Textile Engineering (MS)

Master of Science Degree Requirements

Students are required to take a total of 8 courses (24 credits of graded coursework), meeting criteria #1 and #2 below, courses may count toward both criteria (e.g. all TE and some TC courses). Additional courses must be of the graduate level (500-level or above) and be relevant to the field of study.

Code	Title	Hours	Counts towards
TECS Core Courses		**15**	
Criteria #1 [1]			
See "Criteria #1" listed below			
Engineering Content Courses		**12**	
Criteria #2			
See "Criteria #2" listed below			
TECS Seminar		**2**	
TE 601	Seminar		
TE 601	Seminar		
Research / Independent Studies		**6-9**	
Select either "Option A" or "Option B"			
Option A [2]			
TE 630	Independent Study		
TE 693	Master's Supervised Research		
TE 695	Master's Thesis Research		
TE 696	Summer Thesis Research		
Option B [3]			
TE 630	Independent Study		
TE 630	Independent Study		
Total Hours		**32-36**	

1 The TE courses may also count towards criteria #2 as listed there
2 At least 6 credits of research or independent study courses, the first 6 credits are always recommended to be TC 630
3 6 credits of independent study

Criteria #1

Code	Title	Hours	Counts towards
Select a minimum of five courses from the TECS faculty-taught courses listed below		15	
Total Hours		**15**	

TC Prefix

Code	Title	Hours	Counts towards
500-Level Courses			
TC 530	The Chemistry Of Textile Auxiliaries	3	
TC 561	Organic Chemistry Of Polymers	3	
TC 565	Polymer Applications and Technology	3	
TC 589	Special Studies In Textile Engineering and Science	1-4	
700-Level Courses			
TC 704	Fiber Formation--Theory and Practice	3	
TC 705	Theory Of Dyeing	3	
TC 706	Color Science	3	
TC 707	Color Laboratory	1	
TC 710	Science of Dye Chemistry, Dyeing, Printing and Finishing	3	
TC 720	Chemistry Of Dyes and Color	3	
TC 771	Polymer Microstructures, Conformations and Properties	3	
TC 791	Special Topics In Textile Science	1-6	
TC 792	Special Topics In Fiber Science	1-6	

TE Prefix

Code	Title	Hours	Counts towards
500-Level Courses			
TE 505	Textile Systems and Control	3	
TE 533	Lean Six Sigma Quality	3	
TE 540	Textile Information Systems Design	4	
TE 550	Clothing Comfort and Personal Protection Science	3	
TE 551	Human Physiology for Clothing and Wearables	3	
TE 562	Simulation Modeling	3	

TE 565	Textile Composites	3
TE 566	Polymeric Biomaterials Engineering	3
TE 570	Polymer Physics	3
TE 589	Special Studies In Textile Engineering and Science	1-4

TT Prefix

Code	Title	Hours	Counts towards
500-Level Courses			
TT 503	Materials, Polymers, and Fibers used in Nonwovens	3	
TT 504	Introduction to Nonwovens Products and Processes	3	
TT 505	Advanced Nonwovens Processing	3	
TT 507	Nonwoven Characterization Methods	3	
TT 508	Nonwoven Product Development	3	
TT 520	Yarn Processing Dynamics	3	
TT 521	Filament Yarn Production Processing and Properties	3	
TT 530	Textile Quality and Process Control	3	
TT 532	Evaluation of Biotextiles	3	
TT 533	Lean Six Sigma Quality	3	
TT 581	Technical Textiles	3	

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Code	Title	Hours	Counts towards
500-Level Courses			
TTM 501	Textile Enterprise Integration	3	
700-Level Courses			
TMS 761	Mechanical and Rheological Properties Of Fibrous Material	3	
TMS 762	Physical Properties Of Fiber Forming Polymers, Fibers and Fibrous Structures	3	
TMS 763	Characterization Of Structure Of Fiber Forming Polymers	3	
FPS 710	Science of Dye Chemistry, Dyeing, Printing and Finishing	3	
FPS 750	Advances in Fabric Formation, Structure, and Properties	3	
FPS 770	Advances in Polymer Science	3	

Criteria #2

Code	Title	Hours	Counts towards
Select a minimum of four courses from the Engineering graduate-level classes		12	
TE 500+	Any graded (non-research) TE/TMS course at the 500 level or higher		
Engineering 500+	Any graded (non-research) Engineering course at the 500-level or higher, such as, but not limited to prefixes: CHE, MSE, NE, BME, ENG, CSC, etc.		
Total Hours		**12**	

Accelerated Bachelor's/Master's Degree Requirements

The Accelerated Bachelors/Master's (ABM) degree program allows exceptional undergraduate students at NC State an opportunity to complete the requirements for both the Bachelor's and Master's degrees at an accelerated pace. These undergraduate students may double count up to 12 credits and obtain a non-thesis Master's degree in the same field within 12 months of completing the Bachelor's degree, or obtain a thesis-based Master's degree in the same field within 18 months of completing the Bachelor's degree.

This degree program also provides an opportunity for the Directors of Graduate Programs (DGPs) at NC State to recruit rising juniors in their major to their graduate programs. However, permission to pursue an ABM degree program does not guarantee admission to the Graduate

School. Admission is contingent on meeting eligibility requirements at the time of entering the graduate program.

Faculty

Professors

Roger L. Barker

Ahmed El-Shafei

Raoul Farer

Harold S. Freeman

David Hinks

Tushar K. Ghosh

Russell E. Gorga

Warren J. Jasper

Jeffrey Allen Joines

Martin William King

Marian G. McCord

Behnam Pourdeyhimi

Jon Paul Rust

Renzo Shamey

Richard J. Spontak

Alan E. Tonelli

Xiangwu Zhang

Philip Bradford

Emiel DenHartog

George Lawrence Hodge

Jesse Jur

Richard Kotek

Wendy E. Krause

Jerome Lavelle

Sonja Salmon

Nelson Vinueza

Januka Budhathoki-Uprety

Xiaomeng Fang

Ericka Ford

Wei Gao

Jessica Gluck

Bryan Ormond

Eunkyoung Shim

Mengmeng Zhu

Assistant Professors

Amanda Mills

Md Abdul Quddus

Emeritus Faculty

Pamela Banks-Lee

Robert A. Barnhardt

Robert Alan Donaldson

Aly H. El-Shiekh

Perry L. Grady

Bhupender S. Gupta

Peter J Hauser

Samuel Mack Hudson

Gary N. Mock

Mansour H. Mohamed

William Oxenham

Stephen Dean Roberts

Carl B. Smith

Moon Won Suh

Michael Herbert Theil

Adjunct Faculty

Riikka Helena Raeisaenen

Gisela de Aragao Umbuzeiro

Practice/Research/Teaching Professors

Hechmi Hamouda

Benoit Maze

Jialong Shen

Tova Nykaila Williams