TENNESSEE CAREERS®

Agriculture, Food & Natural Resources

Career Cluster Guide

2008-2009

Four Steps to Career Success

About the Agriculture, Food & Natural Resources Career Cluster

Careers in the Agriculture, Food & Natural Resources Career Cluster encompass production, processing, marketing, distribution, financing, and development of agricultural commodities and resources including food, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources.

GET STARTED TODAY!

1
Assess Yourself

Identify your strengths. Then compare them with job expectations in favorite fields.

2
Check the Labor Market

See how a specific occupation fares in Tennessee. Turn to pages 4 and 5.

3
Find Schools and Educational Programs

Find information on education, training, financial aid, and licensing. See pages 6 and 7.

4
Find Employers and Job Openings

Check out the Web sites below or visit your local career centers to find out about opportunities in Tennessee.

Free Online Resources to Explore Careers

Tennessee Career Information Delivery System (TCIDS): http://tcids.tbr.edu/
KUDER Tennessee College and Career Planning System prepared by edamerica:
http://www.planningyourdreams.org/
Tennessee Department of Labor and Workforce Development:
Education, Wages, Jobs and More: http://www.sourcetn.org
Youth pages: http://state.tn.us/labor-wfd/youth
Career Center locations: http://www.state.tn.us/labor-wfd/cc/
Tennessee Department of Education, Career and Technical Education: http://www.tennessee.gov/education/cte/
Online Tennessee Board of Regents ROCC Virtual Career Center: http://careers.rodp.org/
College for TN, powered by xap: http://www.collegefortn.org/

SECONDARY PROGRAMS OF STUDY*	Specific Occupations	
Agribusiness, Food Products and Process Systems	• Purchasing Agents and Buyers, Farm Products • Agricultural and Food Scientists • Agricultural and Food Science Technicians • Biological Technicians • Agricultural Sciences Teachers, Postsecondary	• Agricultural Inspectors • Graders and Sorters, Agricultural Products • Food and Tobacco Roasting, Baking, and Drying Machine Operators and Tenders • Food Cooking Machine Operators and Tenders
Animal Systems – Pre-Veterinary	• Veterinarians • Veterinary Technologists and Technicians • Veterinary Assistants and Laboratory Animal Caretakers	• Animal Trainers • Nonfarm Animal Caretakers
Animal Systems – Production Animals	• Farm, Ranch, and Other Agricultural Managers • Farmers and Ranchers • Supervisors of Farming and Fishing Workers • Farm Labor Contractors	• Animal Breeders • Farmworkers, Farm and Ranch Animals • Fishers and Related Fishing Workers
Environmental and Natural Resources Systems	• Environmental Engineers • Mining and Geological Engineers • Zoologists and Wildlife Biologists • Conservation Scientists • Foresters • Environmental Scientists and Specialists • Geological and Petroleum Technicians • Environmental Science and Protection Technicians • Forest and Conservation Technicians	• Forestry and Conservation Science Teachers • Environmental Science Teachers, Postsecondary • Forest and Conservation Workers • Fallers • Logging Equipment Operators • Log Graders and Scalers • Roustabouts, Oil and Gas • Petroleum Pump System Operators, Refinery Operators, and Gaugers
Plant Systems – Horticulture Production	• Farm, Ranch, and Other Agricultural Managers • Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers • Pest Control Workers • Landscaping and Groundskeeping Workers	• Pesticide Handlers, Sprayers, and Applicators • Tree Trimmers and Pruners • Farmworkers and Laborers, Crop, Nursery, and Greenhouse
Plant Systems – Turf Grass/ Nursery Production	• Farm, Ranch, and Other Agricultural Managers • Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers • Pest Control Workers • Landscaping and Groundskeeping Workers	• Pesticide Handlers, Sprayers, and Applicators • Tree Trimmers and Pruners • Farmworkers and Laborers, Crop, Nursery, and Greenhouse
Power, Structures and Technical Systems	• Environmental Engineering Technicians • Agricultural Equipment Operators	• Farm Equipment Mechanics

Tennessee

Programs of Study

*http://pathways.tbr.edu

Agriculture, Food & Natural Resources Jobs in Tennessee

Title	Basic Description	Projected Total 2014 Employment
Source: See footnote #2.	Source: See footnote #2.	Source: See footnote #1.
Agricultural and Food Science Technicians	Work with agricultural scientists in food, fiber, and animal research, production, and processing and help conduct tests to improve yield and quality of crops and animals.	220
Conservation Scientists	Manage lands and natural resources for economic, recreational, and conservation purposes and determine how best to comply with environmental regulations.	200
Environmental Engineering Technicians	Use principles of environmental engineering to modify, test, and operate equipment and devices used in the prevention, control, and remediation of environmental pollution.	620
Environmental Engineers	Design, plan, or perform engineering duties in the prevention, control, and remediation of environmental health hazards. May include waste treatment, site remediation, or pollution control.	1,490
Environmental Science and Protection Technicians	Work with Environmental Scientists/Specialists to collect samples (gas, water, soil, etc.) and perform laboratory and field tests to monitor the environment and investigate sources of pollution.	840
Environmental Scientists and Specialists	Conduct research and investigation/testing to identify, abate, or eliminate sources of pollutants or hazards that affect either the environment or the health of the population.	1,670
Farm Equipment Mechanics	Diagnose, adjust, repair, or overhaul farm machinery and vehicles, such as tractors, harvesters, dairy equipment, and irrigation systems.	810
Farm, Ranch, and Other Agricultural Managers	On a paid basis, manage farms, ranches, or other agricultural establishments through daily oversight of operations, including making production, financial, and marketing decisions.	4,630
Foresters	Manage forested lands for economic, recreational, and conservation purposes. May inventory and appraise standing timber, and determine conservation and environmental regulation compliance.	310
Geological and Petroleum Technicians	Assist scientists in the use of electrical, sonic, or nuclear measuring instruments to obtain data indicating potential sources of metallic ore, gas, or petroleum.	100
Mining and Geological Engineers	Utilize scientific techniques to determine the location and plan the extraction of coal, metallic ores, nonmetallic minerals, and building materials, such as stone and gravel.	80
Supervisors of Farming and Fishing Workers	Directly supervise and coordinate the activities of agricultural, forestry, aquacultural, and related workers.	1,170
Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers	Plan, organize, or direct activities of landscaping or groundskeeping workers whose duties include planting and maintaining ornamental trees, shrubs, flowers, and lawns.	3,410
Veterinarians	Diagnose and treat diseases and dysfunctions of animals. May engage in research and development, consultation, or rendering of technical services to commercial firms or other organizations.	1,590
Veterinary Technologists and Technicians	Perform medical tests in a laboratory environment for use in the treatment and diagnosis of diseases in animals. Prepare vaccines and serums for prevention of diseases.	1,600
Zoologists and Wildlife Biologists	Study the origins, behavior, diseases, genetics, and life processes of animals and wildlife. May specialize in wildlife research and management, including the collection and analysis of biological data.	190

1. Estimated wage and employment data are from the Tennessee Department of Labor and Workforce Development, Employment Security Research and Statistics Division (www.sourcetn.org).
2. Job titles and common descriptions are from the Bureau of Labor Statistics, U.S. Department of Labor, Standard Occupational Classification System (http://www.bls.gov/soc).

High Skill - High Wage - In Demand

Projected Number of New Jobs, 2004-2014	Annual Median Wage	Most Common Education/Training	Suggested Programs of Study	High Skill	High Wage	In Demand
Source: See footnote #1.		Source: See footnote #1.	See footnote #3.	Source: See footnote #1.		
20	$36,275	Associate Degree	Agricultural Animal Husbandry and Production Management; Animal Sciences, General; Food Sciences and Technology	●	●	●
0	$60,111	Bachelor's Degree	Forestry and Related Sciences, Other; Forestry Sciences; Forestry, General; Natural Resources Conservation, General; Natural Resources Management and Policy; Wildlife and Wildlands Management	●	●	
140	$52,367	Associate Degree	Environmental and Pollution Control Technologist/Technician	●	●	
370	$75,798	Bachelor's Degree	Environmental/Environmental Health Engineering	●	●	
150	$45,578	Associate Degree	Environmental and Pollution Control Technologist/Technician; Environmental Science/Studies	●	●	●
250	$45,313	Master's Degree	Environmental Science/Studies; Forestry and Related Sciences, Other; Forestry Sciences; Forestry, General; Natural Resources Conservation, General; Natural Resources Management and Policy	●	●	
100	$25,587	Postsecondary career/ technical education	Agricultural Mechanization, General; Agricultural Power Machinery Operator	●		●
910	$45,245	Work experience, plus Bachelor's Degree	Agricultural Business and Management, General; Ornamental Horticulture Operations and Management	●	●	●
20	$41,998	Bachelor's Degree	Forest Harvesting and Production Technologist/Technician; Forestry and Related Sciences, Other; Forestry Sciences; Forestry, General; Natural Resources Conservation, General; Natural Resources Management and Policy	●	●	
0	$34,738	Associate Degree	Environmental and Pollution Control Technologist/Technician	●	●	
10	$54,004	Bachelor's Degree	Environmental/Environmental Health Engineering	●	●	
170	$34,125	Work experience in a related occupation	Agricultural Animal Husbandry and Production Management; Agricultural Production Workers and Managers, General; Agricultural Production Workers and Managers, Other; Animal Sciences, General; Fishing and Fisheries Sciences and Management; Plant Sciences, General	●	●	●
640	$30,574	Work experience in a related occupation	Ornamental Horticulture Operations And Management	●		●
320	$64,139	First professional degree	Veterinary Medicine (DVM)	●	●	●
470	$22,790	Associate Degree	Veterinarian Assistant/Animal Health Technician	●		●
30	$53,347	Bachelor's Degree	Ecology	●	●	

3. The suggested programs of study are postsecondary programs.

For updated career information go to http://www.sourcetn.org.

PROGRAMS OF STUDY

TENNESSEE TECHNOLOGY CENTERS, COLLEGES & UNIVERSITIES

AGRICULTURE, FOOD & NATURAL RESOURCES MAJORS

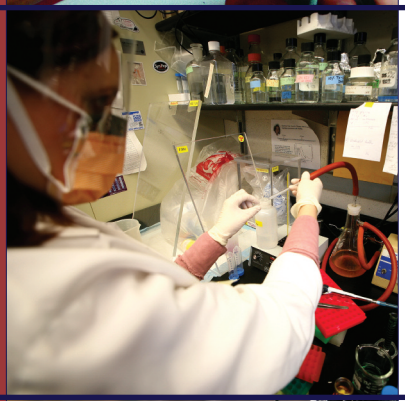
	Austin Peay State University www.apsu.edu	Chattanooga State Technical Community College www.chattanoogastate.edu	Columbia State Community College www.columbiastate.edu	Jackson State Community College www.jscc.cc.tn.us	Middle Tennessee State University www.mtsu.edu	Nashville State Community College www.nscc.edu	Tennessee State University www.tnstate.edu	Tennessee Technological University www.tntech.edu	University of Tennessee at Chattanooga www.utc.edu	University of Tennessee at Knoxville www.utk.edu	University of Tennessee at Martin www.utm.edu	Walters State Community College www.wscc.cc.tn.us	Southwest Tennessee Community College www.southwest.tn.edu	Tennessee Technology Center at Chattanooga www.chattanoogastate.edu	Tennessee Technology Center at Memphis www.memphis.tec.tn.us
Agricultural Business and Management, General										D	M				
Agricultural Business and Management, Other										B					
Agricultural Business/ Agribusiness Operations					B										
Agriculture, General	B			A			B, M	B		D	B				
Animal Sciences, General					B					B, M, D					
Ecology										M, D					
Environmental Studies								D	B, M						
Environmental/Environmental Health Engineering										M					
Food Science										B, M, D					
Forestry, General										B, M					
Horticulture Services Operations and Management, General			A	C										C	
Horticulture Services Operations and Management, Other													A		
Landscaping Operations and Management						C		X		X			C		
Natural Resources Conservation, General										D					
Natural Resources Management And Policy											B				
Ornamental Horticulture Operations and Management												A			
Plant Protection and Integrated Pest Management										M					
Plant Sciences, General					B					B, M, D					
Turf Management											X		C		
Veterinarian Assistant/Animal Health Technician		A	A												C
Veterinary Medicine (DVM)										V					
Wildlife and Wildlands Management								B		B, M					

C = Postsecondary Awards/ Certificates/Diplomas
A = Associate Degree
B = Bachelor's Degree
M = Master's Degree
D = Doctoral Degree
V = Veterinary Medicine
X = Concentration within a related area

This chart was based upon the best available information and is intended only to serve as a general guide for educational opportunities. Department names for programs vary among schools. Refer to related cluster booklets for other possible programs. Community Colleges (www.tbr.state.tn.us/campuses.htm) offer University Parallel Programs, which may also offer opportunities for study in this field. Contact the schools' academic departments or your school advisor for current programs and degrees: www.tbr.state.tn.us/campuses.htm and http:/www.tennessee.edu/.

For financial aid information, go to the Tennessee Student Assistance Corporation, http://Tennessee.gov/tsac/about_us.htm, or The Source, www.sourcetn.org (Services for Individuals, Education Services, Financial Aid).

Tennessee Licensed Occupations

Job Titles and Licenses		Contacts
Environmental Engineers Engineer Engineer Intern **Mining and Geological Engineers, Including Mining** Engineer Engineer Intern		Board of Architectural & Engineering Examiners Division of Regulatory Boards Department of Commerce and Insurance Davy Crockett Tower, 3rd Floor 500 James Robertson Pkwy. Nashville, TN 37243 (615) 741-3221 http://www.tennessee.gov/commerce/boards/ae
Veterinarians Veterinarian **Veterinary Technologists and Technicians** Animal Technician (Veterinary Medical Technician)		Board of Veterinary Medical Examiners Division of Health Related Boards Department of Health 227 French Landing, Suite 300 Nashville, TN 37243 (615) 532-3202 http://health.state.tn.us/licensing.htm
Zoologists and Wildlife Biologists Medical Laboratory Director		Medical Laboratory Board Division of Health Related Boards Department of Health 227 French Landing, Suite 300 Nashville, TN 37243 (615) 532-3202 http://health.state.tn.us/licensing.htm
Zoologists and Wildlife Biologists Pest Control Consultant		Tennessee Pest Control Board Department of Agriculture P.O. Box 40627, Melrose Station Nashville, TN 37204 (615) 837-5148 http://state.tn.us/agriculture/regulate/index.html

Discover your talents

Tennessee Career Information Delivery System (TCIDS): http://tcids.tbr.edu/
The Source: http://www.sourcetn.org

Notice

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For more information on Career clusters:

http://www.tennessee.gov/education/cte

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Tennessee Department of Education
710 James Robertson Parkway, 6th Floor
Nashville, TN 37243-0383
Tel. (615) 253-1550

States' Career Clusters Initiative
www.careerclusters.org