

Textile Technology (BS)

Our B.S. in Textile Technology (<https://textiles.ncsu.edu/academics/undergraduate/textile-technology/>) is perfect for students who want a hands-on, applied science education spent in labs instead of behind a desk.

Textile technology students learn not only about the fibers that make up the textiles we use in everything from outdoor gear to sneakers, but also about business, supply chain operations and manufacturing. As a textile technology student, you'll apply this knowledge to work with textile engineering students and industry partners on a year-long Senior Design project (<https://textiles.ncsu.edu/student-experience/senior-design/>).

You'll have the option to either stay within a general track or pursue one of these three concentrations:

- Medical Textiles (<https://catalog.ncsu.edu/undergraduate/textiles/textile-engineering-chemistry-science/textile-technology-bs-medical-textiles-concentration/>)
- Supply Chain Operations (<https://catalog.ncsu.edu/undergraduate/textiles/textile-engineering-chemistry-science/textile-technology-bs-supply-chain-operations-concentration/>)
- Technical Textiles (<https://catalog.ncsu.edu/undergraduate/textiles/textile-engineering-chemistry-science/textile-technology-bs-technical-textiles-concentration/>)

Contact

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Plan Requirements

Code	Title	Hours
Orientation		
T 101	Strategies for Success in the Wilson College of Textiles	1
MA/ST and Natural Sciences		
CH 101 & CH 102	Chemistry - A Molecular Science and General Chemistry Laboratory ¹	4
MA 131 or MA 141	Calculus for Life and Management Sciences A ¹ Calculus I	3-4
MA 231 or MA 241	Calculus for Life and Management Sciences B Calculus II	3-4
ST 311 or ST 370	Introduction to Statistics Probability and Statistics for Engineers	3
PY 205 & PY 206 or PY 211	Physics for Engineers and Scientists I and Physics for Engineers and Scientists I Laboratory College Physics I	4
PY 208 & PY 209 or PY 212	Physics for Engineers and Scientists II and Physics for Engineers and Scientists II Laboratory College Physics II	4
Major Requirements		
EC 205	Fundamentals of Economics	3

or EC 201	Principles of Microeconomics	
FTM 217	The Textile Industry	3
MT 366	Biotextile Product Development	3
PCC 302	Technology of Textile Wet Processing	4
TE 200	Introduction to Polymer Science and Engineering	3
TE 201	Fiber Science	4
TT 105	Introduction to Textile Technology	3
TT 327	Yarn Production and Properties	4
TT 331	Performance Evaluation of Textile Materials	4
TT 341	Knitted Fabric Technology	3
TT 351	Woven Products and Processes	3
TT 380	Management and Control of Textile and Apparel Systems	3
TT 401	Textile Technology Senior Design I	4
TT 402	Textile Technology Senior Design II	4
TT 404	Introduction to Nonwovens Products and Processes	3
TT 431	Quality Management and Control In Textile Manufacturing	3
TT 481	Design and Technology of Technical Textiles	3

Advised Electives

Advised Electives (p. 2) ² 18

GEP Courses

Acad Writing Resarch (p.) ¹	4
GEP Humanities (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-humanities/)	6
GEP Social Sciences (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-social-sciences/)	3
GEP Health and Exercise Studies (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-health-exercise-studies/)	2
GEP Elective (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/)	3
GEP Interdisciplinary Perspectives (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-interdisciplinary-perspectives/)	5
GEP Global Knowledge (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-global-knowledge/) (verify requirements)	
GEP Elective (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/)	
World Language Proficiency (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/world-language-proficiency/) (verify requirements)	

Total Hours 120-122

¹ C- or better

² Students can select courses from approved textile technology advised elective courses listed or consult their academic advisor to determine suitable advised elective courses that support students' specific interests and career goals that align with textile technology major.

Acad Writing Research

Code	Title	Hours
Acad Writing Research		
ENG 101	Academic Writing and Research	4
WLEN 101	Academic Writing and Research	4
Transfer Sequence		
ENG 1 GEP		3
ENG 202	Disciplinary Perspectives in Writing	3

Approved Textile Technology Advised Electives

Code	Title	Hours
CH 220	Introductory Organic Chemistry	3
DSC 201	Introduction to R/Python for Data Science	1
DSC 205	Data Communication	1
DSC 295	Introductory Special Topics in Data Science	1-3
DSC 406	Exploratory Data Analysis for Big Data	1
DSC 412	Exploring Machine Learning	1
DSC 495	Special Topics in Data Science	1-3
FTM 310	Entrepreneurship & New Product Development in Textiles	3
FTM 480	Operations Management Decisions for Textiles	3
FTM 481	Product Costing in the Textile and Apparel Industry	3
FTM 484	Strategic Planning and Decision Making in the Textile and Fashion Industries	3
FTM 485	Textile Computer Integrated Enterprise	3
FTM 486	Supply Chain Management in the Textile Industry	3
FTM 487	Human Resource Management and Leadership in the Textile and Fashion Industries	3
FTM 491	Special Topics in Textile and Apparel Management	1-4
GC 120	Foundations of Graphics	3
MA 132	Computational Mathematics for Life and Management Sciences	1
MA 242	Calculus III	4
MT 381	Medical Textile and the Regulatory Environment	3
NW 497	Research Experience in Nonwoven Science and Technology	3
PCC 201	Impact of Industry on the Environment and Society	3
PCC 274	Introduction to Forensic Science	3
PCC 301	Technology of Dyeing and Finishing	3
PCC 304	Technology of Dyeing & Finishing Laboratory	1
PCC 350	Introduction to Color Science and Its Applications	2
PCC 354	Intro to Color Science Laboratory	1
PCC 404	Introduction to the Theory and Practice of Fiber Formation	3
PCC 412	Textile Chemical Analysis	2
PCC 414	Textile Chemistry Analysis Lab	1
PCC 420	Textile Dyeing and Printing	3
PCC 442	Theory of Physico-Chemical Processes in Textiles II	3
PCC 461	Chemistry of Polymeric Materials	3

PCC 462	Characterization and Physical Properties of Polymers	3
PCC 464	Chemistry of Polymeric Materials Laboratory	1
PCC 471	Chemistry of Biopolymers	3
PCC 474	Forensic Chemistry Laboratory	3
T 104	Fabric of Success and Career Readiness	1
T 497	Independent Research in Textile Engineering, Chemistry and Materials Science I	1-3
T 498	Independent Research in Textile Engineering, Chemistry and Materials Science II	1-3
TE 110	Computer-Based Modeling for Engineers	3
TE 303	Thermodynamics for Textile Engineers	3
TE 440	Textile Information Systems Design	4
TE 467	Mechanics of Tissues & Implants Requirements	3
TT/NW 405	Advanced Nonwovens Processing	3
TT 407	Characterization Methods in Nonwovens	3
TT/NW 408	Nonwoven Product Development	3
TT 480	Operations Management Decisions for Textiles	3
TT 485	Textile Computer Integrated Enterprise	3
TT 486	Supply Chain Management in the Textile Industry	3
NW/TT 503	Materials, Polymers, and Fibers used in Nonwovens	3
TE/TT 533	Lean Six Sigma Quality	3
TMS 521	Filament Yarn Production Processing and Properties	3
TT 500	Understanding the Textile Complex	3
TT 520	Yarn Processing Dynamics	3
TT 521	Filament Yarn Production Processing and Properties	3
TT/TTM 530	Textile Quality and Process Control	3
TT 532	Evaluation of Biotextiles	3
TT/TTM 535	Research Methods and Management	3
TT 549	Warp Knit Engineering and Structural Design	3
TT 550	Production Mechanics and Properties of Woven Fabrics	3
TT 551	Advanced Woven Fabric Design	3
TT 553	Formation and Structure of Woven and Knitted Fabrics	3
TT 570	Textile Digital Design and Technology	3
TT 581	Technical Textiles	3

Semester Sequence

This is a sample.

First Year

Fall Semester		Hours
CH 101 & CH 102	Chemistry - A Molecular Science and General Chemistry Laboratory ¹	4
ENG 101	Academic Writing and Research	4
MA 131 or MA 141	Calculus for Life and Management Sciences A ¹ or Calculus I	3
TT 105	Introduction to Textile Technology (CP)	3

T 101	Strategies for Success in the Wilson College of Textiles	1
Hours		15
Spring Semester		
MA 231 or MA 241	Calculus for Life and Management Sciences B or Calculus II	3
PY 211 or PY 205 and PY 206	College Physics I or Physics for Engineers and Scientists I and Physics for Engineers and Scientists I Laboratory	4
FTM 217	The Textile Industry	3
GEP Humanities (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-humanities/)		3
HESF 1 GEP Health and Exercise Studies (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-health-exercise-studies/)		1
Hours		14
Second Year		
Fall Semester		
PY 212 or PY 208 and PY 209	College Physics II or Physics for Engineers and Scientists II and Physics for Engineers and Scientists II Laboratory	4
TE 201	Fiber Science (CP)	4
TT 327	Yarn Production and Properties (CP)	4
TT 380	Management and Control of Textile and Apparel Systems	3
Hours		15
Spring Semester		
EC 205 or EC 201	Fundamentals of Economics or Principles of Microeconomics	3
ST 311 or ST 370	Introduction to Statistics or Probability and Statistics for Engineers	3
TE 200	Introduction to Polymer Science and Engineering	3
TT 341	Knitted Fabric Technology (CP)	3
Advised Electives (p. 2) ²		3
Hours		15
Third Year		
Fall Semester		
PCC 302	Technology of Textile Wet Processing	4
TT 351	Woven Products and Processes	3
TT 404	Introduction to Nonwovens Products and Processes	3
GEP Interdisciplinary Perspectives (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-interdisciplinary-perspectives/)		3
Advised Electives (p. 2)		3
Hours		16
Spring Semester		
MT 366	Biotextile Product Development	3
TT 331	Performance Evaluation of Textile Materials (CP)	4

TT 431	Quality Management and Control In Textile Manufacturing	3
Advised Electives (p. 2)		3
GEP Elective (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/)		3
Hours		16
Fourth Year		
Fall Semester		
TT 401	Textile Technology Senior Design I	4
TT 481	Design and Technology of Technical Textiles	3
GEP Humanities (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-humanities/)		3
GEP Interdisciplinary Perspectives (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-interdisciplinary-perspectives/)		2-3
Advised Electives (p. 2)		3
Hours		15
Spring Semester		
TT 402	Textile Technology Senior Design II	4
GEP Social Sciences (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-social-sciences/)		3
Advised Electives (p. 2)		3
Advised Electives (p. 2)		3
Health and Exercise Studies Elective		1
Hours		14
Total Hours		120

¹ Must be completed with a grade of C- or higher for major requirements

Career Opportunities

You can find textiles just about anywhere, which means you can find our graduates there too. Textile Technology alumni land jobs within aerospace, medicine, automotive, apparel, sports, manufacturing and more.

These are just a few of the places our graduates go:

- Athletics and Apparel: Nike, Adidas, The North Face, New Balance, Reebok, Levis, Fruit of the Loom, Hanesbrands
- Healthcare/Medical Textiles: Medline, Secant Medical
- Homewares: Target, Kohl's
- Government Agencies/Defense: United States Patent and Trademark Office, State Bureau of Investigation (SBI)
- Traditional Textiles: Milliken, Unifi, Parkdale Mills, Glen Raven, Springs Global
- Plus: SAS, All Trails, Lenovo, Cisco, Accenture, IBM, Wolfspeed Inc.

Career Titles

- Materials Developer / Specialist / Designer
- Research and Development Engineer
- Product Development Specialist
- Strategic Sourcing Manager
- Logistics Manager / Inventory Manager
- Data Scientist

- Design Engineer / Process Improvement Engineer
- Production Manager / Project Engineer / Product Manager
- Quality Control Engineer
- Technical Marketing Manager
- Technical Service / Sales

Learn More About Careers

NCCareers.org (<https://nccareers.org/>)

Explore North Carolina's central online resource for students, parents, educators, job seekers and career counselors looking for high quality job and career information.

Occupational Outlook Handbook (<https://www.bls.gov/ooh/>)

Browse the Occupational Outlook Handbook published by the Bureau of Labor Statistics to view state and area employment and wage statistics. You can also identify and compare similar occupations based on your interests.

Career One Stop Videos (<https://www.careeronestop.org/>)

View videos that provide career details and information on wages, employment trends, skills needed, and more for any occupation. Sponsored by the U.S. Department of Labor.

Focus 2 Career Assessment (<https://careers.dasa.ncsu.edu/explore-careers/career-assessments/>) (NC State student email address required)

This career, major and education planning system is available to current NC State students to learn about how your values, interests, competencies, and personality fit into the NC State majors and your future career. An NC State email address is required to create an account. Make an appointment with your career counselor (<https://careers.dasa.ncsu.edu/about/hours-appointments/>) to discuss the results.

Focus 2 Apply Assessment (<https://www.focus2career.com/Portal/Register.cfm?SID=1929>) (Available to prospective students)

A career assessment tool designed to support prospective students in exploring and choosing the right major and career path based on your unique personality, interests, skills and values. Get started with Focus 2 Apply and see how it can guide your journey at NC State.

American Society of Quality (<http://asq.org/>)

The Fiber Society (<https://www.thefibersociety.org/>)