



# Electrical Technology - Associate in Applied Science (2022-2023 Catalog)

## SEMESTER-BY-SEMESTER PROGRAM MAP FOR FULL-TIME STUDENTS

Courses are listed in preferred order of completion  
 Plans can be modified to fit student needs by adding more semesters  
**Choose your courses with your Advisor.**

| Developmental Education Courses (if required) |         |                                   |                          |         |                      |
|---|---------|-----------------------------------|--------------------------|---------|----------------------|
| <input type="checkbox"/>                      | ACLS050 | Introduction to Academic Literacy | <input type="checkbox"/> | MATH020 | Pre-Algebra          |
| <input type="checkbox"/>                      | ENGL027 | Writing Skills Workshop           | <input type="checkbox"/> | MATH022 | Elementary Algebra   |
| <input type="checkbox"/>                      |         |                                   | <input type="checkbox"/> | MATH026 | Intermediate Algebra |

| complete   | Course #                 | Course Title                   | Credits   | Gen Ed | Pre-requisites / Co-requisites |  |
|------------|--------------------------|--------------------------------|---|--------|--------------------------------|--|
| Semester 1 | <input type="checkbox"/> | COLS101                        | College Success   | 1      |                                |  |
|            | <input type="checkbox"/> | CISC101                        | Introduction to Information Technology  | 3      |                                |  |
|            | <input type="checkbox"/> | ELTC101                        | Electrical Fundamentals   | 3      |                                |  |
|            | <input type="checkbox"/> | EMEC114                        | Mechanical Skills for the Trades  | 2      |                                |  |
|            | <input type="checkbox"/> | ENGL101                        | English I   | 3      | Comm.                          | PRE: ENGL Placement Policy               |
|            | <input type="checkbox"/> | MATH103                        | Technical Mathematics   | 3      | QL                             |  |
|            | <input type="checkbox"/> | OSAH101 or OSAH102             | Construction Industry Outreach Safety Education or General Industry Outreach Safety Education** | 1      |                                |  |
|            |                          | <b>Total Semester Credits:</b> | <b>16</b>   |        |                                |  |
| Semester 2 | <input type="checkbox"/> | CMGT104                        | Construction Print Reading  | 3      |                                |  |
|            | <input type="checkbox"/> | ELTC107                        | Electrical Wiring I   | 3      |                                | PRE: ELTC101                             |
|            | <input type="checkbox"/> | ELTC135                        | Motors and Controls   | 4      |                                | PRE: ELTC101                             |
|            | <input type="checkbox"/> | EMEC140                        | Sensors, Wiring, and Troubleshooting  | 1      |                                | PRE: ELTC101                             |
|            | <input type="checkbox"/> | CMTH102                        | Introduction to Communication   | 3      | Comm.                          |  |
|            | <input type="checkbox"/> |                                | AH, SIT, or SSHB Elective +   | 3      | AH, SIT, SSHB                  | Depends on course selected               |
|            |                          | <b>Total Semester Credits:</b> | <b>17</b>   |        |                                |  |
| Semester 3 | <input type="checkbox"/> | ELTC109                        | Electrical Wiring II  | 3      |                                | PRE: ELTC107                             |
|            | <input type="checkbox"/> | EMEC240                        | Industrial Control Systems I  | 4      |                                | PRE: ELTC101; PRE or CO: EMEC140         |
|            | <input type="checkbox"/> | ENGL151T                       | English II (Technical Writing)  | 3      | Comm.                          | PRE: ENGL101                             |
|            | <input type="checkbox"/> |                                | AH, SIT, or SSHB Elective +   | 3      | AH, SIT, SSHB                  | Depends on course selected               |
|            | <input type="checkbox"/> |                                | Technical Elective++  | 2 or 3 |                                | Depends on course selected               |
|            |                          | <b>Total Semester Credits:</b> | <b>15-16</b>  |        |                                |  |
| Semester 4 | <input type="checkbox"/> | ELTC211                        | National Electric Code  | 4      |                                | PRE: ELTC109 or permission of instructor |
|            | <input type="checkbox"/> | PHYS152                        | Physical Science II   | 3      |                                |  |
|            | <input type="checkbox"/> |                                | Elective  | 3      |                                | Depends on course selected               |
|            | <input type="checkbox"/> |                                | Technical Elective++  | 3 or 4 |                                | Depends on course selected               |
|            |                          | <b>Total Semester Credits:</b> | <b>13-14</b>  |        |                                |  |
|            |                          | <b>Total Degree Credits</b>    | <b>61-63</b>  |        |                                |  |

| General Education Requirements |  |                        |
|--------------------------------|--|------------------------|
| <input type="checkbox"/>       |  | Diversity (D)          |
| <input type="checkbox"/>       |  | Writing Intensive (WI) |

Notes: +For the General Education Electives, students must select one course from the list of approved courses in two of the following categories: Arts & Humanities (AH); Social Science: Societies and Institution over Time (SIT); Social Science: Scientific Study of Human Behavior (SSHB).  
 \*One course should be designated as Diversity and Global Awareness (D) for degree completion.  
 \*Completion of one General Education Elective in a Writing Intensive (WI) section satisfies the Writing Intensive (WI) requirement.  
 GEOG121G (Environmental Sustainability) is recommended.  
 \*\*OSAH 101 is the recommended course.  
 ++Eligible Technical Electives: any ELTC, HVAC, CADM, EMEC,ELEC,ENGG, CHEM, CISC, or WELD. Ineligible electives: CADM100, CADM117, EMEC115, ENGG100, or ENGG117.

| Arts & Humanities (AH)                          |
|---|
| ARTA 100 Art and Visual Thinking                |
| ARTA 101 Art History Survey                     |
| THEA 110 Introduction to the Theatre            |
| THEA 111 Acting I                               |
| THEA 115 Technical Theatre                      |
| THEA 117 Stagecraft                             |
| CMTH 126 The Communication Arts                 |
| THEA 189 Stage Voice and Movement               |
| THEA 190 Stage Production                       |
| THEA 206 Directing                              |
| THEA 211 Plays: Classical to Contemp. (G-WI)    |
| THEA 212 Acting II                              |
| THEA 218 Theatre Portfolio                      |
| CMTH 220 Introduction to Film                   |
| CMTH235 Understanding Culture Through Film      |
| DANC 101 Dance History                          |
| DANC 110 Ballet I                               |
| DANC 120 Modern Dance I                         |
| DANC 130 Jazz I                                 |
| DANC 210 Ballet II                              |
| DANC 220 Modern Dance II                        |
| DANC 230 Jazz II                                |
| ENGL 201 British Literature I (G-WI)            |
| ENGL 203 Shakespeare (G-WI)                     |
| ENGL 205 American Literature I (G-WI)           |
| ENGL 211 Plays: Classical to Contemp. (G-WI)    |
| ENGL 215 Multicultural Adolescent Lit (G-WI)    |
| ENGL 250 Latin American Literature (G-WI)       |
| ENGL 251 British Literature II (G-WI)           |
| ENGL 253 Creative Writing                       |
| ENGL 255 American Literature II (G-WI)          |
| ENGL 256 Modern Poetry (G-WI)                   |
| ENGL 257 20th Century Lit by Women (G-WI)       |
| ENGL258 Fiction Writing                         |
| ENGL 260 Contemporary Literature (G-WI)         |
| ENGL 264 Irish Literature (G-WI)                |
| ENGL 265 African-American Literature (G-WI)     |
| ENGL 267 Poetry Writing                         |
| HUMA 121 The American Work Experience (G-WI)    |
| HUMA 140 Intro to Women & Gender Studies (G-WI) |
| HUMA 150 Nature of the Environment              |
| HUMA210 Creativity and the Origin of Ideas      |
| JOUR 101 Journalism and Society                 |
| Modern Language - All MDLA Courses              |
| MUSC 101 Introduction to Music                  |
| PHIL 111 On Death and Dying (G-WI)              |
| PHIL 121 World Religions                        |
| PHIL 201 Introduction to Philosophy             |
| PHIL 202 Ethics and Moral Problems (G-WI)       |
| PHIL 204 Asian Philosophies                     |
| PHIL 211 Ancient Philosophy                     |
| PHIL 215 Modern Philosophy                      |
| PHIL220 Existentialism                          |
| PHIL 225 What is Freedom?                       |

| Societies & Institutions Over Time (SIT)                    |
|---|
| ARCH 155 Architectural History II 1870-Present (AAS ONLY)   |
| CMTH 221 History of Broadcasting                            |
| GEOG 101 World Geography                                    |
| GEOG 151 Geography of the U.S. and Canada (G-WI)            |
| GLBL 130 Intro to Global Studies                            |
| GLBL 160 Field Experience & Acad Research in GS             |
| GLBL 230 Global Studies Capstone                            |
| HIST 103 Ancient and Medieval History                       |
| HIST 113 American History I (G-WI)                          |
| HIST 121 The Black Experience (G-WI)                        |
| HIST 123 African Civilization                               |
| HIST 140 Modern Chinese History                             |
| HIST 153 Found of Mod Euro History, 1300-1815 (G-WI)        |
| HIST 163 American History II                                |
| HIST 165 The American Experience of Warfare (G-WI)          |
| HIST 166 Civil War and Reconstruction (G-WI)                |
| HIST 168 History of the Middle East (G-WI)                  |
| HIST 169G History of Latinos in the US                      |
| HIST 173 Mod European History, 1815 to Present (G-WI)       |
| HIST 183 Modern American History 1945-Present               |
| HIST 210 History of Mod Science, 1859 to Present            |
| HIST 211 History of Pennsylvania                            |
| INTS 201 Implementing Sustainable Energy System...          |
| INTS 202 The Architecture of the City: Classic to Contemp.  |
| POLS 101 Introduction to Political Science                  |
| POLS 105 American Constitutional Law (G-WI)                 |
| POLS 110 American National Government (G-WI)                |
| POLS 150 Peace Studies & Conflict Resolution (Study Abroad) |
| POLS 170 Politics of Modern Turkey (Study Abroad)           |
| POLS 202 International Relations                            |
| POLS 205 Women and Politics (G-WI)                          |
| POLS 251 State and Local Government (G-WI)                  |
| SOCA 102 Cultural Anthropology (G-WI)                       |
| SOCA 105 American Ethnicity                                 |
| SOCA 160 Issues in Contemp.Genocide & Mass Violence         |

| Scientific Study of Human Behavior (SSHB)           |
|---|
| CJST 101 Intro to Criminal Justice                  |
| ECON 201 Macroeconomics                             |
| FDST110 Food and Identity                           |
| GEOG 121 Environmental Sustainability (G-WI)        |
| GEOG 140 Investigating Climate Change )             |
| GEOG 271 Intro to Geographic Info Systems           |
| HUMA 250 Research Methods in Social Sciences (G-WI) |
| INTS 250 Study Abroad                               |
| PSYC 103 Introduction to Psychology (G-WI)          |
| PSYC 205 Research Methods                           |
| PSYC 230 Introduction to Health Psychology          |
| PSYC 235 Dev Child Psychopathology                  |
| PSYC 245 Cognitive Psychology                       |
| PSYC 255 Abnormal Psychology                        |
| PSYC 258 Developmental Psychology (G-WI)            |
| PSYC 265 Psychology of Sex and Gender               |
| SOCA 103 Principles of Sociology (G-WI)             |
| SOCA 125 Sociology of Families (G-WI)               |
| SOCA 210 Sociology of Gender                        |

| Diversity (D) Electives                                     |
|---|
| BIOS 126 Environmental Science                              |
| BIOS 210 Environmental Biology                              |
| BUSA 115 Intro to International Business                    |
| CJST 101 Intro to Criminal Justice                          |
| CMTH 126 The Communication Arts                             |
| THEA 211 Plays: Classical to Contemporary                   |
| CMTH 215 Intercultural Communication                        |
| CMTH235 Understanding Culture Through Film                  |
| DANC 101 Dance History                                      |
| ENGL 151L English II (Literature)                           |
| ENGL 205 American Literature I                              |
| ENGL 211 Plays: Classical to Contemporary                   |
| ENGL 215 Multicultural Adolescent Literature                |
| ENGL 250 Latin American Literature                          |
| ENGL 251 British Literature II                              |
| ENGL 253 Creative Writing                                   |
| ENGL 255 American Literature II                             |
| ENGL 256 Modern Poetry                                      |
| ENGL 257 20th Century Lit by Women                          |
| ENGL 260 Contemporary Literature                            |
| ENGL 264 Irish Literature                                   |
| ENGL 265 African-American Literature                        |
| ENGL 267 Poetry Writing                                     |
| GEOG 101 World Geography                                    |
| GEOG 121 Environmental Sustainability                       |
| GEOG 151 Geography of the U.S. and Canada                   |
| GEOG 210 Weather and Climate                                |
| GLBL 130 Intro to Global Studies                            |
| GLBL 160 Field Experience & Acad Research in GS             |
| GLBL 230 Global Studies Capstone                            |
| HIST 113 American History I                                 |
| HIST 121 The Black Experience                               |
| HIST 165 The American Experience of Warfare                 |
| HIST 166 Civil War & Reconstruction                         |
| HIST 168 History of the Middle East                         |
| HIST 169G History of Latinos in the US                      |
| HIST 173 Mod Euro History: 1815-Present                     |
| HIST 183 Modern American History 1945-Present               |
| HUMA 121 American Work Experience                           |
| HUMA 140 Intro to Women and Gender Studies                  |
| HUMA 150 Nature of the Environment                          |
| HUMA210 Creativity and The Origin of Ideas                  |
| INTS 201 Implement Sustain Energy Sys in Dev Com            |
| MATH 150 Introductory Statistics                            |
| Modern Language - All MDLA Courses                          |
| PHIL111 On Death and Dying                                  |
| PHIL 121 World Religions                                    |
| PHIL 204 Asian Philosophies                                 |
| POLS 101 Introduction to Political Science                  |
| POLS 105G American Constitutional Law                       |
| POLS 150 Peace Studies & Conflict Resolution (Study Abroad) |
| POLS 270 Politics of Modern Turkey (Study Abroad)           |
| POLS 202 International Relations                            |
| POLS205 Women & Politics                                    |
| POLS 251 State & Local Government                           |
| PSYC 230 Introduction to Health Psychology                  |
| PSYC 258 Developmental Psychology                           |
| SOCA 102 Cultural Anthropology                              |
| SOCA103 Principles of Sociology                             |
| SOCA 105 American Ethnicity                                 |
| SOCA 125 Sociology of Families                              |
| SOCA 150 Deviance   |
| SOCA160 Issues in Cont Genocide & Mass Violence             |
| SOCA204 Social Problems                                     |

| Electives for AAS Degrees                           |
|---|
| All courses except: OXX-level courses; EARL221, 222 |

**Program Narrative:**

There has never been a more rewarding time to consider entering the electrical trades. With a large number of electricians approaching retirement age and the increasing technical complexity of new equipment, skilled electrical technicians are consistently in demand now and into the future. If you enjoy hands-on physical activities combined with complex problem solving opportunities, the electrical trade offers you a rewarding career path.

Northampton's electrical technology program offers a range of stackable degrees; starting with a specialized diploma that can be completed in one-year, a certificate requiring a minimum of 39 credits, and an AAS degree requiring a minimum of 64 credits.

All of our electrical programs are designed to be completed on either a full time or a part time basis, with most courses available in the evenings as well as during the day.

**Program Features:**

The electrical technology AAS degree offers students an advanced technical credential for those interested in starting an electrical career in the construction trades or pursuing electrical technician positions in the advanced manufacturing sector.

All students completing this program will gain a broad understanding of fundamental electrical principles, residential and commercial wiring practices, and basic PLC / VFD programming/operation. In addition, students may tailor their second year technical courses to focus on their specific career goals, selecting from more advanced electrical courses including solar PV systems design, advanced industrial control systems, or specialized wiring courses.

The program is rounded out by including general education courses that will prepare you to better communicate and build teamwork at your organization, vital skills that are required to advance into supervisory positions. Graduates from this program will have employment opportunities as electricians, electrical service technicians, and electrical maintenance personal in both the construction and advanced manufacturing sectors.

**Program Learning Outcomes:**

Demonstrate an ability to work and independently and collaboratively.

Demonstrate competent speaking skills when working with diverse groups.

Demonstrate skills in collecting, analyzing and applying technical information.

Explain basic electrical theories, including Ohm's, Kirchhoff's, and Watt's laws.

Properly use test equipment to troubleshoot electrical circuits.

Interpret technical information in the form of schematics and electrical specifications.

Describe the function and application of electrical equipment as used in residential, commercial and industrial environments.

Construct, analyze, and troubleshoot common industrial circuits used in control and distribution.

Properly interpret and apply the National Electric Code in common residential, commercial, and industrial applications.

Demonstrate electrical safety practices when working with electrical control and distribution equipment.

Apply mathematics to prepare electrical system documentation.

**Transfer Information:**

While the program is not specifically intended for transfer, it will be considered on a case-by-case basis by Pennsylvania College of Technology.

In addition, this program is eligible for the Bloomsburg partnership program for their "Bachelor of Applied Science in Technical Leadership" 4 year degree.

**Career Information:**

Journeyman electrician (residential, commercial)

Industrial electrician

Electrical maintenance technician

See <https://northampton.emsicc.com/programs/electrical-construction-technology-aas/214379>