

# LINWORKER (ELECTRICAL)

## TECHNICAL LIMITED ENROLLMENT

**CONTACT PERSON: Keith Landeis • 667-9414**

**Keith.Landeis@bsc.nodak.edu**

A career as an electrical lineworker offers men and women the prospect of good wages, dependable and often very strong job demand, and an opportunity to work in any of nearly 3,100 public utilities across the United States.

BSC's program is designed to educate students to become skilled apprentice lineworkers. Instruction time is divided between classroom study and indoor and outdoor laboratory work.

Classes are held and skills practiced at the electrical lineworker program's facilities north of Mandan. This includes twenty acres of land for outside training, and inside laboratories and classrooms. Students also have access to all student facilities at the BSC Campus.

Students are required to take a two-week class, Introduction to Climbing Techniques, offered in the summer before they will be allowed to enter the Lineworker program in the fall. The class will be offered for three credits. Introduction to Climbing will provide students practice in pole climbing in an effort to increase familiarity and security with climbing experiences.

**Enrollment:** A class of 54 students is enrolled once each year in late August. Refer to the admission section of this catalog beginning on page 10 for application procedures and requirements. A doctor's examination and approval is required after acceptance into this program. Also refer to the limited enrollment program information on page 13.

### Required placement scores:

ACT Math - 15 or higher

English - 15 or higher

COMPASS Math - (pre-algebra) 31 or higher

English - 43 or higher

### Background in these areas helpful:

- One year of high school algebra or one semester of college algebra
- Basic computer literacy
- Good written and oral communication skills

SUMMER SESSION	CREDITS
Introduction to Climbing Techniques (LNWK 100).....	3

FALL SEMESTER	CREDITS
Applied Electrical Distribution (LNWK 101) .....	5
Electrical Distribution (LNWK 103) .....	4
Basic Electricity D.C. & A.C. (LNWK 105) .....	3
Equipment Operations (LNWK 107).....	2
Safety I (LNWK 111).....	2
Total credits.....	16

SPRING SEMESTER	CREDITS
Fundamentals of Electrical Distribution (LNWK 112).....	5
Electrical Distribution (LNWK 114) .....	4
Electrical Apparatus and Transformers (LNWK 116) .....	4
Safety II (LNWK 118) .....	2
Rope and Rigging (LNWK 120).....	2
Total credits.....	17

Students receive a program certificate upon successful completion of the program. Additional course work may lead to an Associate in Applied Science degree. See page 51-52 for degree requirements.

## LINWORKER (ELECTRICAL) (LNWK)

<b>LNWK 100</b>	<b>Introduction to Climbing Techniques</b>	<b>SM</b>	<b>3 credits</b>
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The course is designed for students to learn basic climbing techniques required to be a lineworker.

<b>LNWK 101</b>	<b>Applied Electrical Distribution</b>	<b>Fall</b>	<b>5 credits</b>
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This is a lab course in which students will learn to climb and work on poles, dig holes, set and frame poles, string, armor rod, tie and sag conductors, and build single-phase lines.

<b>LNWK 103</b>	<b>Electrical Distribution</b>	<b>Fall</b>	<b>4 credits</b>
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The course includes the principles to function as a lineworker. Course includes climbing equipment, poles, pole guying, conductors, insulators, proper

grounding of equipment, personal protective grounding, and proper use of equipment and tools as well as related safety to accomplish the above.

**LNWK 105 Basic Electricity D.C. and A.C. Fall 3 credits**

Study of the fundamentals of basic electricity. Subjects include DC and AC theory, Ohm's law and circuit calculations, reactance and power factor, and related math skills.

**LNWK 107 Equipment Operations Fall 2 credits**

A mix of classroom training and outdoor lab work studying the safe and efficient operation of digger derricks, pressure diggers, backhoes, and trenchers.

**LNWK 111 Safety I Fall 2 credits**

Study and practice of accident prevention and job safety.

**LNWK 112 Fundamentals of Electrical Distribution Spring 5 credits**

This is a lab course in which students will learn to construct twophase and three-phase lines. Students will also learn about the installation of underground lines and electrical equipment apparatus. Prerequisite: LNWK 101 and 103.

**LNWK 114 Electrical Distribution Spring 4 credits**

Prerequisite: LNWK 103 and 101. The course includes the principles to function as a lineworker. Course includes URD cable procedures, distribution transformer installation, work procedures for overhead and underground construction, and related safety to accomplish the above.

**LNWK 116 Electrical Apparatus and Transformers Spring 4 credits**

Study of the fundamentals of power line apparatus. Subjects include transformer theory and connections, substation and switchyard functions, meter connections and readings, PT's and CT's, regulator operation, breakers, line fuses and switches. Prerequisite: LNWK 105.

**LNWK 118 Safety II Spring 2 credits**

Safety I. Continuation of the study and practice of accident prevention and job safety. Prerequisite: LNWK 111.

**LNWK 120 Rope and Rigging Spring 2 credits**

Students learn knots, tying, splicing, uses of rope and basic rigging techniques.

**LNWK 294 Independent Study 1-3 credits**

Independent or directed study of special topics in the lineworker field. Department chairperson approval is required.

**LNWK 299 Special Topics 1-3 credits**

Variable instructional topics in the lineworker field. Repeatable as long as content varies. Consent of department chairperson.

**LNWK 195-295 Service Learning 1-3 credits**

Maximum of six semester hours. Service learning may be accomplished by one of three methods: Joining a club that has a public service component, doing volunteer work at a non-profit organization, or taking a course that links public service with its curriculum.

**LNWK 197-297 Cooperative Education/Internship 1-3 credits**

Repeatable up to a maximum of six hours. Students get on-the-job experience under qualified supervision in lineworker occupations. Work hours are arranged by the employer, adviser, and student. Student progress is checked by oral and written reports from the employer. Student-adviser conferences are held to discuss progress and/ or problems. All co-op experiences are graded on a satisfactory/unsatisfactory basis. Consent of department chairperson.