AOS DEGREE – CODE #0498
Bradley Thompson, Department Chair and Program Coordinator
Email address: thompsbj@alfredstate.edu

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.

Practical (hands-on) application of the classroom theory is the main emphasis of the laboratory work. As an electrical construction and maintenance electrician student, you will assist in the design and installation of the electrical installations of many projects both on and off campus. Approximately one-third of lab time is spent on actual work sites, gaining real-life work experience.

In your senior year, you will create completely automated projects in the lab using PLCs, pneumatics, electronics, and process controls.

ADVANTAGES
• Summer internships are available to selected students through the International Brotherhood of Electrical Workers, Village of Wellsville Electric Department, and RADEC Corporation in Rochester, 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.

DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM
Alfred State electrical construction and maintenance electrician graduates may enter directly into the construction supervision BTech or technology management BBA degree program. Graduates who have credit for freshman composition, statistics, literature, history, and speech may complete the baccalaureate program in two additional years; others may complete the program in two-and-one-half years.

CONTINUING EDUCATION OPPORTUNITIES
The following local chapters of the International Brotherhood of Electrical Workers (IBEW) have signed articulation agreements with the electrical construction and maintenance electrician program at Alfred State.

• Industrial maintenance electrician
• Technical field representative
• Wholesale representative
• Electrical technician
• Wind turbine technician/installer
• Photovoltaic technician/installer

EMPLOYMENT STATISTICS
Employment and continuing education rate of 90 percent – 82 percent are employed; 8 percent continued their education.

RELATED PROGRAMS
Building Trades: Building Construction
Electrical Engineering Technology

REQUIRED TOOLS/EQUIPMENT
A list of required tools, equipment, PPE, etc. for all of the programs listed above can be found at http://www.alfredstate.edu/tool-lists.

A tier 1 laptop computer is required for students entering this degree program. Laptop specifications are available at www.alfredstate.edu/required-laptops.

ENTRANCE REQUIREMENTS/RECOMMENDATIONS
Recommended: Algebra; good writing and reading comprehension skills

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.

- 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 visually translate information on analog or digital meters.
- Must be able to read and decipher information found in technical manuals.
- Must be able to visually translate information on analog or digital meters and other test equipment.

OFFICE OF ACCESSIBILITY SERVICES
Students who believe they need a reasonable accommodation to properly participate in this program may contact Melanie Ryan in the Office of Accessibility Services. This office may be contacted by email at oas@alfredstate.edu or by phone at 607-587-4506. Please keep in mind that some accommodations may take time to implement, so students seeking accommodations are encouraged to contact OAS as early as possible.

IBEW Local 86, Rochester
IBEW Local 241, Ithaca
IBEW Local 237, Niagara Falls
IBEW Local 86, Rochester

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)
### Electrical Construction and Maintenance Electrician - AOS Degree

#### Typical Four-Semester Program

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td><strong>First</strong></td>
<td>ELTR 1156</td>
<td>Residential Wiring I</td>
<td>6</td>
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<tr>
<td></td>
<td>ELTR 1166</td>
<td>Residential Wiring Lab IA</td>
<td>6</td>
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<tr>
<td></td>
<td>ELTR 1176</td>
<td>Residential Wiring Lab IB</td>
<td>6</td>
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<tr>
<td><strong>Second</strong></td>
<td>ELTR 2156</td>
<td>Residential Wiring II</td>
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<td>ELTR 2166</td>
<td>Residential Wiring Lab II A</td>
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<td>ELTR 2176</td>
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<td>18</td>
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<tr>
<td><strong>Third</strong></td>
<td>ELTR 3156</td>
<td>Electrical Power Systems</td>
<td>6</td>
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<td></td>
<td>ELTR 3326</td>
<td>Magnetic Motor Controls</td>
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<td>ELTR 3306</td>
<td>Alarms and Special Systems</td>
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<tr>
<td><strong>Fourth</strong></td>
<td>ELTR 3336</td>
<td>Photovoltaic &amp; Wind Trbn Sysm In</td>
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<td></td>
<td>ELTR 3356</td>
<td>Programmable Ctrl for Ind Auto</td>
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<tr>
<td></td>
<td>ELTR 3366</td>
<td>Ind Automtn &amp; Process Controls</td>
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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.