



# Industry-Recognized Certificate Programs and Job Corps

Working Toward a Skilled and Qualified Workforce

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**Industry-Recognized Certificate Programs and Job Corps: Working Toward a Skilled and Qualified Workforce**  
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Management & Training Corporation (MTC) is a leader in the training of disadvantaged youth. MTC manages and operates 24 Job Corps Centers in 19 states for the U.S. Department of Labor, preparing disadvantaged youth for meaningful careers. MTC also operates privatized correctional facilities around the world with approximately 8,000 beds under contract. The MTC Institute, a research unit within MTC, addresses topics relevant to job training and corrections programs. The Institute is dedicated to objectively examining data, projecting trends, researching program models, tracking public policy developments, and shedding light on promising practices.

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# Industry-Recognized Certificate Programs and Job Corps

## INTRODUCTION

Programs designed to educate and train students for successful entry into the workforce must target skill and labor deficits within particular areas of industry. Since its inception, Job Corps has worked to increase opportunities for disadvantaged youth by removing key obstacles to their successful employment. Providing basic education, skill-centered training, and practical work experience are central to Job Corps' foundation.

Today's labor market places great value on industry-recognized technical certificates. The continuing success of Job Corps students requires that they develop skills consistent with industry standards and that they obtain recognized and marketable certificates, which employers often use as one important criterion for hiring. In a rapidly changing world, certificates are an effective way for educators, students, and employers to communicate about skill needs, training, and opportunities, particularly in high-growth occupations.

**The continuing success of Job Corps students requires that they develop skills consistent with industry standards and that they obtain recognized and marketable certificates, which employers often use as one important criterion for hiring.**

Industry-based certificates (i.e., developed in partnership with and fully recognized by the business community) are an individual's passport into the new economy. Employers, as members of a particular industry base, participate in setting the standards and creating criteria for certificate acquisition. A certificate signals to an employer a particular set of skills and expected level of productivity. Applicants with an industry-recognized certificate are more likely to be hired because the employer receives assurance that the applicant has the right skills for the job.

Employers use credentials as a mechanism for assessing applicant job skills. Common credentials such as GEDs, high school diplomas, and baccalaureate degrees granted from educational institutions are universally accepted, and each signals discriminate skill levels. While not all technical certificates are universally accepted in their entirety, the rapid growth

in the number of technical certificates is bringing about change. Until recently, private entities, trade associations, and others granted credentials without consistency in standards or regulation of guidelines from one credentialing body to another. With the expanding industry-recognized certificate market, gains in both recognition and prestige are emerging.

Traditional educational entities no longer hold a monopoly on credentials. In fact, the structure and learning environment of the industry-driven certificate movement does not reflect a traditional institutional setting in design or delivery. Alternative learning opportunities like distance and internet-based programs that offer short-term certificate programs are widely available today. Traditional educational entities, though once skeptical of the nontraditional credential, now actively seek industry partners to develop program standards and criteria for assessment.

Increasingly, linkages between formal technical job training based on industry-established skill standards and assessment of performance are changing the dynamics of the certification process in ways that will affect individuals entering the workforce. Industry is working in tandem with academic institutions and government agencies to set skill standards and increase familiarity with new technology.<sup>1</sup> The credentialing arena is rapidly changing and benefits are evident on a variety of levels. Over 4,000 certificates are available today and over 1,600 industry trade associations provide credentials.<sup>2</sup>

The variability in certification/certificate value in terms of employer demand and program quality makes it important to determine which technical certification/certificates best match the needs of employers. With this information, Job Corps can help position its students for better jobs that provide increased opportunity for advancement. The key is in providing students with a credential recognized by the specific industry for which the student is training. This requires Job Corps' working together with industry and the communities to ensure that training programs align with labor market needs. Job Corps needs to provide the future workforce with the foundational skills necessary to keep pace with new technology and business tools. Such efforts will have bearing on how well Job Corps

<sup>1</sup> Workforce Excellence Network. (2002). *Workforce excellence knowledge series: Using skill standards & certification in Workforce Investment Board programs*. Washington, DC: Workforce Excellence Network. Formal organizations and initiatives continue the work of the National Skills Standards Board (NSSB), including the National Association of Workforce Boards, state-sponsored Skill Standards Working Groups, and Industry sponsored organizations.

<sup>2</sup> Interview with Dave Osmond, National Skills Standard Board, June 2003.

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maintains its position as a leader in the delivery of youth training programs and how well it is able to meet the challenge of ensuring youth success in the new economy.

## UNDERSTANDING CERTIFICATES

Is there a difference between certification and a certificate? While this is seemingly a straightforward question, it requires sorting through the details to answer. The growing need for proof of technical skill and achievement has created an abundant number of options, making it difficult and time intensive to find the most appropriate credential options for Job Corps students.

It is difficult in some situations to distinguish between certification and a certificate of completion. The following definitions provide a general basis for distinguishing between the two credentials.<sup>3</sup>

- Certification is an independent third party credential that is industry-accepted and results from a process whereby an individual's knowl-

**In the real world, an individual's knowledge and his or her ability to use it on the job are inextricably linked. Each is useless without the other.**

prohibit work in a particular field until the proper requirements have been met (i.e., license). There is also voluntary certification, a process by which a nongovernmental association or agency recognizes an individual who has met certain predetermined, specified qualifications.

Certificates vary tremendously in type and requirements. A knowledge-based certificate attests to one's skill at recalling important facts. A skill-based certificate requires both knowledge and its application in a controlled work environment. For a performance-based certificate, the controlled setting is moved to the real world, where on-the-job performance is assessed. In the real world, an individual's knowledge and his or her ability to use it on the job are inextricably linked. Each is useless without the other. Many, perhaps arguably, would claim that this latter certificate is the truest measure of one's ability to perform.

**“Workforce programs should forge stronger connections to the business community to identify the skills needed to power the regional economy.” (Ganzglass, E., Mazzeo, C. & Conklin, K. (2002) *A Governor's Guide to Creating a 21st-Century Workforce*, p. 19, Washington, D.C.: National Governors Association Center for Best Practices.)**

edge and/or skill in a particular area is verified against a set of pre-determined standards.

- Certificate is another form of credential that documents the fact that an individual has completed or passed a certified program or class. In many instances, a certificate may require a knowledge and/or skill assessment. Certificates may be industry-recognized.

The basis for this report centers on portable industry-recognized credentials which include both certifications and certificates. For the remainder of the discussion “certificate” is used as a universal term intending to capture both certifications and certificates.

There are mandatory credentials, many of which are in health care, that are regulated by a state entity and

Individuals become certified by successfully completing any one or a combination of the following procedures: passing of an exam, practical work experience, and/or specified coursework. The qualifications will vary by certificate, and these predetermined qualifications can be an indication of whether a certificate evidences a specific set of skill standards. Skill standards specify the competency required for successful job performance specific to that certificate.

Key industry groups must be involved in setting skill standards, particularly in demand-driven occupations. Many credentials available today, however, do not incorporate industry skill standards. It is therefore important to ensure that both the certifications and the training program related to that credential align with skills most in demand. Training programs are a means

<sup>3</sup> Audin, G. (2004, Spring). Ready for Convergence: IT Management and Technologist. *ACUTA Journal of Communications Technology in Higher Education*, P 34-37.

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to achieving certification, but they do not necessarily result in the granting of a credential. In some cases, the certifying entity will recommend curricula or make curricula available at no cost. More comprehensive, full-packaged programs are also available that offer curricula, equipment, and certification, but at an increased cost. As with many things, most costs are negotiable.

## Certifications are Value Added

The value of industry-recognized certifications should not be underestimated. *Providing Job Corps students with recognized, portable credentials will improve their position in the job market and increase their opportunities for success.*<sup>4</sup> In a study conducted by the Information Technology Association of America, vendor or industry certification was found to be as important as a bachelor's degree to information technology (IT) companies, while non-IT companies placed certification only just below a bachelor's degree.<sup>5</sup>

Certification is important economically and psychologically. In a 2003 Certification Magazine survey of over 19,000 IT professionals, 73 percent of respondents said certification played a significant role in their career advancement, with 42 percent of these receiving a raise within their first year of attaining their primary certification. More than three quarters of respondents reported that certification provided them with an added level of confidence, a sense of professionalism, and respect in their field of work.<sup>6</sup>

As the demand for skilled labor continues to outpace supply, community colleges have emerged as a major partner in economic development by providing postsecondary education and training, offering an increasing number of short-term technical job training programs with portable certificates. Increasing student success begins with programs designed to train to identified skill standards in industries and occupations in demand. Students must be provided with essential knowledge and skills to enable them to pass the certification exams in key, high-growth technical areas.

The wide range and abundant number of both certificates of completion and certifications available today

make it challenging to distinguish between those that have no recognition within industry, and thereby with employers, and those that have high recognition and, in turn, more value. Currently no mechanism exists that allows educational trainers, students, and employers to assess programs or skills across the array of available offerings according to their recognition within the employer base. To better serve industry and students, including those in Job Corps, it is imperative that we as a community work to develop a process for organizing and assessing the vast number of available options.

The value of a certificate/certification is relative to its level of recognition with employers. A system of classifying certificates and certifications according to categories of employer or industry recognition would provide an initial framework for beginning to assess the growing number of credentialing options. Understanding that many certificates and certifications may not always neatly fit into one category, with some crossing over into different areas, there is a benefit in

**The increasing demand for skilled labor has opened the door for those interested in playing a role in training the workforce of tomorrow.**

developing a system for identifying those most likely to lead to gainful employment. The resulting system would be a valuable resource for anyone pursuing certificate-level training. It would also help Job Corps to be able to focus its training in the appropriate areas and allow it to remain competitive in the high-tech, high-growth job training arena.

The increasing demand for skilled labor has opened the door for those interested in playing a role in training the workforce of tomorrow. Job Corps is among those. In the past 40 years, Job Corps has established a solid foundation in workforce development. It brings to the table a history deep with experience and knowledge of training in many of the high-growth industry areas. Job Corps can be a strategic partner in helping industry meet its demands for high-growth technical skills by, first, continuing to provide entry-level occupational training backed by industry-recognized

<sup>4</sup> Thompson Prometric. (2003). *2002 global IT training and certification study: Shifting values in the journey to certification*. Retrieved from [www.prometric.com](http://www.prometric.com).

<sup>5</sup> Information Technology Association of America. (2001). *When can you start? Building better information and technology skills and careers*. Arlington, VA: Author.

<sup>6</sup> Sosbe, T. (2003, December). Paying off nicely—CertMag's 2003 salary survey. *Certification Magazine*. Retrieved from [www.certmag.com](http://www.certmag.com).

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certificates and, second, exploring new areas of training to replace less successful trades.

## THE GROWING LABOR SHORTAGE

It is clear that as older Americans move into retirement, they take with them their skill and knowledge, leaving a deficit of trained workers. Consider the

Employers want workers who have the right combination of skills and experience and seek to minimize their risk in hiring by choosing applicants with proven technical skills and abilities.

The labor market is dynamic and complex, with industries requiring a mix of knowledge and skills that can vary from one sector to another for similar types

**“Rapid technology change put a premium on higher education and more skills.” (Porter, M. & Van Opstal, D. (2001, January ). *U.S. Competitiveness 2001: Strengths, Vulnerabilities, and Long-Term Priorities*, p. 17. Washington, D.C.: The Council on Competitiveness.)**

numbers: In terms of projected estimates, the U.S. workforce by 2012 will consist of 162.3 million individuals. Yet in order to sustain the current level of U.S. economic growth, the labor supply requires 165.3 million workers, 3 million short of the projected estimate.<sup>7</sup> Many see this as evidence of a looming labor shortage. However, as Horrigan<sup>8</sup> (2004) explains, the relationship between the projected number of workers and the expected number of jobs is not a one-to-one relationship, especially since many individuals will likely continue to hold multiple jobs.

While the projections appear to clearly indicate a shortage of 3 million workers, it is important to note that projections are derived from multiple data sources that use different data series to project the number of positions needed to produce a desired output, i.e., the gross domestic product (GDP). The projections do not take into account how industries will respond to their labor needs. Companies have a variety of options to consider in meeting their staffing needs. When faced with difficulties in locating skilled and qualified workers, companies can consider immigration (H1B-Visa), integration of technology, reorganization of workflow, hiring, outsourcing, flextime, overtime, and offshore labor, just to name a few possibilities that can influence the perceived coming shortage. For example, recent analysis of payroll indicates manufacturing overtime hours increased to 4.4 hours in November.

of work. Requirements can vary, and can include formal education, specific technical knowledge, industry knowledge, and/or practical work experience. Employers want workers who have the right combination of skills and experience and seek to minimize their risk in hiring by choosing applicants with proven technical skills and abilities. In a 2001 survey on workplace testing, 41 percent of responding firms reported testing applicants in basic literacy and math skills. Of those tested, 34 percent of applicants were identified as deficient in basic skills and 85 percent were not hired for the position.<sup>9</sup>

What is sure to influence industry’s response to a labor shortage is the availability of skilled and qualified workers. For many, the hiring of trained and qualified workers is mission critical. *Job Corps has the opportunity to provide businesses with access to trained and qualified workers in high-demand technical occupations if it provides the proper industry-recognized training to its students.*

## FUTURE JOB GROWTH POTENTIAL

### Work and the Economy

The Bureau of Labor Statistics (BLS) provides a wealth of economic projections related to appropriate educational and career training paths. Industry and the economy

<sup>7</sup> Horrigan, M. W. (2004, February). Employment outlook: 2002-2012. Concepts and context. *Monthly Labor Review*. Washington, DC: Bureau of Labor Statistics, U.S. Department of Labor.

<sup>8</sup> Manufacturing Employment in November. (2003, December 8). *Monthly Labor Review*. Washington, DC: Bureau of Labor Statistics, U.S. Department of Labor.

<sup>9</sup> American Management Association. (2001). *Survey on workplace testing: Basic skills, job skills, psychological measurement*. [www.amanet.org/research/pdfs/bjp\\_2001.pdf](http://www.amanet.org/research/pdfs/bjp_2001.pdf).

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are interdependent and have a combined effect on occupational demand. A significant increase in industry output can directly affect the types of occupations most in demand. Corporate staffing decisions are influenced by new technology and a company's ability to integrate that technology into their practice.

In the 10-year period 2002-2012, job growth will be concentrated in the service-providing sectors of the economy. Education and health services are expected to see twice the growth of the overall economy, adding an estimated 5.1 million jobs. Growth is expected for both ends of the career ladder, the professional and service levels, with the projected increases in these areas accounting for half of all job growth over the decade.<sup>10</sup>

It is expected that high growth in employment opportunities, due in part to changes in technology and the aging workforce, will occur in the following industry sectors: automotive services, biotechnology, construction, geospatial technology applications, health services, high-tech manufacturing, information technology, leisure and hospitality, the retail industry, and transportation.<sup>11</sup> Economic indicators of industry output and job growth signal areas of opportunity for Job Corps in pursuing future job training. Although Job Corps is already providing training in many of these sectors, what lacks is across-the-board granting of industry-recognized certificates that are critical to giving Job Corps students a competitive edge.

Job opportunity varies greatly relative to one's level of education and training. However, basic education is an essential foundation to building the skills and knowledge needed to secure higher paying jobs.<sup>12</sup>

According to the Bureau of Labor Statistics (2003), three quarters of the 30 fastest growing job areas

will require fewer than four years of postsecondary education.<sup>13</sup> Thirteen of these 30 job areas are identified in Table 1 by required credential. Each of the 13 occupations is within reach of Job Corps students. The two areas of fastest growth require an education level comparable to that provided to students attending a Job Corps Center to obtain a technical certificate or a two-year associate's degree. While the occupations listed in Table 1 may not typically be thought of as "high-tech," the skills required to obtain these types of jobs are found in the high-tech sector. At a minimum, Job Corps must ensure that all its students secure industry-recognized certificates with the potential for advancing their education upon completion of their training at a Job Corps Center.

**TABLE 1: FASTEST GROWING OCCUPATIONS BY EDUCATION AND TRAINING**

Dental Assistant	Long-Term On-the-Job (OTJ) Training/Certificate
Environmental Science & Protection Technician	Associate Degree
Hazardous Materials Removal Workers	Moderate OTJ Training
Home Health Aide	Short-Term OTJ Training
Medical Assistant or Technician	Certificate or Associate Degree
Occupational Therapist Assistant	Certificate or Associate Degree
Pharmacy Technician	Long-Term OJT / Certificate
Physical Therapy Assistant	Certificate or Associate Degree
Physical Therapy Aide	Short-Term OTJ Training
Preschool Teacher	Vocational Certificate
Respiratory Therapy Assistant	Postsecondary Vocation
Social and Human Service Assistants	Moderate OTJ Training
Veterinary Technician	Certificate or Associate Degree

**“Not everyone must have a four-year college degree. But almost everyone needs post-secondary education and training to succeed in the future.” (Gunderson, S., Jones, R., Scanland, K. (2004). *The Jobs Revolution. Changing How America Works*, p. 30. Washington, D.C.: Copywriters, Inc.)**

<sup>10</sup> Berman, J. (2004, February). Industry output and employment projections to 2012. *Monthly Labor Review*. Washington, D.C.: Bureau of Labor Statistics: U. S. Department of Labor.

<sup>11</sup> Bureau of Labor Statistics. (2003) *Employment and training administration fiscal year 2005 budget briefing*, Washington, DC: Author.

<sup>12</sup> Cheeseman Day, J., & Newburger, E. (2002, July). The big payoff: Educational attainment and synthetic estimates of work-life earnings. *Current Population Reports* (p. 23-210). Washington, DC: U.S. Census Bureau.

<sup>13</sup> Fastest growing occupations, 2002-2012. (2004, February). *Monthly Labor Review*. Washington, DC: Bureau of Labor Statistics.

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The need for better and more diversified work skills is growing. Many jobs require skills of higher order thinking: reasoning, decision-making, and problem-solving skills. Employers seek individuals who have good interpersonal skills and who are technologically literate and flexible. Individuals with cognitive or critical thinking skills combined with technical skills are in high demand. “Soft” skills and abilities, such as handling success or failure on the job, are considered to affect job stability, and are also increasingly important to employers.<sup>14</sup>

Some states are actively working to assess their labor supply and demand. The Washington State Workforce Training and Education Board<sup>16</sup> reports the following about Washington State:

- A 2002 survey of over 2,400 business firms across the state concluded they were only able to meet 78 percent of the labor demand
- Labor shortage estimates in Washington are such that openings for workers with more than one but less than four years of postsecondary

**“The retirement of millions of baby boomers will leave not just a smaller workforce but a relatively less experienced one. Investment in education and training to boost overall workforce skills will be essential...” (Porter, M. & Van Opstal, D., p. 61.)**

A major challenge facing the new economy is the lack of available skilled labor in key industries. The Bureau of Labor Statistics projects a 22 percent increase in the number of jobs that will require a postsecondary education by 2020, and the loss of 46 million skilled workers over the same period due to the retiring baby boomers. One result of the rising “knowledge economy” is the reorganization of work to allow the automation of low skill jobs and an increase in workers’ use of problem-solving skills to troubleshoot and improve

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productivity. Jobs are being eliminated or redefined to integrate multiple skills and companies are calling for workers with better skills. According to U.S. economists Carnevale and Frye (2001), “Unless we increase the quantity and quality of education and training, we are unlikely to generate enough skill to replace the retiring baby boomers, especially given an increasing demand for post secondary skill levels on the job.”(p.1)<sup>15</sup>

education will exceed the supply by more than 7,000 positions in the 2004-2005 training year

- To begin to close the workforce shortage gap would require training 59,300 individuals by 2008 in addition to the 2,700 already trained annually

Maryland’s Workforce Board<sup>17</sup> found a similar situation in Maryland:

- A 2001 survey of business organizations and employers across the state showed over two thirds had difficulty finding qualified employees

The industry workforce paradigm taking shape reflects a shift from low skill work to “knowledge” jobs that require technical, academic, and soft or cognitive skills development.<sup>18</sup> Adequate training is available to varying degrees. *Given Job Corps’ experience as a leader in providing solid, foundational job training and in increasing advancement opportunities for disadvantaged youth, its role in training the next generation of skilled workers is critical.*

Job Corps remains a leader in training by aligning its training efforts with key industry sectors experiencing or projecting critical shortages or growth. Shifts in technology, emerging business practices, growth, and

<sup>14</sup> Rojewski, J. (2002). Preparing for the workforce of tomorrow. *Journal of Vocational Educational Research*, 27 (1). P 7-34.

<sup>15</sup> Carnevale, A. P., & Frye, R. A. (2001). *The economic and demographic roots of education and training*. Washington, DC: National Association of Manufacturing.

<sup>16</sup> Washington Workforce Training and Education Coordinating Board. (2002). *Washington state employers workforce training needs and practices survey 2002: The gap between supply and demand for post-secondary workforce education*. Retrieved November 2003 from [www.wa.gov](http://www.wa.gov).

<sup>17</sup> Governors Workforce Investment Board. (2001). Maryland workforce educational needs assessment survey. <http://www.mbrt.org/workfcsurv2001.htm>

<sup>18</sup> Carnevale, A. P., & Desrochers, D. M. (2003). *The missing middle: Aligning education and the knowledge economy*. Washington, DC: Office of Vocational and Adult Education, U.S. Department of Education.

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worker retirement are affecting the workforce in many industry sectors. Job Corps must prepare its students for the emerging opportunities in high-growth industry sectors by providing training programs that result in industry-recognized certificates. By offering training programs for demand-driven occupations, Job Corps can positively impact its students' long-term job prospects and wages.

## Industry Sectors Expecting High Growth

The United States is facing a critical shortage of skilled workers to replace exiting workers and fill newly created positions. Some of the industry sectors that will be affected most seriously through 2012 are listed below.<sup>19</sup>

### Automotive

- Automotive repair and maintenance employment is expected to rise by 149,000 positions, or 16.7 percent, from 2002 to 2012.<sup>20</sup>
- Jobs as automotive service professionals will be plentiful for individuals who finish formal training programs.

### Biotechnology

- High-tech employment is expected to account for 15 percent of total employment, with many new jobs and new types of jobs coming from the biotech industry.
- Biotechnology is an industry that cuts across and involves many different disciplines (molecular, agricultural, computers, medicine, and pharmaceutical) and occupations (researchers, biologists, chemists, computer support specialists, pharmacy technician, laboratory technician, marketing specialist, sales representative).

**By offering training programs for demand-driven occupations, Job Corps can positively impact its students' long-term job prospects and wages.**

### Construction

- Employment in the construction industry is projected to grow by 1 million jobs, reaching 7.8 million in 2012. It is among the economy's top 10 areas of employment growth.
- Growth in residential construction is expected at 2.1 percent pace through the 2012.

### Geospatial

- Geospatial technology is among the top three fastest growing career fields in the United States.
- Geographic Information Systems (GIS), Global Positioning Systems (GPS) and remote sensing are geospatial technologies with important applications in many industry areas, including homeland security, natural resources (agriculture, fisheries, forestry, wildlife, and water), urban planning, and emergency management.<sup>21</sup>
- A 15 percent growth in new jobs is projected over the next decade.

### Health Services

- The general consensus is that the healthcare or the health service industry is going to be shifting for at least the next 10 years. One out of every six new jobs created by 2012 is expected to be in health services.
- Employment in this sector is expected to grow by 559,000 per year and reach 2.6 million by 2012.
- The aging population is driving the growth in home health care and assisted living facilities, which are expected to grow at an annual rate of 4.5 percent.

<sup>19</sup> The following economic information for each industry area is from: Berman, J. (2004, February). Industry output and employment projections to 2012. Monthly Labor Review. Washington, D.C.: Bureau of Labor Statistics: U. S. Department of Labor.

<sup>20</sup> Horrigan, M. (2004, February). Employment projections to 2012: concepts and context. Monthly Labor Review. Washington, DC: Bureau of Labor Statistics, U.S. Department of Labor.

<sup>21</sup> GIS allows one to create, map, manage, and analyze spatial information. GPS and remote sensing are ways to collect data that can be incorporated into a GIS. GPS allows users to collect accurate location-based information about features of interest using a constellation of satellites, while remote sensing data are derived from information generated by air-borne or space-borne sensors.

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## Information Technology

- Information technology is the fastest growing sector in the U.S. economy, with a 5.3 percent annual rise in projected output growth rate. Telecommunications and other programming will account for 39.8 percent of projected output growth and 27.3 percent of projected employment growth.
- Software publishing is expected to be the nation's fastest growing employer in 2002-2012, creating 173.7 million more jobs than in the previous decade.
- The majority of all IT workers are in non-IT companies, with 80 percent working in small companies across other industries.
- Internet services, data processing, and other information services are expected to be the third fastest and one of the largest sources of output growth, reaching \$232.6 billion by 2012 and adding 244,000 jobs.

## Leisure and Hospitality

- It is projected that this sector, which primarily comprises food services and drinking establishments, will be responsible for an estimated 10 percent of job creation in the next decade, generating 14.1 million jobs.
- Strong gains in recreation, amusement, and fitness industry jobs are expected, with annual output projected to increase at the rapid rate of 4.2 percent annually, creating an expected 410,000 jobs in this next decade.

## Manufacturing

- Manufacturing accounts for more than 20 percent of the U.S. Gross Domestic Product.<sup>22</sup>
- Faced with an aging workforce and negative occupational stereotypes of factory workers, the manufacturing industry will need to fill 10 million manufacturing positions by 2020.<sup>23</sup>
- In a national survey of manufacturing employers, 80 percent of respondents experienced difficulty finding qualified high-tech manufacturing workers.

- High-tech manufacturing employment is projected to increase in the areas of plastics and rubber products (138%), fabricated metal products (97%), architectural and structural metals (77%), and machinery (51%) over the previous decade.

## Retail

- As the nation's largest employer, retail is expected to continue to be a dominant source of employment, with 2.1 million new jobs projected by 2012.

## Transportation

- The transportation industry accounts for 11 percent of the gross domestic product and employs over 11 million Americans.
- The U.S. Department of Transportation, Bureau of Transportation Statistics (BTS) is collecting the Transportation Services Index, a monthly measure of trucking and parcel services, freight railroad services, inland waterway traffic, pipeline movements, and airfreight to better predict the transportation industry's impact on the economy.<sup>24</sup>

## OPPORTUNITIES FOR GROWTH IN KEY OCCUPATIONS WITH CREDENTIALS

Job Corps can play a critical role in providing skilled and qualified workers in the coming decade. Rapid advances in technology have contributed to a strong demand for workers who can create, apply, and use new technologies. Demand for these skills is widespread, crossing virtually every industry—manufacturing, service provision, transportation, health, education, geospatial, IT, and more. Job Corps already provides job training in many of the demand-driven areas targeted for high growth. Although some of the high-tech certificates are advanced in scope, requiring a two- or four-year degree, many are certificates that Job Corps students can train for and achieve. Training to industry skill standards and providing industry-recognized certificates increases Job Corps' ability to meet the demand for skilled and qualified workers. In addition, students need meaningful certificates, recognized by employer groups, if they are to have

<sup>22</sup> Manufacturing Institute. (2003, may). *Keeping America competitive: How a talent shortage threatens U.S. manufacturing*. [http://www.nam.org/s\\_nam/sec.asp?CID=201721&DID=230273](http://www.nam.org/s_nam/sec.asp?CID=201721&DID=230273).

<sup>23</sup> Eisen, P. (2003). *Today's manufacturing layoffs mask a looming shortage of skilled workers in the U.S.* Washington, DC: National Association of Manufacturers.

<sup>24</sup> Transportation Services Index (TSI). Created by the U.S. Department of Transportation (DOT), Bureau of Transportation Statistics (BTS). Available at [www.bts.gov/programs/transportation\\_services\\_index/](http://www.bts.gov/programs/transportation_services_index/)

# Industry-Recognized Certificate Programs and Job Corps

increased job opportunities with the potential for growth and advancement.

**It is clear, then, that training and developing qualified and skilled workforce participants in technical high-growth jobs is key to the success of Job Corps and, ultimately, the U.S. economy.**

Job Corps provides options and opportunities for career advancement. The higher skilled technical jobs that require more education are replacing the once abundant low-skilled jobs. Occupational training must focus on skill development and documentation if it is going to provide students with increased opportunities for good jobs. A recent study, for example, found that “low skilled jobs tend to be way stations not destinations for youth.”(p. 8).<sup>25</sup> An estimated two thirds of the 6.5 million food servers are between the ages of 16 and 19. The increase in jobs in this industry can be explained in large part by the need to replace workers due to turnover. It is clear, then, that training and developing qualified and skilled workforce participants in technical high-growth jobs is key to the success of Job Corps and, ultimately, the U.S. economy.

Technology is central to many of the high-tech demand-driven occupations. Integrating technology as a primary training component backed by industry-recognized certificates provides a foundation for all Job Corps Centers and gives students a wide net to cast as they begin to explore their career development options.

Certificates are available in the high-growth areas listed below. All are within reach of Job Corps students. The certificates are organized by level of recognition:

- Level I — Industry: Certificates valued across the industry as a whole
- Level II — Employer: Certificates valued by some employers but not others within that industry group
- Level III — Professional Organization: Certificates supported by the professionals who hold the certificate themselves
- Level IV — Education/Training: Certificate from an educational entity granting continuing education units

**“An unskilled workforce significantly affects the ability ... to attract new businesses or to convince existing businesses to expand within communities. (Borlin, B. & Laprade, N. (2002, May). *The Competitive Challenge: Building a World-Class Workforce*, p. 10. Washington, D.C.: National Association of State Workforce Boards.)**

*Job Corps’ technical job training provides students with both the “hard” and “soft” skills deemed essential for preparing them for success in the workforce and in life. Vital to this success is ensuring students secure, marketable training and documentation of their efforts upon program completion. Currently Job Corps programs across the nation offer training in over 100 occupational programming areas. Each Job Corps Center offers a variety of job training programs, but there is no uniformity across centers by program category or classes offered within categories. While industry-recognized certificates are granted for some program areas, they are in the minority.*

Each of the areas of industry listed below will experience growth because of new job creation, a need to replace exiting workers, and advances in technology. As Job Corps Centers assess their training programs, industry-recognized certificates must be a consideration if their students are to be competitive. To illustrate some of the certificates options available, those that are within the scope of training at a Job Corps Center are included for discussion and review.

<sup>25</sup> Haycock, K. (2003, Winter). Thinking K-15. *The Education Trust*, 1, 7.

# Industry-Recognized Certificate Programs and Job Corps

## AVAILABLE CERTIFICATES

### Certificates in Automotive

Jobs as automotive service professionals will be plentiful for individuals who finish training programs in high school, technical school, or community college. To help educators recruit, mentor, and train tomorrow's technicians, the National Institute for Automotive Service Excellence (ASE) offers certification for technician training programs through the National Automotive Technicians Education Foundation (NATEF). NATEF does not endorse specific curricular materials nor provide instruction to individuals, groups, or institutions. It does, however, set standards for the content of instruction (which includes tasks, tools and equipment, hours, and instructor qualifications) and grant industry-recognized certification. A training program must be approved by NATEF for its graduates to receive industry-recognized certification. ASE is a voluntary certification program established in 1972 through the cooperative efforts of the automotive industry as an alternative to a mandatory government licensure program.

The purpose of the automotive technician training certification program is to improve the quality of training offered at secondary, postsecondary, public, and proprietary schools in order to meet the demand for well-trained, employable, entry-level technicians. ASE is the most widely recognized certificate in the automotive service field. ASE grants certification to programs that meet established standards, comply with the evaluation procedure, and adhere to established policies.

The changing technology and skills required by technicians today have altered what was once a lower skilled

job to one that requires electrical knowledge, computer technology, and problem-solving skills.

- Formal automotive technician training is the best preparation
- Good diagnostic and problem-solving skills and knowledge of electronics and mathematics are key and will have a direct, positive effect on occupational opportunities
- Automotive service technicians and mechanics must continually adapt to changing technology and repair techniques as vehicle components and systems become increasingly sophisticated, incorporating new technologies like GPS and onboard computers

Many students get jobs right out of training. Others may decide to continue their training, pursuing a two-year associate's degree. Still others will continue their education to obtain a four-year bachelor's degree to enable them to advance to service managers, engineers, automotive writers, and even auto technology teachers.

Technicians work for automobile dealers and independent repair shops and receive a commission related to the cost of labor charged to the customer. Under this method, weekly earnings depend on the amount of work completed. Employers frequently will guarantee mechanics and technicians on commission a minimum weekly salary.

The following automotive certificates are available and represent positions or skills that can bring opportunities for advancement into positions with projected job growth.

Level I: Industry Recognized	Exam	Education	Work Requirement	Certifier
General Service Technician	Y	NR	2 yrs	National Society for Automotive Service Excellence (ASE)
Automobile Service Technician	Y	NR	2 yrs	ASE
Automobile Collision Repair & Refinish	Y	NR	2 yrs	ASE
Medium/Heavy Truck Technician	Y	NR	2 yrs	ASE

NR = No Requirement

# Industry-Recognized Certificate Programs and Job Corps

## Certificates in Biotechnology

Biotechnology contributes to a vast array of industry sectors. Training and education programs generally include basic curricula in biology, chemistry, and physics, with laboratory courses directly relevant to research in the field of interest.

Biotechnology is an emerging field of industry, involving lengthy research efforts, product development, and marketing. While research and development requires advanced training, manufacturing has a need for individuals with good basic science and laboratory skills. Individuals in these positions are often high school graduates or individuals with an associate degree who have an interest in science and are pursuing entry-level employment.

The number of firms devoted to biotechnology research and manufacturing of products is growing. Industries that apply the techniques of biotechnology include human therapeutics and diagnostics, veterinary services, agriculture, food processing, aquaculture, chemicals, waste management, energy and environmental protection, and forensics, which is the application

of medicine and science to law. Government and universities also employ individuals educated in biotechnology.

Formal training programs for entry-level positions in clinical laboratory occupations like phlebotomy are four to six months in duration. Positions are located in hospitals, laboratories, pharmaceutical companies, and research organizations. It is difficult to predict how technological changes will affect employment. As new diagnostic tools are developed, more testing is indicated. However, advances in technology, robotics, and automation have led to simplification of routine testing procedures and the use of non-laboratory personnel for performing some tests. Areas of growth are expected in independent laboratories, manufacturing and testing, and medical offices. Median salary for an entry level phlebotomist, 1- 4 years experience, is \$24,500.<sup>26</sup>

The following biotechnology certificates are available and represent positions or skills that can bring opportunities for advancement into positions with projected job growth.

Level I: Industry Recognized	Exam	Education	Work Requirement	Certifier
Clinical Laboratory Phlebotomist CLP	Y	HS/GED + formal program	1 yr	National Credentialing Agency for Laboratory Personnel
Assistant Laboratory Animal Technician ALAT	Y	HS/GED + formal program	1 yr	American Association for Laboratory Animal Sciences

Level II: Employer Recognized	Exam	Education	Work Requirement	Certifier
Registered Phlebotomy Technician RPT	Y	HS/GED + accredited program	1,040 hrs OJT	American Medical Technologist
Physician Office Lab Technician POLT	Y	HS/GED + approved program	OR 1 yr	American Association of Bioanalysts

OJT = On-the-Job Training

<sup>26</sup> PayScale, Inc., © 2000-2003. www.payscale.com.

# Industry-Recognized Certificate Programs and Job Corps

## Certificates in Construction

The construction industry engages in the building or engineering of projects (e.g., highways, airports, bridges, tunnels, communications facilities, and utility systems). Construction work may include new work, additions, alterations, or maintenance and repairs, and it involves a wide range of occupational opportunities. Work activities generally are managed at a fixed place of business, but construction activities are usually performed at multiple sites. The entry-level position is a construction laborer. Employment of construction laborers is expected to grow about as fast as the average for all occupations through the year 2012. The median hourly wage of construction laborers in 2002 was \$11.90.

Training for a job in construction can often involve formal apprenticeship programs that provide on-the-job training, but they are not standardized across the industry. Local apprenticeship programs are operated under guidelines established by the Laborers-Associated General Contractors of America Education

and Training Fund. These programs typically require at least 4,000 hours of supervised on-the-job training and approximately 400 hours of classroom training. Depending on the availability of work and on local training schedules, it can take an individual from two to four years to complete the apprenticeship.

The National Center for Construction Education and Research (NCCER) is a not-for-profit education foundation founded in 1995 by construction companies and several national construction associations. NCCER was created to address the severe workforce shortage facing the industry and to develop standardized curricula to ensure a skilled, qualified workforce. Forty technical curricula and assessments are offered through NCCER. Training must be delivered through an accredited training partner.

The following construction certificates are available and represent positions or skills that can bring opportunities for advancement into positions with projected job growth.

Level I: Industry Recognized	Exam	Education	Work Requirement	Certifier
Core Construction	Y	NR	NR	National Center for Construction Education and Research (NCCER)
Electrical	Y	NR	NR	NCCER
Level I - Survey Technician	Y	HS/GED	NR	National Society of Professional Surveyors (NSPS)

Level II: Employer Recognized	Exam	Education	Work Requirement	Certifier
Electrical Wiring	Y	NR	NR	Home Builders Institute, Inc.

NR = No Requirement

## Certificates in Geospatial Industry

Geographic Information Systems (GIS) is a technology that integrates database operations like queries and statistical analysis with maps to solve problems and make decisions. GIS software is a computer-based analysis and mapping tool widely used by schools, governments, and businesses. Today's Homeland Security increasingly depends on how well we understand

geographic differences and their potential impact on security. Mapping geographic information, such as the water supply, enables improved information flow and defense for Homeland Security. GIS was critical in the response and recovery efforts for September 11, creating maps to identify transportation and public access routes for subways and rivers, streets, telephone outages, power grid outages, and more.

# Industry-Recognized Certificate Programs and Job Corps

SPACESTARS, the result of an innovative partnership between Digital Quest, Inc. and the Berkley-Geo Research Group, integrates NASA's Geospatial Technology Competency Model into the GIS/RS program to ensure training/certification meet industry competency standards. STARS certification is the entry-level geospatial certification selected for a U.S. Department

of Labor pilot apprenticeship program at University of Southern Mississippi beginning Summer 2004. The program includes the option for students to continue in their geospatial education and training attaining a two or four year degree.<sup>27</sup>

Level II: Employer Recognized	Exam	Education	Work Requirement	Certifier
GIS/RS Technician	Y	NR	NR	SPACESTARS

NR = No Requirement

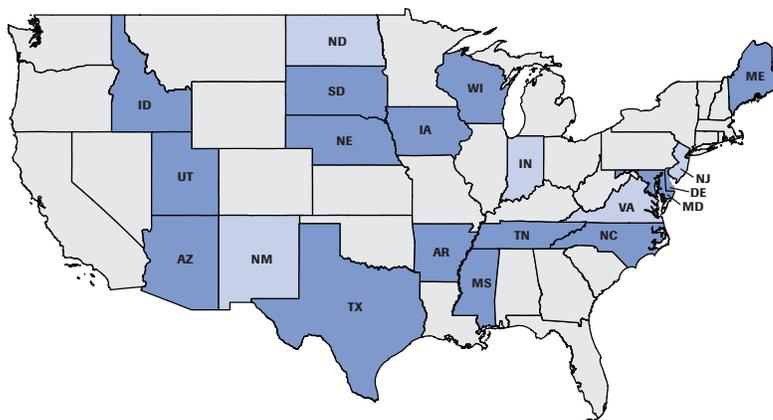
## Certificates in Health Services

The health care industry is growing rapidly due in large part to an aging population, rapid advances in technology, and labor shortages in key professions. Health worker shortages are having a profoundly negative effect on access to needed health services and adversely affecting quality of care across the nation. In response to these shortages, the U.S. Department of Health and Human Services commissioned a task force to assess the extent of the problem and develop recommendations for programs and policies. State responses have generally focused on stimulating the entry of new workers into the industry by developing scholarships and student loan repayment programs, increasing marketing of health careers, and providing reimbursement for paraprofessional programs.<sup>28</sup>

Health occupations in large part are regulated by state licensing boards each consistent with the individual

state health and education system. In 2000, the National Council of State Boards of Nursing developed a Nurse Licensure Compact that allows states to enter into agreements with one another regarding nurse credentials. This provides states with a mechanism for mutually recognizing one another's state nursing credentials. The compact allows nurses licensed in one state to practice in another state without requiring them to obtain a second state license. Figure 1 identifies states either currently engaged in or actively pursuing a compact. The compact applies to Registered Nurses (RNs), Licensed Practical Nurses (LPNs), and Vocational Nurses.<sup>29</sup> Ninety percent of the states identified nursing shortages as a major concern, and shortages in certified nurse assistants, home health aides, and radiological technicians were identified in more than half of the states.

**Figure 1**  
Nurse License Compact Map  
 Compact Enacted  
 Compact Pending



<sup>27</sup> Interview with Cindy Gaudet, Ph.D., GeoSpatial Workforce Development Center, University of Southern Mississippi. May 12, 2004.

<sup>28</sup> Center for Health Workforce Studies. (2002). *State responses to health worker shortages: Results of 2002 survey of states*. Albany, NY: State University of New York.

<sup>29</sup> National Council of State Boards of Nursing. *Nurse Licensure Compact*. Available at <http://www.ncsbn.org/nlc/index.asp>.

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The following health service certificates are available and represent positions or skills that can bring opportunities for advancement into positions with projected job growth.

<b>Level I: Industry Recognized</b>	<b>Exam</b>	<b>Education</b>	<b>Work Requirement</b>	<b>Certifier</b>
Heart saver—CPR/Emergency Cardio	Y	NR	NR	American Heart Association
Clinical Laboratory Phlebotomist CLP	Y	HS/GED+ formal program	AND 1 yr	National Credentialing Agency for Laboratory Personnel
Pharmacy Technician	Y			Pharmacy Technician
Certified Coding Associate CCA	Y	HS/GED+ <sup>1</sup>	NR	American Health Information Management
Certified Coding Specialist CCS	Y	HS/GED+ <sup>2</sup>	NR	American Health Information Management
Registered Health Information Technician RHIT	Y	2-yr post-secondary program	NR	American Health Information Management

<b>Level II: Employer Recognized</b>	<b>Exam</b>	<b>Education</b>	<b>Work Requirement</b>	<b>Certifier</b>
Certificate Home Health Aide	Y	60-hr program	15 hrs OJT	National Association of Home Care
Registered Phlebotomy Technician RPT	Y	HS/GED+ accredited program	1,040 hrs OJT	American Medical Technologists
Physician Office Lab Technician POLT	Y	HS/GED+ approved program	OR 1 yr	American Association of Bioanalysts

<b>Level III: Recognized by Professional Organization</b>	<b>Exam</b>	<b>Education</b>	<b>Work Requirement</b>	<b>Certifier</b>
Certificate Home Health Aide	Y	60-hr program	15 hrs OJT	National Association of Home Care
Physician Office Lab Technician POLT	Y	HS/GED+ approved program	OR 1 yr	American Association of Bioanalysts

<sup>1</sup> Recommended that candidates complete AHIMA-approved coding certificate program.

<sup>2</sup> Recommended that candidates have experience with hospital inpatient and ambulatory medical record coding.

OJT = On-the-Job Training

NR = No Requirement

# Industry-Recognized Certificate Programs and Job Corps

## Certificates in Information Technology

The rapid rate at which technology is changing requires that we alter our traditional conception of information technology training to include knowledge of computer software as well as the hardware and wiring of systems and machines. The ability to use computer software has become a necessity; Job Corp students who are able to understand the systems and technology as well as have an added advantage.

While the United States is home to half of all IT workers worldwide, the size of the IT workforce outside of this country is growing twice as fast (about 20 percent annual growth internationally).<sup>30</sup> Developing students' skills in computer and information technology opens doors to career opportunities and options for students to continue to advance their training. Wage and salary employment within computer systems design and related services will remain one of the fastest growing—up to 55 percent by 2012 compared to 16 percent for the rest of the economy.<sup>31</sup> Information technology training and certification provide portable skills that can transfer into many industry sectors and occupations.

Proper training in this area builds an individual's knowledge base, providing a good foundation for advancement in many job areas.

The scope of business technology is tremendously wide, opening diverse occupational opportunities for Job Corp students. Because of the rapid change in industry needs, however, certain technical skills may be in high demand one year but not the next. Thus understanding regional needs and demands of employers is critical. As business functions become increasingly integrated, the type of skills employers want in workers are more varied. Employers are placing higher value on the soft skills even as the need for technical skills increases. Job Corps can help students gain a competitive edge in any job market by providing these types of technical certificates in addition to its current soft skills training.

The following certificates represent areas of projected job growth related to the information technology industry.

Level I: Industry Recognized	Exam	Education	Work Requirement	Certifier
Internet and Computing Core IC3	Y	NR	NR	Certiport
Certified Document Imaging Architect	Y	NR	NR	Computer Technology Industry Association
CIW Associate	Y	NR	NR	Prosoft Training
A+ Certification	Y	NR	NR	Computer Technology Industry Association

Level II: Employer Recognized	Exam	Education	Work Requirement	Certifier
Software-Specific Skills: Adobe, Corel, Microsoft, QuarkXPress (etc.)	Y	NR	NR	Brainbench
Microsoft Office User Specialist, MOUS	Y	NR	NR	Certiport
Adobe, ACE	Y	NR	NR	Adobe Systems

NR = No Requirement

<sup>30</sup> Vaas, L. (2002, May 13). *Fair trade on jobs?* eWeek Magazine. [www.hireamericancitizens.org/ewk001.htm](http://www.hireamericancitizens.org/ewk001.htm)

<sup>31</sup> *Career guide to industries: Computer systems design and related services*. Retrieved January 30, 2004, from Department of Labor, U.S. Bureau of Labor Statistics at <http://www.bls.gov/oco/cg/cgs033.htm>.

# Industry-Recognized Certificate Programs and Job Corps

## Certificates in Leisure And Hospitality

Leisure and hospitality involves a broad range of industry sectors (i.e., including travel, hotel and lodging, restaurants, etc). According to the Travel Industry Association of America's (TIA) Annual Travel Forecast, the travel industry is in full recovery and will continue through 2005. Overall spending by domestic and international travelers is expected to grow 6 percent for the 2004 travel year. Leisure travel is forecast to be up 3.5 percent and the ever declining business travel sector is expecting positive growth for the first time in five years. International inbound arrivals to the U.S. are on the upswing, with a forecasted 42.5 million

international arrivals in 2004.<sup>32</sup> The increase in people traveling will effect hotel and lodging as well as restaurants. The combination of a strengthening economy along with an increase in consumer confidence and spending is giving rise to one of the strongest years in leisure and hospitality and is fueling job growth.

The following leisure and hospitality certificates are available and represent positions or skills that can bring opportunities for advancement into positions with projected job growth.

Level I: Industry Recognized	Exam	Education	Work Requirement	Certifier
Certified Travel Associate CTA	Y	12 month course	+18 month OJT	The Travel Institute
Certified Pastry Culinarian CPC	Y	NR	NR	American Culinary Federation
Certified Culinarian CC	Y	NR	NR	American Culinary Federation

OJT = On-the-Job Training  
NR = No Requirement

## Certificates in Manufacturing

New technology will play a key role in the future of high-tech manufacturing. The use of new tools and materials such as nanotechnology, intelligent process and controls, and e-commerce are becoming mainstream in manufacturing as they are increasingly integrated into the production and logistic system. This transformation is clear in the high-tech manufacturing of plastics. Plastics touch virtually every aspect of our daily lives, so it is not surprising that plastics manufacturing is the fourth largest manufacturing industry in the United States. From using recycled computers as pothole filler to using plastic to produce artificial hearts, the rapid advances in tools, materials, and technology are providing new opportunities across a wide occupational venue for those with the proper

skills and interest. Medical adhesives, such as DERMA-BOND Topical Skin Adhesive, for example, are now being used in operating rooms and emergency rooms to close wounds. According to the Society of Plastics Engineers, the procedure is four times faster than administering sutures and it does not require painful injections. In many cases, what is not readily apparent is that these innovations are the result of rapid advances in technology— in this case, high-tech manufacturing of plastics.

The following manufacturing certificates are available and represent positions or skills that can bring opportunities for advancement into positions with projected job growth.

<sup>32</sup> Travel Industry Association of American (2004). www.ita.org

# Industry-Recognized Certificate Programs and Job Corps

Level I: Industry Recognized	Exam	Education	Work Requirement	Certifier
Welding	Y	HS/GED	NR	American Welding Society
Sheet Metal	Y	HS/GED	NR	National Center for Construction Education and Research (NCCER)
Metalworking	Y	HS/GED	NR	National Institute for Metalworking Skills
Certification in Plastics	Y	HS/GED+	<sup>1</sup>	Society of the Plastics Industry

Level IV: Education/Training Recognized	Exam	Education	Work Requirement	Certifier
Plastics Technician <sup>33</sup>	Y	HS/GED+	NR	Community/ Technical School

<sup>1</sup> Recommended experience in the specialty area of certification.  
NR = No Requirement

## Certificates in the Retail Industry

The retail industry is multifaceted crossing many sectors. Rather than a one specific job, the focusing on customer service captures a core function for a range of entry-level through first-line supervisor positions across the sales and service industries. This includes workplaces such as retail stores, distribution centers, warehouses, hair salons, rental car companies, and more. Other industries that value excellent customer service

like hospitality, food and beverage, finance, call centers, airlines, and others are tuned into the need for customer service standards and the need to meet them.

The following retail certificates are available and represent positions or skills that can bring opportunities in positions that have projected job growth due to replacement needs.

Level I: Industry Recognized	Exam	Education	Work Requirement	Certifier
Customer Service Professional	Y	HS/GED+	NR	National Retail Federation Foundation

NR = No Requirement

<sup>33</sup> The Society of Plastics Engineers provides the curricula for training plastics technicians used in many of the technical and community college programs.

# Industry-Recognized Certificate Programs and Job Corps

## Certificates in Transportation

Incorporating a number of innovative technologies—including Radio Frequency Identification (RFID) tags and sensors, biometrics technologies, and Global Positioning Systems (GPS)—Transportation and security are integrating technology options to ensure trucks safe journey from beginning to end. This process begins with ensuring drivers are skilled and qualified.

The following transportation certificates are available and represent positions or skills that can bring opportunities for advancement into positions with projected job growth.

Level I: Industry Recognized	Exam	Education	Work Requirement	Certifier
Entry-Level Tractor-Trailer Drive	Y	Y	NR	Professional Truck Driver Institute

NR = No Requirement

## CONCLUSION

Now is the time to adopt policies that ensure that students can maneuver successfully in the new economy and that will simultaneously address American companies' need for a skilled and qualified workforce in the coming decade. Ultimately the labor market determines the economic value of education and job skills. With employers increasingly relying on education credentials to screen candidates' potential ability or assess their learning potential, students' educational attainment and documentation of proficiency influence success in the labor market.

Traditional educational systems were not responsive to industry calls for a more skilled workforce. The growing number of nontraditional education organizations and private venture companies whose mission is to provide a skilled and qualified pool of candidates for their participating companies or customers is evidence of this educational system breakdown.

The skill documentation process has evolved, with innovative businesses offering a multitude of education and training options in every industry sector. Navigating the maze of options now available is challenging at best. The most valuable certificates are those that have industry as an active participant in defining the skill and knowledge standards for training and performance-based testing, and in supporting the credential by using it as a basis for hiring.

A certificate serves many purposes. Understanding the different types of certificates available and how certificates differ from certifications helps consumers make informed decisions about job training options and potential marketability of credentials. The certification process is continuing to evolve. Increasingly education, government, and industry are working collaboratively to set national standards in many industry areas and define common terms to ease confusion between the two credentials. Further work in this area is needed.

To remain competitive in the world market, we must equip individuals with more advanced skills and supply our businesses with qualified workers. To help its students succeed and prosper in the new economy, Job Corps must focus on high-demand occupations and provide training that incorporates technology, innovation, learning, and constant adaptation.

# Industry-Recognized Certificate Programs and Job Corps

## APPENDIX A—REQUIREMENTS FOR SELECT INDUSTRY-RECOGNIZED CERTIFICATES

### Certificates in Automotive

The National Institute for Automotive Service Excellence (ASE) certification program is designed for automotive professionals and is offered twice a year. Candidates have the option of taking one or more exams on a given test day.

**Requirements.** To receive ASE certification, a candidate must pass at least one test and must have two years of relevant hands-on work experience. Technicians may substitute two years of relevant formal training for up to one year of the work experience requirement. Test results are mailed directly to individuals along with a detailed score report.

ASE testing occurs each May and November at over 700 testing sites. The Registration Fee is currently \$31 per technician; the tests cost \$24 each. Advanced-level test fees are \$48 per test. Payment must be included at the time of registration.

#### *Automobile/Light Truck Repair Technician*

ASE tests and certifies automobile technicians in eight areas. To earn ASE certification in this area, the candidate must pass at least one test and have two years of hands-on work experience. To become an ASE-Certified Master Automobile Technician requires passing all eight exams.

Preparing for certification involves combined training and practical experience. The National Automotive Technician Education Foundation (NATEF) has established the following guidelines for its programs:

- 1 Engine Repair (120 hrs)
- 1 Automatic Transmission/Transaxle (120 hrs)
- 1 Manual Drive Train and Axles (100 hrs)
- 1 Suspension and Steering (95 hrs)
- 1 Brakes (105 hrs)
- 1 Electrical/Electronic Systems (230 hrs)
- 1 Heating and Air Conditioning (90 hrs)
- 1 Engine Performance (220 hrs)

The tests are not theoretical or based on recalling “book-knowledge”; instead, they consist of 40 to 70 multiple-choice questions covering on-the-job diagnostic and repair procedures.

#### *ASE Collision Repair*

Candidates can become certified collision repair technicians in four areas; one test is for paint refinishers and three other tests are for repair technicians, covering nonstructural damage repair, structural damage repair, and vehicle mechanical and electrical system repair. Those who pass the three collision repair tests plus the painting and refinishing test become ASE-Certified Master Collision Repair/Refinishing Technicians. These tests are all intended for hands-on collision technicians. ASE also offers a test specially designed for collision damage estimators. The scored portion of the tests consists of 50 to 55 multiple-choice questions that address various content areas.

Preparing for certification involves combined training and practical experience. The National Automotive Technician Education Foundation (NATEF) has established the following guidelines for its programs:

- Nonstructural Damage Repair (260 hrs)
- Structural Damage Repair (260 hrs)
- Mechanical/Electrical (240 hrs)
- Painting Refinishing (340 hrs)
- Medium/Heavy Truck

ASE certifies technicians in eight areas of heavy/medium trucks: Gasoline engines; diesel engines; drive train; brakes; suspension and steering; electrical/electronic systems; heating, ventilation, and air conditioning (HVAC); and preventive maintenance inspection (PMI). The scored portion of the tests consists of 40 to 65 multiple-choice questions that address various content areas.

Preparing for certification involves combined training and practical experience. The National Automotive Technician Education Foundation (NATEF) has established the following guidelines for its programs:

- Gasoline Engines, Diesel Engines (215 hrs)
- Drive Train (105 hrs)
- Brakes (95 hrs)

# Industry-Recognized Certificate Programs and Job Corps

- Suspension and Steering (90 hrs)
- Electrical/Electronic Systems (225 hrs)
- Heating, Ventilation, and Air Conditioning (90 hrs)
- Preventive Maintenance Inspection (105 hrs)

## Certificates in Biotechnology

*Clinical Laboratory Phlebotomist (CLP). National Credentialing Agency for Laboratory Personnel, [www.nca-info.org](http://www.nca-info.org)*

The National Credentialing Agency for Laboratory Personnel, Inc. (NCA) is a voluntary, not-for-profit, nongovernmental organization that conducts certification of medical laboratory personnel and other credential-related activities deemed necessary to serve the patient and public needs. NCA's examinations are consistent with the Federal Government's Uniform Guidelines on Employee Selection Procedures (1978) and the Standards for Educational and Professional Testing (1985), and are endorsed by the American Educational Research Association, American Psychological Association, and the National Council on Measurement in Education.

**Requirements.** To be eligible for the CLPb Examination, applicants must successfully complete a formal education program that includes a clinical component in phlebotomy (e.g., phlebotomy, medical assistant, laboratory assistant, or certified nurse assistant) or have a high school diploma/GED and complete the equivalent of one year of full-time work experience in phlebotomy.

*Assistant Laboratory Animal Technician (ALAT). American Association for Laboratory Animal Science, [www.aalas.org](http://www.aalas.org)*

AALAS certification was developed to endorse competence in laboratory animal technology. The certification is the responsibility of the Certification and Registry Board (CRB), and testing is administered through the Chauncey Group International with Prometric Testing Centers. The certification examination covers three key areas of work-related responsibility: animal husbandry, health, and welfare; facility administration and management; and general knowledge.

**Requirements.** To take the ALAT certificate exam, candidates must meet one of the following requirements:

- No HS/GED + 2 yrs work experience in a laboratory animal facility (excluding volunteer work)
- HS/GED + 1 yr work experience in a laboratory animal facility (excluding volunteer work)
- Any college degree of 2 or more years duration + .5 yr work experience in a laboratory animal facility (excluding volunteer work)

Preparing for certification can include AALAS Technician Training Manuals, Resources Kits, and Workbooks, interactive software, and Web-based courses.

*Registered Phlebotomy Technician (RPT). American Medical Technologists, [www.amt1.com](http://www.amt1.com)*

**Requirements.** The requirements for a registered phlebotomy technician include completion of a program approved by the U.S. Department of Education and accredited by a Regional Accrediting Commission or national organization. Applicants for certification must be of good moral character, graduates of an accredited high school or acceptable equivalent, and must meet one of the following requirements:

- Successfully completed an acceptable phlebotomy training program that includes at least 120 hours of didactic instruction and 120 hours of clinical practicum
- Completed at least 1,040 hours of acceptable work experience as a phlebotomy technician within the past three years; this is to include venipunctures, skin punctures, specimen processing, communication skills, and clerical duties

All approved phlebotomy experience credited toward certification must be earned in an approved health care facility that engages in the collection, examination, or transportation of materials derived from the human body.

*Physician Office Laboratory Technician (POLT). American Association of Bioanalysts (AAB), [www.aab.org](http://www.aab.org)*

The AAB Board of Registry identifies individuals who meet the minimum requirements for medical technologists, laboratory technicians, and physician office laboratory technicians.

**Requirements.** To be certified as a Physician Office Laboratory Technician, an individual must

# Industry-Recognized Certificate Programs and Job Corps

meet one of the following requirements and pass an examination acceptable to the AAB Board of Registry:

- Be a high school graduate or equivalent, and graduate from a clinical laboratory training program of at least six months duration that is acceptable to the AAB Board of Registry
- Be a high school graduate or equivalent, and have 12 months of experience in a physician's office laboratory or other clinical laboratory acceptable to the AAB Board of Registry

Due to the volatile political and ethical implications surrounding aspects of biotechnology, individuals cannot be certified as a POLT(AAB) in the technical disciplines of andrology and embryology.

## Certificates in Construction

*Commercial and Residential Certificates, NCCER, [www.nccer.org](http://www.nccer.org)*

The National Center for Construction Education and Research (NCCER), in partnership with contractors and industry associations, created a national industry-standardized assessment and certificate process for the construction, maintenance, and pipeline industries. The goal of the certificate process is to evaluate competency level skills and knowledge of experience workers and provide documentation and verification of those skills for both workers and employers.

NCCER was created to address the severe workforce shortage facing the industry and to develop a standardized training process and curriculum. NCCER training is accomplished through NCCER Accredited Training Sponsors, a formal accreditation process. Particular standards must be maintained in order to become an NCCER Training Sponsor.

Together with its publishing partner Prentice Hall, NCCER develops and publishes a Construction, maintenance, and pipeline curriculum called the Contren Learning System. Features include:

- Standardized curricula for more than 35 craft areas in commercial, highway/heavy, industrial, maintenance, pipeline and residential construction
- Revised and updated every three years
- Incorporates industry-wide competency standards

- Complete training package: trainee manuals, instructor's guides, written exams, lesson plans, and performance tests
- Competency-based with measurable objectives
- Flexible; teach a single task or teach the entire craft outline

**Requirements.** Core curriculum (73 hrs) must be completed before level-one certification is granted. Students who successfully complete the written assessment with 70% or higher are provided with the designation of "Certified Written." Students successfully completing the performance assessment 70% or higher are provided with a "Performance Verified" designation. Retesting is allowed within 10 days for students not passing within a specified margin. NCCER issues a wallet card and transcript to document training achievement.

Preparing for a certificate. Approximate training hours vary by trade and delivery of trade curricula.

*Survey Technician. National Society of Professional Surveyors (NSPS), [www.acsm.net/nsps](http://www.acsm.net/nsps)*

The NSPS Survey Technician is a four-level certification program that demonstrates an individual is minimally competent to perform surveying tasks at a specified technical level. The NSPS, a member organization of the American Congress on Surveying and Mapping (ACSM), sponsors the comprehensive national certification program and the Survey Technician Certification Board (STCB) administer the program, and the U.S. Department of Labor recognizes the program as part of the National Apprenticeship Program. Two certification tracks are offered: field work or office work.

**Requirements.** Applicants must have basic computational math skills and reading comprehension. Equivalent knowledge base of high school/GED is recommended. For advanced levels of certification increasing years of experience are required.

Preparing for the certification. Entry Level Technicians are required to demonstrate knowledge of basic first aid skills and safety requirements. The individual in this position possesses a basic knowledge of field operations and types of surveys as well as familiarity with field equipment and procedures used in these functions. Additional skills required include computational ability, survey note taking, drafting/CAD and map reading.

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Work Elements further describe the requirements related to this position.

**Certified Welder. American Welding Society (AWS), [www.aws.org](http://www.aws.org)**

**Requirements.** The Certified Welder (CW) program is a performance-based program with no prerequisite courses required. The CW program tests to procedures used in the structural steel, petroleum pipelines, sheet metal, and chemical refinery welding industries. There is a provision to test to a company-supplied or non-code welding specification. At a scheduled appointment at an AWS Accredited Test Facility, candidate must demonstrate sound welding techniques that are inspected by an AWS Certified Welding Inspector (CWI).

Preparing for certification involves candidates' being able to properly adhere to the AWS Welding Procedures & Specifications. AWS does not prescribe a specific training program.

## Certificates in Geospatial Industry

**GIS/RS Technician. STARS, [www.digitalquest.com](http://www.digitalquest.com)**

STARS-Spatial Technology and Remote Sensing certification offers entry level certification for the workforce. SpaceStars is a partnership between Digital Quest, Inc. and the Berkeley Geo-Research Group. Operating from the Center for Geospatial Excellence at John C. Stennis Space Center, STARS is recognized by the Environmental System Research Institute (ESRI), British Aerospace Engineering, NVision, General Dynamics, Enterprise for Innovative Geospatial Solutions (EIGIS), Mississippi Enterprise for Technology (MsET), National Oceanic Atmospheric Administration (NOAA), University of Texas, and Texas A&M. STARS-Spatial Technology and Remote Sensing is a "turn-key" certification program targeting high schools, colleges, and universities. It is the first and most complete program of its kind. Students utilize a customized geographic information system (GIS) to learn detailed information about their local community and utilizing ArcView tools. Instructors require no prior knowledge of geographic information systems (GIS) to teach this course, and only basic computer skills.

**Requirements.** Students are required to participate in specific coursework, and an exam is administered along with a student portfolio of projects

completed during the course. Basic reading comprehension and computational skills are required. Both the exam and portfolio are submitted for certification approval.

Preparing for certification. STARS comprises three semester-long courses:

- Course 1 - Introduction to GIS/RS
- Course 2 - Skill-Based Training
- Course 3 - Campus-based study

For information about STARS contact Ed Hanebuth, Digital Quest, Inc. (601) 856-2237 or Susan L. Radke, Berkeley Geo-Research Group (925) 254-0951.

## Certificates in Health Services

**HeartSaver. American Heart Association, [www.americanheart.org](http://www.americanheart.org)**

CPR Certificate - Infant/Adult/AED—Courses are designed to teach students cardiopulmonary resuscitation (CPR) skills in a classroom setting. Each course is four to five hours long and can be taught over multiple class periods of 40 to 50 minutes in duration.

**Requirements.** No requirements to participate in training. There are varieties of training models to select from for teaching the courses: training center, teacher/instructor model, and the peer-to-peer model. Credential designation is completion of training and is provided following training, examination, and demonstration of skills.

**Clinical Laboratory Phlebotomist (CLP). National Credentialing Agency for Laboratory Personnel, [www.nca-info.org](http://www.nca-info.org)**

The National Credentialing Agency for Laboratory Personnel, Inc. (NCA) is a voluntary, not-for-profit, nongovernmental organization that conducts certification of medical laboratory personnel and other credential-related activities deemed necessary to serve the patient and public needs.

**Requirements.** To be eligible for the CLP/b Examination, applicants must successfully complete a formal education program that includes a clinical component in phlebotomy (e.g., phlebotomy, medical assistant, laboratory assistant, or certified nurse assistant) or have a high school diploma/

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GED and complete the equivalent of one year of full-time work experience in phlebotomy.

## *Pharmacy Technician. Pharmacy Technician Certification Board, [www.ptcb.org](http://www.ptcb.org)*

The Pharmacy Technician Certification Board (PTCB) certification program is intended to enhance patient care, reduce medication errors, and promote wellness. Over 100,000 Pharmacy Technicians are certified nationwide. While it is a national certification, the regulations to work in a pharmacy vary from state to state for practicing technicians. Although PTCB is recognized in 22 states, candidates should contact the state board of pharmacy for the state they prefer to work in. PTCB is active in the development and implementation of policies related to national certification for pharmacy technicians.

**Requirements.** The candidate must have a high school diploma or GED, and never have been convicted of a felony. The PTCB exam is administered three times a year in March, July, and November at 120 locations throughout the United States. Special Sunday test centers are available for candidates who have religious beliefs that prevent them from taking the examination on Saturday. Appropriate documentation is required for a Sunday test site. Professional Examination Service (PES), a testing service agency under contract with the PTCB, administers and scores the examination and issues the score reports. The application fee for the Pharmacy Technician Certification Examination is currently \$120.

Preparing for certification. The PTCB online practice test, which provides diagnostic feedback to aid the study process, is only available at [www.ptcb.org](http://www.ptcb.org). The PTCB practice test is a copyrighted document that is only available online and cannot be printed, emailed, or put on a CD-Rom. Content on the practice test corresponds to that of the actual examination, which applies to all practice settings. Familiarity with the material contained in basic pharmacy technician training manuals may be helpful. A reference listing also is provided at [www.ptcb.org](http://www.ptcb.org). PTCB does not produce or recommend any study guides.

## *Certified Coding Associate (CCA). American Health Information Management Association, [www.ahima.org/certification](http://www.ahima.org/certification)*

To meet the increasing demand for medical information coders, American Health Information Management

Association (AHIMA) created an entry-level coding credential based on job analysis standards and state-of-the-art test construction. AHIMA aims to increase the number of qualified new coders, resulting in a larger pool of qualified coders for employers to choose from, certified coders doing a better job managing health information, and recognition for AHIMA as the industry experts and leaders in clinical coding.

**Requirements.** Candidates must have earned a U.S. high school diploma or the equivalent. Although not required, it is strongly recommended that candidates have at least six months experience in a healthcare organization applying ICD-9-CM and CPT coding conventions and guidelines, or have completed either an AHIMA-approved coding certificate program or other formal coding training program. The CCA exam is not linked to any formal education or training in coding.

A two-hour, 100-item certification examination consisting of 90 scored items is based on an explicit set of competencies. These competencies have been determined through a job analysis study conducted of practitioners.

## *Certified Coding Specialist (CCS). American Health Information Management Association, [www.ahima.org/certification](http://www.ahima.org/certification)*

Certified Coding Specialists are professionals skilled in classifying medical data from patient records, generally in the hospital setting. These coding practitioners review patients' records and assign numeric codes for each diagnosis and procedure. To perform this task, they must possess expertise in the ICD-9-CM coding system and the surgery section within the CPT coding system. In addition, the CCS is knowledgeable about medical terminology, disease processes, and pharmacology.

Hospitals or medical providers report coded data to insurance companies or the government, in the case of Medicare and Medicaid recipients, for reimbursement of their expenses. Researchers and public health officials also use coded medical data to monitor patterns and explore new interventions. Coding accuracy is thus highly important to healthcare organizations because of its impact on revenues and describing health outcomes. Accordingly, the CCS credential demonstrates tested data quality and integrity skills in a coding practitioner. The CCS certification exam assesses mastery or proficiency in coding rather than entry-level skills.

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**Requirements.** Candidates must have earned a high school diploma from a U.S. high school or have an equivalent educational background. Although not required, it is strongly recommended that you have experience in hospital inpatient (ICD-9-CM) and ambulatory care (ICD-9-CM and CPT) medical record coding. Previous examinations suggest that those with three or more years of coding experience are more likely to pass.

Each test lasts six hours and has two parts: Part I consists of 60 multiple-choice questions; Part II covers 21 medical record cases.

**Registered Health Information Technician (RHIT).** *American Health Information Management Association, [www.ahima.org/certification](http://www.ahima.org/certification)*

The Registered Health Information Technician (RHIT) is an advanced certificate.

**Requirements.** Candidate must have an associate's degree from a program approved by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) (an accredited health information technology program [HIT]). The certification process requires a 3.5-hour, 150-item examination consisting of 130 scored items and 20 pre-test items.

**Home Care Aide Certificate, National Association for Home Care and Hospice, [www.nahc.org](http://www.nahc.org)**

National Association for Home Care (NAHC) is the nation's largest trade association representing the interests and concerns of home care agencies, hospices, home care aide organizations, and medical equipment suppliers. NAHC provides professional development, monitors and promotes better regulation, and provides the latest information affecting home and hospice care. NAHC's Home Care Aide Certificate Program establishes national standards for preparation of home care aides and has certified over 2,500 home care aides nationwide. The program is composed of three competency-based elements and uses a 75-hour training (60 hours of classroom and laboratory instruction, and 15 hours of field practice) as a basis for the program. The curriculum contains five sections: Orientation to Home Care Aide Services, Understanding and Working with Various Client Populations, Practical Knowledge and Skills in Home Management, Practical Knowledge and Skills in Personal Care, and The Practicum.

A comprehensive skills checklist with performance behaviors is administered by a registered nurse in addition to a written examination: Home Care Aide Certification. Tests are administered on site and scored by Home Care University. For more information on the certification program, call 202-547-3576, fax 202-547-4322, or e-mail [mb@nahc.org](mailto:mb@nahc.org).

**Registered Medical Assistant, American Medical Technologists, [www.amt1.com](http://www.amt1.com)**

American Medical Technologists (AMT) is accredited by the National Commission for Certifying Agencies (NCCA).

Medical assistants are able to advance to office manager or a variety of administrative duties and may teach medical assisting courses after a number of years of experience.

**Requirements.** Applicant must be of good moral character and at least 18 years of age, be a graduate of an accredited high school/GED, and be a graduate of one of the following approved programs:

- Accrediting Bureau of Health Education Schools (ABHES) or the Commission on Accreditation of Allied Health Programs (CAAHEP)
- Medical assistant program in a postsecondary school or college that has institutional accreditation by a Regional Accrediting Commission or by a national accrediting organization approved by the U.S. Department of Education
- Formal medical services training program

**Registered Phlebotomy Technician (RPT).** *American Medical Technologists, [www.amt1.com](http://www.amt1.com)*

See Biotechnology.

**Physician Office Laboratory Technician (POLT).** *American Association of Bioanalysts, [www.aab.org](http://www.aab.org)*

See Biotechnology.

**Certified Medical Assistant (CMA).** *American Association of Medical Assistants (AAMA), [www.aama-ntl.org/ed/ma.html](http://www.aama-ntl.org/ed/ma.html)*

In 1999, about 450 medical assisting programs were accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) and over 140 accredited by the Accrediting Bureau of Health

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Education Schools (ABHES). The Committee on Accreditation for Ophthalmic Medical Personnel accredited 14 programs in ophthalmic medical assisting.

**Requirements.** Candidates must be a graduate from an accredited CAAEP or ABHES program. The Certified Medical Assistant (CMA) credential is awarded to candidates who pass the AAMA CMA Certification/Re-certification Examination. Certification must be renewed every five years by the continuing education or reexamination method. As of January 1, 2003, all CMAs employed or seeking employment must have current certified status to use the CMA credential in connection with employment.

## Certificates in Information Technology

### *The Internet and Computing Core Certification (IC<sup>3</sup>). Certiport, [www.certiport.com](http://www.certiport.com)*

The Internet and Computing Core Certification (IC<sup>3</sup>) program is a validated, standards-based training and certification program for basic computing and Internet knowledge and skills. Successful completion of IC<sup>3</sup> documents the knowledge and skills required for basic use of computer hardware, software, networks, and the Internet.

**Requirements.** IC<sup>3</sup> is the starting point for anyone interested in learning computer and Internet basics. The program gives individuals sufficient Internet and computing literacy skills to enter current job markets or begin higher education programs. Prime candidates for IC<sup>3</sup> are junior high school students, high school students, GED students, continuing education students, Job Corps participants, employees who use technology on the job, and anyone “young or old” who wants to gain a working knowledge of computers and the Internet.

Global, broad-based IC<sup>3</sup> certification verifies candidates’ possessing the accepted, standard level of basic computer and Internet literacy, and it is more efficient and marketable. Successful completion of IC<sup>3</sup>:

- Provides core skills and knowledge necessary to use some computer applications and the Internet
- Tests computing knowledge and skills to ensure mastery

- Gives a resume-building standard certification as proof of successful completion of the program
- Provides the foundation necessary to further enhance productivity and marketability with other desktop application-specific certifications

Once individuals have successfully achieved IC<sup>3</sup> certification, they are well prepared for additional technical computer certifications.

### *Certified Document Imaging Architect. Computing Technology Industry Association, [www.comptia.org](http://www.comptia.org)*

CompTIA CDIA+ certification is the industry standard for validating document imaging and management skills. This certification is valuable in all levels and positions. Digital Media Designer (Entry Level), Customer Service Technician (Entry Level), Technical Writer (Intermediate Level), and Data Architect (Senior Level) are all occupations that use the skills and knowledge of a document-imaging architect. The CDIA+ certification is an internationally recognized credential, acknowledging competency and professionalism in the document management industry. Those holding CDIA+ certification possess critical knowledge of technologies used to plan, design, and specify a document imaging/management system. Many corporations require CDIA+ certified candidates for key positions, including Canon USA, Ricoh, Hyland Software, Fujitsu Computer Products of America, Bell & Howell and Konica. The CDIA+ exam consists of 85 questions to be completed in 90 minutes. The minimum passing score is 70%. Test results are displayed as soon as the exam is completed.

**Requirements.** No prerequisites are required to take the CDIA+ exam.

Preparing for certification can involve the use of preapproved CompTIA™ Authorized Quality Curriculum (CAQC) materials available on the association’s Web site. Carefully developed training materials are recommended by CompTIA for review and preparation of the CDIA+ certification exam

### *CIW Associate Certification. Prosoft Training, [www.ProsoftTraining.com](http://www.ProsoftTraining.com)*

CIW Associate Certification indicates one has mastered the fundamental knowledge and skills required to work in an Internet technology-enabled environment. Skills assessed include basic knowledge of Internet technologies such as Web browsers, FTP, and e-mail;

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Web page authoring using Hypertext Markup Language (HTML); and basic infrastructure networking. CIW Associate certification is valuable for individuals working in fields such as sales, business development, advertising, technical recruiting, and other areas that depend on Web-enabled systems for productivity.

**Requirements.** No prerequisites are required to take the CIW Associate Certification exam.

Preparing for certification involves training and/or using study materials. Exams are generally administered through secure third-party testing centers such as Thomson Prometric and Pearson VUE.

## *CompTIA A+ Certification, Computer Technology Industry Association, [www.comptia.org](http://www.comptia.org)*

A+ certification indicates a broad base of knowledge and competency in core hardware and operating system technologies, including installation, configuration, diagnostics, preventive maintenance, and basic networking.

**Requirements.** No prerequisites are required to take the CIW Associate Certification exam. The CompTIA A+ exam has two components: the A+ Core Hardware exam and the A+ OS Technologies exam. Both must be passed successfully to become A+ certified. Because technology changes, so do exams. The A+ exam was updated on November 26, 2003, to reflect current technologies and industry practices. Each test consists of 80 questions that are scored on a scale of 100 - 900. The minimum passing score for the A+ Core Hardware exam is 515 and the minimum passing score for the A+ OS Technologies exam is 505. Ninety minutes are allowed to complete each exam.

Preparing for certification can involve a variety of mechanisms. CompTIA has training partners to provide programs specifically focused on training toward certification. Recommended training materials display the CompTIA Authorized Quality Curriculum (CAQC) seal of approval. The

CompTIA Learning Alliance (CLA) provides a list of training partners that meet exacting standards.

## *Corel, Quark and Microsoft Publisher. Brainbench, [www.brainbench.com](http://www.brainbench.com)*

Focused on certifying job skills, Brainbench offers skill assessment and certification for a wide range

of skills and specific software programs, including Corel, Quark, and Microsoft Publisher.

Standard assessments provide a complete skills profile for measuring the skills of employees, candidates, and training participants. Each standard assessment typically includes 40 questions and takes approximately 45 minutes to 1 hour to complete. All tests are developed under strict ISO 9001-2000 certified development standards and are powered by a patent-pending Computer Adaptive Testing (CAT) engine. The CAT engine adjusts questions dynamically to challenge test-taker skills, and it enables multiple test administrations without repetition. Test results include an individual's score, percentile and geographic rankings, strengths and weaknesses, and other summary and comparative information. Brainbench clients include IBM, NASA, USOPM, Wells Fargo, and TAC WorldWide.

**Requirements.** It is recommended but not required that students have experience surfing the World Wide Web and have some computer familiarity

Preparing for certification. Training is available through Certiport and other organizations. For more information, go to [www.elementkcourseware.com](http://www.elementkcourseware.com), [www.certiport.com](http://www.certiport.com), or [www.brainbench.com](http://www.brainbench.com).

## *Microsoft Office Specialist (MOS). Certiport, [www.certiport.com](http://www.certiport.com)*

The Microsoft Office Specialist certification is the globally recognized standard for validating expertise with the Microsoft Office suite of business productivity programs. Microsoft Office Specialist exams evaluate students' overall comprehension of Microsoft Office or Microsoft programs, ability to use their advanced features, and ability to integrate them with other software programs. Two types of certification are available: core and expert. Generally core certification exams test ability to complete a wide range of standard business tasks with ease.

Expert certification exams test ability to complete complex assignments requiring advanced formatting and functionality, in addition to standard business tasks.

**Office Specialist Certification for Office XP** Master certification will soon be available for those wishing to obtain a combination of core and expert certifications in Office XP programs.

**Office Specialist Certification for Office 2000**

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**Office Specialist Certification for Microsoft Project**  
Office Specialist certification is available for Microsoft Project 2000 and Microsoft Project 2002.

Prepare for Certification. A student should prepare for the exam by assessing existing knowledge of the desktop program based on experience, training, and personal needs. The following should be considered:

- Experience using the Office program
- Frequency and depth of experience with the program
- Version of the program most familiar

*Adobe Certified Expert (ACE). Adobe Systems, [www.adobe.com/support/certification/ace.html](http://www.adobe.com/support/certification/ace.html)*

There are three levels of certification.

**Requirement.** No prerequisites are required to take the Adobe Certified Expert exams.

Preparing for Certification requires experience with the product and studying using the exam bulletin. Online training, user guides, and many other study materials are available. The following resources may also help a student prepare for the ACE exam: Adobe product user guides, Adobe Press books, Adobe Authorized Training Centers, Adobe online training from Element K, tutorials and materials from Total Training, and other online training resources. ACE exams are computer-delivered, closed-book tests consisting of 60 to 90 multiple-choice questions. Each exam takes one to two hours to complete, and results are given at the testing center immediately after the test.

**Single product certification:** Recognizes proficiency in a single Adobe product. To qualify as an ACE, a student must pass one product-specific exam  
Example: ACE, Adobe InDesign® CS

**Specialist certification:** Recognizes proficiency in a specific medium: print, Web, or video. To become certified as a Specialist, a student must pass the exams on the required products. Example: ACE Print Specialist (with passing marks on the tests for Adobe InDesign, Adobe Acrobat®, and either Adobe Photoshop® or Adobe Illustrator®)

**Master certification:** Recognizes skills in terms of how they align with the Adobe product suites.

To become certified as a Master, a student must pass the exam for each of the products in the suite.  
Example: ACE, Creative Suite Master

## Certificates in Leisure and Hospitality

*Certified Travel Associate (CTA). The Travel Institute, [www.icta.com](http://www.icta.com)*

The CTA focuses on the knowledge and the sales skills necessary for effective practice in the travel industry. It covers four core skill areas: communication and technology, geography, sales and service, and travel industry. This is the Travel Institute's first level of certification and was introduced in 1997 to meet the needs of travel professionals in the early stages of their careers.

**Requirements.** CTAs must complete a travel associate program and possess 18 months of cumulative industry experience. Additionally, CTAs are required to earn 10 continuing education units each year to maintain their designation. The CTA program represents 40 percent of the study necessary for the CTC program and many CTAs go on to achieve their Certified Travel Counselor (CTC) designations. CTA candidates have 12 months to complete the CTA program and test.

*Certified Travel Counselor (CTC). The Travel Institute, [www.icta.com](http://www.icta.com)*

The CTC designation is the advanced level of certification for the travel industry professional, with over 30,000 travel professionals have earned the CTC designation from The Travel Institute. The CTC curriculum covers three core skill areas: business development, contemporary issues, and professional development.

**Requirements.** Candidates are required to complete 12 courses in which they learn how to negotiate effectively, make presentations, analyze new business opportunities, and implement technological solutions and planning strategies. The first level of The Travel Institute certification, the CTA, must be successfully completed in order to earn the CTC designation. CTCs must possess at least five years of cumulative travel industry experience and are required to earn 10 continuing education credits each year to maintain their designation.

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## *American Culinary Federation (ACF), www.acfchefs.org*

ACF certification is based on three requirements: work experience, tests, and education. Education includes formal schooling (high school to graduate studies), and continuing education.

**Requirements.** Regardless of how education points are acquired, every certified cook and chef must demonstrate that they have successfully completed three mandatory courses: Food Safety and Sanitation, Nutrition, and Hospitality Supervision. Most often chefs have taken these courses in the military, as part of their college degree, or as related instruction in the apprenticeship program. However, chefs may also use ACF-approved courses from various other sources.

Individuals must document the completion of 30 contact hours in each of the mandatory course content areas. To become certified, candidates must pass a written exam with a score of 70 percent or greater and a practical skills test.

Special requirements and waivers apply to students graduating from ACF-accredited culinary art programs and ACF apprentices.

## *Certified Culinarian (CC)*

A CC is an entry-level culinary professional within a commercial foodservice operation responsible for preparing and cooking sauces, cold foods, fish, soups and stocks, meats, vegetables, eggs and other food items. The CC possesses a basic knowledge of food safety and sanitation, culinary nutrition, and supervisory management.

## *Certified Pastry Culinarian (CPC)*

A CPC is an entry-level culinary professional in the baking/pastry area of a foodservice operation responsible for the preparation and production of pies, cookies, cakes, breads, rolls, desserts, or other baked goods. A CPC possesses a basic knowledge of food safety and sanitation, culinary nutrition, and supervisory management.

## **Certificates in Manufacturing**

### *Metalworking, National Institute for Metalworking Skills (NIMS), Inc., www.nims-skills.org*

NIMS was created by a consortium of metalworking trade associations, national labor organizations, a council of state governors, companies, and educators. Developing skill standards and program accreditation has been a collaborative effort by industry trade associations, companies, and education, with an investment of \$7.5 million.

**Requirements.** Certification is available at three levels. NIMS recommends certifying in all areas of Level 1 for an entry-level position in manufacturing (approximately 7-8 months). The two areas of metalworking with Level 1 certification offered through NIMS are machining and metal forming. Level 1 certification requires general math and reading skills. Advanced level training requires increased math and computational skills.

Preparing for certification. NIMS does not provide training but has access to curricula available in the public domain. The curricula are at a level appropriate for secondary students with basic math skills.

### *Plastics Technician Certification, The Society of The Plastics Industry, Inc., www.certifyme.org*

The Society of the Plastics Industry (SPI) has developed national, voluntary certification examinations that assess and certify the knowledge and skills of plastics operations employees. The universal designation of NCP Certified Operator can be achieved through one of four test versions. The National Certification in Plastics exam tests the knowledge and skill level of plastics operations employees in one of the four major plastics processes— injection molding, extrusion, thermoforming or blow molding.

**Requirements.** The NCP exam candidate should have a basic knowledge of processing, including setup, start up/shut down, and standard documentation. Also, a basic knowledge of handling, storing, packaging and delivering plastics materials in-plant is desired. NCP recommends that applicants have:

- A working command, oral and written, of the English language

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- English literacy and reading comprehension skills (at or above sixth grade level)
- Basic math skills (addition, subtraction, multiplication, division, fractions, and decimals)

Exams are delivered online or at a testing center. NCP Certification exams are based on the plastics industry's national standards. The NCP Certified Operator designation is recognized by employers across the country, 80 companies in 20 states, as it measures skills and knowledge in seven key areas:

- Safety
- Quality assurance
- Preventive and corrective action
- General knowledge
- Material handling/storage/delivery
- Tools and equipment
- Basic process control

*Sheet Metal, The National Center for Construction Education and Research (NCCER), [www.nccer.org](http://www.nccer.org)*

See Construction.

*Certified Welder. American Welding Society (AWS), [www.aws.org](http://www.aws.org)*

See Construction.

## Certificates in Retail

*Customer Service Professional. National Retail Federation Foundation, [www.nrf.com](http://www.nrf.com)*

The Customer Service Professional is offered through the NRF Foundation (NRFF), the research and education arm of the National Retail Federation. A non-profit 501(c)3 foundation created in 1981, the NRFF conducts industry research to promote careers in retailing, and develop programs to educate, motivate and inspire careers in retailing, from entry to executive level. National certification in customer service is based on industry-based skill standards from the retail, wholesale, personal services and real estate industries. Training based is offered through Retail Skills Centers, youth programs, and other educational and training organizations, including One-Stops and through online learning.

The Sales & Service Skill Standards describe customer service and sales work in a high-performance company at a level that means success for an employee in such a workplace. They define the knowledge, skills, and abilities regularly performed by entry-level through first-line supervisory employees across the sales and service industries: retail, wholesale, personal services, real estate, and other industries that value excellent customer service and sales skills.

**Requirements.** Applicants must be 16 years of age or older and employed or enrolled in a training or academic program in good standing.

## Certificates in Transportation

*Entry-level Tractor-Trailer Driver. Professional Truck Driver Institute (PTDI), [www.ptdi.org](http://www.ptdi.org)*

The PTDI works to advance tractor-trailer driver training promoting quality courses and voluntary certification programs. PTDI certifies programs at training institutions that meet or exceed established qualifications and criteria through an initial and periodic evaluation process. Courses must meet industry skill standards and curriculum guidelines. Each student is expected to participate in a minimum of 104 hours of classroom and lab instruction that occurs outside the classroom and does not involve actual operation of the vehicle and at least 44 hours of behind the wheel time.

**Requirements:** Applicants must be currently licensed by a local, state, or federal agency. Completion of a truck driver program must have been completed within the year prior to application.

# Industry-Recognized Certificate Programs and Job Corps

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## APPENDIX B—RESOURCES

For more information regarding program standards and certification within core industry areas, visit the Web sites listed below.

### **Oversight Organizations**

National Organization of Competency Assurance (NOCA) [www.noca.org](http://www.noca.org)

Council on Licensure, Enforcement, and Regulation (CLEAR) [www.clearhq.org](http://www.clearhq.org)

American National Standards Institute (ANSI) [www.ansi.org](http://www.ansi.org)





**MTC Institute**  
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