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Tennessee Higher
Education Commission

**Academic Supply and
Occupational Demand
in Tennessee**

**Workforce Needs and
Degree Production**

Annual Report

January 15, 2015



TENNESSEE HIGHER EDUCATION COMMISSION

2014 – 2015 COMMISSION MEMBERS

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EXECUTIVE SUMMARY

- **By 2025, higher education institutions in Tennessee will award many more postsecondary degrees.**
 - More degrees of *all levels* will be awarded. The most substantial growth will be in certificates, followed closely by Associate's degrees.
 - As such, many of these degrees will be awarded from Tennessee Colleges of Applied Technology (TCATs) and community colleges across the state.
 - Bachelor's degrees awarded will continue to increase with the historical trend, while Master's and Doctoral degrees will experience more accelerated growth.

- **There is high demand for individuals trained in a variety of career paths across the state.**
 - The most in-demand career paths include construction, transportation and logistics, medical professions, and banking and finance. There is a deficit of individuals trained to work in these areas throughout Tennessee.
 - Occupations in these fields require all levels of postsecondary degrees. Many positions require a certificate or an Associate's degree.
 - Conversely, a number of career paths are oversupplied, as more Tennesseans are trained in these areas than there are jobs available. These fields include cosmetology and barbering, journalism and broadcasting, and engineering technology.

- **Many higher education institutions in Tennessee offer academic programs that can meet the employment needs of these high-demand areas.**
 - Public, private, and proprietary institutions offer degree programs of all levels in areas related to these in-demand fields.
 - Opportunities for training in these areas are available across the State, and are not limited to higher education institutions in a specific geographic area.

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INTRODUCTION

This report is prepared pursuant to Tenn. Code Ann. § 49-7-112(b) (the “Skills for Jobs Act”), which directs the Tennessee Higher Education Commission (THEC) to:

“...produce an annual report regarding state workforce need projections and credential production.”

This report is the result of collaboration between THEC, the Tennessee Department of Labor and Workforce Development, and the University of Tennessee’s Center for Business and Economic Research (CBER). Using historical data from 2000-2012, this report presents projections of academic degrees to be awarded from public, private, and proprietary institutions in Tennessee through the year 2025. These estimates of degree production (*supply*) are linked to the needs of Tennessee’s workforce (*demand*) to determine whether the output of Tennessee’s higher education system is meeting the needs of employers across the state.

This report is divided into four sections:

Expected awards presents projections of postsecondary certificates and degrees to be awarded by public, private, and proprietary institutions in Tennessee through 2025.

Workforce needs identifies Tennessee’s most immediate workforce deficits and highlights the 25 most in-demand career fields across the state. This section also lists the ten most over-supplied programs of study in Tennessee, for which there are substantially more postsecondary graduates than job opportunities.

Institutions offering programs in high-demand areas lists the public and private institutions across Tennessee that offer degree programs in the top 25 high-demand occupational areas.

Conclusion, limitations, and recommendations discusses what can be learned about Tennessee’s supply of labor and demand for particular career paths, outlines the general shortcomings of supply and demand analyses, and proposes directions for future work in this area.

METHODOLOGY

Projections of academic degree production and workforce demand were developed independently by CBER and the Tennessee Department of Labor and Workforce Development, respectively. These projections were then linked to analyze labor supply and workforce demand. The discussion below explains the methodology used to develop these projections, and addresses important caveats for using these estimates.

Supply projections

Postsecondary awards are projected through 2025.¹ Table 1 presents the types of awards included in these projections. Concentrations and minors are excluded, as these are difficult to link to the education requirements of particular occupations.

Table 1: Types of awards included in analysis

Awards of less than 1 academic year
Awards of at least 1 but less than 2 academic years
Associate's degrees
Awards of at least 2 but less than 4 academic years
Bachelor's degrees
Post baccalaureate certificates
Master's degrees
Post-master's certificates
Doctoral degrees
First-professional degrees
First-professional certificates

Public, private, and proprietary institutions in Tennessee that award postsecondary certificates or higher, participate in federal student financial aid programs, and are included in the Integrated Postsecondary Education Data System (IPEDS) comprise the sample for this analysis (number of institutions = 197). IPEDS is a federal dataset containing a breadth of information about higher education institutions, including student demographics and program offerings. A complete list of these institutions is presented in **Appendix A**.

Demand projections

Projections of workforce demand were estimated by the Tennessee Department of Labor and Workforce Development using both the Standard Occupation

¹ Data for projections of supply were extracted from IPEDS. These projections are based on historical data for the years 2000-2012. Past trends in degree attainment are significantly

Classification (SOC) and the North American Industrial Classification systems (NAICS), as well as employer surveys.²

The linkage between educational requirements and occupations are most accurate for highly specialized fields, such as those requiring a specific certificate or an advanced degree. Conversely, many fields requiring a Bachelor's degree are less clearly defined, as those who hold a Bachelor's degree often have a number of diverse employment opportunities in a variety of fields.

² The SOC system and the Bureau of Labor Statistics provide information about the education and training required for specific occupations across the state. These education and training requirements reflect what is typically observed for an employee in a given occupation. Certainly, exceptions exist. For example, an individual who holds a Doctoral degree may be employed in a position that requires only a Bachelor's degree.

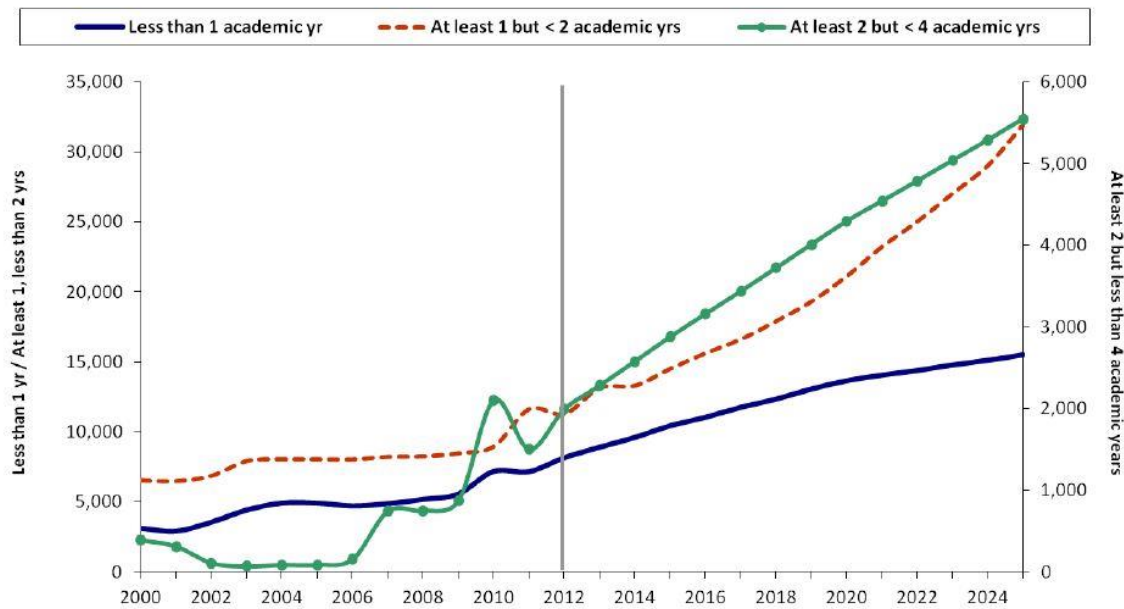
EXPECTED AWARDS

This section examines projections of the supply of postsecondary certificates and degrees to be awarded by public, private, and proprietary institutions in Tennessee. This analysis forecasts various award levels by institutional sector through the year 2025.³

Certificates

Figure 1 shows the projections of certificates to be awarded by public, private, and proprietary institutions included in the sample. Certificates are classified into three groups: certificates that require less than one academic year, certificates that require at least one but less than two academic years, and certificates that require at least two but less than four academic years. During the period of interest (AY 2012 – AY 2025), all types of certificate awards are projected to increase appreciably, continuing the historical trend.

Figure 1: Certificates by Academic Year – private, public, and proprietary institutions



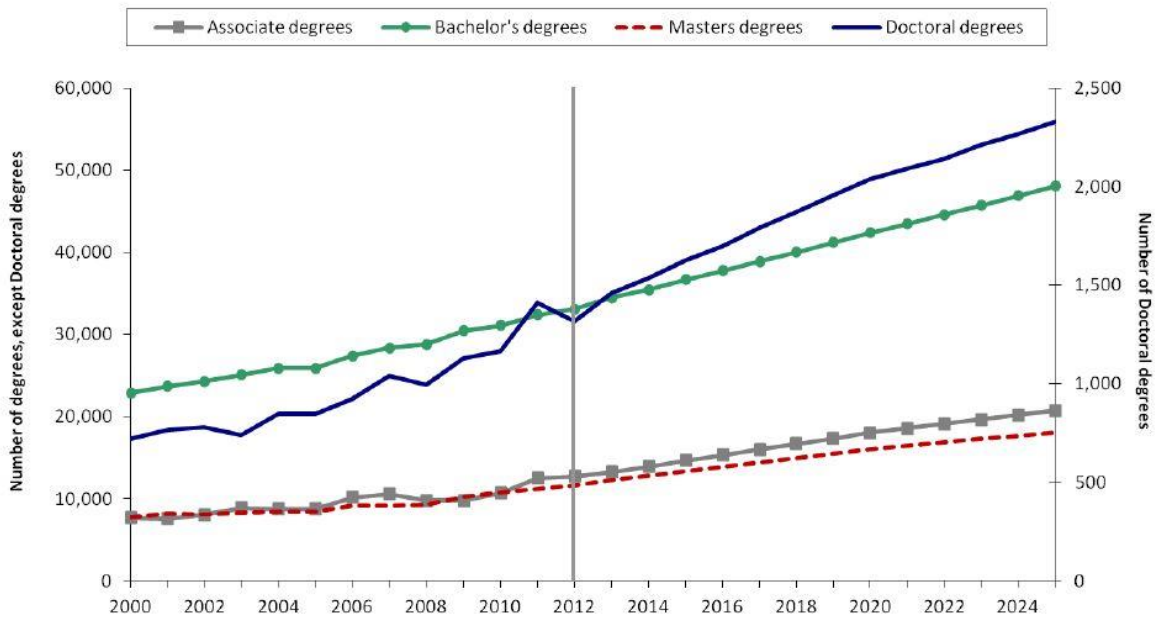
Reproduced with permission from: CBER, *2013 Academic Program Supply and Occupational Demand Projections: 2012–2025* (Figure 2, p.19).

³ For public institutions, CBER used historical data from IPEDS from academic year (AY) 2000 to AY 2012, and developed projections by institution and award level through AY 2025. For private institutions, THEC used historical supply data from IPEDS from AY 1995 through AY 2012, and calculated projections by institutional sector through AY 2025.

Associate, Bachelors, Masters, and Doctoral degrees

Figure 2 forecasts degree production by award level: Associate’s, Bachelor’s, Master’s, and Doctoral degrees. The number of postsecondary degrees produced by public, private, and proprietary institutions of higher education is projected to increase for all award levels through 2025. While Bachelor’s degrees are expected to increase in accordance with the historical trend, Associate’s and Doctoral degrees will experience more accelerated growth.

Figure 2: Degrees Awarded by Academic Year

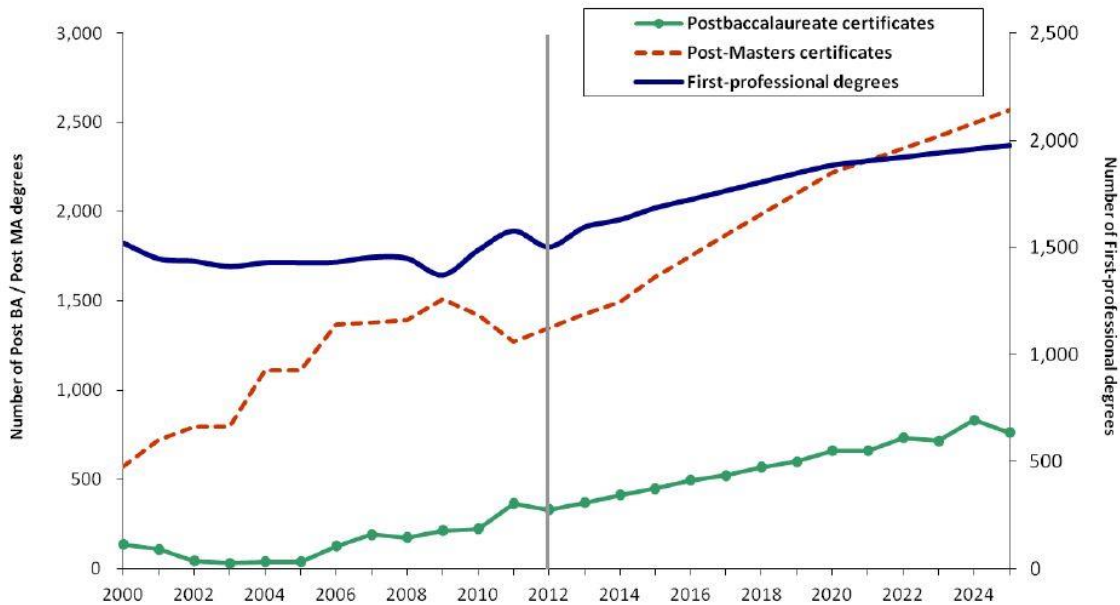


Reproduced with permission from: CBER, *2013 Academic Program Supply and Occupational Demand Projections: 2012–2025* (Figure 3, p.19).

Post-baccalaureate and Post-Masters Certificates, and First Professional degrees

Figure 3 shows projections for post-baccalaureate and post-Master’s certificates and first-professional degrees. All of these awards are projected to grow through 2025, with post-baccalaureate and post-Master’s certificates showing the fastest growth.

Figure 3: Post-BA, Post-MA, and First-Professional Awards by Academic Year



Reproduced with permission from: CBER, *2013 Academic Program Supply and Occupational Demand Projections: 2012–2025* (Figure 4, p.20).

Table 2 displays the number of awards produced by **public** higher education institutions in Tennessee. It includes historical supply data from AY 2000 through AY 2012, and projections of degree production through 2025. Institutions are classified into Tennessee Colleges of Applied Technology (TCATs), community colleges, and public colleges and universities.

Continuing the historical trend, all award types at public institutions are projected to increase through 2025. The fastest growth will occur in certificate awards: certificates requiring more than two but less than four years (249.6 percent growth), any certificates requiring less than two years (121.2 percent), and post-baccalaureate certificates (100.9 percent). In absolute numbers, Bachelor’s degrees will continue to be the dominant award type, followed by less-than-two-year certificates and Associate’s degrees.

Table 3 presents degree production forecasts from Tennessee’s **private** and **proprietary** postsecondary institutions. These projections apply the historical growth rate to degree production estimates from AY 2013 through 2025. The awards in Table 3 include the combined number of certificates and degrees, and are presented separately for private and proprietary institutions.

Although total awards in both the private and proprietary sectors are projected to increase through 2025, awards from proprietary institutions are expected to increase much more quickly. From AY 2013 to 2025, the number of awards awarded by proprietary institutions is projected to increase by 159.2 percent, while degrees awarded from private institutions will experience a gain of 61.1 percent.

Table 2: Number of Awards Produced by Public Institutions in Tennessee: Projections 2013-2025

Type of Institution Level of award	Number of awards																
	History			Forecast													
	2000- 2001	2005- 2006	2011- 2012	2012- 2013	2013- 2014	2014- 2015	2015- 2016	2016- 2017	2017- 2018	2018- 2019	2019- 2020	2020- 2021	2021- 2022	2022- 2023	2023- 2024	2024- 2025	2025- 2026
TCATs																	
Awards of less than 1 AY	1,109	1,453	1,863	2,117	2,253	2,415	2,568	2,698	2,830	2,957	3,087	3,217	3,268	3,316	3,363	3,420	3,476
Awards of at least 1 but less than 2 AY	3,797	4,199	4,715	4,941	5,477	5,674	6,322	6,323	6,849	7,070	7,530	7,727	8,235	8,740	9,465	10,389	10,989
Awards of at least 2 but less than 4 AY	205	28	940	1,112	1,256	1,411	1,571	1,732	1,895	2,061	2,235	2,404	2,575	2,746	2,923	3,100	3,286
Community colleges																	
Awards of less than 1 AY	912	999	2,082	1,931	2,295	2,391	2,722	2,807	3,077	3,162	3,429	3,524	3,667	3,681	3,820	3,834	3,964
Awards of at least 1 but less than 2 AY	482	430	715	760	881	907	1,064	1,053	1,242	1,177	1,368	1,406	1,540	1,700	1,955	2,121	2,275
Associate's degrees	5,561	5,946	8,125	8,372	8,703	9,098	9,505	9,864	10,230	10,587	10,945	11,307	11,587	11,862	12,140	12,418	12,697
Public, 4+ years																	
Awards of less than 2 AY	16	6	17	20	23	26	30	35	39	43	47	52	56	59	64	68	71
Associate's degrees	248	268	370	370	389	406	424	439	454	470	484	500	508	518	525	533	542
Bachelor's degrees	13,438	14,969	18,530	18,916	19,721	20,187	20,879	21,422	22,054	22,641	23,266	23,886	24,479	25,066	25,681	26,306	26,946
Post-baccalaureate certificates	21	29	248	220	259	289	328	356	383	407	440	467	477	489	506	516	523
Master's degrees	4,319	4,540	5,732	5,804	6,069	6,303	6,540	6,760	6,975	7,191	7,412	7,625	7,797	7,968	8,129	8,300	8,465
Post-master's certificates	111	205	393	381	415	449	480	507	534	560	586	613	631	652	674	698	722
Doctor's degrees	455	468	733	721	758	785	810	839	873	906	941	974	1,005	1,039	1,078	1,112	1,147
First-professional degrees/certificates	825	784	979	993	1,022	1,058	1,091	1,121	1,149	1,178	1,207	1,233	1,249	1,263	1,279	1,294	1,309

Reproduced with permission from: CBER, *2013 Academic Program Supply and Occupational Demand Projections: 2012–2025*.

Table 3: Number of Awards Produced by Private and Proprietary Institutions in Tennessee: Projections 2014-2025

	Number of awards *																	
	History **						Forecast ***											
	2007- 2008	2008- 2009	2009- 2010	2010- 2011	2011- 2012	2012- 2013	2013- 2014	2014- 2015	2015- 2016	2016- 2017	2017- 2018	2018- 2019	2019- 2020	2020- 2021	2021- 2022	2022- 2023	2023- 2024	2024- 2025
Institutional sector																		
Private institutions	11,254	11,555	12,118	12,563	12,907	13,302	13,100	13,072	13,376	13,432	13,474	13,490	13,513	13,554	13,610	13,649	13,686	13,674
Proprietary institutions	22,011	19,289	20,597	21,353	21,455	19,239	19,050	19,982	19,408	19,902	20,347	20,811	20,939	21,094	20,971	21,037	21,288	21,958

- Notes:**
- * Awards include a combined count of undergraduate degrees (certificates through bachelor’s degrees) ONLY.
 - ** Data source for proprietary institutions: THEC (Division of Postsecondary School Authorization); Private institutions: IPEDS.
 - *** A multivariate linear model is used to forecast awards.

Appendix B presents the preliminary count of all degree levels awarded by **proprietary** institutions operating in Tennessee during AY 2013-14, by program area. The majority of these awards are certificates and diplomas, followed closely by Associate's degrees. Students earning many of these certificates and degrees specialized in a small number of fields: transportation and materials moving, mechanic and repair technology, health professions, and computer and information sciences.

Very few proprietary institutions operating in Tennessee (49 percent of institutions, 16 percent of locations) are included in the IPEDS dataset. This is because not all of these institutions participate in federal financial aid programs. When all proprietary institutions authorized to operate in Tennessee (191 institutions in 407 locations) are included, as presented in Appendix B, trends in degree production at proprietary institutions are presented much more clearly, as the trends at a greater number of institutions are seen.

WORKFORCE NEEDS⁴

Table 4 presents the top 25 postsecondary programs of study for which employment opportunities are growing more rapidly than the supply of educated labor. Said differently, these programs produce fewer graduates than jobs available, so there is a need for Tennesseans to be trained in these areas. This list of programs was compiled by the Tennessee Department of Labor and Workforce Development. These programs of study are offered at public, private, and proprietary institutions across the state, and yield all levels of postsecondary awards. Additional information about the supply of graduates and demand for those trained in these programs can be seen in **Appendix C**.

As the construction industry continues to grow throughout the state, thousands of job opportunities are expected over the next decade. This is the case not only for those trained in general construction, but also for those specializing in design, electrical, plumbing, and masonry. Further, there is a great need for skilled employees in transportation, logistics, and distribution.

Also, Tennesseans trained in computer programming and web/multimedia management are in high demand. While it is worth noting that those who complete any of these 25 high-need programs have the potential to earn a salary at or above the statewide median income (approximately \$30,000), those trained as computer programmers or web/media managers are some of the highest earners among those working in these in-demand fields.

Finally, those trained in banking and finance, accounting, and business analysis have many employment opportunities statewide. As Tennessee's economy grows, and more industries choose to enter and operate in the state, those who earn credentials in these fields will be invaluable resources to both new and existing businesses.

Conversely, oversupplied academic programs are presented in Table 5. These programs graduate a larger number of students than there are jobs available, leading to a surplus in those trained in these areas. These degree programs include cosmetology and barbering, journalism and broadcasting, engineering technology, and fine arts.

Additionally, please note that instructional coordinators and postsecondary instructors are listed as oversupplied fields. It will be interesting to see how the occupational demand for those trained in these areas shifts over the next few years, as larger numbers of traditional age and adult students enter higher education due to the suite of programs introduced as part of the *Drive to 55* initiative.

⁴ Please refer to www.edutrendstn.com for more information about labor supply and workforce demand, high-demand occupations, and employee wages and salaries throughout Tennessee.

Table 4: Programs of study with largest growth in employment opportunities across Tennessee

Program of Study	Average Annual Openings	Average Salary
Precision Production - Manufacturing	3,175	\$34,142
Operations and Maintenance	2,495	\$40,940
Truck, Bus, Rail, Water Transportation, and Equipment	2,270	\$41,121
Communications Development	2,230	\$29,236
Accounting Administrative Support	1,475	\$32,610
Banking and Finance	1,280	\$62,880
Web/Multimedia Management, Programming	1,260	\$73,064
Elementary Teachers, Except Special Education	1,190	\$46,344
Construction - Other	1,160	\$21,437
Business Analysis	1,090	\$58,775
Construction - Construction Electrical	825	\$46,475
Pre-K-Early Childhood Education	725	\$30,003
Religion	625	\$42,098
Technical Design & Preconstruction	520	\$61,952
Human Resources	505	\$49,741
Security and Protective Services	385	\$30,323
Legal Assisting	355	\$42,305
Medical and Clinical Lab Technicians	305	\$35,074
Fire Fighting	280	\$42,534
Industrial Engineering	205	\$80,257
Construction - Construction Plumbing	200	\$40,427
Compliance Officers	160	\$60,828
Medical and Clinical Laboratory Technologists	155	\$56,936
Construction – Construction Masonry & Concrete	140	\$34,022
Revenue and Taxation	100	\$42,396

Source: Tennessee Department of Labor and Workforce Development, 2014

Table 5: Programs of study with surplus supply relative to occupational demand across Tennessee

Program of Study	Average Annual Openings	Program Completers	Demand Lag
Cosmetology and Barbering	480	3,486	3006
Instructional Coordinators	40	1,530	1490
Postsecondary Teachers - English	40	1,484	1444
Journalism and Broadcasting	290	1,626	1336
Construction - HVAC/R	220	1,039	819
Postsecondary Teachers - Teacher Ed	45	729	684
Engineering Technology	70	619	549
Marketing Management	185	698	513
Surgical Technologist	115	560	445
Fine Arts	105	526	421

Source: Tennessee Department of Labor and Workforce Development, 2014

INSTITUTIONS OFFERING PROGRAMS IN HIGH-DEMAND AREAS

The following section presents the academic programs available at public and private institutions in Tennessee that produce graduates who are employable in the aforementioned high-demand areas.

a. Precision Production Pathway - Manufacturing

Careers in this area include various positions in manufacturing. Typical education requirements for these occupations include moderate on-the-job training, work experience in a related area, and postsecondary vocational training.

Programs leading to careers in this area are available at the following institutions:

Precision Production Pathway - Manufacturing			
System	Institution	Program	Degree
TBR	Chattanooga State Community College	Manufacturing Technology	Certificate
TBR	TCAT Oneida-Huntsville	Machine Tool Technology	Diploma
TBR	Northeast State Community College	Machine Tool Operations	Certificate
TBR	Southwest Tennessee Community College	Mechanical/Manufacturing CAD	Certificate
TBR	TCAT Athens	Machine Tool Technology	Diploma
TBR	TCAT Chattanooga	Machine Tool Technology	Diploma
TBR	TCAT Covington	Machine Tool Technology	Diploma
TBR	TCAT Crossville	Machine Tool Technology	Diploma
TBR	TCAT Crump	Machine Tool Technology	Diploma
TBR	TCAT Dickson	Machine Tool Technology	Diploma
TBR	TCAT Harriman	Machine Tool Technology	Diploma
TBR	TCAT Hartsville	Machine Tool Technology	Diploma
TBR	TCAT Hohenwald	Machine Tool Technology	Diploma
TBR	TCAT Jacksboro	Machine Tool Technology	Diploma
TBR	TCAT Jackson	Machine Tool Technology	Diploma
TBR	TCAT Knoxville	Machine Tool Technology	Diploma
TBR	TCAT Livingston	Machine Tool Technology	Diploma
TBR	TCAT McKenzie	Machine Tool Technology	Diploma
TBR	TCAT McMinnville	Machine Tool Technology	Diploma
TBR	TCAT Memphis	Machine Tool Technology	Diploma
TBR	TCAT Morristown	Machine Tool Technology	Diploma
TBR	TCAT Murfreesboro	Machine Tool Technology	Diploma
TBR	TCAT Nashville	Machine Tool Technology	Diploma
TBR	TCAT Newbern	Machine Tool Technology	Diploma
TBR	TCAT Paris	Machine Tool Technology	Diploma
TBR	TCAT Shelbyville	Machine Tool Technology	Diploma
TBR	TCAT Whiteville	Machine Tool Technology	Diploma

b. Operations and Maintenance

Programs leading to careers in Operations and Maintenance are available at various Colleges of Applied Technology. Additionally, Walters State Community College offers a certificate program in Operations Management and Quality.

c. Truck, Bus, Rail, Water Transportation, and Heavy Equipment

Careers in this area include truck drivers, bus drivers, locomotive engineers, ship engineers, and boat operators. Typical education requirements for these occupations include moderate on-the-job training, work experience in a related area, and postsecondary vocational training.

Programs leading to careers in this area are available at the following institutions:

Commercial Truck Driving			
System	Institution	Program	Degree
TBR	TCAT Chattanooga	Truck Driving	Certificate/ Diploma
TBR	TCAT Crump	Truck Driving	Certificate/ Diploma
TBR	TCAT Dickson	Truck Driving	Certificate/ Diploma
TBR	TCAT Knoxville	Truck Driving	Certificate/ Diploma
TBR	TCAT Memphis	Truck Driving	Certificate/ Diploma
TBR	TCAT Nashville	Truck Driving	Certificate/ Diploma
TBR	TCAT Oneida	Truck Driving	Certificate/ Diploma
TBR	TCAT Ripley	Truck Driving	Certificate/ Diploma
TBR	TCAT Shelbyville	Truck Driving	Certificate/ Diploma

d. Communication Development

Careers in this field include corporate communications, public information officers, and marketing coordinators. These positions most often require a Bachelor's degree.

Programs leading to careers in this area are available at the following institutions:

Communication Development			
System	Institution	Program	Degree
TBR	Austin Peay State University	Communication Arts	BA/BS/MA
TICUA	Belmont University	Communication Studies	BS
TICUA	Belmont University	Public Relations	BS
TICUA	Bryan College	Communication Studies	BA
TICUA	Carson-Newman College	Public Relations	BS
TBR	East Tennessee State University	Communication Studies	BA/BS
TICUA	Freed-Hardeman University	Public Relations	BA
TICUA	Johnson Bible College	Communication	BA/BS

TICUA	King College	Communication	BA/BS
TICUA	Lee University	Public Relations	BA/BS
TICUA	Lipscomb University	Organizational Communication	BS
TICUA	Lipscomb University	Public Relations	BS
TICUA	Lipscomb University	Health Communication	BS
TICUA	Milligan College	Communications	BA/BS
TBR	Tennessee State University	Communication	BA/BS
TBR	Tennessee Technological University	Communication	BS
TICUA	Trevecca Nazarene University	Organizational Communication	BA/BS
TICUA	Union University	Public Relations	BA/BS
TICUA	Union University	Intercultural Communication	BA/MA
TBR	University of Memphis	Communication	BA/MA/PhD
UT	University of Tennessee, Chattanooga	Communication	BA
UT	University of Tennessee, Knoxville	Communication and Information	MS/PhD
UT	University of Tennessee, Knoxville	Public Relations	BA
UT	University of Tennessee, Martin	Communications	BA/BS
TICUA	Vanderbilt University	Communication Studies	BS

e. Accounting Administrative Support

Careers in this area include bookkeeping, accounting, auditing, and payroll and medical billing. Entry into these careers typically requires moderate on-the-job training. However, there are many opportunities throughout the Tennessee for postsecondary education in this area.

Programs leading to careers in this field are available at the following institutions:

Accounting Administrative Support			
System	Institution	Program	Degree
TBR	Dyersburg State Community College	Medical Coding	Certificate
TBR	Nashville State Community College	Medical Coding	Certificate
TBR	Walters State Community College	Medical Insurance Specialist/Coding	Certificate
TBR	Pellissippi State Community College	Medical Insurance Coding and Reimbursement	Certificate
TBR	Cleveland State Community College	Accounting	Certificate
TBR	Southwest Tennessee Community College	Accounting	Certificate
TBR	Pellissippi State Community College	Accounting Specialist	Certificate
TBR	Nashville State Community College	Accounting Technology	Certificate
TBR	Northeast State Community College	Accounting Technology	Certificate
TBR	Chattanooga State Community College	Accounting Technology	AAS
TBR	Nashville State Community College	Computer Accounting	AAS

f. Banking and Finance

Careers in this area typically require moderate on-the-job training in addition to postsecondary degrees. Undergraduate and graduate degrees in accounting and finance are suitable for this occupation. Additionally, Bachelor's and graduate degrees in economics and business, offered by many institutions across the state, can lead to employment in banking and finance.

Programs leading to careers in this area are available at the following institutions:

Banking and Finance			
System	Institution	Program	Degree
TICUA	Belmont University	Accounting	BBA/BS
TICUA	Bethel College	Accounting	BAA
TICUA	Carson-Newman College	Accounting	BBA
TICUA	Christian Brothers University	Accounting	BS/MACC
TBR	Cleveland State Community College	Accounting	Certificate
TICUA	Cumberland University	Accounting	BBA
TBR	East Tennessee State University	Accounting	BBA/MACC
TICUA	Freed-Hardeman University	Accounting	BBA
TICUA	Lee University	Accounting	BA/BS
TICUA	Lincoln Memorial University	Accounting	BBA
TICUA	Lipscomb University	Accounting	BBA/MACC
TICUA	Martin Methodist College	Accounting	BBA
TICUA	Maryville College	Accounting	BBA
TBR	Middle Tennessee State University	Accounting	BBA/MACC
TICUA	Milligan College	Accounting	BA/BS
TBR	Nashville State Community College	Accounting	Cert/AAS
TICUA	Rhodes College	Accounting	MACC
TBR	Southwest Tennessee CC	Accountancy	AAS
TBR	Southwest Tennessee CC	Accounting	Certificate
TBR	Tennessee State University	Accounting	BBA
TBR	Tennessee Technological University	Accounting	BSBA
TICUA	Tennessee Wesleyan College	Accounting	BS
TICUA	Trevecca Nazarene University	Accounting	BBA
TICUA	Tusculum College	Management Accounting	BS
TICUA	Union University	Accounting	BBA/MACC
TBR	University of Memphis	Accounting	BBA/MS
UT	University of Tennessee, Chattanooga	Accountancy	MACC
UT	University of Tennessee, Knoxville	Accounting	BSBA/MACC
UT	University of Tennessee, Martin	Accounting	BSBA
TICUA	Vanderbilt University	Accountancy	MACC

g. Web/Multimedia Management and Computer Programming

Careers in this area include information systems managers, computer programmers, database administrators, software developers, and computer science researchers and teachers. Postsecondary education is necessary for entry into all of these career fields. Computer support specialists require an Associate's degree, while more specialized occupations, such as computer and information research scientists, require a Master's or Doctoral degree.

Programs leading to careers in this field are available at the following institutions:

Web/Multimedia Management			
System	Institution	Program	Degree
TBR	TCAT Athens	Computer Information Technology	Certificate/ Diploma
TBR	TCAT Chattanooga	Computer Information Technology	Certificate/ Diploma
TBR	TCAT Covington	Computer Information Technology	Certificate/ Diploma
TBR	TCAT Crossville	Computer Information Technology	Certificate/ Diploma
TBR	TCAT Crump	Computer Information Technology	Certificate/ Diploma
TBR	TCAT Dickson	Computer Information Technology	Certificate/ Diploma
TBR	TCAT Elizabethton	Computer Information Technology	Certificate/ Diploma
TBR	TCAT Harriman	Computer Information Technology	Certificate/ Diploma
TBR	TCAT Hartsville	Computer Information Technology	Certificate/ Diploma
TBR	TCAT Hohenwald	Computer Information Technology	Certificate/ Diploma
TBR	TCAT Jacksboro	Computer Information Technology	Certificate/ Diploma
TBR	TCAT Livingston	Computer Information Technology	Certificate/ Diploma
TBR	TCAT McKenzie	Computer Information Technology	Certificate/ Diploma
TBR	TCAT McMinnville	Computer Information Technology	Certificate/ Diploma
TBR	TCAT Memphis	Computer Information Technology	Certificate/ Diploma
TBR	TCAT Morristown	Computer Information Technology	Certificate/ Diploma
TBR	TCAT Murfreesboro	Computer Information Technology	Certificate/ Diploma
TBR	TCAT Nashville	Computer Information Technology	Certificate/ Diploma
TBR	TCAT Oneida	Computer Information Technology	Certificate/ Diploma
TBR	TCAT Paris	Computer Information Technology	Certificate/ Diploma
TBR	TCAT Ripley	Computer Information Technology	Certificate/ Diploma
TBR	TCAT Shelbyville	Computer Information Technology	Certificate/ Diploma
TBR	TCAT Whiteville	Computer Information Technology	Certificate/ Diploma
TBR	TCAT Pulaski	Computer Operating Systems	Certificate/ Diploma
TBR	TCAT Memphis	Computer Based Graphic Design	Certificate/ Diploma
TBR	Roane State Community College	Computer Science	Certificate
TBR	Southwest Tennessee Community College	Computer Software Specialist	Certificate
TBR	All Community Colleges (RODP)	Web Page Authoring	Certificate
TBR	Chattanooga State Community College	Web Programming	Certificate
TBR	Chattanooga State Community College	Web Design Tools	Certificate

TBR	Pellissippi State Community College	Web Design Tools	Certificate
TBR	Volunteer State Community College	Web Applications and Development	Certificate
TBR	All Community Colleges (RODP)	Web Technology	AAS
TBR	Dyersburg State Community College	Computer Information Technology	AAS
TBR	Northeast State Community College	Computer and Information Sciences	AAS
TBR	Walters State Community College	Computer and Information Sciences	AAS
TBR	Nashville State Community College	Computer Technology	AAS
TBR	Nashville State Community College	Computer Network Technology	AAS
TBR	Southwest Tennessee Community College	Computer Engineering Technology	AAS
TBR	Southwest Tennessee Community College	Information Technology	AAS
TBR	Walters State Community College	Information Technology	AAS
TBR	Austin Peay State University	Computer Science	BS
TICUA	Belmont University	Computer Science/ Web Development	BS
TICUA	Bethel University	Computer Science	BA/BS
TICUA	Christian Brothers University	Computer Science	BS
TICUA	Cumberland University	Computer Information Systems	BBA
TBR	East Tennessee State University	Computer and Information Sciences	MS
TICUA	Freed-Hardeman University	Computer Science/ Digital Design	BS
TICUA	Lane College	Computer Science	BS
TICUA	Lee University	Digital Media/ Information Systems	BA/BS
TICUA	Lipscomb University	Computer Science/ Web Development	BS
TICUA	Maryville College	Computer Science	BS
TBR	Middle Tennessee State University	Computer Science	BS/MS
TICUA	Milligan College	Computer Science / Information Systems	BA/BS
TICUA	Rhodes College	Computer Science	BS
TICUA	Sewanee: University of the South	Computer Science	BS
TICUA	Southern Adventist University	Computer Science/ Information Systems	BA/BS/BBA
TBR	Tennessee State University	Computer Science	BS
TBR	Tennessee Technological University	Computer Science/ Computer Engineering	BS/MS/ BSCMPE
TICUA	Tennessee Wesleyan University	Computer Information Systems	BBA
TICUA	Trevecca Nazarene University	Computing/ Web Development/ IT	BBA/BS
TICUA	Tusculum College	Computer Science/ Graphic Design	BS
TICUA	Union University	Computer Science/ Digital Media/ IT	BS
TBR	University of Memphis	Computer Science/ Computer Engineering	BS/BSCPE/MS/PhD
UT	University of Tennessee, Chattanooga	Computer Science/ Computer Networking	BS/MS
UT	University of Tennessee, Knoxville	Computer Science/ Computer Engineering	BSCS/BSCOME/MS/PhD
UT	University of Tennessee, Martin	Computer Science	BS
TICUA	Vanderbilt University	Computer Science/ Computer Engineering	BS/ MS/ PhD

h. Elementary Teachers (excluding Special Education)

Any education program that leads to grade K-6 licensure is included in the Elementary Education career category. A Bachelor's degree or higher is required for a career in this field.

Programs leading to careers in this area are available at the following institutions:

Elementary Teachers, Except Special Education			
System	Institution	Program	Degree
TICUA	Aquinas College	Education	BS/MAT/MED
TBR	Austin Peay State University	Education	EDS
TICUA	Belmont University	Elementary Education	BS
TICUA	Bethel College	Education	MED
TICUA	Bryan College	Education	BS/MED
TICUA	Carson-Newman College	Elementary Education	BS/MAT/MED
TICUA	Christian Bothers University	Education	MAT/MED
TBR	East Tennessee State University	Elementary Education	MED
TICUA	Fisk University	Teacher Education	BS
TICUA	Freed-Hardeman University	Education	BS/MAT/MED
TICUA	Johnson Bible College	Teacher Education	BS
TICUA	King College	Education	BS/MED
TICUA	Lee University	Elementary Education	BS/MAT/MED
TICUA	Le-Moyne-Owen College	Teacher Education	BA/BS
TICUA	Lipscomb University	Education: K-6	BS/MED/EDD
TICUA	Martin Methodist College	Elementary Education	BS
TICUA	Maryville College	Education	BS
TBR	Tennessee State University	Elementary Education	MED
TICUA	Tennessee Wesleyan College	Education	BS
TICUA	Trevecca Nazarene University	Elementary Education	BS/MAT
TICUA	Tusculum College	Education	BS/MAT
TICUA	Union University	Teaching and Learning(K-12)	BS/MED
TBR	University of Memphis	Education	EDS
UT	University of Tennessee, Chattanooga	Elementary Education	MED
UT	University of Tennessee, Knoxville	Education	MS/EDS/PhD
TICUA	Vanderbilt University	Elementary Education	BS/MED
TICUA	Welch College	Child Dev. & Learning (grade K-6)	BS

i. Construction

Careers in this area require a wide range of skills and craftsmanship knowledge. They include paving, carpentry, plumbing, masonry, electrical work, civil engineering, and construction management. Typical educational requirements for

these careers range from on-the-job training and some postsecondary vocational training to an Associate's or Bachelor's degree.

Programs leading to careers in this field are available at the following institutions:

Construction			
System	Institution	Program	Degree
TBR	TCAT Chattanooga	Building and Construction Technology	Certificate/ Diploma
TBR	TCAT Livingston	Building and Construction Technology	Certificate/ Diploma
TBR	TCAT Memphis	Building and Construction Technology	Certificate/ Diploma
TBR	TCAT Nashville	Building and Construction Trades	Certificate/ Diploma
TBR	TCAT Chattanooga	Plumbing	Certificate/ Diploma
TBR	TCAT Chattanooga	Masonry	Certificate/ Diploma
TBR	TCAT Memphis	Masonry	Certificate/ Diploma
TBR	TCAT Athens	Electrical Repair	Certificate/ Diploma
TBR	TCAT Chattanooga	Electrical & Power Transmission Installation	Diploma
TBR	Pellissippi State Community College	Electrical Construction & Repair	Technical Certificate
TBR	Southwest Tennessee Community College	Electrical Fundamentals	Technical Certificate
TBR	Pellissippi State Community College	Electrical Systems Technology	Technical Certificate
TBR	Chattanooga State Community College	Electrical Engineering Technology	AAS
TBR	Nashville State Community College	Electrical Engineering Technology	AAS
TBR	Southwest Tennessee Community College	Electrical Engineering Technology	AAS
TBR	Northeast State Community College	Electrical Technology	AAS
TBR	Southwest Tennessee Community College	Architectural Engineering Technician	AAS
TBR	Middle Tennessee State University	Construction Management	BS

j. Business Analytics

Careers in this area include business operations specialists, and budget, marketing, and management analysts. Each of these careers requires a Bachelor's or Master's degree. While many of the programs included in the following list are specific to management information systems and management science, degrees in marketing and business also provide a foundation for careers in this field.

Programs leading to careers in this field are available at the following institutions:

Business Analytics			
System	Institution	Program/ Concentration	Degree
TICUA	Belmont University	Management Information Systems	BBA
TICUA	Carson-Newman University	Management Information Systems	BBA
TICUA	Christian Brothers University	Management Information Systems	BSBA
TICUA	Cumberland University	Management Science	BBA
TICUA	Lincoln Memorial University	Management Science	BBA
TICUA	Lee University	Management Information Systems	BA/BS

TICUA	Martin Methodist College	Management Information Systems	BBA
TBR	University of Memphis	Management Information Systems	BBA
UT	University of Tennessee, Knoxville	Management Science	PhD

k. Pre-K/Early Childhood Education

Preschool and Kindergarten teachers are included in the Pre-K/Early Childhood Education career category. Vocational training or a Bachelor's degree is required for a career in this field.

Programs leading to careers in this field are available at the following institutions:

Early Childhood Education			
System	Institution	Program	Degree
TBR	TCAT Crossville	Early Childhood Education	Certificate/ Diploma
TBR	TCAT Hohenwald	Early Childhood Education	Certificate/ Diploma
TBR	TCAT Nashville	Early Childhood Education	Certificate/ Diploma
TBR	TCAT Paris	Early Childhood Education	Certificate/ Diploma
TBR	Chattanooga State Community College	Early Childhood Education	Certificate/AAS
TBR	Cleveland State Community College	Early Childhood Education	Certificate/AAS
TBR	Columbia State Community College	Early Childhood Education	Certificate
TBR	Dyersburg State Community College	Early Childhood Education	Certificate/AAS
TBR	Motlow State Community College	Early Childhood Education	Certificate/AAS
TBR	Nashville State Community College	Early Childhood Education	Certificate/AAS
TBR	Northeast State Community College	Early Childhood Education	Certificate/AAS
TBR	Pellissippi State Community College	Early Childhood Education	Certificate/AAS
TBR	Roane State Community College	Early Childhood Education	Certificate/AAS
TBR	Southwest Tennessee Community College	Early Childhood Education	Certificate/AAS
TBR	Volunteer State Community College	Early Childhood Education	Certificate/AAS
TBR	Walters State Community College	Early Childhood Education	Certificate/AAS
TICUA	Belmont University	Early Childhood Education	BA/BS
TICUA	Carson-Newman University	Early Childhood Education	BA
TBR	East Tennessee State University	Early Childhood Education	BS/MS/PhD
TICUA	Freed-Hardeman University	Early Childhood Education	BA/BS
TICUA	Lee University	Early Childhood Education	BS
TICUA	LeMoyne-Owen College	Early Childhood Education	BA
TBR	Middle Tennessee State University	Early Childhood Education	BS
TICUA	Milligan College	Child and Youth Development	BA
TICUA	Southern Adventist University	Early Childhood Education	AA/BA
TBR	Tennessee State University	Early Childhood Education	BS
TBR	Tennessee Technological University	Early Childhood Education	BS
TICUA	Tennessee Wesleyan College	Early Human Development and Learning	BS
TICUA	Trevecca Nazarene University	Early Childhood Education	BA
TICUA	Tusculum College	Early Childhood Education	BA
UT	University of Tennessee, Chattanooga	Early Childhood Education	BS
TICUA	Vanderbilt University	Early Childhood Education	BS
TICUA	Welch College	Early Childhood Education	BS

1. Religion

Administrative and nonprofit positions are included in the category. In addition to the programs listed below, many institutions offer theological and denominational programs that may be more specific to a certain position within this field.

Programs leading to careers in this area are available at the following institutions:

Religion			
System	Institution	Program	Degree
TICUA	Belmont University	Religious Studies/ Church Leadership	BS
TICUA	Bryan College	Christian Ministry	BS
TICUA	Carson-Newman University	Religion/ Ministry Studies	BS/MS
TICUA	Freed-Hardeman University	Ministry	MA
TICUA	Johnson Bible College	Nonprofit Management	BS
TICUA	King College	Religious Studies	BS
TICUA	Lane College	Religion	BA/BS
TICUA	Lee University	Pastoral Ministry	BA/BS
TICUA	Lincoln Memorial University	Philosophy and Religion	BA
TICUA	Lipscomb University	Theology and Ministry	BA/MTS
TICUA	Martin Methodist College	Religion and Philosophy	BS
TICUA	Maryville College	Religion	BS
TICUA	Rhodes College	Religious Studies	BS
TICUA	Sewanee College	Religion	BS/MA
TICUA	Southern Adventist University	Religion	BS/MA
TICUA	Trevecca Nazarene University	Religious Studies	BA
TICUA	Tusculum College	Religious Studies	BS
TICUA	Union University	Christian Ministry and Missions	BS/MCS
UT	UT - Knoxville	Religious Studies	BS
TICUA	Vanderbilt University	Religious Studies	BS
TICUA	Welch College	Minister of Christian Education	BS

m. Technical Design and Preconstruction

Careers in this area include wood model makers and wood pattern makers. Work experience in a related occupation or long-term on-the-job training is necessary for employment in production design. Additionally, Tennessee Technological University offers a Bachelor's of Fine Arts with a concentration in Wood Working, which would prepare Tennesseans for careers in this area.

Technical Design and Preconstruction			
System	Institution	Program/ Concentration	Degree
TBR	Cleveland State CC	Civil Engineering Technology	Certificate

TBR	Middle Tennessee State University	Construction Management	BS
TBR	Southwest Tennessee CC	Architectural Engineering Tech	Cert/AA
TBR	Southwest Tennessee CC	Civil Engineering Technology	AA
TBR	Pellissippi State CC	Civil Engineering Technology	AA

n. Human Resources

Careers in this category include human resource specialists and training and development specialists. Those who seek a career in human resource management typically earn a Bachelor’s degree in business administration, or a Master’s degree in Business Administration.

Programs leading to careers in this field are available at the following institutions:

Human Resource Management			
System	Institution	Program/ Concentration	Degree
TICUA	Christian Brothers University	Human Resource Management	BSBA
TICUA	Lincoln Memorial University	Human Resource Management	BBA
TICUA	Lipscomb University	Human Resource Management	BBA/MHR
TICUA	Maryville College	Human Resource Management	BS
TICUA	Southern Adventist University	Human Resource Management	BBA
TBR	Tennessee Technological University	Human Resource Management	BSBA
TICUA	Tennessee Wesleyan College	Human Resource Management	BSBA
UT	University of Tennessee, Knoxville	Human Resource Management	BSBA
TICUA	Vanderbilt University	Human Resources Development	M.Ed

o. Security and Protective Services

The Security and Protective Services career category includes correctional officers, detectives and investigators, gaming surveillance, and criminal justice and law enforcement teachers. Educational requirements for each career range from on-the-job training to a Doctoral degree.

Programs leading to careers in this field are available at the following institutions:

Security and Protective Services			
System	Institution	Program	Degree
TBR	TCAT Chattanooga	Law Enforcement Training Academy	Certificate
TBR	Cleveland State Community College	Law Enforcement Training	Certificate
TBR	Dyersburg State Community College	Corrections and Law Enforcement	Certificate
TBR	All Community Colleges (RODP)	Criminal Justice	AAS
TBR	Austin Peay State University	Criminal Justice	BS
TICUA	Bethel University	Criminal Justice (Online)	BS/MS
TICUA	Bryan College	Criminal Justice	BA
TICUA	Christian Brothers University	Cybersecurity & Digital Forensics	BS
TICUA	Cumberland University	Criminal Justice	BA

TBR	East Tennessee State University	Criminal Justice	BA/BS/MA
TICUA	Freed-Hardeman University	Criminal Justice	BS
TICUA	Lane College	Criminal Justice	BA
TICUA	LeMoyne-Owen College	Criminal Justice	BS
TICUA	Lincoln Memorial University	Criminal Justice	BS
TICUA	Martin Methodist College	Criminal Justice	BA/BS
TBR	Tennessee State University	Criminal Justice	BS
TICUA	Tennessee Wesleyan College	Criminal Justice	BA/BS
TICUA	Trevecca Nazarene University	Criminal Justice	BS
TICUA	Tusculum College	Criminal Justice	BS
TBR	University of Memphis	Criminal Justice	BA/MA
UT	University of Tennessee, Chattanooga	Criminal Justice	BS/MSCJ
UT	University of Tennessee, Martin	Criminal Justice	BSCJ
TBR	Middle Tennessee State University	Criminal Justice Administration	BS

p. Legal Assisting

Careers in this field include paralegals and administrative assistant work in law offices. This position typically requires a certificate or Associate’s degree, which are offered by many community colleges across the state.

Programs leading to careers in this area are available at the following institutions:

Legal Assisting			
System	Institution	Program	Degree
TBR	Chattanooga State CC	Paralegal Studies	Certificate/AAS
TBR	Nashville State CC	Paralegal Studies	AAS
TBR	Pellissippi State CC	Paralegal Studies	AAS
TBR	Roane State CC	Paralegal Studies	AAS
TICUA	Tennessee Wesleyan College	Behavioral Science: Legal Studies	BS
UT	UT - Chattanooga	Legal Assistant Studies	BS
TBR	Volunteer State CC	Paralegal Program	Certificate/AAS

q. Firefighting

Careers in this area include fire fighters, fire inspectors, and fire investigators. Educational requirements for this line of work typically involve on-the-job training or work experience in a related occupation.

Programs leading to careers in firefighting are available at the following institutions:

Fire Fighting			
System	Institution	Program	Degree
TBR	Chattanooga State Community College	Fire Science and Technology	AAS
TBR	Southwest Tennessee Community College	Fire Science and Technology	AAS

r. Industrial Engineering

Careers in this field require a minimum of a bachelor's degree in engineering. Several private and public institutions offer degrees in engineering including the University of Tennessee, Knoxville and the University of Memphis.

Programs leading to careers in this area are available at the following institutions:

Industrial Engineering			
System	Institution	Program	Degree
TICUA	Christian Brothers University	Engineering Management	BS/MSEM
TICUA	Lane College	Engineering	BS
TICUA	Lipscomb University	Engineering	BS/MS
TICUA	Maryville College	Engineering	BS
TICUA	Sewanee College	Engineering	BS
TBR	Tennessee State University	Engineering	ME
TBR	Tennessee Technological University	Engineering	PHD
TICUA	Union University	Engineering	BS
TBR	University of Memphis	Engineering	PHD
UT	University of Tennessee, Chattanooga	Engineering	BSE/MS
UT	University of Tennessee, Knoxville	Industrial Engineering	BSIE/MS/PhD
UT	University of Tennessee, Martin	Engineering	BSE
TICUA	Vanderbilt University	Engineering Science	BS

s. Compliance Officers

Careers in this area include compliance officers, financial examiners, and transportation inspectors. Educational requirements for these careers include long-term on-the-job training, work experience in a related occupation, or a Bachelor's degree. There are currently no programs offered in Tennessee that train students for this specific career field. However, many compliance officers have a background in finance. Finance degrees are offered at the baccalaureate level at East Tennessee State University, Middle Tennessee State University, Tennessee Technological University, the University of Memphis, the University of Tennessee, Knoxville and the University of Tennessee, Martin, as well as many of the state's private institutions.

t. Medical and Clinical Laboratory Technician

Medical and clinical lab technicians can specialize in high-need areas such as phlebotomy, ultrasounds, or general laboratory work. Careers in this category require an Associate's degree, and specialized training is available at several universities throughout the state.

Programs leading to careers in this field are available at the following institutions:

Medical and Clinical Laboratory Technicians			
System	Institution	Program	Degree
TBR	Volunteer State Community College	Medical Lab Technology	AAS
TBR	Southwest Tennessee Community College	Medical Lab Technician	AAS
TBR	Southwest Tennessee Community College	Lab Phlebotomy Technician	Certificate
TBR	Jackson State Community College	Phlebotomy/ Medical Lab Technician	Certificate/ AAS
TBR	Austin Peay State University	Clinical Lab Science	BS
TICUA	Belmont University	Clinical Lab Science	BS
TICUA	Lincoln Memorial University	Clinical Lab Science	BS
TICUA	Southern Adventist University	Clinical Lab Science	BS
TICUA	Trevecca Nazarene University	Clinical Lab Science	BS
UT	University of Tennessee – Knoxville	Cytotechnologist	MA
UT	University of Tennessee Health Science Center	Medical Lab Science	BSMLS

CONCLUSION, LIMITATIONS, AND RECOMMENDATIONS

Conclusion

Projections of the supply of postsecondary degrees to be awarded indicate that all levels of certificates and degrees will increase through 2025. This growth is particularly dramatic for certificates and Associate's degrees, while the number of Bachelor's and graduate degrees will increase with the historic trend. THEC will further refine these degree projections as the 2015-2025 *Master Plan for Tennessee Higher Education* is drafted throughout the spring.

Construction, transportation and logistics, and business and finance are career fields in great demand – there are more employment opportunities in these areas than skilled workers to fill them. Careers in these fields require all levels of postsecondary certificates and degrees, ranging from certificates earned in less than one year to Doctoral degrees. Alternatively, certificates and degrees leading to jobs in cosmetology and barbering, journalism and broadcast, engineering technology and fine arts are oversupplied, as the supply of trained Tennesseans far exceeds the number of jobs available.

Public, private, and proprietary higher education institutions throughout the state offer a number of academic programs to prepare Tennesseans for careers in these high-demand fields. These programs are offered at institutions across the state, providing many opportunities for training for those seeking employment in these in-demand areas.

Limitations

Supply and demand analyses are useful for educators, employers, and policymakers at all levels. However, those who produce such reports acknowledge two underlying limitations:

Supply and demand analyses rely on historical data and assumptions about future economic conditions and industry expansion or contraction. For this reason, projections are sometimes incorrect for various occupational fields, particularly emerging fields with limited historical data, and those fields with high supply-to-demand ratios (oversupplied fields).

Also, the relationship between supply and demand is most direct at the sub-baccalaureate level (certificates and Associate's degrees) and specialized programs at the Doctoral and professional level. For example, someone with a certificate in automotive repair or a medical specialization in Cardiology is much more likely than someone holding a Bachelor's degree in English to hold a job that is *extremely specific* to their field of study. As such, it is more straightforward to link individuals with specialized degrees to specific employment areas. This is not true for those holding more versatile Bachelor's and Master's degrees, as those with these types of degrees are employable in a number of fields.

Recommendations for future research

Future discussions of degrees awarded and the demand for labor in particular areas would benefit from regional and county-specific breakdowns, as opposed to exploring this issue on a statewide scale. In doing so, educators, employers, and policymakers can better determine the education and workforce needs that are unique to a particular area, and can target funds and interventions accordingly.

Further, future work in this area must more fully integrate information about proprietary institutions operating in Tennessee, rather than rely only on the few institutions of this type that are included in the IPEDS dataset. More comprehensive, detailed data are available from the Tennessee Higher Education Commission's Division of Postsecondary School Authorization. Including more information about proprietary institutions, as well as the programs in high-demand areas offered at these institutions, will provide a more complete view of the number and type of degrees being awarded across Tennessee, particularly in high-demand areas.

Finally, data that are newly available to the Department of Labor and Workforce Development include information on employer certification requirements for tens of thousands of job openings currently listed on *jobs4tn.gov*. Analysis of these data could better inform higher education institutions about current job requirements and refine program offerings to more closely match employer demand.

Appendix A: Higher education institutions included in sample

Public, 4-year or above

Austin Peay State University
East Tennessee State University
Middle Tennessee State University
Tennessee State University
Tennessee Technological University
The University of Tennessee
The University of Tennessee at Chattanooga
The University of Tennessee Health Science Center
The University of Tennessee-Martin
University of Memphis

Public, 2-year

Chattanooga State Community College
Cleveland State Community College
Columbia State Community College
Dyersburg State Community College
Jackson State Community College
Motlow State Community College
Nashville State Community College
Northeast State Community College
Pellissippi State Community College
Roane State Community College
Southwest Tennessee Community College
Southwest Tennessee Community College-Macon
Volunteer State Community College
Walters State Community College

Public, less than 2-year

TN College of Applied Technology - Athens
TN College of Applied Technology - Covington
TN College of Applied Technology - Crossville
TN College of Applied Technology - Crump
TN College of Applied Technology - Dickson
TN College of Applied Technology - Elizabethton
TN College of Applied Technology - Harriman
TN College of Applied Technology - Hartsville
TN College of Applied Technology - Hohenwald
TN College of Applied Technology - Jacksboro
TN College of Applied Technology - Jackson
TN College of Applied Technology - Knoxville

Private not-for-profit, 4-year or above

University American Baptist College
Aquinas College
Baptist Memorial College of Health Sciences
Belmont University
Bethel University
Bryan College-Dayton
Carson-Newman College
Christian Brothers University
Cumberland University
Emmanuel Christian Seminary
Fisk University
Free Will Baptist Bible College
Freed-Hardeman University
Harding University Graduate School of Religion
Hiwassee College
Johnson University
King College
Lambuth University
Lane College
Le Moyne-Owen College
Lee University
Lincoln Memorial University
Lipscomb University
Martin Methodist College
Maryville College
Meharry Medical College
Memphis College of Art
Memphis Theological Seminary
Middle Tennessee School of Anesthesia Inc.
Milligan College
O'More College of Design
Oxford Graduate School
Pentecostal Theological Seminary
Rhodes College
Richmont Graduate University
Sewanee-The University of the South
Southern Adventist University
Southern College of Optometry
Temple Baptist Seminary
Tennessee Temple University

Public, less than 2-year cont'd

TN College of Applied Technology - Livingston
 TN College of Applied Technology - McKenzie
 TN College of Applied Technology - McMinnville
 TN College of Applied Technology - Memphis
 TN College of Applied Technology - Morristown
 TN College of Applied Technology - Murfreesboro
 TN College of Applied Technology - Nashville
 TN College of Applied Technology - Newbern
 TN College of Applied Technology - Oneida
 TN College of Applied Technology - Paris
 TN College of Applied Technology - Pulaski
 TN College of Applied Technology - Ripley
 TN College of Applied Technology - Shelbyville
 TN College of Applied Technology - Whiteville

Private for-profit, 4-year or above

Argosy University-Nashville
 Daymar Institute-Clarksville
 Daymar Institute-Murfreesboro
 Daymar Institute-Nashville
 DeVry University's Keller Grad School of Mgmt
 DeVry University-Tennessee
 Fountainhead College of Technology
 Int'l Academy of Design & Technology-Nashville
 ITT Technical Institute-Chattanooga
 ITT Technical Institute-Cordova
 ITT Technical Institute-Knoxville
 ITT Technical Institute-Nashville
 Nossi College of Art
 South College
 Strayer University-Tennessee
 The Art Institute of Tennessee-Nashville
 University of Phoenix-Chattanooga Campus
 University of Phoenix-Memphis Campus
 University of Phoenix-Nashville Campus
 Victory University
 Virginia College-School of Business and Health

Private for-profit, 2-year

Anthem Career College-Memphis
 Anthem Career College-Nashville
 Chattanooga Medical Dental & Technical Careers

Tennessee Wesleyan College
 Trevecca Nazarene University
 Tusculum College
 Union University
 Vanderbilt University
 Visible Music College
 Watkins College of Art Design & Film
 Williamson Christian College

Private not-for-profit, 2-year

John A Gupton College
 Methodist Hospital School of Nursing
 Remington College-Memphis Campus
 William Moore College of Technology

Private not-for-profit, less than 2-year

Franklin Academy

Private for-profit, less than 2-year

Arnolds Beauty School
 Buchanan Beauty College
 Career Beauty College
 Chattanooga Barber College
 Elite College of Cosmetology
 Empire Beauty School-E Memphis
 Empire Beauty School-Nashville
 Fayetteville College of Cosmetology Arts
 Genesis Career College
 Genesis Career College-Lebanon Campus
 Institute of Hair Design
 International Barber & Style College
 Jenny Lea Academy of Cosmetology
 Knoxville Institute of Hair Design
 Last Minute Cuts Barbering and Cosmetology
 Love Beauty School
 Mason Academy of Cosmetology
 Memphis Institute of Barbering
 Meridian Institute of Surgical Assisting
 Mr. Wayne's School of Unisex Hair Design
 Nashville Barber and Style Academy
 Nashville College of Medical Careers
 New Concepts School of Cosmetology

Private for-profit, 2-year cont'd

Concorde Career College-Memphis

Fortis Institute

Fortis Institute-Nashville

Kaplan Career Institute-Nashville

L'Ecole Culinaire

Miller-Motte Technical College-Chattanooga

Miller-Motte Technical College-Clarksville

Miller-Motte Technical College-Madison

Nashville Auto Diesel College

Nat'l College of Business and Technology-Nashville

North Central Institute

Remington College-Nashville Campus

Tennessee Career College

Vatterott Career College-Memphis Appling Farms

Vatterott Career College-Memphis Dividend Drive

West Tennessee Business College

New Directions Hair Academy

New Wave Hair Academy

Paul Mitchell The School-Knoxville

Paul Mitchell the School-Memphis

Paul Mitchell the School-Murfreesboro

Paul Mitchell the School-Nashville

Plaza Beauty School

Pyramid Beauty School

Queen City College

Regency Beauty Institute-Chattanooga

Regency Beauty Institute-Knoxville

Regency Beauty Institute-Nashville

Regency Beauty Institute-North Nashville

SAE Institute of Technology-Nashville

Shear Academy

Southern Institute of Cosmetology

Styles and Profiles Beauty College

Tennessee Academy of Cosmetology LLC-Shelby

Tennessee Academy of Cosmetology LLC-Stage

Tennessee Career Institute

Tennessee Institute of Healing Arts

Tennessee School of Beauty of Knoxville Inc.

The Beauty Institute-Memphis

The Hair Design School-Jackson

The Hair Design School-N Memphis

The Hair Design School-S Memphis

The Massage Institute of Memphis

Volunteer Beauty School-Dyersburg

Volunteer Beauty School-Madison

Volunteer Beauty School-Nashville

Appendix B: THEC Division of Postsecondary School Authorization

Credentials awarded to programs completers at authorized institutions, FY 2013-14

	All Awards		Certificate		Diploma		Associates	
	For-Profit	Not-For-Profit	For-Profit	Not-For-Profit	For-Profit	Not-For-Profit	For-Profit	Not-For-Profit
All Programs	17,524	2,258	8,592	539	4,217	644	2,676	147
Administrative and Clerical Support	43	0	22	0	11	0	10	0
Aeronautics and Aviation	192	15	117	0	10	0	65	0
Agriculture Operations and Related Sciences	0	3	0	0	0	0	0	3
Bartending and Hospitality	465	0	462	0	0	0	0	0
Business, Management, Marketing and Related Services	687	215	16	0	11	0	182	24
Communications, Journalism and Related Fields	7	2	0	2	0	0	1	0
Computer and Information Sciences and Support Services	1,156	69	554	30	21	0	430	27
Construction Trades	704	298	84	227	481	71	134	0
Counseling/Social Work	86	48	0	0	0	0	0	0
Criminal Justice	224	54	0	0	1	0	140	40
Culinary Services	372	0	0	0	157	0	198	0
Education	327	387	0	9	0	0	20	0
Engineering	98	0	0	0	0	0	75	0
English Language and Literature/Letters	2	1	0	0	0	0	0	0
Finance, Accounting and Economics	123	0	0	0	4	0	25	0
Health Professionals and Related Clinical Sciences	6,093	688	2,753	180	2,023	456	1,034	34

History	5	0	0	0	0	0	0	0
Human Resources and Human Sciences	126	30	1	0	0	0	28	0
Law, Legal Services and Legal Studies	93	0	5	0	0	0	71	0
Mechanic and Repair Technology	1,320	12	1	0	1,215	2	104	10
Medical Billing and Coding	234	65	38	0	162	65	30	0
Multi/Interdisciplinary Studies	6	5	0	0	0	0	1	0
Natural Resources and Research	1	0	0	0	0	0	0	0
Physical Sciences	5	0	0	0	0	0	0	0
Protective Services	24	9	0	9	0	0	5	0
Psychology	125	5	0	0	0	0	9	1
Public Administration and Services	27	3	0	0	0	0	0	0
Science Technologies/Technicians	28	0	15	0	6	0	7	0
Social Sciences	41	3	0	0	0	0	0	0
Taxation and Tax Preparation	421	0	419	0	0	0	0	0
Theological Studies and Religious Vocations	8	292	0	41	0	48	0	6
Transportation and Materials Moving Services	3,966	40	3,940	40	26	0	0	0
Visual and Performing Arts	488	2	145	0	85	0	107	0
Other	27	12	20	1	4	2	0	2

	Bachelors		Graduate Certificate		Masters		Doctorate	
	For-Profit	Not-For-Profit	For-Profit	Not-For-Profit	For-Profit	Not-For-Profit	For-Profit	Not-For-Profit
All Programs	1,151	273	18	12	790	630	80	13
Administrative and Clerical Support	0	0	0	0	0	0	0	0
Aeronautics and Aviation	0	5	0	0	0	10	0	0
Agriculture Operations and Related Sciences	0	0	0	0	0	0	0	0
Bartending and Hospitality	0	0	0	0	3	0	0	0
Business, Management, Marketing and Related Services	293	95	6	0	163	96	16	0
Communications, Journalism and Related Fields	6	0	0	0	0	0	0	0
Computer and Information Sciences and Support Services	129	1	1	0	19	11	2	0
Construction Trades	5	0	0	0	0	0	0	0
Counseling/Social Work	0	6	0	0	73	42	13	0
Criminal Justice	76	14	0	0	7	0	0	0
Culinary Services	17	0	0	0	0	0	0	0
Education	77	16	5	10	196	343	29	9
Engineering	23	0	0	0	0	0	0	0
English Language and Literature/Letters	1	0	0	0	1	1	0	0
Finance, Accounting and Economics	49	0	2	0	42	0	1	0
Health Professionals and Related Clinical Sciences	137	10	1	1	145	7	0	0
History	5	0	0	0	0	0	0	0
Human Resources and Human Sciences	27	6	2	1	64	23	4	0
Law, Legal Services and Legal Studies	14	0	0	0	3	0	0	0

Mechanic and Repair Technology	0	0	0	0	0	0	0	0
Medical Billing and Coding	4	0	0	0	0	0	0	0
Multi/Interdisciplinary Studies	5	1	0	0	0	4	0	0
Natural Resources and Research	1	0	0	0	0	0	0	0
Physical Sciences	5	0	0	0	0	0	0	0
Protective Services	13	0	0	0	5	0	1	0
Psychology	74	4	0	0	32	0	10	0
Public Administration and Services	0	0	0	0	24	3	3	0
Science Technologies/Technicians	0	0	0	0	0	0	0	0
Social Sciences	33	3	0	0	7	0	1	0
Taxation and Tax Preparation	0	0	1	0	1	0	0	0
Theological Studies and Religious Vocations	4	103	0	0	4	90	0	4
Transportation and Materials Moving Services	0	0	0	0	0	0	0	0
Visual and Performing Arts	151	2	0	0	0	0	0	0
Other	2	7	0	0	1	0	0	0

Appendix C:

Supply and demand projections for the 25 highest-demand fields in Tennessee's workforce, prepared by the Tennessee Department of Labor and Workforce Development

Tennessee

Average Occupational Growth Rate = 1.3

13.100000 Precision Production Pathway

DEMAND DATA

SOC CODE	SOC TITLE	Estimated Employment	Projected Employment	Average Annual Openings	Average Annual Growth	Annual Median Salary	Usual Education Requirement
499069	Precision Instrument and Equipment Repairers, All	549	672	27	2.0	\$52,990	Long-term on-the-job training
511011	First-Line Supervisors of Production and Operating	15750	16150	262	0.3	\$51,147	Work experience in a related occupation
512041	Structural Metal Fabricators and Fitters	1971	2369	119	1.9	\$31,452	Moderate-term on-the-job training
512091	Fiberglass Laminators and Fabricators	1009	1287	44	2.5	\$32,429	Moderate-term on-the-job training
512092	Team Assemblers	39679	47700	1429	1.9	\$30,358	Moderate-term on-the-job training
513021	Butchers and Meat Cutters	2606	2739	77	0.5	\$27,041	Long-term on-the-job training
514011	Computer-Controlled Machine Tool Operators, Metal	2622	3469	158	2.8	\$33,104	Long-term on-the-job training
514012	Computer Numerically Controlled Machine Tool Progr	492	737	38	4.1	\$41,980	Long-term on-the-job training
514021	Extruding and Drawing Machine Setters, Operators,	2400	2428	49	0.1	\$29,109	Moderate-term on-the-job training
514022	Forging Machine Setters, Operators, and Tenders, M	625	641	14	0.3	\$30,510	Moderate-term on-the-job training
514023	Rolling Machine Setters, Operators, and Tenders, M	907	951	22	0.5	\$35,544	Moderate-term on-the-job training
514032	Drilling and Boring Machine Tool Setters, Operator	503	456	10	-1.0	\$32,527	Moderate-term on-the-job training
514033	Grinding, Lapping, Polishing, and Buffing Machine	1621	1616	36	0.0	\$31,453	Moderate-term on-the-job training
514034	Lathe and Turning Machine Tool Setters, Operators,	710	660	14	-0.7	\$32,949	Moderate-term on-the-job training
514035	Milling and Planing Machine Setters, Operators, an	557	555	11	0.0	\$30,194	Moderate-term on-the-job training
514041	Machinists	8007	9368	320	1.6	\$39,599	Long-term on-the-job training
514051	Metal-Refining Furnace Operators and Tenders	768	881	21	1.4	\$36,802	Moderate-term on-the-job training
514061	Model Makers, Metal and Plastic	57	62	1	0.8	\$38,546	Moderate-term on-the-job training
514062	Patternmakers, Metal and Plastic	58	77	3	2.9	\$41,601	Moderate-term on-the-job training
514081	Multiple Machine Tool Setters, Operators, and Tend	2589	2683	59	0.4	\$31,274	Moderate-term on-the-job training
514111	Tool and Die Makers	2278	2700	56	1.7	\$45,448	Long-term on-the-job training
514191	Heat Treating Equipment Setters, Operators, and Te	473	484	10	0.2	\$33,326	Moderate-term on-the-job training
514192	Layout Workers, Metal and Plastic	197	203	5	0.3	\$35,118	Moderate-term on-the-job training
514194	Tool Grinders, Filers, and Sharpeners	128	143	4	1.1	\$33,439	Moderate-term on-the-job training
514199	Metal Workers and Plastic Workers, All Other	202	247	6	2.0	\$27,989	Moderate-term on-the-job training
516061	Textile Bleaching and Dyeing Machine Operators and	393	432	10	1.0	\$23,535	Moderate-term on-the-job training
*	*	61	69	2	1.2	\$36,172	Long-term on-the-job training
516093	Upholsterers	1245	1204	33	-0.3	\$22,938	Long-term on-the-job training
517011	Cabinetmakers and Bench Carpenters	1569	1574	12	0.0	\$29,566	Long-term on-the-job training
517021	Furniture Finishers	108	103	2	-0.5	\$25,412	Long-term on-the-job training
517041	Sawing Machine Setters, Operators, and Tenders, Wo	1246	1349	44	0.8	\$23,409	Moderate-term on-the-job training
517042	Woodworking Machine Setters, Operators, and Tender	1777	1749	10	-0.2	\$26,907	Moderate-term on-the-job training
517099	Woodworkers, All Other	823	819	27	0.0	\$19,098	Moderate-term on-the-job training
*	*	78	83	2	0.6	\$63,983	Long-term on-the-job training
518013	Power Plant Operators	538	592	22	1.0	\$75,711	Long-term on-the-job training
518021	Stationary Engineers and Boiler Operators	683	646	21	-0.6	\$51,726	Long-term on-the-job training
519022	Grinding and Polishing Workers, Hand	804	794	23	-0.1	\$27,413	Moderate-term on-the-job training
519071	Jewelers and Precious Stone and Metal Workers	304	240	6	-2.3	\$33,211	Post-secondary vocational training
519082	Medical Appliance Technicians	137	162	7	1.7	\$35,134	Long-term on-the-job training
519083	Ophthalmic Laboratory Technicians	926	1126	51	2.0	\$27,188	Moderate-term on-the-job training
519122	Painters, Transportation Equipment	960	1189	41	2.2	\$34,979	Moderate-term on-the-job training
519194	Etchers and Engravers	129	114	3	-1.2	\$31,056	Long-term on-the-job training
*	*	1619	1448	53	-1.1	\$28,755	Moderate-term on-the-job training
TOTAL		100158	112971	3164	1.3		

SUPPLY DATA

CODE	PROGRAM TITLE	Totals	Secondary Concentrators	Cert	Assoc	Bach	Grad	WIA	CT CODE
410301	Chemical Technology/Technician.		0	11	0	0	0	0	
410303	Chemical Process Technology.		0	88	0	0	0	0	
480501	Machine Tool Technology/Machinist.		0	91	1	0	0	0	
480503	Machine Shop Technology/Assistant.		0	422	0	0	0	0	
480507	Tool and Die Technology/Technician.		0	12	0	0	0	0	
Total		625	0	624	1	0	0	0	
TOTAL SUPPLY		625							
TOTAL DEMAND		3164							
SUPPLY/DEMAND RATIO		0.2							

Cluster Grade = B

The outlook for this cluster is Very Good.

The growth rate is positive but not above the average for all occupations.

There are more job openings expected annually than there were training completers in a recent year.

Source: TN Department of Labor and Workforce Development, Emp. Sec. Div., Labor Market Information: (615) 741-3639, 2013

Tennessee

Average Occupational Growth Rate = 1.3

13.2200000 Operations and Maintenance (*denotes confidential data)

DEMAND DATA

		Statewide Only Cluster					
SOC CODE	SOC TITLE	Estimated Employment	Projected Employment	Average Annual Openings	Average Annual Growth	Annual Median Salary	Usual Education Requirement
131023	Purchasing Agents, exc. Wholesale, Retail & Farm.	4367	4823	125	1.0	\$51,273	Bachelor's degree
472011	Boilermakers	533	551	26	0.3	\$62,368	Long-term on-the-job training
491011	First-Line Supervisors of Mechanics, Installers, a	8707	9541	319	0.9	\$55,246	Work experience in a related occupation
499011	Mechanical Door Repairers	402	444	18	1.0	\$30,726	Moderate-term on-the-job training
499031	Home Appliance Repairers	825	829	26	0.0	\$29,097	Long-term on-the-job training
499041	Industrial Machinery Mechanics	6715	7918	314	1.7	\$52,270	Long-term on-the-job training
499043	Maintenance Workers, Machinery	2729	3142	75	1.4	\$40,987	Long-term on-the-job training
499044	Millwrights	925	1062	28	1.4	\$43,490	Long-term on-the-job training
*	*	13	13	0	0.0	\$56,972	Moderate-term on-the-job training
499062	Medical Equipment Repairers	1027	1367	62	2.9	\$40,254	Moderate-term on-the-job training
*	*	221	239	8	0.8	\$30,386	Long-term on-the-job training
*	*	21	16	1	-2.7	\$65,786	Long-term on-the-job training
499071	Maintenance and Repair Workers, General	28591	31588	849	1.0	\$35,250	Post-secondary vocational training
*	*	472	517	9	0.9	\$31,174	Moderate-term on-the-job training
499094	Locksmiths and Safe Repairers	457	599	29	2.7	\$33,168	Moderate-term on-the-job training
512022	Electrical and Electronic Equipment Assemblers	2875	3164	64	1.0	\$25,946	Short-term on-the-job training
512023	Electromechanical Equipment Assemblers	524	572	11	0.9	\$31,795	Short-term on-the-job training
516063	Textile Knitting and Weaving Machine Setters, Oper	438	487	12	1.1	\$23,468	Long-term on-the-job training
516064	Textile Winding, Twisting, and Drawing Out Machine	1126	812	18	-3.2	\$27,247	Moderate-term on-the-job training
516091	Extruding and Forming Machine Setters, Operators,	599	461	10	-2.6	\$36,646	Moderate-term on-the-job training
518091	Chemical Plant and System Operators	1538	1089	57	-3.4	\$50,906	Long-term on-the-job training
519011	Chemical Equipment Operators and Tenders	1689	1402	59	-1.8	\$43,862	Moderate-term on-the-job training
519061	Inspectors, Testers, Sorters, Samplers, and Weighe	11410	12662	376	1.0	\$31,729	Moderate-term on-the-job training
TOTAL		76204	83298	2496	0.9		

SUPPLY DATA

CODE	PROGRAM TITLE	Totals	COMPLETERS					CT CODE
			Secondary Concentrators	Cert	Assoc	Bach	Grad	
150401	Biomedical Technology/Technician.		0	15	0	0	0	0
150403	Electromechanical Technology/Electromechanical Engineering T		0	0	0	0	0	0
150607	Plastics Engineering Technology/Technician.		0	9	0	0	0	0
150702	Quality Control Technology/Technician.		0	8	0	0	0	0
470000	Mechanics and Repairers, General.		0	0	17	0	0	0
470303	Industrial Mechanics and Maintenance Technology.		0	717	0	0	0	0
470399	Heavy/Industrial Equipment Maintenance Technologies, Other.		0	27	1	0	0	0
520205	Operations Management and Supervision.		0	40	0	1	27	0
Total		862	0	816	18	1	27	0
TOTAL SUPPLY		862						
TOTAL DEMAND		2496						
SUPPLY/DEMAND RATIO		0.3						

Cluster Grade = B
 The outlook for this cluster is Very Good.
 The growth rate is positive but not above the average for all occupations.
 There are more job openings expected annually than there are training completers in a recent year.
 Source: TN Department of Labor and Workforce Development, Emp. Sec. Div., Labor Market Information: (615) 741-3639, 2013

Tennessee

Average Occupational Growth Rate = **1.3**

16.1300000 Truck, Bus, Rail, Water Transportation, and Heavy Equipment (*denotes confidential data)

DEMAND DATA

SOC CODE	SOC TITLE	Estimated Employment	Projected Employment	Average Annual Openings	Average Annual Growth	Annual Median Salary	Usual Education Requirement
474061	Rail-Track Laying and Maintenance Equipment Operat	229	266	9	1.5	\$38,401	Moderate-term on-the-job training
*	*	4765	5319	186	1.1	\$50,798	Work experience in a related occupation
533011	Ambulance Drivers and Attendants, Except Emergency	267	378	15	3.5	\$19,762	Moderate-term on-the-job training
533021	Bus Drivers, Transit and Intercity	2574	2998	89	1.5	\$30,209	Moderate-term on-the-job training
533032	Heavy and Tractor-Trailer Truck Drivers	58104	66706	1789	1.4	\$38,130	Moderate-term on-the-job training
534021	Railroad Brake, Signal, and Switch Operators	710	799	31	1.2	\$53,931	Work experience in a related occupation
535021	Captains, Mates, and Pilots of Water Vessels	872	1022	55	1.6	\$94,417	Moderate-term on-the-job training
535022	Motorboat Operators	1	1	0	0.0	\$54,673	Moderate-term on-the-job training
535031	Ship Engineers	287	310	15	0.8	\$58,751	Post-secondary vocational training
537121	Tank Car, Truck, and Ship Loaders	109	144	7	2.8	\$30,316	Moderate-term on-the-job training
TOTAL		67918	77943	2196	1.5		

SUPPLY DATA

CODE	PROGRAM TITLE	Totals	Secondary Concentrators	Cert	Assoc	COMPLETERS				CT CODE
						Bach	Grad	WIA		
490205	Truck and Bus Driver/Commercial Vehicle Operation.		0	318	0	0	0	0	0	
	Total	318	0	318	0	0	0	0	0	
	TOTAL SUPPLY	318								
	TOTAL DEMAND	2196								
	SUPPLY/DEMAND RATIO	0.1								

Cluster Grade = A
 The outlook for this cluster is Excellent.
 The GROWTH rate is above the average for all occupations across the state.
 There are more job openings expected annually than there were training completers in a recent year..

Tennessee

Average Occupational Growth Rate = **1.3**

04.500000 Communications Development

DEMAND DATA

		Statewide Only Cluster				Annual Median Salary	Usual Education Requirement
SOC CODE	SOC TITLE	Estimated Employment	Projected Employment	Average Annual Openings	Average Annual Growth		
273031	Public Relations Specialists	2930	3396	87	1.5	\$45,148	Bachelor's degree
434051	Customer Service Representatives	48048	56407	2143	1.6	\$28,590	Moderate-term on-the-job training
TOTAL		50978	59803	2230	1.7		

SUPPLY DATA

CODE	PROGRAM TITLE	Totals	Secondary		COMPLETERS				CT CODE
			Concentrators	Cert	Assoc	Bach	Grad	WIA	
090900	Public Relations, Advertising, and Applied Communication.		0	0	0	18	0	0	
090901	Organizational Communication, General.		0	0	0	3	0	0	
090902	Public Relations/Image Management.		0	0	0	103	0	0	
090905	Health Communication.		0	0	0	1	0	0	
090907	International and Intercultural Communication.		0	0	0	0	0	0	
090908	Technical and Scientific Communication.		0	0	0	4	0	0	
090999	Public Relations, Advertising, and Applied Communication, Ot		0	0	0	6	0	0	
520501	Business/Corporate Communications.		0	0	0	5	0	0	
Total		140	0	0	0	140	0	0	
TOTAL SUPPLY		140							
TOTAL DEMAND		2230							
SUPPLY/DEMAND RATIO		0.1							

Cluster Grade = A
 The outlook for this cluster is Excellent.
 The GROWTH rate is above the average for all occupations across the state.
 There are more job openings expected annually than there were training completers in a recent year..

Tennessee

Average Occupational Growth Rate = 1.3

04.2120000 Accounting Administrative Support (*denotes confidential data)

DEMAND DATA

SOC CODE	SOC TITLE	Estimated Employment	Projected Employment	Average Annual Openings	Average Annual Growth	Annual Median Salary	Usual Education Requirement
433021	Billing and Posting Clerks	11831	14574	492	2.1	\$31,127	Short-term on-the-job training
433031	Bookkeeping, Accounting, and Auditing Clerks	32194	37357	812	1.5	\$32,867	Moderate-term on-the-job training
433051	Payroll and Timekeeping Clerks	4117	4849	163	1.6	\$35,572	Short-term on-the-job training
*	*	219	248	9	1.3	\$36,849	Moderate-term on-the-job training
TOTAL		48361	57028	1476	1.8		

SUPPLY DATA

CODE	PROGRAM TITLE	Totals	Secondary Concentrators	Cert	Assoc	COMPLETERS			CT CODE
						Bach	Grad	WIA	
510714	Medical Insurance Specialist/Medical Biller.		0	14	3	0	0	0	
520302	Accounting Technology/Technician and Bookkeeping.		0	37	74	0	0	0	
520399	Accounting and Related Services, Other.		0	0	0	0	0	0	
5203BH	Accounting II		24	0	0	0	0	0	0 3780 3702
Total		152	24	51	77	0	0	0	
TOTAL SUPPLY		152							
TOTAL DEMAND		1476							
SUPPLY/DEMAND RATIO		0.1							

Cluster Grade = A
 The outlook for this cluster is Excellent.
 The GROWTH rate is above the average for all occupations across the state.
 There are more job openings expected annually than there were training completers in a recent year..

Tennessee

Average Occupational
Growth Rate

=

1.3

06.3110000 Banking and Finance

Statewide Only Cluster

DEMAND DATA

SOC CODE	SOC TITLE	Estimated Employment	Projected Employment	Average Annual Openings	Average Annual Growth	Annual Median Salary	Usual Education Requirement
131031	Claims Adjusters, Examiners, and Investigators	4443	4965	155	1.1	\$51,406	Long-term on-the-job training
131032	Insurance Appraisers, Auto Damage	190	186	4	-0.2	\$58,764	Long-term on-the-job training
131131	Fundraisers	738	969	37	2.8	\$46,151	No category defined
131161	Market Research Analysts & Marketing Specialists	2778	3808	141	3.2	\$49,737	Bachelor's degree
132041	Credit Analysts	1449	1657	57	1.4	\$54,677	Bachelor's degree
132051	Financial Analysts	2468	3106	124	2.3	\$69,955	Bachelor's degree
132053	Insurance Underwriters	1593	1609	45	0.1	\$58,958	Bachelor's degree
132071	Credit Counselors	416	501	16	1.9	\$30,140	Bachelor's degree
132072	Loan Officers	5764	6289	158	0.9	\$49,262	Bachelor's degree
132099	Financial Specialists, All Other	1842	2049	40	1.1	\$58,524	Bachelor's degree
193011	Economists	73	85	3	1.5	\$83,579	Bachelor's degree
193022	Survey Researchers	252	309	10	2.1	\$19,670	Bachelor's degree
251011	Business Teachers, Postsecondary	2010	2191	48	0.9	\$60,265	Doctor's degree
251063	Economics Teachers, Postsecondary	231	246	6	0.6	\$82,103	Doctor's degree
413021	Insurance Sales Agents	7648	8042	219	0.5	\$40,476	Bachelor's degree
TOTAL		31895	36012	1063	1.3		

SUPPLY DATA

CODE	PROGRAM TITLE	Totals	Secondary Concentrators	Cert	Assoc	COMPLETERS Bach	Grad	WIA	CT CODE
010103	Agricultural Economics.		0	0	0	0	14	0	
450601	Economics, General.		0	0	0	404	37	0	
450602	Applied Economics.		0	0	0	0	1	0	
450604	Development Economics and International Development.		0	0	0	0	35	0	
450605	International Economics.		0	0	0	4	0	0	
450699	Economics, Other.		0	0	0	5	0	0	
520601	Business/Managerial Economics.		0	0	0	105	11	0	
520803	Banking and Financial Support Services.		0	0	0	0	4	0	
521302	Business Statistics.		0	0	0	1	19	0	
Total		640	0	0	0	519	121	0	
TOTAL SUPPLY		640							
TOTAL DEMAND		1063							
SUPPLY/DEMAND RATIO		0.6							

Cluster Grade = B

The outlook for this cluster is Very Good.

The growth rate is positive but not above the average for all occupations.

There are more job openings expected annually than there were training completers in a recent year.

	▼ Web/Multimedia Management, Programming	▼ Tennessee	Web/Multimedia Management, Progra	Average Occupational Growth Rate =	1.3
Shelby County	▼ Nutrition and Foods - 5609				
Bachelor's Degree - 05	▼ Clinical Laboratory Science/Medical Technology/Technologist. - 511005		11.3400000		

Statewide Only Cluster

DEMAND DATA

SOC CODE	SOC TITLE	Estimated Employment	Projected Employment	Average Annual Openings	Average Annual Growth	Annual Median Salary	Usual Education Requirement
113021	Computer and Information Systems Managers	5137	6063	164	1.7	\$102,042	Work experience, plus bachelor's degree
151111	Computer and Information Research Scientists	464	439	7	-0.6	\$78,526	Master's degree
151121	Computer Systems Analysts	8810	10893	346	2.1	\$75,431	Associate degree
151131	Computer Programmers	4895	5400	178	1.0	\$75,120	Bachelor's degree
151132	Software Developers, Applications	4477	5424	152	1.9	\$80,845	Bachelor's degree
151133	Software Developers, Systems Software	2376	2880	80	1.9	\$83,781	Bachelor's degree
151141	Database Administrators	1625	1934	62	1.8	\$78,565	Bachelor's degree
151151	Computer Support Specialists	6939	8392	254	1.9	\$41,189	Associate degree
251021	Computer Science Teachers, Postsecondary	602	689	18	1.4	\$58,612	Master's degree
TOTAL		35325	42114	1261	1.9		

SUPPLY DATA

CODE	PROGRAM TITLE	Totals	COMPLETERS						
			Secondary Concentrators	Cert	Assoc	Bach	Grad	WIA	CT CODE
010106	Agricultural Business Technology.		0	0	0	0	0	0	0
110101	Computer and Information Sciences, General.		0	12	160	163	17	0	0
110103	Information Technology.		0	4	39	65	29	0	0
110199	Computer and Information Sciences, Other.		0	0	0	2	0	0	0
110201	Computer Programming/Programmer, General.		0	0	34	12	0	0	0
110401	Information Science/Studies.		0	0	9	14	5	0	0
110501	Computer Systems Analysis/Analyst.		0	0	0	8	0	0	0
110701	Computer Science.		0	0	0	195	69	0	0
111004	Web/Multimedia Management and Webmaster.		0	0	0	1	0	0	0
111006	Computer Support Specialist.		0	0	7	0	0	0	0
111099	Computer/Information Technology Services Administration andM		0	0	0	0	3	0	0
119999	Computer and Information Sciences and Support Services, Othe		0	2	11	6	0	0	0
151202	Computer Technology/Computer Systems Technology.		0	0	71	0	0	0	0
521201	Management Information Systems, General.		0	0	25	162	2	0	0
Total		1127	0	18	356	628	125	0	0
TOTAL SUPPLY		1127							
TOTAL DEMAND		1261							
SUPPLY/DEMAND RATIO		0.9							

Cluster Grade = A

The outlook for this cluster is Excellent.

The GROWTH rate is above the average for all occupations across the state.

There are more job openings expected annually than there were training completers in a recent year..

Tennessee

Average Occupational Growth Rate = **1.3**

05.1170000 Elementary Teachers, Except Special Education

DEMAND DATA

SOC CODE	SOC TITLE	Statewide Only Cluster			Average Annual Growth	Annual Median Salary	Usual Education Requirement
		Estimated Employment	Projected Employment	Average Annual Openings			
252021	Elementary School Teachers, Except Special Educati	27740	33515	1188	1.9	\$46,344	Bachelor's degree
TOTAL		27740	33515	1188	2.1		

SUPPLY DATA

CODE	PROGRAM TITLE	Totals	Secondary Concentrators	Cert	COMPLETERS				CT CODE
					Assoc	Bach	Grad	WIA	
131202	Elementary Education and Teaching.		0	0	5	454	218	0	
	Total	677	0	0	5	454	218	0	
TOTAL SUPPLY		677							
TOTAL DEMAND		1188							
SUPPLY/DEMAND RATIO		0.6							

Cluster Grade = A
 The outlook for this cluster is Excellent.
 The GROWTH rate is above the average for all occupations across the state.
 There are more job openings expected annually than there were training completers in a recent year..

Tennessee

Average Occupational Growth Rate = 1.3

02.2700000 All Other Construction (*denotes confidential data)

DEMAND DATA

SOC CODE	SOC TITLE	Estimated Employment	Projected Employment	Average Annual Openings	Average Annual Growth	Annual Median Salary	Usual Education Requirement
471011	Supervisors of Construction and Extraction Workers	8909	10070	212	1.2	\$48,552	Work experience in a related occupation
*	*	306	282	6	-0.8	\$33,919	Moderate-term on-the-job training
472042	Floor Layers, Except Carpet, Wood, and Hard Tiles	253	262	5	0.4	\$32,435	Moderate-term on-the-job training
472043	Floor Sanders and Finishers	34	35	1	0.3	\$19,238	Moderate-term on-the-job training
*	*	58	52	1	-1.1	\$35,846	Long-term on-the-job training
472071	Paving, Surfacing, and Tamping Equipment Operators	1523	1738	44	1.3	\$31,462	Moderate-term on-the-job training
472072	Pile-Driver Operators	40	46	2	1.4	\$35,029	Moderate-term on-the-job training
472073	Operating Engineers and Other Construction Equipme	4450	5241	178	1.6	\$34,866	Moderate-term on-the-job training
472081	Drywall and Ceiling Tile Installers	1397	1400	13	0.0	\$32,384	Moderate-term on-the-job training
472082	Tapers	285	279	3	-0.2	\$33,785	Moderate-term on-the-job training
472121	Glaziers	952	1127	40	1.7	\$32,177	Long-term on-the-job training
472131	Insulation Workers, Floor, Ceiling, and Wall	464	522	12	1.2	\$24,393	No category defined
472132	Insulation Workers, Mechanical	363	499	19	3.2	\$36,198	No category defined
472141	Painters, Construction and Maintenance	4307	4636	98	0.7	\$31,954	Moderate-term on-the-job training
472142	Paperhangers	35	39	1	1.1	\$27,509	Moderate-term on-the-job training
472161	Plasterers and Stucco Masons	405	469	8	1.5	\$35,765	Long-term on-the-job training
472171	Reinforcing Iron and Rebar Workers	109	120	3	1.0	\$35,709	Long-term on-the-job training
472181	Roofers	2691	2992	86	1.1	\$34,920	Moderate-term on-the-job training
472211	Sheet Metal Workers	3734	4437	140	1.7	\$35,584	Moderate-term on-the-job training
472221	Structural Iron and Steel Workers	985	1132	47	1.4	\$39,825	Long-term on-the-job training
*	*	186	251	10	3.0	\$28,084	Moderate-term on-the-job training
474041	Hazardous Materials Removal Workers	1040	1128	31	0.8	\$38,233	Moderate-term on-the-job training
474051	Highway Maintenance Workers	3098	3297	66	0.6	\$25,290	Moderate-term on-the-job training
474071	Septic Tank Servicers and Sewer Pipe Cleaners	431	530	19	2.1	\$39,684	Moderate-term on-the-job training
474099	Construction and Related Workers, All Other	381	403	9	0.6	\$34,741	No category defined
475021	Earth Drillers, Except Oil and Gas	393	441	15	1.2	\$37,877	Moderate-term on-the-job training
499095	Manufactured Building and Mobile Home Installers	227	183	6	-2.1	\$24,417	Moderate-term on-the-job training
537021	Crane and Tower Operators	647	815	39	2.3	\$39,632	Moderate-term on-the-job training
537031	Dredge Operators	55	68	1	2.1	\$37,860	Moderate-term on-the-job training
537032	Excavating and Loading Machine and Dragline Operat	1288	1528	34	1.7	\$33,190	Moderate-term on-the-job training
TOTAL		39046	44022	1149	1.3		

SUPPLY DATA

CODE	PROGRAM TITLE	Totals	Secondary Concentrators	Cert	Assoc	COMPLETERS			CT CODE
						Bach	Grad	WIA	
460415	Building Construction Technology.		0	15	0	0	0	0	
469999	Construction Trades, Other.		0	158	0	0	0	0	
4699CH	Construction Core		26	0	0	0	0	0	5730
Total		199	26	173	0	0	0	0	
TOTAL SUPPLY		199							
TOTAL DEMAND		1149							
SUPPLY/DEMAND RATIO		0.2							

Cluster Grade = B

The outlook for this cluster is Very Good.

The growth rate is positive but not above the average for all occupations.

There are more job openings expected annually than there are training completers in a recent year. Source: TN Department of Labor and Workforce Development, Emp. Sec. Div., Labor Market Information: (615) 741-3639, 2013

Tennessee

Average Occupational Growth Rate = **1.3**

04.400000 Business Analysis

DEMAND DATA

SOC CODE	SOC TITLE	Estimated Employment	Projected Employment	Average Annual Openings	Average Annual Growth	Annual Median Salary	Usual Education Requirement
131111	Management Analysts	9009	11276	367	2.3	\$70,524	Work experience, plus bachelor's degree
131161	Market Research Analysts & Marketing Specialists	0	0	0	3.2	\$49,737	Bachelor's degree
131199	Business Operations Specialists, All Other	12419	14066	335	1.3	\$52,346	No category defined
132031	Budget Analysts	771	893	43	1.5	\$62,218	Bachelor's degree
152031	Operations Research Analysts	1096	1456	61	2.9	\$62,745	Master's degree
TOTAL		23295	27691	806	1.9		

SUPPLY DATA

CODE	PROGRAM TITLE	Totals	Secondary Concentrators	Cert	Assoc	COMPLETERS				CT CODE
						Bach	Grad	WIA		
521201	Management Information Systems, General.			0	36	0	0	0	0	
	Total	36		0	36	0	0	0	0	
TOTAL SUPPLY		36								
TOTAL DEMAND		806								
SUPPLY/DEMAND RATIO		0.0								

Cluster Grade = A
 The outlook for this cluster is Excellent.
 The GROWTH rate is above the average for all occupations across the state.
 There are more job openings expected annually than there were training completers in a recent year..

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Tennessee

Average Occupational Growth Rate = 1.3

05.2110000 Teacher Training Services- Pre-K-Early Childhood Education

DEMAND DATA

SOC CODE	SOC TITLE	Statewide Only Cluster			Average Annual Growth	Annual Median Salary	Usual Education Requirement
		Estimated Employment	Projected Employment	Average Annual Openings			
252011	Preschool Teachers, Except Special Education	9850	12005	492	2.0	\$22,286	Bachelor's degree
252012	Kindergarten Teachers, Except Special Education	4815	5817	235	1.9	\$46,160	Bachelor's degree
TOTAL		14665	17822	727	2.2		

SUPPLY DATA

CODE	PROGRAM TITLE	Totals	Secondary		COMPLETERS				CT CODE
			Concentrators	Cert	Assoc	Bach	Grad	WIA	
131209	Kindergarten/Preschool Education and Teaching.		0	0	0	0	0	0	
131210	Early Childhood Education and Teaching.		0	33	2	218	12	0	
Total		265	0	33	2	218	12	0	
TOTAL SUPPLY		265							
TOTAL DEMAND		727							
SUPPLY/DEMAND RATIO		0.4							

Cluster Grade = A
 The outlook for this cluster is Excellent.
 The GROWTH rate is above the average for all occupations across the state.
 There are more job openings expected annually than there were training completers in a recent year..

Tennessee

Average Occupational Growth Rate = 1.3

10.3120000 Religion

Statewide Only Cluster

DEMAND DATA

SOC CODE	SOC TITLE	Estimated Employment	Projected Employment	Average Annual Openings	Average Annual Growth	Annual Median Salary	Usual Education Requirement
212011	Clergy	12134	15724	607	2.6	\$41,748	First professional degree
251126	Philosophy and Religion Teachers, Postsecondary	774	857	20	1.0	\$52,714	Doctor's degree
TOTAL		12908	16581	627	2.8		

SUPPLY DATA

CODE	PROGRAM TITLE	Totals	Secondary Concentrators	Cert	Assoc	COMPLETERS			CT CODE
						Bach	Grad	WIA	
380001	Philosophy and Religious Studies, General.		0	0	0	0	4	0	
380101	Philosophy.		0	0	0	0	22	0	
380199	Philosophy, Other.		0	0	0	0	5	0	
380201	Religion/Religious Studies.		0	0	0	74	49	0	
390201	Bible/Biblical Studies.		0	0	0	2	28	0	
390601	Theology/Theological Studies.		0	0	0	1	120	0	
390602	Divinity/Ministry (BD, MDiv.).		0	0	0	0	154	0	
390699	Theological and Ministerial Studies, Other.		0	0	0	0	10	0	
	Total	469	0	0	0	77	392	0	
	TOTAL SUPPLY	469							
	TOTAL DEMAND	627							
	SUPPLY/DEMAND RATIO	0.7							

Cluster Grade = A
 The outlook for this cluster is Excellent.
 The GROWTH rate is above the average for all occupations across the state.
 There are more job openings expected annually than there were training completers in a recent year..

Tennessee

Average Occupational Growth Rate = **1.3**

02.1220000 Technical Design & Preconstruction

DEMAND DATA

SOC CODE	SOC TITLE	Estimated Employment	Projected Employment	Average Annual Openings	Average Annual Growth	Annual Median Salary	Usual Education Requirement
119021	Construction Managers	11042	11960	266	0.8	\$71,911	Bachelor's degree
131051	Cost Estimators	1801	2118	90	1.6	\$54,895	Bachelor's degree
173022	Civil Engineering Technicians	1074	1237	38	1.4	\$48,197	Associate degree
474011	Construction and Building Inspectors	1426	1653	57	1.5	\$44,208	Work experience in a related occupation
TOTAL		15343	16968	451	1.1		

SUPPLY DATA

CODE	PROGRAM TITLE	Totals	COMPLETERS						CT CODE
			Secondary Concentrators	Cert	Assoc	Bach	Grad	WIA	
150101	Architectural Engineering Technology/Technician.		0	17	7	0	0	0	
150201	Civil Engineering Technology/Technician.		0	0	0	0	0	0	
151001	Construction Engineering Technology/Technician.		0	3	1	0	0	0	
522001	Construction Management.		0	0	0	57	0	0	
Total		85	0	20	8	57	0	0	
TOTAL SUPPLY		85							
TOTAL DEMAND		451							
SUPPLY/DEMAND RATIO		0.2							

Cluster Grade = B
 The outlook for this cluster is Very Good.
 The growth rate is positive but not above the average for all occupations.
 There are more job openings expected annually than there were training completers in a recent year.

Tennessee

Average Occupational Growth Rate = **1.3**

04.300000 Human Resources

DEMAND DATA

SOC CODE	SOC TITLE	Estimated Employment	Projected Employment	Average Annual Openings	Average Annual Growth	Annual Median Salary	Usual Education Requirement
131071	Human Resources, Training, and Labor Relations Spe	6235	7198	210	1.4	\$50,324	Bachelor's degree
131075	Labor Relations Specialists	524	521	10	-0.1	\$55,411	No category defined
131141	Compensation, Benefits & Job Analysis Specialists	1329	1473	38	1.0	\$51,220	Bachelor's degree
131151	Training and Development Specialists	4521	5353	166	1.7	\$56,269	Bachelor's degree
434161	Human Resources Assistants, Except Payroll and Tim	3129	3263	92	0.4	\$36,022	Short-term on-the-job training
TOTAL		15738	17808	516	1.3		

SUPPLY DATA

CODE	PROGRAM TITLE	Totals	Secondary Concentrators	Cert	Assoc	COMPLETERS			CT CODE
						Bach	Grad	WIA	
521003	Organizational Behavior Studies.		0	0	0	6	55	0	
521005	Human Resources Development.		0	0	0	0	6	0	
	Total	67	0	0	0	6	61	0	
	TOTAL SUPPLY	67							
	TOTAL DEMAND	516							
	SUPPLY/DEMAND RATIO	0.1							

Cluster Grade = A

The outlook for this cluster is Excellent.

The GROWTH rate is above the average for all occupations across the state.

There are more job openings expected annually than there were training completers in a recent year..

Tennessee

Average Occupational Growth Rate = **1.3**

12.3000000 Security and Protective Services Pathway (*denotes confidential data)

DEMAND DATA

SOC CODE	SOC TITLE	Estimated Employment	Projected Employment	Average Annual Openings	Average Annual Growth	Annual Median Salary	Usual Education Requirement
151142	Network and Computer Systems Administrators	342	399	11	1.6	\$62,964	No category defined
251111	Criminal Justice and Law Enforcement Teachers, Pos	206	230	5	1.1	\$44,462	Doctor's degree
*	*	557	617	25	1.0	\$42,988	Work experience in a related occupation
*	*	9105	10110	342	1.1	\$28,243	Moderate-term on-the-job training
*	*	240	321	15	3.0	\$51,950	Work experience in a related occupation
*	*	4	4	0	0.0	\$21,580	Moderate-term on-the-job training
TOTAL		10454	11681	398	1.2		

SUPPLY DATA

CODE	PROGRAM TITLE	Totals	COMPLETERS					CT CODE	
			Secondary Concentrators	Cert	Assoc	Bach	Grad		WIA
430109	Security and Loss Prevention Services.		0	0	0	0	0	0	
430199	Corrections and Criminal Justice, Other.		0	0	7	0	0	0	
4301AH	Legal and Protective Service Careers I		5	0	0	0	0	0	5330
4301BH	Legal and Protective Service Careers II		32	0	0	0	0	0	5331
4301CH	Criminal Justice III		51	0	0	0	0	0	5342
4301DH	Criminal Justice II/III		8	0	0	0	0	0	5343
439999	Security and Protective Services, Other.		0	2	0	0	0	0	
	Total	105	96	2	7	0	0	0	
	TOTAL SUPPLY	105							
	TOTAL DEMAND	398							
	SUPPLY/DEMAND RATIO	0.3							

Cluster Grade = B
 The outlook for this cluster is Very Good.
 The growth rate is positive but not above the average for all occupations.
 There are more job openings expected annually than there were training completers in a recent year.

Tennessee

Average Occupational Growth Rate = **1.3**

12.4110000 Legal Assisting (*denotes confidential data)

DEMAND DATA

SOC CODE	SOC TITLE	Estimated Employment	Projected Employment	Average Annual Openings	Average Annual Growth	Annual Median Salary	Usual Education Requirement
*	*	98	102	2	0.4	\$49,640	Work experience, plus bachelor's degree
232011	Paralegals and Legal Assistants	4823	7173	313	4.0	\$42,807	Associate degree
232093	Title Examiners, Abstractors, and Searchers	524	658	21	2.3	\$33,825	Moderate-term on-the-job training
*	*	434	533	17	2.1	\$42,673	No category defined
TOTAL		5879	8466	353	4.4		

SUPPLY DATA

CODE	PROGRAM TITLE	Totals	COMPLETERS					CT CODE
			Secondary Concentrators	Cert	Assoc	Bach	Grad	
220000	Legal Studies, General.		0	0	0	20	0	0
220001	Pre-Law Studies.		0	0	0	0	0	0
220205	Banking, Corporate, Finance, and Securities Law (LL.M., J.S.		0	0	0	0	15	0
220302	Legal Assistant/Paralegal.		0	22	146	17	0	0
300501	Peace Studies and Conflict Resolution.		0	0	0	3	17	0
Total		240	0	22	146	40	32	0
TOTAL SUPPLY		240						
TOTAL DEMAND		353						
SUPPLY/DEMAND RATIO		0.7						

Cluster Grade = A
 The outlook for this cluster is Excellent.
 The GROWTH rate is above the average for all occupations across the state.
 There are more job openings expected annually than there were training completers in a recent year..

Tennessee

Average Occupational Growth Rate = 1.3

08.2210000 Medical and Clinical Laboratory Technologists

DEMAND DATA

SOC CODE	SOC TITLE	Statewide Only Cluster			Average Annual Growth	Annual Median Salary	Usual Education Requirement
		Estimated Employment	Projected Employment	Average Annual Openings			
292011	Medical and Clinical Laboratory Technologists	4538	4884	154	0.7	\$56,936	Bachelor's degree
TOTAL		4538	4884	154	0.8		

SUPPLY DATA

CODE	PROGRAM TITLE	Totals	Secondary Concentrators		COMPLETERS				CT CODE
			Concentrators	Cert	Assoc	Bach	Grad	WIA	
511002	Cytotechnology/Cytotechnologist.		0	0	0	0	5	0	
511005	Clinical Laboratory Science/Medical Technology/Technologist.		0	0	0	36	0	0	
Total		41	0	0	0	36	5	0	
TOTAL SUPPLY		41							
TOTAL DEMAND		154							
SUPPLY/DEMAND RATIO		0.3							

Cluster Grade = B
 The outlook for this cluster is Very Good.
 The growth rate is positive but not above the average for all occupations.
 There are more job openings expected annually than there were training completers in a recent year.

Tennessee

Average Occupational Growth Rate = 1.3

12.4140000 Fire Fighting

DEMAND DATA

SOC CODE	SOC TITLE	Estimated Employment	Projected Employment	Average Annual Openings	Average Annual Growth	Annual Median Salary	Usual Education Requirement
331021	First-Line Supervisors of Fire Fighting and Preven	1361	1510	73	1.0	\$52,834	Work experience in a related occupation
332011	Firefighters	4713	5280	185	1.1	\$37,191	Long-term on-the-job training
332021	Fire Inspectors and Investigators	243	263	9	0.8	\$50,704	Post-secondary vocational training
332022	Forest Fire Inspectors and Prevention Specialists	158	178	7	1.2	\$65,838	Bachelor's degree
TOTAL		6475	7231	274	1.2		

SUPPLY DATA

CODE	PROGRAM TITLE	Totals	COMPLETERS					CT CODE
			Secondary Concentrators	Cert	Assoc	Bach	Grad	
430203	Fire Science/Fire-fighting.		0	6	29	0	0	0
	Total	35	0	6	29	0	0	0
TOTAL SUPPLY		35						
TOTAL DEMAND		274						
SUPPLY/DEMAND RATIO		0.1						

Cluster Grade = B
 The outlook for this cluster is Very Good.
 The growth rate is positive but not above the average for all occupations.
 There are more job openings expected annually than there were training completers in a recent year.

Tennessee

Average Occupational Growth Rate = **1.3**

15.116000 Industrial Engineering

Statewide Only Cluster

DEMAND DATA

SOC CODE	SOC TITLE	Estimated Employment	Projected Employment	Average Annual Openings	Average Annual Growth	Annual Median Salary	Usual Education Requirement
172112	Industrial Engineers	4896	5511	205	1.2	\$80,257	Bachelor's degree
TOTAL		4896	5511	205	1.3		

SUPPLY DATA

CODE	PROGRAM TITLE	Totals	Secondary Concentrators	Cert	Assoc	COMPLETERS			CT CODE
						Bach	Grad	WIA	
143501	Industrial Engineering.		0	0	0	43	15	0	
	Total	58	0	0	0	43	15	0	
	TOTAL SUPPLY	58							
	TOTAL DEMAND	205							
	SUPPLY/DEMAND RATIO	0.3							

Cluster Grade = B
 The outlook for this cluster is Very Good.
 The growth rate is positive but not above the average for all occupations.
 There are more job openings expected annually than there were training completers in a recent year.

Tennessee

Average Occupational Growth Rate = **1.3**

02.2300000 Construction Pathway - Construction Plumbing

DEMAND DATA

SOC CODE	SOC TITLE	Estimated Employment	Projected Employment	Average Annual Openings	Average Annual Growth	Annual Median Salary	Usual Education Requirement
472151	Pipelayers	1576	1801	42	1.3	\$33,255	Moderate-term on-the-job training
472152	Plumbers, Pipefitters, and Steamfitters	7247	7947	160	0.9	\$42,310	Long-term on-the-job training
TOTAL		8823	9748	202	1.0		

SUPPLY DATA

CODE	PROGRAM TITLE	Totals	Secondary Concentrators	Cert	Assoc	COMPLETERS			CT CODE
						Bach	Grad	WIA	
460502	Pipefitting/Pipefitter and Sprinkler Fitter.		0	30	0	0	0	0	0
4605AH	Plumbing I		11	0	0	0	0	0	0 5739 5234
4605BH	Plumbing II		5	0	0	0	0	0	0 5740 5235
Total		46	16	30	0	0	0	0	
TOTAL SUPPLY		46							
TOTAL DEMAND		202							
SUPPLY/DEMAND RATIO		0.2							

Cluster Grade = B
 The outlook for this cluster is Very Good.
 The growth rate is positive but not above the average for all occupations.
 There are more job openings expected annually than there were training completers in a recent year.

Tennessee

Average Occupational Growth Rate = **1.3**

07.7120000 Compliance Officers

DEMAND DATA

SOC CODE	SOC TITLE	Estimated Employment	Projected Employment	Average Annual Openings	Average Annual Growth	Annual Median Salary	Usual Education Requirement
131041	Compliance Officers	3948	4408	119	1.1	\$53,079	Long-term on-the-job training
132061	Financial Examiners	506	556	18	0.9	\$80,028	Bachelor's degree
536051	Transportation Inspectors	465	542	24	1.5	\$84,848	Work experience in a related occupation
TOTAL		4919	5506	161	1.2		

SUPPLY DATA

PROGRAM TITLE	Totals	Secondary Concentrators	Cert	Assoc	COMPLETERS			WIA	CT CODE
					Bach	Grad			
Total	0	0	0	0	0	0	0	0	
TOTAL SUPPLY	0								
TOTAL DEMAND	161								
SUPPLY/DEMAND RATIO	0.0								

Cluster Grade = B
 The outlook for this cluster is Very Good.
 The growth rate is positive but not above the average for all occupations.
 There are more job openings expected annually than there were training completers in a recent year.

Tennessee

Average Occupational Growth Rate = **1.3**

08.2220000 Medical and Clinical Laboratory Technicians

DEMAND DATA

SOC CODE	SOC TITLE	Estimated Employment	Projected Employment	Average Annual Openings	Average Annual Growth	Annual Median Salary	Usual Education Requirement
292012	Medical and Clinical Laboratory Technicians	6535	7884	306	1.9	\$35,074	Associate degree
TOTAL		6535	7884	306	2.1		

SUPPLY DATA

CODE	PROGRAM TITLE	Totals	Secondary Concentrators	Cert	Assoc	COMPLETERS			CT CODE
						Bach	Grad	WIA	
511099	Clinical/Medical Laboratory Science and Allied Professions,		0	114	0	0	0	0	0
510802	Clinical/Medical Laboratory Assistant.		0	39	0	0	0	0	0
511001	Blood Bank Technology Specialist.		0	31	0	0	0	0	0
511004	Clinical/Medical Laboratory Technician.		0	0	50	0	0	0	0
Total		234	0	184	50	0	0	0	0
TOTAL SUPPLY		234							
TOTAL DEMAND		306							
SUPPLY/DEMAND RATIO		0.8							

Cluster Grade = A
 The outlook for this cluster is Excellent.
 The GROWTH rate is above the average for all occupations across the state.
 There are more job openings expected annually than there were training completers in a recent year..

Tennessee

Average Occupational Growth Rate = 1.3

02.2200000 Construction Pathway - Construction Masonry & Concrete

DEMAND DATA

SOC CODE	SOC TITLE	Estimated Employment	Projected Employment	Average Annual Openings	Average Annual Growth	Annual Median Salary	Usual Education Requirement
472021	Brickmasons and Blockmasons	930	1259	43	3.1	\$42,440	Long-term on-the-job training
472022	Stonemasons	176	182	3	0.3	\$23,619	Long-term on-the-job training
472044	Tile and Marble Setters	520	499	9	-0.4	\$29,934	Long-term on-the-job training
472051	Cement Masons and Concrete Finishers	1845	2214	58	1.8	\$31,451	Long-term on-the-job training
473011	Helpers--Brickmasons, Blockmasons, Stonemasons, an	418	581	22	3.3	\$25,755	Short-term on-the-job training
499045	Refractory Materials Repairers, Except Brickmasons	76	96	4	2.4	\$43,282	Moderate-term on-the-job training
TOTAL		3965	4831	139	2.2		

SUPPLY DATA

CODE	PROGRAM TITLE	Totals	Secondary Concentrators	Cert	Assoc	COMPLETERS Bach	Grad	WIA	CT CODE
460101	Mason/Masonry.		0	23	0	0	0	0	
4601AH	Masonry I		17	0	0	0	0	0	5735 5232
4601BH	Masonry II		15	0	0	0	0	0	5736 5233
Total		55	32	23	0	0	0	0	
TOTAL SUPPLY		55							
TOTAL DEMAND		139							
SUPPLY/DEMAND RATIO		0.4							

Cluster Grade = A

The outlook for this cluster is Excellent.

The GROWTH rate is above the average for all occupations across the state.

There are more job openings expected annually than there were training completers in a recent year..

Tennessee

Average Occupational Growth Rate = **1.3**

07.7140000 Revenue and Taxation (*denotes confidential data)

DEMAND DATA

SOC CODE	SOC TITLE	Estimated Employment	Projected Employment	Average Annual Openings	Average Annual Growth	Annual Median Salary	Usual Education Requirement
132081	Tax Examiners and Collectors, and Revenue Agents	1457	1601	64	0.9	\$47,257	Bachelor's degree
*	*	1238	1271	34	0.3	\$33,246	Short-term on-the-job training
TOTAL		2695	2872	98	0.7		

SUPPLY DATA

PROGRAM TITLE	Totals	Secondary Concentrators	Cert	Assoc	COMPLETERS			CT CODE
					Bach	Grad	WIA	
Total	0	0	0	0	0	0	0	0
TOTAL SUPPLY	0							
TOTAL DEMAND	98							
SUPPLY/DEMAND RATIO	0.0							

Cluster Grade = B
 The outlook for this cluster is Very Good.
 The growth rate is positive but not above the average for all occupations.
 There are more job openings expected annually than there were training completers in a recent year.