



Energy Industry Fundamentals C.C.

Career Community: Electrical and Manufacturing

Curriculum Code: 1777

Effective: Fall 2025 – Summer 2030

Purpose of the Major

This Certificate provides a foundational understanding of the structure of the United States energy industry and the opportunity to study for and earn pre-employment certifications developed for the industry. Competencies addressed include employment skills, industrial safety, mathematics, electrical theory, problem solving, blueprint reading, rigging and troubleshooting.

Milestone

Completion of ELTE 110 with a 2.0 or higher is a key component for success in completing this program. Knowledge obtained in this course 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 the course.

Additional Information

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 also fulfill the prerequisite for ELTE 110, ELTE 156 and METS 140.

Students must complete all courses on this pathway with a minimum 2.5 grade to receive this certificate.

Students who plan to pursue the Electrical Technology, Associate in Applied Science Degree (0134) should choose ELTE 121 and ELTE 123. ELTE 121 will also fulfill the General Education Applied Mathematics requirement.

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

Course Code	Course Title	Credit / Billing Hours
ELTE 104	Employee Worksite Basics	1 / 1
ELTE 110	Practical Electricity	4 / 6
ELTE 154	Utility Prints and Diagrams	3 / 3
ELTE 173	Energy Industry Fundamentals I	2 / 2

Course Code	Course Title	Credit/ Billing Hours
ELTE 174	Energy Industry Fundamental II	2 / 2
TECH 102	General Industry Safety	2 / 3

Major Required Courses, Limited Choice – *Select either ELTA 106 and ELTA 120, or ELTE 121*

Course Code	Course Title	Credit/ Billing Hours
ELTA 106	Basic Electrical Calculations	2 / 2
ELTA 120	AC Fundamentals - Electrician	2 / 3
ELTE 121	Electrical Mathematics	5 / 6

Major Required Courses, Limited Choice – *Select one*

Course Code	Course Title	Credit/ Billing Hours
ELTA 155	Transformer Fundamentals	2 / 3
ELTE 123	Motors and Transformers	5 / 7

Major Required Courses, Limited Choice – *Select one*

Course Code	Course Title	Credit/ Billing Hours
ELTE 131	Machine Controls I	4 / 5
ELTE 156	Lineworker/Utility Rigging	3 / 4
METS 140	Rigging	3 / 4.5

Minimum Total Credit Hours

23 credits / 29 billing hours

Recommended Course Sequence

Semester I
ELTA 106 (Second 8 weeks) if selected
ELTE 104 (First 8 weeks)
ELTE 110 – Milestone course
TECH 102

Semester II (Spring)
ELTA 120 (First 8 weeks) or ELTE 121 depending on selection
ELTA 155 (Second 8 weeks) if selected
ELTE 154
ELTE 173 (First 8 weeks)
ELTE 174 (Second 8 weeks)
Limited Choice

Semester III (Fall)
ELTE 123 if selected

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.