

ADVANTAGES

Summer internships are available, allowing students to gain additional, valuable trade experience. Various IBEW Locals have agreed to award qualified graduates from Alfred State's electrical construction and maintenance electrician program advanced placement in their apprenticeship programs. The degree of advanced placement to be awarded will be determined after review by the joint apprenticeship committee and after all conditions of the joint apprenticeship standards have been met. Hands-on application of classroom theory is the main emphasis of the laboratory work.

PROGRAM STUDENT LEARNING OUTCOMES

- Read, interpret, and apply technical information from the National Electrical Code.
- Perform basic and complex mathematical equations that apply to the electrical trade.
- Perform layout, design, and installation for commercial and industrial wiring systems.
- Perform entry-level layout, design, and installation of residential wiring systems.
- Apply combined knowledge to perform maintenance and troubleshooting procedures within the electrical trade.
- Students will develop an understanding of efficiency, design, and NEC requirements as pertaining to renewable energy systems.
- Design, sizing, layout, and selection of equipment for the electrical systems within a residential dwelling.

DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM

Build on your associate degree to complete a bachelor's 100% online. Alfred State electrical construction and maintenance electrician graduates may enter directly into the construction supervision BTech or the technology management BBA degree program. Graduates who have credit for freshman composition, statistics, literature, history, and speech may complete the bachelor's program in two additional years; others may complete the bachelor's program in two-and-one-half years.

OCCUPATIONAL OPPORTUNITIES

- Designer
- Installer
- Construction site electrician
- Electrical estimator
- Electrical inspector
- PLC programmer
- Salesperson
- Electrical trade union or non-union apprentice
- Electric motor control technician
- Private contractor (residential, commercial)
- Industrial maintenance electrician
- Technical field representative
- Wholesale representative
- Electrical technician
- Wind turbine technician/installer
- Photovoltaic technician/installer

TECHNICAL STANDARDS

It is essential that students in this degree program can participate fully and safely, with or without reasonable accommodations in all classrooms, laboratory, or field experiences required for completion of the program. Students in this degree program:

- Must be able to function in a safe manner, not placing themselves, faculty, staff, or other students in jeopardy.
- Must be able to appropriately and safely use standard laboratory equipment, materials, and instrumentation that requires possession of fine motor skills and mobility.
- Must be able to lift 50 pounds of materials up to 5ft to mount electrical panels at standard industry height.
- Must be able to communicate orally with a person 6 to 10 feet away.
- Must be able to read and decipher information found in technical manuals.
- Must be able to visually translate information on analog or digital meters & test equipment.

This program provides in-depth instruction in the theories and principles of electricity. Principles of operation for electrical devices and equipment, and correct and safe operation of tools are covered. You will study and learn to interpret and apply the requirements of the National Electric Code for designing electrical layouts, installation methods, and the maintenance, troubleshooting, and repair of electrical circuits and equipment. In your senior year lab, you'll create completely automated projects using PLCs, pneumatics, electronics, and process controls.

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Recommended: Algebra; good writing and reading comprehension skills.

CONTINUING EDUCATION OPPORTUNITIES

The International Brotherhood of Electrical Workers (IBEW) Local 86, Rochester; IBEW Local 237, Niagara Falls; and IBEW Local 241, Ithaca have signed articulation agreements with the Alfred State electrical construction and maintenance electrician program.

TYPICAL FOUR-SEMESTER PROGRAM

First			
ELTR	1156	Residential Wiring I	6
ELTR	1166	Residential Wiring Lab IA	6
ELTR	1176	Residential Wiring Lab IB	6
			18
Second			
ELTR	2156	Residential Wiring II	6
ELTR	2166	Residential Wiring Lab IIA	6
ELTR	2176	Residential Wiring Lab IIB	6
			18
Third			
ELTR	3156	Electrical Power Systems	6
ELTR	3326	Magnetic Motor Controls	6
ELTR	3306	Alarms and Special Systems	6
			18
Fourth			
ELTR	3336	Photovlct & Wind Trbn Systm In	6
ELTR	3356	Pgrmble Cntrls for Ind Autotn	6
ELTR	3366	Ind Automtn & Process Controls	6
			18

Note: Seniors will rotate through the six courses listed in the third and fourth semesters. These six are taught both semesters.

Graduation requirements

A student must successfully complete all courses and earn a minimum cumulative index of 2.0, which is equivalent to a "C" average, in the prescribed four-semester program.