

Textile Engineering

Master of Science in Textile Engineering (MS/TE)

The Master of Science in Textile Engineering program trains students to apply engineering principles to the design, production and testing of fiber and polymer-based materials, textiles and related materials. Students focus on enhancing their understanding of structures, production processes and development related to these materials and products. We offer a thesis and non-thesis option of this program. The non-thesis option can be completed entirely online (<https://online-distance.ncsu.edu/program/textile-engineering/>).

Thesis research has focused on the areas of:

- Biomedical textiles.
- Textile composites.
- Nonwovens.
- E-textiles and smart fibers/fabrics.
- New fibers: sensors, actuators and energy storage.
- Sustainability in materials and processes.
- Flexibility, durability and comfort of textiles for activewear applications.
- Personal Protective Equipment (PPE) for firefighters, military and more.
- Product testing and quality control.
- Supply chain optimization.

Students enrolled in this master's program often pursue a double major in statistics, biomedical engineering, industrial engineering, material science or other fields.

The Master of Science in Textile Engineering overlaps with studies in materials science and chemistry, meaning graduates may research and develop solutions for the integration of chemistry and materials science.

Degree Requirements Master of Science in Textile Engineering (MS/TE)

The Masters of Science in Textile Engineering (MS TE) has two options, a thesis option (Option A) and a non-thesis option (Option B).

M.S. TE Option A (Thesis Degree) Program Requirements

MS TE Option A (Thesis) requires a minimum of 32 credit hours, with a minimum of 24 credit hours (8 courses) meeting the following requirements:

- At least 12 credit hours of courses with substantial **engineering** content, including courses with TE and TMS prefixes. Substitutions must be approved by the Director of Graduate Programs;
- A minimum of 15 credit hours of courses that are offered by the TECS Department, which may have the following prefixes: TC (PCC), TE, TMS, NW, TT, FPS, and TTM. *Note: not all courses with these prefixes are offered by the TECS Department;*
- Two semesters of TE601 (Graduate Seminar) are required;

- For the thesis a minimum of six hours of thesis related research is required (TE 695, TE693 or TE630).

Master's Thesis. The Master's thesis should be a research exercise that necessitates expertise at the M.S. level and is concentrated in the textile engineering area on a well-defined topic that has a restricted scope.

M.S. TE Option B (Non-Thesis Degree) Program Requirements

MS TE Option B (Non-Thesis) requires a minimum of 32 credit hours, with a minimum of 24 credit hours (8 courses) meeting the following requirements:

- At least 12 credit hours of courses with substantial **engineering** content, including courses with TE and TMS prefixes. Substitutions must be approved by the Director of Graduate Programs;
- A minimum of 15 credit hours of courses that are offered by the TECS Department, which may have the following prefixes: TC (PCC), TE, TMS, NW, TT, FPS, and TTM. *Note: not all courses with these prefixes are offered by the TECS Department;*
- Two semesters of TE601 (Graduate Seminar) are required;
- At least six credit hours of project-related work in textile engineering at the 600 level or above, such as TE 630 (Independent Study) or an internship, which will be advised by and evaluated by at least one Graduate Faculty Member in Textile Engineering.

Degrees

- Textile Engineering (MS) (<http://catalog.ncsu.edu/graduate/textiles/textile-engineering/textile-engineering-ms/>)
- Textile Engineering (Minor) (<http://catalog.ncsu.edu/graduate/textiles/textile-engineering/textile-engineering-minor/>)
- Textile Supply Chain Management (Certificate) (<http://catalog.ncsu.edu/graduate/textiles/textile-engineering/textile-supply-chain-management-certificate/>)

Faculty

Roger L. Barker

Ahmed El-Shafei

Harold S. Freeman

David Hinks

Tushar K. Ghosh

Russell E. Gorga

Warren J. Jasper

Jeffrey Allen Joines

Martin William King

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Wei Gao

Jessica Gluck

Bryan Ormond

Eunyoung Shim

Mengmeng Zhu

William Oxenham

Stephen Dean Roberts

Carl B. Smith

Moon Won Suh

Michael Herbert Theil

Practice/Research/Teaching Professors

Hechmi Hamouda

Benoit Maze

Jialong Shen

Tova Nykaila Williams

Adjunct Faculty

Gisela de Aragao Umbuzeiro

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