

Comprehensive Regional Growth Plan for the Fort Bragg Region

Assessment and Recommendations



Chapter 3 Workforce and Higher Education

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DISCLAIMER

This report is intended as an aid to planners, managers, elected officials, and other decision makers in the Fort Bragg region. Our aim is not to dictate what should be done, but to assist in ongoing efforts to achieve goals and objectives identified and valued by the residents of the region. The recommendations presented in this report are suggestions for how the region could work towards those goals and objectives, based on best available information and current understandings.

The information, projections and estimates in this report are based upon publicly available data and have been prepared using generally accepted methodologies and formulas. The projections and needs presented in this report are based upon best estimates using the available data. It is important to note that currently available information and understandings are incomplete and cannot account for the inevitable, but unpredictable, impacts of unexpected global, national, state, and/or local events. Actual results and needs may differ significantly from the projections of this report due to such unforeseen factors and conditions, as well as inaccuracy of available data, and/or factors and conditions not within the scope of this project. Persons using this information to make business and financial decisions are cautioned to examine the available data for themselves and not to rely solely on this report.

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Chapter 3: Workforce and Higher Education

The quality of the Top 25 High-Skill/High-Wage jobs is very high; the likelihood of unemployment in any of them is low; and the salary for each is well above average. Few of those working in the Fort Bragg area today are prepared to compete for jobs like these. Medical-related occupations are the most numerous on the list; careers in the computer field are a close second. If present and future employment challenges are to be met, many more members of the Fort Bragg area's workforce will need to possess qualifications like those required for the top jobs. Acquiring more of the education, skills, and experience needed to succeed in so many of this economy's challenging, technology-oriented careers will benefit employee and employer alike.

The present section summarizes the likely impacts that projected military growth will have on jobs and workforce development in the Fort Bragg region through 2016. The section includes a preliminary identification of the jobs that will be created as a result of expansion at Fort Bragg—civilian jobs with the Department of the Army, jobs with defense contractors, and jobs created to support the anticipated population growth—and makes projections regarding the likely locations of these job and career opportunities. Since many of the new jobs will entail skills that are very different from those needed for the most common jobs in the past, this section will also focus on the new and expanded training and educational programs needed to support these jobs. Possession of such information, which will be of considerable use to individuals and institutions making decisions about what courses to take or what programs to offer, should help drive growth efforts within the education sector.

This section builds on the 2006 Workforce Development Plan for Cumberland County, which was presented to the BRAC Regional Task Force by the Cumberland County Workforce Development Board and Fayetteville Technical Community College.¹ The section also draws from a 2007 Labor-Market Survey conducted by ERISS Corporation under subcontract with TDA, Inc.² and from a needs assessment focusing on planned changes to Fort Bragg personnel and mission. Considerable information regarding planned changes was made available by the Fort Bragg Army Garrison. Thus, the

1. <http://bractf.com/documents/>

2. Refer to www.usworks.com/BRACRTE for complete details.

facts and recommendations presented here are wholly dependent on baseline personnel projections and on information about existing and planned programs.

A. National and State Context

Over the past two years, the national economy has experienced slowed growth that has resulted in a large number of layoffs and a continuing transformation of the industries the nation has depended on for good jobs and good wages. These layoffs—which until fairly recently have occurred primarily in manual labor, service, materials handling, technical, and administrative-support jobs—have reflected the economic impact of new technologies and global competition. Now, due to the continued flattening³ of organizations and to the “off-shoring” of automated customer service activities, many jobs are being lost in the “white collar” segment as well. More than one-half of all state economies are expected to be in recession by mid-year, with the remainder soon to follow. Whether the current recession proves to be deep or shallow, the trend in the re-formation of labor markets will continue for other reasons, such as global open-market forces, technology-driven higher productivity, and the identification of fungible (exchangeable or replaceable) work components.

Continuing a trend that began more than five years ago, demand for creative and skilled professionals—managers, sophisticated sales executives, and

3. “Flattening” of organizations refers to the reduction of layers of middle management in an effort to increase efficiency and shift from a more top-down, hierarchical structure to a more horizontal and flexible structure.

specialists in management-related occupations—has been increasing. If this trend continues, the labor market will in all likelihood split into two spheres: one in which a premium is placed on critical thinking, creativity, and self motivation; and another comprised primarily of lower-skill occupations such as equipment operation, assembly-line, back-office, and manual work.

The North Carolina 2007 State of the Workforce Report⁴ suggests that North Carolina's economy is undergoing a critical economic transformation. For decades, the state depended on agriculture and manufacturing industries for its middle-income, family-sustaining jobs. Increasingly, these are being replaced by occupations that are much more globally oriented, knowledge-driven, and service-based. During the past several years, numerous studies and strategies have characterized these challenges and identified potential policy responses. The transformation occurring in North Carolina has significant implications for the state's businesses and workers, changing what they do and how they compete in a globally-integrated economy.

Examination of North Carolina's fastest growing industries reveals many of its current economic trends (refer to the Workforce and Higher Education appendix). Eight of the twenty-five fastest growing industries are found in the health and education services sector, and another seven are found in professional and business services industries. The fact that one of every ten net new jobs will be in the temporary help services or the employee leasing industry reflects an increasing reliance on part-time and temporary services as a way of handling short-term cyclical demand for products and services. Twelve of these top twenty-five industries offer salaries that are less than 80% of the state's overall average. Only five offer salaries that are 120% of the state average or higher.

North Carolina's economic mainstay during previous generations has been a variety of manufacturing industries. However, no manufacturing industry is currently among the state's twenty-five fastest

growing industries, and only one—animal slaughtering and processing—is expected to be among its fifty fastest growing industries between 2007 and 2017. The state's manufacturing industries are, in fact, prominent among those that are shedding the most jobs. Over the next decade, twenty-one of the twenty-five industries that will experience the greatest projected employment losses will be manufacturing-related. Fourteen of these involve textiles and apparel. Furthermore, industries related to tobacco (crop production and product manufacturing) and furniture (logging, milling, and wood preservation) are also projected to decline, as are many technology-intensive manufacturing sectors (for example, semiconductor and other electronic equipment manufacturing).

The decline in manufacturing has had significant consequences for many North Carolinians. The affected industries were typically viewed as paying family-supporting wages to those who had relatively low levels of education. As the twin forces of globalization and technology force industries to change the way they do business, companies have eliminated thousands of these jobs during the past decade. In the past four years alone, North Carolina's economy has shed 72,000 manufacturing jobs, three-quarters of which have been in textiles, apparel, furniture, and computer electronics.

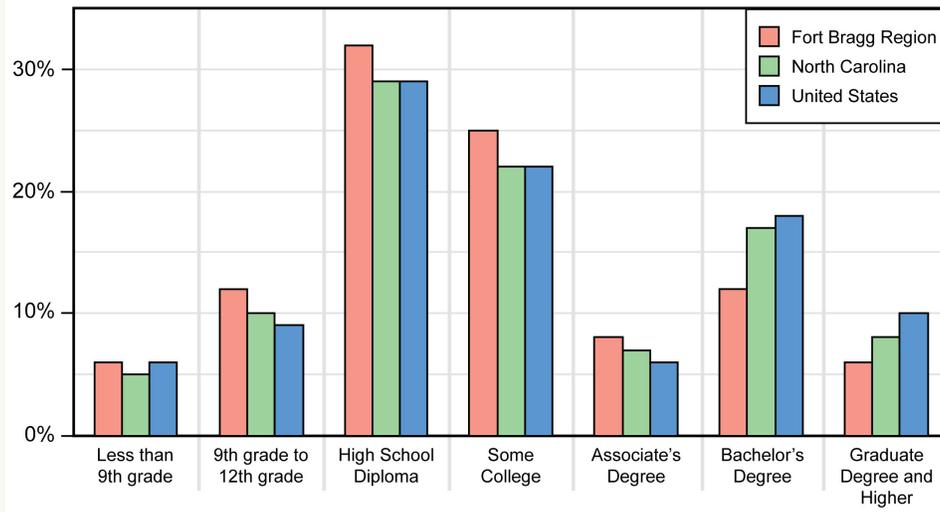
In short, new challenges face a large segment of North Carolina's—and the Fort Bragg region's—workforce. *The state's industries are creating few jobs that can employ dislocated workers who have not made substantial changes in their skill sets.* New jobs in knowledge-intensive industries require workers to have far greater levels of education than the current average.

B. Current Conditions

An economy is no longer defined by city, county, or state boundaries. Instead, economies are defined as being regionally based and comprised of a diverse group of industries supported by factors such as infrastructure, investment, and an availability of local

4. NC 2007 State of the Workforce Report pg. 1

Figure 1. Educational attainment in the Fort Bragg region, compared with that of the state and of the nation as a whole. The height of the bars shows the percentage of adults for whom that educational level is the highest that they have achieved.



talent.⁵ This section will examine the region’s supply of available talent and highlight the knowledge and skills most often requested by the region’s existing employers.

1. Labor Supply and Demand

The Fort Bragg region lags behind the state and the nation in terms of the numbers graduating from high school. For the past decade, the unemployment rate has been higher than that for North Carolina and for the United States. Area jobs having the greatest numbers of employees are very low paying and generally require only short-term training. Military spouses, military retirees, and the wounded offer the region a largely untapped pool of motivated and talented individuals.

a. Labor-Force Educational Levels

Education plays a critical role in virtually every aspect of the labor market. On average, the more education people have, the more likely they are to seek and find jobs, earn higher wages, and retire with a pension. Employers are more attracted to areas

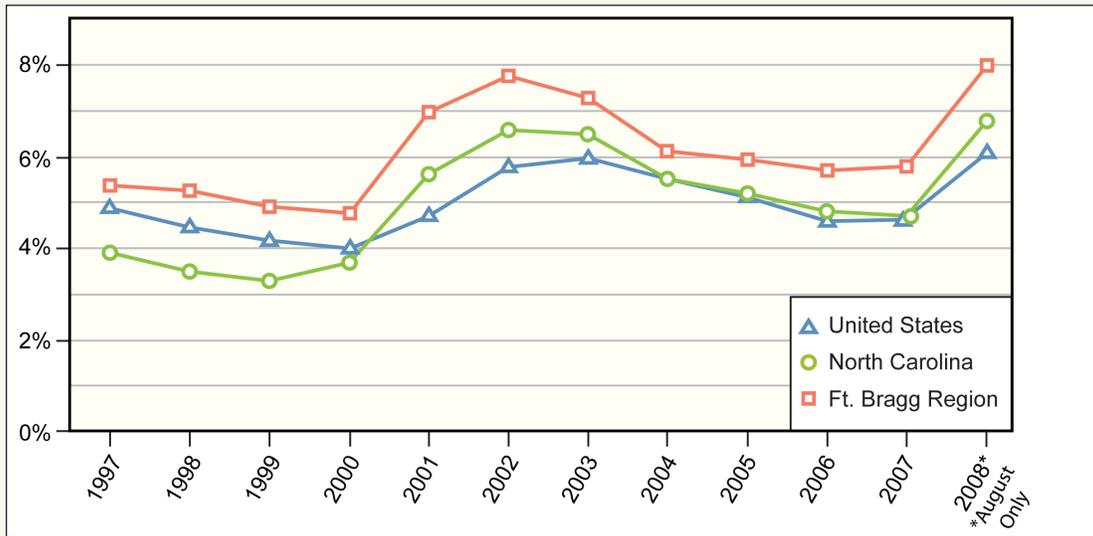
offering concentrations of well-educated and skilled workers; low-wage levels are no longer sufficient to attract businesses. Therefore, a labor force with low education levels poses a challenge for counties seeking economic development.

The Fort Bragg region lags behind the state and the nation in terms of the numbers graduating from high school, as shown in **Figure 1**.⁶ In 2006, 18% of the region’s population did not graduate from high school, as compared with North Carolina (15%) and the United States (15%). Within the region, only Cumberland County (11%) did better than the state and national averages in terms of the percentage of the population that did not graduate from high school. Six counties within the region did worse than the state and national averages: Montgomery County (28%), Robeson County (27%), Sampson County (24%), Richmond County (23%), Scotland County (21%), and Bladen County (21%). In terms of the region overall, 18% of people have bachelor’s degrees or higher, compared with 25% for North Carolina as a whole and 28% for the United States. Moore County, with 30% of its population having a bachelor’s degree or higher, is the only county in the region that exceeds the United States average.

5. Cooperate: A Practitioner’s Guide for Effective Alignment of Regional Development and Higher Education. March 2008. Prepared by the Council on Competitiveness for the U.S. Dept. of Labor Employment and Training Administration.

6. Source: Economic Modeling Specialists, Inc.

Figure 2. Unemployment rates in the Fort Bragg region from 1997 to 2008, compared with unemployment rates in the state and the nation as a whole.



b. Labor-Force Unemployment

The unemployment rate indicates the proportion of the labor force that does not have a job but is available and actively looking for work; this familiar indicator provides a good measure of the relative utilization of labor in the region. Unemployment rates are considered to reflect current economic situations, rather than foreshadowing long-term economic trends.

For the past decade, the unemployment rate in the Fort Bragg region has been higher than that for North Carolina and for the United States (Figure 2).⁷ Unemployment in the region rose to a high of 8.0% in August 2008. The unemployment rate during the same period was 6.8% for North Carolina and 6.1% for the United States. Within the region, Sampson County (5.5%), Moore County (6.5%) and Hoke County (6.3%) had lower unemployment rates in August, 2008 than did the state as a whole; unemployment was at 9.9% in Richmond County and 12.0% in Scotland County.

c. Labor-Force Subpopulations

Military spouses, military retirees, and the wounded offer the region a largely untapped pool of motivated and talented individuals. 97% of active-duty military spouses have a high school diploma. An

overwhelming 87% of spouses would like to further their education and develop a portable career, but the cost of education prohibits many of them from enrolling in school or training. The Army has recently offered incentives for military spouses desiring to pursue high-demand, high-growth, portable careers in fields such as health care, information technology, education, and construction. Military spouses who already have degrees within or across disciplines in engineering, education, health care, or information technology, among others, would be extremely attractive to employers looking for talented workers. Given the fact that many in the military retire and often enter some form of second career, an examination of how military retirees might serve as candidates to both backfill and grow new firms would be beneficial. Likewise, our wounded warriors offer the region another source of untapped talent.

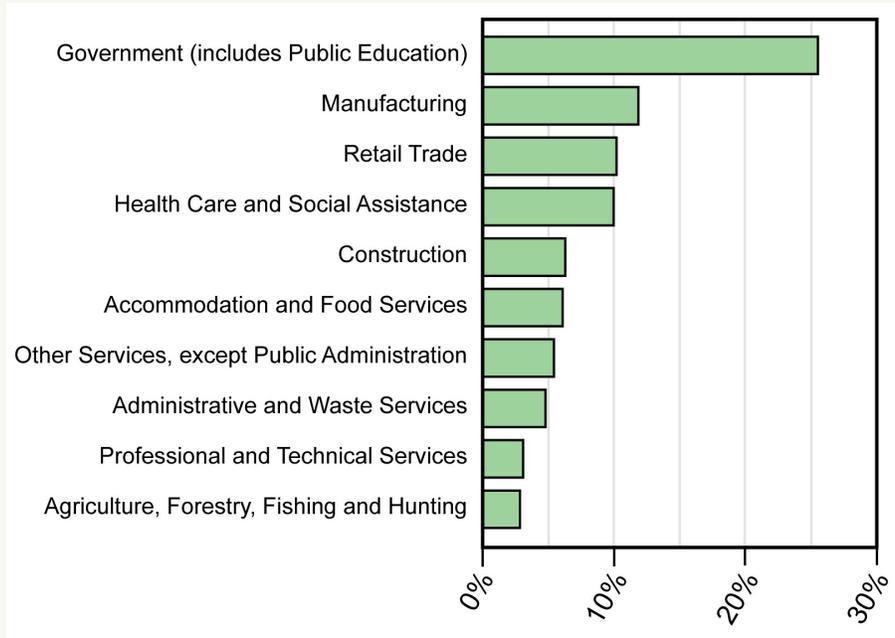
d. Labor Demand by Industry Sectors

Examination of the distribution of industry employment in the region provides an inside look at how the region’s industrial base is organized and how well its jobs pay. To begin, the Fort Bragg region in 2006 had 476,000 jobs with an average annual pay of \$39,774. Figure 3⁸ shows the region’s job distribution by industry. The largest sector was

7. Source: U.S. Department of Labor, Bureau of Labor Statistics

8. Source: Economic Modeling, Inc.

Figure 3. Percentage of jobs for the largest sectors in the Fort Bragg region in third quarter of 2007.



government, with 25.5% of the total jobs. One of the reasons for this is that “government” includes military jobs, of which there obviously are very many in the region. In addition to federal, state, and local workers, the government sector also includes public education. The next largest industry is manufacturing, with nearly 57,000 jobs (11.9% of the total). Manufacturing has above-average pay—\$43,404 annually. The problem is that manufacturing employment has been declining, and this decline is expected to continue. Since 2002, manufacturing employment has fallen by 11%, while total Fort Bragg employment has risen by 7%. Next, with 48,000 jobs (10.2%), is retail trade. Annual wages in this sector are very low—\$24,950 annually. This sector is where most displaced workers find employment. Another large sector is health care and social assistance, with about 47,500 jobs (10.0%). Wages in this group averaged just \$33,815. While many health care jobs pay very high wages, there are others (social assistance, for example) that offer below-average wages.

e. Labor Demand by Occupation

This section discusses the distribution of occupations in the current Fort Bragg regional economy. Top jobs

are identified in terms of employment and wages, the number of jobs projected in the future economy, and the skills that will be needed to succeed in those jobs.

Figure 4⁹ shows the top occupational groups in the region. The top three occupational groups each represented 10.8% of total jobs in 2006. These included the Office and Administrative Support, Military, and Sales-related groups. Production jobs still represent a sizeable portion (8.1%) of the region’s jobs. Rounding out the top groups are Food Preparation and Serving (6.3%); Transportation and Material Moving (6.3%); and Management (6.2%).

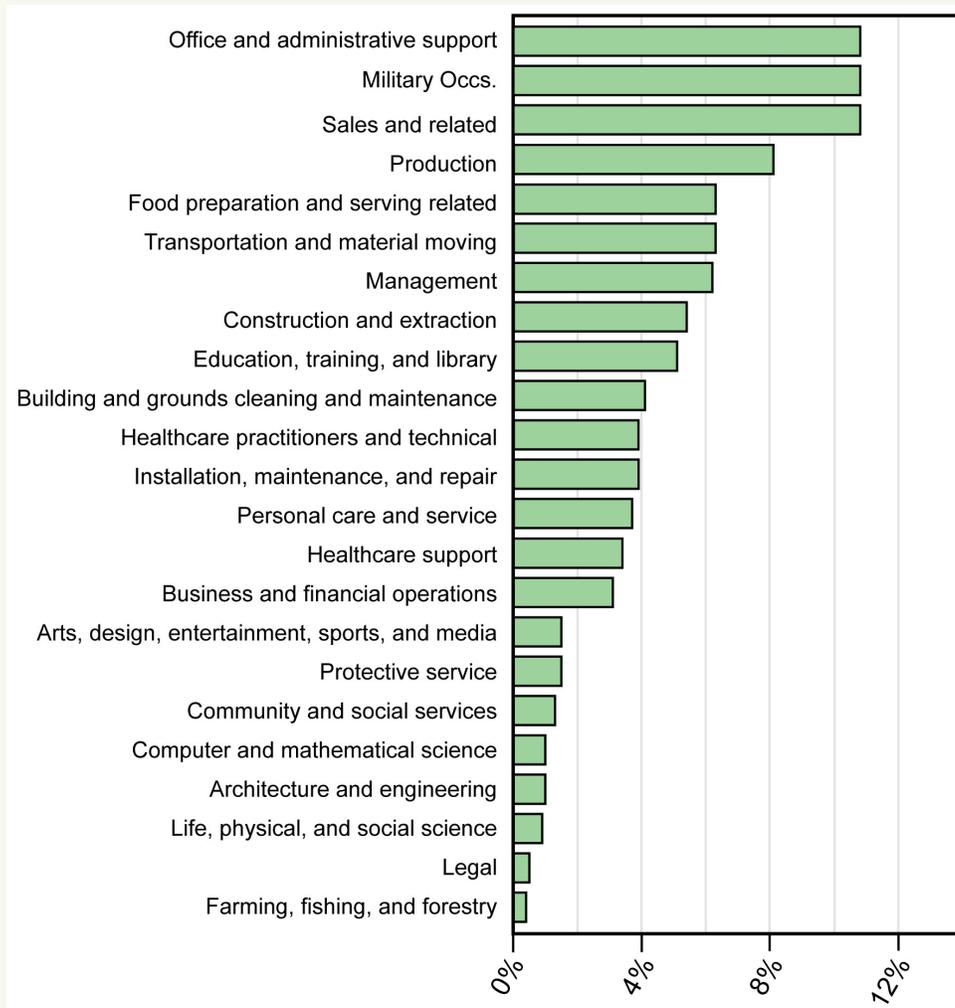
Regional jobs having the greatest numbers of employees are listed in **Table 1**.¹⁰ Most of these are very low paying and generally require only short-term training.

Traditional views of top occupations look only at employment figures. Low-skilled, low-wage jobs—such as cashiers, security guards, waiters, and waitresses—dominate such a list, since the economy is like a pyramid in terms of number of jobs in different wage categories. A more useful list, one that

9. Source: Economic Modeling Specialists, Inc.

10. Source: Economic Modeling Specialists, Inc. EMSI

Figure 4. Distribution of employment by Standard Occupational Classification (SOC) Categories for the Fort Bragg Region in 2006.



ranges across occupational levels and opportunities, is presented in **Table 2**,¹¹ which sorts the region’s occupations by total wages and thus allows the reader to use a given wage as a proxy for skill. This list provides a view of the overall “quality” of labor market opportunities in the Fort Bragg region.

All of the top-wage occupations in the above table require extensive training and education. A large number of these occupations are in the fast-growing medical field, with many more of them in management occupations.

11. Source: Economic Modeling Specialists, Inc. EMSI

In September, 2007, as part of the BRAC Regional Task Force’s planning effort, a labor-market survey was conducted among nearly 1,400 regional employers who employ ten or more people. Key findings of the survey are listed below:

Industry Growth - Businesses were asked to report the number of their current employees and to project how many employees they would have at this time next year. After compiling this information at the industry level, projected relative growth was calculated. The Fort Bragg/Pope-area sector that had the highest projected relative growth through 2008 was Business Services (28%), followed by Construction (14%).

Table 1. Top 20 Occupations by Total Employment in the Fort Bragg Region, 2006

Occupation ¹	2006 Jobs	Avg. Annual Wage	Education Level
Combined food prep and serving workers, including fast food	10,620	\$14,872	Short-term on-the-job training
Cashiers, except gaming	10,527	\$15,621	Short-term on-the-job training
Retail salespersons	10,461	\$21,299	Short-term on-the-job training
Home health aides	9,515	\$17,368	Short-term on-the-job training
Laborers and freight, stock, and material movers, hand	7,461	\$20,384	Short-term on-the-job training
First-line supervisors / managers of retail sales workers	7,444	\$31,637	Work experience in a related field
Office clerks, general	6,706	\$21,133	Short-term on-the-job training
Registered nurses	5,830	\$50,523	Associate's degree
Team assemblers	5,827	\$23,795	Moderate-term on-the-job training
Janitors and cleaners, except maids	5,721	\$17,722	Short-term on-the-job training
Maids and housekeeping cleaners	5,657	\$15,912	Short-term on-the-job training
Teacher assistants	5,513	\$17,742	Short-term on-the-job training
Child care workers	5,248	\$16,266	Short-term on-the-job training
Carpenters	5,088	\$28,059	Long-term on-the-job training
Waiters and waitresses	5,051	\$15,912	Short-term on-the-job training
Bookkeeping, accounting, and auditing clerks	4,728	\$27,726	Moderate-term on-the-job training
Secretaries, except legal, medical, and executive	4,592	\$25,126	Moderate-term on-the-job training
Truck drivers, heavy and tractor-trailer	4,460	\$35,714	Moderate-term on-the-job training
General and operations managers	4,312	\$85,925	Degree plus work experience
Elementary school teachers, except special education	4,277	\$35,963	Bachelor's degree

Industry Turnover - For each occupation surveyed, businesses were asked to report on annual turnover rate. Turnover rates for each industry were calculated based on this information. For the Fort Bragg/Pope region, the industries with the highest reported annual turnover rates were Construction (35%) and Lodging (26%).

Industry Demand - Level of Demand for an industry is influenced by two factors—the creation of new positions (growth) and the cycling of employees through existing positions (turnover). An industry with high turnover but minimal growth could still exhibit high demand for employees. When determining demand information, therefore, it is best to consider growth and turnover in proportion to employer base. This is especially true with regards to

the implementation of training programs and the allocation of funding. The industries with the highest projected relative demand were Business Services (52%), Construction (50%), and Retail (35%).

Occupational Demand and Wages - Each of the businesses was asked about their constituent occupations and the wages they paid. Workers that are most in demand include electricians, construction laborers, waiters and waitresses, fast-food counter workers, and home-care aides. Occupations with the highest wages include registered nursing, postal-service mail delivering, elementary and middle school teaching, and secondary school teaching (refer to the Workforce and Higher Education appendix).

Table 2. Top 20 Occupations by Total Wages in the Fort Bragg Region, 2006.
(Includes only occupations with fifty or more jobs)

Description	2006 Jobs	Avg. Annual Wage	Education Level
Chief executives	2,050	\$158,246	Degree plus work experience
Dentists, general	207	\$147,139	First professional degree
Podiatrists	66	\$140,858	First professional degree
Physicians and surgeons	2,074	\$140,566	First professional degree
Optometrists	153	\$118,893	First professional degree
Airline pilots, copilots, and flight engineers	288	\$115,502	Bachelor's degree
Lawyers	1,172	\$106,288	First professional degree
Natural sciences managers	112	\$102,232	Degree plus work experience
Engineering managers	234	\$98,072	Degree plus work experience
Pharmacists	600	\$97,365	First professional degree
Chiropractors	74	\$92,560	First professional degree
Veterinarians	160	\$89,502	First professional degree
General and operations managers	4,312	\$85,925	Degree plus work experience
Marketing managers	330	\$83,034	Degree plus work experience
Computer hardware engineers	94	\$82,534	Bachelor's degree
Computer and information scientists, research	71	\$79,123	Doctoral degree
Industrial-organizational psychologists	127	\$78,520	Master's degree
Sales managers	847	\$78,520	Degree plus work experience
Purchasing managers	129	\$77,480	Degree plus work experience
Nuclear engineers	65	\$76,128	Bachelor's degree

2. Regional Training and Educational Opportunities

The future employment landscape is improving in the Fort Bragg region. The growth at Fort Bragg and the associated indirect employment provide a unique opportunity for the local workforce. The jobs expected to come to the region will provide higher wages but will require a highly skilled workforce. This section describes these coming changes and highlights the importance of having a trained and ready workforce.

Each year public, private, and nonprofit interests make significant investments in the training and education of the Fort Bragg region's residents and its workforce. These human-capital investments take multiple forms, ranging from large-scale and highly structured higher education programs to public-sector workforce training programs that target particular groups. There are also, of course, significant investments made by and for the military at Fort Bragg.

While there are thirty-four independent, third-party vendors in the Fort Bragg region, two- and four-year colleges deliver most of the region's training. In fact, examination of available programs (refer to the Workforce and Higher Education appendix) reveals that nearly 89% of the 598 different course offerings in the eleven-county region is delivered in instructor-led or virtual distance-learning portals sponsored by local colleges and universities.

a. Community Colleges (two year)

Community colleges dominate the workforce training landscape, providing instruction to more than 70% of those pursuing post-secondary education and receiving a certificate, a diploma, or a degree. In all, eight community colleges¹² support the training needs of the eleven-county region. Their prevalence is due in part to the state's requirement that community

12. Bladen Community College, Central Carolina Community College, Fayetteville Technical Community College, Montgomery Community College, Richmond Community College, Robeson Community College, Sampson Community College, and Sandhills Community College

colleges be located no further than fifty miles from one another. Still, less than 20% of the region’s workforce takes advantage of community-college offerings.

A little fewer than three-quarters of the area’s training programs lead to either an Associate or Bachelor’s degree. About 15.6% of the training conducted by educational institutions or third-party vendors leads to an industry-recognized credential; the remaining programs are comprised of short-term courses for continuing or lifelong education.

Despite the predominant role of community colleges as training providers, preliminary findings seem to indicate that current military personnel receive training either internally or from four-year institutions (such as Campbell University, Central Texas College at Fort Bragg, Fayetteville State University, Troy University, University of North Carolina-Pembroke, Methodist College, or Webster College), all of which have branch campuses located at either Fort Bragg or Pope Air Force Base. Fayetteville Technical Community College is the only community college that has a physical presence on the base. This suggests a potential niche that the two-year colleges have yet to address adequately.

Course offerings and training programs at the community colleges are generally similar to one another; most have high enrollments in business administration, nursing, education, and computer courses. Interview findings indicate that these courses are taken by approximately 75% of the area’s part-time community-college students. Fayetteville

Technical Community College, which customizes its curriculum to a more interdisciplinary set of training solutions, is especially innovative in addressing current employer needs (**Table 3**).

Business technology programs prepare graduates for positions in accounting, computer technologies, finance, hospitality and travel, insurance, management, marketing, and office support occupations. Within the Business Technologies pathway, a total of 608 individuals graduated during the 2006-07 school year, and nearly 5,700 are presently enrolled in business related programs. Fayetteville Technical Community College graduated the most business students in the Fort Bragg region in 2007 with 295 graduates. In the 2006-2007 school year, Fayetteville Technical Community College had nearly 2,500 people enrolled in a business technologies curriculum. The Health Sciences pathway programs are designed to prepare the graduate for licensure, certification, or registration by examination. Professional program accreditation applies to specific Health Sciences programs and is awarded by the accrediting body of the appropriate professional society or association. The region’s community colleges graduated 931 health science students in 2007, and enrollment in health science programs for the region exceeded 3,200 in the 2006-07 school year. Fayetteville Technical Community College graduated over 300 individuals in this pathway, while Robeson, Richmond, and Central Carolina Community Colleges each graduated over 100 students. Finally, construction technology programs are closely allied to the construction industry. There are many entry levels for individuals who are preparing to work in this broad field. Students may choose a variety of careers as HVAC technicians, carpenters, electricians, masons, plumbers, or heavy equipment operators, or choose to study further and become involved in construction management. In 2007, 256 people graduated in the construction technologies fields from the region’s eight community colleges, and over 1,300 individuals were enrolled in construction-related program during the 2006-07 school year. Other programs within the public service and industrial areas are available in the region. These areas were not included in this assessment, however, because the future demand for community college graduates in these areas is

Table 3. Community College Enrollment and completion in 2006-07 ¹

	Enrollment	Graduation
Arts and Sciences	11,986	493
Health Science Technologies	3,258	931
Business Technologies	5,663	608
Construction Technologies	3,671	976
Transport Systems Technologies	552	91

1. Planning and Research, NC Community College System, 05/20/2008

not expected to be as great. The exception may be programs for lateral entry teachers that allow them to gain the educational core necessary to receive state licensure (refer to the Workforce and Higher Education appendix).

Although most of the training opportunities for military personnel are offered at Fort Bragg, the majority of this training is delivered virtually rather than via the traditional, instructor-led courses that dominate most curriculums available to the civilian public. Finding new portals and means of delivering distance-learning training to civilians, in either synchronous or asynchronous adaptations,¹³ might also be a means of offering lifelong learning

13. In “synchronous” distance learning, the instructor and students all meet for class at the same time, but may be in different locations. In “asynchronous” or “different time, different place” learning, the instructor and students interact at a distance and not in real time.

opportunities that would help area workers qualify for the new technical jobs that will relocate to the Fort Bragg region.

b. Colleges and Universities (four year)

All of the top-wage occupations listed in **Table 4** require a bachelor’s degree or higher. In addition, a bachelor’s degree or higher is needed to advance to the highest wage positions in several of the largest job sectors. The region’s 4-year colleges and universities therefore have an important role to play in preparing the region’s workforce to meet future needs.

There are four 4-year colleges and universities in the Fort Bragg region,¹⁴ offering a wide range of undergraduate majors. Most of the graduate degree

14. University of North Carolina – Pembroke, Fayetteville State University, Saint Andrews Presbyterian College, Campbell University, and Methodist University.

Table 4. Degrees awarded in selected programs by 4-year colleges in 2006-2007¹.

	UNC- Pembroke	Fayetteville State University	St. Andrews Presbyterian College	Methodist University	Campbell University	Total
Business, management, marketing, and related support services	0 Associates 84 Bachelors 11 Masters 0 Doctoral	0 Associates 138 Bachelors 27 Masters 0 Doctoral	0 Associates 53 Bachelors 0 Masters 0 Doctoral	1 Associates 133 Bachelors 0 Masters 0 Doctoral	0 Associates 369 Bachelors 132 Masters 0 Doctoral	1 Associates 777 Bachelors 170 Masters 0 Doctoral
Computer and information sciences and support services	0 Associates 7 Bachelors 0 Masters 0 Doctoral	0 Associates 14 Bachelors 0 Masters 0 Doctoral	0 Associates 0 Bachelors 0 Masters 0 Doctoral	0 Associates 0 Bachelors 2 Masters 0 Doctoral	0 Associates 13 Bachelors 0 Masters 0 Doctoral	0 Associates 34 Bachelors 2 Masters 0 Doctoral
Education	0 Associates 99 Bachelors 188 Masters 0 Doctoral	0 Associates 71 Bachelors 63 Masters 2 Doctoral	0 Associates 19 Bachelors 0 Masters 0 Doctoral	0 Associates 0 Bachelors 8 Masters 0 Doctoral	134 Associates 48 Bachelors 47 Masters 0 Doctoral	134 Associates 237 Bachelors 306 Masters 2 Doctoral
Health professions and related clinical sciences	0 Associates 65 Bachelors 0 Masters 0 Doctoral	0 Associates 14 Bachelors 0 Masters 0 Doctoral	0 Associates 4 Bachelors 0 Masters 0 Doctoral	0 Associates 4 Bachelors 28 Masters 0 Doctoral	0 Associates 53 Bachelors 34 Masters 108 Doctoral	0 Associates 140 Bachelors 62 Masters 108 Doctoral
Public administration and social service professions	0 Associates 45 Bachelors 29 Masters 0 Doctoral	0 Associates 0 Bachelors 40 Masters 0 Doctoral	0 Associates 0 Bachelors 0 Masters 0 Doctoral	0 Associates 4 Bachelors 0 Masters 0 Doctoral	0 Associates 11 Bachelors 5 Masters 0 Doctoral	0 Associates 60 Bachelors 74 Masters 0 Doctoral

1. National Center for Education Statistics, U.S. Department of Education, College Navigator (<http://nces.ed.gov/collegenavigator/>)

programs offer master’s degrees; these schools have very few doctoral or upper-level professional degree programs.

The number of degrees awarded in selected programs during the 2006-07 academic year is shown in Table 4. Degree programs in Education had the most graduates, with 189 bachelors, 259 masters, and two doctoral degrees awarded. Degree programs in business, management, marketing, and related support services had the next highest number of graduates, with 408 bachelors and thirty-eight master’s degrees awarded. Degree programs in the health professions and related clinical sciences awarded a total of eighty-seven bachelors and twenty-eight master’s degrees. Degree programs in Public Administration and social service professions awarded forty-nine bachelors and sixty-seven master’s degrees. Twenty-one bachelors and two master’s degrees were awarded by computer and information science and support services degree programs. None of these schools have post-graduate professional programs (Medicine, Law, Engineering, etc.), although preparatory degrees are offered for students who plan to enter such programs elsewhere.

C. Future Conditions

The biggest impact of growth in the Fort Bragg region will be in government employment, which will grow in 2016 by 15,825 jobs, compared to a 2006 baseline. The next largest job gain is expected to be in the health care and social services sector. In 2016, the region’s health care and social service sector is expected to be able to support an additional 14,817 jobs. The quality of many of the anticipated jobs is very high, with low likelihood of part-time employment and low potential for unemployment. All occupations on the list pay well above average. Medical-related occupations are the most numerous on the list, followed closely by careers in professional and technical services. A significant impact will also be felt by the construction-related sectors. In the Tier I and Tier II regions, demand for additional construction jobs will peak in 2011 at 6,265 and normalize at 1,057 in 2016 as large military projects are completed.

The remainder of this chapter assesses emerging industries and occupations and the associated training and education programs provided in the region. These topics are explored for the ten year period from 2006 through 2016; the timeframe of interest has been expanded beyond 2013 – used in other chapters of this assessment – to ensure consistency with available workforce data and research. Likewise, total growth – that includes normal and expected growth – will be used throughout this chapter as it is a better indicator of the total demand for future jobs in the region.

1. Emerging Industry Sectors

A total of 44,618 jobs will be created by 2016 as a result of normal growth and the additional military investment in the region. The biggest impact in the region will be in government employment. In 2016, 15,825 government jobs will be sustained by the region’s economy. The next biggest job gain is expected to be in the health care and social assistance sector. The health care and social services sector is projected to support an additional 14,817 jobs in the region (**Table 5**).

Table 5. Projected Job Growth by Industry (2006-2016)

Government	15,825
Health care and social assistance	14,817
Professional and technical services	3,991
Accommodation and food services	3,865
Administrative and waste services	3,574
Other services, except public administration	2,767
Retail trade	2,573
Educational services	1,639
Real estate and rental and leasing	1,440
Arts, entertainment, and recreation	1,204
Construction	1,057
Transportation and warehousing	701
Finance and insurance	154
Utilities	29
Management of companies and enterprises	-82
Mining	-149
Information	-320
Agriculture, forestry, fishing and hunting	-645
Wholesale trade	-701
Manufacturing	-7,121
TOTAL	44,618

Other sectors expected to have significant job growth in the region include professional and technical assistance, administrative and waste services, accommodation and food services, and retail. Sectors that show small employment gains include finance and insurance; arts, entertainment, and recreation; and wholesale trade. Although construction sector gains are modest in 2016, significant impact is realized in the near term. Demand for additional construction jobs will peak in 2011 at 6,265 and normalize at 1,057 in 2016 as large military projects are completed.

2. Emerging Occupations

Employment, annual wage, and projected growth data are all important when determining which occupations have the potential to employ a greater number of individuals in careers that pay well and have a future in the new economy. Occupational modeling¹⁵ was done for the occupations across all industry sectors for the Fort Bragg region (**Table 6**). The quality of jobs listed in this table is very high, with low likelihood of part-time employment. Most are expected to have a low potential of unemployment, and all occupations on the list pay well above average. Medical-related occupations are the most numerous on the list, followed closely by careers in the computer field.

Many of the jobs that will be relocating with the U.S. Army Forces Command (FORSCOM) and the U.S. Army Reserve (USARC) to Fort Bragg are among the high wage/high skill occupations. A job zone is a group of occupations that are similar in terms of overall experience, education, on-the-job training required, etc. Job zones range from job zone one, which requires little or no preparation, to job zone five, which requires extensive preparation. Jobs in zones three, four and five require a bachelor's degree or higher. Salary ranges for each occupation are also listed. The top of the range is the wage at which 90% of workers earn less and 10% earn more. Bottom of the range is the wage at which 10% of workers earn less and 90% earn more. Wage ranges were obtained from the Occupation Employment Survey data for the Fayetteville MSA by the N.C. Labor Market Information System.

15. Occupational modeling is the process of evaluating job growth, wages and other factors in an effort to identify the top occupations.

Jobs related to management and program analysis, information technology management, personnel management, budget analysis, and accounting are all among the civilian opportunities that will be available to the region's workforce.¹⁶ Other civilian opportunities in intelligence, training, security, and logistics will also be available with the Army. Similar opportunities will almost certainly be available with private defense contractors. Although opportunities with defense contractors were preliminarily considered in this analysis, further research would be necessary to fully understand the skills and knowledge required for such occupations.

There are several other occupations that are fast growing but do not have high wages. These jobs are similarly important to the regional economy. **Table 7** identifies ten occupations that are not considered High Wage/High Skill jobs but nonetheless have large projected net job growth. These occupations will account for much of the net job growth in the region and will provide ample opportunities to a wide range of residents. Unlike the high wage/high skill jobs, the quality of jobs listed in this table is

16. According to a briefing entitled "FORSCOM BRAC Transition Update" dated March 11, 2008, of the 971 Army civilian positions with FORSCOM and USARC that are relocating to Fort Bragg: fourteen percent are in the information technology career program, fifteen percent are in the Comptroller career program, eight percent are in the materials maintenance management career program, seven percent are in the manpower/force management career program, six percent are in the intelligence career program, six percent are in the supply management career program and three percent are in the military personnel management career program.

Table 6. Top High-Skill/High-Wage Jobs (2006-2016)

	ONET*SOC	Job Zone	Job Growth	Salary Range
Career Cluster – Information Technology				
Career Pathway – Network Systems				
Network Systems and Data Communications Analysts	15-1081.00	3	360	\$38,700 - \$99,000
Network and Computer Systems Administrators	15-1071.00	4	186	\$39,200 - \$96,800
Career Pathway -Programming and Software Development				
Computer Systems Analysts	15-1051.00	4	130	\$44,600 - \$110,700
Computer Software Engineers, Systems Software	15-1032.00	4	376	\$58,100 - \$129,100
Computer Software Engineers, Applications	15-1031.00	4	491	\$51,400 - \$122,400
Computer and Information Systems Managers	11-3021.00	4	123	\$66,900 - \$145,600
Career Cluster – Health Sciences				
Optometrists	29-1041.00	5	60	\$61,500 - \$145,600
Dental Hygienists	29-2021.00	3	213	\$44,100 - \$78,100
Physician Assistants	29-1071.00	5	149	\$61,400 - \$101,100
Pharmacists	29-1051.00	5	190	\$76,500 - \$128,300
Physical Therapists	29-1123.00	5	165	\$52,600 - \$96,700
Physicians and Surgeons	29-1069.99	5	556	\$46,000 - \$145,600
Registered Nurses	29.1111.00	3	1,953	\$41,100 - \$73,500
Medical Scientist	19-1042.00	5	112	\$41,500-\$133,200
Career Cluster – Business, Management and Administration				
Career Pathway – Human Resources				
Human Resources, Training and Labor Relations Specialist	13-1079.99	varies	237	\$34,800 - \$80,600
Career Pathway – Financial Management and Accounting				
Accountants and Auditors	13-2011.00	4	606	\$35,600 - \$90,100
Career Pathway – Business Analysis				
Management Analysts	13-1111.00	4	509	\$42,200 - \$123,000
Business Operations Specialists, All Other	13-1199.00	varies	602	\$31,300 - \$94,400
Career Pathway – Marketing				
Sales Managers	11-2022.00	4	191	\$39,900 - \$145,600
Career Pathway – Management				
General and Operations Management	11-1021	3	772	\$49,200 - \$145,600
Medical and Health Services Managers	11-9111.00	5	169	\$53,500 - \$124,500
Career Cluster – Education				
Career Pathway: Administration and Administration Support				
Education Administrators, Postsecondary	11-9033.00	5	155	\$39,700 - \$126,300
Career Cluster – Human Services				
Career Pathway: Family and Community Services				
Directors, Religious Activities and Education	21-2021	4	221	\$29,100 - \$103,000
Career Cluster – Law, Public Safety, Corrections & Security				
Career Pathway: Legal Services				
Lawyer	23-1011.11	5	416	\$44,400 - \$145,600
Career Cluster – Hospitality and Tourism				
Career Pathway: Recreation, Amusements and Attractions				
Self-Enrichment Education Teachers	25-3021.00	3	265	\$18,700 - \$56,400

Table 7. Other Fast Growing Occupations (2006-2016)¹

Occupation	ONET*SOC	Job Growth ²	Job Zone ³	Salary Range
Home Health Aides	31-1011.00	6,038	2	\$15,300 - \$25,100
Retail Salespeople	41-2031.00	2,138	2	\$14,800-\$39,200
Personal and Home Care Aides	39-9021.00	1,736	2	\$14,600-\$23,200
Child Care workers	39-9011.00	1,711	2	\$13,700-\$26,100
Food Preparation and Serving, including fast food	35-3021.00	1,508	1	\$13,200-\$19,700
Janitors and Cleaners	37-2011.00	1,447	1	\$14,100-\$26,600
Preschool Teachers	25-2011.00	1,032	3	\$14,700-\$30,700
Teacher Assistants	25-9041.00	1,032	3	\$15,300-\$24,400
Elementary School teachers	25-2021.00	853	4	\$27,700-\$53,400
Nurses Aides, Orderlies and Attendants	31-1012.00	854	2	\$17,100-\$29,700

1. Based on available military construction schedules, growth in construction-related jobs will be minimal in 2016.

variable, and the pay is average or less. Healthcare, retail, and education jobs dominate the list.

D. Gaps

Three major workforce-related challenges face the Fort Bragg region. First, there is an insufficient number of college graduates to meet the future demand for high-skill/high-wage careers. Second, indications are that the emerging adult labor force has a skill deficit that hinders migration to the higher-skill/higher-wage jobs demanded by the military-related development currently underway. Finally, regional coordination of workforce-development activities needs improvement so as to ensure development activities are aligned.

1. Insufficient Number of College Graduates in Selected Fields

As noted previously, one of the fastest growing industries in the region is health care and social assistance. Approximately 3,096 jobs will be created between 2006 and 2016 for registered nurses, physical therapists, physician assistants, physicians and surgeons, optometrists, and dental hygienists, and an estimated 8,628 jobs will be created for home health aides, personal and home care aides, nurses aides, orderlies, and attendants. In the 2006-07 academic year, the region’s community colleges awarded 931 degrees in the health science technologies arena,

and 202 health-related degrees were awarded by the region’s 4-year colleges and universities. Campbell University awarded 108 doctoral-level pharmacy degrees. None of the schools has a medical school. These data suggest that the programs are producing a sufficient number of graduates in many of the health-related fields; more information is needed to determine if the number of graduates per sub-field is sufficient and the number of graduates that elect to stay in the region is reasonable. New doctors and other health diagnosing and treating practitioners will need to be recruited from outside of the region.

Jobs in information technology and business management contribute significantly to the government, health care, and professional and technical services industries; 4,752 new jobs in information technology and business management will be created during this time. In the 2006-07 academic year, the region’s community colleges awarded 608 degrees in business technologies – which includes information technology and business management degrees. Seven hundred and seventy-seven undergraduate degrees and 170 masters were awarded in business-related fields; only thirty-six information technology-related degrees were awarded by the region’s 4-year colleges and universities. These data suggest that the programs are producing a significant number of graduates in many of the business-related fields. Although the number of information technology-related graduates is significant at the community college level, the

number of graduates from four-year schools is low. A bachelor degree in information technology is a minimum requirement for many of the identified high skill and high wage jobs.

It is projected that 1,639 jobs in the education services industry will be created between 2006 and 2016. Approximately, 853 of these jobs will be for elementary teachers – excluding special education teachers. In the 2006-07 academic year, education programs in the region’s community colleges awarded 172 degrees, and the education programs in the region’s 4-year colleges and universities awarded 679 degrees.¹⁷ This graduation rate appears to be sufficient to meet the projected need. However, the distribution of graduates among the specialties is likely to be unbalanced, with some specialties having an oversupply, and others having severe shortages. For example, the small numbers of graduates from science and mathematics educational programs coupled with long-standing national trends suggests that there will likely be very few mathematics and science teachers available. This is an important gap, given the region’s growing need for higher-skilled workers to fill high-tech and medical jobs, (**Table 8**).

In general, there are relatively few students graduating from science, mathematics, and high-skill technical fields. An effort should be made to increase enrollments in these areas in order to adapt

17. Includes 134 associate degrees awarded by Campbell University.

to the ongoing transformation from agricultural and manufacturing industries to industries requiring more creative and skilled workers (refer to Workforce and Higher Education appendix).

2. Low Educational Attainment

Where skills and knowledge are the major indicators of a region’s ability to adapt to a changing economic environment, educational attainment can serve as a proxy indicator. Based on employer surveys and educational attainment data, indications are that the Fort Bragg region’s emerging adult labor force has a skill deficit that hinders migration to the higher-skill/higher-wage jobs demanded by the military cluster development that is currently underway. This is creating a “disconnect” between the workforce development needs of the region’s future employers on the one hand, and the current skills of the workforce and the training provided by the educational programs on the other.

Participants in a recent discussion forum¹⁸ described a need to acquire and retain sufficient teachers in the educational system to handle the increased student load with no reduction in quality and the need to ensure that the correct skills are being taught to prepare students for the kind of emerging employment opportunities associated with regional transformation. Another identified need is to engage students to stay in school and continue their education.

In meetings with defense, intelligence, and security

18. Education and Workforce Work Group, BRAC Regional Task Force Tabletop Exercise, conducted by Booz Allen Hamilton on March 25, 2008

Table 8. Education degrees awarded from the region’s four-year colleges and universities in 2006-07, by specialty

	Associate's Degree	Bachelor's Degree	Master's Degree	Doctoral Degree
All 1-12 Ed*	134	222	208	2
138 degrees in Elementary Education and Teaching				
102 degrees in School Administration				
32 degrees in Physical Education Teaching and Coaching				
16 degrees in Junior High/Middle School Education and Teaching				
14 degrees in Mathematics Teacher Education				
9 degrees in Science Education (Two Biology Teacher Education programs had no grads)				

* Except for Counselor Education/School Counseling and Personnel Services, and Kindergarten/Preschool Education and Teaching

industry representatives,¹⁹ a number of skills and requirements were described as being of particular importance for students planning to seek the coming military-related jobs. Communications/interpersonal and team skills were considered paramount, along with other “soft” skills such as work ethic, motivation/self-initiative, critical thinking, and problem solving. To help students gain these skills, participants suggested that schools at all levels need more project team work and team-based learning. Another key issue raised in these meetings is that applicants seeking employment in these industries will need to be able to pass the background checks required to gain Top/Secret clearance. Participants suggested that Junior High/Middle School students need to be made aware of activities that would disqualify them from these good jobs.

3. Lack of Regional Coordination

Key workforce stakeholders in the Fort Bragg region include its employers, eight community colleges, five universities, four workforce development boards, twelve JobLink Centers, eleven County Boards of Commissioners, relevant state agencies, regional business organizations and economic developers, regional Councils of Government, and key philanthropies. These stakeholders are responsible for identifying the workforce needs of businesses, for disseminating information to both employers and educators, and, more broadly, for helping the region’s current economy thrive while preparing it for the future. If the Fort Bragg region’s development activities are not aligned, current challenges may be exacerbated and potential challenges could very well become actual problems. The aligning of activities, resources, and strategies is not a silver bullet for resolving regional challenges, but it certainly can mitigate their impact. If this approach is to succeed in creating systemic changes, there will need to be ongoing regional communication, reassessment, and realignment of ideas and resources.

Both state and regional economic development leaders are viewing the move of U.S. Army Forces Command (FORSCOM) and U.S. Army Reserve Command

(USARC) as a significant catalyst for attracting economic growth in the military preparedness and homeland security sectors. The establishment in September, 2008, of the All American Defense Corridor was intended to be an initial step in state and regional efforts to take advantage of the opportunities presented by the expansion at Fort Bragg to expand the defense industry sector in North Carolina. The All American Defense Corridor includes the world-class research and development centers in the Research Triangle region, military installations in eastern North Carolina,²⁰ and major transportation hubs and corridors, including the Port of Wilmington and the I-95 Corridor.

Economic development efforts within the All American Defense Corridor are applying an “industry cluster” approach to attract a targeted set of industries centered on homeland security and defense. An industry cluster is a geographically bounded concentration of similar, related or complementary businesses, with active channels for business transactions, communications and dialogue that share specialized infrastructure, labor markets and services and that are faced with common opportunities and threats.²¹ Traditional economic development strategies focused resources on individual firms. Cluster strategies, in contrast, deal with a system of industries and emphasize the importance of relationships among industries in different sectors for promoting economic development.²² In addition to large companies, cluster strategies seek to nurture small businesses and entrepreneurs, thereby enhancing the resiliency and durability of economic transformation.

An important component of the All American Defense Corridor’s efforts is an emphasis on education and workforce training to supply the skilled workers required to attract defense industry businesses. The BRAC Regional Task Force is working closely with the region’s colleges and universities to proactively identify skills and training needed by these businesses

19. The Partnership for Defense Innovation’s (PDI) Center of Operations and the Defense Security Technology Accelerator (DSTA) Program, both located in Fayetteville

20. Fort Bragg/Pope Air Force Base, Camp Lejeune Marine Base and MCAS New River, Seymour Johnson Air Force Base, MCAS Cherry Point, and Military Ocean Terminal Sunny Point.

21. Rosenfeld, Stuart A. 1997. “Bringing Business Clusters into the Mainstream of Economic Development.” *European Planning Studies* 5(1): 3-23.

22. <http://www.planning.unc.edu/courses/261/leveen/>

and to develop educational programs preparing students for the relevant career clusters. In July, 2008, the U.S. Department of Labor awarded the BRAC Regional Task Force a \$5 million grant to develop the “All-American Center for Workforce Innovation” aimed at development of a skilled workforce matched to defense industry needs. The goal is for the Center to ‘virtually’ link, through Internet and wireless communication technology, every public school, community college, JobLink center, and institution of higher learning in the eleven-county region. The Center is intended as a mechanism to unite the region’s educational systems, economic development corporations, and workforce development boards.

The cooperative economic development efforts in the Fort Bragg region are still in their early stages. A significant amount of work remains to be done to implement this ambitious strategy so as to achieve sustainable economic growth throughout the region.

E. Recommended Actions

Important Action 1: Expand educational opportunities and upgrade skills of incumbent workforce by increasing number of local graduates of business, health care, and public services-related programs.

The estimated job growth in the region far exceeds its present capacity for graduating qualified workers. Regional opportunities for training in the business, health care, and public services technologies pathways should be maximized in order to adequately prepare the workforce for expected employment opportunities. Particular attention should be paid to training and educational programs that prepare graduates for any of the Top 25 High-Wage/High-Skill Occupations identified earlier and for technology and entrepreneurial programs that support the long-term development of a regional homeland security and emergency preparedness employment cluster.

Important Action 2: Develop an information network among regional employers, educators, and workforce.

Timely and accurate information flow among employers, educators, and the area workforce is critical. Employers expect to have a talented workforce available to do the work; the local workforce desires to enhance their skills so they earn higher wages; and local colleges and universities want to align their available programs with the emerging needs of industry. In other words, it is essential for the region to develop a network that allows the workforce to better plan careers, that gives educators the opportunity to promote their offerings, and that provides employers the means of communicating directly with a supply of available talent. Special outreach efforts should be targeted to military spouses and to early military retirees, both of which are likely to have untapped skills. The BRAC Regional Task Force recently implemented a demonstration program that uses Pipeline, a web-based information network platform developed by Futures, Inc., to give wounded warriors access to training programs and employment opportunities. Early results of this program seem promising. As the demonstration project matures, planners would be well advised to consider expanding the demonstration program so as to cover the entire eleven-county region.

Information that may be used to make career, education, and training decisions on a continuing basis will require regular updating. Given the gaps and time delays in federal labor-market information sources, access to locally generated original research would also be highly valuable. For example, leaders of the region should consider complementing federal and state databases on at least an annual basis with a statistically sampled survey of human resource professionals, similar to the Labor-Market Survey completed in 2007. Information gathered would cover such matters as available jobs, emerging career opportunities, and the changing skill expectations of employers.

Important Action 3: Fully implement the plan for the All-American Center for Workforce Innovation.

The BRAC Regional Task Force has partnered with the region’s colleges and universities, workforce development boards, and other workforce stakeholders to establish the All-American Center for Workforce Innovation. The Center is housed in the Harry F. Shaw Virtual College Center at Fayetteville Technical Community College. The Center will virtually and physically connect the region’s workforce, economic, and educational assets with other regional assets and partners. It will also develop specific occupational, employment, educational, and training requirements for the emerging industries. Finally, in order to create the talent pool for the future, the Center will create career tracks and will share job and program information with the region’s employment and training community, school systems, community colleges, universities, businesses, and citizens. The full implementation of this partnership is critical to the success of the region’s workforce development efforts.

Important Action 4: Recognize the BRAC Regional Task Force as a regional workforce intermediary.

The Fort Bragg region has two primary workforce and economic development goals. First, the region must attract knowledge-driven companies that can help the area move away from low-wage industries. Second, the region must link a low-skilled workforce to education and training opportunities that improve their earning potential. Achieving these two goals will support the efforts of numerous regional workforce-development stakeholders, will optimize workforce uses of regional resources, and will help balance the often competing goals and interests of individual entities. A best practice in the employment and training arena is to utilize workforce intermediaries that can assume the following core responsibilities:

- Facilitating the full range of labor market activities and services—including job matching, occupational training, and career coaching
- Coordinating multiple partners and funding streams so that services for individuals and employers are seamless
- Advocating public policies that support workforce and economic development in the region
- Projecting a vision that motivates and guides the effort’s partnerships and activities

The BRAC Regional Task Force is well positioned to serve as an “accountability agent” for the region and formally accept the role of the

region's workforce intermediary. Examples of successful workforce intermediary initiatives can be found in Austin, Baltimore, Boston, New York City, Pennsylvania, and San Francisco.

Important Action 5: Improve high school graduation rates.

Without high school diplomas, youth—the emerging workforce—will be less likely to be successful in obtaining or holding the critical high-skill/high-wage jobs that are important to the economy. They are more likely to need external supports and “second chance” system interventions. Strategies to increase the adult and youth population's academic and occupational skill sets are key to creating a competitive workforce advantage. The region should continue to strengthen curriculums and enhance student engagement in middle schools and high schools. There are several possible ways of accomplishing these goals.

First, the region should encourage the design and implementation of “Learn and Earn” high schools throughout the region. These early college high schools are designed to enable students to earn, tuition-free, both a high school diploma and up to two years of college credit or an Associate's degree in five years. For young people starting as early as sixth grade, K-12 and higher-education faculty work together to integrate course offerings and provide a seamless system of early awareness and college preparatory academic and exploratory experiences. “Learn and Earn” high schools already exist in Cumberland, Robeson, Scotland, Hoke, Lee, and Richmond Counties. Second, students should be provided with access to leadership-development programs throughout the region. Such programs can motivate and inspire middle and high school students to graduate, develop role models, and pursue the careers that can contribute to emerging industries. Any new regional program could be modeled after several existing programs provided at Fayetteville Technical Community College, Sandhills Community College, and N.C. State University's Leadership Center. Third, the region should create a comprehensive long-term (from birth to adulthood) campaign for improving literacy. Intervention at all levels will be required if results are to lead to a major shift. Several well-documented literacy efforts underway in North Carolina and in other parts of the United States could be used as models for similar programs in the Fort Bragg region, including programs in the Charlotte, Northwest Piedmont, and the Triad regions. Enrollments in College Tech Prep (CTP) should be increased. Other strategies may include school-to-work investments, mentoring programs, apprenticeship programs, and substantial investments of youth training dollars in the counties with the lowest rates of attainment through local workforce board Youth Councils.

Important Action 6: Recruit dual career professional couples as “brain gain” strategy.

Development of innovative methods towards the recruitment of dual career couples will serve as a strategic move to fill important industry needs. Couples with degrees within or across disciplines in engineering, education, health care, and information technology, among others, would be particularly attractive to employers. Local and regional economic development leaders should consider military spouses as assets to the workforce, capable of securing high-skill, high-wage, and high-demand careers. Barriers to hiring of military spouses include their traditional transience and additional childcare issues encountered when spouses are deployed. Potential strategies for overcoming these barriers include informing educators and employers about the benefits of hiring military spouses and investigating and promoting flexible employment options, including compressed time, alternate hours, alternate delivery, job sharing, and childcare accommodations.

Important Action 7: Work closely with high-growth firms to understand their needs for workforce solutions to support continuing growth.

One strategy for the region is to focus on how to increase the critical skills needed by workers in high-skilled work settings. It will be beneficial for local workforce boards to align their incumbent worker training grants (a state program administered locally) to the region’s economic development growth and retention strategies. This will foster the integration of workforce and economic development strategies. Another important potential strategy is to support the development of sector partnerships in which local workforce boards convene sector experts and leaders together with education entities for the purpose of focusing on a critical industry sector’s attempts to fill occupation gaps and develop career ladders. A model for sector partnerships is currently being created across North Carolina for allied health occupations. The BRAC Regional Task Force has been working to develop such partnerships; for example, it recently became involved with two Allied Health Regional Skills Partnerships, and it initiated a Construction Job Connection Initiative.

Important Action 8: Capture early military retirees as a potential source of growth for high-skill firms.

Over 4,000 skilled workers separate from Fort Bragg and Pope Air Force Base annually. Many have homes and employed spouses settled in the area. Most have the necessary security clearances for employment in the defense industries. Participants in a recent discussion forum pointed out that retaining

these individuals will strengthen the quality of the regional workforce and significantly contribute to the attractiveness of the region to potential defense industries. Solutions suggested include easing the transition for military members, and increasing the flexibility used by educational institutions when teaching military students. Similar programs could be set up for military spouses.

Important Action 9: Develop networking solutions across in-migrant populations to acculturate them into the fabric of the community.

The population migrating into the region in response to the expansion at Fort Bragg is expected to be quite diverse. Diversity has been increasing in the region through normal growth as the Hispanic population has increased by nearly 50,000 since 1990. Efforts should be made to assist these in-migrants to acculturate into the fabric of local communities and to ensure that they have access to high-quality schools, transportation options providing access to employment and to retail centers, and encouragement to take part in local social and civic events. Licensing and credentialing programs that better align with other state or country requirements in nursing, engineers, public safety, etc. are encouraged.

F. Appendix A: Job Zone Definitions

Job Zone One: Little or No Preparation Needed

Overall Experience No previous work-related skill, knowledge, or experience is needed for these occupations. For example, a person can become a cashier even if he/she has never worked before.

Job Training Employees in these occupations need anywhere from a few days to a few months of training. Usually, an experienced worker could show you how to do the job.

Job Zone Examples These occupations involve following instructions and helping others. Examples include taxi drivers, amusement and recreation attendants, counter and rental clerks, cashiers, and waiters/waitresses.

Education These occupations may require a high school diploma or GED certificate. Some may require a formal training course to obtain a license.

Job Zone Two: Some Preparation Needed

Overall Experience Some previous work-related skill, knowledge, or experience may be helpful in these occupations, but usually is not needed. For example, a teller might benefit from experience working directly with the public, but an inexperienced person could still learn to be a teller with little difficulty.

Job Training Employees in these occupations need anywhere from a few months to one year of working with experienced employees.

Job Zone Examples These occupations often involve using your knowledge and skills to help others. Examples include sheet metal workers, forest fire fighters, customer service representatives, pharmacy technicians, salespersons (retail), and tellers.

Education These occupations usually require a high school diploma and may require some vocational training or job-related course work. In some cases, an associate's or bachelor's degree could be needed.

Job Zone Three: Medium Preparation Needed

Overall Experience Previous work-related skill, knowledge, or experience is required for these occupations. For example, an electrician must have completed three or four years of apprenticeship or several years of vocational training, and often must have passed a licensing exam, in order to perform the job.

Job Training Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers.

Job Zone Examples These occupations usually involve using communication and organizational skills to coordinate, supervise, manage, or train others to accomplish goals. Examples include funeral directors, electricians, forest and conservation technicians, legal secretaries, interviewers, and insurance sales agents.

Education Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree. Some may require a bachelor's degree.

Job Zone Four: Considerable Preparation Needed

Overall Experience A minimum of two to four years of work-related skill, knowledge, or experience is needed for these occupations. For example, an accountant must complete four years of college and work for several years in accounting to be considered qualified.

Job Training Employees in these occupations usually need several years of work-related experience, on-the-job training, and/or vocational training.

Job Zone Examples Many of these occupations involve coordinating, supervising, managing, or training others. Examples include accountants, human resource managers, computer programmers, teachers, chemists, and police detectives.

Education Most of these occupations require a four - year bachelor's degree, but some do not.

Job Zone Five: Extensive Preparation Needed

Overall Experience Extensive skill, knowledge, and experience are needed for these occupations. Many require more than five years of experience. For example, surgeons must complete four years of college and an additional five to seven years of specialized medical training to be able to do their job.

Job Training Employees may need some on-the-job training, but most of these occupations assume that the person will already have the required skills, knowledge, work-related experience, and/or training.

Job Zone Examples These occupations often involve coordinating, training, supervising, or managing the activities of others to accomplish goals. Very advanced communication and organizational skills are required. Examples include librarians, lawyers, aerospace engineers, physicists, school psychologists, and surgeons.

Education A bachelor's degree is the minimum formal education required for these occupations. However, many also require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree)

G. Appendix B: Inventory of Educational Opportunities

Contact information for each educational entity offering courses in the Ft. Bragg region is provided below. Following pages provide information on the training programs available to both civilian and military personnel across the 11 county Ft. Bragg region. For further information, readers should access the provided internet addresses and check the institution's most current program catalogue of available degrees and certifications.

AIT Acclaim
Michael Noble, Training Manager
421 Maiden Lane
Fayetteville, NC 28311
www.aitacclaim.com
910-321-1322

Alliance Tractor Trailer Training Center
Jane Porterfield, Training Director
P.O. Box 604
Wyethville, VA 24382
www.alliancetractortrailer.com
276-228-6101

Bladen Community College
Darrell Page, President
P.O. Box 266
Dublin, NC 28332
910-862-2164
www.bcc.cc.nc.us

Body Therapy Institute
Rick Rosen, Co-Director
300 Southwind Road
Siler City, NC 27344
919-663-3111
www.massage.net

Campbell University
Herbert V. Kerner, Associate Dean
P.O. box 546
Buies Creek, NC 27506
www.campbell.edu
910-893-1200

Central Michigan University
Daniel J. Stephens, Vice President
801 Industrial Avenue
Mount Pleasant, MI 48858
www.cel.cmich.edu
989-774-4456

Central Carolina Community College
Celia Hurley, Director, Distance Education
1105 Kelly Drive
Sanford, NC 27330
www.cccc.edu
919-718-7284

Central Texas College
Edilyn Freitas, Director
P.O. Box 70266
Pope AFB, NC 28310
www.ctcd.edu
910-497-2749

Community Education & Programs
Brenda Nesbitt, Executive Director
1218 N. Main Street
Lillington, NC 27546
910-893-6021
www.ceaps.org

ECI Technology & Business Center
Dr. DeLayna Elliott, Director of Education
4230 Cumberland Road
Fayetteville, NC 28301
910-482-3946

ECPI College of Technology
Carlton Hackney, Mgr. of Continuing Ed
103G Sleepy Drive
Spring Lake, NC 28390
www.ecpi.edu
910-436-6002

Embry Riddle Aeronautical University
Larry W. Jenkins, Director
P.O. Box 70270
Fort Bragg, NC 28307
www.centers.ec.erau.edu/nc
910-436-5005

EnVisionary I-Care, Inc.
Yvette Kennedy, Director of Operations
P.O. Box 2111
Garner, NC 27529
www.envisionary.com
910-661-7773

Fayetteville Collision Learning Center
Fundador DeJesus, Director
2450A Bragg Blvd.
Fayetteville, NC 28303
910-488-4947

Fayetteville State University
Latonya Hankins, Vice Chancellor
1200 Murchison Road
Fayetteville, NC 28301
www.uncc.edu
910-672-1035

Fayetteville State University
Extended Learning
Betty Gardner, Sr. Educational Consultant
3000 Highwoods Blvd.
Raleigh, NC 27606
919-625-1314

Fayetteville Technical Community College
Bob Ervin, Asst. Vice President for Learning
P.O. Box 35236
Fayetteville, NC 28303
www.faytechcc.edu
910-678-8442

Health Science Technology
Maude van Putten, owner
118 N. Wilson Avenue
Dunn, NC 28334
910-892-2460

Henkels & McCoy
J.B. Fischer, Regional manager
204 Perry Lane Road
Brunswick, GA 31525
912-261-7969

InovaTech, Inc.
Joseph Grimm, President
6408 Brookstone Lane
Fayetteville, NC 28314
www.inovatech.edu
910-764-1111

Interstate Driving Academy
Robert P. Elmore, Director
1111 S. Clinton Avenue
Dunn, NC 28335
910-891-1344

JZ Barber College
Neal Stanback, Director
1545 U.S. Hwy 1 South
Southern Pines, NC 28387
910-246-2005

Lazar Group
Richard G. Lazar
2936 Middlesex Road
Fayetteville, NC 28306
www.thelazargroup.com
910-425-8090

Lumberton Truck Driving Academy
Hearl Oxendine, Director
2600 East 5th Street
Lumberton, NC 28358
910-735-0033

Methodist College
Joseph McKoy, Director
5400 Ramsey Street
Fayetteville, NC 28311
www.methodist.edu
910-436-3624

Millwright & Crane Inspection School
Terry Baker, Executive Director
277 MacDougal Drive
West End, NC 27376
910-673-0909

Montgomery Community College
Karen Frye, Admission Officer
1011 Page Street
Troy, NC 27371
910-576-6222
www.montgomery.edu

Montgomery's Hairstyling Academy
Loretta Montgomery, President
222 Tallywood
Fayetteville, NC 28303
910-485-6310

NR Enterprises
Nathaniel Rainey, CEO
6694 Kodiak Drive
Fayetteville, NC 28304
910-487-0779

Professional Administrative Services
Simplified, Ltd.
Sheryl Casey, CEO
2936 Breezwood
Fayetteville, NC 28303
www.passltd.com
910-485-2543

Professional Employment Assessment &
Career Enhancement
Sherry Matthews, Trainer
P.O. Box 87551
Fayetteville, NC 28303
910-843-8844

Progress Works, LLC
Monita McLaurin, Owner
5826 Cedar Creek Road
Fayetteville, NC 28212
910-273-1201
www.progressworks.net

Q Learning Center
Paula Quick Hall, Owner
3274 Rosehill road
Fayetteville, NC 28301
910-488-9992

Rayford's Computer Services
Angela Bates
111 Lamon Street
Fayetteville, NC 28390
910-484-3377

Regency Beauty & Barber Academy
Hugh Mackey, Director of Operations
110 N. Main Street
Spring Lake, NC 28390
910-497-1088

Richmond Community College
Diane Honeycutt, President
P.O. Box 1189
Hamlet, NC 28345
910-410-1727
www.richmondcc.edu

Robeson Community College
Charles V. Crestman, President
P.O. Box 1420
Lumberton, NC 28359
910-272-3300
www.robeson.cc.nc.us

Sampson Community College
Tonita B. Smith, Counselor
P.O. Box 318
Clinton, NC 28329
910-592-8081
www.sampsoncc.edu

Sandhills Community College
John R. Dempsey, President
3395 Airport Road
Pinehurst, NC 28374
910-692-6185
www.sandhills.edu

Sanford-Lee School of Barbering
Robert Cotton, Director
403 Wicker Street
Sanford, NC 27330
919-774-9997

S-Lyon Nurse Competency
Sheryl Lyons, CEO
204 S. Reilly Road
Fayetteville, NC 28314
910-864-3426

SmartChoice Services
Lisa Lewis Schaeffer
Associate Vice Chancellor
One University Drive
Pembroke, NC 28372
910-521-6270
www.uncp.edu

TARTT Technical Institute
Dr. Terry Franklin, President
2521 Murchison Road
Fayetteville, NC 28301
910-723-1396

Top Trade Barber School
Terrence Williams, Manager
101 W. Roseboro Street
Roseboro, NC 28382
910-525-5950

The CMA Group
Mona Powell, Director
Gallery Suite
Fayetteville, NC 28314
910-864-7471

The Job Network, Inc.
Petty Thiessen
6256 Yadkin Road
Fayetteville, NC 28303
910-864-4116

Thomas Health Care Institute, Inc.
Levette Bount, Director
5824-A Machines Place
Raleigh, NC 27616
919-790-9084

Troy University
Patricia Bush-McManus, Site manager
811 Stamper Road
Fayetteville, NC 28303
910-484-6639

University of North Carolina at Pembroke
Lisa Lewis Schaeffer
Associate Vice Chancellor
One University Drive
Pembroke, NC 28372
910-521-6270

Webster University
Hubert L. Gibson, Director
384 Maynard Street, Suite A
Pope AFB, NC 28303
910-436-0014

Wisdom Keys Learning Center
Lillie Council, Director
2215 Murchison Road
Fayetteville, NC 48201
910-480-0355

**Ft. Bragg Region
Cumberland WDB (Cumberland County)**

Vendor	Location of Training	Program Offered	Duration of Program	Tuition
AIT Acclaim	Fayetteville	A+ Computer Service Tech	40 hours	\$1,095/course
		Cisco CCDA Certification	40 hours	\$2,500/course
		Cisco CCNA Certification	40 hours	\$2,500/course
		Microsoft Certified Desktop Support Tech	40 hours	\$2,100/course
		Microsoft Certified Systems Administrator	160 hours	\$6,999/course
		Microsoft Certified Systems Engineer	160 hours	\$6,999/course
		CompTIA Network+ Computer Service Tech	40 hours	\$1,095/course
		CompTIA Security+ Computer Service Tech	40 hours	\$1,095/course
Campbell University	Buies Creek	Associate's Degree	Semester, two-yr degree	\$2,040/semester
	Buies Creek Pope AFB Ft. Bragg	Bachelor of Arts -- Criminal Justice	Semester, four-yr degree	\$2,040/semester
	Buies Creek Pope AFB Ft. Bragg	Bachelor of Arts -- Health Science	Semester, four-yr degree	\$2,040/semester
	Buies Creek Pope AFB Ft. Bragg	Bachelor of Arts in Business Administration – Accounting	Semester, four-yr degree	\$2,040/semester
	Buies Creek Pope AFB Ft. Bragg	Bachelor of Arts in Business Administration	Semester, four-yr degree	\$2,040/semester
	Buies Creek Pope AFB Ft. Bragg	Bachelor of Arts in Business Administration – Computer Information Systems	Semester, four-yr degree	\$2,040/semester
	Buies Creek Pope AFB Ft. Bragg	Bachelor of Science – Computer Science	Semester, four-yr degree	\$2,040/semester
	Buies Creek Pope AFB Ft. Bragg	Bachelor of Science – Psychology	Semester, four-yr degree	\$2,040/semester
	Buies Creek	Bachelor of Science – Social Science	Semester, four-yr degree	\$2,040/semester

Vendor	Location of Training	Program Offered	Duration of Program	Tuition
	Pope AFB Ft. Bragg			
Central Michigan University	Spring Lake	Master of Arts – Education	Semester, 33 hours	\$250/credit hour
		Master of Science – Administration	Semester, 36 hours	\$250/credit hour
Central Texas College	Pope AFB	Associate Degree – Applied Management	Semester, two-yr degree	\$100/credit hour
		Associate Degree -- Arts	Semester, two-yr degree	\$100/credit hour
		Associate Degree – Business Administration	Semester, two-yr degree	\$100/credit hour
		Associate Degree – Commercial Art	Semester, two-yr degree	\$100/credit hour
		Associate Degree – Interdisciplinary Studies	Semester, two-yr degree	\$100/credit hour
		Associate Degree – Journalism/Communication	Semester, two-yr degree	\$100/credit hour
		Associate Degree – Modern Language	Semester, two-yr degree	\$100/credit hour
		Associate Degree – Radio & Technology	Semester, two-yr degree	\$100/credit hour
		Associate Degree – Social Science	Semester, two-yr degree	\$100/credit hour
		Associate of Applied Science – Radio Cable	Semester, two-yr degree	\$100/credit hour
		Associate of Applied Science –At Risk Youth	Semester, two-yr degree	\$100/credit hour
		Associate of Applied Science – Business Mgmt	Semester, two-yr degree	\$100/credit hour
		Associate of Applied Science – HVAC	Semester, two-yr degree	\$100/credit hour
		Associate of Applied Science – Criminal Justice/Law Enforcement	Semester, two-yr degree	\$100/credit hour
Central Texas College	Pope AFB	Associate of Applied Science – Agriculture Production	Semester, two-yr degree	\$100/credit hour
		Associate of Applied Science – Computer Applications	Semester, two-yr degree	\$100/credit hour
		Associate of Applied Science – Military Science	Semester, two-yr degree	\$100/credit hour
		Associate of Applied Science – Auto Collision Repair	Semester, two-yr degree	\$100/credit hour
		Associate of Applied Science – Automotive Mechanic	Semester, two-yr degree	\$100/credit hour
		Associate of Applied Science –	Semester, two-	\$100/credit hour

Vendor	Location of Training	Program Offered	Duration of Program	Tuition
		Aviation Maintenance Tech	yr degree	
		Associate of Applied Science – Chemical Dependency	Semester, two-yr degree	\$100/credit hour
		Associate of Applied Science – Communications Electronics	Semester, two-yr degree	\$100/credit hour
		Associate of Applied Science – CAD	Semester, two-yr degree	\$100/credit hour
		Associate of Applied Science – Diesel Engine Mechanics	Semester, two-yr degree	\$100/credit hour
		Associate of Applied Science – Early Childhood Education	Semester, two-yr degree	\$100/credit hour
		Associate of Applied Science – EMT	Semester, two-yr degree	\$100/credit hour
		Associate of Applied Science – Medical Lab Tech	Semester, two-yr degree	\$100/credit hour
		Associate of Applied Science – Network Systems Administrator	Semester, two-yr degree	\$100/credit hour
		Associate of Applied Science – Nursing	Semester, two-yr degree	\$100/credit hour
Central Texas College	Pope AFB	Associate of Applied Science – Nursing, Paramedic to LVN	Semester, two-yr degree	\$100/credit hour
		Associate of Applied Science – Nursing Associate Degree	Semester, two-yr degree	\$100/credit hour
		Associate of Applied Science – Office Mgmt	Semester, two-yr degree	\$100/credit hour
		Associate of Applied Science – Paralegal/Legal Assistant	Semester, two-yr degree	\$100/credit hour
		Associate of Applied Science – Restaurant and Culinary Mgmt	Semester, two-yr degree	\$100/credit hour
		Associate of Applied Science – Small Engine Mechanic	Semester, two-yr degree	\$100/credit hour
		Associate of Applied Science – Social Work Specialization	Semester, two-yr degree	\$100/credit hour
		Associate of Applied Science – Welding	Semester, two-yr degree	\$100/credit hour
		Associate of Applied Science – Applied Technology	Semester, two-yr degree	\$100/credit hour
		Associate of Applied Science – Business Mgmt	Semester, two-yr degree	\$100/credit hour
		Associate of Applied Science – Computer Science, Information Technology	Semester, two-yr degree	\$100/credit hour
		Associate of Applied Science – Criminal Justice	Semester, two-yr degree	\$100/credit hour
		Associate of Applied Science – Hospitality Mgmt, Food and	Semester, two-yr degree	\$100/credit hour

Vendor	Location of Training	Program Offered	Duration of Program	Tuition
		Beverage		
		Associate Degree – Agriculture	Semester, two-yr degree	\$100/credit hour
		Associate Degree – Biology	Semester, two-yr degree	\$100/credit hour
		Associate Degree – Engineering	Semester, two-yr degree	\$100/credit hour
		Associate Degree – Environmental Science	Semester, two-yr degree	\$100/credit hour
Central Texas College	Pope AFB	Associate Degree – Mathematics	Semester, two-yr degree	\$100/credit hour
		Associate of Applied Science in Applied Technology, Satellite Communications Systems	Semester, two-yr degree	\$100/credit hour
		Associate of Applied Science in Applied Technology, Signal Support Systems	Semester, two-yr degree	\$100/credit hour
		Associate of Applied Science in Applied Technology, Machinist	Semester, two-yr degree	\$100/credit hour
		Associate of Applied Science in Applied Technology, Marketing Mgmt	Semester, two-yr degree	\$100/credit hour
		Associate of Applied Science in Applied Technology, Sales Mgmt	Semester, two-yr degree	\$100/credit hour
		Certification of Completion in Microsoft System Administrator	Variable	\$100/credit hour
		Certificate of Completion -- Office Information Mgmt	Variable	\$100/credit hour
		Certificate of Completion – Administrative Support	Variable	\$100/credit hour
		Certificate of Completion – Administrator’s Credentials	Variable	\$100/credit hour
		Certificate of Completion – Advanced Supervision Mgmt	Variable	\$100/credit hour
		Certificate of Completion – At Risk Youth Specialization, Advanced Certificate	Variable	\$100/credit hour
		Certificate of Completion – Auto Collision Repair Tech	Variable	\$100/credit hour
		Certificate of Completion – Automotive System Specialist	Variable	\$100/credit hour
		Central Texas College	Pope AFB	Certificate of Completion – Automotive Technician
Certificate of Completion –	Variable			\$100/credit hour

Vendor	Location of Training	Program Offered	Duration of Program	Tuition
		Automotive Tune-up Specialist		
		Certificate of Completion – Aviation Science	Variable	\$100/credit hour
		Certificate of Completion – Building Trades G35	Variable	\$100/credit hour
		Certificate of Completion – Bus Mgmt, Marketing and Sales Mgmt	Variable	\$100/credit hour
		Certificate of Completion – Business Mgmt, Real Estate Sales Agent	Variable	\$100/credit hour
		Certificate of Completion – Chemical Dependency Specialization, Advanced Certificate	Variable	\$100/credit hour
		Certificate of Completion – Commercial HVAC	Variable	\$100/credit hour
		Certificate of Completion – Computer-Aided Drafting and Design	Variable	\$100/credit hour
		Certificate of Completion – Construction Trades	Variable	\$100/credit hour
		Certificate of Completion – Cosmetology	Variable	\$100/credit hour
		Certificate of Completion – Criminal Justice Studies, Corrections Specialization	Variable	\$100/credit hour
		Certificate of Completion – Culinary Arts	Variable	\$100/credit hour
		Certificate of Completion – Diesel Engine Specialist	Variable	\$100/credit hour
		Certificate of Completion – Diesel System Specialist	Variable	\$100/credit hour
		Certificate of Completion – Diesel Technician	Variable	\$100/credit hour
		Central Texas College	Pope AFB	Certificate of Completion – Early Childhood Professions
Certificate of Completion – Emergency Medical Technology, Paramedic	Variable			\$100/credit hour
Certificate of Completion -- Entrepreneurship	Variable			\$100/credit hour
Certificate of Completion – Extended Basic Peace Officer Training	Variable			\$100/credit hour
Certificate of Completion – Fire Protection	Variable			\$100/credit hour

Vendor	Location of Training	Program Offered	Duration of Program	Tuition
		Certificate of Completion – Fitter	Variable	\$100/credit hour
		Certificate of Completion – Health Information Mgmt	Variable	\$100/credit hour
		Certificate of Completion -- HVAC	Variable	\$100/credit hour
		Certificate of Completion – Information Center Specialist	Variable	\$100/credit hour
		Certificate of Completion – Institutional Food Service Operations	Variable	\$100/credit hour
		Certificate of Completion – Medical Office Specialist	Variable	\$100/credit hour
		Certificate of Completion – Medical Secretary	Variable	\$100/credit hour
		Certificate of Completion – Medical Transcription	Variable	\$100/credit hour
		Certificate of Completion – Microcomputer Specialist	Variable	\$100/credit hour
		Certificate of Completion – Microsoft System Administrator	Variable	\$100/credit hour
		Certificate of Completion – Network Specialist	Variable	\$100/credit hour
		Certificate of Completion – Office Assistant	Variable	\$100/credit hour
		Central Texas College	Pope AFB	Certificate of Completion – Office Mgmt, Level 1
Certificate of Completion – Office Mgmt, Level 2	Variable			\$100/credit hour
Certificate of Completion – Property Mgmt, Advanced	Variable			\$100/credit hour
Certificate of Completion – Radio Broadcasting	Variable			\$100/credit hour
Certificate of Completion – Residential HVAC	Variable			\$100/credit hour
Certificate of Completion – Restaurant Skills	Variable			\$100/credit hour
Certificate of Completion – Rooms Division	Variable			\$100/credit hour
Certificate of Completion – Small Engine Mechanic	Variable			\$100/credit hour
Certificate of Completion – Software Applications Specialist	Variable			\$100/credit hour
Certificate of Completion – Special Child Option	Variable			\$100/credit hour
Certificate of Completion – Supervision Mgmt	Variable			\$100/credit hour
Certificate of Completion –	Variable			\$100/credit hour

Vendor	Location of Training	Program Offered	Duration of Program	Tuition
		Tacker		
		Certificate of Completion – Television/Radio/Broadcasting	Variable	\$100/credit hour
		Certificate of Completion – Vocational Nursing	Variable	\$100/credit hour
		Certificate of Completion – Welding	Variable	\$100/credit hour
		Certificate of Completion – Welding Technology	Variable	\$100/credit hour
		Certificate of Completion – Agricultural Technology	Variable	\$100/credit hour
		Certificate of Completion – Business Mgmt (undergraduate)	Variable	\$100/credit hour
Central Texas College	Pope AFB	Certificate of Completion – Computer Electronics Technology	Variable	\$100/credit hour
		Certificate of Completion – Criminal Justice	Variable	\$100/credit hour
		Certificate of Completion – Graphics and Printing Technology	Variable	\$100/credit hour
		Certificate of Completion – Hospitality Mgmt	Variable	\$100/credit hour
ECI Technology & Business Center	Fayetteville	Introduction to Mortgage Financing	12 hours	\$75/short course
ECPI College of Technology	Spring Lake	MSCE Windows Network Engineer	9 months	\$712/short course
		MSCA Windows Network Administration	7 months	\$771.50/short course
		Network & Certification Preparation	5 weeks	\$239/short course
Embry Riddle Aeronautical University	Fort Bragg	Bachelor of Science Degree – Professional Aeronautics	Semester, 120 hours	\$152/hour
EnVisionary I-Care, Inc.	Fayetteville	A+ Certification in Computer Repair	3 months	\$1,795/course
		Cisco CCNA Certification	2 months	\$1,795/course
		Network+ Certification	3 months	\$1,795/course
		CompTIA Security+ Certification	76 hours	\$2,895/course
Fayetteville Collision Learning Center	Fayetteville	Automotive Engineering Technology	6 months	\$6,000/course
Fayetteville State University (civilian)	Fayetteville	Bachelor of Arts in Biology	Semester, four-yr degree	\$4,686/semester
		Bachelor of Arts in Business Administration	Semester, four-yr degree	\$4,686/semester

Vendor	Location of Training	Program Offered	Duration of Program	Tuition
		Bachelor of Arts in Criminal Justice	Semester, four-yr degree	\$4,686/semester
Fayetteville State University (civilian)	Fayetteville	Bachelor of Arts in Elementary Education	Semester, four-yr degree	\$4,686/semester
		Bachelor of Arts in Math	Semester, four-yr degree	\$4,686/semester
		Bachelor of Arts in Psychology	Semester, four-yr degree	\$4,686/semester
		Bachelor of Arts in Secondary Education	Semester, four-yr degree	\$4,686/semester
		Bachelor of Arts in Sociology	Semester, four-yr degree	\$4,686/semester
Fayetteville State University (military)	Fayetteville	Bachelor of Arts in History	Semester, four-yr degree	\$4,686/semester
		Bachelor of Arts in Psychology	Semester, four-yr degree	\$4,686/semester
		Bachelor of Arts in Sociology	Semester, four-yr degree	\$4,686/semester
		Bachelor of Arts in Biology	Semester, four-yr degree	\$4,686/semester
		Bachelor of Arts in Business Administration	Semester, four-yr degree	\$4,686/semester
		Bachelor of Arts in Computer Science	Semester, four-yr degree	\$4,686/semester
		Bachelor of Arts in Criminal Justice	Semester, four-yr degree	\$4,686/semester
		Bachelor of Science in Elementary Education	Semester, four-yr degree	\$4,686/semester
		Bachelor of Science in Nursing	Semester, four-yr degree	\$4,686/semester
		Bachelor of Science in Political Science, Public Administration concentration	Semester, four-yr degree	\$4,686/semester
Fayette State University – Extended Learning	Fayetteville Fort Bragg	Microsoft Certified Database Administrator	160 hours	\$4,999/course
		Microsoft Certified Systems Administrator	136 hours	\$3,999/course
		MCSE Certification	208 hours	\$4,999/course
		Medical Insurance Billing Specialist	340 hours	\$5,000/course
		Pharmacy Technician	250 hours	\$3,750/course
		Medical Transcriptionist	448 hours	\$6,999/course
		Medical Assistant	340 hours	\$5,000/course
Fayette State	Fayetteville	Project Management Certification	40 hours	\$2,499/course

Vendor	Location of Training	Program Offered	Duration of Program	Tuition
University – Extended Learning	Fort Bragg	Project Management Certification	40 hours	\$2,499/course
		Web Design Certification	240 hours	\$3,499/course
		Pharmacy Technician	250 hours	\$3,750/course
		Medical Transcriptionist	448 hours	\$6,999/course
		Medical Assistant	340 hours	\$5,000/course
Fayetteville Technical Community College	Fayetteville	Associate Degree – Accounting	Semester, two-year degree	\$42/credit hour
		Associate Degree – Advertising & Graphic Design	Semester, two-year degree	\$42/credit hour
		Associate Degree – Business Administration	Semester, two-year degree	\$42/credit hour
		Associate Degree – Computer Information Technology	Semester, two-year degree	\$42/credit hour
		Associate Degree – Computer Programming	Semester, two-year degree	\$42/credit hour
		Associate Degree – Culinary Technology	Semester, two-year degree	\$42/credit hour
		Associate Degree – General Occupational Technology	Semester, two-year degree	\$42/credit hour
		Associate Degree – Healthcare Mgmt Technology	Semester, two-year degree	\$42/credit hour
		Associate Degree – Hotel & Restaurant Mgmt	Semester, two-year degree	\$42/credit hour
		Associate Degree – Networking Technology	Semester, two-year degree	\$42/credit hour
		Associate Degree – Information Systems Security	Semester, two-year degree	\$42/credit hour
		Fayetteville Technical Community College	Fayetteville	Associate Degree – Medical Office Administration
Associate Degree – Office Systems Technology	Semester, two-year degree			\$42/credit hour
Associate Degree – Paralegal Secretary	Semester, two-year degree			\$42/credit hour
Associate Degree – Postal Service Technology	Semester, two-year degree			\$42/credit hour
Associate Degree – Web Technology	Semester, two-year degree			\$42/credit hour
Associate Degree – Fine Arts	Semester, two-year degree			\$42/credit hour
Associate Degree – Spanish	Semester, two-year degree			\$42/credit hour
Associate Degree – Biotechnology	Semester, two-year degree			\$42/credit hour
Associate Degree – Nursing	Semester, two-year degree			\$42/credit hour

Vendor	Location of Training	Program Offered	Duration of Program	Tuition
		Associate Degree – Dental Hygiene	Semester, two-year degree	\$42/credit hour
		Associate Degree – Emergency Medical Technician	Semester, two-year degree	\$42/credit hour
		Associate Degree – Nuclear Medicine Technology	Semester, two-year degree	\$42/credit hour
		Associate Degree – Physical Therapy	Semester, two-year degree	\$42/credit hour
		Associate Degree – Radiography	Semester, two-year degree	\$42/credit hour
Fayetteville Technical Community College	Fayetteville	Associate Degree – Respiratory Care	Semester, two-year degree	\$42/credit hour
		Associate Degree – Speech Pathology	Semester, two-year degree	\$42/credit hour
		Associate Degree – Surgical Technology	Semester, two-year degree	\$42/credit hour
		Associate Degree – HVAC	Semester, two-year degree	\$42/credit hour
		Associate Degree – Architectural Technology	Semester, two-year degree	\$42/credit hour
		Associate Degree – Automotive Systems Technology	Semester, two-year degree	\$42/credit hour
		Associate Degree – Building Construction Technology	Semester, two-year degree	\$42/credit hour
		Associate Degree – Criminal Justice Technology	Semester, two-year degree	\$42/credit hour
		Associate Degree – Civil Engineering Technology	Semester, two-year degree	\$42/credit hour
		Associate Degree – Early Childhood Education	Semester, two-year degree	\$42/credit hour
		Associate Degree – Electrical Technology	Semester, two-year degree	\$42/credit hour
		Associate Degree – Electronics Engineering Technology	Semester, two-year degree	\$42/credit hour
		Associate Degree – Emergency Preparedness Technology	Semester, two-year degree	\$42/credit hour
		Associate Degree – Fire Protection Technology	Semester, two-year degree	\$42/credit hour
Fayetteville Technical Community College	Fayetteville	Associate Degree – Funeral Service Education	Semester, two-year degree	\$42/credit hour
		Associate Degree – Horticulture Technology	Semester, two-year degree	\$42/credit hour
		Associate Degree – Machining Technology	Semester, two-year degree	\$42/credit hour
		Associate Degree – Surveying Technology	Semester, two-year degree	\$42/credit hour

Vendor	Location of Training	Program Offered	Duration of Program	Tuition
Henkels & McCoy	Fayetteville	Cable Installation	429 hours	\$3,500/course
InovaTech, Inc.	Fayetteville	Building Cisco Multilayer Remote Access Networks	90 hours	\$2,225/course
		Building Cisco Multilayer Switched Networks	90 hours	\$2,225/course
		Building Scalable Cisco Internetworks	90 hours	\$2,225/course
		Certified HIPAA Administrator	8 hours	\$175/course
		Certified HIPAA Security Specialist	8 hours	\$175/course
		Cisco Certified Network Associate	45 hours	\$1,175/course
		Cisco Internetwork Troubleshooting Support	90 hours	\$2,225/course
		CompTIA A+ Core Hardware	45 hours	\$1,208/course
		CompTIA A+ Operating Systems	45 hours	\$1,208/course
InovaTech, Inc.	Fayetteville	CompTIA Network Certification	45 hours	\$1,275/course
		CompTIA Security	45 hours	\$1,294/course
		Microsoft Office Suite Applications	45 hours	\$1,050/course
		PMP Series – Project Management	45 hours	\$1,112/course
		Project Management Principles & Techniques	45 hours	\$1,050/course
Lazar Group	Fayetteville	Career Exploration for Military Spouses	1 weeks	\$200/course
Methodist College	Fayetteville	Bachelor Degree – Accounting	Semester, four-yr degree	\$9,320/course
		Bachelor Degree – Applied Exercise Science	Semester, four-yr degree	\$9,320/course
		Bachelor Degree – Art	Semester, four-yr degree	\$9,320/course
		Bachelor Degree – Art Education	Semester, four-yr degree	\$9,320/course
		Bachelor Degree – Athletic Education	Semester, four-yr degree	\$9,320/course
		Bachelor Degree – Biology	Semester, four-yr degree	\$9,320/course
		Bachelor Degree – Business Administration	Semester, four-yr degree	\$9,320/course
		Bachelor Degree – Chemistry	Semester, four-yr degree	\$9,320/course
		Bachelor Degree – Computer Technology	Semester, four-yr degree	\$9,320/course
		Bachelor Degree – Elementary	Semester, four-	\$9,320/course

Vendor	Location of Training	Program Offered	Duration of Program	Tuition
		Education	yr degree	
		Bachelor Degree – English	Semester, four-yr degree	\$9,320/course
		Bachelor Degree – Financial Economics	Semester, four-yr degree	\$9,320/course
		Bachelor Degree – French	Semester, four-yr degree	\$9,320/course
		Bachelor Degree – History	Semester, four-yr degree	\$9,320/course
		Bachelor Degree – International Studies	Semester, four-yr degree	\$9,320/course
		Bachelor Degree – Justice Studies	Semester, four-yr degree	\$9,320/course
		Bachelor Degree – Marketing	Semester, four-yr degree	\$9,320/course
		Bachelor Degree – Math	Semester, four-yr degree	\$9,320/course
		Bachelor Degree – Middle School Education	Semester, four-yr degree	\$9,320/course
		Bachelor Degree – Music	Semester, four-yr degree	\$9,320/course
		Bachelor Degree – Music Education	Semester, four-yr degree	\$9,320/course
		Bachelor Degree – Music Theory	Semester, four-yr degree	\$9,320/course
		Methodist College	Fayetteville	Bachelor Degree – Occupational Environmental Mgmt
Bachelor Degree – Organizational Communications	Semester, four-yr degree			\$9,320/course
Bachelor Degree – Physician Assistant	Semester, four-yr degree			\$9,320/course
Bachelor Degree – Political Science	Semester, four-yr degree			\$9,320/course
Bachelor Degree – Psychology	Semester, four-yr degree			\$9,320/course
Bachelor Degree – Religion	Semester, four-yr degree			\$9,320/course
Bachelor Degree – Social Work	Semester, four-yr degree			\$9,320/course
Bachelor Degree – Sociology	Semester, four-yr degree			\$9,320/course
Bachelor Degree – Spanish	Semester, four-yr degree			\$9,320/course
Bachelor Degree – Special Education	Semester, four-yr degree			\$9,320/course
Bachelor Degree – Sports	Semester, four-			\$9,320/course

Vendor	Location of Training	Program Offered	Duration of Program	Tuition
		Management	yr degree	
		Bachelor Degree – Theater	Semester, four-yr degree	\$9,320/course
Montgomery’s Hairstyling Academy	Fayetteville	Cosmetology	1 year	\$6,000/course
NR Enterprises	Fayetteville	MIS Systems and Business Processes	3 days	\$120/course
Professional Administrative Services Simplified, Ltd.	Fayetteville	Advanced Medical Terminology	6 weeks	\$200/course
		CPT/IC-9 Coding	6 weeks	\$200/course
		Medical Billing	6 weeks	\$200/course
		Medical Keyboarding	6 weeks	\$175/course
Professional Employment Assessment & Career Enhancement	Fayetteville	Job Readiness Skills	30 hours	\$350/course
		Job Retention Skills	4 hours	\$30/course
Q Learning Center	Fayetteville	Cultural Competency Communications	290 hours	Unknown
Rayford’s Computer Services	Fayetteville	MCSE A+ Training	208 hours	\$4,800/course
Regency Beauty & Barber Academy	Spring Lake	Hair Styling	10 months	\$4,600/course
		Cosmetology	6 months	\$3,400/course
		Nail Technology	1 month	\$1,200/course
S-Lyon Nurse Competency	Fayetteville	First Aid, HIPAA, Client Confidentiality	8 hours	Unknown
TARTT Technical Institute	Fayetteville	Certificate in Vinyl Sign-making	4 weeks	\$1,999/course
		C-Tech Network Cabling	4 weeks	\$1,500/course
The CMA Group	Fayetteville	Entrepreneurship Training	4 days	\$1,000/course
The Job Network, Inc.	Fayetteville	Job Seeking Skills	up to 4 weeks	\$250 to \$850
Thomas Health Care Institute, Inc.	Fayetteville	Phlebotomy Technician	10 weeks	\$650/hour
Troy University	Virtual	Bachelor Degree	Semester, four-yr degree	\$150/hour
		Associate Degree -- Business	Semester, two-yr degree	\$150/hour
		Associate Degree – Criminal Justice	Semester, two-yr degree	\$150/hour
		Associate Degree – Psychology	Semester, two-yr degree	\$150/hour
		Associate Degree – Social Science	Semester, two-yr degree	\$150/hour
		Associate Degree – Physical	Semester, two-	\$150/hour

Vendor	Location of Training	Program Offered	Duration of Program	Tuition
		Fitness	yr degree	
		Associate Degree – Political Science	Semester, two-yr degree	\$150/hour
		Associate Degree – Sociology	Semester, two-yr degree	\$150/hour
		Bachelor of Applied Science – Resources & Technology Mgt.	Semester, four-yr degree	\$150/hour
		Bachelor of Science -- Business	Semester, four-yr degree	\$150/hour
		Bachelor of Science – Criminal Justice	Semester, four-yr degree	\$150/hour
Troy University	Virtual	Bachelor of Science – Psychology	Semester, four-yr degree	\$150/hour
		Bachelor of Science – Social Science	Semester, four-yr degree	\$150/hour
		Bachelor of Science – Physical Fitness	Semester, four-yr degree	\$150/hour
		Bachelor of Science – Political Science	Semester, four-yr degree	\$150/hour
		Bachelor of Science – Sociology	Semester, four-yr degree	\$150/hour
		Master of Science in Public Administration	Semester, four-yr degree	\$150/hour
		Master of Business Administration	Semester, four-yr degree	\$150/hour
		Master of Science in Management	Semester, four-yr degree	\$150/hour
		Master of Science in Criminal Justice	Semester, four-yr degree	\$150/hour
		Master of Science in Human Resource Management	Semester, four-yr degree	\$150/hour
		Master of Science in International Relations	Semester, four-yr degree	\$150/hour
		Master of Science in Education	Semester, four-yr degree	\$150/hour
		Master of Science in Sport and Physical Fitness Mgmt	Semester, four-yr degree	\$150/hour
University of North Carolina at Pembroke (military)	Fort Bragg	Bachelor of Arts – Criminal Justice	Semester, four-yr degree	\$3,94/semester
		Bachelor of Science – Nursing	Semester, four-yr degree	
		Bachelor of Science – Business Administration	Semester, four-yr degree	
		Master of Public Administration	Semester, graduate degree	
		Master of Arts in Teaching	Semester,	

Vendor	Location of Training	Program Offered	Duration of Program	Tuition
			graduate degree	
		Master of Business Administration	Semester, professional degree	
Webster University	Pope AFB	Masters Degree – Counseling	48 semester hours	\$270/hour
		Masters Degree – HR Management	36 semester hours	\$270/hour
		Masters Degree – Mgmt & Leadership	36 semester hours	\$270/hour
		Masters Degree – Business Administration	48 semester hours	\$270/hour
		Masters Degree – Public Administration	36 semester hours	\$270/hour
Wisdom Keys Learning Center	Fayetteville	Study Skills	2 hours	\$80/course

**Ft. Bragg Region
Mid Carolina WDB (Harnett, Lee, and Sampson Counties)**

Vendor	Location of Training	Program Offered	Duration of Program	Tuition
Alliance Tractor Trailer Training Center	Benson	Commercial Driver’s License (CDL)	200 hours	\$3,390/course
Body Therapy Institute	Siler City	Massage Therapy diploma	8 to 12 months	\$8,900/course
Campbell University	Buies Creek Ft. Bragg	Associate’s Degree	Semester, two-yr degree	\$2,040/semester
	Buies Creek Ft. Bragg	Bachelor Degree – Criminal Justice	Semester, four-yr degree	\$2,040/semester
		Bachelor Degree – Health Science	Semester, four-yr degree	\$2,040/semester
		Bachelor Degree – Business Administration, Accounting	Semester, four-yr degree	\$2,040/semester
		Bachelor Degree – Business Administration, Computer Information Systems	Semester, four-yr degree	\$2,040/semester
		Bachelor of Science – Computer Science	Semester, four-yr degree	\$2,040/semester
		Bachelor of Science – Psychology	Semester, four-yr degree	\$2,040/semester
		Bachelor of Science – Social Science	Semester, four-yr degree	\$2,040/semester
Central Carolina Community College	Sanford	Associate Degree – Accounting	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Nursing	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Pre-Business Administration	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Pre-Business Education	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Pre-Criminal Justice	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Education	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Pre-English/English Education	Semester, two-yr degree	\$42/credit hour
Central Carolina Community College	Sanford	Associate Degree – Pre-history	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Pre-Nursing	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Pre-Physical Education	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Pre-Political	Semester, two-yr	\$42/credit hour

Vendor	Location of Training	Program Offered	Duration of Program	Tuition
		Science	degree	
		Associate Degree – Pre-Psychology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Pre-Social Studies Education	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Pre-Sociology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Pre-Speech	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Pre-Biology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Pre-Chemistry	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Pre-Engineering	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Pre-Mathematics	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Automotive Restoration	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Automotive Systems Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree -- Cosmetology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Law Enforcement Training	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Bioprocess Manufacturing Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Broadcasting & Production Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Business Administration	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Computer Engineering Technology	Semester, two-yr degree	\$42/credit hour
		Central Carolina Community College	Sanford	Associate Degree – Computer Information Technology
Associate Degree – Computer Programming	Semester, two-yr degree			\$42/credit hour
Associate Degree – Criminal Justice Technology	Semester, two-yr degree			\$42/credit hour
Associate Degree – Dental Assisting	Semester, two-yr degree			\$42/credit hour
Associate Degree – Dental Hygiene	Semester, two-yr degree			\$42/credit hour
Associate Degree – Early Childhood Education	Semester, two-yr degree			\$42/credit hour

Vendor	Location of Training	Program Offered	Duration of Program	Tuition
		Associate Degree – Electrical Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Esthetics	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Facility Maintenance	Semester, two-yr degree	\$42/credit hour
		Associate Degree – General Occupational Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Human Services Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Industrial Hydraulics	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Industrial Systems	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Information Systems	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Internet Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Laser and Photonics Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Machining Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Marketing & Retailing	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Mechanical Drafting Technology	Semester, two-yr degree	\$42/credit hour
		Central Carolina Community College	Sanford	Associate Degree –Mechanical Engineering Technology
		Associate Degree – Medical Assistant	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Medical Billing	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Medical Transcriptionist	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Motorcycle Mechanics	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Network Administration	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Office Systems Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Paralegal Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Practical Nursing	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Professional Arts (Sculpture)	Semester, two-yr degree	\$42/credit hour

Vendor	Location of Training	Program Offered	Duration of Program	Tuition
		Associate Degree – Sustainable Agriculture	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Telecommunications	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Veterinary Medical Technology	Semester, two-yr degree	\$42/credit hour
Community Education & Programs	Lillington	Early Care and Education	6 months	\$750/course
Health Science Technology	Dunn	Medical Terminology	3 weeks	\$279/course
Interstate Driving Academy	Dunn	Commercial Driver’s License (CDL)	160 hours	\$2,990/course
Progress Works, LLC	Lumberton	Introduction to Computers	30 days	\$150/course
Sampson Community College	Clinton	Associate Degree – Accounting	Semester, two-yr degree	\$42/credit hour
		Associate Degree – HVAC	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Nursing	Semester, two-yr degree	\$42/credit hour
Sampson Community College	Clinton	Associate Degree – Business Administration	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Law Enforcement Training	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Computer Information Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Cosmetology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Criminal Justice Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Early Childhood Education	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Horticulture Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Industrial Systems Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Information Systems	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Livestock & Poultry Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Network Administration	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Office Systems Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Practice	Semester, two-yr	\$42/credit hour

Vendor	Location of Training	Program Offered	Duration of Program	Tuition
		Nursing	degree	
		Associate Degree – Support Technologies	Semester, two-yr degree	\$42/credit hour
		Associate Degree -- Welding	Semester, two-yr degree	\$42/credit hour
Sanford-Lee School of Barbering	Sanford	Barbering	1,528 hours	\$3,500/course
Top Trade Barber School	Roseboro	Barbering	10.5 months	\$5,500/course

Ft. Bragg Region
Lumber River WDB (Bladen, Robeson, Scotland, and Hoke Counties)

Vendor	Location of Training	Program Offered	Duration of Program	Tuition
Bladen Community College	Dublin	Associate Degree – Arts	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Automotive Systems Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Business Administration	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Law Enforcement Training	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Carpentry	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Computer Information Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Computer Programming	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Cosmetology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Criminal Justice Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Early Childhood Education	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Electrical Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Environmental Science Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – General Occupational Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Industrial Systems Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Information Systems Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Livestock & Poultry Technology	Semester, two-yr degree	\$42/credit hour
Bladen Community College	Dublin	Associate Degree – Medical Assistant Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Nursing Assistant	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Office Systems Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Pharmacy Technician	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Real Estate	Semester, two-yr degree	\$42/credit hour

Vendor	Location of Training	Program Offered	Duration of Program	Tuition
		Associate Degree – Speech	Semester, two-yr degree	\$42/credit hour
		Associate Degree -- Welding	Semester, two-yr degree	\$42/credit hour
Lumberton Truck Driving Academy	Lumberton	Commercial Driving License (CDL)	160 hours	\$2,840/course
Progress Works, LLC	Lumberton	Introduction to Computers	30 days	\$150/course
Robeson Community College	Lumberton	Associate Degree – Accounting	Semester, two-yr degree	\$42/credit hour
		Associate Degree –HVAC	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Nursing	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Business Administration	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Criminal Justice Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Law Enforcement Training	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Carpentry	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Computer Information Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Cosmetology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Culinary Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Early Childhood Education	Semester, two-yr degree	\$42/credit hour
Robeson Community College	Lumberton	Associate Degree – Electrical Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – General Occupational Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Industry Systems Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree –Nursing Assistant	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Office Systems Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Respiratory Care	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Support Technologies	Semester, two-yr degree	\$42/credit hour
SmartChoice Services	Lumberton	CompTIA A+ Certification	80 hours	\$1,495/course
		CompTIA Network+ Certification	40 hours	\$1,395/course

Vendor	Location of Training	Program Offered	Duration of Program	Tuition
		Microsoft Certified Systems Administrator	6 weeks	\$5,500/course
		Microsoft Certified Systems Engineer	12 weeks	\$9,175/course
University of North Carolina at Pembroke	Pembroke	Bachelor Degree – Computer Science	Semester, four-yr degree	\$1,394/semester
		Bachelor Degree – Business Administration	Semester, four-yr degree	\$1,394/semester
		Bachelor Degree – Early Childhood Education	Semester, four-yr degree	\$1,394/semester
		Bachelor Degree – Sociology	Semester, four-yr degree	\$1,394/semester
		Bachelor Degree – Special Education	Semester, four-yr degree	\$1,394/semester
		Bachelor Degree – Communications	Semester, four-yr degree	\$1,394/semester

**Ft. Bragg Region
Pee Dee WDB (Montgomery, Moore, and Richmond Counties)**

Vendor	Location of Training	Program Offered	Duration of Program	Tuition
JZ Barber College	Southern Pines	Barbering/Cosmetology	9 months	\$4,100/course
Millwright & Crane Inspection School	West End	Electrical Construction & Wiring	180 hours	\$2,300/course
		Welding/Piping	180 hours	\$2,960/course
Montgomery Community College	Troy	Associate Degree – Accounting	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Arts	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Autobody repair	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Law Enforcement Training	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Business Administration	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Computer Information Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Criminal Justice Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Dental Assistant	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Early Childhood Education	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Electrical Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Forest Mgmt Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Gunsmithing	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Human Service Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Information Systems Technology	Semester, two-yr degree	\$42/credit hour
Associate Degree – Medical Assistant Technology	Semester, two-yr degree	\$42/credit hour		
Montgomery Community College	Troy	Associate Degree – Office Systems Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Practice Nursing	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Taxidermy	Semester, two-yr degree	\$42/credit hour
Richmond Community College	Hamlet	Associate Degree – Accounting	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Nursing	Semester, two-yr	\$42/credit

Vendor	Location of Training	Program Offered	Duration of Program	Tuition
			degree	hour
		Associate Degree – Business Administration	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Computer Information Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Computer Engineering Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Criminal Justice Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Early Childhood Education	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Electrical Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Foodservice Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – General Occupational Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Healthcare Management Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Human Services Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Industrial Systems Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Information Systems Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Machining Technology	Semester, two-yr degree	\$42/credit hour
Richmond Community College	Hamlet	Associate Degree – Manufacturing Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Mechanical Engineering Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Medical Assistant Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Office Systems Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Practical Nursing	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Support Technologies	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Web Design & Technologies	Semester, two-yr degree	\$42/credit hour
Sandhills Community College	Pinehurst	Associate Degree – Accounting	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Architectural Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Arts	Semester, two-yr	\$42/credit

Vendor	Location of Training	Program Offered	Duration of Program	Tuition
			degree	hour
		Associate Degree – Education	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Business Administration	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Nursing	Semester, two-yr degree	\$42/credit hour
		Associate Degree – English	Semester, two-yr degree	\$42/credit hour
		Associate Degree – English Education	Semester, two-yr degree	\$42/credit hour
		Associate Degree – History	Semester, two-yr degree	\$42/credit hour
		Associate Degree –Physical Education	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Political Science	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Psychology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Sociology	Semester, two-yr degree	\$42/credit hour
Sandhills Community College	Pinehurst	Associate Degree – Speech Communications	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Fine Arts/Music	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Biology/Biology Education	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Computer Science	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Engineering	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Mathematics	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Autobody Repair	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Automotive Systems Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Baking/Pastry Arts	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Law Enforcement Training	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Business Administration	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Civil Engineering	Semester, two-yr degree	\$42/credit hour

Vendor	Location of Training	Program Offered	Duration of Program	Tuition
		Associate Degree – Computer Engineering Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Computer Information Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Computer Programming	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Cosmetology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Criminal Justice Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Culinary Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Early Childhood Education	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Electrical Technology	Semester, two-yr degree	\$42/credit hour
Sandhills Community College	Pinehurst	Associate Degree – Emergency Medical Science	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Entrepreneurship	Semester, two-yr degree	\$42/credit hour
		Associate Degree – General Occupational Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Hotel and Restaurant Management	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Human Services Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Information Systems Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Landscape Gardening	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Manufacturing Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Medical Laboratory Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Medical Office Administration	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Nursing Assistant	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Office Systems Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Paralegal Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Physical Fitness Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Polysomnography	Semester, two-yr degree	\$42/credit hour

Vendor	Location of Training	Program Offered	Duration of Program	Tuition
		Associate Degree – Practical Nursing	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Radiography	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Resort & Spa Mgmt	Semester, two-yr degree	\$42/credit hour
Sandhills Community College	Pinehurst	Associate Degree – Respiratory Care	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Speech Pathology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Support Technologies	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Surgical Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Surveying Technology	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Therapeutic Massage	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Turf-grass Management	Semester, two-yr degree	\$42/credit hour
		Associate Degree – Web Design & Technologies	Semester, two-yr degree	\$42/credit hour

H. Appendix C: Information on Top Jobs

ACCOUNTANTS AND AUDITORS: NORTH CAROLINA

Occupation Description

Examine, analyze, and interpret accounting records for the purpose of giving advice or preparing statements. Install or advise on systems of recording costs or other financial and budgetary data.

State and National Wages

- High is the wage at which 90% of workers earn less and 10% earn more.
- Middle is the wage at which 50% of workers earn less and 50% earn more.
- Low is the wage at which 10% of workers earn less and 90% earn more.

Location	Pay Period	2007				
		10%	25%	Median	75%	90%
United States	Hourly	\$17.10	\$21.27	\$27.43	\$36.07	\$47.22
	Yearly	\$35,600	\$44,200	\$57,100	\$75,000	\$98,200
North Carolina	Hourly	\$17.11	\$20.89	\$26.00	\$32.98	\$43.34
	Yearly	\$35,600	\$43,500	\$54,100	\$68,600	\$90,100

State and National Trends

United States	Employment		Percent Change	Job Openings ¹
	2006	2016		
Accountants and auditors	1,274,400	1,499,900	+ 18 %	44,980
North Carolina	Employment		Percent Change	Job Openings ¹
	2004	2014		
Accountants and auditors	23,640	28,830	+ 22 %	970

¹Job Openings refers to the average annual job openings due to growth and net replacement.

Note: The data for the State Employment Trends and the National Employment Trends are not directly comparable. The projections period for state data is 2004-2014, while the projections period for national data is 2006-2016.

Knowledge, Skills, and Abilities

Accountants and Auditors are grouped into the following occupations for which the most important knowledge, skills, and abilities (KSAs) are listed.

- [Accountants](#)
- [Auditors](#)

Accountants

Knowledge:

- **Mathematics** - Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.
- **Economics and Accounting** - Knowledge of economic and accounting principles and practices, the financial markets, banking and the analysis and reporting of financial data.
- **English Language** - Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
- **Customer and Personal Service** - Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
- **Computers and Electronics** - Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.

Skills:

- **Mathematics** - Using mathematics to solve problems.
- **Active Listening** - Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Critical Thinking** - Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
- **Monitoring** - Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.
- **Judgment and Decision Making** - Considering the relative costs and benefits of potential actions to choose the most appropriate one.

Abilities:

- **Problem Sensitivity** - The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
- **Deductive Reasoning** - The ability to apply general rules to specific problems to produce answers that make sense.
- **Information Ordering** - The ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations).
- **Mathematical Reasoning** - The ability to choose the right mathematical methods or formulas to solve a problem.
- **Oral Expression** - The ability to communicate information and ideas in speaking so others will understand.
- **Written Expression** - The ability to communicate information and ideas in writing so others will understand.

Auditors

Knowledge:

- **Economics and Accounting** - Knowledge of economic and accounting principles and practices, the financial markets, banking and the analysis and reporting of financial data.
- **English Language** - Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
- **Customer and Personal Service** - Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
- **Mathematics** - Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.
- **Computers and Electronics** - Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.

Skills:

- **Time Management** - Managing one's own time and the time of others.
- **Mathematics** - Using mathematics to solve problems.
- **Active Learning** - Understanding the implications of new information for both current and future problem-solving and decision-making.
- **Critical Thinking** - Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
- **Reading Comprehension** - Understanding written sentences and paragraphs in work related documents.

Abilities:

- **Written Comprehension** - The ability to read and understand information and ideas presented in writing.
- **Inductive Reasoning** - The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events).
- **Near Vision** - The ability to see details at close range (within a few feet of the observer).
- **Oral Comprehension** - The ability to listen to and understand information and ideas presented through spoken words and sentences.
- **Problem Sensitivity** - The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.

Education and Training

Occupation: Accountants and Auditors
Most Common Educational/Training Level: Bachelor's degree
Related Instructional Programs:

- Accounting
- Accounting and Business/Management
- Accounting and Computer Science
- Accounting and Finance
- Auditing
- Taxation

Distribution of Educational Attainment

Occupation	Percent of employees aged 25 to 44 in the occupation whose highest level of educational attainment is-		
	High School or Less	Some College	Bachelor Degree or More
Accountants and auditors	3.7%	17.1%	79.1%
Financial Specialists	11.6%	26.3%	62.1%
Business and Financial Operations	15.5%	29.6%	54.9%
Total, All Occupations	38.8%	29.1%	32.1%

BUSINESS OPERATIONS SPECIALISTS, ALL OTHER: NORTH CAROLINA

Occupation Description

All business operations specialists not listed separately.

State and National Wages

- High is the wage at which 90% of workers earn less and 10% earn more.
- Middle is the wage at which 50% of workers earn less and 50% earn more.
- Low is the wage at which 10% of workers earn less and 90% earn more.

Location	Pay Period	2007				
		10%	25%	Median	75%	90%
United States	Hourly	\$14.73	\$19.98	\$27.45	\$37.08	\$48.09
	Yearly	\$30,600	\$41,600	\$57,100	\$77,100	\$100,000
North Carolina	Hourly	\$15.05	\$19.00	\$24.67	\$33.99	\$45.38
	Yearly	\$31,300	\$39,500	\$51,300	\$70,700	\$94,400

State and National Trends

United States	Employment		Percent Change	Job Openings ¹
	2006	2016		
Business operation specialists, all other	1,043,100	1,261,400	+ 21 %	32,990
North Carolina	Employment		Percent Change	Job Openings ¹
	2004	2014		
Business operation specialists, all other	20,890	26,850	+ 29 %	950

¹Job Openings refers to the average annual job openings due to growth and net replacement.

Note: The data for the State Employment Trends and the National Employment Trends are not directly comparable. The projections period for state data is 2004-2014, while the projections period for national data is 2006-2016.

Knowledge, Skills, and Abilities

There is no information about knowledge, skills and abilities. This may occur because data has not been collected or because this is a composite occupation (e.g., "All Other").

Education and Training

Occupation: Business Operations Specialists, All Other
Most Common Educational/Training Level: Bachelor's degree

Related Instructional Programs: Business, Management, Marketing, and Related Support Services, Other

Distribution of Educational Attainment

Occupation	Percent of employees aged 25 to 44 in the occupation whose highest level of educational attainment is-		
	High School or Less	Some College	Bachelor Degree or More
Business operation specialists, all other	18.2%	33.2%	48.7%
Business Operations Specialists	18.5%	32.2%	49.4%
Business and Financial Operations	15.5%	29.6%	54.9%
Total, All Occupations	38.8%	29.1%	32.1%

COMPUTER AND INFORMATION SYSTEMS MANAGERS: NORTH CAROLINA

Occupation Description

Plan, direct, or coordinate activities in such fields as electronic data processing, information systems, systems analysis, and computer programming. Exclude "Computer Specialists".

State and National Wages

- High is the wage at which 90% of workers earn less and 10% earn more.
- Middle is the wage at which 50% of workers earn less and 50% earn more.
- Low is the wage at which 10% of workers earn less and 90% earn more.

Location	Pay Period	2007				
		10%	25%	Median	75%	90%
United States	Hourly	\$31.62	\$40.76	\$51.96	\$65.79	\$70.01+
	Yearly	\$65,800	\$84,800	\$108,100	\$136,800	\$145,600+
North Carolina	Hourly	\$32.15	\$41.24	\$51.29	\$63.19	\$70.01+
	Yearly	\$66,900	\$85,800	\$106,700	\$131,400	\$145,600+

State and National Trends

United States	Employment		Percent Change	Job Openings ¹
	2006	2016		
Computer and information systems managers	263,700	306,800	+ 16 %	8,570
North Carolina	Employment		Percent Change	Job Openings ¹
	2004	2014		
Computer and information systems managers	8,090	9,970	+ 23 %	340

¹Job Openings refers to the average annual job openings due to growth and net replacement.

Note: The data for the State Employment Trends and the National Employment Trends are not directly comparable. The projections period for state data is 2004-2014, while the projections period for national data is 2006-2016.

Knowledge, Skills, and Abilities

The most important knowledge, skills, and abilities (KSAs) are listed for **Computer and Information Systems Managers**.

Knowledge:

- **Computers and Electronics** - Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.
- **Administration and Management** - Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.
- **Mathematics** - Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.

Workforce and Higher Education

- **English Language** - Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
- **Design** - Knowledge of design techniques, tools, and principles involved in production of precision technical plans, blueprints, drawings, and models.

Skills:

- **Reading Comprehension** - Understanding written sentences and paragraphs in work related documents.
- **Critical Thinking** - Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
- **Active Listening** - Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Judgment and Decision Making** - Considering the relative costs and benefits of potential actions to choose the most appropriate one.
- **Active Learning** - Understanding the implications of new information for both current and future problem-solving and decision-making.

Abilities:

- **Oral Expression** - The ability to communicate information and ideas in speaking so others will understand.
- **Problem Sensitivity** - The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
- **Oral Comprehension** - The ability to listen to and understand information and ideas presented through spoken words and sentences.
- **Written Comprehension** - The ability to read and understand information and ideas presented in writing.
- **Deductive Reasoning** - The ability to apply general rules to specific problems to produce answers that make sense.
- **Near Vision** - The ability to see details at close range (within a few feet of the observer).
- **Speech Clarity** - The ability to speak clearly so others can understand you.

Education and Training

Occupation: Computer and Information Systems Managers

Most Common Educational/Training Level: Bachelor's or higher degree, plus work experience

Related Instructional Programs:

- Computer Science
- Computer and Information Sciences, General
- Information Resources Management/CIO Training
- Information Science/Studies
- Knowledge Management
- Management Information Systems, General
- Operations Management and Supervision
- System Administration/Administrator

Distribution of Educational Attainment

Occupation	Percent of employees aged 25 to 44 in the occupation whose highest level of educational attainment is-		
	High School or Less	Some College	Bachelor Degree or More
Computer and information systems managers	4.6%	23%	72.5%
Operations Specialties Managers	18%	29.8%	52.2%
Management	17.6%	26.2%	56.2%
Total, All Occupations	38.8%	29.1%	32.1%

COMPUTER SOFTWARE ENGINEERS, APPLICATIONS: NORTH CAROLINA

Occupation Description

Develop, create, and modify general computer applications software or specialized utility programs. Analyze user needs and develop software solutions. Design software or customize software for client use with the aim of optimizing operational efficiency. May analyze and design databases within an application area, working individually or coordinating database development as part of a team. Exclude "Computer Hardware Engineers".

State and National Wages

High is the wage at which 90% of workers earn less and 10% earn more.

- Middle is the wage at which 50% of workers earn less and 50% earn more.
- Low is the wage at which 10% of workers earn less and 90% earn more.

Location	Pay Period	2007				
		10%	25%	Median	75%	90%
United States	Hourly	\$25.04	\$31.64	\$39.97	\$49.38	\$60.22
	Yearly	\$52,100	\$65,800	\$83,100	\$102,700	\$125,300
North Carolina	Hourly	\$24.71	\$32.37	\$40.63	\$48.85	\$58.85
	Yearly	\$51,400	\$67,300	\$84,500	\$101,600	\$122,400

State and National Trends

United States	Employment		Percent Change	Job Openings ¹
	2006	2016		
Computer software engineers, applications	506,800	732,500	+ 45 %	29,960
North Carolina	Employment		Percent Change	Job Openings ¹
	2004	2014		
Computer software engineers, applications	8,990	12,870	+ 43 %	480

¹Job Openings refers to the average annual job openings due to growth and net replacement.

Knowledge, Skills, and Abilities

The most important knowledge, skills, and abilities (KSAs) are listed for **Computer Software Engineers, Applications**.

Knowledge:

- **Computers and Electronics** - Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.

Workforce and Higher Education

- **Engineering and Technology** - Knowledge of the practical application of engineering science and technology. This includes applying principles, techniques, procedures, and equipment to the design and production of various goods and services.
- **Telecommunications** - Knowledge of transmission, broadcasting, switching, control, and operation of telecommunications systems.
- **Mathematics** - Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.
- **English Language** - Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.

Skills:

- **Programming** - Writing computer programs for various purposes.
- **Critical Thinking** - Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
- **Complex Problem Solving** - Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.
- **Troubleshooting** - Determining causes of operating errors and deciding what to do about it.
- **Active Learning** - Understanding the implications of new information for both current and future problem-solving and decision-making.

Abilities:

- **Deductive Reasoning** - The ability to apply general rules to specific problems to produce answers that make sense.
- **Oral Comprehension** - The ability to listen to and understand information and ideas presented through spoken words and sentences.
- **Inductive Reasoning** - The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events).
- **Near Vision** - The ability to see details at close range (within a few feet of the observer).
- **Problem Sensitivity** - The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.

Education and Training

Occupation: Computer Software Engineers, Applications
Most Common Educational/Training Level: Bachelor's degree
Related Instructional Programs:

- Artificial Intelligence and Robotics
- Bioinformatics
- Computer Engineering Technologies/Technicians, Other
- Computer Engineering, General
- Computer Science
- Computer Software Engineering
- Information Technology
- Medical Illustration and Informatics, Other
- Medical Informatics

Distribution of Educational Attainment

Occupation	Percent of employees aged 25 to 44 in the occupation whose highest level of educational attainment is-		
	High School or Less	Some College	Bachelor Degree or More
Computer software engineers, applications	2.2%	13%	84.8%
Computer Specialists	6.5%	26.6%	66.9%
Computer and Mathematical	4.5%	19.6%	75.9%
Total, All Occupations	38.8%	29.1%	32.1%

COMPUTER SOFTWARE ENGINEERS, SYSTEMS SOFTWARE: NORTH CAROLINA

Occupation Description

Research, design, develop, and test operating systems-level software, compilers, and network distribution software for medical, industrial, military, communications, aerospace, business, scientific, and general computing applications. Set operational specifications and formulate and analyze software requirements. Apply principles and techniques of computer science, engineering, and mathematical analysis.

State and National Wages

- High is the wage at which 90% of workers earn less and 10% earn more.
- Middle is the wage at which 50% of workers earn less and 50% earn more.
- Low is the wage at which 10% of workers earn less and 90% earn more.

Location	Pay Period	2007				
		10%	25%	Median	75%	90%
United States	Hourly	\$26.86	\$33.99	\$42.82	\$52.56	\$62.91
	Yearly	\$55,900	\$70,700	\$89,100	\$109,300	\$130,900
North Carolina	Hourly	\$27.92	\$34.00	\$42.35	\$51.67	\$62.05
	Yearly	\$58,100	\$70,700	\$88,100	\$107,500	\$129,100

State and National Trends

United States	Employment		Percent Change	Job Openings ¹
	2006	2016		
Computer software engineers, systems software	350,000	448,700	+ 28 %	14,970
North Carolina	Employment		Percent Change	Job Openings ¹
	2004	2014		
Computer software engineers, systems software	9,490	12,190	+ 28 %	360

¹Job Openings refers to the average annual job openings due to growth and net replacement.

Knowledge, Skills, and Abilities

The most important knowledge, skills, and abilities (KSAs) are listed for **Computer Software Engineers, Systems Software**.

Knowledge:

- **Computers and Electronics** - Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.
- **Mathematics** - Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.
- **English Language** - Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
- **Engineering and Technology** - Knowledge of the practical application of engineering science and technology. This includes applying principles, techniques, procedures, and equipment to the design and production of various goods and services.
- **Design** - Knowledge of design techniques, tools, and principles involved in production of precision technical plans, blueprints, drawings, and

models.

Skills:

- **Complex Problem Solving** - Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.
- **Technology Design** - Generating or adapting equipment and technology to serve user needs.
- **Troubleshooting** - Determining causes of operating errors and deciding what to do about it.
- **Critical Thinking** - Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
- **Active Learning** - Understanding the implications of new information for both current and future problem-solving and decision-making.

Abilities:

- **Deductive Reasoning** - The ability to apply general rules to specific problems to produce answers that make sense.
- **Inductive Reasoning** - The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events).
- **Information Ordering** - The ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations).
- **Oral Comprehension** - The ability to listen to and understand information and ideas presented through spoken words and sentences.
- **Oral Expression** - The ability to communicate information and ideas in speaking so others will understand.
- **Problem Sensitivity** - The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.

Education and Training

Occupation: Computer Software Engineers, Systems Software
Most Common Educational/Training Level: Bachelor's degree
Related Instructional Programs:

- Artificial Intelligence and Robotics
- Computer Engineering Technologies/Technicians, Other
- Computer Engineering, General
- Computer Science
- Information Science/Studies
- Information Technology

Distribution of Educational Attainment

Occupation	Percent of employees aged 25 to 44 in the occupation whose highest level of educational attainment is-		
	High School or Less	Some College	Bachelor Degree or More
Computer software engineers, systems software	2.2%	13%	84.8%
Computer Specialists	6.5%	26.6%	66.9%
Computer and Mathematical	4.5%	19.6%	75.9%
Total, All Occupations	38.8%	29.1%	32.1%

COMPUTER SYSTEMS ANALYSTS: NORTH CAROLINA

Occupation Description

Analyze science, engineering, business, and all other data processing problems for application to electronic data processing systems. Analyze user requirements, procedures, and problems to automate or improve existing systems and review computer system capabilities, workflow, and scheduling limitations. May analyze or recommend commercially available software. Exclude persons working primarily as "Engineers", "Mathematicians", or "Scientists". May supervise computer programmers.

State and National Wages

- High is the wage at which 90% of workers earn less and 10% earn more.
- Middle is the wage at which 50% of workers earn less and 50% earn more.
- Low is the wage at which 10% of workers earn less and 90% earn more.

Location	Pay Period	2007				
		10%	25%	Median	75%	90%
United States	Hourly	\$21.12	\$27.20	\$35.14	\$44.43	\$54.65
	Yearly	\$43,900	\$56,600	\$73,100	\$92,400	\$113,700
North Carolina	Hourly	\$21.45	\$27.03	\$34.85	\$43.95	\$53.21
	Yearly	\$44,600	\$56,200	\$72,500	\$91,400	\$110,700

State and National Trends

United States	Employment		Percent Change	Job Openings ¹
	2006	2016		
Computer systems analysts	503,600	649,600	+ 29 %	27,950
North Carolina	Employment		Percent Change	Job Openings ¹
	2004	2014		
Computer systems analysts	15,910	20,100	+ 26 %	600

¹Job Openings refers to the average annual job openings due to growth and net replacement.

Knowledge, Skills, and Abilities

The most important knowledge, skills, and abilities (KSAs) are listed for **Computer Systems Analysts**.

Knowledge:

- **Computers and Electronics** - Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.
- **English Language** - Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
- **Customer and Personal Service** - Knowledge of principles and processes for providing customer and personal services. This includes customer

Workforce and Higher Education

needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.

- **Design** - Knowledge of design techniques, tools, and principles involved in production of precision technical plans, blueprints, drawings, and models.
- **Telecommunications** - Knowledge of transmission, broadcasting, switching, control, and operation of telecommunications systems.

Skills:

- **Active Learning** - Understanding the implications of new information for both current and future problem-solving and decision-making.
- **Reading Comprehension** - Understanding written sentences and paragraphs in work related documents.
- **Complex Problem Solving** - Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.
- **Critical Thinking** - Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
- **Active Listening** - Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

Abilities:

- **Oral Comprehension** - The ability to listen to and understand information and ideas presented through spoken words and sentences.
- **Problem Sensitivity** - The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
- **Deductive Reasoning** - The ability to apply general rules to specific problems to produce answers that make sense.
- **Inductive Reasoning** - The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events).
- **Written Comprehension** - The ability to read and understand information and ideas presented in writing.

Education and Training

Occupation: Computer Systems Analysts

Most Common Educational/Training Level: Bachelor's degree

Related Instructional Programs:

- Computer Systems Analysis/Analyst
- Computer and Information Sciences, General
- Information Technology
- Web/Multimedia Management and Webmaster

Distribution of Educational Attainment

Occupation	Percent of employees aged 25 to 44 in the occupation whose highest level of educational attainment is-		
	High School or Less	Some College	Bachelor Degree or More
Computer systems analysts	7%	24.6%	68.4%
Computer Specialists	6.5%	26.6%	66.9%
Computer and Mathematical	4.5%	19.6%	75.9%
Total, All Occupations	38.8%	29.1%	32.1%

DENTAL HYGIENISTS: NORTH CAROLINA

Occupation Description

Clean teeth and examine oral areas, head, and neck for signs of oral disease. May educate patients on oral hygiene, take and develop X-rays, or apply fluoride or sealants.

State and National Wages

- High is the wage at which 90% of workers earn less and 10% earn more.
- Middle is the wage at which 50% of workers earn less and 50% earn more.
- Low is the wage at which 10% of workers earn less and 90% earn more.

Location	Pay Period	2007				
		10%	25%	Median	75%	90%
United States	Hourly	\$20.42	\$25.62	\$31.12	\$36.96	\$43.07
	Yearly	\$42,500	\$53,300	\$64,700	\$76,900	\$89,600
North Carolina	Hourly	\$21.18	\$24.99	\$29.15	\$33.99	\$37.55
	Yearly	\$44,100	\$52,000	\$60,600	\$70,700	\$78,100

State and National Trends

United States	Employment		Percent Change	Job Openings ¹
	2006	2016		
Dental hygienists	167,000	217,200	+ 30 %	8,210
North Carolina	Employment		Percent Change	Job Openings ¹
	2004	2014		
Dental hygienists	5,220	7,650	+ 47 %	290

Job Openings refers to the average annual job openings due to growth and net replacement.

Note: The data for the State Employment Trends and the National Employment Trends are not directly comparable. The projections period for state data is 2004-2014, while the projections period for national data is 2006-2016.

Knowledge, Skills, and Abilities

The most important knowledge, skills, and abilities (KSAs) are listed for **Dental Hygienists**.

Knowledge:

- **Medicine and Dentistry** - Knowledge of the information and techniques needed to diagnose and treat human injuries, diseases, and deformities. This includes symptoms, treatment alternatives, drug properties and interactions, and preventive health-care measures.
- **Customer and Personal Service** - Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
- **Biology** - Knowledge of plant and animal organisms, their tissues, cells, functions, interdependencies, and interactions with each other and the environment.

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- **Education and Training** - Knowledge of principles and methods for curriculum and training design, teaching and instruction for individuals and groups, and the measurement of training effects.
- **English Language** - Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.

Skills:

- **Active Listening** - Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Speaking** - Talking to others to convey information effectively.
- **Reading Comprehension** - Understanding written sentences and paragraphs in work related documents.
- **Active Learning** - Understanding the implications of new information for both current and future problem-solving and decision-making.
- **Time Management** - Managing one's own time and the time of others.

Abilities:

- **Finger Dexterity** - The ability to make precisely coordinated movements of the fingers of one or both hands to grasp, manipulate, or assemble very small objects.
- **Near Vision** - The ability to see details at close range (within a few feet of the observer).
- **Manual Dexterity** - The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate, or assemble objects.
- **Arm-Hand Steadiness** - The ability to keep your hand and arm steady while moving your arm or while holding your arm and hand in one position.
- **Problem Sensitivity** - The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.

Education and Training

Occupation: Dental Hygienists

Most Common Educational/Training Level: Associate degree

Related Instructional Programs: Dental Hygiene/Hygienist

Distribution of Educational Attainment

Occupation	Percent of employees aged 25 to 44 in the occupation whose highest level of educational attainment is-		
	High School or Less	Some College	Bachelor Degree or More
Dental hygienists	2.9%	63.8%	33.3%
Health Technologists and Technicians	20.1%	57.1%	22.7%
Healthcare Practitioners and Technical	9.9%	31%	59.1%
Total, All Occupations	38.8%	29.1%	32.1%

DIRECTORS, RELIGIOUS ACTIVITIES AND EDUCATION: NORTH CAROLINA

Occupation Description

Direct and coordinate activities of a denominational group to meet religious needs of students. Plan, direct, or coordinate church school programs designed to promote religious education among church membership. May provide counseling and guidance relative to marital, health, financial, and religious problems.

State and National Wages

- High is the wage at which 90% of workers earn less and 10% earn more.
- Middle is the wage at which 50% of workers earn less and 50% earn more.
- Low is the wage at which 10% of workers earn less and 90% earn more.

Location	Pay Period	2007				
		10%	25%	Median	75%	90%
United States	Hourly	\$9.54	\$12.88	\$17.00	\$23.00	\$31.67
	Yearly	\$19,800	\$26,800	\$35,400	\$47,800	\$65,900
North Carolina	Hourly	\$13.98	\$18.21	\$28.04	\$37.32	\$49.53
	Yearly	\$29,100	\$37,900	\$58,300	\$77,600	\$103,000

State and National Trends

United States	Employment		Percent Change	Job Openings ¹
	2006	2016		
Directors, religious activities and education	99,200	118,700	+ 20 %	4,230
North Carolina	Employment		Percent Change	Job Openings ¹
	2004	2014		
Directors, religious activities and education	4,250	5,490	+ 29 %	170

¹Job Openings refers to the average annual job openings due to growth and net replacement.

Note: The data for the State Employment Trends and the National Employment Trends are not directly comparable. The projections period for state data is 2004-2014, while the projections period for national data is 2006-2016.

Knowledge, Skills, and Abilities

The most important knowledge, skills, and abilities (KSAs) are listed for **Directors, Religious Activities and Education**.

Knowledge:

- **Administration and Management** - Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.
- **Education and Training** - Knowledge of principles and methods for curriculum and training design, teaching and instruction for individuals and groups, and the measurement of training effects.

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- **English Language** - Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
- **Customer and Personal Service** - Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
- **Clerical** - Knowledge of administrative and clerical procedures and systems such as word processing, managing files and records, stenography and transcription, designing forms, and other office procedures and terminology.
- **Personnel and Human Resources** - Knowledge of principles and procedures for personnel recruitment, selection, training, compensation and benefits, labor relations and negotiation, and personnel information systems.

Skills:

- **Speaking** - Talking to others to convey information effectively.
- **Management of Personnel Resources** - Motivating, developing, and directing people as they work, identifying the best people for the job.
- **Active Listening** - Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Coordination** - Adjusting actions in relation to others' actions.
- **Monitoring** - Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.

Abilities:

- **Oral Comprehension** - The ability to listen to and understand information and ideas presented through spoken words and sentences.
- **Oral Expression** - The ability to communicate information and ideas in speaking so others will understand.
- **Speech Clarity** - The ability to speak clearly so others can understand you.
- **Speech Recognition** - The ability to identify and understand the speech of another person.
- **Written Comprehension** - The ability to read and understand information and ideas presented in writing.

Education and Training

Occupation: Directors, Religious Activities and Education
Most Common Educational/Training Level: Bachelor's degree
Related Instructional Programs:

- Bible/Biblical Studies
- Missions/Missionary Studies and Missiology
- Religious Education
- Youth Ministry

Distribution of Educational Attainment

Occupation	Percent of employees aged 25 to 44 in the occupation whose highest level of educational attainment is-		
	High School or Less	Some College	Bachelor Degree or More
Directors, religious activities and education	9.7%	26%	64.4%
Religious Workers	11.3%	23.8%	64.9%
Community and Social Services	10.5%	20.5%	69%
Total, All Occupations	38.8%	29.1%	32.1%

EDUCATION ADMINISTRATORS, POSTSECONDARY: NORTH CAROLINA

Occupation Description

Plan, direct, or coordinate research, instructional, student administration and services, and other educational activities at postsecondary institutions, including universities, colleges, and junior and community colleges.

State and National Wages

- High is the wage at which 90% of workers earn less and 10% earn more.
- Middle is the wage at which 50% of workers earn less and 50% earn more.
- Low is the wage at which 10% of workers earn less and 90% earn more.

Location	Pay Period	2007				
		10%	25%	Median	75%	90%
United States	Hourly	\$20.15	\$26.41	\$36.43	\$50.63	\$70.01+
	Yearly	\$41,900	\$54,900	\$75,800	\$105,300	\$145,600+
North Carolina	Hourly	\$19.09	\$23.73	\$32.17	\$45.42	\$60.72
	Yearly	\$39,700	\$49,400	\$66,900	\$94,500	\$126,300

State and National Trends

United States	Employment		Percent Change	Job Openings ¹
	2006	2016		
Education administrators, postsecondary	131,300	150,000	+ 14 %	5,530
North Carolina	Employment		Percent Change	Job Openings ¹
	2004	2014		
Education administrators, postsecondary	5,140	6,630	+ 29 %	280

¹Job Openings refers to the average annual job openings due to growth and net replacement.

Note: The data for the State Employment Trends and the National Employment Trends are not directly comparable. The projections period for state data is 2004-2014, while the projections period for national data is 2006-2016.

Knowledge, Skills, and Abilities

The most important knowledge, skills, and abilities (KSAs) are listed for **Education Administrators, Postsecondary**.

Knowledge:

- **Administration and Management** - Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.
- **English Language** - Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
- **Education and Training** - Knowledge of principles and methods for curriculum and training design, teaching and instruction for individuals and

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groups, and the measurement of training effects.

- **Customer and Personal Service** - Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
- **Personnel and Human Resources** - Knowledge of principles and procedures for personnel recruitment, selection, training, compensation and benefits, labor relations and negotiation, and personnel information systems.

Skills:

- **Active Listening** - Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Reading Comprehension** - Understanding written sentences and paragraphs in work related documents.
- **Critical Thinking** - Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
- **Writing** - Communicating effectively in writing as appropriate for the needs of the audience.
- **Management of Personnel Resources** - Motivating, developing, and directing people as they work, identifying the best people for the job.
- **Speaking** - Talking to others to convey information effectively.

Abilities:

- **Oral Comprehension** - The ability to listen to and understand information and ideas presented through spoken words and sentences.
- **Oral Expression** - The ability to communicate information and ideas in speaking so others will understand.
- **Problem Sensitivity** - The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
- **Speech Clarity** - The ability to speak clearly so others can understand you.
- **Speech Recognition** - The ability to identify and understand the speech of another person.
- **Written Comprehension** - The ability to read and understand information and ideas presented in writing.

Education and Training

Occupation: Education Administrators, Postsecondary

Most Common Educational/Training Level: Bachelor's or higher degree, plus work experience

Related Instructional Programs:

- Community College Education
- Educational Administration and Supervision, Other
- Educational Leadership and Administration, General
- Educational, Instructional, and Curriculum Supervision
- Higher Education/Higher Education Administration

Distribution of Educational Attainment

Occupation	Percent of employees aged 25 to 44 in the occupation whose highest level of educational attainment is-		
	High School or Less	Some College	Bachelor Degree or More
Education administrators, postsecondary	6.4%	15.2%	78.4%
Other Management Occupations	19.8%	26.1%	54.1%
Management	17.6%	26.2%	56.2%
Total, All Occupations	38.8%	29.1%	32.1%

GENERAL AND OPERATIONS MANAGERS: NORTH CAROLINA

Occupation Description

Plan, direct, or coordinate the operations of companies or public and private sector organizations. Duties and responsibilities include formulating policies, managing daily operations, and planning the use of materials and human resources, but are too diverse and general in nature to be classified in any one functional area of management or administration, such as personnel, purchasing, or administrative services. Include owners and managers who head small business establishments whose duties are primarily managerial. Exclude "First-Line Supervisors/Managers of Retail Sales Workers" and workers in other small establishments.

State and National Wages

- High is the wage at which 90% of workers earn less and 10% earn more.
- Middle is the wage at which 50% of workers earn less and 50% earn more.
- Low is the wage at which 10% of workers earn less and 90% earn more.

Location	Pay Period	2007				
		10%	25%	Median	75%	90%
United States	Hourly	\$21.15	\$29.26	\$42.64	\$64.22	\$70.01+
	Yearly	\$44,000	\$60,900	\$88,700	\$133,600	\$145,600+
North Carolina	Hourly	\$23.64	\$31.59	\$45.05	\$67.41	\$70.01+
	Yearly	\$49,200	\$65,700	\$93,700	\$140,200	\$145,600+

State and National Trends

United States	Employment		Percent Change	Job Openings ¹
	2006	2016		
General and operations managers	1,720,500	1,746,300	+ 2 %	44,070
North Carolina	Employment		Percent Change	Job Openings ¹
	2004	2014		
General and operations managers	54,850	65,940	+ 20 %	2,140

¹Job Openings refers to the average annual job openings due to growth and net replacement.

Note: The data for the State Employment Trends and the National Employment Trends are not directly comparable. The projections period for state data is 2004-2014, while the projections period for national data is 2006-2016.

Knowledge, Skills, and Abilities

The most important knowledge, skills, and abilities (KSAs) are listed for **General and Operations Managers**.

Knowledge:

- **Administration and Management** - Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.

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- **Customer and Personal Service** - Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
- **English Language** - Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
- **Law and Government** - Knowledge of laws, legal codes, court procedures, precedents, government regulations, executive orders, agency rules, and the democratic political process.
- **Personnel and Human Resources** - Knowledge of principles and procedures for personnel recruitment, selection, training, compensation and benefits, labor relations and negotiation, and personnel information systems.

Skills:

- **Active Listening** - Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Management of Personnel Resources** - Motivating, developing, and directing people as they work, identifying the best people for the job.
- **Time Management** - Managing one's own time and the time of others.
- **Monitoring** - Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.
- **Judgment and Decision Making** - Considering the relative costs and benefits of potential actions to choose the most appropriate one.

Abilities:

- **Oral Expression** - The ability to communicate information and ideas in speaking so others will understand.
- **Oral Comprehension** - The ability to listen to and understand information and ideas presented through spoken words and sentences.
- **Problem Sensitivity** - The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
- **Speech Clarity** - The ability to speak clearly so others can understand you.
- **Speech Recognition** - The ability to identify and understand the speech of another person.
- **Written Comprehension** - The ability to read and understand information and ideas presented in writing.

Education and Training

Occupation: General and Operations Managers

Most Common Educational/Training Level: Bachelor's or higher degree, plus work experience

Related Instructional Programs:

- Business Administration and Management, General
- Business/Commerce, General
- Entrepreneurship/Entrepreneurial Studies
- International Business/Trade/Commerce
- Public Administration

Distribution of Educational Attainment

Occupation	Percent of employees aged 25 to 44 in the occupation whose highest level of educational attainment is-		
	High School or Less	Some College	Bachelor Degree or More
General and operations managers	19.6%	32.5%	48%
Top Executives	15.2%	25.4%	59.4%
Management	17.6%	26.2%	56.2%
Total, All Occupations	38.8%	29.1%	32.1%

HUMAN RESOURCES, TRAINING, AND LABOR RELATIONS SPECIALISTS, ALL OTHER: NORTH CAROLINA

Occupation Description

All human resources, training, and labor relations specialists not listed separately.

State and National Wages

- High is the wage at which 90% of workers earn less and 10% earn more.
- Middle is the wage at which 50% of workers earn less and 50% earn more.
- Low is the wage at which 10% of workers earn less and 90% earn more.

Location	Pay Period	2007				
		10%	25%	Median	75%	90%
United States	Hourly	\$13.15	\$19.54	\$26.10	\$34.50	\$43.84
	Yearly	\$27,400	\$40,600	\$54,300	\$71,800	\$91,200
North Carolina	Hourly	\$16.71	\$20.30	\$24.59	\$31.13	\$38.75
	Yearly	\$34,800	\$42,200	\$51,100	\$64,800	\$80,600

State and National Trends

United States	Employment		Percent Change	Job Openings ¹
	2006	2016		
Human resources, training, and labor relations specialists, all other	214,400	249,700	+ 16 %	8,150
North Carolina	Employment		Percent Change	Job Openings ¹
	2004	2014		
Human resources, training, and labor relations specialists, all other	2,370	3,050	+ 28 %	110

¹Job Openings refers to the average annual job openings due to growth and net replacement.

Note: The data for the State Employment Trends and the National Employment Trends are not directly comparable. The projections period for state data is 2004-2014, while the projections period for national data is 2006-2016.

Knowledge, Skills, and Abilities

There is no information about knowledge, skills and abilities. This may occur because data has not been collected or because this is a composite occupation (e.g., "All Other").

Education and Training

Occupation: Human Resources, Training, and Labor Relations Specialists, All Other
Most Common Educational/Training Level: Bachelor's degree

Related Instructional Programs:

- Human Resources Management and Services, Other
- Human Resources Management/Personnel Administration, General
- Labor and Industrial Relations
- Organizational Behavior Studies

Distribution of Educational Attainment

Occupation	Percent of employees aged 25 to 44 in the occupation whose highest level of educational attainment is-		
	High School or Less	Some College	Bachelor Degree or More
Human resources, training, and labor relations specialists, all other	14.1%	30.4%	55.5%
Business Operations Specialists	18.5%	32.2%	49.4%
Business and Financial Operations	15.5%	29.6%	54.9%
Total, All Occupations	38.8%	29.1%	32.1%

LAWYERS: NORTH CAROLINA

Occupation Description

Represent clients in criminal and civil litigation and other legal proceedings, draw up legal documents, and manage or advise clients on legal transactions. May specialize in a single area or may practice broadly in many areas of law.

State and National Wages

- High is the wage at which 90% of workers earn less and 10% earn more.
- Middle is the wage at which 50% of workers earn less and 50% earn more.
- Low is the wage at which 10% of workers earn less and 90% earn more.

Location	Pay Period	2007				
		10%	25%	Median	75%	90%
United States	Hourly	\$25.14	\$34.64	\$51.02	\$70.01+	\$70.01+
	Yearly	\$52,300	\$72,100	\$106,100	\$145,600+	\$145,600+
North Carolina	Hourly	\$21.33	\$28.58	\$42.45	\$64.83	\$70.01+
	Yearly	\$44,400	\$59,400	\$88,300	\$134,800	\$145,600+

State and National Trends

United States	Employment		Percent Change	Job Openings ¹
	2006	2016		
Lawyers	760,700	844,200	+ 11 %	22,780
North Carolina	Employment		Percent Change	Job Openings ¹
	2004	2014		
Lawyers	12,390	15,060	+ 22 %	430

¹ Job Openings refers to the average annual job openings due to growth and net replacement.

Note: The data for the State Employment Trends and the National Employment Trends are not directly comparable. The projections period for state data is 2004-2014, while the projections period for national data is 2006-2016.

Knowledge, Skills, and Abilities

The most important knowledge, skills, and abilities (KSAs) are listed for **Lawyers**.

Knowledge:

- **Law and Government** - Knowledge of laws, legal codes, court procedures, precedents, government regulations, executive orders, agency rules, and the democratic political process.
- **English Language** - Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
- **Customer and Personal Service** - Knowledge of principles and processes for providing customer and personal services. This includes customer

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needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.

- **Administration and Management** - Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.
- **Computers and Electronics** - Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.

Skills:

- **Reading Comprehension** - Understanding written sentences and paragraphs in work related documents.
- **Judgment and Decision Making** - Considering the relative costs and benefits of potential actions to choose the most appropriate one.
- **Writing** - Communicating effectively in writing as appropriate for the needs of the audience.
- **Critical Thinking** - Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
- **Active Listening** - Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

Abilities:

- **Oral Expression** - The ability to communicate information and ideas in speaking so others will understand.
- **Problem Sensitivity** - The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
- **Speech Clarity** - The ability to speak clearly so others can understand you.
- **Inductive Reasoning** - The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events).
- **Oral Comprehension** - The ability to listen to and understand information and ideas presented through spoken words and sentences.
- **Written Comprehension** - The ability to read and understand information and ideas presented in writing.

Education and Training

Occupation: Lawyers

Most Common Educational/Training Level: First professional degree

Related Instructional Programs:

- Advanced Legal Research/Studies, General (LL.M., M.C.L., M.L.I., M.S.L., J.S.D./S.J.D.)
- American/U.S. Law/Legal Studies/Jurisprudence (LL.M., M.C.J., J.S.D./S.J.D.)
- Banking, Corporate, Finance, and Securities Law (LL.M., J.S.D./S.J.D.)
- Canadian Law/Legal Studies/Jurisprudence (LL.M., M.C.J., J.S.D./S.J.D.)
- Comparative Law (LL.M., M.C.L., J.S.D./S.J.D.)
- Energy, Environment, and Natural Resources Law (LL.M., M.S., J.S.D./S.J.D.)
- Health Law (LL.M., M.J., J.S.D./S.J.D.)
- International Business, Trade, and Tax Law (LL.M., J.S.D./S.J.D.)
- International Law and Legal Studies (LL.M., J.S.D./S.J.D.)
- Law (LL.B., J.D.)
- Legal Professions and Studies, Other
- Legal Research and Advanced Professional Studies, Other
- Programs for Foreign Lawyers (LL.M., M.C.L.)
- Tax Law/Taxation (LL.M., J.S.D./S.J.D.)

Distribution of Educational Attainment

Occupation	Percent of employees aged 25 to 44 in the occupation whose highest level of educational attainment is-		
	High School or Less	Some College	Bachelor Degree or More
Lawyers	0.2%	0.7%	99.1%
Lawyers, Judges, and Related Workers	0.2%	0.7%	99.1%
Legal	11.5%	22.5%	66%
Total, All Occupations	38.8%	29.1%	32.1%

MANAGEMENT ANALYSTS: NORTH CAROLINA

Occupation Description

Conduct organizational studies and evaluations, design systems and procedures, conduct work simplifications and measurement studies, and prepare operations and procedures manuals to assist management in operating more efficiently and effectively. Include program analysts and management consultants. Exclude "Computer Systems Analysts" and "Operations Research Analysts".

State and National Wages

- High is the wage at which 90% of workers earn less and 10% earn more.
- Middle is the wage at which 50% of workers earn less and 50% earn more.
- Low is the wage at which 10% of workers earn less and 90% earn more.

Location	Pay Period	2007				
		10%	25%	Median	75%	90%
United States	Hourly	\$19.64	\$25.54	\$34.21	\$46.34	\$63.40
	Yearly	\$40,900	\$53,100	\$71,200	\$96,400	\$131,900
North Carolina	Hourly	\$20.28	\$25.84	\$33.92	\$46.10	\$59.15
	Yearly	\$42,200	\$53,700	\$70,600	\$95,900	\$123,000

State and National Trends

United States	Employment		Percent Change	Job Openings ¹
	2006	2016		
Management analysts	678,200	826,800	+ 22 %	26,440
North Carolina	Employment		Percent Change	Job Openings ¹
	2004	2014		
Management analysts	9,280	11,070	+ 19 %	310

¹Job Openings refers to the average annual job openings due to growth and net replacement.

Note: The data for the State Employment Trends and the National Employment Trends are not directly comparable. The projections period for state data is 2004-2014, while the projections period for national data is 2006-2016.

Knowledge, Skills, and Abilities

The most important knowledge, skills, and abilities (KSAs) are listed for **Management Analysts**.

Knowledge:

- **Customer and Personal Service** - Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.

Workforce and Higher Education

- **Administration and Management** - Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.
- **English Language** - Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
- **Personnel and Human Resources** - Knowledge of principles and procedures for personnel recruitment, selection, training, compensation and benefits, labor relations and negotiation, and personnel information systems.
- **Computers and Electronics** - Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.

Skills:

- **Critical Thinking** - Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
- **Judgment and Decision Making** - Considering the relative costs and benefits of potential actions to choose the most appropriate one.
- **Coordination** - Adjusting actions in relation to others' actions.
- **Active Listening** - Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Time Management** - Managing one's own time and the time of others.

Abilities:

- **Oral Comprehension** - The ability to listen to and understand information and ideas presented through spoken words and sentences.
- **Oral Expression** - The ability to communicate information and ideas in speaking so others will understand.
- **Written Comprehension** - The ability to read and understand information and ideas presented in writing.
- **Inductive Reasoning** - The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events).
- **Written Expression** - The ability to communicate information and ideas in writing so others will understand.

Education and Training

Occupation: Management Analysts

Most Common Educational/Training Level: Bachelor's or higher degree, plus work experience

Related Instructional Programs:

- Business Administration and Management, General
- Business/Commerce, General

Distribution of Educational Attainment

Occupation	Percent of employees aged 25 to 44 in the occupation whose highest level of educational attainment is-		
	High School or Less	Some College	Bachelor Degree or More
Management analysts	6.6%	15.9%	77.5%
Business Operations Specialists	18.5%	32.2%	49.4%
Business and Financial Operations	15.5%	29.6%	54.9%
Total, All Occupations	38.8%	29.1%	32.1%

MEDICAL SCIENTISTS, EXCEPT EPIDEMIOLOGISTS: NORTH CAROLINA

Occupation Description

Conduct research dealing with the understanding of human diseases and the improvement of human health. Engage in clinical investigation or other research, production, technical writing, or related activities. Include medical scientists such as physicians, dentists, public health specialists, pharmacologists, and medical pathologists. Exclude practitioners who provide medical or dental care or dispense drugs.

State and National Wages

- High is the wage at which 90% of workers earn less and 10% earn more.
- Middle is the wage at which 50% of workers earn less and 50% earn more.
- Low is the wage at which 10% of workers earn less and 90% earn more.

Location	Pay Period	2007				
		10%	25%	Median	75%	90%
United States	Hourly	\$17.66	\$22.37	\$30.87	\$44.21	\$59.85
	Yearly	\$36,700	\$46,500	\$64,200	\$92,000	\$124,500
North Carolina	Hourly	\$19.95	\$26.48	\$35.06	\$47.74	\$64.06
	Yearly	\$41,500	\$55,100	\$72,900	\$99,300	\$133,200

State and National Trends

United States	Employment		Percent Change	Job Openings ¹
	2006	2016		
Medical scientists, except epidemiologists	87,400	105,000	+ 20 %	4,470
North Carolina	Employment		Percent Change	Job Openings ¹
	2004	2014		
Medical scientists, except epidemiologists	2,510	3,490	+ 39 %	140

¹Job Openings refers to the average annual job openings due to growth and net replacement.

Note: The data for the State Employment Trends and the National Employment Trends are not directly comparable. The projections period for state data is 2004-2014, while the projections period for national data is 2006-2016.

Knowledge, Skills, and Abilities

The most important knowledge, skills, and abilities (KSAs) are listed for **Medical Scientists, Except Epidemiologists**.

Knowledge:

- **Biology** - Knowledge of plant and animal organisms, their tissues, cells, functions, interdependencies, and interactions with each other and the environment.
- **English Language** - Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.

Workforce and Higher Education

- **Mathematics** - Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.
- **Medicine and Dentistry** - Knowledge of the information and techniques needed to diagnose and treat human injuries, diseases, and deformities. This includes symptoms, treatment alternatives, drug properties and interactions, and preventive health-care measures.
- **Chemistry** - Knowledge of the chemical composition, structure, and properties of substances and of the chemical processes and transformations that they undergo. This includes uses of chemicals and their interactions, danger signs, production techniques, and disposal methods.

Skills:

- **Reading Comprehension** - Understanding written sentences and paragraphs in work related documents.
- **Science** - Using scientific rules and methods to solve problems.
- **Active Listening** - Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Active Learning** - Understanding the implications of new information for both current and future problem-solving and decision-making.
- **Writing** - Communicating effectively in writing as appropriate for the needs of the audience.

Abilities:

- **Oral Comprehension** - The ability to listen to and understand information and ideas presented through spoken words and sentences.
- **Inductive Reasoning** - The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events).
- **Written Comprehension** - The ability to read and understand information and ideas presented in writing.
- **Oral Expression** - The ability to communicate information and ideas in speaking so others will understand.
- **Deductive Reasoning** - The ability to apply general rules to specific problems to produce answers that make sense.

Education and Training

Occupation: Medical Scientists, Except Epidemiologists

Most Common Educational/Training Level: Doctoral degree

Related Instructional Programs:

- Anatomy
- Biochemistry
- Biomedical Sciences, General
- Biophysics
- Biostatistics
- Cardiovascular Science
- Cell Physiology
- Cell/Cellular Biology and Histology
- Endocrinology
- Environmental Toxicology
- Epidemiology
- Exercise Physiology
- Human/Medical Genetics
- Immunology
- Medical Microbiology and Bacteriology
- Medical Scientist (MS, PhD)
- Molecular Biology
- Molecular Pharmacology
- Molecular Physiology
- Molecular Toxicology
- Neurobiology and Neurophysiology
- Neuropharmacology
- Oncology and Cancer Biology
- Pathology/Experimental Pathology
- Pharmacology
- Pharmacology and Toxicology
- Pharmacology and Toxicology, Other
- Physiology, General
- Physiology, Pathology, and Related Sciences, Other
- Reproductive Biology
- Toxicology

- Vision Science/Physiological Optics

Distribution of Educational Attainment

Occupation	Percent of employees aged 25 to 44 in the occupation whose highest level of educational attainment is-		
	High School or Less	Some College	Bachelor Degree or More
Medical scientists, except epidemiologists	0%	0%	99.3%
Life Scientists	0%	8.6%	91.4%
Life, Physical, and Social Science	5.6%	12.7%	81.7%
Total, All Occupations	38.8%	29.1%	32.1%

MEDICAL AND HEALTH SERVICES MANAGERS: NORTH CAROLINA

Occupation Description

Plan, direct, or coordinate medicine and health services in hospitals, clinics, managed care organizations, public health agencies, or similar organizations.

State and National Wages

- High is the wage at which 90% of workers earn less and 10% earn more.
- Middle is the wage at which 50% of workers earn less and 50% earn more.
- Low is the wage at which 10% of workers earn less and 90% earn more.

Location	Pay Period	2007				
		10%	25%	Median	75%	90%
United States	Hourly	\$22.53	\$28.80	\$37.01	\$47.92	\$63.74
	Yearly	\$46,900	\$59,900	\$77,000	\$99,700	\$132,600
North Carolina	Hourly	\$25.72	\$29.28	\$35.70	\$45.28	\$59.86
	Yearly	\$53,500	\$60,900	\$74,300	\$94,200	\$124,500

State and National Trends

United States	Employment		Percent Change	Job Openings ¹
	2006	2016		
Medical and health services managers	261,900	304,900	+ 16 %	9,190
North Carolina	Employment		Percent Change	Job Openings ¹
	2004	2014		
Medical and health services managers	7,260	9,210	+ 27 %	340

¹Job Openings refers to the average annual job openings due to growth and net replacement.

Note: The data for the State Employment Trends and the National Employment Trends are not directly comparable. The projections period for state data is 2004-2014, while the projections period for national data is 2006-2016.

Knowledge, Skills, and Abilities

The most important knowledge, skills, and abilities (KSAs) are listed for **Medical and Health Services Managers**.

Knowledge:

- **Customer and Personal Service** - Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
- **Administration and Management** - Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.
- **Personnel and Human Resources** - Knowledge of principles and procedures for personnel recruitment, selection, training, compensation and benefits, labor relations and negotiation, and personnel information systems.

Workforce and Higher Education

- **English Language** - Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
- **Medicine and Dentistry** - Knowledge of the information and techniques needed to diagnose and treat human injuries, diseases, and deformities. This includes symptoms, treatment alternatives, drug properties and interactions, and preventive health-care measures.
- **Public Safety and Security** - Knowledge of relevant equipment, policies, procedures, and strategies to promote effective local, state, or national security operations for the protection of people, data, property, and institutions.

Skills:

- **Active Listening** - Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Reading Comprehension** - Understanding written sentences and paragraphs in work related documents.
- **Critical Thinking** - Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
- **Speaking** - Talking to others to convey information effectively.
- **Monitoring** - Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.

Abilities:

- **Oral Comprehension** - The ability to listen to and understand information and ideas presented through spoken words and sentences.
- **Deductive Reasoning** - The ability to apply general rules to specific problems to produce answers that make sense.
- **Inductive Reasoning** - The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events).
- **Oral Expression** - The ability to communicate information and ideas in speaking so others will understand.
- **Problem Sensitivity** - The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
- **Written Comprehension** - The ability to read and understand information and ideas presented in writing.

Education and Training

Occupation: Medical and Health Services Managers

Most Common Educational/Training Level: Bachelor's or higher degree, plus work experience

Related Instructional Programs:

- Community Health and Preventive Medicine
- Health Information/Medical Records Administration/Administrator
- Health Services Administration
- Health Unit Manager/Ward Supervisor
- Health and Medical Administrative Services, Other
- Health/Health Care Administration/Management
- Hospital and Health Care Facilities Administration/Management
- Medical Staff Services Technology/Technician
- Nursing Administration (MSN, MS, PhD)
- Public Health, General (MPH, DPH)

Distribution of Educational Attainment

Occupation	Percent of employees aged 25 to 44 in the occupation whose highest level of educational attainment is-		
	High School or Less	Some College	Bachelor Degree or More
Medical and health services managers	11.4%	32%	56.6%
Other Management Occupations	19.8%	26.1%	54.1%
Management	17.6%	26.2%	56.2%
Total, All Occupations	38.8%	29.1%	32.1%

NETWORK AND COMPUTER SYSTEMS ADMINISTRATORS: NORTH CAROLINA

Occupation Description

Install, configure, and support an organization's local area network (LAN), wide area network (WAN), and Internet system or a segment of a network system. Maintain network hardware and software. Monitor network to ensure network availability to all system users and perform necessary maintenance to support network availability. May supervise other network support and client server specialists and plan, coordinate, and implement network security measures. Exclude "Computer Support Specialists".

State and National Wages

- High is the wage at which 90% of workers earn less and 10% earn more.
- Middle is the wage at which 50% of workers earn less and 50% earn more.
- Low is the wage at which 10% of workers earn less and 90% earn more.

Location	Pay Period	2007				
		10%	25%	Median	75%	90%
United States	Hourly	\$19.21	\$24.24	\$31.10	\$39.51	\$48.81
	Yearly	\$40,000	\$50,400	\$64,700	\$82,200	\$101,500
North Carolina	Hourly	\$18.83	\$23.23	\$29.39	\$37.35	\$46.55
	Yearly	\$39,200	\$48,300	\$61,100	\$77,700	\$96,800

State and National Trends

United States	Employment		Percent Change	Job Openings ¹
	2006	2016		
Network and computer systems administrators	309,200	392,500	+ 27 %	15,390
North Carolina	Employment		Percent Change	Job Openings ¹
	2004	2014		
Network and computer systems administrators	7,340	10,270	+ 40 %	370

¹Job Openings refers to the average annual job openings due to growth and net replacement.

Knowledge, Skills, and Abilities

Network and Computer Systems Administrators are grouped into the following occupations for which the most important knowledge, skills, and abilities (KSAs) are listed.

Computer Security Specialists

Knowledge:

- **Computers and Electronics** - Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.
- **Customer and Personal Service** - Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
- **Administration and Management** - Knowledge of business and management principles involved in strategic planning, resource allocation,

human resources modeling, leadership technique, production methods, and coordination of people and resources.

- **Engineering and Technology** - Knowledge of the practical application of engineering science and technology. This includes applying principles, techniques, procedures, and equipment to the design and production of various goods and services.
- **Telecommunications** - Knowledge of transmission, broadcasting, switching, control, and operation of telecommunications systems.

Skills:

- **Active Learning** - Understanding the implications of new information for both current and future problem-solving and decision-making.
- **Reading Comprehension** - Understanding written sentences and paragraphs in work related documents.
- **Systems Evaluation** - Identifying measures or indicators of system performance and the actions needed to improve or correct performance, relative to the goals of the system.
- **Critical Thinking** - Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
- **Active Listening** - Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

Abilities:

- **Inductive Reasoning** - The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events).
- **Problem Sensitivity** - The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
- **Near Vision** - The ability to see details at close range (within a few feet of the observer).
- **Oral Comprehension** - The ability to listen to and understand information and ideas presented through spoken words and sentences.
- **Deductive Reasoning** - The ability to apply general rules to specific problems to produce answers that make sense.
- **Oral Expression** - The ability to communicate information and ideas in speaking so others will understand.
- **Written Comprehension** - The ability to read and understand information and ideas presented in writing.

Network and Computer Systems Administrators

Knowledge:

- **Computers and Electronics** - Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.
- **Customer and Personal Service** - Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
- **Telecommunications** - Knowledge of transmission, broadcasting, switching, control, and operation of telecommunications systems.
- **English Language** - Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
- **Education and Training** - Knowledge of principles and methods for curriculum and training design, teaching and instruction for individuals and groups, and the measurement of training effects.

Skills:

- **Troubleshooting** - Determining causes of operating errors and deciding what to do about it.
- **Reading Comprehension** - Understanding written sentences and paragraphs in work related documents.
- **Active Listening** - Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Active Learning** - Understanding the implications of new information for both current and future problem-solving and decision-making.
- **Critical Thinking** - Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

Abilities:

- **Near Vision** - The ability to see details at close range (within a few feet of the observer).
- **Problem Sensitivity** - The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
- **Inductive Reasoning** - The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events).
- **Oral Comprehension** - The ability to listen to and understand information and ideas presented through spoken words and sentences.
- **Deductive Reasoning** - The ability to apply general rules to specific problems to produce answers that make sense.
- **Information Ordering** - The ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations).
- **Oral Expression** - The ability to communicate information and ideas in speaking so others will understand.

- **Written Comprehension** - The ability to read and understand information and ideas presented in writing.

Education and Training

Occupation: Network and Computer Systems Administrators
Most Common Educational/Training Level: Bachelor's degree
Related Instructional Programs:

- Computer Systems Analysis/Analyst
- Computer Systems Networking and Telecommunications
- Computer and Information Sciences and Support Services, Other
- Computer and Information Sciences, General
- Computer and Information Systems Security
- Information Science/Studies
- System Administration/Administrator
- System, Networking, and LAN/WAN Management/Manager

Distribution of Educational Attainment

Occupation	Percent of employees aged 25 to 44 in the occupation whose highest level of educational attainment is-		
	High School or Less	Some College	Bachelor Degree or More
Network and computer systems administrators	8.3%	41.5%	50.2%
Computer Specialists	6.5%	26.6%	66.9%
Computer and Mathematical	4.5%	19.6%	75.9%
Total, All Occupations	38.8%	29.1%	32.1%

NETWORK SYSTEMS AND DATA COMMUNICATIONS ANALYSTS: NORTH CAROLINA

Occupation Description

Analyze, design, test, and evaluate network systems, such as local area networks (LAN), wide area networks (WAN), Internet, intranet, and other data communications systems. Perform network modeling, analysis, and planning. Research and recommend network and data communications hardware and software. Include telecommunications specialists who deal with the interfacing of computer and communications equipment. May supervise computer programmers.

State and National Wages

- High is the wage at which 90% of workers earn less and 10% earn more.
- Middle is the wage at which 50% of workers earn less and 50% earn more.
- Low is the wage at which 10% of workers earn less and 90% earn more.

Location	Pay Period	2007				
		10%	25%	Median	75%	90%
United States	Hourly	\$19.28	\$25.06	\$32.80	\$41.74	\$50.95
	Yearly	\$40,100	\$52,100	\$68,200	\$86,800	\$106,000
North Carolina	Hourly	\$18.62	\$23.94	\$30.88	\$39.24	\$47.61
	Yearly	\$38,700	\$49,800	\$64,200	\$81,600	\$99,000

State and National Trends

United States	Employment		Percent Change	Job Openings ¹
	2006	2016		
Network systems and data communications analysts	261,800	401,600	+ 53 %	19,320
North Carolina	Employment		Percent Change	Job Openings ¹
	2004	2014		
Network systems and data communications analysts	7,600	11,410	+ 50 %	470

¹Job Openings refers to the average annual job openings due to growth and net replacement.

Knowledge, Skills, and Abilities

The most important knowledge, skills, and abilities (KSAs) are listed for **Network Systems and Data Communications Analysts**.

Knowledge:

- **Computers and Electronics** - Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.
- **Customer and Personal Service** - Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.

Workforce and Higher Education

- **Telecommunications** - Knowledge of transmission, broadcasting, switching, control, and operation of telecommunications systems.
- **Administration and Management** - Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.
- **Education and Training** - Knowledge of principles and methods for curriculum and training design, teaching and instruction for individuals and groups, and the measurement of training effects.

Skills:

- **Equipment Selection** - Determining the kind of tools and equipment needed to do a job.
- **Troubleshooting** - Determining causes of operating errors and deciding what to do about it.
- **Complex Problem Solving** - Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.
- **Active Listening** - Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Active Learning** - Understanding the implications of new information for both current and future problem-solving and decision-making.

Abilities:

- **Near Vision** - The ability to see details at close range (within a few feet of the observer).
- **Deductive Reasoning** - The ability to apply general rules to specific problems to produce answers that make sense.
- **Written Comprehension** - The ability to read and understand information and ideas presented in writing.
- **Problem Sensitivity** - The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
- **Inductive Reasoning** - The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events).
- **Information Ordering** - The ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations).
- **Oral Comprehension** - The ability to listen to and understand information and ideas presented through spoken words and sentences.

Education and Training

Occupation: Network Systems and Data Communications Analysts

Most Common Educational/Training Level: Bachelor's degree

Related Instructional Programs:

- Computer Systems Analysis/Analyst
- Computer Systems Networking and Telecommunications
- Computer and Information Sciences, General
- Computer and Information Systems Security
- Information Technology

Distribution of Educational Attainment

Occupation	Percent of employees aged 25 to 44 in the occupation whose highest level of educational attainment is-		
	High School or Less	Some College	Bachelor Degree or More
Network systems and data communications analysts	8.1%	34.8%	57.1%
Computer Specialists	6.5%	26.6%	66.9%
Computer and Mathematical	4.5%	19.6%	75.9%
Total, All Occupations	38.8%	29.1%	32.1%

OPTOMETRISTS: NORTH CAROLINA

Occupation Description

Diagnose, manage, and treat conditions and diseases of the human eye and visual system. Examine eyes and visual system, diagnose problems or impairments, prescribe corrective lenses, and provide treatment. May prescribe therapeutic drugs to treat specific eye conditions.

State and National Wages

- High is the wage at which 90% of workers earn less and 10% earn more.
- Middle is the wage at which 50% of workers earn less and 50% earn more.
- Low is the wage at which 10% of workers earn less and 90% earn more.

Location	Pay Period	2007				
		10%	25%	Median	75%	90%
United States	Hourly	\$23.07	\$32.98	\$45.09	\$58.61	\$70.01+
	Yearly	\$48,000	\$68,600	\$93,800	\$121,900	\$145,600+
North Carolina	Hourly	\$29.55	\$39.92	\$55.18	\$70.01+	\$70.01+
	Yearly	\$61,500	\$83,000	\$114,800	\$145,600+	\$145,600+

State and National Trends

United States	Employment		Percent Change	Job Openings ¹
	2006	2016		
Optometrists	32,700	36,400	+ 11 %	930
North Carolina	Employment		Percent Change	Job Openings ¹
	2004	2014		
Optometrists	820	1,010	+ 23 %	40

Job Openings refers to the average annual job openings due to growth and net replacement.

Note: The data for the State Employment Trends and the National Employment Trends are not directly comparable. The projections period for state data is 2004-2014, while the projections period for national data is 2006-2016.

Knowledge, Skills, and Abilities

The most important knowledge, skills, and abilities (KSAs) are listed for **Optometrists**.

Knowledge:

- **Medicine and Dentistry** - Knowledge of the information and techniques needed to diagnose and treat human injuries, diseases, and deformities. This includes symptoms, treatment alternatives, drug properties and interactions, and preventive health-care measures.
- **Customer and Personal Service** - Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
- **English Language** - Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.

Workforce and Higher Education

- **Biology** - Knowledge of plant and animal organisms, their tissues, cells, functions, interdependencies, and interactions with each other and the environment.
- **Mathematics** - Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.

Skills:

- **Active Listening** - Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Reading Comprehension** - Understanding written sentences and paragraphs in work related documents.
- **Critical Thinking** - Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
- **Judgment and Decision Making** - Considering the relative costs and benefits of potential actions to choose the most appropriate one.
- **Science** - Using scientific rules and methods to solve problems.

Abilities:

- **Oral Expression** - The ability to communicate information and ideas in speaking so others will understand.
- **Arm-Hand Steadiness** - The ability to keep your hand and arm steady while moving your arm or while holding your arm and hand in one position.
- **Problem Sensitivity** - The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
- **Near Vision** - The ability to see details at close range (within a few feet of the observer).
- **Oral Comprehension** - The ability to listen to and understand information and ideas presented through spoken words and sentences.

Education and Training

Occupation: Optometrists

Most Common Educational/Training Level: First professional degree

Related Instructional Programs: Optometry (OD)

Distribution of Educational Attainment

Occupation	Percent of employees aged 25 to 44 in the occupation whose highest level of educational attainment is-		
	High School or Less	Some College	Bachelor Degree or More
Optometrists	0%	0%	100%
Health Diagnosing and Treating Practitioners	1.3%	11.4%	87.4%
Healthcare Practitioners and Technical	9.9%	31%	59.1%
Total, All Occupations	38.8%	29.1%	32.1%

PHARMACISTS: NORTH CAROLINA

Occupation Description

Dispense drugs prescribed by physicians and other health practitioners and provide information to patients about medications and their use. May advise physicians and other health practitioners on the selection, dosage, interactions, and side effects of medications.

State and National Wages

- High is the wage at which 90% of workers earn less and 10% earn more.
- Middle is the wage at which 50% of workers earn less and 50% earn more.
- Low is the wage at which 10% of workers earn less and 90% earn more.

Location	Pay Period	2007				
		10%	25%	Median	75%	90%
United States	Hourly	\$35.10	\$42.34	\$48.31	\$55.30	\$60.78
	Yearly	\$73,000	\$88,100	\$100,500	\$115,000	\$126,400
North Carolina	Hourly	\$36.77	\$43.21	\$49.64	\$56.54	\$61.67
	Yearly	\$76,500	\$89,900	\$103,300	\$117,600	\$128,300

State and National Trends

United States	Employment		Percent Change	Job Openings ¹
	2006	2016		
Pharmacists	243,500	296,400	+ 22 %	9,510
North Carolina	Employment		Percent Change	Job Openings ¹
	2004	2014		
Pharmacists	6,370	8,040	+ 26 %	290

Job Openings refers to the average annual job openings due to growth and net replacement.

Note: The data for the State Employment Trends and the National Employment Trends are not directly comparable. The projections period for state data is 2004-2014, while the projections period for national data is 2006-2016.

Knowledge, Skills, and Abilities

The most important knowledge, skills, and abilities (KSAs) are listed for **Pharmacists**.

Knowledge:

- **Customer and Personal Service** - Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
- **Medicine and Dentistry** - Knowledge of the information and techniques needed to diagnose and treat human injuries, diseases, and deformities. This includes symptoms, treatment alternatives, drug properties and interactions, and preventive health-care measures.
- **Mathematics** - Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.
- **Chemistry** - Knowledge of the chemical composition, structure, and properties of substances and of the chemical processes and

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transformations that they undergo. This includes uses of chemicals and their interactions, danger signs, production techniques, and disposal methods.

- **English Language** - Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.

Skills:

- **Active Listening** - Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Speaking** - Talking to others to convey information effectively.
- **Reading Comprehension** - Understanding written sentences and paragraphs in work related documents.
- **Mathematics** - Using mathematics to solve problems.
- **Science** - Using scientific rules and methods to solve problems.

Abilities:

- **Oral Expression** - The ability to communicate information and ideas in speaking so others will understand.
- **Problem Sensitivity** - The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
- **Oral Comprehension** - The ability to listen to and understand information and ideas presented through spoken words and sentences.
- **Speech Clarity** - The ability to speak clearly so others can understand you.
- **Written Comprehension** - The ability to read and understand information and ideas presented in writing.

Education and Training

Occupation: Pharmacists

Most Common Educational/Training Level: First professional degree

Related Instructional Programs:

- Clinical and Industrial Drug Development (MS, PhD)
- Clinical, Hospital, and Managed Care Pharmacy (MS, PhD)
- Industrial and Physical Pharmacy and Cosmetic Sciences (MS, PhD)
- Medicinal and Pharmaceutical Chemistry (MS, PhD)
- Natural Products Chemistry and Pharmacognosy (MS, PhD)
- Pharmaceuticals and Drug Design (MS, PhD)
- Pharmacoeconomics/Pharmaceutical Economics (MS, PhD)
- Pharmacy (PharmD [USA], PharmD or BS/BPharm [Canada])
- Pharmacy Administration and Pharmacy Policy and Regulatory Affairs (MS, PhD)
- Pharmacy, Pharmaceutical Sciences, and Administration, Other

Distribution of Educational Attainment

Occupation	Percent of employees aged 25 to 44 in the occupation whose highest level of educational attainment is-		
	High School or Less	Some College	Bachelor Degree or More
Pharmacists	0%	2.9%	97%
Health Diagnosing and Treating Practitioners	1.3%	11.4%	87.4%
Healthcare Practitioners and Technical	9.9%	31%	59.1%
Total, All Occupations	38.8%	29.1%	32.1%

PHYSICAL THERAPISTS: NORTH CAROLINA

Occupation Description

Assess, plan, organize, and participate in rehabilitative programs that improve mobility, relieve pain, increase strength, and decrease or prevent deformity of patients suffering from disease or injury.

State and National Wages

- High is the wage at which 90% of workers earn less and 10% earn more.
- Middle is the wage at which 50% of workers earn less and 50% earn more.
- Low is the wage at which 10% of workers earn less and 90% earn more.

Location	Pay Period	2007				
		10%	25%	Median	75%	90%
United States	Hourly	\$23.33	\$27.83	\$33.54	\$39.49	\$48.12
	Yearly	\$48,500	\$57,900	\$69,800	\$82,100	\$100,100
North Carolina	Hourly	\$25.27	\$28.65	\$33.65	\$39.39	\$46.50
	Yearly	\$52,600	\$59,600	\$70,000	\$81,900	\$96,700

State and National Trends

United States	Employment		Percent Change	Job Openings ¹
	2006	2016		
Physical therapists	172,900	219,800	+ 27 %	6,760
North Carolina	Employment		Percent Change	Job Openings ¹
	2004	2014		
Physical therapists	3,760	5,200	+ 39 %	180

Job Openings refers to the average annual job openings due to growth and net replacement.

Note: The data for the State Employment Trends and the National Employment Trends are not directly comparable. The projections period for state data is 2004-2014, while the projections period for national data is 2006-2016.

Knowledge, Skills, and Abilities

The most important knowledge, skills, and abilities (KSAs) are listed for **Physical Therapists**.

Knowledge:

- **Medicine and Dentistry** - Knowledge of the information and techniques needed to diagnose and treat human injuries, diseases, and deformities. This includes symptoms, treatment alternatives, drug properties and interactions, and preventive health-care measures.
- **Therapy and Counseling** - Knowledge of principles, methods, and procedures for diagnosis, treatment, and rehabilitation of physical and mental dysfunctions, and for career counseling and guidance.
- **Customer and Personal Service** - Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
- **Education and Training** - Knowledge of principles and methods for curriculum and training design, teaching and instruction for individuals

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and groups, and the measurement of training effects.

- **Biology** - Knowledge of plant and animal organisms, their tissues, cells, functions, interdependencies, and interactions with each other and the environment.

Skills:

- **Active Listening** - Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Instructing** - Teaching others how to do something.
- **Time Management** - Managing one's own time and the time of others.
- **Speaking** - Talking to others to convey information effectively.
- **Critical Thinking** - Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

Abilities:

- **Oral Comprehension** - The ability to listen to and understand information and ideas presented through spoken words and sentences.
- **Oral Expression** - The ability to communicate information and ideas in speaking so others will understand.
- **Inductive Reasoning** - The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events).
- **Problem Sensitivity** - The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
- **Written Comprehension** - The ability to read and understand information and ideas presented in writing.

Education and Training

Occupation: Physical Therapists

Most Common Educational/Training Level: Master's degree

Related Instructional Programs:

- Kinesiotherapy/Kinesiotherapist
- Physical Therapy/Therapist

Distribution of Educational Attainment

Occupation	Percent of employees aged 25 to 44 in the occupation whose highest level of educational attainment is-		
	High School or Less	Some College	Bachelor Degree or More
Physical therapists	1.8%	8.8%	89.3%
Health Diagnosing and Treating Practitioners	1.3%	11.4%	87.4%
Healthcare Practitioners and Technical	9.9%	31%	59.1%
Total, All Occupations	38.8%	29.1%	32.1%

PHYSICIANS AND SURGEONS, ALL OTHER: NORTH CAROLINA

Occupation Description

All physicians and surgeons not listed separately.

State and National Wages

- High is the wage at which 90% of workers earn less and 10% earn more.
- Middle is the wage at which 50% of workers earn less and 50% earn more.
- Low is the wage at which 10% of workers earn less and 90% earn more.

Location	Pay Period	2007				
		10%	25%	Median	75%	90%
United States	Hourly	\$23.05	\$45.45	\$70.01+	\$70.01+	\$70.01+
	Yearly	\$47,900	\$94,500	\$145,600+	\$145,600+	\$145,600+
North Carolina	Hourly	\$22.13	\$25.60	\$70.01+	\$70.01+	\$70.01+
	Yearly	\$46,000	\$53,200	\$145,600+	\$145,600+	\$145,600+

State and National Trends

Employment Trends are for **Physicians and surgeons**, which includes Anesthesiologists ; Family and General Practitioners ; Internists, General ; Obstetricians and Gynecologists ; Pediatricians, General ; **Physicians and Surgeons, All Other** ; Psychiatrists ; Surgeons .

United States	Employment		Percent Change	Job Openings ¹
	2006	2016		
Physicians and surgeons	633,300	723,500	+ 14 %	20,440
North Carolina	Employment		Percent Change	Job Openings ¹
	2004	2014		
Physicians and surgeons	16,660	21,180	+ 27 %	670

¹Job Openings refers to the average annual job openings due to growth and net replacement.

Note: The data for the State Employment Trends and the National Employment Trends are not directly comparable. The projections period for state data is 2004-2014, while the projections period for national data is 2006-2016.

Knowledge, Skills, and Abilities

There is no information about knowledge, skills and abilities. This may occur because data has not been collected or because this is a composite occupation (e.g., "All Other").

Education and Training

Occupation: Physicians and Surgeons, All Other
Most Common Educational/Training Level: First professional degree
Related Instructional Programs:

- Aerospace Medicine
- Allergies and Immunology
- Blood Banking
- Chemical Pathology
- Child Neurology
- Child/Pediatric Neurology
- Cytopathology
- Dermatology
- Dermatopathology
- Diagnostic Radiology
- Emergency Medicine
- Endocrinology and Metabolism
- Forensic Pathology
- Gastroenterology
- Geriatric Medicine (Internal Medicine)
- Hematological Pathology
- Hematology
- Immunopathology
- Laboratory Medicine
- Medical Residency Programs, Other
- Medicine (MD)
- Musculoskeletal Oncology
- Nephrology
- Neurology
- Neuropathology
- Nuclear Medicine
- Nuclear Radiology
- Occupational Medicine
- Oncology
- Ophthalmology
- Orthopedic Surgery of the Spine
- Osteopathic Medicine/Osteopathy (DO)
- Otolaryngology
- Pathology
- Pediatric Urology
- Physical Medicine and Rehabilitation/Psychiatry
- Physical and Rehabilitation Medicine
- Preventive Medicine
- Public Health Medicine
- Pulmonary Disease
- Radiation Oncology
- Radioisotopic Pathology
- Rheumatology
- Sports Medicine
- Urology

Distribution of Educational Attainment

Occupation	Percent of employees aged 25 to 44 in the occupation whose highest level of educational attainment is-		
	High School or Less	Some College	Bachelor Degree or More
Physicians and surgeons	0%	0%	100%
Health Diagnosing and Treating Practitioners	1.3%	11.4%	87.4%
Healthcare Practitioners and Technical	9.9%	31%	59.1%
Total, All Occupations	38.8%	29.1%	32.1%

PHYSICIAN ASSISTANTS: NORTH CAROLINA

Occupation Description

Provide healthcare services typically performed by a physician, under the supervision of a physician. Conduct complete physicals, provide treatment, and counsel patients. May, in some cases, prescribe medication. Must graduate from an accredited educational program for physician assistants. Exclude "Emergency Medical Technicians and Paramedics", "Medical Assistants", and "Registered Nurses".

State and National Wages

- High is the wage at which 90% of workers earn less and 10% earn more.
- Middle is the wage at which 50% of workers earn less and 50% earn more.
- Low is the wage at which 10% of workers earn less and 90% earn more.

Location	Pay Period	2007				
		10%	25%	Median	75%	90%
United States	Hourly	\$22.47	\$31.56	\$37.72	\$44.86	\$50.81
	Yearly	\$46,700	\$65,600	\$78,500	\$93,300	\$105,700
North Carolina	Hourly	\$29.50	\$33.26	\$37.51	\$43.55	\$48.62
	Yearly	\$61,400	\$69,200	\$78,000	\$90,600	\$101,100

State and National Trends

United States	Employment		Percent Change	Job Openings ¹
	2006	2016		
Physician assistants	65,600	83,400	+ 27 %	2,680
North Carolina	Employment		Percent Change	Job Openings ¹
	2004	2014		
Physician assistants	2,620	3,940	+ 50 %	170

¹Job Openings refers to the average annual job openings due to growth and net replacement.

Note: The data for the State Employment Trends and the National Employment Trends are not directly comparable. The projections period for state data is 2004-2014, while the projections period for national data is 2006-2016.

Knowledge, Skills, and Abilities

The most important knowledge, skills, and abilities (KSAs) are listed for **Physician Assistants**.

Knowledge:

- **Medicine and Dentistry** - Knowledge of the information and techniques needed to diagnose and treat human injuries, diseases, and deformities. This includes symptoms, treatment alternatives, drug properties and interactions, and preventive health-care measures.
- **Biology** - Knowledge of plant and animal organisms, their tissues, cells, functions, interdependencies, and interactions with each other and the environment.

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- **Psychology** - Knowledge of human behavior and performance; individual differences in ability, personality, and interests; learning and motivation; psychological research methods; and the assessment and treatment of behavioral and affective disorders.
- **Therapy and Counseling** - Knowledge of principles, methods, and procedures for diagnosis, treatment, and rehabilitation of physical and mental dysfunctions, and for career counseling and guidance.
- **Customer and Personal Service** - Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.

Skills:

- **Active Listening** - Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Active Learning** - Understanding the implications of new information for both current and future problem-solving and decision-making.
- **Speaking** - Talking to others to convey information effectively.
- **Reading Comprehension** - Understanding written sentences and paragraphs in work related documents.
- **Critical Thinking** - Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

Abilities:

- **Problem Sensitivity** - The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
- **Oral Expression** - The ability to communicate information and ideas in speaking so others will understand.
- **Inductive Reasoning** - The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events).
- **Oral Comprehension** - The ability to listen to and understand information and ideas presented through spoken words and sentences.
- **Deductive Reasoning** - The ability to apply general rules to specific problems to produce answers that make sense.
- **Speech Clarity** - The ability to speak clearly so others can understand you.

Education and Training

Occupation: Physician Assistants

Most Common Educational/Training Level: Master's degree

Related Instructional Programs: Physician Assistant

Distribution of Educational Attainment

Occupation	Percent of employees aged 25 to 44 in the occupation whose highest level of educational attainment is-		
	High School or Less	Some College	Bachelor Degree or More
Physician assistants	7.6%	25.5%	66.9%
Health Diagnosing and Treating Practitioners	1.3%	11.4%	87.4%
Healthcare Practitioners and Technical	9.9%	31%	59.1%
Total, All Occupations	38.8%	29.1%	32.1%

REGISTERED NURSES: NORTH CAROLINA

Occupation Description

Assess patient health problems and needs, develop and implement nursing care plans, and maintain medical records. Administer nursing care to ill, injured, convalescent, or disabled patients. May advise patients on health maintenance and disease prevention or provide case management. Licensing or registration required. Include advance practice nurses such as: nurse practitioners, clinical nurse specialists, certified nurse midwives, and certified registered nurse anesthetists. Advanced practice nursing is practiced by RNs who have specialized formal, post-basic education and who function in highly autonomous and specialized roles.

State and National Wages

High is the wage at which 90% of workers earn less and 10% earn more.

- Middle is the wage at which 50% of workers earn less and 50% earn more.
- Low is the wage at which 10% of workers earn less and 90% earn more.

Location	Pay Period	2007				
		10%	25%	Median	75%	90%
United States	Hourly	\$20.20	\$23.95	\$28.85	\$35.18	\$41.97
	Yearly	\$42,000	\$49,800	\$60,000	\$73,200	\$87,300
North Carolina	Hourly	\$19.77	\$22.26	\$26.02	\$30.06	\$35.32
	Yearly	\$41,100	\$46,300	\$54,100	\$62,500	\$73,500

State and National Trends

United States	Employment		Percent Change	Job Openings ¹
	2006	2016		
Registered nurses	2,504,700	3,092,000	+ 23 %	100,080
North Carolina	Employment		Percent Change	Job Openings ¹
	2004	2014		
Registered nurses	70,950	97,010	+ 37 %	4,090

¹Job Openings refers to the average annual job openings due to growth and net replacement.

Note: The data for the State Employment Trends and the National Employment Trends are not directly comparable. The projections period for state data is 2004-2014, while the projections period for national data is 2006-2016.

Knowledge, Skills, and Abilities

The most important knowledge, skills, and abilities (KSAs) are listed for **Registered Nurses**.

Knowledge:

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- **Medicine and Dentistry** - Knowledge of the information and techniques needed to diagnose and treat human injuries, diseases, and deformities. This includes symptoms, treatment alternatives, drug properties and interactions, and preventive health-care measures.
- **Psychology** - Knowledge of human behavior and performance; individual differences in ability, personality, and interests; learning and motivation; psychological research methods; and the assessment and treatment of behavioral and affective disorders.
- **Customer and Personal Service** - Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
- **English Language** - Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
- **Biology** - Knowledge of plant and animal organisms, their tissues, cells, functions, interdependencies, and interactions with each other and the environment.

Skills:

- **Active Listening** - Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Reading Comprehension** - Understanding written sentences and paragraphs in work related documents.
- **Critical Thinking** - Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
- **Instructing** - Teaching others how to do something.
- **Speaking** - Talking to others to convey information effectively.

Abilities:

- **Problem Sensitivity** - The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
- **Oral Expression** - The ability to communicate information and ideas in speaking so others will understand.
- **Inductive Reasoning** - The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events).
- **Oral Comprehension** - The ability to listen to and understand information and ideas presented through spoken words and sentences.
- **Deductive Reasoning** - The ability to apply general rules to specific problems to produce answers that make sense.
- **Speech Clarity** - The ability to speak clearly so others can understand you.
- **Speech Recognition** - The ability to identify and understand the speech of another person.
- **Written Expression** - The ability to communicate information and ideas in writing so others will understand.

Education and Training

Occupation: Registered Nurses

Most Common Educational/Training Level: Associate degree

Related Instructional Programs:

- Adult Health Nurse/Nursing
- Clinical Nurse Specialist
- Critical Care Nursing
- Family Practice Nurse/Nurse Practitioner
- Maternal/Child Health and Neonatal Nurse/Nursing
- Nurse Anesthetist
- Nurse Midwife/Nursing Midwifery
- Nursing Science (MS, PhD)
- Nursing, Other
- Nursing/Registered Nurse (RN, ASN, BSN, MSN)
- Occupational and Environmental Health Nursing
- Pediatric Nurse/Nursing
- Perioperative/Operating Room and Surgical Nurse/Nursing
- Psychiatric/Mental Health Nurse/Nursing
- Public Health/Community Nurse/Nursing

Distribution of Educational Attainment

Occupation	Percent of employees aged 25 to 44 in the occupation whose highest level of educational attainment is-		
	High School or Less	Some College	Bachelor Degree or More

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Registered nurses	1%	42.7%	56.2%
Health Diagnosing and Treating Practitioners	1.3%	11.4%	87.4%
Healthcare Practitioners and Technical	9.9%	31%	59.1%
Total, All Occupations	38.8%	29.1%	32.1%

SALES MANAGERS: NORTH CAROLINA

Occupation Description

Direct the actual distribution or movement of a product or service to the customer. Coordinate sales distribution by establishing sales territories, quotas, and goals and establish training programs for sales representatives. Analyze sales statistics gathered by staff to determine sales potential and inventory requirements and monitor the preferences of customers.

State and National Wages

- High is the wage at which 90% of workers earn less and 10% earn more.
- Middle is the wage at which 50% of workers earn less and 50% earn more.
- Low is the wage at which 10% of workers earn less and 90% earn more.

Location	Pay Period	2007				
		10%	25%	Median	75%	90%
United States	Hourly	\$22.05	\$30.60	\$45.63	\$66.48	\$70.01+
	Yearly	\$45,900	\$63,600	\$94,900	\$138,300	\$145,600+
North Carolina	Hourly	\$19.18	\$26.92	\$40.70	\$58.98	\$70.01+
	Yearly	\$39,900	\$56,000	\$84,700	\$122,700	\$145,600+

State and National Trends

United States	Employment		Percent Change	Job Openings ¹
	2006	2016		
Sales managers	318,300	350,800	+ 10 %	10,330
North Carolina	Employment		Percent Change	Job Openings ¹
	2004	2014		
Sales managers	12,710	15,400	+ 21 %	500

¹Job Openings refers to the average annual job openings due to growth and net replacement.

Note: The data for the State Employment Trends and the National Employment Trends are not directly comparable. The projections period for state data is 2004-2014, while the projections period for national data is 2006-2016.

Knowledge, Skills, and Abilities

The most important knowledge, skills, and abilities (KSAs) are listed for **Sales Managers**.

Knowledge:

- **Mathematics** - Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.
- **Sales and Marketing** - Knowledge of principles and methods for showing, promoting, and selling products or services. This includes marketing strategy and tactics, product demonstration, sales techniques, and sales control systems.
- **Computers and Electronics** - Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software,

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including applications and programming.

- **English Language** - Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
- **Customer and Personal Service** - Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.

Skills:

- **Active Listening** - Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Speaking** - Talking to others to convey information effectively.
- **Mathematics** - Using mathematics to solve problems.
- **Time Management** - Managing one's own time and the time of others.
- **Service Orientation** - Actively looking for ways to help people.

Abilities:

- **Oral Expression** - The ability to communicate information and ideas in speaking so others will understand.
- **Oral Comprehension** - The ability to listen to and understand information and ideas presented through spoken words and sentences.
- **Speech Clarity** - The ability to speak clearly so others can understand you.
- **Speech Recognition** - The ability to identify and understand the speech of another person.
- **Problem Sensitivity** - The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
- **Written Comprehension** - The ability to read and understand information and ideas presented in writing.

Education and Training

Occupation: Sales Managers

Most Common Educational/Training Level: Bachelor's or higher degree, plus work experience

Related Instructional Programs:

- Business Administration and Management, General
- Business/Commerce, General
- Consumer Merchandising/Retailing Management
- Marketing, Other
- Marketing/Marketing Management, General

Distribution of Educational Attainment

Occupation	Percent of employees aged 25 to 44 in the occupation whose highest level of educational attainment is-		
	High School or Less	Some College	Bachelor Degree or More
Sales managers	9.2%	22.1%	68.7%
Advertising, Marketing, Promotions, Public Relations, and Sales Managers	8.5%	19.5%	72%
Management	17.6%	26.2%	56.2%
Total, All Occupations	38.8%	29.1%	32.1%

SELF-ENRICHMENT EDUCATION TEACHERS: NORTH CAROLINA

Occupation Description

Teach or instruct courses other than those that normally lead to an occupational objective or degree. Courses may include self-improvement, nonvocational, and nonacademic subjects. Teaching may or may not take place in a traditional educational institution.

State and National Wages

- High is the wage at which 90% of workers earn less and 10% earn more.
- Middle is the wage at which 50% of workers earn less and 50% earn more.
- Low is the wage at which 10% of workers earn less and 90% earn more.

Location	Pay Period	2007				
		10%	25%	Median	75%	90%
United States	Hourly	\$8.91	\$11.99	\$16.62	\$24.27	\$31.96
	Yearly	\$18,500	\$24,900	\$34,600	\$50,500	\$66,500
North Carolina	Hourly	\$8.98	\$12.35	\$15.92	\$21.70	\$27.12
	Yearly	\$18,700	\$25,700	\$33,100	\$45,100	\$56,400

State and National Trends

United States	Employment		Percent Change	Job Openings ¹
	2006	2016		
Self-enrichment education teachers	261,500	322,000	+ 23 %	8,840
North Carolina	Employment		Percent Change	Job Openings ¹
	2004	2014		
Self-enrichment education teachers	5,000	6,380	+ 28 %	200

¹Job Openings refers to the average annual job openings due to growth and net replacement.

Note: The data for the State Employment Trends and the National Employment Trends are not directly comparable. The projections period for state data is 2004-2014, while the projections period for national data is 2006-2016.

Knowledge, Skills, and Abilities

The most important knowledge, skills, and abilities (KSAs) are listed for **Self-Enrichment Education Teachers**.

Knowledge:

- **Education and Training** - Knowledge of principles and methods for curriculum and training design, teaching and instruction for individuals and groups, and the measurement of training effects.
- **Customer and Personal Service** - Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
- **English Language** - Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of

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composition, and grammar.

- **Administration and Management** - Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.
- **Psychology** - Knowledge of human behavior and performance; individual differences in ability, personality, and interests; learning and motivation; psychological research methods; and the assessment and treatment of behavioral and affective disorders.

Skills:

- **Instructing** - Teaching others how to do something.
- **Speaking** - Talking to others to convey information effectively.
- **Active Listening** - Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Learning Strategies** - Selecting and using training/instructional methods and procedures appropriate for the situation when learning or teaching new things.
- **Social Perceptiveness** - Being aware of others' reactions and understanding why they react as they do.

Abilities:

- **Oral Comprehension** - The ability to listen to and understand information and ideas presented through spoken words and sentences.
- **Oral Expression** - The ability to communicate information and ideas in speaking so others will understand.
- **Speech Clarity** - The ability to speak clearly so others can understand you.
- **Problem Sensitivity** - The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
- **Speech Recognition** - The ability to identify and understand the speech of another person.

Education and Training

Occupation: Self-Enrichment Education Teachers

Most Common Educational/Training Level: Work experience in a related occupation

Related Instructional Programs: Adult and Continuing Education and Teaching

Distribution of Educational Attainment

Occupation	Percent of employees aged 25 to 44 in the occupation whose highest level of educational attainment is-		
	High School or Less	Some College	Bachelor Degree or More
Self-enrichment education teachers	16.7%	29.4%	53.9%
Other Teachers and Instructors	16.7%	29.4%	53.9%
Education, Training, and Library	9.3%	16.5%	74.2%
Total, All Occupations	38.8%	29.1%	32.1%