CATALOG OF SERVICES

TEXTILE TECHNOLOGY CENTER
at Gaston College

TEXTILE TECHNOLOGY CENTER

at Gaston College

7220 Wilkinson Blvd., Belmont, North Carolina • 704.825.3737

Since its inception in 1943, the Center has played a significant role in serving the North Carolina textile industry. Today, the Center serves the nation and the world. Over time, the areas of need within the textile industry have changed and evolved and the Center has remained flexible with those needs. The new Fiber Innovation Center will support a new generation of advanced materials and continue our evolution.

We are the heart of the textile industry, driven by American ingenuity and innovation that is at the forefront of transforming the global landscape of advanced materials.

Textile Technology and Fiber Innovation Center Leadership:
Stephen Sharp, Vice President-Fiber Innovation and Facilities Development
Jasmine Cox, Executive Director- Textile Technology Center and Kimbrell Campus
Don Rusch, Director- Technology and Special Projects

TABLE OF CONTENTS

Prices subject to change.
Revised April 2023

MELT EXTRUSION LAB

Christopher Saunders • 704.825.5003 • saunders.chris@gaston.edu
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Where the creation of synthetic fibers begins. From polymer to chip to fiber. From fiber to yarn, then fabric, melt extrusion is the start of seeing your sample come to being. With small run capabilities, see if your formulation will translate well when implemented at your own mill or plant; minimizing your investment risk. Let the Textile Center's Melt Extrusion Laboratory be your lab for perfecting your project from its start!

Call for Quote

Melt Spinner (Large Extruder)
Single line multi-filament melt extruder.

Melt Spinner (Small Extruder)

Staple Draw Line
Processes filament fiber into cut staple with 2 draw lines, crimper, drying oven and cutter.

Fiber Drawing
Single thread line, four heated rolls

Fiber Cutting
Cuts drawn uncrimped fiber into staple, 1/2" to 7".

Chip Drying
Dessicate up to 180 pounds. Vacuum up to 250 pounds.

Reacter
2 Liter Batch Autoclave includes cleanout/ wash batch.

One Shot Extruder
Includes clean up

TEXTURING SERVICES

Air Jet Texturing

BCF Texturing

False Twist Texturing

YARN PROCESSING

Chuck Costner • 704.825.6270 • costner.chuck@gaston.edu
Christopher Perkins • 704.825.3737 • perkins.chris@gaston.edu

With as little as 100 grams of your fiber, the Textile Center's Yarn Processing Department can spin it into the yarn of your choice. Offering short and long staple options, the center supports both the synthetic and natural fiber industries.

Call for Quote

Short Staple Processing (30 to 250 pounds)

Hollingsworth Hopper Blend Line
Opens bales of fiber; weighs and blends to specific ratios. Used for natural and synthetic fibers.

Trutzschler LVSA Fine Opener
Opens fiber and stores it for fiber regulation and control.

Trutzschler FBK 760 Card
Cards short staple fibers. Operates using a single licker-in. Semi-worsted system, mid to long staple fibers.

Trutzschler DK 903 Card
Cards short staple fibers. Operates using triple licker-ins within rollertop card.

Reiter RSB 851 Draw Frame with Autoleveller
Used to draw sliver to improve evenness and achieve desired grain weight.

Saco-Lowell Rovamatic with Speed Controls
Processes sliver into roving for ring spinning.

CSM Ring Spinning Frame
Capable of producing a wide range of yarn counts.

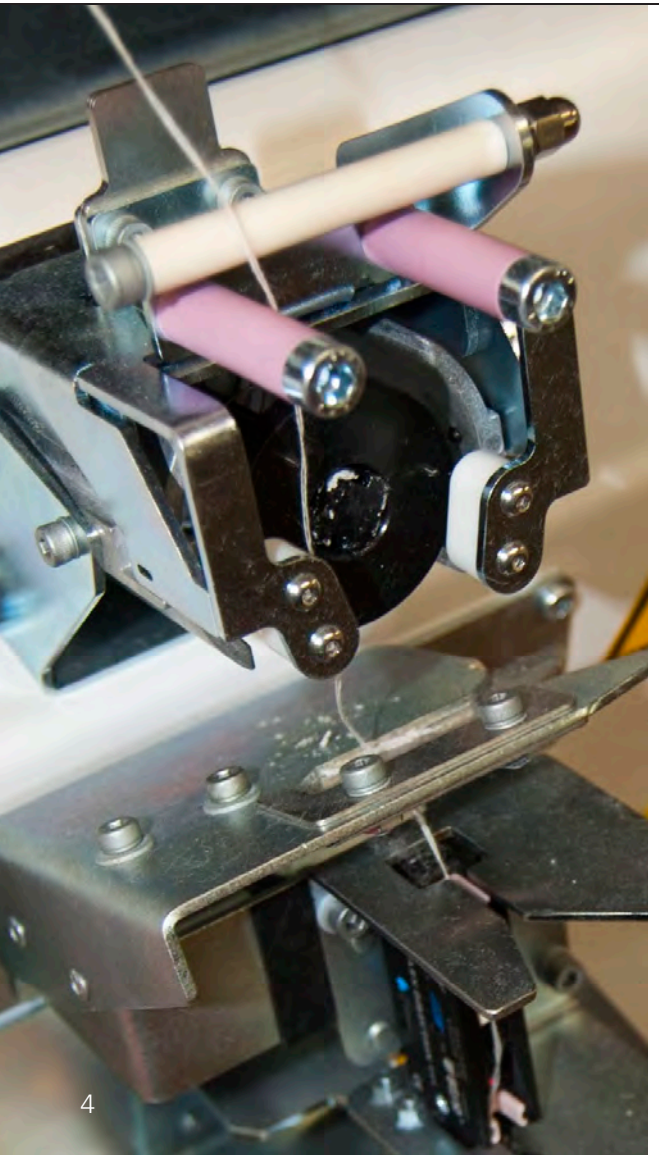
Muratec MVS
Vortex Spinning Frame.

Schlafhorst SE-11 Autocoro
Open End spinning frame.

SSM Doubler
Plys together two to three packages.

Muratec Link Coner
Winds ring spun yarn that is packaged on bobbins onto larger packages.

yarn processing (con't)



Galan PR166/9 - Doubling and Ring Twisting Machine

Ring Twister offers flexibility for small to medium scale productions.

Agteks Directwist 2C10 - Multi-Function Twisting Machine

Symtech SSM Xeno YD with Digicone 2 Fastflex Technology

Winder for monofilament, textured filaments, technical yarns, assembly winding.

Xorella XO-Mini

Textile conditioning machine with treatment temperatures up to 140C.

<u>Lab Scale Processing</u> (100 grams)

Uster MDTA Rotoring

Produces sliver that can be used to create an Open End or Ring Spun yarn.

Pinter 24- Position Ring Spinning Frame

Capable of spinning long staple and fine counts

FABRIC FORMATION

Lee Allison • 704.825.6262 • allison.jeffery@gaston.edu
Kelly Brown • 704.825.6290 • brown.kelly@gaston.edu

Starting with a CCI Sample Weaving System, The Fabric Formation Department is capable of sizing, warping and weaving fabric from a single package. The ability to warp using up to six different packages, using any fiber type! Fabric Formation also offers knitting services, from small tubular knit samples to larger jersey knits requiring as few as 24 packages.

Call for Quote
Pricing based on sley (warp ends)

CCI Sample Weaving System (min. 2 yds.)
This is a set of three separate machines that are capable of sizing, warping and weaving fabric from a single package. The machine is able to warp using up to six different packages. Any fiber type will work on this machine. Weaves any 18 body harness dobby design.

CCI Sample Weaving System (up to 20 yds.)

ITEMA Sulzer Rapier Weaving System
Forty yard broadcloth sample in any dobby weave.

Circular Knitting Projects

DYEING LAB

Jerome Harris • 704.825.6268 or 704.825.6285 • harris.jerome@gaston.edu

From diagnostic dyeing and colorfastness evaluation to shade matching, the Dye Laboratory's capabilities can be performed on fiber, yarn and fabric samples.

Colorfastness to Laundering, Home and Commercial:
Accelerated (AATCC 61): $95/hour

Launderometer / Ahiba Nuance
Colorfastness to Water (AATCC 107): $90/hour
Merge Checks: $90/hour
Competitive and Comparative.
Dye Puffs/Fabric: $90/hour
Dye Re-level: $90/hour
Pre-Treatment and After-Treatment: $30/hour
Pressure Level: $90/hour
Strip/Re-dye: $175/hour
Scour: $90/hour
V-Value for Polyester: $90/hour

Gaston County Futura Jet: $175/hour

Gaston County Package Machine: $90/hour
(2 pound max.)
Scour: $60/hour

Gaston County Mini-Lab Jet: $115/hour
(36" x 7 yards max.)

Ahiba Skein Dyer: $90/hour

Single Dip Padder: $150/hour

Single Dip Padder Usage: $130/hour (minimum of 1 hour)

ANALYTICAL CHEMISTRY LAB

Rick Stahl • 704.825.6265 • ttcanalyticallab@ymail.com
Denisha Guy • 704.825.6263 • ttcanalyticallab@ymail.com
Maria Curry • 704.825.6296 • ttcanalyticallab@ymail.com

Using techniques that involve separation, identification and quantification, the Analytical Laboratory determines the identity and quantity of chemical components within a sample.

ICP: $190
(Minimum sample size 5 grams)
Standard Element List-Standard Preparation (Acid Digestion or Ash) Elements available include (any and all can be reported at the specified rate):

Silver, Aluminum, Arsenic, Beryllium, Bismuth, Calcium, Cadmium, Cobalt, Chromium, Copper, Iron, Potassium, Lithium, Magnesium, Manganese, Molybdenum, Sodium, Nickel, Phosphorous, Lead, Antimony, Selenium, Strontium, Thallium, Titanium, Vanadium and Zinc

GC: $190
(Minimum sample size 5 grams)
Standard PET preparation and analysis only (Any other GC analysis must be quoted individually and test methods provided where applicable.)

GC/MS: Call for quote
As required

DSC: $135
Standard melt point and transitions.

DSC- Multiple Cycle: $155
Multiple cycle heat and cool based on specific instructions included in the initial request.

DSC- Heat History: $155
Heat history analysis of yarn, fiber and fabric in triplicate.

UVVis: Call for quote
Quoted per request dependent on requirements.

Ash Content: $110
Per request duplicate analysis.

Moisture: $125
Standard evaporative analysis of polymer moisture (n=1).

Loss on Drying: $80
Standard evaporative analysis of polymer moisture (n=2).

analytical chemistry lab (con't)

% Finish (Extractables): $160
(minimum sample size 20 grams)
Polar and non-polar extraction using methanol/hexanes.

% Finish (Extractables): $175
(minimum sample size 20 grams)
Finish analysis with hexanes and methanol data separated by solvent.

Special Finish Analysis: Call for quote
(minimum sample size 20 grams)
Finish extraction with non-standard solvents/ techniques quoted individually.

Complete Finish Analysis: $395
(minimum sample size 20 grams)
Finish extraction and analysis of residue by FTIR. Additional charge if EDX and/or GCMS required.

Blend Analysis: $125
(minimum sample size 10 grams)
Per polymer - i.e., remove cotton = 1 sample, remove PET = 1 sample

Dissolve Out: Call for quote
Per polymer.

FTIR: $105 (minimum sample size 5 grams)
Normal Prep: Special handling will be quoted.

pH Determination: $85
(minimum sample size 5 grams)
This test determines the pH of wet processed textiles.

Relative Dye: $160
(minimum sample size 5 grams)
Standard PET method w/HFIP.

Surface Oligomers: $165
(minimum sample size 5 grams)
Standard Method - UVVis.

Total Oligomers: $165
(minimum sample size 5 grams)
Standard Method - UVVis.

Consultation: $150 per hour

Analytical Priority Assignment

Standard Service: Completion within 15 working business days
Express Service: Completion within 5 working business days 50% surcharge
Priority Service: Completion within 1-2 working business days 100% surcharge


50mL
50mL

MICROSCOPY LAB

Leslie Berryhill • 704.825.6293 • ttcmicro@yahoo.com
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Jim Taft • 704.825.6298 • ttcmicro@yahoo.com

The microscopy lab has a very talented staff that is trained to get the most out of the equipment which includes stereo, compound, scanning electron microscopes and more. These tools are often used for imaging, identification, reverse engineering and problem solving.

Bicomponent/Hollow Fiber dpf: $210/sample
Similar to determining fiber dpf, uses the weight percent of each component.

Chemical Extraction: $40/solvent/sample
Water, alcohol, hexanes, acetone and xylene for contamination investigation.

Chemical Extraction (HFIP gel analysis): $100/sample/solvent
Chemical extraction typically involving 0.05 milliliters or less of solvent.

Cotton Maturity Detection: $105/sample

Contamination Identification: Call for quote
The lab is skilled at contamination identification by combining sample manipulation, polarized light, microscope infrared, hot stage, and energy dispersive x-ray analysis techniques to identify contaminants.

Crimp per inch by image analysis (n=30): $185/sample

Cross-section: $105/sample or $120/spandex (hand cut procedure) or $145/comparing normal to defect yarns.
Digital image of fiber, yarn or multilayer film cross-section.

Data Compilation: $100/hour
The compilation of data for all imaging and problem solving projects

Density Column: $70/sample

Density Column Building: $140/sample
Fiber or yarn – n=3 /
Chip – n=10 /
Bottle Flake – n=1

EDX: $110/sample
Identification of elements (carbon and heavier) lowest level of detection 2000ppm.

microscopy lab (con't)

EDX Mapping: $230/ sample

Epoxy Cross-section: $220/sample
This technique is used to cross-section high strength yarns such as Para-aramid.

Failure Analysis: Call for quote
Root cause failure analysis (i.e., Did the sample fail from stress overload, brittle fracture, environmental stress cracking, chemical attack, etc.) This does not include the cost of contaminant identification.

Fiber Birefringence: $295/sample

Fiber dpf: $160/sample or Bicomponent/Hollow: $210/sample
Calculate fiber dpf by using image analysis to measure the fiber cross-sectional area.

Fiber Identification: $220/sample
Unknown fibers are identified by using a combination of microscopy infrared and cross section analysis. Additional testing may be required such as hot stage and EDX at an additional cost.

Fiber Shrinkage by Hot Stage: $250/sample
Fiber shrinkage determined by Mettler Hot stage and Image Analysis.

Fiber ID Stain: $65/sample
Gross determination of fiber types in an unknown sample.

Filament Count by Image Analysis: $105/sample
(Additional $80 per hour for 100+ filament yarns if necessary)
Yarn cross-section via thin sectioning device.

Freeze Fracture: $100/sample
Prepares foamed samples for SEM imaging.

Hot Stage Analysis: $125/sample
The lab has a Mettler hot stage. The hot stage can be thought of as Differential Scanning Calorimetry with images instead of a thermal analysis plot.

Mod Ratio & DPF: $210/sample
Similar to determining fiber dpf with the addition of mod ratio also being calculated.

Microscopic Infrared Analysis: $115/sample
The lab has an IlluminatIR II for doing microscope ATR or ARO analysis.

microscopy lab (con't)

Nonwoven Blend: $530/ sample for 2 component (Additional cost per/component)
The lab is skilled at reverse engineering non-woven fabrics. The lab can identify each fiber type and the type of binder. The analysis and quantification of a binder can be determined at an additional cost.

Optical Imaging: $105/hour
Optical microscopy includes stereo zoom compound microscopy.

Pyrolysis: $100/sample
Sample prep for elastomeric materials.

Sample Examination Fee: $100/sample
Sample investigation - minimum fee for all samples submitted for problem solving.

Scanning Electron Microscopy: $230/hour
The Amray 1820 is a conventional high vacuum SEM. This unit has EDXRA energy dispersive x-ray analysis capabilities.

Sample Prep and Manipulation: $100/sample
This fee is for non-routine sample prep such as unraveling a warp knit or manipulating 5 micron particles.

Yarn Blend Analysis (2 fiber types): $435/sample or $555/comparing normal v defect
Microscopy techniques are used to determine blend analysis when analytical techniques (i.e., dissolve out) cannot be used. Examples of when analytical techniques cannot be used are a heather blend of black and white polyester or a blend of cotton and rayon. Each **additional** fiber type adds $150 to the cost.

Microscopy Priority Assignment

Standard Service: Completion within 15 working business days
Express Service: Completion within 10 working business days 50% surcharge
Priority Service: Completion within 5 working business days 100% surcharge

FLAMMABILITY LAB

Jim Taft • 704.825.6298 • ttcmicro@yahoo.com

Flammability Vertical Burn: $100/sample
(ASTM D6413) Standard Test Method Flame Resistance of Textiles. The purpose of this test is to determine whether a fabric will continue to burn after the source of ignition is removed.

Flammability Vertical Burn (Draperies): $120/sample
NFPA 701: Standard Methods of Fire Tests for Flame Propagation of Textiles and Films. Drapery fabric is tested by burning a small sample and measuring the flame, char length and flaming residue.

TPP (Thermal Protective Performance) Flammability: $120/sample
(ASTM F2700) Standard Test Method for Unsteady-State Heat Transfer Evaluation of Flame Resistant Materials for Clothing with Continuous Heating. This test method is intended for the determination of the heat transfer performance value of a material, a combination of materials, or a comparison of different materials used in flame resistant clothing for workers exposed to combined convective and radiant thermal hazards.

Flammability Sample Prep: $100/hour

PHYSICAL TESTING LAB

Alicia Stevenson • 704.825.6288 • stevenson.alicia@gaston.edu
Monét Freeman • 704.825.6305 • freeman.monet@gaston.edu
Denisha Guy • 704.825.6288 • guy.denisha@gaston.edu

FIBER TESTING

AFIS: $90/sample
(ASTM D5866) Advanced Fiber Information System, provides an improved method of collecting fiber information on fiber quality. It measures "single" fibers and provides data and distributions of measured properties for length and neps.

Classifiber: $80/sample
Classifiber is a fiber length distribution tester for short natural and synthetic fibers up to 80mm.

Crimp per inch: $80/sample (n=15)
(ASTM D3937) This test for determination of crimp frequency of manufactured staple fibers may be used for the acceptance testing of commercial shipments.

Favimat Fiber Breaks: $90/sample
(Fiber from Yarn $110/sample)
(ASTM D1577) Favimat is a semiautomatic controlled tensile tester which works according to the principle of constant rate of extension with integrated measuring head for fineness measurement.

Fiber Diameter Synthetic (DPF): $55/sample
Denier per Filament or DPF is the method which covers the determination of denier to all types of yarn with less than 5% stretch.

Moisture Balance: $73/sample
(ASTM D4120) This method is used to measure the amount of time it takes for water to dissipate from fabric.

Rotor Ring: $61/sample
This Rotor Ring instrument measures fiber-to-fiber and fiber-to-metal opening energy to monitor changes in staple fiber cohesion.

Staple Length: $37/sample
(ASTM D5103) This method covers the determination of average staple length and staple length distribution of both manufactured and natural fibers by manually measuring single fiber length.

YARN TESTING

Boiling Water Shrinkage: $55/sample

(ASTM D2259) This test method covers the measurement of shrinkage of yarns that has been exposed to boiling water. Skeins are made from yarn and immersed into boiling water. Skeins are reconditioned and measured for shrinkage.

Hot Air Shrinkage: $55/sample

(ASTM D2259) This test method covers the measurement of shrinkage of yarns that has been exposed to hot air. Skeins are made from yarn and exposed to dry heat. Skeins are reconditioned and measured for shrinkage.

Instron Yarn Breaks single end (n=10): $67/sample

(ASTM D2256) This test conditions for determining the tensile properties of yarns using the single-strand method.

Node Count: $61/sample

This method determines a node count in a filament yarn.

Short Length Denier (From Fabric): $70/sample

(ASTM D1059) This test method covers the determination of the yarn number taken from any textile fabrics in which the yarns are intact and can be removed in measurable lengths. Because this method is based on short-length specimens, the results should only be considered as approximations of the yarn number.

Skein Breaks (Instron): $61/sample

(ASTM D1578) This test covers the determination of the breaking strength of yarn in skein form. The observed breaking strength is expressed in units of force and equations are provided to convert breaking strength to skein breaking tenacity and to skein break factor.

Spinning Process ID: $32/sample

Determine how the yarn is spun. Ring, Open End or Air Jet. ***For novelty yarns see Microscopy Laboratory.***

Staff Shedding Test: $56/sample

Measures the lint generated by action of yarn against yarn.

Statimat: $97/6 bobbins

(ASTM D2256) This test method covers the determination of tensile properties of monofilament, multifilament and spun yarns.

physical testing lab (con't)

Twist per Inch-Plied: $42/sample

(ASTM D1422) This test method covers the determination of the twist of the plied yarns and the twist of the single yarn before plying.

Twist per Inch-Singles: $40/sample

(ASTM D1422) This test method covers the determination of the amount and direction of twist at the completion of any stage of twisting in single (spun or filament) yarns.

Uster UT- 6 (Roving/Sliver/Staple) and UT-4 (Filament): $49 (1-2 packages)/ $97 (3-6 packages)

Determines the number of imperfections in a yarn. It provides statistical evaluations of polyester blended yarns for classification of evenness, thickness, thinness as well as neps.

Yarn Denier/Count: $18/sample (90 Meter Skein)

(ASTM D1907) This test covers the determination of the yarn number of all types of cotton, woolen, worsted, and man-made fiber yarns taken from packages; or from any textile fabrics in which the yarns are intact and can be removed in measurable lengths.

FABRIC TESTING

Absorbency: $20/sample

(AATCC 79) This test method is designed to measure the water absorbency of textiles by measuring the time it takes a drop of water placed on the fabric surface to be completely absorbed into the fabric.

Ball Burst: $43/sample

(ASTM D6797) This test method describes the measurement for bursting strength of woven and knitted textiles taken from rolls of fabric or fabric taken from garments.

Computer Color Measurement: $43/sample

The Color Eye specializes in color management and color communication L,a,b technology. It offers digital solutions for color management, color matching, quality control and color communication from production to marketing.

Crocking: $25/sample

This test method describes the transfer of color from one fabric onto another white test fabric. It is to test improper dyeing, poor penetration or poor fixation.

physical testing lab (con't)

Cut TDM100: $250/sample
(ASTM F2992-15) This test method covers the measurement of the cut resistance of a material when mounted on a mandrel and subjected to a cutting edge under a specific load.

Elmendorf Tear: $73/sample
(ASTM D1424) A pendulum impact tester is used to measure the force required to propagate an existing slit a fixed stance to the edge of the test sample.

Fabric Appearance: $59/sample
(AATCC 124) This test method is designed to evaluate the smoothness appearance of flat fabric specimens after repeated home laundering.

Fabric Construction Analysis: $80/sample
Visual determination of weave process, fabric weight, fabric thickness, thread count/courses and wales, and denier.

Fabric Weight: $25/sample
(ASTM D3776) These test methods cover the measurement of fabric mass per unit area (weight) and is applicable to most fabrics.

FAK Sampler Knitting Machine:
$97/hour (standard yarn)
$60/day (if knitting exceeds 8 hours)
Knits sample sizes in tubular knit with one cone of yarn. The yarn can be of any type.

General Physical Testing Prep: $80/sample
If additional preparation is necessary to complete primary testing.

Grab Strength: $43/sample
(ASTM D5034) This test method covers the grab and modified grab test procedures for determining the breaking strength and elongation of most textile fabrics.

Home Laundering 5 wash: $30/sample
Five Home Laundering washings in standard washing machine.

Plastic Replica: $56/sample
Determine if defects in a fabric such as streaks and barre are caused by physical or dye defects.

Random Tumble Pilling: $25/sample
(ASTM D3512) This test method covers the resistance to the formation of pills and other related surface changes on textile fabric.

physical testing lab (con't)

Ring Pull: $56/sample
Mechanical test that quantifies hand of a fabric.

Seam Slippage: $73/sample
(ASTM D4034) Used to determine either the sewn seam strength of textiles or the efficiency of a seam assembly with any given fabric.

Shrinkage (Fabric): $48/sample
(AATCC Test Method 135) This test method is intended for the determination of dimensional changes of fabrics when subjected to home laundering procedures used by consumers.

Static Dissipation: $61/sample
(ATSM D4865) This is a measure of the amount of time it takes for static to dissipate from a fabric strip or staple fabric.

Strip Strength: $43/sample (1 inch Instron)
(ASTM D5035) This test method covers raveled strip and cut strip test procedures for determining the breaking force and elongation of most textile fabrics. Provision is made for wet testing.

Thickness: $30/sample
(ASTM D1777) Covers the measurement on the thickness of most textile materials.

Thread Count: $35/sample
(ASTM D3775) The measurement of warp end count and filling pick count and is applicable to all types of woven fabrics.

Tongue Tear: $43/sample
(ASTM D2261) This test method covers the measurement of the tearing strength of textile fabrics by the tongue (single rip) procedure.

Trapezoid Tear: $43/sample
(ASTM D4533) This test method is an index test used to measure the force required to continue or propagate a tear in woven or non-woven geotextiles by the trapezoid method.

Twist per Inch (Fabric): $40/sample
(ASTM D1422) This test determines the amount and direction of twist at the completion of any stage of twisting in single (spun or filament) yarns taken from fabrics.

Vertical Wicking: $40/sample
(AATCC Test Method 197) This test method is used to evaluate the ability of vertically aligned fabric specimens to transport liquid along and/or through them, and is applicable to woven, knitted or nonwoven fabrics.

physical testing lab (con't)

Whiteness Measurement: $43/sample
(AATCC Test Method 110) This test method provides procedures for measuring the whiteness and tint of textiles.

Martindale Abrasion: $80/sample
(1st 15,000 cycles*)
(ASTM D4966) This test method covers the determination of the abrasion resistance of textile fabrics abraded against crossbred, worsted wool fabric.
(*Each additional 5,000 rubs: $15)

Tabor Abrasion: $97/sample
(1st 15,000 cycles*)
(ASTM D3884) This test method covers the determination of the abrasion resistance of organic coatings to abrasion produced by the Tabor Abraser on coatings applied to a plane, rigid surface, such as a metal panel.
(*Each additional 5,000 rubs: $15)

Wyzenbeek: $85/sample
(1st 15,000 cycles*)
(ASTM D4157) This test method covers the determination of the abrasion resistance of woven textile fabrics using oscillatory cylinder tester. The specimen is abraded using cotton duck #10 and evaluated visually.
(*Each additional 5,000 rubs: $15)

Physical Testing Priority Assignment

Standard Service: Completion within 15 working business days or more
Express Service: Completion within 5 working days 50% Surcharge
Priority Service: Completion within 1-2 working business days 100% Surcharge

FABRIC & YARN LAB

Leslie Berryhill • 704.825.6293 • ttcmicro@yahoo.com

The Fabric and Yarn Analysis Laboratory has a talented staff adept at analyzing fiber, yarn and fabric defects. They have numerous tools and resources at their disposal to aid in this very challenging type of analysis.

Cross Section: $105/sample or $145/normal vs defect yarn
Yarn and fiber identification and analysis per cross section.

Defect Analysis Sample Exam: $100/sample
Visual analysis and defect determination.

Fabric Construction: $80/sample (n=3)
Visual determination of weave process.

Filament Count: $50/sample (n=3)
Determine filament count.

Hot Air Shrinkage: $80/sample (n=10)
Percent yarn shrinkage.

Knit Extension: $80/sample (n=10)
Measures the tightness and looseness of a yarn within a knitted fabric.

Plastic Replica: $56/sample
Determines if defects in a fabric such as streaks and barre are caused by physical or dye defects.

Pressure Level: $90/sample
Supplemental dye lab procedure for defect determination.

Sample Prep: $100/hour
Separate normal and defect for woven and knit.

Scrim Analysis: Call for quote
Price contingent upon polymer type.
Analysis comparison of one fiber component to the other in an intimate blend.

Short Length yarn denier from fabric: $70/ sample (n=10)
This method covers the determination of the yarn taken from any textile fabrics in which the yarns are intact and can be removed in measurable lengths. Because this method is based in short length specimens, the results should only be considered as approximations of the yarn number.

fabric & yarn lab (con't)

Staple Length from fabric:
$105/sample (n=25)

This method covers the determination of average staple length and staple length distribution of both manufactured and natural fibers by manually measuring single fiber length.

Twist per inch (from fabric):
$70/sample (n=10)

This test determines the amount and direction of twist at the completion of any stage of twisting in single (spun or filament) yarns taken from fabrics.

Unravel Warp Knit or fabrics with spandex:
$100/hour

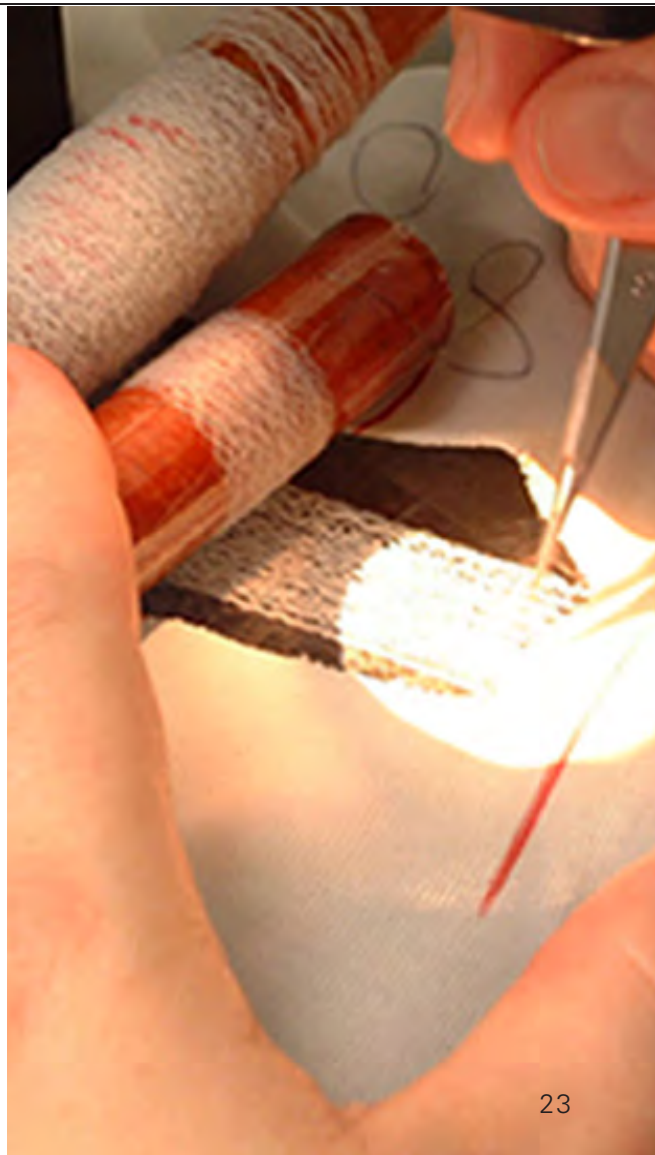
Fabric deconstruction, usually for further analysis.

Weave Extension: $70/sample (n=10)

Measures the tightness and looseness of a yarn within a woven fabric.

Fabric and Yarn Analysis Priority Assignment

Standard Service: Completion within 15 working business days
Express Service: Completion within 10 working business days: 50% surcharge
Priority Service: Completion within 5 working days: 100% surcharge



CUSTOMIZED TRAINING

Monét Freeman • 704.825.6305 • freeman.monet@gaston.edu

Intro to Textiles (formally known as Textiles 101)
$99 per person

Provides attendees with a high-level overview of textile technology and the apparel supply chain. With topics from fiber through emerging trends and technology. This course is a 4 hour course and is offered monthly on-site at TTC, virtually or on-site at facilities for additional costs.

Fiber Fundamentals
$150 per person

Introduces attendees to basic fiber types, explores fiber properties and fiber manufacturing processes. This is a 6-hour course and is offered on-site at TTC, virtually or on-site at facilities for additional costs.

Staple Yarn Spinning Fundamentals
$199 per person

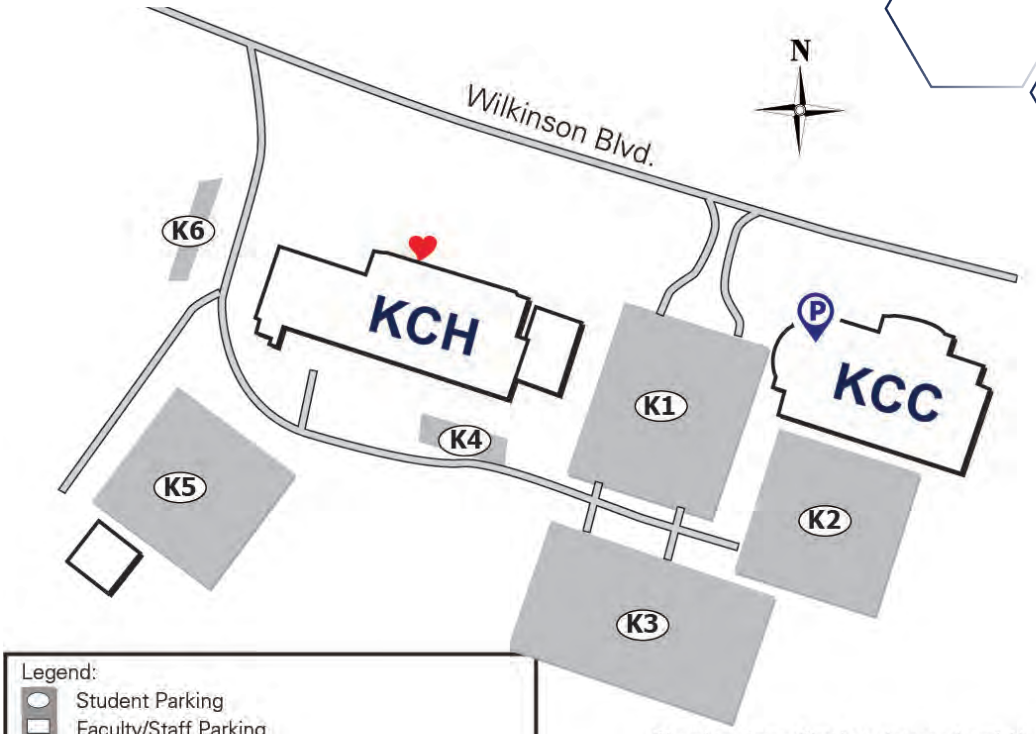
Learn key principles of fiber processing, spinning, fiber properties and yarn numbering systems. This course provides hands-on laboratory activities to attendees.

Weaving Fundamentals
$199 per person

Provides attendees with principal concepts of the woven fabric manufacturing process. This course gives textile professionals an understanding of yarn preparation, fabric construction, loom mechanisms and more.

Textile Academy
$399 per person

This five- week program provides attendees with the knowledge of core concepts such as textile fundamentals, textile manufacturing concepts, math and measurement, teamwork and communication, safety, lean manufacturing principles, and problem-solving. Upon program completion, attendees will receive a certification from Gaston College, OSHA 10-hour safety training and forklift certification. Great for new hires.



Directions from Charlotte International Airport

Directions:

Coming from the North. Take exit #27 from I-85 South. Turn left at top of exit ramp onto Hwy. 273. Travel approximately 1/3 mile (3rd stop light) and turn left on Hwy. 74. Travel approximately 2/3 mile until you reach the Gaston College Kimbrell Campus on your right.

Coming from the South. Take exit #27 from I-85 North. Turn right at top of exit ramp onto Hwy. 273. Turn left at the 2nd stoplight onto Hwy. 74 (Wilkinson Blvd.). Travel approximately 2/3 mile until you reach the Gaston College Kimbrell Campus on your right.

TEXTILE TECHNOLOGY CENTER

at Gaston College

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