

Textile Engineering (BS): Information Systems Concentration

To see more about what you will learn in this program, visit the Learning Outcomes website (<https://apps.oirp.ncsu.edu/pgas/>)!

The B.S. in Textile Engineering (administered jointly by the Wilson College of Textiles and the College of Engineering) is an interdisciplinary curriculum drawing on diverse science and engineering principles. Textile engineering students develop a unique background, through the curriculum, undergraduate research opportunities, summer internship experiences, and design projects ranging from the development of artificial arteries to the design of novel high-tech sporting and personal protective equipment. Textile engineers also design computer information systems that can integrate a worldwide distribution program eliminating a company's reliance on regional stockpiles or streamline an industrial process using Six Sigma quality which can result in saving millions of dollars. The program offers small class sizes with personal attention from faculty. With the focus on interdisciplinary research, the opportunities for textile engineers have never been brighter. Students in this degree program will participate in the TE/TT Capstone Design Program (<https://textiles.ncsu.edu/tecs/student-experience/senior-design/>), where projects are sponsored by industry partners and government agencies.

The Textile Engineering d program is accredited by the Engineering Accreditation Commission ABET, <https://www.abet.org>. The TE program: Information Systems Design concentration provides the student with the use of database information systems and is linked with Industrial Engineering, which allows most of the students to minor in IE while some choose to minor/double major in Computer Science..

- Minors in associated engineering fields (e.g., Computer Science, Industrial Engineering, and Materials Science) as well as foreign language minors are strongly encouraged as part of the academic plan.
- For exceptional students, dual degree programs with Chemical and Biomolecular Engineering, Biomedical Engineering, and Materials Science and Engineering provide a bachelor degree in two engineering majors with one additional semester of course work.
- Our courses deal with the application of scientific and engineering principles to the design and control of all aspects of fiber, textile, and apparel processes, products, and machinery

For more details about the program, see description under the College of Engineering (<http://catalog.ncsu.edu/undergraduate/engineering/textile-program/>) and the TECS TE website (<https://textiles.ncsu.edu/tecs/undergraduate/textile-engineering/>).

Contact:

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Plan Requirements

Code	Title	Hours	Counts towards
Orientation			
E 101	Introduction to Engineering & Problem Solving 1	1	
E 115	Introduction to Computing Environments	1	
T 101	Strategies for Success in the Wilson College of Textiles	1	
Mathematical & Physical Science			
MA 141	Calculus I 1	4	
MA 241	Calculus II 1	4	
MA 242	Calculus III	4	
MA 341	Applied Differential Equations I	3	
CH 101 & CH 102	Chemistry - A Molecular Science and General Chemistry Laboratory 1	4	
PY 205 & PY 206	Physics for Engineers and Scientists I and Physics for Engineers and Scientists I Laboratory 1	4	
PY 208 & PY 209	Physics for Engineers and Scientists II and Physics for Engineers and Scientists II Laboratory	4	
Major Requirements			
E 102	Engineering in the 21st Century	2	
TE 105	Textile Engineering: Materials and Systems	2	
TE 110	Computer-Based Modeling for Engineers 1	3	
TE 200	Introduction to Polymer Science and Engineering	3	
TE 201	Fiber Science	4	
TE 205	Analog and Digital Circuits	4	

TE 301	Engineering Textile Structures I: Linear Assemblies	3
TE 302	Textile Manufacturing Processes and Systems II	4
TE 303	Thermodynamics for Textile Engineers	3
TE 401	Textile Engineering Design I	4
TE 402	Textile Engineering Design II	4
TE 404	Textile Engineering Quality Improvement	3
TE 424	Textile Engineering Quality Improvement Laboratory	1
PCC 301 & PCC 304	Technology of Dyeing and Finishing and Technology of Dyeing & Finishing Laboratory	4
GC 120	Foundations of Graphics	3
MAE 206	Engineering Statics	3
or CE 214	Engineering Mechanics-Statics	
ST 370	Probability and Statistics for Engineers	3
Select one of the following:		3
ARE 201	Introduction to Agricultural & Resource Economics	
EC 201	Principles of Microeconomics	
EC 205	Fundamentals of Economics	
Concentration Requirements		
ISE 135	Computer-Based Modeling for Engineers	3
ISE 311	Engineering Economic Analysis	3

ISE 361	Deterministic Models in Industrial Engineering	3
TE 440	Textile Information Systems Design	4
Concentration Elective: Select two of the following:		6
ISE 411	Supply Chain Economics and Decision Making	
ISE 417	Database Applications in Industrial & Systems Engineering	
ISE 435	Python Programming for Industrial & Systems Engineers	
ISE 437	Data Analytics for Industrial Engineering	
ISE 441	Introduction to Simulation	

GEP Courses		
Acad Writing Research (p. 3) 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 Additional Breadth (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/) (Humanities/Social Sciences/Visual and Performing Arts)		3
GEP Interdisciplinary Perspectives (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-interdisciplinary-perspectives/)		3
GEP U.S. Diversity (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-us-diversity/) (verify requirement)		

GEP Global Knowledge (<http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-global-knowledge/>) (verify requirement)

Foreign Language Proficiency (<http://catalog.ncsu.edu/undergraduate/gep-category-requirements/foreign-language-proficiency/>) (verify requirement)

Total Hours 126

¹ C- or better

Acad Writing Research

Code	Title	Hours	Counts towards
Acad Writing Research			
ENG 101	Academic Writing and Research	4	
FLE 101	Academic Writing and Research	4	
Transfer Sequence			
ENG 1GEP	100 Level English Composition	3	
ENG 202	Disciplinary Perspectives in Writing	3	

Semester Sequence

This is a sample.

First Year

Fall Semester			Hours
CH 101	Chemistry - A Molecular Science ¹		3
CH 102	General Chemistry Laboratory ¹		1
E 101	Introduction to Engineering & Problem Solving ¹		1
E 115	Introduction to Computing Environments		1
ENG 101	Academic Writing and Research ¹		4
MA 141	Calculus I ¹		4
T 101	Strategies for Success in the Wilson College of Textiles		1
Hours			15

Spring Semester

TE 105	Textile Engineering: Materials and Systems ¹	2
MA 241	Calculus II ¹	4
PY 205	Physics for Engineers and Scientists I ¹	3
PY 206	Physics for Engineers and Scientists I Laboratory	1
GEP Health and Exercise Studies (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-health-exercise-studies/)		1
E 102	Engineering in the 21st Century	2

EC 201 or EC 205 or ARE 201	Principles of Microeconomics or Fundamentals of Economics or Introduction to Agricultural & Resource Economics	3
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Hours 16

Second Year

Fall Semester

MA 242	Calculus III	4
PY 208	Physics for Engineers and Scientists II	3
PY 209	Physics for Engineers and Scientists II Laboratory	1
TE 200	Introduction to Polymer Science and Engineering	3
TE 110	Computer-Based Modeling for Engineers	3
GC 120	Foundations of Graphics	3

Hours 17

Spring Semester

MA 341	Applied Differential Equations I	3
TE 201	Fiber Science	4
TE 205	Analog and Digital Circuits	4
ISE 135	Computer-Based Modeling for Engineers	3
MAE 206 or CE 214	Engineering Statics or Engineering Mechanics-Statics	3

Hours 17

Third Year

Fall Semester

TE 301	Engineering Textile Structures I: Linear Assemblies	3
TE 303	Thermodynamics for Textile Engineers	3
TE 440	Textile Information Systems Design	4
ST 370	Probability and Statistics for Engineers	3
ISE 361	Deterministic Models in Industrial Engineering	3

Hours 16

Spring Semester

TE 302	Textile Manufacturing Processes and Systems II	4
TE 404	Textile Engineering Quality Improvement	3
GEP Health and Exercise Studies (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-health-exercise-studies/)		1
TE 424	Textile Engineering Quality Improvement Laboratory	1

ISE 311 Engineering Economic Analysis 3

GEP Humanities (<http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-humanities/>) 3

Hours 15

Fourth Year

Fall Semester

TE 401	Textile Engineering Design I	4
PCC 301 & PCC 304	Technology of Dyeing and Finishing and Technology of Dyeing & Finishing Laboratory	4

GEP Humanities (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-humanities/)	3
Concentration Elective	3
GEP Social Sciences (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-social-sciences/)	3
Hours	17
Spring Semester	
TE 402 Textile Engineering Design II	4
Concentration Elective	3
GEP Interdisciplinary Perspectives (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-interdisciplinary-perspectives/)	3
GEP Additional Breadth (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/)	3
Hours	13
Total Hours	126

¹ Must be completed with grade of C-or higher for matriculation.

² Must be completed with grade of C-or higher for major requirements.