

Career Clusters & Pathways

Thinking ahead and preparing for careers is helpful if you are headed to the workplace or college. Some careers that are not common today may be needed tomorrow. And all careers require flexibility, knowledge, and skills.



Agriculture, Food & Natural Resources

- Agribusiness Systems
- Animal Systems
- Environmental Service Systems
- Food Products & Processing Systems
- Natural Resources Systems
- Plant Systems
- Power, Structural & Technical Systems



Architecture & Construction

- Construction
- Design/Pre-Construction
- Maintenance/Operations



Arts, A/V Technology & Communication

- A/V Technology & Film
- Journalism & Broadcasting
- Performing Arts
- Printing Technology
- Telecommunications
- Visual Arts



Business, Management & Administration

- Administrative Support
- Business Information Management
- General Management
- Human Resources Management
- Operations Management



Education & Training

- Administration & Administrative Support
- Professional Support Services
- Teaching/Training



Finance

- Accounting
- Banking Services
- Business Finance
- Insurance
- Securities & Investments



Government & Public Administration

- Foreign Service
- Governance
- National Security
- Planning
- Public Management & Administration
- Regulation
- Revenue & Taxation



Health Science

- Biotechnology Research & Development
- Diagnostic Services
- Health Informatics
- Support Services
- Therapeutic Services



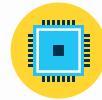
Hospitality & Tourism

- Lodging
- Recreation, Amusements & Attractions
- Restaurants & Food/Beverage Services
- Travel & Tourism



Human Services

- Consumer Services
- Counseling & Mental Health Services
- Early Childhood Development & Services
- Family & Community Services
- Personal Care Services



Information Technology

- Information Support & Services
- Network Systems
- Programming & Software Development
- Web & Digital Communications



Law, Public Safety, Corrections & Security

- Correction Services
- Emergency & Fire Management Services
- Law Enforcement Services
- Legal Services
- Security & Protective Services



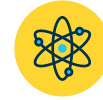
Manufacturing

- Health, Safety & Environmental Assurance
- Logistics & Inventory Control
- Maintenance, Installation & Repair
- Manufacturing Production Process Development
- Production
- Quality Assurance



Marketing

- Marketing Communications
- Marketing Management
- Marketing Research
- Merchandising
- Professional Sales



Science, Technology, Engineering & Mathematics

- Engineering & Technology
- Science & Mathematics



Transportation, Distribution & Logistics

- Facility & Mobile Equipment Maintenance
- Health, Safety & Environmental Management
- Logistics Planning & Management Services
- Sales & Service
- Transportation Operations
- Transportation Systems/Infrastructure Planning, Management & Regulation
- Warehousing & Distribution Center Operations

Source: National Career Clusters Framework

NS4ed™ Pathway2Careers™ 2018 Trademark NS4ed, LLC





Science, Technology, Engineering and Mathematics



NATIONAL CAREER CLUSTERS PATHWAYS:

- Engineering & Technology
- Science & Mathematics

Regional Career Opportunities (Listed by Highest Projected Demand)

JOB ZONE 1 High School Diploma or Less

JOB ZONE 2 High School Diploma

JOB ZONE 3 Certificate or Associate's Degree

JOB ZONE 4 Bachelor's Degree

JOB ZONE 5 Master's or Doctorate Degree

FOR JOB ZONES 1-3, APPRENTICESHIP OR ON-THE-JOB TRAINING MAY ALSO SATISFY EMPLOYMENT REQUIREMENTS.

Few regional occupations in these pathways require education at this degree level.

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Consult with a career counselor or school advisor to explore additional high-demand occupations in these pathways that require a certificate or associate's degree.

Industrial Engineers ★
Annual Openings 100
Median Wage..... \$79,673

Architectural & Engineering Managers ★
Annual Openings 55
Median Wage..... \$119,868

Mechanical Engineers ★
Annual Openings 75
Median Wage..... \$94,035

Microbiologists
Annual Openings 15
Median Wage..... \$59,555

Environmental Scientists & Specialists ★
Annual Openings 50
Median Wage..... \$61,016

Physicists
Annual Openings 15
Median Wage..... \$122,833*

Electrical Engineers ★
Annual Openings 45
Median Wage..... \$98,458

Materials Scientists
Annual Openings 10
Median Wage..... \$71,069

Engineers, All Other
Annual Openings 45
Median Wage..... \$75,589

Physical Scientists, All Other
Annual Openings 10
Median Wage..... \$132,640

★ Top five high-value occupations in these pathways for the East Tennessee Region. Occupations with the highest annual openings that are stable or growing with median wages above \$35,000 are considered high-value.

* State data was used due to limitations in regional data.

Data Source: TSBA District Data Dashboard | NS4ed™ Pathway2Careers™ 2018 Trademark NS4ed, LLC

Explore careers at tsbadatadashboard.com



Blount Partnership



PATHWAY 2 CAREERS



Science, Technology, Engineering and Mathematics



NATIONAL CAREER CLUSTERS PATHWAYS:

- Engineering & Technology
- Science & Mathematics

Regional High School Requirements and Programs (Grades 9-12)

English Language Arts	Math	Science	Social Studies	Foreign Language	Physical Education	Fine Arts	Elective Focus
English I	Algebra I	Biology	World History and Geography	Foreign Language I	Lifetime Wellness	Fine Arts Selection	Minimum of Three Courses See career programs and electives below.
English II	Geometry	Chemistry	U.S. History	Foreign Language II	Physical Education (.5)	----	
English III	Algebra II	Physics	Economics / Government	----	----	----	
English IV	Higher Level Math	----	Personal Finance (.5)	----	----	----	

Career Programs	Career Program Courses and Related Courses	Additional Electives	Regional Postsecondary Schools				
<input type="checkbox"/> Engineering <input type="checkbox"/> Technology <i>Note: Programs and courses may vary by high school.</i>	<input type="checkbox"/> Career Exploration <input type="checkbox"/> Principles of Engineering & Tech <input type="checkbox"/> Introduction to Mechatronics & Robotic Systems <input type="checkbox"/> AP Computer Science Principles <input type="checkbox"/> Digital Electronics <input type="checkbox"/> Robotics & Automated Systems <input type="checkbox"/> Engineering Design I & II <input type="checkbox"/> AP Physics <input type="checkbox"/> Practicum or Apprenticeship	Math <input type="checkbox"/> _____ <input type="checkbox"/> _____ Science <input type="checkbox"/> _____ <input type="checkbox"/> _____ Other <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____	<table border="1"> <thead> <tr> <th>Certificates and Associate's Degrees</th> <th>Bachelor's and Advanced Degrees</th> </tr> </thead> <tbody> <tr> <td> <ul style="list-style-type: none"> ■ Pellissippi State Community College ■ Tennessee College of Applied Technology ■ Roane State Community College </td> <td> <ul style="list-style-type: none"> ■ Maryville College ■ University of Tennessee ■ Lincoln Memorial University </td> </tr> </tbody> </table>	Certificates and Associate's Degrees	Bachelor's and Advanced Degrees	<ul style="list-style-type: none"> ■ Pellissippi State Community College ■ Tennessee College of Applied Technology ■ Roane State Community College 	<ul style="list-style-type: none"> ■ Maryville College ■ University of Tennessee ■ Lincoln Memorial University
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Postsecondary Programs/Majors for Occupations in this Pathway

Certificate or AA	Mechanical Engineering Technology	Industrial Maintenance Engineering Technology	Biology / Geosciences	Electrical Engineering Technology	Mathematics
Bachelor's Degree	Mechanical Engineering	Industrial Engineering	Environmental Sciences	Electrical Engineering	Sciences (Biology, Chemistry, Physics, etc.)
Advanced Degree	Engineering	Economics	Statistics	Biochemistry	Sciences (Biology, Chemistry, Physics, etc.)