

## Mass Customization Capabilities — Software and Equipment at Southern University

Southern University currently has the software and equipment necessary to fully mass customize.

### Design Software

- ◆ Lectra Systems
  - ◇ Kaledo Textile (Print, Weave, & Knit)
  - ◇ Modaris and Modaris 3D
  - ◇ Diamino
- ◆ Adobe PhotoShop

### Digital Textile Printing Equipment

- ◆ 2 Textile Printers and supporting software
- ◆ 1 Garment Printer and supporting software
- ◆ 1 Padder for pre-treatment of fabric
- ◆ 2 Fabric Steamers
- ◆ 1 Heatpress
- ◆ Several design computer stations
- ◆ Supporting scanners for design work

### Body Scanning Equipment

- ◆ 1 3-D Full Body Scanner/System and supporting software



Mimaki GP-604, Garment Printer



3-D Body Scanner



Mimaki TX-2 1600, Digital Textile Printer

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SOUTHERN UNIVERSITY AG CENTER

## Mass Customization Technology at

## Southern University



### Textile Technology Laboratory



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# Mass Customization Technology at Southern University

## Digital Technologies

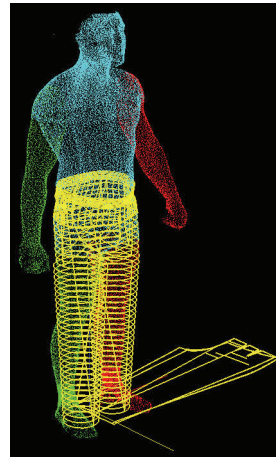
The apparel and textiles area at Southern University is on the cutting edge with respect to research, teaching and outreach on digital technologies relating to mass customization, the current and future trend in the apparel and textiles industry. The digital technology is housed in computerized state-of-the-art research and teaching facility that features 3-D body scanning, digital textile printing equipment, computer-aided design software, and scientific instrumentation for textile testing. Mass customization is the process of producing customized garments that fit individual customers needs and preferences by utilizing computer technology to automatically calculate garment fit and specialty print fabrics.

## Garment Printing

The Mimaki GP-604 digital garment printer allows designs to be printed directly on garments. Using piezo technology, this printer can print on surfaces of about 24"x16". The garment to be printed is fitted into a template and fed into the machine.



*Preparing the GP-604 garment printer for printing.*

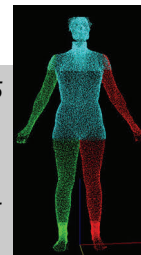


*Pant pattern unwrapped from 3-D body scan. Pattern fits the individual's measurements.*

## 3-D Body Scanning

3-D body scanning is a non-intrusive technology that scans the human body to produce a 3-D model and automatically provides body measurements. The measurements can be uploaded into a pattern design program and used to customize a pattern for the individual scanned. The scanner uses a series of light to generate the 3-D model. Customized fabric designs can be applied on the pattern, resulting in apparel that fits the consumer and meets their special design requirements. Southern University is proud to provide this technology as a service to its students and other constituents.

*A 3-D Scan takes about 15 seconds. Numerous body measurements are extracted. To the right is an actual body scan image.*



## Customized Fabric

Digital textile printing is the technology of printing on fabric directly from the computer. The digital textile printers are capable of printing several yards of fabric in a short time.



The customized fabric designs are created using special design software. Images also may be scanned into the software using a flatbed scanner. Using the design software, the design may be edited for flawless repeats or strategically positioned for garment design.



*SU Ag Center logo customized designs*

Once the design is printed onto the fabric, post-treatment is necessary. This process ensures penetration of dyes. Post-treatment includes steaming the fabric for a pre-determined time and temperature and then rinsing away excess dye.

Southern University has the capabilities to digitally print on a variety of fabrics including cottons and silks.