



## **Electrical Technology A.A.S.**

Career Community: Electrical and Manufacturing

Curriculum Code: 0134

Effective: Fall 2025 – Summer 2030

### **Purpose of the Major**

Students in this program select one of three subspecialties; Construction, Automation and Control, or Power Generation. Construction electricians install electrical wiring and systems in homes, offices, stores or industrial plants. Automation and machine control designers are responsible for designing control systems that operate automated work cells in manufacturing facilities. Industrial electricians work in industry maintaining and troubleshooting power and control circuits on machinery. Power Generation technicians operate and maintain engine or turbine-driven generators in stand-alone or integrated facilities. All subspecialties require mechanical aptitude, logical thinking and problem-solving skills. Employment opportunities vary with each specialty.

### **Milestone**

In addition to the required General Education courses in Math and English, completion of ELTE 110 with a 2.0 or higher is a key component for success in completing this program. Knowledge obtained in these courses is the foundation for learning in other required courses. Students are encouraged to contact their faculty if they need additional assistance with learning the concepts presented in these courses.

### **Additional Information**

- Students in this program choose one subspecialty pathway: 1) Construction, 2) Automation and Control, or 3) Power Generation, to determine the courses to take each semester.
- Upon completion of a subspecialty, any additional subspecialty courses will not count toward the student's enrollment level for determining financial aid eligibility.
- If students have already completed DCTM 102 with a grade of 2.0 or higher, that will satisfy the TECH 102 requirement. DCTM 102 will fulfill the prerequisite for ELTE 110, ELTE 111 and ELTE 121.

### **Contact Information**

For further information, including career options, course substitutions and waivers, etc., contact the Electrical Technology Program at the West Campus Building, Room M127, telephone number 517-483-1570 or Student Services West Campus, West Campus Building, Room M106, telephone number 517-267-5452.

**Major Required Courses for All Subspecialties** - *A minimum grade of 2.0 is required for General Education courses.*

Course Code	Course Title	Credit / Billing Hours
ACAD 100	First-Year Experience	1 / 1

Course Code	Course Title	Credit / Billing Hours
COMM 110 or COMM 120 or COMM 130 or COMM 200 or COMM 240 or COMM 260 or ENGL 122 or ENGL 132	Communication in the Workplace Dynamics of Communication Fundamentals Public Speaking Small Group Communication Interpersonal Communication Nonverbal Communication Composition II Honors Composition II	3 / 3 3 / 3 3 / 3 3 / 3 3 / 3 3 / 3 4 / 4 4 / 4
ENGL 121 or ENGL 124 or ENGL 127 or ENGL 131	Composition I Technical Writing Business Writing Honors Composition I	4 / 4 3 / 3 3 / 3 4 / 4
ELTE 110	Practical Electricity	4 / 6
ELTE 111	Intro to Industrial Automation	4 / 6
ELTE 121	Electrical Mathematics	5 / 6
ELTE 123	Motors and Transformers	5 / 7
ELTE 131	Machine Controls I	4 / 5
TECH 102	General Industry Safety	2 / 3

Notes:

ACAD 100 may be waived when students meet one of the following College-approved waiver criteria:

- Completion of 12 college-level credits with minimum grades of 2.0 shown on the LCC transcript (including transfer, if applicable), or
- Employment in the field of, or a field related to, the degree being sought, or
- For Health Careers students, successful completion of CHSE 100.

Students wishing to waive ACAD 100 should contact their advisor.

**Major Required Courses for All Subspecialties, Limited Choice – Humanities and Fine Arts or Social Sciences or Applied Social Sciences** - *Select one as recommended or select one from [LCC General Education Applied Degrees](#): Humanities and Fine Arts or Social Sciences or Applied Social Sciences. A minimum grade of 2.0 is required for each General Education course.*

Course Code	Course Title	Credit / Billing Hours
GEOG 200	World Regional Geography	4 / 4
MGMT 234	Diversity in the Workplace	3 / 3
SOCL 120	Introduction to Sociology	4 / 4

Note: Students considering future transfer, choose GEOG 200 or SOCL 120.

## Major Required Courses for All Subspecialties, Limited Choice – Natural Sciences or Applied Sciences and Technology Lab

Select one lab course as recommended or select one from [LCC General Education Applied Degrees](#): Natural Sciences or Applied Sciences and Technology Lab. A minimum grade of 2.0 is required for each General Education course.

Course Code	Course Title	Credit / Billing Hours
BIOL 120	Environmental Science	4 / 6
CHEM 151 and CHEM 161	General Chemistry Lecture I General Chemistry Lab I	5 / 7
METM 190	Metallurgy and Heat Treatment	4 / 6
PHYS 120	The Art of Physics	4 / 5
PHYS 200	Intro to Applied Physics	4 / 5
PHYS 221	Introductory Physics I	4 / 6

## Major Required Courses for the Subspecialty

Take the courses as noted below for one of the following subspecialties: 1) Construction, 2) Automation and Control, or 3) Power Generation.

### 1 - Construction Subspecialty Pathway Major Required Courses

Course Code	Course Title	Credit / Billing Hours
BLDT 120	Structural Framing	4 / 6
CITN 115	IoT & Automation Fundamentals	5 / 6
DCTM 101	Drafting/Intro to CAD	3 / 4
ELTA 105	Elect. Industry Orientation	.5 / .5
ELTA 160	PLC Overview for Electricians	1 / 2
ELTA 180	Introduction to Fire Alarms	1 / 1
ELTE 112	Basic Wiring Installation	2 / 3
ELTE 141	National Electrical Code I	4 / 4
ELTE 142	National Electrical Code II	4 / 4
ELTE 145	Electrical Prints for Building	4 / 5
ELTE 150	Electric Motor Maintenance	2 / 3

### 2 - Automation and Control Subspecialty Pathway Major Required Courses

Course Code	Course Title	Credit / Billing Hours
ELTE 122	Industrial Control Electronics	5 / 7
ELTE 132	Control Panel Assembly	2 / 3
ELTE 232	Machine Controls II	4 / 6
ELTE 260	Programmable Controllers I	4 / 6
ELTE 261	Programmable Controllers II	6 / 8
METS 115	Intro to Mechanical Systems	4 / 6
METS 160	Introduction to Robotics	3 / 4.5

## 2 - Automation and Control Subspecialty Pathway Major Required Courses, Limited Choice – *Select one or two for a minimum of 5 credits*

Course Code	Course Title	Credit / Billing Hours
ELTE 141	National Electrical Code I	4 / 4
ELTE 150	Electric Motor Maintenance	2 / 3
ELTE 262	Programmable Controllers III	5 / 8

## 3 - Power Generation Subspecialty Pathway Major Required Courses

Course Code	Course Title	Credit / Billing Hours
ELTE 132	Control Panel Assembly	2 / 3
ELTE 136	Digital Basics	2 / 3
ELTE 150	Electric Motor Maintenance	2 / 3
ELTE 154	Utility Prints and Diagrams	3 / 3
ELTE 173	Energy Industry Fundamentals I	2 / 2
ELTE 174	Energy Industry Fundamentals II	2 / 2
ELTE 251	Energy Generation & Control I	4 / 5
ELTE 252	Energy Generation & Control II	4 / 5
ELTE 255	Power Instrumentation	4 / 5
ELTE 260	Programmable Controllers I	4 / 6
ELTE 261	Programmable Controllers II	6 / 8

## General Education - Applied Degrees, Recommended Courses

- English Composition or Applied English  
Major Required Courses meets this requirement.
- English Composition (second course)/Communication or Applied Communication  
Major Required Courses meets this requirement.
- Humanities and Fine Arts or Social Sciences or Applied Social Sciences  
Major Required Limited Choice Courses meets this requirement.
- Mathematics or Applied Mathematics  
Major Required Courses meets this requirement.
- Natural Sciences Lab or Applied Sciences and Technology Lab  
Major Required Limited Choice Courses meets this requirement.

## Additional Credits

After completing the course and credit requirements as noted on this pathway, students who fall short of the 60-credit minimum required for an Associate Degree may select any course(s) needed to reach 60 credits, except those courses noted in number 7 in the [Institutional Requirements for Associate Degrees](#). Students are encouraged to use Degree Works and meet with an Advisor to ensure all requirements are met and for course recommendations.

## Minimum Total Credit Hours

67.5 credits / 85.5 billing hours

## 1 - Construction Subspecialty Recommended Course Sequence

Semester I
ACAD 100
CITN 115
ELTE 110
ELTE 111
ENGL 121 or ENGL 124 or ENGL 127 or ENGL 131
TECH 102

Semester II
DCTM 101
ELTA 105
ELTE 112
ELTE 121
ELTE 131
ELTE 141

Semester III
BLDT 120
ELTA 160
ELTA 180
ELTE 123
ELTE 145

Semester IV
COMM 110 or COMM 120 or COMM 130 or COMM 200 or COMM 240 or COMM 260 or ENGL 122 or ENGL 132
ELTE 142
ELTE 150
Limited Choice - Humanities and Fine Arts or Social Sciences or Applied Social Sciences
Limited Choice – Natural Sciences Lab or Applied Sciences and Technology Lab

## 2 - Automation and Control Subspecialty Recommended Course Sequence

Semester I
ACAD 100
ELTE 110 – Milestone course
ELTE 111
ENGL 121 or ENGL 124 or ENGL 127 or ENGL 131
METS 160
TECH 102

Semester II
ELTE 121

Semester II
ELTE 131
ELTE 132
Limited Choice

Semester III
ELTE 123
ELTE 232
ELTE 260
METS 115
Limited Choice– Natural Sciences Lab or Applied Science and Technology Lab

Semester IV
COMM 110 or COMM 120 or COMM 130 or COMM 200 or COMM 240 or COMM 260 or ENGL 122 or ENGL 132
ELTE 122
ELTE 261
Limited Choice – Humanities and Fine Arts or Social Sciences or Applied Social Sciences
Limited Choice

### 3 - Power Generation Subspecialty Recommended Course Sequence

Semester I
ACAD 100
ELTE 110 – Milestone course
ELTE 111
ELTE 173 (First 8 weeks)
ELTE 174 (Second 8 weeks)
ENGL 121 or ENGL 124 or ENGL 127 or ENGL 131
TECH 102

Semester II
COMM 110 or COMM 120 or COMM 130 or COMM 200 or COMM 240 or COMM 260 or ENGL 122 or ENGL 132
ELTE 121
ELTE 131
ELTE 132
ELTE 150
ELTE 154

Semester III
ELTE 123
ELTE 136
ELTE 251

Semester III
ELTE 260
Limited Choice – Humanities and Fine Arts or Social Sciences or Applied Social Sciences

Semester IV
ELTE 252
ELTE 255
ELTE 261
Limited Choice – Natural Sciences Lab or Applied Science and Technology Lab

*LCC makes every effort to limit revisions to the pathways during their effective timeframe. However, the College reserves the right to update certificate and degree titles, and make course changes as needed, without prior notice. The College also reserves the right to discontinue programs when warranted.*