Power Line Registered Apprenticeship Certificate Program Proposal

Presented to the South Dakota
State Board of Education
July 2016
For Implementation
Summer 2017

Mitchell Technical Institute
1800 E. Spruce St. • Mitchell, SD 57301

Mitchell Technical Institute

New Program Proposal:	**Power Line Registered Apprenticeship Certificate**
Length of Program:	**Dependent upon number of required apprenticeship hours/credits**
Number of Students:	**25 initial cohort**
Projected State Date:	**Certificate Option Summer 2017**
Total Program Credits:	**71.5**

Executive Summary:

Mitchell Technical Institute is requesting approval to offer as part of our Advanced Technical Education division, a Registered Apprenticeship training program for academic credit as a certificate program expansion for the existing Power Line Construction and Maintenance program. This certificate program would provide an opportunity for employees, or apprentices to access a training program that would recognize the skills and abilities necessary for success in the power line industry. Academic credit will be awarded for skills training that occurs outside of the traditional technical institute environment.

According to the American Association of Community Colleges, "Registered Apprenticeship is an 'earn while you learn' model that provides on-the-job learning and related classroom instruction focused on certain high-skilled jobs."[1] The proposed curriculum and utilization of nationally recognized assessments will meet requirements of the Office of Apprenticeship, a division of the US Department of Labor. A comprehensive Standards of Apprenticeship document has been developed jointly by MTI and the US Department of Labor to encompass the mandatory apprenticeship program components.[2]

This program will allow students to pursue journeyworker status within their career field, framed within a formalized, recognizable structure. Graduates of the program will earn stacked credentials: an initial diploma from MTI; a certificate of completion for each year of apprenticeship training; and a Journeyworker certificate from the US Department of Labor at the conclusion of their apprenticeship experience.

Identification and Description of Program:

The Power Line Registered Apprenticeship certificate program will provide an opportunity for students to take both online and on-campus classes and perform skills training under supervision in their selected occupational area. All apprentices will be registered through the federal Office of Apprenticeship, a division of the US Department of Labor.

Objectives and Purpose of the Program:

The Power Line Registered Apprenticeship certificate program is dedicated to offering students the practical experience, targeted curriculum, and focused training to become a highly skilled practitioner of their chosen occupation. This program will provide detailed attention to all phases of their industry using supervised on-the-job learning, combined with related instruction.

General Program Objectives

According to the US Department of Labor, Registered Apprenticeship training has several program objectives:

- Participants who are newly hired (or already employed) earn wages from employers during training
- Programs must meet national standards for registration with the U.S. Department of Labor (or federally-recognized State Apprenticeship Agencies)
- Programs provide on-the-job learning and job-related technical instruction
- On-the-job learning is conducted in the work setting under the direction of one or more of the employer's personnel
- Training results in an industry-recognized credential.

Advantages

There are several advantages to the operation of a Registered Apprenticeship program by a technical institute. These include the development of a strong symbiotic industry relationship; the immediate identification and familiarity with Apprenticeship as an industry credential; and the public profile that the Apprenticeship would display as a unique offering of the school, the program and the employer.

Methods of Attaining the Objectives of the Program:

Students are recruited into the Power Line Registered Apprenticeship certificate program in two ways: either through matriculation into the Power Line Construction and Maintenance academic program at Mitchell Technical Institute, or by enrolling in the Power Line Registered Apprenticeship certificate program offered through MTI's Department of Advanced Technical Education delivered through a combination of classroom, online and workplace supervised instruction. Both the MTI Admissions office and the Director of Advanced Technical Education may assist in the recruitment of prospective students.

MTI provides assurance that it possesses the resources and staff necessary to:

- Develop marketing materials and recruit students
- Recruit and supervise qualified staff
- Collaborate with business partners to identify students
- Assess the abilities of students for proper program and course placement
- Develop and administer budgets
- Make available instructional resources
- Provide career guidance to students
- Evaluate programs and staff
- Secure input from industry through an advisory committee
- Maintain membership in professional organizations and provide time and fiscal resources for professional development
- Provide services to disabled students
- Provide classrooms and laboratories

Description of Labor Market Demand:

South Dakota's job growth has outpaced the US average for the past 15 years with an average rate of growth at 12.9%. In 2015 specifically, South Dakota ranked 15th nationally for job growth with 2.3% real job growth.

Registered Apprenticeships are typically associated with highly skilled technical occupations. The Power Line Construction and Maintenance program at MTI has historically supported ongoing apprenticeships for our graduates.

According to US Census Bureau data, in 2003, 82% of the baby boom generation participated in the workforce. In 2013, that number was at 66% and expected to continue to decrease at an annual rate near 5%. This program will help to increase the number of highly skilled workers who have either already completed a technical program and are seeking additional skills or who are seeking entry into an occupation that is in need of registered journeyworkers across South Dakota and in neighboring states.

Students who complete the Apprenticeship program will not only see the potential for higher wages, but also increased demand for their skills, education and technical experience.

South Dakota	Employment		Percent Change	Annual Demand
	2012	2022		
Electrical Power Line Installers and Repairers	690	755	9.40%	31

The Power Line Registered Apprenticeship program will be available to any worker nationwide who has successfully completed either an accredited power line training program or who has completed Year One of a recognized registered apprenticeship. Therefore, we have included occupational data from the Midwest region:

Midwest Region	Employment		Percent Change	Annual Demand
	2012	2022		
Electrical Power Line Installers and Repairers	9,080	9,970	10%	400

Source: CareerOneStop (www.careerinfonet.org), May 2016, a website sponsored by the US Department of Labor, Employment and Training Administration. Occupation profiles for the above occupations are for the states of Iowa, Minnesota, Montana, Nebraska, North Dakota, South Dakota, and Wyoming.

Population Served:

MTI does not discriminate in its educational programs on basis of race, color, creed, religion, age, sex, disability, national origin or ancestry. The program will draw traditional students from South Dakota and surrounding states. MTI also anticipates that there will be interest in the program from those already employed as laborers, seeking to increase their skill level to journeyworker. Opportunities for employment will be available in South Dakota, the surrounding states and anywhere that licensed journeyworkers are needed.

Projected Three-Year Budget:

Categories	2016-2017	2017-2018	2018-2019
Salaries/Benefits*	$22,500	$26,500	$28,000
Travel/Training	$1,000	$3,500	$3,500
Supplies	$500	$3,000	$4,000
Miscellaneous	$500	$500	$1,000
TOTAL	**$24,500**	**$33,500**	**$36,500**

*MTI anticipates that instructors in related programs will develop the curriculum for this program. Contractual agreements outside of their regular full-time compensation will ensure that the curriculum is developed by highly qualified instructors. Funds from the TAACCCT #4 federal grant will be used to support the cost of program development and any up-front costs. Curriculum development is scheduled for 2016-2017 and 2017-2018. In 2018-2019, although curriculum development would be completed, there would be some training expense and the anticipated need for a part-time Apprenticeship Coordinator as enrollment grows.

Program Competencies and Entry and Exit Points:

The power line industry already requires an apprenticeship for all entry-level workers and line workers must attain their journeyworker status within a defined amount of time in order to make career progress and receive the benefits of a registered journeyworker.

Students will concurrently register as apprentices upon entering the full time Power Line Construction and Maintenance program at MTI. The courses they complete during their first year of enrollment, along with the field training and lab activities, will allow them to advance to a second-year level apprentice after completing the requisite number of on-the-job hours, typically 1,000, following graduation.

The curriculum is designed to help participants develop the knowledge, skills, and behaviors necessary to be successful upon completion of the program. The program will follow a defined work process schedule as required by the terms of the apprenticeship:

- Overhead and underground construction
- Overhead and underground maintenance
- Secondary connections and lighting
- Use and care of tools and equipment
- Vehicle inspection and maintenance
- OCR/regulators/capacitors
- Transformers and metering
- Engineering and staking
- Rolling stock or inventory
- Records
- Safety meetings
- Live line maintenance

- Troubleshooting
- Substations

In order to obtain journeyworker status, the apprentice must spend a minimum of four years/8,000 hours, plus the minimum 576 required hours of related instruction.

Statement of Nonduplication:

At the present time, there are no similar programs offered in an educational setting anywhere in South Dakota. However, private companies use for-profit apprenticeship training programs (Merchant, Northwest Linemen's, etc.). The unique aspect of an MTI Power Line Registered Apprenticeship certificate program is the value-added component. MTI's program has deep and robust support from the power line industry. Our graduates are sought after to fill entry-level positions at all kinds of power line companies: investor-owned utilities, rural electric cooperatives, and construction companies. With our more than 40 years of experience training lineworkers, we are confident that the industry will be eager to join MTI's Power Line Registered Apprenticeship certificate program.

Proposed Curriculum Design:

The curriculum proposed for this program will be delivered in a variety of methods including traditional classroom delivery; lab activities; supervised field work; online materials and assignments; short-term annual workshops on campus during years two, three and four; and supervision at the workplace.

First Year Apprentice

First Semester	**Semester Credits**
PL 111 Characteristics of DC/AC	3
PL 141 Power Grid Design	3
PL 150 Field Training I	2
PL 151 Construction of Underground Lines	2
PL 152 Construction of Overhead Lines	2
PL 171 Utility Safety I	2
PAT 100 Intro to GPS Technologies	1
CPR 100 First Aid, CPR & AED	0.5
OSHA 101 OSHA 10 Training	1
SSS 100 Student Success	1
English Elective	3
	20.5

Second Semester	**Semester Credits**
PL 112 Transformer Connections	3
PL 143 Power Grid Design II	3
PL 154 Maintenance of Underground Lines	2
PL 155 Maintenance of Overhead Lines	2
PL 156 Field Training II	2
PL 172 Utility Safety II	2
TRAN 100 Industrial Transportation/CDL	1
CIS 105 Complete Computer Concepts	3
Math Elective	3
	21

Diploma earned with successful completion of 41.5 credits

Second Year Apprentice

APPL 111 Advanced Connections	2
APPL 112 Advanced Metering	1
APPL 143 Power Grid III	2
APPL 151 Construction of Underground Lines	1
APPL 152 Construction of Overhead Lines	1
APPL 154 Maintenance of Underground Lines	1
APPL 155 Maintenance of Overhead Lines	1
APPL 171 Safety III	1
	10

Third Year Apprentice

APPL 211 Adv. Transformer Connections II	2
APPL 212 Metering Connections II	1
APPL 241 Power Grid IV	2
APPL 251 Transmission/Distribution Troubleshooting	2
APPL 254 Transmission/Distribution Live Line Maint.	2
APPL 271 Safety IV	1
	10

Fourth Year Apprentice

APPL 220 Relays	1
APPL 242 Power Grid V	2
APPL 252 Trans/Distribution Troubleshooting II	2
APPL 255 Trans/Distribution Live Line Maint. II	2
APPL 272 Safety V	1
APPL 275 Supervision & Leadership	2
	10

At the completion of four years/8,000 hours on-the-job training, plus a minimum of 576 hours of related instruction, the student will be awarded a Journeyworker certificate from the US Department of Labor and a certificate of completion from Mitchell Technical Institute.

Wage Factor:

Typically, apprentices are paid on a graduated, increasing scale of wages and benefits as their training progresses. The established hourly rate for a journeyworker power line installer-repairer is $28.58 per hour.[3]

The workday and work week for apprentices is the same as that for journey/craft workers and is subject to the same conditions.

4-Year Term Example:

First Year:	1st 1,000 hour Period:	50%	2nd 1,000 hour Period:	55%
Second Year:	3rd 1,000 hour Period:	60%	4th 1,000 hour Period:	65%
Third Year:	5th 1,000 hour Period:	70%	6th 1,000 hour Period:	75%
Fourth Year:	7th 1,000 hour Period:	80%	8th 1,000 hour Period:	85%

Source: Standards of Apprenticeship, U.S. Department of Labor Office of Apprenticeship, Appendix A

CIP Code: 46.0303

Title: Power Line Registered Apprenticeship Certificate

Definition: A program that prepares individuals to apply technical knowledge and skills to install, operate, maintain and repair local, long-distance, and rural electric power cables and communication lines; erect and construct pole and tower lines; and install underground lines and cables. Includes instruction in cable installation and repair, fibre-optic technology, trenching, mobile equipment and crane operation, high-voltage installations, maintenance and inspection, safety, remote communications, and applicable codes and standards.[4]

Sources Cited

[1]Dembicki, Matthew. "Fed program aims to bridge college credit for apprenticeships." www.ccdaily.com/Pages/Workforce-Development/Fed-program.aspx. April 7, 2014.

[2]*Standards of Apprenticeships*. US Department of Labor Office of Apprenticeship, 2014.

[3]*Standards of Apprenticeships: Appendix A*. US Department of Labor Office of Apprenticeship, 2014.

[4]"Detail for CIP Code 46.0303." Retrieved from https://nces.ed.gov/ipeds/cipcode/cipdetail.aspx?y=55&cipid=88607.

Letters of Support

Black Hills Energy
Improving life with energy

May 11, 2016

Mr. Mark Wilson, President
Mitchell Technical Institute
1800 E. Spruce St.
Mitchell, SD 57301

Dear Mr. Wilson:

Black Hills Corporation is pleased to support MTI's application to operate a Registered Apprenticeship program as part of its educational offerings.

The Power Line industry is somewhat unique in many of our line mechanics begin as apprentices and work toward their journey line mechanic status. Historically, we have either hired graduates from programs such as MTI's Power Line Construction & Maintenance program, or other qualified applicants. BHE then proceeded to enroll them in one of a few proprietary apprenticeship programs (Merchant, Northwest Lineman School, etc.). We are anxious to begin working with MTI to help us manage our apprentices through the four years of required related instruction and on-the-job training. Their combination of experience, technology and reputation in the power line industry will ensure that our apprentices have access to the best possible apprenticeship training.

The fact the Power Line graduates will already have completed their first year of apprenticeship soon after beginning employment with us, and that they will receive academic credit, along with their apprenticeship hours, is very attractive. We also serve as advisors to MTI's program and we know that we will have input into the development and delivery of the Registered Apprenticeship program.

MTI's apprenticeship program will also be a great assess to the graduates of the program. Many of the graduates come out of school and go to work for small contractors. The majority of the small contractors do not have the resources to administer an apprentice program. MTI's apprenticeship program with help with the process and give the graduates the ability to keep moving towards journey line mechanic status.

Black Hills Corporation is an enthusiastic supporter of MTI's application for the Registered Apprenticeship program. We will assist in any way we can.

Sincerely,

Ken Meirose
Black Hills Operations Manager

MONTANA-DAKOTA
UTILITIES CO.
A Division of MDU Resources Group, Inc.

400 North Fourth Street
Bismarck, ND 58501
(701) 222-7900

May 12, 2016

Mr. Mark Wilson, President
Mitchell Technical Institute
1800 E. Spruce St.
Mitchell, SD 57301

Dear Mr. Wilson:

On behalf of Montana-Dakota Utilities Co., I would like to lend my support to the efforts of Mitchell Technical Institute to implement a Registered Apprenticeship program.

As a provider of electric power and gas services over a multi-state region, we hire many entry-level employees as apprentices. Some come to us from programs like MTI's Power Line Construction & Maintenance program where they have developed foundational skills; others are hired with a variety of skills that we believe will make them effective line workers.

Whatever their background, if it is necessary for us to enroll them in a registered apprenticeship program in order to obtain their Journeyworker certification, we look forward to the opportunity to the possibility of expanding our relationship with MTI. We know that MTI will combine their many years of experience training line workers with a high quality registered apprenticeship program.

Montana-Dakota Utilities is pleased to support the application for a Registered Apprenticeship program. Please know that MDU will be happy to provide any necessary assistance or information.

Sincerely.

Doug Dixon
Director, Safety & Technical Training

cc: Pat Darras, VP Operations
Jim Kaiser, Director, Human Resources