



Electrical Technology A.A.S.

Curriculum Code: 0134

Effective: Fall 2020 – Summer 2025

Description

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.

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.

Students who have already completed DCTM 102, HVAC 102, METS 102 or WELD 102 with a grade of 2.0 or higher may substitute one of these courses for ELTE 102. Any of these courses may also be used to fulfill the prerequisite for ELTE 108, ELTE 109, ELTE 111 and ELTE 121.

Students may substitute ELTE 131 where ELTE 129 and ELTE 130 are required.

Contact Information

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.

General Education - Applied Degree, Recommended Choices

(For the full list of options, see [General Education](#))

- English Composition – *Select one*
ENGL 121, Composition I, 4 credits / 4 billing hours
ENGL 124, Technical Writing, 3 credits / 3 billing hours
ENGL 127, Business Writing, 3 credits / 3 billing hours
- English Composition (Second Course)/Communications or Applied Communications – *Select one*
COMM 110, Communication in the Workplace, 3 credits / 3 billing hours
COMM 120, Dynamics of Communication, 3 credits / 3 billing hours
COMM 130, Fundamentals Public Speaking, 3 credits / 3 billing hours

- Humanities and Fine Arts or Social Sciences or Applied Social Sciences– *Select one*
 GEOG 200, World Regional Geography, 4 credits / 4 billing hours
 MGMT 234, Diversity in the Workplace, 3 credits / 3 billing hours
 SOCL 120, Introduction to Sociology, 4 credits / 4 billing hours
- Mathematics or Applied Mathematics – *Select one*
 Program of Study Required Courses will fulfill this requirement.
- Natural Sciences Lab or Applied Science and Technology Lab – *Select one*
 BIOL 120, Environmental Science, 4 credits / 6 billing hours
 CHEM 151 and CHEM 161, General Chemistry I and Lab I, total 5 credits / 7 billing hours
 METM 190, Metallurgy and Heat Treatment, 4 credits / 6 billing hours
 PHYS 120, The Art of Physics, 4 credits / 5 billing hours

Construction Subspecialty Pathway

Program of Study 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 102	Industrial/Construction Safety	2 / 3
ELTE 108	Practical Electricity I	2 / 3
ELTE 109	Practical Electricity II	2 / 3
ELTE 111	Intro to Industrial Automation	4 / 6
ELTE 112	Basic Wiring Installation	2 / 3
ELTE 121	Electrical Mathematics	5 / 6
ELTE 123	Motors and Transformers	5 / 7
ELTE 131	Machine Controls I	4 / 5
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

Total Credit Hours

67.5-70.5 credits / 85.5-89.5 billing hours

Recommended Course Sequence

Semester I	Semester II
Gen Ed – English Composition	DCTM 101
CITN 115	ELTA 105
ELTE 102	ELTE 112
ELTE 108 (First 8 weeks)	ELTE 121
ELTE 109 (Second 8 weeks)	ELTE 131
ELTE 111	ELTE 141

Semester III	Semester IV
BLDT 120	Gen Ed – English Composition (Second Course)/ Communications or Applied Communications
ELTA 160	Gen Ed - Humanities and Fine Arts or Social Sciences or Applied Social Sciences
ELTA 180	Gen Ed – Natural Sciences Lab or Applied Science and Technology Lab
ELTE 123	ELTE 142
ELTE 145	ELTE 150

Automation and Control Subspecialty Pathway

Program of Study Required Courses

Course Code	Course Title	Credit / Billing Hours
ELTE 102	Industrial/Construction Safety	2 / 3
ELTE 108	Practical Electricity I	2 / 3
ELTE 109	Practical Electricity II	2 / 3
ELTE 111	Intro to Industrial Automation	4 / 6
ELTE 121	Electrical Mathematics	5 / 6
ELTE 122	Industrial Control Electronics	5 / 7
ELTE 123	Motors and Transformers	5 / 7
ELTE 129	Machine Controls I – A	2 / 2.5
ELTE 130	Machine Controls I – B	2 / 2.5
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

Program of Study 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

Total Credit Hours

70-74 credits / 95.5-98.5 billing hours

Recommended Course Sequence

Semester I	Semester II
Gen Ed – English Composition ELTE 102 ELTE 108 (First 8 weeks) ELTE 111 ELTE 129 (Second 8 weeks) METS 160	ELTE 109 (Second 8 weeks) ELTE 121 ELTE 130 (First 8 weeks) ELTE 132 ELTE 232 ELTE 260

Semester III	Semester IV
Gen Ed – Natural Sciences Lab or Applied Science and Technology Lab ELTE 123 ELTE 261 METS 115	Gen Ed – English Composition (Second Course)/ Communications or Applied Communications Gen Ed – Humanities and Fine Arts or Social Sciences or Applied Social Sciences ELTE 122 Limited Choice

Power Generation Subspecialty Pathway

Program of Study Required Courses

Course Code	Course Title	Credit / Billing Hours
ELTE 102	Industrial/Construction Safety	2 / 3
ELTE 108	Practical Electricity I	2 / 3
ELTE 109	Practical Electricity II	2 / 3
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
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

Course Code	Course Title	Credit / Billing Hours
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

Total Credit Hours

72-75 credits / 92-96 billing hours

Recommended Course Sequence

Semester I	Semester II
Gen Ed – English Composition ELTE 102 ELTE 108 (First 8 weeks) ELTE 109 (Second 8 weeks) ELTE 111 ELTE 173 (First 8 weeks) ELTE 174 (Second 8 weeks)	Gen Ed – English Composition (Second Course)/ Communications or Applied Communications ELTE 121 ELTE 131 ELTE 132 ELTE 150 ELTE 154

Semester III	Semester IV
Gen Ed – Humanities and Fine Arts or Social Sciences or Applied Social Sciences ELTE 123 ELTE 136 ELTE 251 ELTE 260	Gen Ed – Natural Sciences Lab or Applied Science and Technology Lab ELTE 252 ELTE 255 ELTE 261