

PHYS-1420	Elementary General Physics II w/ Algebra/Trigonometry (with lab and recitation) or	5
PHYS-2120	General Physics II w/ Calculus (with lab and recitation)	5

**Recommended Electives or
Courses Required for Transfer** **14 credits**

Class		Credits
ENGR-2020	Statics	3
PHYS-1070	Astronomy	4

It is recommended that the remainder of the seven (7) credits be selected from any of the technical electives below:

BIOS-1010	General Biology (with lab)	4
BIOS-2250	Human Anatomy & Physiology I (with lab)	4
BIOS-2260	Human Anatomy & Physiology II (with lab)	4
BIOS-2120	Genetics (with lab)	4
BIOS-2460	Microbiology (with lab)	4
CHEM-1090	General Chemistry I (with lab)	4
CHEM-1100	General Chemistry II (with lab)	4
ENGR-1070	Graphics for Engineers	3
ECEN-2110	Intro to Circuits and Electronics	3
INFO-2350	Introduction to Computer Science	3
MATH-2170	Applied Statistics	3
MATH-2210	Applied Differential Equations	3

Total AS Requirements **62-64 credits**

Recommended Plan of Study

1st Semester		Credits
ENGL-1010	English Composition I	3
MATH-1600	Analytic Geometry and Calculus I	5
PHYS-1070	Astronomy	4
PRDV-1010	Achieving College Success	3
Total Credits		15

2nd Semester		Credits
ENGL-1020	English Composition II	3
ENGR-1020	Programming and Problem Solving	3
MATH-2150	Calculus II	5
	Humanities GE elective	3
	Technical elective	3-4
Total Credits		17-18

3rd Semester		Credits
MATH-2200	Calculus III	5
PHYS-2110	General Physics I w/ Calculus (with lab and recitation)	5
	Oral Communications GE elective	3
	Elective	3
Total Credits		16

4th Semester		Credits
ENGR-2020	Statics	3
PHYS-2120	General Physics II w/ Calculus (with lab and recitation)	5
	Social Sciences GE elective	3
	Technical elective	3-4
Total Credits		14-15
Total AS Credits		62-64

Powerline Construction & Maintenance Technology

Associate of Applied Science

Diploma

Certificate

Alliance

This program provides students with the training to apply technical knowledge and skills to install, operate, maintain, and repair distribution, transmission, and rural electric power lines and cables. The student also learns to construct power lines according to Rural Utility Standards (RUS). Upon completion of this program, students have the skills required of an apprentice power line technician for utility providers.

All electives used to fulfill graduation requirements for this degree require pre-approval of the faculty advisor. The final plan for each student must be approved by his or her faculty advisor and the chair of Applied Technology.

Program Outcomes

- Demonstrate proficiency in climbing skills including perception of and response to communication cues from pole-top heights and/or in loud settings.
- Demonstrate functional working knowledge electrical theory and concepts as a baseline for efficient and safe work environment conditions.
- Develop safe working habits and skills necessary for an understanding of power line safety guidelines and principles in accordance with the American Public Power Association and OSHA.

- Identify, select, and utilize the appropriate tools, materials, and equipment for the installation, maintenance, and repair of utilities services; following specifications and drawings for construction units.
- Use information and instruction to work cooperatively with groups of individuals to accomplish actual workplace simulations in outdoor settings.

Technical Standards

- Apply information and instruction delivered in a classroom setting to the successful performance of lab tasks to simulate actual workplace settings.
- Demonstrate a functional working knowledge of electrical theory and concepts as a baseline for efficient and safe work environment conditions.
- Follow safety procedures described in the American Public Power Association Safety Handbook.
- Identify, select, and utilize the appropriate tools, materials, and equipment for the installation, maintenance, and repair of Rural Utilities Service (RUS) lines, following specifications and drawings for construction units.
- Identify, select and utilize the appropriate tools, materials, and equipment for the installation, maintenance, and repair of a variety of electrical equipment such as transformers, reclosers, grounds, disconnect switches, fused cutouts, and other industry-standard devices.
- Inspect equipment and machinery to ensure safe operational condition per established guidelines.
- Operate hand tools, equipment, and machinery common to the power line trade in a safe manner.
- Utilize a hand line to hoist equipment and materials as necessary to elevated positions.
- Operate equipment such as bucket trucks and digger derrick trucks from elevated platforms.
- Read a load lifting chart and safely load, secure, and unload a variety of equipment and materials using a bucket truck and/or digger derrick truck.
- Climb wooden and steel poles to heights of up to 45 feet to perform construction, repair, or coworker rescue maneuvers.
- Perceive and respond to communication cues from pole-top heights and/or in loud environments.
- Work cooperatively with groups of individuals to accomplish physical tasks in outdoor settings.

Associate of Applied Science (AAS)

AAS.4603 (66 credits)

Students must successfully complete a minimum of 15 credits of general education in addition to the Powerline core courses required for the certificate (see below). Students should consult with their academic advisor about how best to incorporate the general education requirements into their academic pathway.

Notes

- Interested students should contact the Admissions Office for current program requirements.
- The following are required for acceptance into the Powerline Construction & Maintenance Technology program: a physical exam; health insurance; valid driver's license; and purchase of climbing tools and equipment. For specific information regarding these items, prospective students should contact the Admissions Office.
- The Merchant Training Program requires an average of 70% on all unit tests in order to take the final for that book/semester. Students who do not have a 70% average on these tests will not be allowed to take the Merchant Training Program final for that book/semester.
- In order to progress to the next book/semester in the Merchant Training Program, students must pass the final for the current book/semester and maintain a 2.5 cumulative GPA in UTIL program specific courses. WNCC requires a 2.0 cumulative GPA overall for graduation.
- An internship is required of all students pursuing a degree, diploma, or certificate in Powerline Construction & Maintenance Technology.

Program Requirements

AAS General Education Core Class	15 credits Credits
Written Communication*	3
<i>ENGL-1000 (Workplace Writing) recommended</i>	
Oral Communication	3
<i>SPCH-1200 (Human Communication) recommended</i>	
Quantitative Reasoning*	3
<i>MATH-1020 (Technical Math) recommended</i>	
Social or Lab Science	3
<i>ECON-1230 (General Economics) recommended</i>	
Personal Development	3

*Written Communication and Quantitative Reasoning course selections are dependent on writing and math

proficiency based on assessment. Students should consult with their academic advisor about specific general education courses required.

Core Program Requirements 51 credits

See requirements for certificate program (below).

Total AAS Requirements 66 credits

Diploma

D2.4603 (60 credits)

This diploma is designed as a standalone program or to fulfill 60 credits of the Powerline Construction & Maintenance Technology AAS degree.

Students must successfully complete a minimum of nine (9) credits of general education in addition to the Powerline core courses required for the certificate (see below). Students should consult with their academic advisor about how best to incorporate the general education requirements into their academic pathway.

Program Requirements

Diploma General Education Core 9 credits

Class	Credits
Written Communication*	3
<i>ENGL-1000 (Workplace Writing) recommended</i>	
Quantitative Reasoning*	3
<i>MATH-1020 (Technical Math) recommended</i>	
Personal Development	3

*Written Communication and Quantitative Reasoning course selections are dependent on writing and math proficiency based on assessment. Students should consult with their academic advisor about specific general education courses required.

Core Program Requirements 51 credits

See requirements for certificate program (below)

Total Diploma Requirements 60 credits

Certificate

C2.4603 (51 Credits)

This certificate is designed as a standalone program or to fulfill 51 credits of the Powerline Construction & Maintenance Technology AAS degree or diploma.

Program Requirements

The certificate in Powerline Construction and Maintenance Technology requires 51 credits as described in the plan of study below.

Recommended Plan of Study

1st Semester (summer)		Credits
AMDT-1000	OSHA 10 for General Industry	1
TRAN-1100	Commercial Driver's License (CDL Class B)	2
UTIL-1100	Introduction to Power Line Basics and Safety	3.5
UTIL-1200	Basic Climbing	2.5
UTIL-1500	Applied Electric Science for Powerline I	2
UTIL-1600	Applied Math for Powerline I	1
Total Credits		12
2nd Semester (fall)		Credits
UTIL-1015	Staking/Mapping I	1
UTIL-1025	Rigging I	1
UTIL-1030	Power Use I	1
UTIL-1040	Street Lighting I	1
UTIL-1150	Safety I	1
UTIL-1415	Overhead Power Line Construction I	3
UTIL-1425	Electrical Equipment Structure & Design I	3
UTIL-1435	Electrical Equipment Structure & Design Lab	3
UTIL-1550	Applied Electric Science for Powerline II	3
UTIL-1650	Applied Math for Powerline II	1
Total Credits		18
3rd Semester (spring)		Credits
UTIL-2010	Staking/Mapping II	1
UTIL-2020	Safety II	1
UTIL-2030	Power Use II	1
UTIL-2040	Street Lighting II	1
UTIL-2350	Transformer Connections	4
UTIL-2415	Overhead Power Line Construction II	3
UTIL-2425	Electrical Equipment Structure & Design II	4
UTIL-2500	Powerline Internship	3
UTIL-2550	Applied Electric Science for Powerline III	3
Total Credits		21
Total Certificate Credits		51