

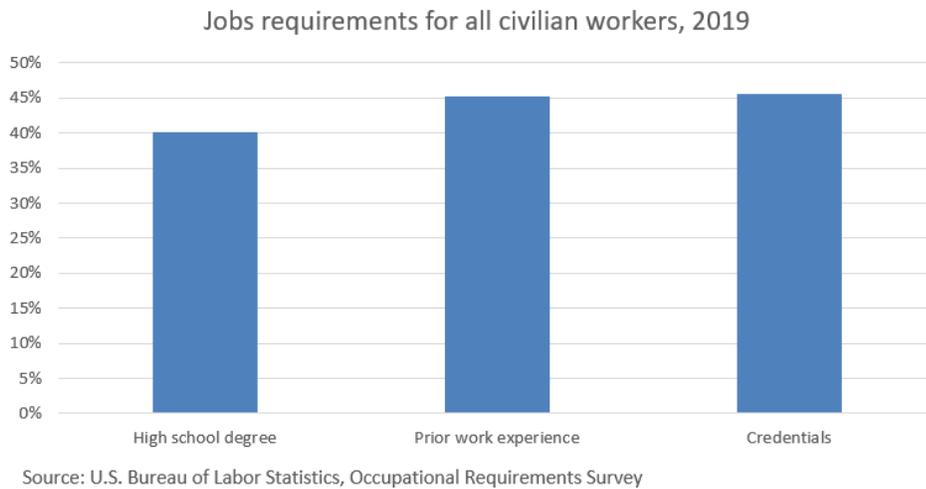
# Occupational Requirements Survey: Occupational Profiles

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## All workers

This profile offers an overview of private industry as well as state and local government workers in the United States economy.



### Cognitive and mental requirements

Interaction with the general public was required for 75.3 percent of workers. Working a round crowds was not required for 95.7 percent of workers. The work pace varied for 61.1 percent of workers.

### Education, training, and experience requirements

No minimum formal education was required for 31.0 percent of workers. Another 40.0 percent had a high school degree requirement and 18.1 percent had a bachelor’s degree requirement. Prior work experience was required for 45.1 percent of workers and credentials were required for 45.4 percent.

### Environmental conditions

A moderate noise intensity level was present for 76.9 percent of workers, 14.2 had exposure to quiet noise intensity level, and another 8.6 percent were exposed to a loud noise intensity level. Outdoor exposure was present for 33.4 percent of workers. Exposure to hazardous contaminants was not present for 93.1 percent.

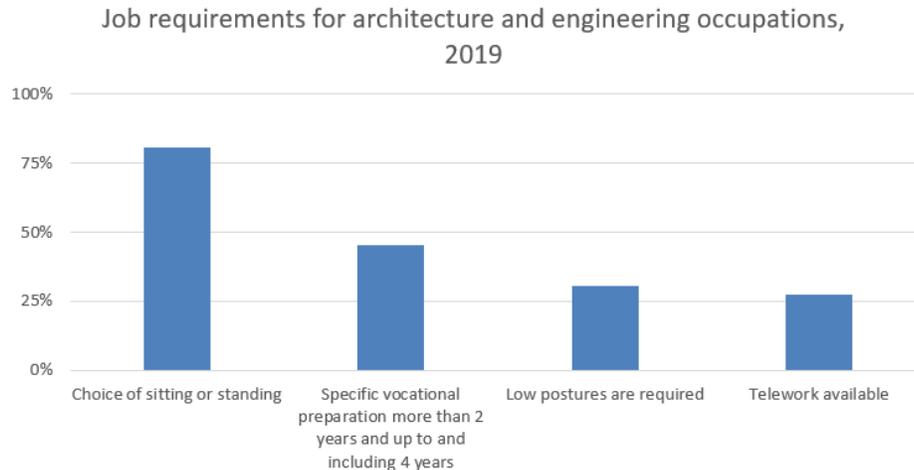
### Physical demands

The maximum average weight lifted by workers in 2019 was 27.3 pounds. A medium strength level was required for 28.5 percent of workers. A light strength level was required for 33.8 percent of workers while another 27.0 percent had a sedentary strength level. Near vision was required for 98.9 percent of workers. Far vision was not required for 67.2 percent of workers while peripheral vision was required for 30.1 percent. Reaching at or below the shoulder was required for 79.8 percent of workers while 44.6 percent were required to reach overhead. Keyboarding is required for 64.4 percent of workers.



## Architecture and engineering occupations

This occupational group includes architects, surveyors, cartographers, photogrammetrists, engineers, drafters, engineering technicians, electro-mechanical technicians, and mapping technicians.



Source: U.S. Bureau of Labor Statistics, Occupational Requirements Survey

### Cognitive and mental requirements

Verbal interaction was required not constantly but more than once per hour for 51.2 percent of workers. Problem solving was required more than once per day for 54.1 percent of workers. The work pace varied for 60.5 percent of workers and the ability to pause work was present for 92.8 percent.

### Education, training, and experience requirements

The minimum formal education required was a high school diploma for 14.9 percent of workers and a bachelor's degree for 74.0 percent. Prior work experience was required for 63.5 percent of workers with an average of about 1,332 days.

### Environmental conditions

Utilizing personal protective equipment for proximity to moving mechanical parts was required for 11.0 percent of workers. A moderate noise intensity level was present for 67.7 percent of workers. Exposure to the outdoors was not present for 71.8 percent.

### Physical demands

Five percent of workers were able to choose a low posture of crawling to perform critical tasks. Climbing ladders, ropes, or scaffolds was required for 11.1 percent, and climbing work-related ramps or stairs was required for 11.5 percent. The maximum average weight lifted by workers was 14.6 pounds and 14.3 percent were required to have medium strength. Standing was required for 27.5 percent of the workday and sitting was required for 72.5 percent.



## Arts, design, entertainment, sports, and media occupations

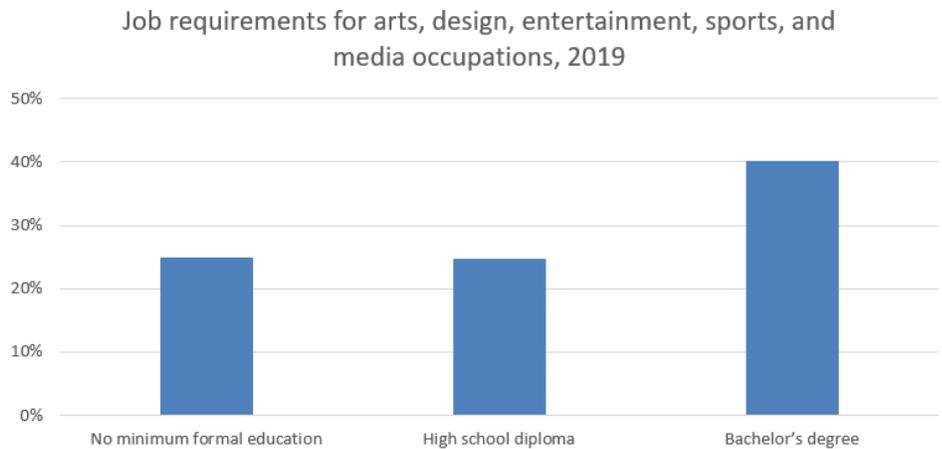
This occupational group includes art directors, artists, fashion designers, actors, producers, directors, coaches, dancers, choreographers, musicians, singers, radio announcers, writers, editors, interpreters, sound engineering technicians, photographers, and film editors.

### Cognitive and mental requirements

Interaction with the general public was required for 86.5 percent of these workers. Problem solving was required once per day for 17.4 percent and more than once per day for 18.9 percent. The workload was self-paced for 20.1 percent of workers and controlled by people for 72.5 percent. Work pace was consistent and generally fast for 28.0 percent of workers. Telwork was not available for 81.3 percent of workers.

### Education, training, and experience requirements

No minimum formal education was required for 24.8 percent of workers. Another 24.6 percent had a high school degree requirement and 40.1 percent had a bachelor's degree requirement. Prior work experience was not required for 37.6 percent of workers and credentials were not required for 69.0 percent. On-the-job training was required for 56.0 percent of these workers.



Source: U.S. Bureau of Labor Statistics, Occupational Requirement Survey

### Environmental conditions

A moderate noise intensity level was present for 65.6 percent of workers and 98.1 percent of workers were not required to utilize personal protective equipment for noise. Outdoor exposure was present for 27.6 percent of workers. Exposure to extreme heat and humidity were not required for 99.7 percent of workers.

### Physical demands

The average time standing on the job was about 2.3 hours. Driving was required for 18.7 percent of workers. The maximum average weight lifted was 13.8 pounds. A light strength level was required for 41.9 percent of workers and 43.5 percent required a sedentary strength level. Low postures were required for 38.4 percent of workers. Far vision was required for 29.0 percent of workers. Reaching overhead with both hands was required for 29.2 percent of workers. Fine manipulation was required for 97.2 percent of workers and gross manipulation was required for 98.2 percent.



## Building and grounds cleaning and maintenance occupations

This occupational group includes janitors, maids and housekeeping cleaners, pest control, landscaping, pesticide handlers, tree trimmers, and grounds maintenance workers.

### Cognitive and mental requirements

Constant verbal interaction, every few minutes, was required for 2.4 percent of these workers. The workload was self-paced for 16.8 percent of workers and controlled by numerical performance targets for 17.2 percent. Workpace was consistent and generally slow for 25.0 percent of workers and generally fast for 26.2 percent. Work was reviewed by a supervisor more than once per day for 38.8 percent of workers and a supervisor was present on-site for 48.2 percent.

### Education, training, and experience requirements

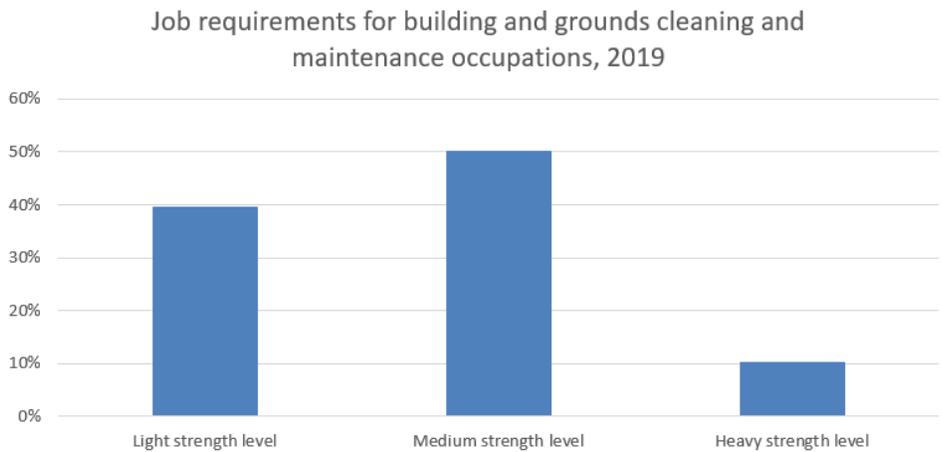
Minimum formal education required was a high school diploma for 30.4 percent of these workers and literacy was not required for 23.9 percent. Credentials were required for 30.0 percent of these workers. About 12 days of on-the-job training was required for these workers and no on-the-job training was required for 9.9 percent. Prior work experience was not required for 76.6 percent of these workers. Prior work experience averaged about 555 days when required.

### Environmental conditions

Exposure to heavy vibrations was present for 7.7 percent of workers. Exposure to loud noise was present for 9.9 percent and 22.4 percent of workers were required to utilize personal protective equipment for noise. About 15.1 percent of these workers were exposed to hazardous contaminants and 13.9 percent utilized personal protective equipment to mitigate exposure to hazardous contaminants. About 78.4 percent were exposed to wetness and 99.8 percent were not exposed to extreme heat nor to extreme cold.

### Physical demands

An average of 6.4 hours were spent standing per working day for these workers and 11.8 percent were allowed to choose between sitting and standing. A heavy strength level was required for 10.3 percent of these workers, a medium level was required for 50.0 percent, and a light level was required for 39.5. Reaching overhead with one hand was required for 11.6 percent.



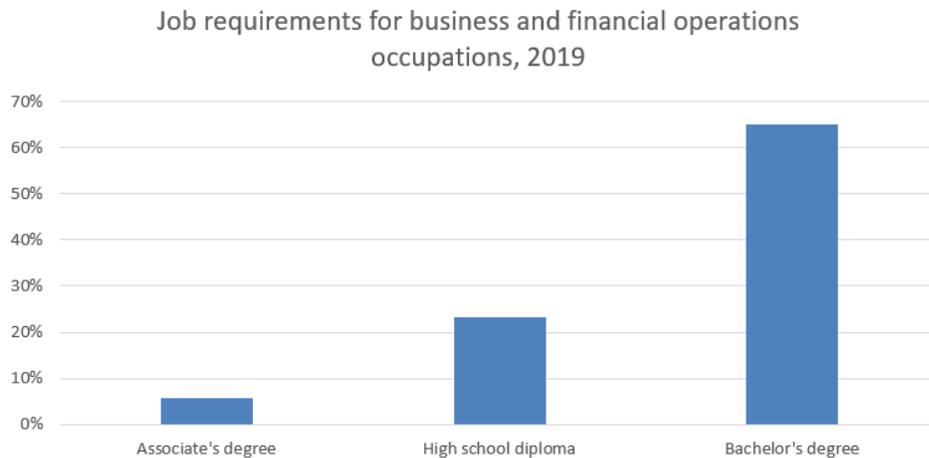
Source: U.S. Bureau of Labor Statistics, Occupational Requirement Survey

Crouching was required for 14.4 percent of these workers, not required for 15.2 percent, and 70.4 percent had a ability to choose this low posture. Pushing or pulling with both feet or legs was required for 35.6 percent of these workers.



## Business and financial operations occupations

This occupational group includes purchasing agents, compliance officers, human resource workers, logisticians, fundraisers, market research analysts, accountants, auditors, credit counselors, and tax examiners.



Source: U.S. Bureau of Labor Statistics, Occupational Requirements Survey

### Cognitive and mental requirements

Work was reviewed by a supervisor more than once per day for 7.3 percent of workers. Telework was available for 40.8 percent of workers. Interaction with the general public was required for 72.5 percent of workers.

### Education, training, and experience requirements

The minimum formal education required was a high school diploma for 23.2 percent of workers and a bachelor's degree for 65.1 percent. Credentials were required for 30.6 percent of workers. On-the-job training was required for 72.9 percent of workers with an average of about 53 days. Prior work experience was required for 79.8 percent of workers with an average of about 1222 days, or over three years. Specific vocational preparation time of over 4 years and up to and including 10 years was required for 50.2 percent of workers.

### Environmental conditions

A quiet noise intensity level was present for 38.1 percent and a moderate noise intensity level was present for 61.5 percent of workers. Exposure to the outdoors was not present for 88.5 percent of workers.

### Physical demands

A choice of sitting or standing was allowed for 94.6 percent of workers and reaching at or below the shoulder was not required for 50.2 percent of workers. Sedentary strength was required for 82.9 percent of these workers. Fine manipulation was required for 99.9 percent of workers.



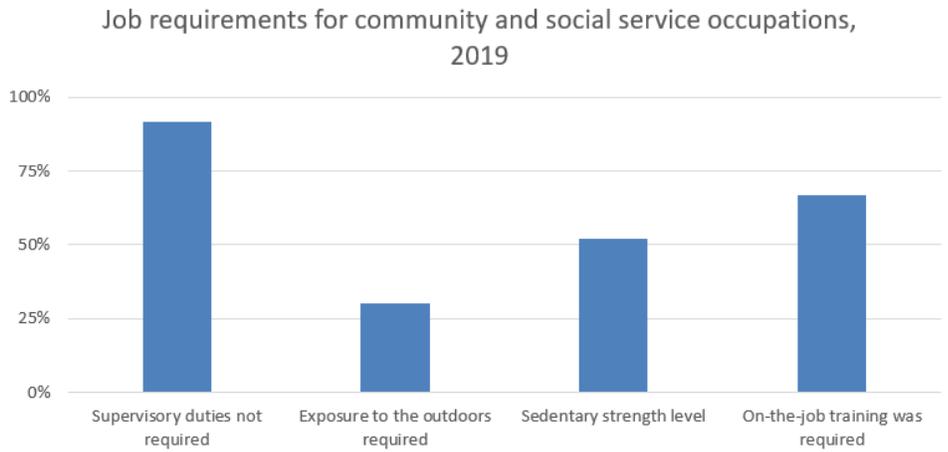
## Community and social services occupation

This occupational group includes counselors, social workers, health educators, probation officers, correctional treatment specialists, community health workers, clergy, and directors of religious activities.

### Cognitive and mental requirements

Workload was self-paced for 12.2 percent of workers and was controlled by people for 87.1 percent of workers. Workpace was consistent and generally slow for 13.3 percent of workers and it was consistent and generally fast for 28.6 percent of workers. Problem solving was required not every day, but at least once per week for 20.0

percent of workers, and once per day for 26.9 percent of workers. Verbal interaction was required constantly, every few minutes, for 33.9 percent of workers. The ability to pause work was present for 81.5 percent of workers and telework was not available for 83.1 percent of these workers.



Source: U.S. Bureau of Labor Statistics, Occupational Requirements Survey

### Education, training, and experience requirements

The minimum formal education required was a high school diploma for 13.2 percent of workers, a bachelor’s degree for 39.1 percent, and a master’s degree for 37.5 percent. On-the-job training was not required for 33.1 percent of workers. On-the-job training was required for 66.9 percent of workers and the average days of on-the-job training was about 52 days. Prior work experience was required for 62.8 percent of workers.

### Environmental conditions

Almost one-third (30.2 percent) of these workers were exposed to outdoors. Most (88.0 percent) of these workers were exposed to moderate noise intensity.

### Physical demands

The choice of sitting or standing was not allowed for 15.5 percent of workers. Workers were required to stand for 32.0 percent of their workday and were required to sit for 68.0 percent of the workday. The average weight lifted or carried on-the-job was 13.9 pounds and 52.3 percent of workers required a sedentary strength level. Low postures were required for 31.2 percent of workers. Peripheral vision was required for 48.5 percent of workers and far vision was required for 49.3 percent.

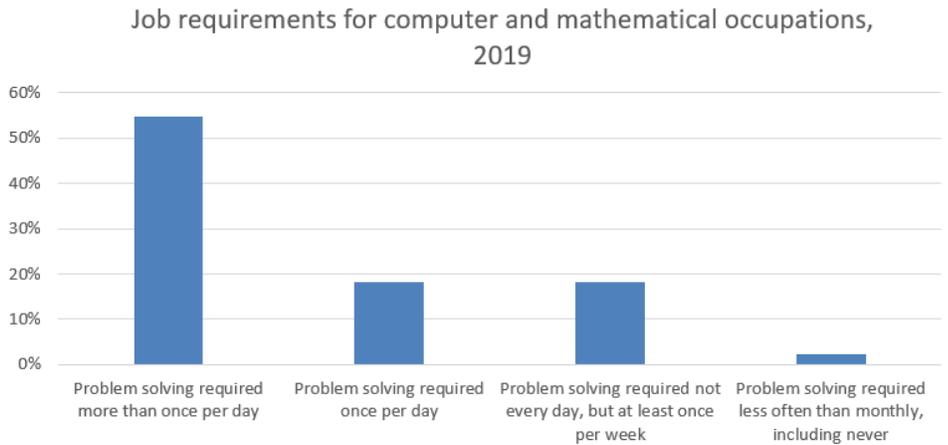


## Computer and mathematical occupations

This occupational group includes computer and information analysts, software developers and programmers, database and systems administrators, computer support specialists, actuaries, mathematicians, statisticians, operations research analysts, and mathematical technicians.

### Cognitive and mental requirements

Verbal interaction was required once per day or less for 7.8 percent of workers and workload was self-paced for 33.9 percent of workers. Supervisory duties were required for 12.3 percent and work was reviewed by a supervisor once per day for 19.3 percent. Problem solving was required once per day for 18.3 percent of workers and more than once per day for 54.7 percent. Telework was available for 45.2 percent of workers.



Source: U.S. Bureau of Labor Statistics, Occupational Requirements Survey

### Education, training, and experience requirements

The minimum formal education required was a high school diploma for 15.8 percent of workers. On-the-job training was not required for 35.5 percent of workers. Prior work experience was required for 82.2 percent of workers and the average days of prior experience required was almost 1,381 days. Specific vocational preparation was between 4 and 10 years for 55.4 percent of workers.

### Environmental conditions

Exposure to quiet noise intensity was present for 31.6 percent of workers and exposure to moderate noise intensity was required for 68.2 percent. Personal protective equipment for noise was not required for 99.3 percent of workers. Exposure to the outdoors was not required for 99.2 percent of workers. Exposure to wetness and proximity to moving mechanical parts were not required for 99.9 percent of workers.

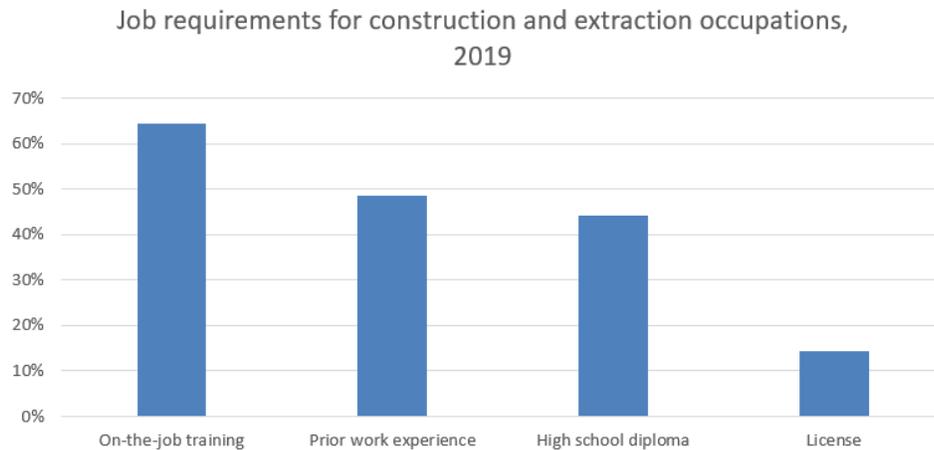
### Physical demands

Workers spent an average of 1.1 hours standing and 6.8 hours sitting on the job. The average maximum weight lifted or carried on-the-job was 10.3 pounds. Far vision and peripheral vision were required for 11.5 percent of workers. Low postures were required for 23.4 percent of workers. Gross manipulation with both hands was required for 69.5 percent of workers.



## Construction and extraction occupations

This occupational group includes carpenters, laborers, equipment operators, electricians, roofers, elevator installers and repairers, earth drillers, mining machine operators, and carpet, floor, and tile installers and finishers.



Source: U.S. Bureau of Labor Statistics, Occupational Requirement Survey

### Cognitive and mental requirements

Supervisory duties were required for 21.3 percent of workers. Work was reviewed by a supervisor less often than weekly for 6.0 percent of workers. Work pace was consistent and generally fast for 36.1 percent of workers and varied for 53.7 percent. Interaction with the general public was required for 42.8 percent.

### Education, training, and experience requirements

On-the-job training was required for 64.6 percent of workers and averaged about 56 days. Prior work experience was required for 48.5 percent of workers. A high school diploma was the minimum education requirement for 44.2 percent of workers. A license was required for 14.5 percent of workers and certification was required for 15.8 percent.

### Environmental conditions

Few (9.7 percent) workers were exposed to extreme heat, 38.4 percent were exposed to wetness, and 24.7 were exposed to heavy vibrations. Almost half (49.9 percent) of these workers utilized personal protective equipment for noise and 42.4 percent were constantly exposed to the outdoors. A moderate noise intensity was present for 71.5 percent of workers.

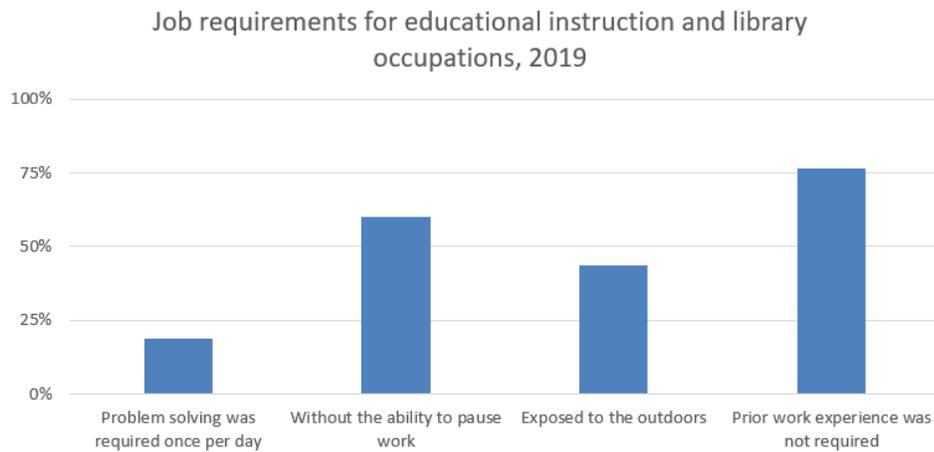
### Physical demands

Climbing ladders, ropes, or scaffolds was not required for 21.5 percent of these workers. A choice of sitting or standing was available to 14.8 percent of workers. The average weight lifted or carried on-the-job was 52.4 pounds and 31.3 percent of workers required a heavy strength level. Pushing or pulling with both feet or legs was required for 39.1 percent of workers and with both hands or arms for 44.0 percent. Driving was required for 52.4 percent of workers.



## Education, training, and library occupation

This occupational group includes postsecondary teachers, preschool teachers, primary school teachers, middle school teachers, self-enrichment education teachers, special education school teachers, librarians, curators, archivists, home management advisors, instructional coordinators, and teacher assistants.



Source: U.S. Bureau of Labor Statistics, Occupational Requirements Survey

### Cognitive and mental requirements

Supervisory duties were required for 8.6 percent of these workers. Work was reviewed by a supervisor more than once per day for 11.0 percent of workers and the supervisor was present for 43.5 percent of workers. Work pace was consistent and generally fast for 23.5 percent of workers and workload was controlled by people for 67.6 percent of workers. The ability to pause work was available for 40.1 percent of workers. More than basic people skills were required for 96.5 percent of workers.

### Education, training, and experience requirements

The minimum education level was an associate's degree for 5.9 percent of these workers and a bachelor's degree for 58.3 percent of workers. Specific vocational preparation (SVP) was over 4 years and up to and including 10 years for 18.1 percent of workers. On-the-job training was required for 42.6 percent of workers and the average days of on-the-job training required was about 22 days. Prior work experience was required for 23.4 percent of workers.

### Environmental conditions

About one-fifth (18.8 percent) of workers were exposed to wetness, with 43.5 percent of workers were exposed to outdoors. Most (89.7 percent) of workers were exposed to moderate noise intensity.

### Physical demands

A medium strength level was required for 11.9 percent of workers and the average weight lifted or carried on-the-job was 16.2 pounds. The choice of sitting or standing was not allowed for 28.6 percent of workers. Far vision was not required for 67.7 percent of workers. Keyboarding was required for 96.3 percent of workers.



## Food preparation and serving-related occupations

This occupational group includes chefs, cooks, bartenders, dishwashers, waiters, waitresses, food servers, hosts, and hostesses.

### Cognitive and mental requirements

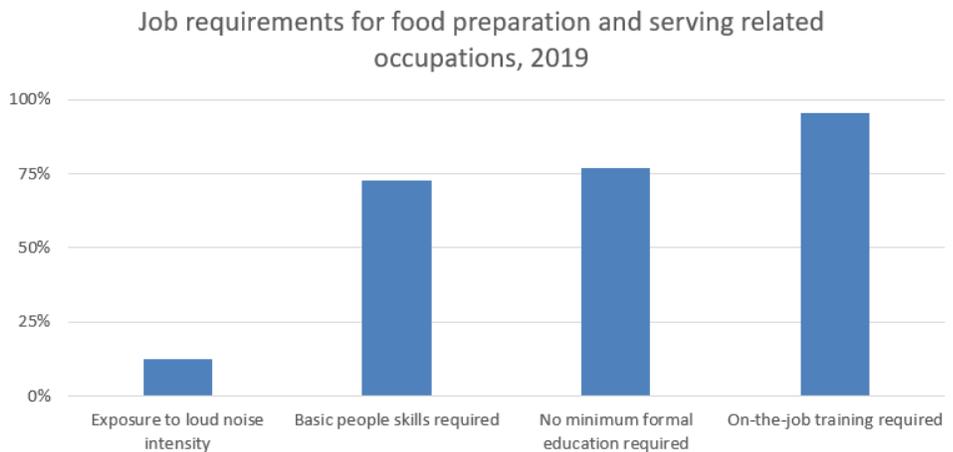
The ability to pause work was available for 18.2 percent of workers. Work pace was consistent and generally fast for 22.0 percent of workers and work pace varied for 76.2 percent of workers. Workload was controlled by people for 98.7 percent of workers. Work was reviewed by a supervisor once per day for 20.1 percent of workers and more than once per day for 69.6 percent of workers. The supervisor was present for 91.4 percent of workers. Basic people skills were required for 72.6 percent of workers. Interaction with the general public was required for 85.1 percent of workers. Problem solving was required less often than monthly, including never for 89.6 percent of workers.

### Education, training, and experience requirements

The minimum formal education required was a high school diploma for 22.6 percent of workers and literacy was required for 73.2 percent of workers. On-the-job training was required for 95.5 percent of workers. Prior work experience was required for 25.7 percent of workers. Credentials were required for 38.5 percent of workers. Specific vocational preparation beyond a short demonstration and up to and including 1 month was required for 70.5 percent of workers.

### Environmental conditions

Exposure to a loud noise intensity was present for 12.6 percent of workers and 87.0 percent were exposed to moderate noise. About one-third (36.1 percent) of workers were exposed to extreme cold and 23.7 percent of workers were exposed to extreme heat. Most (91.5 percent) of these workers were exposed to wetness.



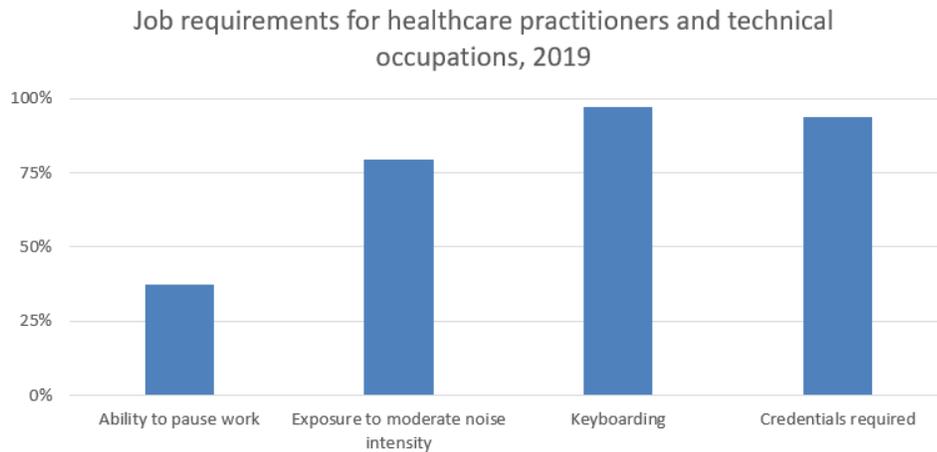
Source: U.S. Bureau of Labor Statistics, Occupational Requirements Survey

### Physical demands

The average hours of required standing on-the-job was 6.1 hours. Crouching was required for 8.0 percent of these workers. Climbing structure-related ramps or stairs was required for 11.9 percent of these workers. The average weight lifted or carried on-the-job was 28.4 pounds and 46.0 percent of these workers required a medium strength level. Reaching overhead with both hands was required for 53.0 percent of these workers. Reaching at or below the shoulder was required for 96.7 percent of these workers and reaching at or below the shoulder with both hands was required for 92.0 percent. Speaking was required for 93.3 percent of these workers.

## Healthcare practitioners and technical occupations

This occupational group includes chiropractors, dentists, pharmacists, physicians, surgeons, health diagnosing and treating practitioners, therapists, veterinarians, registered nurses, health technologists and technicians, and occupational health and safety specialists.



Source: U.S. Bureau of Labor Statistics, Occupational Requirements Survey

### Cognitive and mental requirements

Work pace varied for 57.6 percent of workers and workload was controlled by people for 95.5 percent of workers. The ability to pause work was not available for 62.6 percent of workers. Verbal interaction, not constantly but more than once per hour, was required for 60.3 percent of workers. More than basic people skills were required for 92.3 percent of workers. The supervisor was present for 67.2 percent of workers. Supervisory duties were not required for 75.0 percent of workers. Working around crowds was not required for 98.3 percent of workers.

### Education, training, and experience requirements

The minimum formal education required was a bachelor's degree for 23.7 percent of workers. Prior work experience was required for 35.8 percent of workers. On-the-job training was required for 71.4 percent of workers.

### Environmental conditions

Exposure to the outdoors was required for 9.1 percent of workers and 76.0 percent of workers were exposed to wetness. Exposure to hazardous contaminants was not present for 92.5 percent of workers and 98.3 percent were not required to work in proximity to moving mechanical parts.

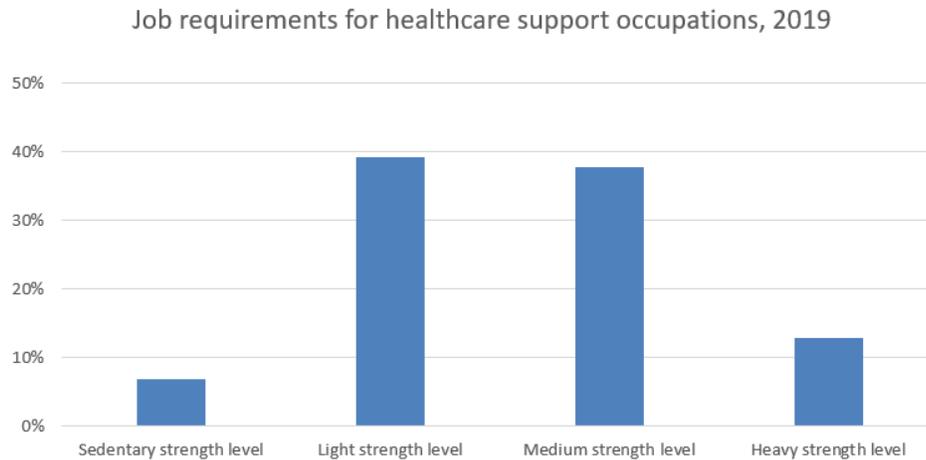
### Physical demands

A heavy strength level was required for 13.4 percent of workers. The average weight lifted or carried on-the-job was 36.2 pounds. Reaching overhead was required for 61.9 percent of workers while reaching at or below the shoulder was required for 91.6 percent. Workers were required to stand 64.0 percent of the workday. Crawling was not required for 93.5 percent of workers.



## Healthcare support occupations

This occupational group includes nursing, psychiatric, home health aides, occupational therapy and physical therapist assistants and aides, dental, medical, and veterinary assistants, phlebotomists, and medical transcriptionists.



Source: U.S. Bureau of Labor Statistics, Occupational Requirements Survey

### Cognitive and mental requirements

More than basic people skills were required for 59.9 percent of workers. Verbal interaction was required constantly, every few minutes, for 32.1 percent of workers. A supervisor was present for 48.9 percent of workers and supervisory duties were not required for 99.0 percent of workers in healthcare support occupations.

### Education, training, and experience requirements

The minimum formal education required was a high school diploma for 59.9 percent of workers, an associate's vocational degree for 3.0 percent of workers, and an associate's degree for an additional 4.1 percent of workers. A certification was required for 20.1 percent of these workers, a license was required for 30.2 percent of workers, and credentials were required for 78.5 percent of workers.

### Environmental conditions

Few (3.8 percent) workers in healthcare support occupations were exposed to hazardous contaminants. About one-third (35.0 percent) of workers had exposure to the outdoors and 87.9 percent were exposed to wetness. Almost a quarter (22.6 percent) of workers were exposed to quiet noise intensity and exposure to moderate noise intensity was present for another 77.3 percent of workers.

### Physical demands

A sedentary strength level was required for 6.8 percent of workers in healthcare support occupations. A light strength level was required for 39.2 percent of workers required and another 37.8 percent of workers required medium work. Heavy work was required for 12.8 percent of workers and the average weight lifted or carried on-the-job is 39.3 pounds of these workers.



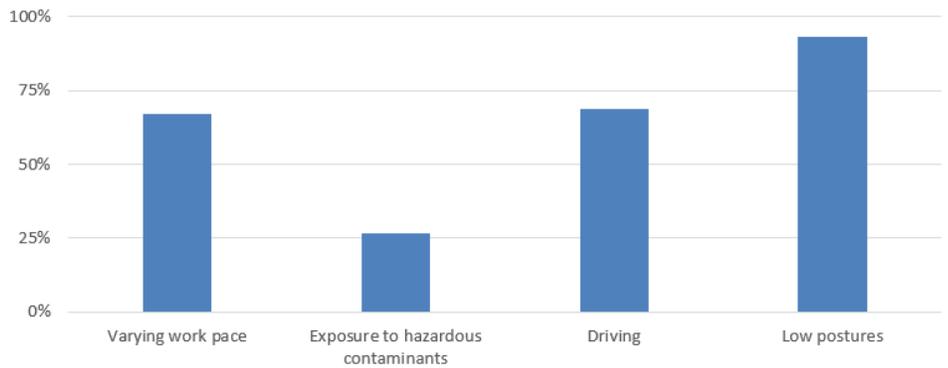
## Installation, maintenance, and repair occupations

This occupational group includes computer, automated teller and office machine repairers, avionics technicians, security and fire alarm systems installers, aircraft mechanics and technicians, bus and truck mechanics, diesel engine specialists, small engine mechanics, bicycle repairers, home appliance repairers, millwrights, watch repairers, wind turbine service technicians, and riggers.

### Cognitive and mental requirements

Workload was self-paced for 12.3 percent of these workers and controlled by people for 74.9 percent of workers. Supervisory duties were required for 14.5 percent of workers. Work was reviewed by a supervisor less than once per day, but at least once per week for 16.3 percent of workers. The ability to pause work was not available for 37.8 percent of workers. More than basic required people skills were required for 48.3 percent of workers. Working around crowds was not required for 99.4 percent.

Job requirements for installation, maintenance, and repair occupations, 2019



Source: U.S. Bureau of Labor Statistics, Occupational Requirements Survey

### Education, training, and experience requirements

The minimum formal education required was a high school diploma for 58.8 percent of workers. On-the-job training was required for 78.2 percent. Prior work experience was not required for 30.9 percent and was required for 69.1 percent of workers. Credentials were required for 72.6 percent.

### Environmental conditions

About one-fifth (18.8 percent) of workers did not utilize personal protective equipment for proximity to moving mechanical parts. Exposure to heights was required for 50.1 percent of workers and 79.3 percent were exposed to the outdoors. Exposure to moderate noise was required for 80.4 percent of workers. Exposure to extreme heat was not required for 93.6 percent of workers.

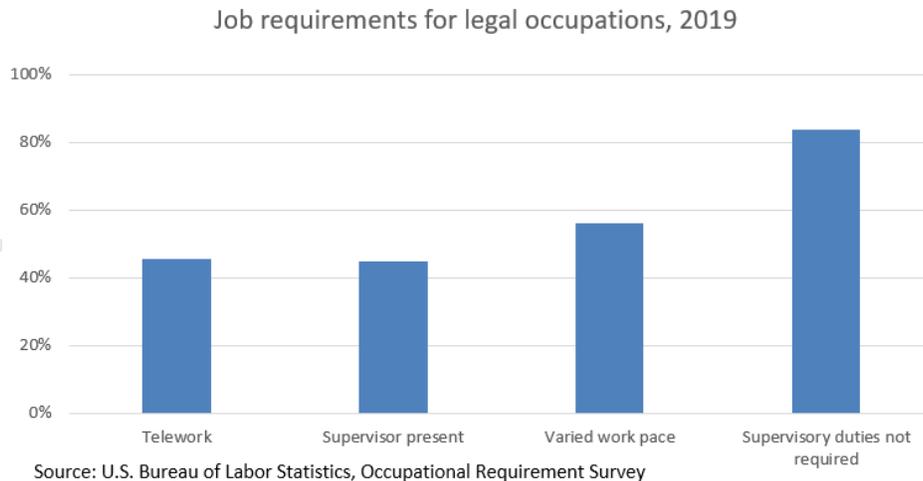
### Physical demands

The average hours of standing required on-the-job was 6.6 hours. Crawling was required for 20.3 percent of workers. Kneeling was required for 20.5 percent of workers. The choice of sitting or standing was allowed for 21.3 percent of workers. The average weight lifted or carried on-the-job was 54.7 pounds. Reaching overhead with both hands was required for 81.9 percent.



## Legal occupation

This occupational group includes lawyers, judicial law clerks, judges, arbitrators, mediators, conciliators, paralegals, legal assistants, court reporters, title examiners, abstractors, and searchers.



### Cognitive and mental requirements

Telework was available for 45.4 percent of these workers and work was reviewed by a supervisor once per day for 30.4 percent. For 60.9 percent of workers in legal occupations, verbal interaction was not required constantly, but more than once per hour. Problem solving was required more than once per day for 55.6 percent, and supervisory duties were not required for 83.7 percent of the workers.

### Education, training, and experience requirements

A professional degree was required for 64.6 percent of workers and a high school diploma was the minimum formal education required for 18.4 percent of workers. Prior work experience was required for 54.0 percent of workers with the average length of time being about 3 years and 2 months (1,162 days). On-the-job training was required for 59.3 percent of workers in legal occupations.

### Environmental conditions

A moderate noise intensity level was experienced by 63.9 percent of these workers.

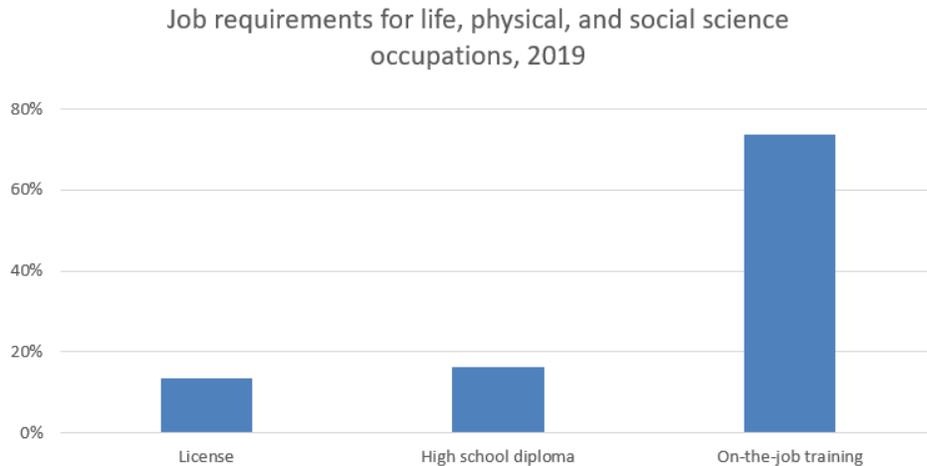
### Physical demands

Reaching overhead was not required for 94.5 percent of workers. Crouching was not required for 88.7 percent, kneeling was not required for 96.8 percent, and climbing work-related ramps or stairs was not required for 99.7 percent for workers in legal occupations. A sedentary strength level was required for 72.0 percent of these workers. Driving was required for 43.2 percent of workers and the average weight lifted or carried on-the-job was 9.8 pounds.



## Life, physical, and social science occupations

This occupational group includes agricultural scientists, food scientists, biological scientists, medical scientists, astronomers, physicists, chemists, hydrologists, economists, survey researchers, psychologists, sociologists, urban planners, anthropologists, archeologists, geographers, historians, political scientists, and nuclear technicians.



Source: U.S. Bureau of Labor Statistics, Occupational Requirements Survey

### Cognitive and mental requirements

Work was reviewed by a supervisor once per day for 9.5 percent of workers. Telework was available for 15.0 percent of workers and interaction with the general public was not required for 42.2 percent of workers.

### Education, training, and experience requirements

A license was required for 13.5 percent of workers. The required minimum formal education required was a high school diploma for 16.1 percent of workers and on-the-job training was required for 73.8 percent of workers. Prior work experience was required for 78.3 percent of workers and the average days of prior work experience required was about 1,211 days.

### Environmental conditions

Exposure to the outdoors was required for 37.8 percent of workers and 39.6 percent of workers were exposed to wetness. Exposure to hazardous contaminants was present for 41.2 percent of workers and 40.3 percent of workers utilized personal protective equipment for hazardous contaminants.

### Physical demands

Workers were required to sit for 68.8 percent of their workday and stand for the other 31.2 percent. Low postures were required for 40.7 percent of workers, kneeling was required for 8.4 percent of workers, and crouching was required for 11.3 percent of workers. Hearing over the telephone was required for 98.0 percent of workers and speaking was required for 98.5 percent of workers.



## Management occupations

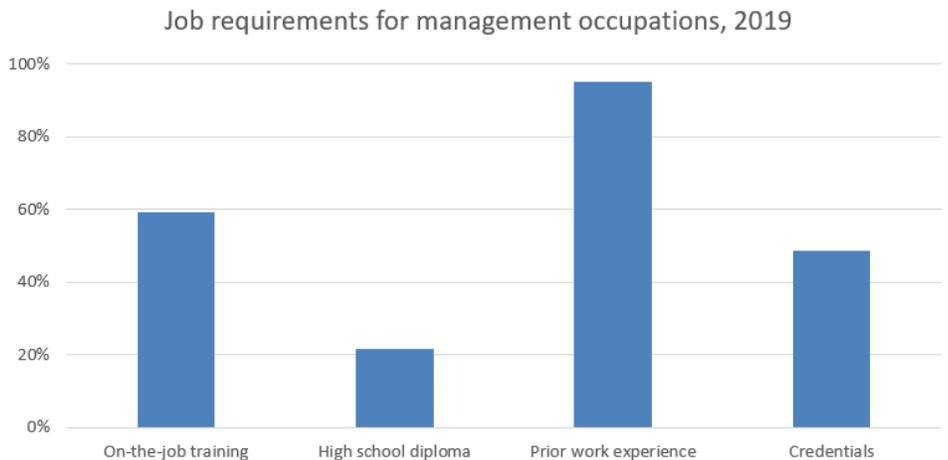
This occupational group includes chief executives, general and operations managers, advertising and promotions managers, construction, administrative services managers, financial managers, industrial production managers, transportation managers, storage managers, distribution managers, compensation and benefits managers, human resources managers, training managers, development managers, and education administrators.

### Cognitive and mental requirements

Telework was not available for 67.2 percent of workers. Six percent of workers had their workload controlled by numerical performance targets and work pace varied for 57.5 percent. Interaction with the general public was required for 82.2 percent of workers in management occupations. For 49.4 percent of workers, problem solving was required more than once per day.

### Education, training, and experience requirements

A bachelor's degree was the minimum formal education requirement for 59.2 percent of workers and a master's degree was the minimum formal education requirement for 8.7 percent of workers. Prior work experience was required for 95.0 percent of workers, and the length of prior work experience required was on average greater than 5 years (about 1,960 days). On-the-job training was required for 59.1 percent of workers in management occupations.



Source: U.S. Bureau of Labor Statistics, Occupational Requirement Survey

### Environmental conditions

A moderate noise intensity level was present for 74.6 percent of workers in management occupations, 23.7 percent experienced a quiet noise intensity level, and 1.7 percent a loud noise intensity level. About 21.7 percent of these workers were exposed to the outdoors. Proximity to moving mechanical parts was experienced by 3.6 percent of workers and 2.2 percent utilized personal protective equipment for proximity to mechanical parts. Only 2.1 percent of these workers were exposed to hazardous contaminants and 1.8 percent utilized personal protective equipment for hazardous contaminants.

### Physical demands

A sedentary strength level was required for 57.4 percent of workers. A light strength level was required for 32.3 percent of workers and a medium strength level was required for 7.8 percent of workers in management occupations. Fine manipulation was required for 99.9 percent of these workers. Gross manipulation with both hands was required for 84.4 percent of workers. The average hours spent while sitting on-the-job was 5.6 hours.

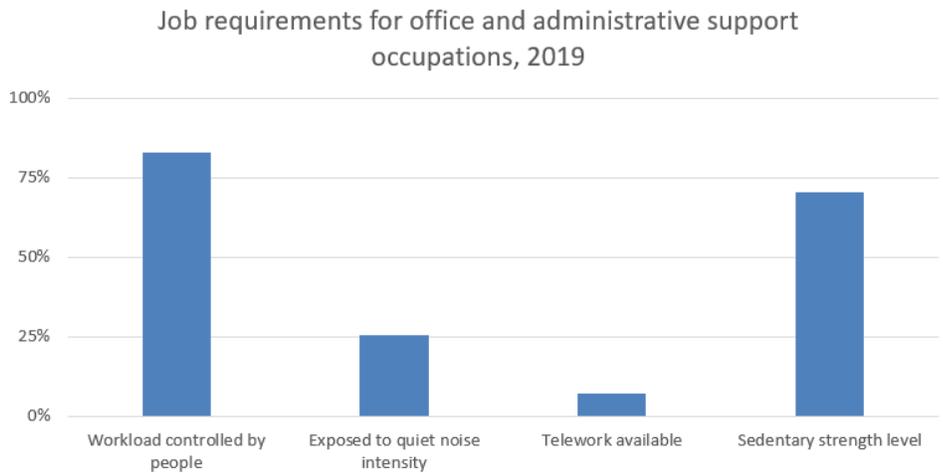


## Office and administrative support occupations

This occupational group includes communications equipment and computer operators, bill collectors, gaming cage workers, tellers, information and record clerks, customer service representatives, eligibility interviewers, secretaries and administrative assistants, couriers, dispatchers, data entry and information processing workers, and desktop publishers.

### Cognitive and mental requirements

Work was reviewed by a supervisor less than once per day, but at least once per week for 27.9 percent of workers. Work pace varied for 59.4 percent while more than basic people skills were required for 69.8 percent of workers. The supervisor was present for 83.2 percent. Telework was not available for 92.8 percent and working around crowds was not required for 99.5 percent.



### Education, training, and experience requirements

The minimum education level was a high school diploma for 73.2 percent of workers and a bachelor’s degree for 5.6 percent of workers. Specific vocational preparation was over 4 years and up to and including 10 years for 8.3 percent of workers. The average days of on-the-job training required was about 35 days. Prior work experience was required for 57.3 percent of workers.

### Environmental conditions

Exposure to a quiet noise intensity was present for 25.4 percent of workers. Another 73.3 percent were exposed to moderate noise intensity. Exposure to the outdoors was not required for 95.0 percent of workers. Almost all (99.6 percent) workers were not exposed to heights.

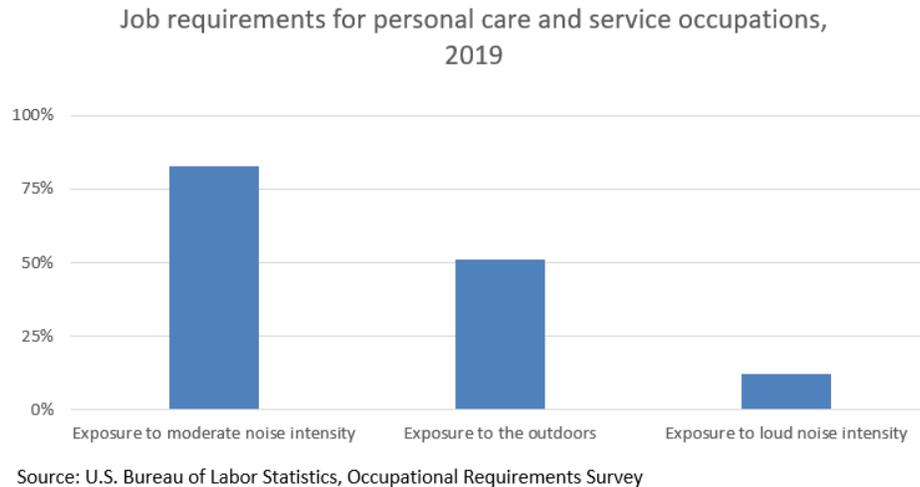
### Physical demands

The average hours of required sitting on-the-job was 6.0 hours. The average weight lifted or carried on-the-job was 9.2 pounds and 22.0 percent of workers required a light strength level. Reaching at or below the shoulder was not required for 38.8 percent of workers. Low postures were not required for 78.2 percent of workers. Peripheral vision was not required for 91.0 percent of workers. Hearing over the telephone was required for 97.3 percent of workers and hearing speech in person was required for 98.5 percent of workers.



## Personal care and service occupations

This occupational group includes animal care and service workers, entertainment attendants, funeral service workers, personal appearance workers, baggage portages, bellhops, and concierges, tour and travel guides, childcare workers, personal care aides, recreation and fitness workers, and residential advisors.



### Cognitive and mental requirements

Basic people skills were required for 38.7 percent of personal care and service workers. Constant verbal interaction, every few minutes, was required for 50.2 percent of workers. Work pace varied for 66.4 percent of workers.

### Education, training, and experience requirements

There was no minimum education requirement for 35.3 percent of workers and literacy was required for 32.0 percent of workers. Credentials were required for 49.1 percent of workers. On-the-job training was required for 85.2 percent of workers.

### Environmental conditions

Exposure to the outdoors was required for 51.1 percent of workers. Exposure to moderate noise intensity was required for 82.6 percent and exposure to loud noise intensity was required for 12.2 percent of workers. Exposure to hazardous contaminants was not present for 88.8 percent of workers.

### Physical demands

Workers spent an average of 1.6 hours sitting on the job and an average of 4.6 hours of standing. Climbing work-related ramps or stairs was required for 14.6 percent of workers. A light strength level was required for 50.3 percent of workers, a medium strength level was required for 36.4 percent of workers, and a heavy strength level was required for 6.7 percent of workers.

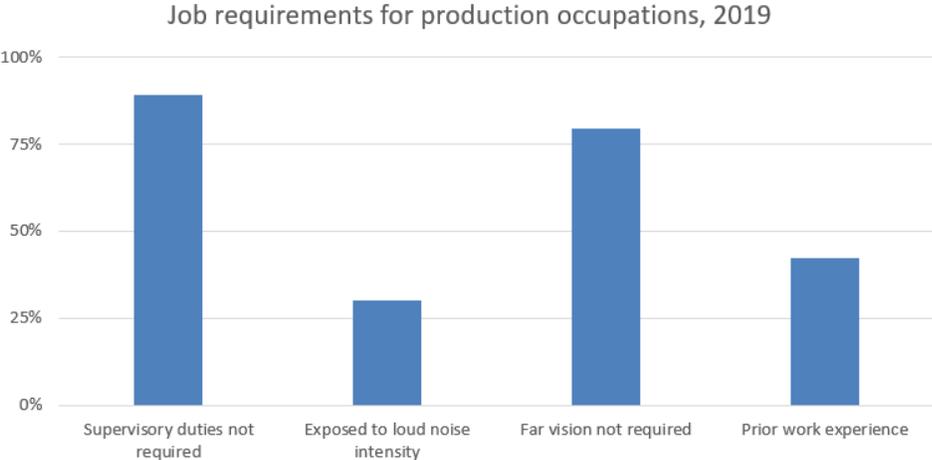


# Production occupations

This occupational group includes engine assemblers, structural metal fabricators and fitters, bakers, butchers and meat cutters, meat packers, computer-controlled machine tool operators, forging machine setters, machinists, pourers and casters, tool and die makers, printing press operators, upholsters, furniture finishers, model makers, gas plant operators, tire builders, etchers, and engravers.

## Cognitive and mental requirements

Verbal interaction was required once per day or less for 13.3 percent of these workers while the supervisor was not present for 14.1 percent. Workload was controlled by numerical performance targets for 27.0 percent with work being reviewed by a supervisor more than once per day for 59.7 percent of workers. The ability to pause work was not available for 61.4 percent of workers. Supervisory duties were not required for 89.3 percent and interaction with the general public was not required for 89.8 percent.



Source: U.S. Bureau of Labor Statistics, Occupational Requirements Survey

## Education, training, and experience requirements

On-the-job training was not required for 7.8 percent of these workers. There was no minimum education requirement for 35.8 percent of workers and a high school diploma was required for 59.3 percent of workers. Specific vocational preparation was beyond a short demonstration and up to and including 1 month for 39.5 percent of workers.

## Environmental conditions

About half (52.3 percent) of workers were not using personal protective equipment to mitigate noise intensity and 70.7 percent of workers were not exposed to wetness. Most (84.2 percent) workers were not exposed to hazardous contaminants or heavy vibrations (97.6 percent).

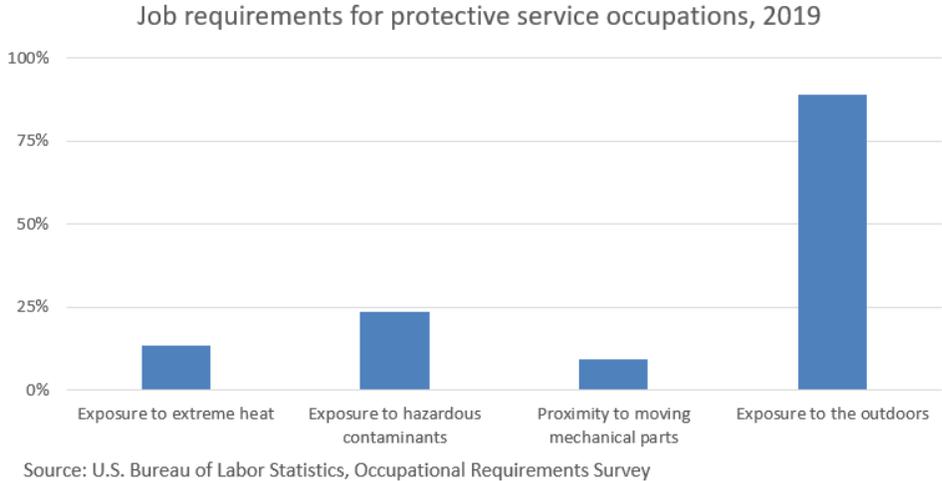
## Physical demands

Climbing structure-related ramps or stairs was required for 18.4 percent of workers. Pushing or pulling with both feet or legs was required for 28.3 percent of workers. The average weight lifted or carried on-the-job was 37.6 pounds and a heavy strength level was required for 12.1 percent of workers. Keyboarding was not required for 62.6 percent of workers and driving was not required for 87.3 percent of workers. Reaching at or below the shoulder was required for 86.2 percent of workers. Hearing speech in person was required for 95.2 percent. Near vision was required for 96.9 percent.



## Protective service occupations

This occupational group includes workers engaged in firefighting and fire prevention, law enforcement, and animal control, as well as private detectives and investigators, security guards, lifeguards, transportation security screeners, and crossing guards.



### Cognitive and mental requirements

Constant verbal interaction, every few minutes, was required for 37.4 percent of these workers. Workpace was varied for 67.5 percent. Working around crowds was required for 48.3 percent and more than basic people skills were required for 79.1 percent. Nearly all (97.1 percent) were required to interact with the general public.

### Education, training, and experience requirements

A high school diploma was required for 82.5 percent of workers. Credentials were required for 86.1 percent of workers and prior work experience was required for 33.1 percent of workers. An average of about two and a half years (920 days) of prior work experience was required. On-the-job training was required for 79.0 percent of workers.

### Environmental conditions

Exposure to the outdoors was experienced by 89.2 percent of workers. Workers were rarely exposed to extreme cold (94.7 percent) or extreme heat (86.6 percent). The majority of workers were not exposed to wetness (67.8 percent) or hazardous contaminants (76.4 percent). Personal protective equipment for hazardous contaminants was worn by 16.3 percent of workers. A moderate noise intensity level was experienced by 81.1 percent of workers and 91.9 percent of workers did not wear personal protective equipment to protect from noise intensity level.

### Physical demands

The average number of hours spent sitting throughout the workday was 4.1 hours and the average for standing was 5.1 hours. The choice of sitting and standing was allowed for 9.8 percent of workers in protective service occupations. Climbing work related ramps or stairs (structure-related) was required for 42.2 percent of workers. Reaching at or below the shoulder with both hands was required by 87.2 percent of these workers. Far visual acuity was required for 86.3 percent of workers and peripheral vision was required for 82.6 percent of workers. Driving was required for 61.5 percent of workers.

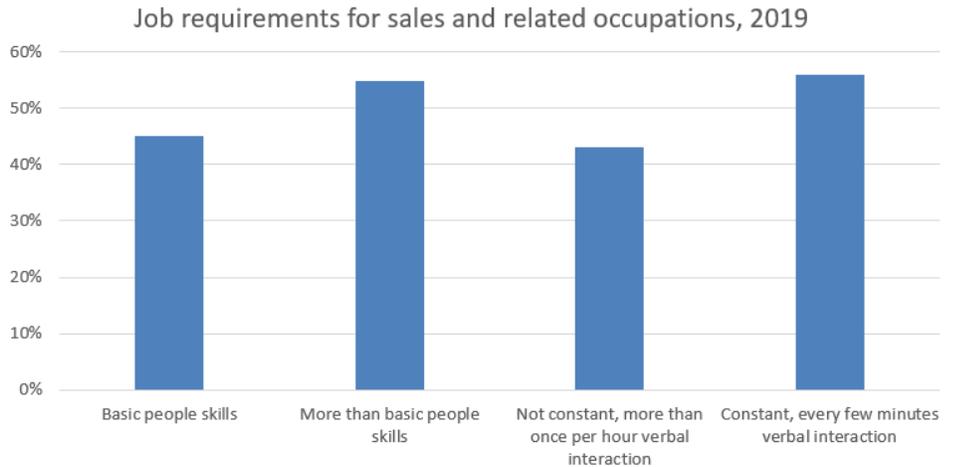


## Sales and related occupations

This occupational group includes cashiers, rental clerks, retail salespersons, advertising sales agents, travel agents, wholesale and manufacturing sales representatives, models, demonstrators, product promoters, sales engineers, real estate brokers, street vendors, and telemarketers.

### Cognitive and mental requirements

For 84.3 percent of workers in sales and related occupations workload was controlled by people and for 7.0 percent of workers workload was controlled by numerical performance targets. Work pace varied for 79.5 percent of workers and it was consistent and generally fast for 14.5 percent. Fifty-eight percent of these workers did not have the ability to pause work.



Source: U.S. Bureau of Labor Statistics, Occupational Requirement Survey

### Education, training, and experience requirements

There was no education requirement for 49.9 percent of workers and a high school diploma was required for 39.9 percent of workers. Only 7.9 percent of workers were required to have a bachelor’s degree. Literacy was required for 49.4 percent of workers. Credentials were required for 29.6 percent of workers and on-the-job training was required for 93.4 percent of workers taking an average of about 27 and a half days. Prior work experience was required for 31.3 percent of workers and with an average of nearly two and a half years (about 894 days) of experience.

### Environmental conditions

A moderate noise intensity level was experienced by 85.6 percent of workers. A quiet noise intensity level was experienced by 13.6 percent of workers. Most workers were not exposed to extreme heat (99.8 percent), extreme cold (95.5 percent), heavy vibrations (99.6 percent), heights (95.7 percent), humidity (99.9 percent) or hazardous contaminants (98.5 percent). Exposure to wetness was experienced by 20.7 percent of workers.

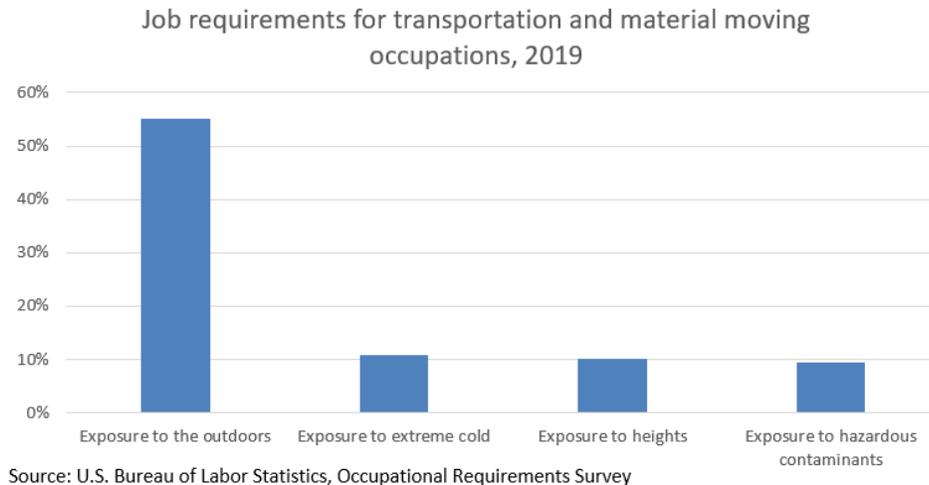
### Physical demands

Stooping was required for 22.3 percent of workers and the average weight lifted or carried on-the-job was 22.5 pounds. Driving was required for 24.5 percent of workers. Gross manipulation was required for 99.9 percent of workers and fine manipulation was required for 99.9 percent of workers. Climbing ladders, ropes, or scaffolds was required for 7.3 percent and crouching was required for 8.2 percent of these workers.



## Transportation and material moving occupations

This occupational group includes airline pilots, flight attendants, bus drivers, taxi drivers, chauffeurs, locomotive engineers, railroad conductors, ship engineers, parking lot attendants, crane operators, recyclable material collectors, mine shuttle car operators, and ship loaders.



### Cognitive and mental requirements

Interaction with the general public was required for 58.8 percent of workers. Basic people skills were required for 79.0 percent of workers and another 21.0 percent required more than basic people skills. Most (70.3 percent) workers did not have the ability to pause work. Supervisory duties were not required for 96.0 percent of workers.

### Education, training, and experience requirements

The minimum formal education required was a high school diploma for 38.4 percent of workers. A license was required for 27.8 percent of workers and prior work experience was required for another 29.2 percent of workers. Literacy was required for 55.5 percent of workers. On-the-job training was required for 88.3 percent of workers and the average days of prior work experience was about 601 days.

### Environmental conditions

Exposure to hazardous contaminants was experienced by 9.4 percent of workers. Another 10.1 percent of workers were exposed to heights. Exposure to loud noise intensity levels was present for 23.9 percent of workers and 12.7 percent of workers utilized personal protective equipment for noise. Only 10.9 percent of workers were exposed to extreme cold and 55.2 percent of workers were exposed to the outdoors.

### Physical demands

Climbing ladders, ropes, or scaffolds was required for 19.9 percent of workers and climbing structure-related ramps or stairs was required for 24.1 percent of workers. Driving was required for 59.9 percent of workers. Near vision was required for 97.9 percent of workers. Hearing speech in person was required for 98.0 percent of workers; however, hearing other sounds was not required for 49.9 percent of workers.



## Technical note

The Occupational Requirements Survey (ORS) is conducted by the U.S. Department of Labor, Bureau of Labor Statistics (BLS). The ORS is an establishment-based survey and provides job-related information about the physical demands; environmental conditions; education, training, and experience; as well as cognitive and mental requirements of jobs in the U.S. economy. Job requirements do not include modifications or adjustments to a job or change in the work environment that enables a person with a disability to compete equally or carry out the occupational critical tasks in support of the critical job functions.

Additional estimates for detailed occupations and occupational groups are available at [www.bls.gov/ors/data.htm](http://www.bls.gov/ors/data.htm).

## Sample size

For information regarding the sample size see the [technical note in the current News Release](#). The ORS Handbook of Methods provides information on the sample [design](#).

## Measures of reliability

To assist users in ascertaining the reliability of ORS estimates, standard errors are available for each estimate. For more information on standard errors see: [www.bls.gov/ors/se.htm](http://www.bls.gov/ors/se.htm).

## Occupational classification

BLS uses the [Standard Occupational Classification \(SOC\)](#) system to code and publish occupations to the 6-digit level of detail. The occupational groups in this publication reflect the 2-digit aggregation of occupations as defined using the [2018 SOC](#). Military specific occupations (55-0000.00) are out of scope for the ORS.

## Definitions of major terms

The complete list of terms is available within the [ORS 2018-2019 collection manual](#) and [ORS Handbook of Methods](#). The glossary below contains some major terms used in these occupational group profiles.

### General terms

- Civilian workers – includes private industry and state and local government workers. Excluded are the federal government, the military, agricultural workers, private household workers, and the self-employed.
- Critical job function - This is the main purpose and the primary pay factor for the job. It consists of critical tasks that are integral to the job.
- Critical tasks - Activities workers must perform to carry out their critical job function(s).
- Duration levels:
  - Seldom – up to 2 percent of the workday
  - Occasionally – from 2 percent up to 1/3 of the workday
  - Frequently – from 1/3 up to 2/3 of the workday
  - Constantly – from 2/3 or more of the workday



- Job – group of workers in an establishment that have the same position. The term job refers to a single position within an establishment, whereas occupation refers to a profession or trade. Example: “waiters at Smith’s Restaurant” is a job, whereas “waiters” is an occupation.

### Cognitive and mental requirements

- Crowds - Working around crowds is present when the following five conditions are met:
  1. many unfamiliar people are present considering the space available,
  2. movement is restricted,
  3. any given arrangement of the crowd is temporary,
  4. a certain level of disorganization is present, and
  5. workers are not separated from unfamiliar people by counters, dividers, or other objects.
- General public - Includes interacting with individuals other than coworkers to perform critical tasks.

### Education, training, and experience requirements

- Preparation time – the amount of time required by a typical worker to learn the techniques, acquire the information, and develop the facility needed for average performance in a specific job/worker situation. This is also referred to as specific vocational preparation (SVP) and is measure in nine levels from a “short demonstration” to “over 10 years”. For more information see the [Calculation section](#) of the [Handbook of Methods](#).
- Minimum education – the lowest level of formal coursework required in a job and excludes general education, see the [Minimum formal education](#) factsheet for more information.
- Credentials – the amount of time needed to complete required training as a condition for hiring which may include certifications, licenses, and educational certificates.
- On-the-job training – the amount of training time that occurs after an employee has been hired.
- Prior work experience – the amount of prior relevant work activity. This excludes any non-vocationally specific requirements.

### Environmental conditions

- Extreme cold – 40 degrees or below when exposed 2/3 or more of the workday or 32 degrees or below when exposed up to 2/3 of the workday.
- Extreme heat – above 90 degrees in a dry environment or above 85 degrees in a humid environment.
- Hazardous contaminants – exposure that negatively affects the respiratory system, eyes, skin, or other living tissue via inhalation, ingestion, or contact.
- Noise intensity level – amount of noise that a worker experiences while working. Examples of noise level:
  - Quiet – settings such as a private office or art museum;
  - Moderate – business office, department store, fast food restaurant;
  - Loud – large earth moving equipment or can manufacturing department;
  - Very loud – rock concert or jackhammer work.



- Outdoors – is considered present when two conditions exist, (1) a worker performs typical job duties outdoors or a worker moves between different work sites during the workday and (2) a worker is unprotected and exposed to the elements.
- Personal protective equipment (PPE) – gear used or worn to minimize exposure to serious workplace injuries and illnesses.
- Proximity to moving mechanical parts – refers to moving materials, mechanical parts, settings, or any moving objects that could cause bodily injury.
- High and exposed places – when a worker is at risk of falling five feet or more from the worker’s center of gravity.

### Physical demands

- Fine manipulation – touching, picking, pinching, or otherwise working primarily with fingers rather than with the whole hand or arm.
- Gross manipulation – seizing, holding, grasping, turning, or otherwise working with the hands; and also often present when lifting involves the hands.
- Strength level – A job is classified into strength five levels: sedentary, light, medium, heavy, and very heavy. The strength level is determined by how much weight a worker is required to lift or carry, how often they have to lift or carry that weight, as well as standing and walking in some special cases. Pushing or pulling – Pushing or pulling can be done with the hands and arms, feet and legs, or feet only. Additional detail on the calculation of strength levels is available in the [Handbook of Methods](#).

