

# **POWERLINE CONSTRUCTION & MAINTENANCE TECHNOLOGY**

Alliance

## **Programs and Awards:**

AOS. 4603 Powerline Construction & Maintenance Technology  
(66 credits)

**D2.4603 Powerline Construction & Maintenance Technology  
(57 credits)**

**C2.4603 Powerline Construction & Maintenance Technology  
(35 credits)**

**PSA.4603 Powerline Construction & Maintenance Technology  
(6-12 credits)**

This program provides students with the training to apply technical knowledge and skills to install, operate, maintain and repair local, long-distance, and rural electric power cables and communication lines. The student will also learn to erect and construct pole and tower lines. Upon completion of this program, students will have the skills necessary to work as a powerline technician for utility providers.

**Requirements:** Students must complete 15-17 credits of the required General Education Core, 6 credits of the required Power Line Technology Core, and all 5 **highlighted** Skill Set Areas to total at least 66 credit hours. All electives used to fulfill graduation requirements for this AOS must be pre-approved by the assigned faculty advisor and each student's final plan must be approved by the Faculty Advisor and the Applied Technologies Division Chair.

### **Required General Education (Choose any 15-17 Credits)**

MATH-0151 Electrical Math 1..... 3  
MATH-0152 Electrical Math 2  
or  
OFFT-1500 Business Mathematics  
or  
MATH-0150 Technical Mathematics  
or higher ..... 2-4  
OFFT-1210 Business Communications  
or  
ENGL-0500 Work Place Writing  
or  
ENGL-1500 English Composition I  
or higher ..... 3  
OFFT-2400 Career Development  
or  
\*UTIL-XXXX Internship I ..... 3  
Elective (Comp. Apps course recommended)  
..... 1-3  
Human Relations/Psychology/Social Science 3  
BSAD-2450 Business Ethics ..... 3  
SPCH-1200 Speech Communications  
or  
SPCH-1390 Public Speaking..... 3  
OFFT-1100 Personal Finance ..... 3  
Science or General Education Elective 3-4  
PHYS-0151 Electrical Physics ..... 3

**15-17 Credits**

**Required Basic Power Line Core and Skill Set Awards**

**Required Basic Power Line Technology Core**

|  |   |
|--|---|
| TRANS-1100 Commercial Drivers License<br>(CDL Class B) ..... | 2 |
| Computer Application .....                                   | 3 |
| HLTH-1100 First Aid .....                                    | 5 |
| HLTH-1090 CPR .....  | 5 |

**6 Credits**

**Skill Set #1**

|   |   |
|---|---|
| UTIL-1010 Basic Systems Design &<br>Electricity ..... | 2 |
| UTIL-1020 Powerline Orientation &<br>Rigging .....    | 2 |
| UTIL-1040L1 Overhead Line Construction<br>Lab .....   | 2 |
| UTIL-1040L2 Overhead Line Construction<br>Lab .....   | 2 |

**Total Credits 8**

**Skill Set #2**

|   |   |
|---|---|
| UTIL-1120 Powerline Crew Fundamentals 1                 | 1 |
| UTIL-1130 Basic Transformers .....                      | 2 |
| UTIL-1140L Overhead Equipment<br>Installation Lab ..... | 3 |

**Total Credits 6**

**Skill Set #3**

|  |   |
|--|---|
| UTIL-1210 Electrical Concepts .....              | 3 |
| UTIL-1220 Powerline Crew<br>Fundamentals 2 ..... | 1 |
| UTIL-1230 Transformer Ration and Ratings         | 1 |
| UTIL-1240 Powerline Construction ..              | 2 |
| UTIL-1240L Powerline Construction Lab            | 3 |

**Total Credits 10**

**Skill Set #4**

|   |   |
|---|---|
| UTIL-1310 Overvoltage/Overcurrent<br>Protective Devices ..... | 3 |
| UTIL-1320 Powerline Crew Fundamentals 3<br>.....              | 1 |
| UTIL-1330 Transformer Connections                             | 1 |
| UTIL-1340L Operations of Electric Utility                     | 4 |
| UTIL-1350 Customer Relations .....                            | 1 |
| UTIL-1360 Electricity & Metering 1                            | 1 |

**Total Credits 11**

**Skill Set #5**

|  |   |
|--|---|
| UTIL-1410 Live Line Concepts .....       | 3 |
| UTIL-1420 Utility Occupational Procedure | 1 |
| UTIL-1430 Transformer Connections 2      | 1 |
| UTIL-1440L Live Line Construction Lab    | 4 |
| UTIL-1450 Substations .....              | 1 |
| UTIL-1460 Electricity & Meters 2 ....    | 1 |

**Total Credits 11**

**\*May enroll in Internship after maintaining a 3.0 in 24 or more credits of Power Line Construction & Maintenance.**

## D2.4603 Diploma: Power Line Construction & Maintenance Technology

This diploma is designed to fulfill 57 credit hours of the Powerline Construction & Maintenance Technology AOS Degree.

**Requirements:** Students must meet General Education requirements according to current catalog requirements, and successfully complete 8 credits of **highlighted** required General Education courses, 3 credits of the **highlighted** Powerline Technology Core courses, and all 5 **highlighted** Skill Set Areas to total at least 57 credit hours. All electives used to fulfill graduation requirements for this Diploma must be pre-approved by the assigned faculty advisor and each student's final plan must be approved by the Faculty Advisor and the Applied Technologies Division Chair. This Diploma is designed to fulfill 57 credit hours of the Power Line Construction & Maintenance AOS Degree.

### **Required General Education (Choose any 6-8 Credits)**

MATH-0151 Electrical Math 1..... 3  
MATH-0152 Electrical Math 2  
or  
OFFT-1500 Business Mathematics  
or  
MATH-0150 Technical Mathematics  
or higher ..... 2-4  
OFFT-1210 Business Communications  
or  
ENGL-0500 Work Place Writing  
or  
ENGL-1500 English Composition I  
or higher ..... 3  
OFFT-2400 Career Development  
or  
\*UTIL-XXXX Internship I ..... 3  
Human Relations/Psychology/Social Science 3  
BSAD-2450 Business Ethics ..... 3  
SPCH-1200 Speech Communications  
or  
SPCH-1390 Public Speaking..... 3  
OFFT-1100 Personal Finance ..... 3  
Science or General Education Elective 3-4  
PHYS-0151 Electrical Physics ..... 3

**Total Credits 8**

### **Required Basic Applied Technology Core and Skill Set Awards**

#### **Required Basic Power Line Technology Core**

TRANS-1100 Commercial Drivers License  
(CDL Class B) ..... 2  
Computer Application ..... 3  
HLTH-1100 First Aid ..... 5  
HLTH-1090 CPR ..... 5

**Total Credits 3**

#### **Skill Set #1**

UTIL-1010 Basic Systems Design &  
Electricity ..... 2  
UTIL-1020 Powerline Orientation &  
Rigging ..... 2  
UTIL-1040L1 Overhead Line  
Construction Lab ..... 2  
UTIL-1040L2 Overhead Line  
Construction Lab ..... 2

**Total Credits 8**

**Skill Set #2**

|            |                               |          |
|------------|-------------------------------|----------|
| UTIL-1120  | Powerline Crew Fundamentals 1 |          |
|            | .....                         | 1        |
| UTIL-1130  | Basic Transformers .....      | 2        |
| UTIL-1140L | Overhead Equipment            |          |
|            | Installation Lab .....        | 3        |
|            | <b>Total Credits</b>          | <b>6</b> |

**Skill Set #3**

|            |                               |           |
|------------|-------------------------------|-----------|
| UTIL-1210  | Electrical Concepts .....     | 3         |
| UTIL-1220  | Powerline Crew Fundamentals 2 |           |
|            | .....                         | 1         |
| UTIL-1230  | Transformer Ration and        |           |
|            | Ratings .....                 | 1         |
| UTIL-1240  | Powerline Construction..      | 2         |
| UTIL-1240L | Powerline Construction Lab    | 3         |
|            | <b>Total Credits</b>          | <b>10</b> |

**Skill Set #4**

|            |                                |           |
|------------|--------------------------------|-----------|
| UTIL-1310  | Overvoltage/Overcurrent        |           |
|            | Protective Devices .....       | 3         |
| UTIL-1320  | Powerline Crew                 |           |
|            | Fundamentals 3 .....           | 1         |
| UTIL-1330  | Transformer Connections        | 1         |
| UTIL-1340L | Operations of Electric Utility | 4         |
| UTIL-1350  | Customer Relations.....        | 1         |
| UTIL-1360  | Electricity & Metering 1 .     | 1         |
|            | <b>Total Credits</b>           | <b>11</b> |

**Skill Set #5**

|            |                                |           |
|------------|--------------------------------|-----------|
| UTIL-1410  | Live Line Concepts.....        | 3         |
| UTIL-1420  | Utility Occupational Procedure | 1         |
| UTIL-1430  | Transformer Connections        | 1         |
| UTIL-1440L | Live Line Construction Lab     | 4         |
| UTIL-1450  | Substations .....              | 1         |
| UTIL-1460  | Electricity & Meters 2 ...     | 1         |
|            | <b>Total Credits</b>           | <b>11</b> |

**\*May enroll in Internship after maintaining a 3.0 in 24 or more credits of Power Line Construction & Maintenance.**

## **C2.4603 Certificate: Power Line Construction & Maintenance Technology**

This certificate is designed to fulfill 35 credit hours of the Powerline Construction & Maintenance Technology AOS Degree or the Powerline Construction & Maintenance Technology Diploma.

**Requirements:** Students must meet General Education requirements according to current catalog requirements, and successfully completed 6 credits of highlighted required General Education courses, 3 credits of the **highlighted** Power Line Technology Core courses, and a minimum of the **highlighted** Skill Set Award Areas #1, #2, and #3 to total at least 35 credit hours. All electives used to fulfill graduation requirements for this Certificate must be pre-approved by the assigned faculty advisor and each student's final plan must be approved by the Faculty Advisor and the Applied Technologies Division Chair. This Certificate is designed to fulfill 35 credit hours of the Power Line Construction & Maintenance Technology AOS Degree or the Power Line Construction & Maintenance Technology Diploma.

### **Required General Education (Choose any 6-8 Credits)**

MATH-0151 Electrical Math 1..... 3  
MATH-0152 Electrical Math 2  
or  
OFFT-1500 Business Mathematics  
or  
MATH-0150 Technical Mathematics  
or higher ..... 2-4  
OFFT-1210 Business Communications  
or  
ENGL-0500 Work Place Writing  
or  
ENGL-1500 English Composition I  
or higher ..... 3  
OFFT-2400 Career Development  
or  
\*UTIL-XXXX Internship I ..... 3  
Human Relations/Psychology/Social Science 3  
BSAD-2450 Business Ethics ..... 3  
SPCH-1200 Speech Communications  
or  
SPCH-1390 Public Speaking ..... 3  
OFFT-1100 Personal Finance ..... 3  
Science or General Education Elective 3-4  
PHYS-0151 Electrical Physics ..... 3

**8 Credits**

### **Required Basic Applied Technology Core and Skill Set Awards**

#### **Required Basic Power Line Technology Core**

TRAN-1100 Commercial Drivers License  
(CDL Class B) ..... 2  
Computer Application ..... 3  
HLTH-1100 First Aid ..... 5  
HLTH-1090 CPR ..... 5

**3 Credits**

#### **Skill Set #1**

UTIL-1010 Basic Systems Design &  
Electricity ..... 2  
UTIL-1020 Powerline Orientation &  
Rigging ..... 2  
UTIL-1040L1 Overhead Line Construction  
Lab ..... 2  
UTIL-1040L2 Overhead Line Construction  
Lab ..... 2

**Total Credits 8**

**Skill Set #2**

|                      |                                     |   |          |
|----------------------|-------------------------------------|---|----------|
| UTIL-1120            | Powerline Crew Fundamentals 1       | 1 |          |
| UTIL-1130            | Basic Transformers .....            | 2 |          |
| UTIL-1140L           | Overhead Equipment Installation Lab |   | 3        |
| <b>Total Credits</b> |                                     |   | <b>6</b> |

**Skill Set #3**

|                      |                                      |   |           |
|----------------------|--------------------------------------|---|-----------|
| UTIL-1210            | Electrical Concepts .....            | 3 |           |
| UTIL-1220            | Powerline Crew Fundamentals 2 .....  | 1 |           |
| UTIL-1230            | Transformer Ration and Ratings ..... | 1 |           |
| UTIL-1240            | Powerline Construction..             | 2 |           |
| UTIL-1240L           | Powerline Construction Lab           |   | 3         |
| <b>Total Credits</b> |                                      |   | <b>10</b> |

**Skill Set #4**

|                      |  |   |           |
|----------------------|--|---|-----------|
| UTIL-1310            | Overvoltage/Overcurrent Protective Devices ..... | 3 |           |
| UTIL-1320            | Powerline Crew Fundamentals 3 .....              | 1 |           |
| UTIL-1330            | Transformer Connections                          | 1 | 1         |
| UTIL-1340L           | Operations of Electric Utility                   |   | 4         |
| UTIL-1350            | Customer Relations.....                          | 1 |           |
| UTIL-1360            | Electricity & Metering 1 .                       | 1 |           |
| <b>Total Credits</b> |  |   | <b>11</b> |

**Skill Set #5**

|                      |                                     |   |           |
|----------------------|-------------------------------------|---|-----------|
| UTIL-1410            | Live Line Concepts.....             | 3 |           |
| UTIL-1420            | Utility Occupational Procedure..... | 1 |           |
| UTIL-1430            | Transformer Connections             | 2 | 1         |
| UTIL-1440L           | Live Line Construction Lab          |   | 4         |
| UTIL-1450            | Substations .....                   | 1 |           |
| UTIL-1460            | Electricity & Meters 2 ....         | 1 |           |
| <b>Total Credits</b> |                                     |   | <b>11</b> |

**Required Curriculum-Professional Skills Award 6-12 Credits of any Power Line Construction & Maintenance courses with Applied Technology Division approval.**

Course descriptions and syllabi for this program can be found on the WNCC website at

[http://www.wncc.net/programs/courses\\_by\\_subject.html](http://www.wncc.net/programs/courses_by_subject.html)