The middle 50 percent earned between $35,550 and $75,970. The lowest 10 percent earned less than $25,350, and the highest 10 percent earned more than $105,280.

Median annual earnings for floral designers were $19,480 in 2002. The middle 50 percent earned between $15,880 and $23,560. The lowest 10 percent earned less than $13,440, and the highest 10 percent earned more than $29,830. Median annual earnings were $21,610 in grocery stores and $18,950 in florists.

Median annual earnings for graphic designers were $36,680 in 2002. The middle 50 percent earned between $28,140 and $48,820. The lowest 10 percent earned less than $21,860, and the highest 10 percent earned more than $64,160. Median annual earnings in the industries employing the largest numbers of graphic designers were as follows:

Advertising and related services	$39,510
Specialized design services	38,710
Printing and related support activities	31,800
Newspaper, periodical, book, and directory publishers	31,670

Median annual earnings for interior designers were $39,180 in 2002. The middle 50 percent earned between $29,070 and $53,060. The lowest 10 percent earned less than $21,240, and the highest 10 percent earned more than $69,640. Median annual earnings in the industries employing the largest numbers of interior designers were as follows:

Architectural, engineering, and related services	$41,680
Specialized design services	39,870
Furniture stores	36,320

Median annual earnings of merchandise displayers and window dressers were $22,550 in 2002. The middle 50 percent earned between $18,320 and $29,070. The lowest 10 percent earned less than $15,100, and the highest 10 percent earned more than $40,020. Median annual earnings were $22,130 in department stores.

Median annual earnings for set and exhibit designers were $33,870 in 2000. The middle 50 percent earned between $24,780 and $46,350. The lowest 10 percent earned less than $17,830, and the highest 10 percent earned more than $63,280.

The American Institute of Graphic Arts reported 2002 median annual earnings for graphic designers with increasing levels of responsibility. Staff-level graphic designers earned $40,000, while senior designers, who may supervise junior staff or have some decisionmaking authority that reflects their knowledge of graphic design, earned $55,000. Solo designers, who freelanced or worked under contract to another company, reported median earnings of $55,000. Design directors, the creative heads of design firms or in-house corporate design departments, earned $85,000. Graphic designers with ownership or partnership interests in a firm or who were principals of the firm in some other capacity earned $93,000.

Related Occupations

Workers in other occupations who design or arrange objects, materials, or interiors to enhance their appearance and function include artists and related workers; architects, except landscape and naval; engineers; landscape architects; and photographers. Some computer-related occupations, including computer software engineers and desktop publishers, require design skills.

Sources of Additional Information

For general information about art and design and a list of accredited college-level programs, contact:

- National Association of Schools of Art and Design, 11250 Roger Bacon Dr., Suite 21, Reston, VA 20190. Internet: http://nasad.arts-accredit.org

For information about graphic, communication, or interaction design careers, contact:

- American Institute of Graphic Arts, 164 Fifth Ave., New York, NY 10010. Internet: http://www.aiga.org

For information on degree, continuing education, and licensure programs in interior design and interior design research, contact:

- American Society for Interior Designers, 608 Massachusetts Ave. NE, Washington, DC 20002-6006. Internet: http://www.asid.org

For a list of schools with accredited programs in interior design, contact:

- Foundation for Interior Design Education Research, 146 Monroe Center NW., Suite 1318, Grand Rapids, MI 49503. Internet: http://www.fider.org

For information on careers, continuing education, and certification programs in the interior design specialty of residential kitchen and bath design, contact:

- National Kitchen and Bath Association, 687 Willow Grove St., Hackettstown, NJ 07840. Internet: http://www.nkba.org/student

For information about careers in floral design, contact:

- Society of American Florists, 1601 Duke St., Alexandria, VA 22314. Internet: http://www.safnow.org

Related O*NET Occupation(s)

COMMERCIAL AND INDUSTRIAL DESIGNERS (O*NET 27-1021.00)–**Preparation:** Bachelor's degree. **Description:** Develop and design manufactured products, such as cars, home appliances, and children's toys. Combine artistic talent with research on product use, marketing, and materials to create the most functional and appealing product design. **EXHIBIT DESIGNERS** (O*NET 27-1027.02)–**Preparation:** Bachelor's degree. **Description:** Plan, design, and oversee construction and installation of permanent and temporary exhibits and displays. **FASHION DESIGNERS** (O*NET 27-1022.00)–**Preparation:** Bachelor's degree. **Description:** Design clothing and accessories. Create original garments or design garments that follow well established fashion trends. May develop the line of color and kinds of materials. **FLORAL DESIGNERS** (O*NET 27-1023.00)–**Preparation:** Moderate-term on-the-job training. **Description:** Design, cut, and arrange live, dried, or artificial flowers and foliage. **GRAPHIC DESIGNERS** (O*NET 27-1024.00)–**Preparation:** Bachelor's degree. **Description:** Design or create graphics to meet specific commercial or promotional needs, such as packaging, displays, or logos. May use a variety of mediums to achieve artistic or decorative effects. **INTERIOR DESIGNERS** (O*NET 27-1025.00)–**Preparation:** Bachelor's degree. **Description:** Plan, design, and furnish interiors of residential, commercial, or industrial buildings. Formulate design which is practical, aesthetic, and conducive to intended purposes, such as raising productivity, selling merchandise, or improving life style. May specialize in a particular field, style, or phase of interior design. **MERCHANDISE DISPLAYERS AND WINDOW TRIMMERS** (O*NET 27-1026.00)–**Preparation:** Moderate-term on-the-job training. **Description:** Plan and erect commercial displays, such as those in windows and interiors of retail stores and at trade exhibitions. **SET DESIGNERS** (O*NET 27-

1027.01)–**Preparation:** Bachelor's degree. **Description:** Design sets for theatrical, motion picture, and television productions.

Related DOT Occupation(s)

ART DIRECTOR: Formulates design concepts, selects locations and settings, and directs and coordinates set design, construction, and erection activities to produce sets for motion picture and television productions. **ARTIFICIAL-FOLIAGE ARRANGER:** Cuts out, assembles, and installs artificial foliage, such as trees, shrubs, and flowers, to achieve aesthetic effects in commercial and industrial locations, using handtools and working as member of team. **BANK-NOTE DESIGNER:** Designs engraving plate for printing government securities, such as currency, stamps, and bonds, according to preliminary drawings and knowledge of engraving and printing techniques. **CLOTH DESIGNER:** Originates designs for fabrication of cloth, specifying weave pattern, color, and gauge of thread, to create new fabrics according to functional requirements and fashion preferences of consumers. **COLOR EXPERT:** Advises clients relative to fashionable shades and color combinations in paper, paint, draperies, floor coverings, and other permanent installations for furnishing interiors of homes, offices, and other commercial establishments. **COMMERCIAL DESIGNER:** Creates and designs graphic material for use as ornamentation, illustration, advertising, or cosmetic on manufactured materials and packaging. **COPYIST:** Gathers information on current trends in garment styling and sketches representations of competitors' garments, such as dresses, coats, and trousers. **DECORATOR:** Prepares and installs decorations and displays from blueprints or drawings for trade and industrial shows, expositions, festivals, and other special events. **DISPLAY DESIGNER:** Designs displays, using paper, cloth, plastic, and other material to decorate streets, fairgrounds, buildings, and other places for celebrations, fairs, and special occasions. **DISPLAYER, MERCHANDISE:** Displays merchandise, such as clothes, accessories, and furniture, in windows, showcases, and on sales floor of retail store to attract attention of prospective customers. **EXHIBIT DESIGNER:** Plans, designs, and oversees construction and installation of permanent and temporary exhibits and displays. **FASHION DESIGNER:** Designs men's, women's, and children's clothing and accessories. **FLORAL DESIGNER:** Designs and fashions live, cut, dried, and artificial floral and foliar arrangements for events, such as holidays, anniversaries, weddings, balls, and funerals. **FUR DESIGNER:** Designs or redesigns custom and commercial fur garments. **FURNITURE DESIGNER:** Designs furniture for manufacture, according to knowledge of design trends, offerings of competition, production costs, capability of production facilities, and characteristics of company's market. **GRAPHIC DESIGNER:** Designs art and copy layouts for material to be presented by visual communications media such as books, magazines, newspapers, television, and packaging. **INDUSTRIAL DESIGNER:** Originates and develops ideas to design the form of manufactured products. **INTERIOR DESIGNER:** Plans, designs, and furnishes interior environments of residential, commercial, and industrial buildings. **MANAGER, DISPLAY:** Develops advertising displays for window or interior use and supervises and coordinates activities of workers engaged in laying out and assembling displays. **MEMORIAL DESIGNER:** Designs and builds plaster models of monuments, statues, and memorials. **ORNAMENTAL-METALWORK DESIGNER:** Designs ornamental metal items, such as grills, lattice work, statuary, railings, displays, plaques, and light fixtures, and tooling for fabrication, utilizing knowledge of properties of metal, fabrication techniques, principles of design, and artistic talent. **PACKAGE DESIGNER:** Designs containers for products, such as foods, beverages, toiletries, cigarettes, and medicines. **SAFETY-CLOTHING-AND-EQUIPMENT DEVELOPER:** Designs safety clothing and equipment to protect personnel against hazards, such as fire and toxic fumes. **SET DECORATOR:** Selects decorations and coordinates activities of workers who decorate sets for motion picture or television production. **SET DESIGNER:** Designs motion picture or television production sets, signs, props, or scenic effects, and prepares scale drawings for use in construction, modification, or alteration. **SET DESIGNER:** Designs sets for theatrical productions. **STAINED GLASS ARTIST:** Creates original stained glass designs and artwork, draws cartoons (full size working drawings), and prepares glass for fabrication into windows, art objects, and other decorative articles. **SUPERVISOR, SCENIC ARTS:** Creates layouts of scenery and backdrops for motion picture and television sets according to instructions, and supervises and coordinates activities of artists who paint them.

Entertainers and Performers, Sports and Related Occupations

Actors, Producers, and Directors

O*NET: 27-2011.00, 27-2012.01, 27-2012.02, 27-2012.03, 27-2012.04, and 27-2012.05; **GOE Interest Area(s):** 01 Arts, Entertainment, and Media; **GOE Work Group(s):** 01.01 Managerial Work in Arts, Entertainment, and Media; 01.05 Performing Arts; **Personality Type(s):** Artistic; Enterprising; Realistic

Significant Points

- ▲ Actors endure long periods of unemployment, intense competition for roles, and frequent rejections in auditions.
- ▲ Formal training through a university or acting conservatory is typical; however, many actors, producers, and directors find work on the basis of their experience and talent alone.
- ▲ Because earnings for actors are erratic, many supplement their incomes by holding jobs in other fields.

Nature of the Work

Actors, producers, and directors express ideas and create images in theater, film, radio, television, and other performing arts media. They interpret a writer's script to entertain, inform, or instruct an audience. Although the most famous actors, producers, and directors work in film, network television, or theater in New York or Los Angeles, far more work in local or regional television studios, theaters, or film production companies, preparing advertising, public-relations, or independent, small-scale movie productions.

Actors perform in stage, radio, television, video, or motion picture productions. They also work in cabarets, nightclubs, theme parks, commercials, and "industrial" films produced for training and educational purposes. Most actors struggle to find steady work; only a few ever achieve recognition as stars. Some well-known, experienced performers may be cast in supporting roles. Others work as "extras," with no lines to deliver, or make brief, cameo appearances, speaking only one or two lines. Some actors do voiceover and narration work for advertisements, animated features, books on tape, and other electronic media. They also teach in high school or university drama departments, acting conservatories, or public programs.

Producers are entrepreneurs, overseeing the business and financial decisions of a motion picture, made-for-television feature, or stage production. They select scripts, approve the development of ideas for the production, arrange financing, and determine the size and cost of the endeavor. Producers hire or approve the selection of directors, principal cast members, and key production staff members. They also negotiate contracts with artistic and design personnel in accordance with collective bargaining agreements and guarantee payment of salaries, rent, and other expenses. Television and radio producers determine which programs, episodes, or news segments get aired. They may research material, write scripts, and oversee the production of individual pieces. Producers in any medium coordinate the activities of writers, directors, managers, and agents to ensure that each project stays on schedule and within budget.

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