

**Southeast Tech**  
Program Overview  
Electronics and Mechatronics Programs  
**EXECUTIVE SUMMARY**

**Purpose:**

To provide the School Board information about the Electronics and Mechatronics Programs at Southeast Tech.

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The presentation will provide the School Board information about the Electronics Technology and Mechatronics Technology Programs at Southeast Tech and introduce the principals involved in the program. The presentation will include program details, student demographics and career/employer information. Both programs offer a two-year Associate of Applied Science degree.

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**Administrative Recommendation to School Board:**

To acknowledge the Electronics/Mechatronics Program Overview Report.

# SOUTHEAST TECH

Electronics Technology  
Mechatronics Technology

Report to Sioux Falls School Board

# Our Story: Electronics and Mechatronics

- Common First-Year curriculum between the programs
  - Start with a year of basic electronics with courses in both analog and digital circuits.
  - Second year is a unique pathway for electronics and mechatronics students.
  - After 4 semesters, both programs culminate in an AAS degree.

# Our Faculty and Staff

- Curt Olson, BSEE, MSEd
- 16<sup>th</sup> year at Southeast Tech
- 11 years industry experience, Daktronics, Inc.
  - PCB repair technician (new and used product)
  - Call center support technician
  - Field service technician
  - Installation technician
  - Manufacturing technician
  - Project Management
  - Product development engineer
  - Product testing technician
  - System designer using AutoCAD®
  - PCB design engineer



**SOUTHEAST  
TECH**

# Our Faculty and Staff

- Bryan Cox, BSEET, MSEd
- 11<sup>TH</sup> year at Southeast Tech
- 10 years industry experience
  - 6 years, Hicks Enterprise
    - Field service technician, amusement and vending Certified Technician level 1,2 and 3, SD Video Lottery
  - 4 years, Daktronics, Inc.
    - Manufacturing Maintenance Technician
    - Manufacturing Supervisor



# Our Faculty and Staff

- Julie Sackett, AAS Nursing, AAS ET
  - Southeast Tech ET graduate, 2001
  - 9<sup>th</sup> year at Southeast Tech
  - 7 years industry experience, Daktronics, Inc.
    - Circuit board repair
    - Procedure documentation/revision
    - New employee trainer
    - Software installation



# Our Students

- Students are typically male
- Ages and life experiences are extremely varied
- Aptitudes needed:
  - Algebra-based math skills
  - Physical science background
  - Mechanical aptitude
  - Desire to understand how things work and to improve them
  - Desire to be a life-long learner as technology is constantly evolving

# Our Program

- Electronics Technology
  - Second year focuses on project based learning
    - Interfacing
    - Printed Circuit Board (PCB) design
    - Programming with microcontrollers and Labview®
    - Major project (capstone) in final semester
      - Project Management
      - Documentation
      - Scheduling
      - Budgeting
      - Resource Management
      - Implementation

# Our Program

- Mechatronics Technology
  - Second year focuses on plant automation
    - Fluid power (hydraulic and pneumatic)
    - Electric motors (AC, DC, Servo, Stepper)
    - Programmable Logic Controllers (PLC) using RSLogix®
    - Final semester dedicated to system integration
      - Computer Integrated Manufacturing (CIM) Cell
      - Safety/Documentation
      - Setup and calibration
      - Mechanical adjustments
      - Machine programming and communication
      - Troubleshooting and repair

# Our Data

- Current total enrollment: 45
- Job placement in related field last five years: 86%
- Average Salary: 2015
  - Mechatronics \$21.24
  - Electronics \$16.00

# Our Careers: Electronics Technology

- ET is very diverse and difficult to define a particular career path
  - “Bench tech”
  - Installation
  - Support
  - Manufacturing
  - Research and Design
  - Technical sales
  - Technical writing
  - Project Management

# Our Careers: Mechatronics Technology

- Mechatronics graduates are ready to enter a wide range of careers
  - Maintenance Tech
  - Process Tech
  - Instrumentation Tech
  - Machine Installation/setup
  - Preventive Maintenance
  - Field Service Tech

# Our Careers: Some Potential Employers

- 3M
- 3D Security
- AGCO Manufacturing
- Applied Engineering
- Border States Electric
- CCL Label
- Dakota Digital
- Dakota Fluid Power
- Daktronics
- Direct Automation
- Glambia
- Interstates Control Systems
- KDLT
- Orion Foods
- Smithfield Foods
- Malloy Electric
- POET
- Raven Industries
- Sencore
- Spartan ERV
- Sparton Manufacturing
- Wells Blue Bunny

# Our Impact on Workforce

- Over time, careers have transformed from primarily service careers (i.e. “TV repairman”) to adding value to the industry
  - Value added agriculture
    - GPS farming (Raven Industries)
  - Value added production
    - Automation of food packaging (Smithfield Foods)
    - Ethanol and soybean processing (POET)
  - Value added advertising
    - Programmable billboards (Daktronics, Inc.)

# A Personal Story

- Beau Anderson
- 2004 graduate, Southeast Tech, ET
- Post-graduate work experience
  - 12 years, Daktronics, Inc.
    - Bench tech
    - Testing supervisor
    - Electronic Assembly production supervisor
      - Provided key roll in start-up of Sioux Falls plant
    - Electrical Design Engineer
  - 4 months, Interstates Control Systems
    - Project Estimator

# Thank You

## **Administrative Recommendation to School Board:**

- To acknowledge the Electronics Technology and Mechatronics Technology Program Report.