METROPOLITAN COMMUNITY COLLEGE

2026-27 Lineman Handbook

Table of Contents

METROPOLITAN COMMUNITY COLLEGE

Lineman Student Handbook

---

1. Introduction and Program Overview

1.1 Message from the Program Director

Welcome to the Metropolitan Community College Blue River East (MCCBRE) Lineman program! As the Program Director, I would like to extend a warm greeting and congratulate you on your rewarding career choice. The field of electrical line work is not only essential but also offers a rewarding path filled with opportunities for growth and advancement. Here at MCCBRE, we are committed to providing you with a top-tier education, equipping you with the knowledge, skills, and, most importantly, the commitment to safety that will set you apart in this dynamic industry. We are excited to guide you on this journey, and we look forward to seeing you thrive as you build a successful and fulfilling career.

1.2 Purpose of the Handbook

As a college student entering this program, you will develop a comprehensive skill set vital for a career in electrical line work, encompassing both theoretical knowledge and practical expertise. This includes demonstrating proficiency in climbing techniques such as safely ascending wood poles of varying heights, understanding climbing hazards, and performing work on structures in field environments. You will also gain an understanding of electrical power systems, including the processes of power generation, transmission, and distribution, as well as the application of industry standards and specifications, particularly in line construction. You will master transformer theory and installation, including proper maintenance, as well as installation and maintenance of conductor and metering systems. You will develop the skills necessary to work on underground distribution systems, perform pole setting and replacement safely, and demonstrate knowledge of fusing, substations, and voltage regulation. Additionally, you will refine your advanced climbing skills and prioritize safety by obtaining certifications in First Aid, CPR, and OSHA 10-hour safety training, equipping you to identify and mitigate hazards in the field.

1.3 Program Accreditation Information

Metropolitan Community College Blue River East's Lineman program demonstrates a strong commitment to quality through a combination of institutional accreditation, industry recognition, and curriculum alignment. The college's regional accreditation ensures a baseline standard of educational excellence and institutional stability. Beyond this, the Lineman program actively cultivates partnerships with utility companies and industry organizations, ensuring its curriculum is not only relevant but also aligned with current industry needs and best practices. This alignment ensures that students gain the skills and knowledge employers seek, leading to valuable hands-on experiences, such as internships and apprenticeships, and to enhanced job prospects upon graduation. By prioritizing these key areas, the Lineman program delivers a comprehensive and industry-relevant education, preparing students for successful careers in the electrical line industry.

1.4 Description of the Program and Areas of Study

Through a combination of classroom instruction, laboratory exercises, and real-world simulations, students will gain the knowledge and skills necessary to excel in this demanding and essential profession. Graduates of this program will be well-prepared to enter the workforce as qualified electrical line workers.

- **Climbing and Pole Work:** Mastering the techniques and safety procedures for climbing and working on wooden utility poles, a foundational skill for all line workers.
- **Electrical Theory:** Learning the fundamentals of electricity, including AC/DC circuits, voltage, current, resistance, and power, provides a solid understanding of how electrical systems operate.
- **Transformer Theory and Installation:** Studying the principles of transformers, including their construction, operation, and installation, is crucial for understanding and maintaining electrical distribution systems.
- **Conductor Installation and Metering:** Acquiring the skills to install and maintain electrical conductors, as well as working with metering equipment to measure and monitor electrical usage.
- **Underground Distribution Systems:** Learning about the installation, maintenance, and troubleshooting of underground electrical systems, a growing area in the industry.
- **Safety and Accident Prevention**: Understanding and applying safety regulations and procedures to prevent accidents and injuries in the workplace, a top priority in the lineman profession.
- **Line Construction Specifications and Standards**: This area covers working specification knowledge in aerial and ground situations; understanding design specifications; the installation/repair of conductors, guy assemblies, cross arms, and insulators; and understanding of copper/aluminum primary conductor characteristics and safety considerations.
- **Fusing, Substations, & Voltage Regulation**: The student will be familiarized with the different types and methods of system coordination, substations, capacitors, voltage regulators, autotransformers, oil reclosures, and sectionalizers.

1.5 Program Learning Outcomes

As a college student entering this program, you will acquire a comprehensive skillset encompassing both theoretical knowledge and practical expertise essential for a career in electrical line work. Upon completing the program, you will be able to:

Demonstrate proficiency in climbing techniques:

- Safely ascend and work on wood poles of varying heights using proper climbing methods and fall arrest equipment.
- Understand and mitigate climbing hazards, particularly near energized conductors.
- Climb and correctly work on structures in field environments.

Understand electrical power systems:

- Identify the basic and emerging principles and concepts that impact the energy industry, including emerging technologies like Smart Grids.

- Describe and apply compliance procedures to ensure a safe and healthy work environment.
- Explain the processes of electric power generation, natural gas transmission, and distribution systems.

Apply industry standards and specifications:

- Demonstrate increased endurance and advanced climbing skills.
- Apply specification knowledge in aerial and ground situations.
- Interpret design specifications for electrical systems.
- Understand the characteristics of copper and aluminum primary conductors.
- Describe the specifications of 7,200, 12,500, 14,400, and 34,500volt construction.

Master transformer theory and installation:

- Demonstrate safe work practices around electrical equipment.
- Understand the purposes and basics of different types of transformers.
- Select appropriate transformers for various applications by using electrical calculations.
- Connect various types of transformers.
- Describe the correct protection required for transformer installation and maintenance.

Install and maintain conductor and metering systems:

- Select the correct cables and wires for different installations.
- Construct temporary service installations.
- Parallel residential and commercial services.
- Perform proper metering and instrumentation procedures.
- Apply proper grounding techniques.
- Implement safeguards against tampering and power theft.
- Construct temporary meter locations.

Work on underground distribution systems:

- Understand cable specifications for underground installations.
- Install correct splices for underground cables.
- Describe the specifications and uses of conduits.
- Explain the specifications and purposes of manholes, transformer vaults, and trenches.
- Terminate cables properly.
- Troubleshoot primary and secondary faults.

Perform pole setting and replacement safely:

- Understand minimum approach distances and worksite hazards.

- Perform manual pole installations.
- Apply proper vehicle grounding practices.
- Employ rigging techniques and temporary pole supports.

Demonstrate knowledge of fusing, substations, and voltage regulation:

- Identify symbols used in online diagrams.
- Perform operating procedures for fused cutouts.
- Use the loadbreak tool.
- Properly size fuses.
- Operate various types of fuses.
- Build lateral breakoffs with correct fusing coordination.
- Describe the operation and purpose of substations.
- Understand SCADA and voltage regulation.
- Apply proper grounding methods used in substations and describe substation grounding grid safety requirements.

Apply advanced climbing skills:

- Perform work at heights above 35 feet.
- Understand the hazards of working on or near energized conductors/equipment.
- Perform various tasks off the pole for extended periods of time.
- Demonstrate proficiency in pole top rescue.
- Execute complicated tasks with increased levels of complexity.

Prioritize safety and accident prevention:

- Demonstrate safe work practices.
- Obtain certifications in First Aid, CPR, and OSHA 10-hour safety.
- Identify and describe common hazards within line work.
- Describe and demonstrate high and low voltage hazards.
- Understand and adhere to gloving requirements.
- Describe and apply proper grounding and isolation techniques.

1.6 Career Pathways

A student trained in the use, terminology, construction, and field knowledge of the electric utility industry has a variety of promising career pathways available. Here are some of the most common and potential growth areas:

Core Lineman Roles:

- **Utility Lineman/Line Installer & Repairer:** This is the most direct and common path. Linemen install, maintain, and repair electrical power lines and systems, both overhead and underground. They work on distribution and transmission systems to ensure the reliable delivery of power to homes and businesses.
- **Apprentice Lineman:** An entry-level position where you learn the trade under the supervision of experienced linemen, gradually increasing your skills and responsibilities. This is typically a structured program that combines on-the-job training with classroom instruction.
- **Journeyman Lineman:** A fully qualified and experienced lineman who can perform all tasks associated with line work independently. This is the goal after completing an apprenticeship.

Specialized Lineman Roles:

- **Transmission Lineman:** Specializes in the construction and maintenance of high-voltage transmission lines that carry electricity over long distances.
- **Substation Technician:** Focuses on the maintenance and repair of equipment within electrical substations, which are crucial for regulating voltage and distributing power.
- **Underground Distribution Technician:** Concentrates on the installation and repair of underground electrical distribution systems, often in urban areas.
- **High-voltage Cable Splicer:** A highly skilled technician who specializes in splicing and terminating high-voltage cables, which requires precision and expertise.
- **Troubleshooter/System Operator:** Responds to power outages and other system disturbances, diagnosing the problem and coordinating repairs to restore service.

2. Admission and Enrollment

2.1 Program Eligibility Requirements

The lineman program is a full-time, year-long program beginning in June, accepting approximately 40 new cohort students. The application deadline is April 1st. However, there is no guarantee that a spot will be open until then.

Early applications will receive priority status during the review process. Applications may continue to be accepted until all seats in the program for the following summer class are filled.

These classes are recommended for completion before the program's start.

- BUSN 190
- English: ENGL 101
- Math: MATH 102 or higher

More information can be found at the following links:

- 6.10013 DP Transfer Credit
- 6.10014 DP Academic Forgiveness
- 6.10015 DP Credit for Prior Learning

2.2 Program Application Process

Deadline to apply is April 1st. https://mcckc.edu/lineman

1. Apply to MCC. Fill out the general MCC application at www.mcckc.edu/applynow.

2. Submit all nonMCCKC official transcripts. Send official transcripts from all previous institutions attended to MCC Student Data Center, 3200 Broadway, Kansas City, MO 64111, OR electronically at transcripts@mcckc.edu.

3. Complete the Free Application for Federal Student Aid (FAFSA)
MCC's school is 002484

4. Take *Accuplacer* or submit ACT scores. Must meet or exceed the required scores in all three sections: Algebra, Reading, and Writing. Once Accuplacer/ACT is completed, students will not be eligible to begin Lineman courses until the required course(s) listed (see table below) have been completed with a grade letter of "C" or higher. Test scores are valid for 3 years from the test date. **(If you have sent in official transcripts indicating you have a Bachelor's Degree, no Accuplacer or ACT will be required.)** These are the required scores and classes for each section:

Accuplacer Requirements

* If not a 210 in the Advanced Algebra & Functions (AAF) level – then follow Your Score and Required courses

Subject	Required Score	Your Score	Required Courses
Algebra	210 (AAF) *	200–240	MATH 31, then MATH 103
Algebra	210 (AAF) *	241–300	MATH 102
Algebra	210 (AAF) *	QAS placement	Advisor guidance required
Reading	248	213–229	READ 10, then READ 11
Reading	248	230–247	READ 11
Writing	246	200–231	ENGL 80, then ENGL 90
Writing	246	232–245	ENGL 90

ACT Requirements

Subject	Score Required	Score Range	Required Courses
Algebra	22 or higher	Below 22	Must take Accuplacer
Algebra	22 or higher	22 or higher	MATH 102, MATH 103, or MATH 120
Reading	18	Below 15	READ 10, then READ 11
Reading	18	15–17	READ 11
Reading	18	18 or higher	No course required
Writing/English	18	Below 18	Must take Accuplacer

5. **Apply to the Lineman Program** *Click on the Program Application Link in the middle of the page. Make sure to complete ALL sections of the application.*

Recommended courses include those that can be completed before or during the program. Completing or currently being enrolled in the program will enhance the applicant's consideration for acceptance. The recommended courses are as follows:

- English 101 Composition and Reading I
- BUSN 190 Personal Finance
- Math 102, Technical and Business Mathematics or higher

6. Attend a Bootcamp after the Lineman application is submitted. Bootcamp will be a one-day event during

Application Submitted	**Attend Bootcamp**
August, September, October	November
November, December, January	February
January, February, March	April

Additional Information

After Bootcamp, please continue to check your student email. This is how additional follow-up communication will be sent, and you will be notified about acceptance into the program.

If you want to complete the AAS Lineman degree, you will need to complete general education courses. These courses can be completed before, during, or after the Lineman program. The additional general education courses are:

- History 120, History 121, or Political Science 136
- Spanish 100: Beginning Occupational Spanish or higher-level Spanish course.
- Communications 100 Fundamentals of Speech
- 2 courses (610 credit hours) General Education Electives in the areas of:
    - Anth, Art, Econ, Engl, Foreign Language, GEOG (except 104, 110, and GIS Courses), Phil, Psych, Soci, or Socs

3. Faculty and Staff Directory and other Key Offices

3.1 Instructor Contact Information, Office Hours, and Availability

MCC Email: susan.blaser@mcckc.edu

- MCC Phone: 8166045613
- MCC Fax: 8164825693

Office Hours:

- Monday: By Appointment
- Tuesday/Thursday: 6:307:00 am and 12:002:30 pm
- Friday: By Appointment

3.2 Staff Contact Information

- Dan Fuller – (816) 6989120
- Don Kuritz – (602) 7907474
- Mike Saunders – (816) 6513554

3.3 Contact Information for Key Offices

Metropolitan Community College
3200 Broadway
Kansas City, MO 64111

MCC Police Emergency Dispatch
816.604.1200

After Hours Non-Emergency Calls
816.604.1111

Human Resources
816.604.1234

Room Reservations
816.604.1000

4. Student Support Services

4.1 Advising

This program helps students create educational plans, connect their coursework with career goals, and explore funding options for their education.

A Student Success Advisor will work to help you reach your goals and limit roadblocks along the way. Your Student Success Advisor will help you with:

- Exploring MCC programs and academic and career pathways
- Understanding specific degree and certificate requirements
- Choosing or changing your degree plan
- Selecting classes and planning your class schedule

- Setting your educational goals and creating a plan to fund your education
- Solving academic problems
- Transferring credit to and from other colleges
- Accessing campus and community resources

MCC - Blue River
Education Center, room 134
br.advisor@mcckc.edu

4.2 Career Services

MCC's Career Center provides free resources and support to help students develop career-readiness skills, connect with area employers, and explore careers that match their interests and values. There is a Career Center at each campus location to assist students with their career development and employment-related needs.

Each MCC Campus has a Career Center that provides in-depth career analysis and exploration to help students find their career paths. Career guidance is our specialty, and your success is our goal! Whether you are coming to MCC from high school or looking to make a career change, we can help you become intentional in your career planning to create the life you see for yourself!

- Career Exploration and Planning
- Comprehensive Vocational Evaluation Assessments
- Personalized Career Action Plan
- Career Counseling and Guidance

MCC - Blue River
Tess Roam, Career Services Coordinator
Education Center, Room 134M
816.604.6576
tess.roam@mcckc.edu

Matthew Heck, Career Exploration Coordinator
Education Center, Room 134T
816.604.6432
matthew.heck@mcckc.edu

4.3 Counseling Services

The Counseling office and the MCCares initiative help connect students with resources and support for mental health and other well-being needs.

MCC counselors are faculty members who hold a Master's or Ph.D. They are available to meet with you to discuss success strategies and personal concerns. Services are FREE for MCC students. Call 816.604.1000 to schedule an appointment or visit our counselor page for more information. mcckc.edu/counseling/

4.4 Tutoring and Academic Support

At MCC, each campus offers free tutoring in most college subjects and assistance with study skills.

MCCBlue River
Campus Center, CC142
816.604.6770
br.learningservices@mcckc.edu

Disability Support Services (DSS): DSS ensures equal access for students with disabilities. Students with documented disabilities that significantly limit one or more major life activities are eligible.

- *How to Access Services:* Contact the DSS Coordinator, provide documentation from a qualified professional, meet with the DSS Coordinator to discuss needs, receive accommodation letters, and discuss accommodations with instructors.
- 7.40020 DR Academic Intervention

4.5 Financial Aid and Scholarship Opportunities

The Lineman Program will provide a list of scholarships specific to the craft. These should be applied for in the Summer Semester.

To get priority consideration for financial aid, submit your Free Application for Federal Student Aid (FAFSA) by February 1. MCC's school code is 002484.

Apply early so you can get the best financial aid package possible! Some funds are limited, so the earlier you apply, the better your chances of receiving aid.

Metropolitan Community College uses Scholarship Universe as a platform for students to apply for and accept scholarship opportunities across campus! Please follow these simple steps to apply for scholarship opportunities each year.

NOTE: These scholarships are for students who will have completed a high school degree or equivalent before the next academic term begins. If you are a high school student taking college classes, talk with your high school counselors about any possible scholarship opportunities.

- 7.25020 BP Satisfactory Academic Progress of Financial Aid Recipients
- 7.25020 DP Satisfactory Academic Progress of Financial Aid Recipients
- 7.25050 DP Satisfactory Academic Progress of Veterans Benefits Recipients
- 7.30000 BP Student Financial Aid

5. Academic Policies and Expectations

5.1 Academic Integrity and Code of Conduct

Metropolitan Community College expects students to conduct themselves in a manner appropriate for an educational setting. This includes complying with federal, state, and municipal laws that generally prohibit certain activities, as well as those related to public school property and college-sponsored functions. Students who act inappropriately or exhibit disruptive behavior may be disciplined by MCC and face criminal charges.

In addition to demonstrating honesty and integrity, students are expected to comply with all Metropolitan Community College policies, regulations, and procedures. They should follow the college traffic code and the directions of all college representatives acting in an official capacity.

For more complete information about the Student Code of Conduct, please consult PRP7.35010 in the Metropolitan Community College manual of Policies, Regulations, and Procedures, which is available online or from the office of the dean of student development.

- 6.10010 BP Academic Standards
- 6.10011 DP Grading Standards, Coursework and Final Examination
- 6.10012 DP Grade Change
- 6.10014 DP Academic Forgiveness
- 7.20000 BP Student Rights and Responsibilities
- 7.35010 BP Code of Student Conduct
- 7.35010 DP Code of Student Conduct
- 7.40010 BP Freedom Due Process and Disciplinary Action

5.2 AI Usage

Artificial Intelligence (AI) may be used as a tool, not a replacement, for student learning and contribution. Academic honesty in relation to AI use is expected. Failure to utilize AI in an academically honest manner will be subject to the academic dishonesty policy, which may include discipline up to and including program dismissal. MCC requires adherence to accurate attribution of sources and transparent acknowledgment of others' contributions to ideas, discoveries, interpretations, and conclusions. As such, all material included in assignment submissions must be appropriately attributed to sources (using quotations and citations as appropriate). Failure to attribute material to its original source constitutes plagiarism. Students should be aware that generative AI tools often produce incorrect statements, create fake sources, and/or fail to attribute material to proper sources. Students must acknowledge all instances in which generative AI tools were used in an assignment 24 (such as in ideation, research, analysis, editing, debugging, etc.). All submitted work by a student must be original, unless the instructor specifies otherwise for the individual assignment. Students are responsible for the entirety of their final submission; any inaccuracies or other deficiencies cannot be excused based on originating from an AI tool.

5.3 Student Attendance and Participation Expectations

General Requirement: Students are responsible for attending classes and officially withdrawing if they are unable to continue attending.

Instructor Discretion: The Program coordinator can withdraw students after three absences.

Specifics:

- More than three absences may result in a written warning.
- Additional absences after the warning could lead to removal from the program.
- Two instances of being late to class or leaving early equals one absence.
- Being on the property but not being signed in, in your seat, with your boots on at the start time is considered late.

Excused Absences: The program coordinator has the discretion to allow absences from class. Circumstances that may be considered: COVID-19 positive, hospitalizations, death in the family.

Tracking: Students are responsible for keeping track of their own absences.

Impact on Grade:

- No missed classes = A (Excellent Attendance)
- 1 missed day = B (Above Average)
- 2 missed days = C (Average)
- 3 missed days = D (Below Average)
- 3.5 missed days = F (Unacceptable)

The college expects students to attend every meeting of every course they're enrolled in. If attendance is a problem, MCC may dismiss a student from class for the following reasons:

- If a student has been absent for two consecutive weeks or the equivalent time period during a shorter term.
- If the student has missed one-third of the sessions scheduled for the class that semester.

In some cases, due to the course's subject matter, an instructor may enforce a stricter attendance policy. However, if a student has a valid reason for being absent, they should consult the instructor, who may grant permission for the student to make up the work.

To receive financial aid, you are expected to attend all classes on which the award of financial assistance is based. Award funds may be delayed if you do not attend the first class. If you stop attending all of your classes before completing 60% of the semester, you will owe money back to federal aid programs. Failure to begin attendance in a course could result in your financial aid being adjusted or reduced.

- 6.10017 DP Withdrawal and Audit Enrollment Status
- 7.30050 DP Medical Discretionary Withdrawal
- 7.35020 DR Student Attendance

5.4 Student Complaint and Grievance Procedures

According to MCC regulations and procedures, a student who has complaints about a course should first talk with the instructor or instructors involved. If the issue cannot be resolved, the student should contact the appropriate division chairperson. If the student is still not satisfied, then they should discuss the situation with the dean of instructional services. If the problem persists at this level, the dean of instructional services will appoint a faculty committee to resolve it.

Students who have complaints about issues outside the classroom should go to the appropriate department manager. If the issue cannot be resolved, then the student should see the dean of student services.

- 7.20300 DR Student Complaints
- 7.20300 OP Student Complaints
- 7.20400 DR Student Rights and Privacy
- 7.20400 OP Student Rights and Privacy
- 7.40030 BP Status of Suspended or Expelled Student

5.5 Grading Policies and Standards

Grading/Method of Evaluation

The instructor reserves the right to exercise professional judgment as to whether a student passes a course satisfactorily.

The number of examinations, quizzes, and field tests varies within each class. The requirement will be outlined during the orientation for each class on the very first day.

For all process evaluations/competencies/skills assessments in the field portion of a course, the student must earn a minimum of 70 % in the summer semester, 70 % in the fall semester, and 70% in the spring semester. If the overall grade for a course is less than 70%, the final grade will be "D" or "F", depending on points earned.

6.10012 DP Grade Change

5.6 Non-Discrimination and Accessibility Policies

Metropolitan Community College supports an integrated learning experience for students with disabilities. Each MCC campus has a Disability Support Services (DSS) office that provides services for students with documented disabilities. Arrangements can be made for aids and adjustments to help ensure access to MCC's programs and services.

The campus DSS office also has information about the existence and location of services, activities and facilities accessible to and usable by persons with disabilities.

- 7.30020 BP Non-Discrimination
- 7.30030 BP Non-Discrimination and Harassment Student
- 7.30030 DP Non-Discrimination and Harassment Student
- 7.30035 BP Sex Discrimination and Sexual Harassment Student

- 7.30035 DP Sex Discrimination and Sexual Harassment Student
- 7.20100 DR Disability Support Services
- 7.20100 OP Disability Support Services
- 7.20200 DR Service Animals and Emotional Support Animals
- 7.20200 OP Service Animals and Emotional Support Animals

6. Curriculum and Course Descriptions

6.1 Program and Course Requirements and Credit Hours

Lineman (Total 61 - 69 credits)

General Education Requirements (Total 21 - 29 credits)

- COMM100 - Fundamentals of Speech 3
- ENGL101 - Composition & Reading I 3
- MATH 102 - Technical and Business Math or higher 3-5
- SPAN 100 - Beginning Occupational Spanish or higher 3-5
- Choose one of the following courses: (Total 3 credits)
- HIST120 - United States History to 1865 3
- HIST121 - United States History since 1865 3
- POLS136 - Introduction to U.S. National Politics 3
- **General Education Electives** (Total 6-10 credits)
- Any course(s) numbered 100 or above from disciplines such as
- ANTH, ART, ECON, ENGL, Foreign Language, GEOG (except 104, 110, and GIS courses), PHIL, PSYC, SOCI, SOSC, totaling 6-10 credits.

****Specific Program Requirements** (Total 40 credits)**

- BUSN190 - Personal Finance 3
- INTE112 - Industrial Electrical DC Principles 2
- INTE113 - Industrial Electrical AC Principles 2
- LINE104 - Pole Climbing Skills 5
- LINE105 - Electrical Distribution Systems 3
- LINE210 - Pole Framing and Construction Specifications 3
- LINE215 - Setting and Replacing Poles 3
- LINE237 - Transformer Theory and Installation 3
- LINE241 - Conductor Installation and Metering 3

- LINE250 - Fusing, Substations, and Voltage Regulation 3
- LINE251 - Installation and Troubleshooting Underground Distribution Systems 3
- LINE252 - Advanced Pole Climbing 3
- LINE253 - Safety and Accident Prevention 4

6.2 Pre-requisite Courses

None Required

6.3 Required Core Courses

Specific Program Certificate Requirements (Total 46 - 48)

Complete all of the following

BUSN 190 Personal Finance

Principles of personal financial planning enable the student to achieve personal economic satisfaction and long-term financial security. Topics will include career planning, taxes, banking, consumer strategies, housing, transportation, insurance, investments, retirement, and estate planning.

ENGL 101 Composition & Reading I

Prerequisite: ENGL 90 with a grade of S, or appropriate placement test score. Focus on instruction in the composing process, including exploration of ideas through reading, methods of writing development, and the use of writing conventions. Instruction takes students from reflective expression to critical analysis through writing. (MOTR ENGL 100)

INTE 112 Industrial Electrical DC Principles

Prerequisite: Concurrent enrollment or completion of MATH 102 or higher with a grade of C or higher. This course is an introductory course for the individual who is moving into an industrial maintenance or related activity. Behavior of electricity, sources of electricity, Ohm's and Watt's laws in DC circuits. The student will learn basic concepts in direct current circuits and applications.

INTE 113 Industrial Electrical AC Principles

Prerequisite: INTE 112 or equivalent. This course is an introductory course for the individual who is moving into an industrial maintenance or related activity. This course will build on the concepts learned in INTE 112 and expand into alternating circuit concepts, including an introduction to transformers and 3-phase power distribution.

LINE 104 Pole Climbing Skills

This course introduces students to proper and safe methods of wood pole climbing. The student must master climbing wooden pole structures using fall arrest equipment. The student will be taught two methods of climbing: free climbing while tethered to a fall-arrest device and hitchhiking with a fall-arrest device. Upon completion of this class, the student will be able to demonstrate the ability to safely climb a wooden pole and conduct work practices associated with the electrical utility industry.

LINE 105 Electrical Distribution Systems

This course will begin with a basic introduction to the components of a basic electrical system, including generation, transmission, and distribution. Students will discover how the electrical system in the United States is tied together through the electrical grid.

LINE 210 Pole Framing and Construction Specifications

Prerequisites: LINE 104 & LINE 105 with grades of C or higher. This course will introduce varied materials used for different kinds of construction by sight and definition. Knowledge and skills taught will include aerial and groundman situations, as well as installing, repairing, and removing various materials and equipment. Students will demonstrate the construction and understanding used in aerial pole framing. These tasks will be completed using climbing equipment off the pole.

LINE 215 Setting and Replacing Poles

Prerequisites: LINE 210, LINE 237, LINE 241, and LINE 251 with grades of C or higher. This course will introduce students to the operation, inspection, and safety of a digger derrick during the construction of electrical distribution systems. Students will operate the truck to remove old poles and set new poles in the field. Students will learn hand signals, rigging, lifting capacities, minimum approach distances, and worksite hazard analysis.

LINE 237 Transformer Theory and Installation

Prerequisite: LINE 104 & LINE 105 with grades of C or higher. The course provides students with a working knowledge of transformer theory, installation, and single-phase configuration. Students will build various types of customer connections, demonstrate proper cover-up techniques, and follow industry specifications. Safety regulations on minimum approach distances for high- and low-voltage systems and on distribution system protection will be taught. Students will build all work completed off the pole.

LINE 241 Conductor Installation and Metering

Prerequisite: LINE 104 & LINE 105 with grades of C or higher. This course provides students with a working knowledge of watt-hour meters and the different types of copper and aluminum conductors used in residential and commercial services. Students will gain practical experience in conductor sizing, connection types, and installing an overhead service from the pole to the residence.

LINE 250 Fusing, Substations, and Voltage Regulation

Prerequisites: LINE 210, LINE 237, LINE 241, and LINE 251 with grades of C or higher. This course will instruct students about different types and methods of system coordination and fusing applications. The focus will be on identifying substation capacitors, autotransformers, and sectionalizers. Students will gain skills in grounding, substation operations, voltage regulation, and related equipment.

LINE 251 Installation and Troubleshooting Underground Distribution Systems

Prerequisite: LINE 104 & LINE 105 with grades of C or higher. This course will instruct students about different types and methods of system coordination and fusing applications. The focus will be on identifying substation capacitors, autotransformers, and sectionalizers. Students will gain skills in grounding, substation operations, voltage regulation, and related equipment.

LINE 252 Advanced Pole Climbing

Prerequisites: LINE 210, LINE 237, LINE 241, and LINE 251 with grades of C or higher. This course reinforces proper and safe methods of wood pole climbing. The student must master climbing wood-pole structures while using fall-arrest equipment, performing various detailed tasks. The student will

spend extended periods on the pole while constructing complex assignments and a three-phase transformer construction. The student will demonstrate the ability to safely climb a wooden pole and follow safe work practices in the electrical utility industry.

LINE 253 Safety and Accident Prevention

`Prerequisites: LINE 210, LINE 237, LINE 241, and LINE 251 with grades of C or higher. The student will be able to implement proper climbing techniques, safety rules, and safe work practices in accordance with industry standards. Students will demonstrate Hurtman rescue off the pole and out of the bucket and complete the requirements to obtain an OSHA ET&D, CPR/First Aid/AED card.

MATH 102 Technical and Business Math or higher

Prerequisites: MATH 31 with a grade of S or appropriate placement score. This course introduces technical, algebraic, and business principles, including measurements, conversion factors and unit conversion, precision measurement comparison, ratio and proportion applications, formula utilization, data interpretation, simple and compound interest, and finance charges on loans.

6.4 Elective Options

Lineman Degree (Total 61 - 69)

In addition to the Certificate Requirements, complete all of the following

General Education Requirements (Total 21 - 29)

- COMM100 Fundamentals of Speech
    - An introductory public speaking course including practical application of speaking and listening skills. The emphasis will be on the organization and delivery of subject matter.
- ENGL101 Composition & Reading I
    - Focus on instruction in the composing process, including exploration of ideas through reading, methods of writing development, and the use of writing conventions. Instruction takes students from reflective expression to critical analysis through writing.
- MATH 102 Technical and Business Math or higher
    - Prerequisites: MATH 31 with a grade of S or appropriate placement score. This course introduces technical, algebraic, and business principles, including measurements, conversion factors and unit conversion, precision measurement comparison, ratio and proportion applications, formula utilization, data interpretation, simple and compound interest, and finance charges on loans.
- SPAN 100 Beginning Occupational Spanish or higher
    - An introduction to Spanish. The course develops basic communication skills specifically tailored to a particular degree or occupation.

Choose one of the following courses: (Total 3)

Complete the following number of credits: 3

- HIST120 United States History to 1865
    - Survey of American history and institutions from pre-Columbian times through the Civil War. Examines economic, social, cultural, intellectual, and political development. Federal and Missouri constitutions.
- HIST121 United States History since 1865
    - Survey of American history and institutions from the Civil War to the present. Examines economic, social, cultural, intellectual, and political development. Federal and Missouri constitutions.
- POLS 136 Introduction to U.S. National Politics
    - Principles of political science. Examination of the development, organization, and function of the national government. Its relationship to the cultural, economic, and social institutions of the United States, the Federal, and the Missouri constitutions.

General Education Electives (Total 6-10)

Complete the following number of credits: 6-10

- Any course(s) numbered 100 or above from the following disciplines:
    - ANTH, ART, ECON, ENGL, Foreign Language, GEOG (except 104, 110, and GIS Courses), PHIL, PSYC, SOCI, SOSC

7. Work-Based Learning Requirements

7.1 Work-Based Learning (i.e., Internships, Clinical Experiences, Apprenticeships, Co-op Programs)

Not Applicable

7.2 Eligibility and Application Process

Not Applicable

7.3 Expectations and Responsibilities of Students

Not Applicable

7.4 Evaluation Process of Work-Based Learning Sites

Not Applicable

8. Industry Specific Expectations

8.1 Rules and Ethics

Obtaining a Class A CDL is a significant privilege and a vital milestone in your career as a utility lineman, as it opens doors to a wide range of job opportunities and responsibilities. This license not only grants you the legal ability to operate large commercial vehicles essential for your work but also plays a critical role in shaping your professional future. Maintaining your CDL is essential for ensuring continued employment, career advancement, and the ability to perform your duties safely and effectively. Without it, many aspects of your job become impossible, highlighting the importance of safeguarding this privilege throughout your career.

Losing your Class A CDL can effectively end your career in line work because driving is a critical component of the job. Many utility lineman tasks require operating large trucks, bucket trucks, or transport equipment to job sites. Without a valid CDL, you may be unable to legally perform these driving duties, which are often essential for completing projects efficiently and safely.

Since most employers rely on drivers with CDL privileges to transport tools, equipment, and personnel, losing this license significantly limits your ability to perform the core functions of the job. In many cases, if you cannot drive or if your driving privileges are revoked, employers may no longer see you as a viable candidate for continued employment in line work. This makes maintaining your CDL crucial to preserving your career in this field.

Industry and Soft Skills Overview:

Importance: National and area industry leaders have identified a lack of soft skills as a recurring issue for both new and experienced workers.

Examples of Soft Skills:

The syllabus lists these as examples of the types of soft skills that will be evaluated:

- Climbing
- Punctuality
- Timeliness
- Ability to work with people
- Attention to detail
- Quality of work
- Ability to take direction
- Ability to take criticism

Specific Areas of Ethics:

Attitude

- Flexibility and adaptability to change
- Ability to prioritize and handle multiple tasks

- Good rapport with students and instructors, willingness to assist others, and being a team player.
- Respectful and considerate of others
- Self-discipline
- Taking pride in accomplishments.

Dependability:

- Always present and on time
- Dresses appropriately and respects others
- Meets deadlines and stays on task
- Meets daily expectations
- Follows school and classroom procedures
- Demonstrates an understanding of the importance of confidentiality relating to students in the class
- Demonstrates honesty in all situations

Initiative:

- Self-motivated
- Accepts responsibility
- Perceptive of classroom/field needs.
- Willingly goes beyond what is required
- Demonstrates skill in adjusting to various classroom/field situations
- Adjusts readily to the varying needs of students in the classroom/field

Importance of Demonstrating These Skills:

Soft skills are crucial in the work environment for a multitude of reasons, all of which contribute to a more productive, positive, and successful workplace.

Enhanced Communication and Collaboration:

- Clear Communication: Soft skills like effective speaking, writing, and active listening enable clear and concise communication between colleagues, clients, and supervisors. This reduces misunderstandings, errors, and wasted time.
- Teamwork and Collaboration: Soft skills facilitate effective teamwork. Skills such as empathy, conflict resolution, and negotiation enable individuals to work together harmoniously, share ideas, and achieve common goals. Collaborative teams are more innovative and productive.

Improved Productivity and Efficiency:

- Problem Solving and Critical Thinking: Soft skills empower employees to analyze situations, identify problems, and develop creative solutions. This leads to better decision-making and improved efficiency.

- Time Management and Organization: Soft skills like time management, planning, and organization allow individuals to prioritize tasks, meet deadlines, and manage their workload effectively. This minimizes wasted time and maximizes productivity.

Stronger Customer Relationships:

- Customer Service and Empathy: Soft skills like empathy, patience, and active listening are essential for providing excellent customer service. Employees who can understand and respond to customer needs build stronger relationships and foster customer loyalty.
- Building Rapport: Soft skills help employees build rapport with clients and customers, creating a more positive and trusting interaction.

Enhanced Leadership and Management:

- Motivation and Inspiration: Leaders with strong soft skills can motivate and inspire their teams, fostering a positive and engaged work environment.
- Delegation and Empowerment: Effective delegation and empowerment rely on soft skills like clear communication, trust, and providing constructive feedback.
- Conflict Resolution and Negotiation: Leaders and managers use soft skills to resolve conflicts fairly, negotiate effectively, and build consensus within their teams.

Increased Adaptability and Innovation:

- **Flexibility and Adaptability:** The modern workplace is constantly evolving. Soft skills, such as adaptability, flexibility, and a willingness to learn, enable employees to embrace change and navigate new challenges effectively.
- **Creativity and Innovation:** Soft skills like curiosity, open-mindedness, and a willingness to experiment foster creativity and innovation within the workplace.

Positive Work Environment and Culture:

- **Professionalism and Etiquette:** Soft skills like professionalism, etiquette, and respect contribute to a positive and respectful work environment.
- **Conflict Resolution and Mediation:** Employees with strong soft skills can help de-escalate conflicts, mediate disagreements, and promote a more harmonious work environment.
- **Employee Morale and Engagement:** A workplace where soft skills are valued and practiced tends to have higher employee morale, engagement, and job satisfaction.

In summary, soft skills are the key to a successful work environment. They improve communication, teamwork, productivity, customer relationships, leadership, adaptability, and overall workplace culture. Employers are increasingly valuing soft skills and actively seeking candidates who possess them.

8.2 HIPAA Confidentiality

Not Applicable

8.4 Legal Standards

SOCIAL MEDIA/ELECTRONIC DEVICE POLICY

Lineman Program Social media platforms are technology tools and online spaces for integrating and sharing user-generated content to engage constituencies in conversations and allow them to participate in content and community creation. Examples include but are not limited to:

- Blogs: WordPress, Blogger
- Social Networking Sites: Facebook, Twitter, LinkedIn
- Collaborative Projects: Wikis
- Content Communities: YouTube, Flickr, Instagram, Snapchat

It is suggested that students in each class create their own social networking page to communicate about course assignments, brainstorming sessions, educational resources, and more.

8.5 Professional Standards

Student conduct

1. Lineman Program Students are to be in the classroom promptly at the times designated by the instructor. Breaks are scheduled according to the instructor.
2. Students are not permitted to leave the school or pole field without informing the coordinator or instructor.
3. Students shall adhere to the smoking policies of the school and/or clinic facilities.
4. No personal phone calls during classroom and/or pole field time except for emergencies. If any student needs to make a phone call, they must request it from the program coordinator or field trainers.
5. No cell phones are permitted in the pole field area. Cell phones should be turned off in the classroom.

Care of the classroom and pole field areas:

1. Students are responsible for keeping these areas neat and clean and clear of obstructions.
2. No one will be allowed to leave the areas until all supplies are clean and put away in the storage areas.
3. Inappropriate conduct consists of sleeping during a lecture or in another designated classroom or other disruptive or disrespectful behavior. Sleeping during a lecture or another designated classroom or pole field may be counted as absent time.
4. Academic dishonesty (cheating) shall be subject to a zero grade and possible dismissal from the program.
5. Use or suspected use of intoxicants or unlawful possession of any illegal or controlled substance in the pole field or classroom setting shall subject the student to immediate dismissal from the program.

6. Students are expected to conduct themselves in a responsible, safe, and professional manner at all times.

With respect to the school grounds, classroom, and/or pole field facility.

MCC Code of Conduct: https://mcckc.edu/student-handbook/conduct.

Communication:

During line work, clear and concise communication is critical given the profession's high-risk nature. Here are key reasons why:

Safety Critical: Electric utility work involves live wires, heavy machinery, and working at heights, all of which pose significant hazards. Effective communication helps prevent accidents and injuries.

Coordination: Linemen work in teams and need precise coordination to perform complex tasks safely. Clear instructions ensure everyone is on the same page.

Emergency Response: In unexpected situations, concise and direct communication allows quick reactions, such as halting work or summoning assistance.

Environmental Factors: Noise from equipment, weather conditions, and distance can hinder understanding. Communicating concisely ensures messages are understood.

Risk Mitigation: Proper communication reduces misunderstandings, errors, and the potential for dangerous mistakes during high-risk procedures.

In summary, clear and concise communication is essential for safety, efficiency, and coordination in utility line work.

9. Facilities, Equipment, and Safety Guidelines

9.1 Lab and Classroom Expectations

Climbing and Field Area Safety Guidelines

Climbing Gear

- Always wear climbing gloves and long-sleeve shirts to protect against friction, cuts, and sun exposure during climbing activities.

Cell Phones

- Cell phones are prohibited in the field area unless explicitly approved by the program coordinator to prevent distractions and maintain safety.

Protective Equipment

- Mandatory PPE includes safety glasses and hard hats at all times when in the field to protect against falling debris and other hazards.

Behavior

- Horseplay is strictly forbidden.
- Do not place your hands on other students to avoid unintentional injury.

Material Handling

- Store all materials properly at the end of each day to maintain a safe work environment.
- Avoid throwing materials into piles, as this can cause hazards or damage.
- Immediately report broken or suspicious tools/materials to a Field Instructor.

Music Policy

- Music can be played with the program coordinator's approval.
- Offensive language in music is prohibited to foster a respectful environment.

Pole Field Maintenance

- Conduct a walkthrough of the pole field at the end of each class to pick up dropped materials and trash, maintaining safety and cleanliness.

General Safety Requirements

- Always use proper PPE: hard hats, gloves, reinforced toe boots.
- Perform pre-operation checks on all equipment before use to identify issues early.
- Ensure equipment is on level ground with outriggers fully deployed for stability.
- Communicate clearly with team members using standardized signals or radios.
- Adhere to load charts and maintain safe distances from overhead power lines during operation.

Personal Protective Equipment (PPE)

- Hard Hat: Shields against falling objects and overhead hazards.
- Safety Glasses/Face Shield: Protects eyes from debris or splashes.
- Gloves: Protect hands when handling materials or equipment.
- Steel-toed boots: Guard feet against heavy or falling objects.
- Inspect all PPE for damage and replace any damaged items.

Equipment and Site Setup

Pre-Operation Checks

- Inspect hydraulic systems, booms, controls, and safety devices before each use.

Site Assessment

- Check for underground utilities and overhead lines.
- Identify hazards and plan for safe operation.

Stabilization

- Ensure equipment sits on level ground with outriggers fully extended and stabilized.
- Never lower the outriggers without visually watching their descent.

Load Management

- Never exceed rated capacity; always follow load charts.

Emergency Preparedness

- Verify all emergency stops and safety features are active and functional.

Operation and Communication

- Maintain continuous, clear communication with ground personnel through signals or radios.
- Maintain safe distances from simulated energized power lines; use a spotter if working near electrical hazards.
- Monitor weather conditions regularly to assess if work should continue or pause.
- Only qualified, certified operators should operate machinery.

Heavy Material Handling

- Use proper rigging techniques to secure loads safely.
- Secure loads to prevent shifting or falling.
- Ensure boom and stabilizers are properly engaged when handling loads or when idle.
- Never manage winch ropes without the operator's presence and knowledge; the operator should always control the winch controls.

Together, these guidelines promote a safe, respectful, and efficient training environment.

9.2 Equipment Usage and Maintenance

Digger Derrick Trucks

- Regular Inspections: Check for structural damage, hydraulic leaks, tire condition, and brakes.
- Hydraulic System: Change hydraulic fluids as recommended; inspect hoses and fittings for wear.
- Lubrication: Grease pivot points, boom joints, and other moving parts regularly.
- Electrical Components: Inspect wiring, lights, and controls for corrosion or damage.
- Tire Maintenance: Keep tires properly inflated; rotate if applicable.
- Operational Checks: Test safety features and controls before use.

Skid Steer

- Daily Checks: Inspect fluid levels (engine oil, hydraulic fluid), tires/ tracks, and attachments.
- Filters: Replace engine and hydraulic filters as per manufacturer schedule.
- Lubrication: Grease all pivot points and moving parts regularly.
- Cooling System: Check coolant levels and radiator condition.
- Battery: Keep terminals clean and connections tight.
- Cleaning: Remove dirt and debris to prevent corrosion and overheating.

UTVs (Utility Task Vehicles)

- Regular Inspection: Check tires, brakes, lights, and fluid levels.
- Oil & Fluids: Change engine oil, coolant, and transmission fluids at recommended intervals.
- Battery: Keep terminals clean; ensure it's charged, especially if not used frequently.

- Cleaning: Wash after use, especially after off-road conditions.
- Storage: Store in a dry place; disconnect battery if stored long-term.

Pressure Washer

- Inspection: Check hoses, gun, and nozzle for leaks or damage before use.
- Cleaning: Flush system after use; clean or replace nozzles.
- Oil and Fuel: Change compressor oil, engine oil, and filter regularly.
- Storage: Drain water from pump and hoses; store in a dry, covered area.
- Detergents: Use compatible detergents and follow manufacturer guidelines.

Batteries for Drills

- Charging: Use manufacturer-recommended chargers; avoid overcharging.
- Storage: Keep in a cool, dry place; partially charged batteries last longer.
- Maintenance: Clean terminals with a wire brush; check for corrosion.
- Usage: Regularly use and recharge to maintain capacity.
- Replacement: Replace if holding charge significantly less than when new.

9.3 Safety Policies and Emergency Procedures

1. Emergency Procedures

1. Stay calm and assess the situation.
2. Alert others and notify emergency services (911) if needed.
3. Provide clear details: location, injury, hazards.
4. Follow evacuation routes calmly to the designated assembly point.
5. For fires: use a fire extinguisher if trained, or evacuate.
6. For electrical or chemical hazards: turn off power, evacuate, and call for help.
7. Do NOT move seriously injured persons unless there is immediate danger.
8. Assist injured persons with care and monitor their condition.

2. First Aid

1. Ensure safety before helping others.
2. For bleeding: apply direct pressure with a clean cloth.
3. For burns: cool with water, cover loosely.
4. For broken bones: keep the person still; do not attempt to realign.
5. For unconscious persons: check breathing and pulse. Administer CPR if trained.
6. Retrieve AED
7. Keep victims comfortable and call for medical help.

8. Report all injuries to a supervisor.

3. General Safety

1. Always wear PPE: helmets, gloves, vests, etc.
2. Inspect equipment and work area regularly.
3. Keep pathways clear and warn of hazards.
4. Use proper lifting techniques and avoid distractions.
5. Handle and operate equipment carefully and according to instructions.
6. Report hazards immediately.
7. Participate in safety drills and training.

Remember: Safety is everyone's responsibility. Stay alert, follow protocols, and report hazards promptly.

10. Industry Certifications and Licensure

10.1 Available Certifications through the Program

OSHA 10 Hour

CPR/AED

10.2 State and National Licensing Requirements

Not Applicable

10.3 Certification Exam Preparation Resources

Not Applicable

11. Graduation and Program Completion Requirements

11.1 Graduation Checklist

Prospective MCC graduates must submit an application for graduation through their myMCCKC student portal before they are eligible to graduate and participate in the MCC commencement ceremony. Once the application for graduation is submitted, students will receive an official evaluation to determine degree completion status.

Please visit https://mcckc.edu/commencement/ for more information.

“A new Missouri Law (SB807) requires all public colleges and universities to administer a civics exam to students as a requirement for graduation. The law will apply to the incoming class of first-time-in-college, degree-seeking students at the beginning of fall 2019, and to all students entering afterward. The law indicates a student must score at least 70% on the exam before they can receive a degree.”

11.2 Capstone Projects or Final Assessments

Not Applicable

12. Appendix & Additional Resources

12.1 Forms and Templates

https://mcckc.edu/lineman

12.2 Academic Calendars

https://mcckc.edu/calendar/academic.aspx

12.3 Frequently Asked Questions (FAQs)

What are the days and hours of the program?

- During the summer semester, the lineman class will be on Tuesdays, Wednesdays, and Thursdays from 7:00 a.m. until 12:30 p.m.
- During the fall and Spring semesters, the lineman classes will be on Tuesdays, Wednesdays, and Thursdays from 7:00 a.m. until 12:30 p.m.
- Your general education classes will be on the days you don't have the lineman classes. That makes this a full-time, day program. No classes are offered at night.

How long is the program?

The certificate is a three-semester program starting in the summer. (One year)

How many more classes are needed to get an A.A.S. degree?

You will need an additional four to five classes to receive the Associate in Applied Science (A.A.S.) It's only one more semester!

Will dual credits from high school help?

Yes, dual credit will help you get a jump start on the program. It can also set you up to finish the A.A.S. in only one year.

How do I pay for the program?

You can apply for loans, grants, and scholarships just like you would at any college. Learn more about financial aid.

Will A+ pay for the program?

Yes, A+ will pay for tuition. You will be responsible for any additional fees (lab fees, program fees, books, etc.)

Can I use the GI Bill®?

Yes, the GI Bill® will pay for the program.

Are there any prerequisites?

No. These classes are recommended for completion before the program's start.

- BUSN 190
- English: ENGL 101
- Math: MATH 102 or higher

Are there classes I can take to make me a better candidate?

Yes, completing all classes and setting yourself up to earn the A.A.S. will raise your score during the selection process.

How are the students selected?

Several factors will be taken into consideration—the application, references, essay, program preview evaluation, interview, completed classes, etc.

What happens at the program preview/interview?

The program preview will include a task to be performed outside. Digging holes, climbing a 40-foot pole (while wearing a safety device), and assembling materials. The field instructors will conduct the interview. This will generally be a series of questions.

Do I need to buy climbing tools?

No, we will provide you with your climbing gear, belt, and tools while in class.

12.4 Note Pages

