Mechatronics
Course Description

PROGRAM:  Mechatronics 8554, 8555, and 8556

CAMPUS LOCATION:  Butler Farm, Hampton, VA

COURSE DESCRIPTION:  This is a one-year program offered at the Butler Farm Campus through an advanced manufacturing partnership with Thomas Nelson Community College (TNCC). This program will lead to industry certification and prepares students for manufacturing careers as electrical/mechanical or mechatronics technicians who design, install, maintain, repair, or troubleshoot manufacturing systems that include electrical and mechanical equipment, instrumentation, controls, and automation. This class is dual enrolled with TNCC for 22 college credits.

PREREQUISITES:  The Mechatronics course is dual enrolled with Thomas Nelson Community College (TNCC) for 22 credits and students are required by Virginia's Community Colleges to take the TNCC English and Math placement test to be considered for acceptance.

SPECIAL CONSIDERATIONS:  Students will be required to do tool training which will expose them to lifting and handling metal on various occasions. Students will learn to solder and use special chemicals to help clean surface area. Students will be asked to compete in a district competition if they win the classroom competition. Districts may be out of the school building and are primarily on a Saturday.

CLASS SIZE:  16 students are the maximum number per class.

CLASS FEES:  $17.00 school activity fee


STUDENT ORGANIZATIONS:  Skills USA

CREDENTIALING:
- National Occupational Competency Testing Institute (NOCTI)
- Siemens Level 1 Mechatronics Systems Certification

COURSE SCHEDULE:
Mechatronics I
- MECH 155 – Mechanisms
- ELE 156 – Electrical Control Systems

Mechatronics II
- ETR 140 – Introduction to Mechatronics
- ETR 168 – Digital Circuit Fundamentals

Mechatronics III
- ELE 233 – Programmable Logic Controller Systems
- IND 243 – Principles and Applications of Mechatronics

POSTSECONDARY PARTNERS:
- Thomas Nelson Community College
PROJECTED EMPLOYMENT:

<table>
<thead>
<tr>
<th>Career</th>
<th>State Employment Growth 10 year projection</th>
<th>2015 National Median Salary</th>
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</thead>
<tbody>
<tr>
<td>Industrial Engineer</td>
<td>10%</td>
<td>$83,470</td>
</tr>
<tr>
<td>Industrial Engineering Technician</td>
<td>21%</td>
<td>$53,780</td>
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*Source:* *U.S. Bureau of Labor Statistics*

BUSINESS PARTNERS:

- Canon Inc. of Virginia
- Continental
- Liebherr

TEACHER:

The Mechatronics program consists of 8 different courses which are taught by various different TNCC instructors.

RESOURCES:

- CTE Verso Virginia