Proposal for New Instructional Program
Mid-Plains Community College

I. Descriptive Information

Name of Institution: Mid-Plains Community College

Name of the Program: Electrical Automation Control

Degrees/credentials to be awarded: Associate of Applied Science Degree

Other programs offered in this field: Associate of Applied Science in Electrical Technology

CIP Code: 47.0303 – Industrial Mechanics and Maintenance Technology

Administrative Units: This degree would be part of the Applied Technology Division within the College.

Proposed delivery site, and type of delivery: This program will be offered in a hybrid format. Lecture would take place during the week online utilizing the College's Learning Management System. Students would come to campus in North Platte on Fridays for the lab portion of the courses.

Date approved by governing board: Will be presented February 27, 2019

Proposed date the program will be initiated: Fall 2019

Description and purpose of the program: The Electrical Automation Control degree is a new associate degree program designed specifically for those currently employed in the field. No other community college in the state currently offers this type of degree, in this format. The degree would be a total of 60 credit hours for a two-year degree. Detailed program of study options are attached in Appendix A.

II. Review of Criteria

Centrality to Role and Mission: The proposed Associate of Applied Science Degree in Electrical Automation Control is central to the role and mission of Mid-Plains Community College (MPCC), which is to transform lives through exceptional learning opportunities for individual student success. MPCC strives to enhance the individuals and businesses in our service area. This proposed

degree provides the opportunity for individuals to improve their careers through skill development which could open more doors for them in their current business and beyond. The proposed degree will also meet the unique needs of our area industry partners.

The Nebraska Legislature defines the role of the community colleges and this proposed degree meets the first instructional and service priority of applied technology education as defined in state statute. This degree is an applied technology degree designed for students currently in the field. By enrolling in the program, students will be looking to further their careers in manufacturing. Initial discussions with various manufacturing plants have been encouraging and supportive. Employers have discussed this need to help develop their current employees to keep them local while growing their business.

The third instructional and service priority in state statue is public service. Students looking to enroll in this program want to advance in their career. Potential career areas for graduates include advanced positions in manufacturing facilities such as Electronics Technicians, Electromechanical Technicians, Instrument and Control Technicians, Maintenance Technicians, Control and Valve Installers and Repairers, and Industrial Machinery Mechanics. The program also allows area businesses to train their current employees for hard to fill positions that require a specific skill set.

a. Evidence of Need and Demand
    i. Need for the program – Students in MPCC's 18-county service area have been unable to pursue an associate degree specifically designed to improve their knowledge and skills in the area of Electrical Automation Control. For an industry worker, pursuing a similar degree would have required both resignation from a full-time position and relocation to the eastern end of Nebraska or a different state.

    In the letters of support found in Appendix C, local industry leaders describe a shortage of qualified workers with the right technology and automation skill sets to keep their businesses operational. They consider this proposed hybrid degree program as "a perfect fit," "evolutionary," "well laid out to accommodate employees/students," and "an absolute need in industry today" for individuals who want to "further their education and remain working at the same time."

    ii. Demand for the program – The Office of Institutional Research and Planning at MPCC pulled data from the region and the state in regard to potential jobs. The data was collected through Emsi Analyst, a labor market analysis tool (Emsi is an affiliate of the Strada Education Network). Students could utilize the Associate of Applied Science degree

in Electrical Automation Control to potentially find employment. Within the 18-county MPCC service area, target occupations are projected to grow 8.3% in the next five years with an average wage of $22.12 per hour, while the specific position of Control and Valve Installer and Repairer would average $30.47 per hour.

The statewide increase is lower than the regional increase with projected growth of 6.7% in the next five years. MPCC already ranks first as a regional talent provider in these target occupations, and the addition of Nebraska's only hybrid Associate of Applied Science degree in Electrical Automation Control would help meet statewide demand of 342 potential openings in target occupations over the next five years.

b. Adequacy of Resources
    i. Faculty and Staff Resources – Currently, the Electrical Technology program consists of one full-time faculty, one part-time adjunct/substitute, and one part-time lab assistant. The new program would require the current adjunct to teach additional courses. The part-time lab assistant position would change to a full-time position.

    ii. Physical Facilities – The existing electrical building is an adequate facility for this program. There would be no need in the immediate future for any additional space or facilities. However, with anticipated growth, an additional facility and/or renovated space may be needed. Expansion of the existing electrical building is projected in the College's Facilities Master Plan. Expenses associated with that expansion are included in Appendix B.

    iii. Instructional Equipment and Informational Resources – All funds used for the new program will come from existing Electrical Technology and Program Development budgets. In future years, funds to upgrade Electrical Automation Control equipment may come from the $300,000 Instructional Equipment Plan within the College. Instructional Enhancement funds are also available for equipment or materials.

    iv. Budget Projections – see attached sheets for details. No additional or new monies are anticipated at this time to launch the program. All startup expenses are already part of the Program Development and Electrical Technology budgets. The majority of the expenses on the attached sheet in Appendix B can be attributed to new or renovated space for the program. This coincides with our institution's Facilities Master Plan. However, this space is not vital for the success of the program. Beyond the potential space, it must be noted that few expenses are needed for the addition of this program.

c. **Avoidance of Unnecessary Duplication:** No other community college in the State of Nebraska offers an Associate of Applied Science degree in Electrical Automation Control. Furthermore, the business-friendly hybrid format sets this program apart from similar offerings available at Central Community College's Columbus campus and Southeast Community College's Milford campus.

d. **Consistency with the Comprehensive Statewide Plan for Postsecondary Education:** Chapter Three of the Comprehensive Statewide Plan for Postsecondary Education describes meeting the needs of the state. This degree fulfills many of the goals listed throughout the chapter. Within "Workforce Development", the plan states institutions should "respond to workforce needs by developing, offering, and promoting degree or certificate programs in needed areas."

   Chapter Three also explains the importance of technology in reaching students and widening students' education opportunities with the use of technology. Chapter Three states, "Tremendous potential also exists to make education more efficient and effective while at the same time enhancing access and quality". This proposed degree will tap into this potential with the use of hybrid and online classes. Not only will technology be used to create access to as many students as possible but it will also be used to create learning opportunities within the program. During our Fall and Spring semesters each student will be assigned their own computer with electrical automation control software for use on campus and at home. Projected expenditures for the college-provided computers are reflected in Appendix B Table 1.

   The degree also meets the statewide goal of technology through a collaboration with the College's Information Technology department. Degree requirements include courses in networking and programming that are taught by the Information Technology faculty. Chapter Three exemplifies the need for technology in addressing educational needs. This collaboration follows suit by what is described in the chapter as "inter-institutional sharing of talent, more efficient campus operations, and developing curriculum that shares facilities, courseware, and other resources".

   The use of technology will address the evolving needs of the targeted students. Technology will allow this degree to reach all areas of our service area as well as non-traditional working students. This allows us to reach all our communities in our service area and supports community development meeting the goal of community outreach, "Postsecondary education institutions make concerted efforts to reach out to their communities and across the state to identify and meet educational, research, and public service needs and to be proactive in assisting economic and community development."

Chapter Five discusses meeting educational needs through partnerships and collaboration. The proposed degree is an example of partnering with area employers. We have worked with area employers to make sure this degree fits exactly what businesses need now and for the future. The opening paragraph of Chapter Five starts, “An active partnership between higher education and Nebraska’s business sector is essential if the economy of the state is to grow.” We believe this degree will help area and state businesses grow thus strengthening our economy. The degree will require ongoing collaboration with area employers to keep enrollment numbers high and to stay up to date with technology and their needs. Conversations have shown how multiple businesses need this program and how employers are willing to enroll their current employees. Industry leaders want their employees to have the opportunity to work full-time while being enrolled in the program resulting in a hybrid style program.

Mid-Plains Community College has worked diligently with local businesses to develop a program that serves the needs of our constituents. We believe the proposed Associate of Applied Science Degree in Electrical Automation Control enhances the ability for area industry leaders to fill positions in their manufacturing facilities. The use of a hybrid format will allow a large variety of students to enroll in the program and fulfill their goals while working. This proposed program will be an innovative way for an Applied Technologies program to be offered in the area. It will reach a focused group of students while keeping costs at a minimum.

Appendix A – Program of Study

Associate of Applied Science Degree
Electrical Automation Control
General Two-Year Program of Study

First Semester - Fall		**Credit Hours**
ELTR 1610	Electrical Theory and Safety	4.0
ELTR 1620	Electronics	4.0
INFO 1050	Networking Essentials	3.0
General Education Course		3.0
Total Semester Credit Hours		14.0

Second Semester - Spring		
ELTR 1650	Schematics	1.0
ELTR 1660	Motor Control	4.0
ELTR 1670	Programmable Logic Controllers I	4.0
General Education Courses		6.0
Total Semester Credit Hours		15.0

Third Semester - Summer		
ELTR 1690	Automation Control Internship	5.0

Fourth Semester - Fall		
ELTR 2620	Programmable Logic Controllers II	4.0
ELTR 2630	Human Machine Interface I	2.0
ELTR 2640	Motion Control	3.0
INFO 1180	Intro to Programming (Python)	3.0
General Education Course		3.0
Total Semester Credit Hours		15.0

Fifth Semester - Spring		
ELTR 2670	Programmable Logic Controllers III	4.0
ELTR 2680	Human Machine Interface II	2.0
DSLT 2690	Pneumatics and Hydraulic Fundamentals	2.0
General Education Course		3.0
Total Semester Credit Hours		11.0

Total Credit Hour Requirements	**60**

Appendix B – Projected Expenses and Revenues

TABLE 1: PROJECTED EXPENSES - NEW INSTRUCTIONAL PROGRAM

	(FY 2019) Year 1		(FY 2020) Year 2		(FY 2021) Year 3		(FY 2022) Year 4		(FY 2023) Year 5		**Total**	
Personnel	**FTE**	Cost	FTE	Cost	FTE	Cost	FTE	Cost	FTE	Cost	**FTE**	**Cost**
Faculty [1]		$14,000		$18,000	1	$15,000	1	$19,000	1	$16,000	1	$82,000
Professional [2]											0	$0
Graduate assistants											0	$0
Support staff		$16,000		$16,500		$17,000		$17,500		$18,500	0	$85,500
Subtotal	0	$30,000	0	$34,500	1	$32,000	1	$36,500	1	$34,500	1	$167,500
Operating												
General Operating [3]												$0
Equipment [4]		$95,000		$35,000		$23,000		$23,000		$28,000		$204,000
New or renovated space [5]						$251,000		$259,000				$510,000
Library/Information Resources [6]												$0
Other [7]												$0
Subtotal		$95,000		$35,000		$274,000		$282,000		$28,000		$714,000
Total Expenses	0	$125,000.00	0	$69,500.00	1	$306,000.00	1	$318,500.00	1	$62,500.00	**1**	**$881,500.00**

[1] Projected faculty expenditures include compensation for an adjunct teaching 17 credit hours in Year 1, 15 credit hours in Year 2, 17 credit hours in Year 3, 15 credit hours in Year 4, and 17 credit hours in Year 5. Year 2 and 4 include summer compensation for internships. Support staff projected expenditures include 2/5 of the increase from a part-time lab assistant to a full-time lab assistant.

[4] Projected expenditures include annual purchases of lab components plus computer purchases on a four-year rotation.

[5] Projected expenditures include estimated costs of the Facilities Master Plan renovation of the Electrical Building, with approximately 2/5 of the total renovation expected to house the Electrical Automation Control program.

NOTE: All items requiring explanation may be included on this page or in the proposal narrative.

CCPE; 11/19/08

TABLE 2: REVENUE SOURCES FOR PROJECTED EXPENSES - NEW INSTRUCTIONAL PROGRAM

	(FY 2019) Year 1	(FY 2020) Year 2	(FY 2021) Year 3	(FY 2022) Year 4	(FY 2023) Year 5	**Total**
Reallocation of Existing Funds [1]						$0
Required New Public Funds [2]						$0
1. State Funds						$0
2. Local Tax Funds (community colleges)						$0
Tuition and Fees [3]	$33,000	$34,500	$43,200	$45,000	$46,800	$202,500
Other Funding [4]						$0
1						$0
2						$0
3						$0
Total Revenue [5]	$33,000	$34,500	$43,200	$45,000	$46,800	$202,500

[3] Projected revenue includes tuition and fees for ten students in the first cohort (Years 1 & 2) with 12 students in the cohorts that begin in Year 3 and Year 5.

CCPE; 11/19/08

Appendix C – Letters of Support

Nebraska Public Power District

Always there when you need us

December 17, 2018

To Whom It May Concern:

I am pleased to write this letter of support for the proposed Electrical Automation Control Associate Degree. The presentation of this new program/degree was very informative, and the future possibilities are exciting.

We have recently struggled to fill an Instrument and Control Technician position at the Gerald Gentleman Station power plant in Sutherland, NE. A program such as the one proposed would help us plan into the future with existing employees that have some of the skills but are lacking the education to qualify for the I&C Tech position. It appears Electrical Automation Control program would be bridging a similar gap for other companies in the North Platte area as well.

Wonderful job on thinking outside of the box in continuing to grow for the needs of our community!

Sincerely,

Sarah Chittenden

Sarah Chittenden
Human Resources Business Partner

Gerald Gentleman Station, HR Department
6089 South Highway 25 / Sutherland, NE 69165-2134
Telephone: 308-386-5148 / Cell: 302-753-6312
http://www.nppd.com

150 South 1st Avenue
Broken Bow, NE 68822
t: (308) 872-6811
bd.com

BD

December 18, 2018

To Whom It May Concern:

On behalf of the Engineering department at BD, I wish to offer my support of efforts on the part of MPPC staff to create a viable associate's degree in Electrical Automation Controls, allowing full time employees achieve their degree while working. This is made possible by the foresight of the MPCC staff to coordinate efforts to offer onsite and online course work, that is well laid out to accommodate employees/students. I look forward to the opportunity to work with MPCC on a successful launch of this program and continued support in the future.

Please feel free to contact me if I can be of any assistance.

Regards,

Brian Petersen
Engineering Manager
BD
Broken Bow, NE 68822
(308) 872-3684

Michael W. Richards
Valmont Industries, Inc.
75 South, Highway 83
McCook, Nebraska 69001
Phone – 308-345-8239

December 10, 2018

To Whom It May Concern:

I am pleased to offer my support for the proposed Electrical Automation Control Associate's Degree Program at MPCC. While serving in the military I both taught and supervised personnel who were trained in an environment much like the one proposed in this program, so I can say from firsthand experience that this type of learning produces confident and competent workers.

Recent articles in the media have suggested that the American economy has slipped due to a shortage of skilled workers. As a current maintenance manager in a small town I can say we are hard pressed to find the right workers with the skillsets we need to keep our plants running. If the media reports are true, this program would be a step in the right direction and would serve to strengthen our state's economy for the future.

I encourage you to strongly consider adding the Electrical Automation Control Associate's Degree Program at Mid-Plains Community College.

Sincerely,

Michael W. Richards

Michael W. Richards

January 7, 2019

Dear Committee Members,

On behalf of American Shizuki Corporation, I wish to offer my full support of the proposed Electrical Automation Controls program being considered by Mid-Plains Community College. Our company's success depends on having strong technically skilled individuals on our team. Western Nebraska has been underserved from an educational viewpoint in this area for a long time. A majority of these programs are being taught in eastern Nebraska and it is a major challenge to attract and highly skilled individuals to western Nebraska.

The Electrical Automation Controls program that was discussed is a perfect fit for not only our organization, but most other similar employers in the area. We don't have enough staff to send someone off to school for two years for training. This program allows us to send someone to North Platte for training once a week and continue to use their very valuable skillset at the same time in our workforce. It also gives us the opportunity to promote internally, improve the standard of living for these qualified individuals and reduce turnover for this highly sought after skillset.

I look forward to the opportunity to enroll one of our staff members in this program and strongly encourage you to add this degree program to MPCC.

Sincerely,

Curt Van Laningham

Curt Van Laningham
President and COO
American Shiuzuki Corporation

301 West "O" Street • Ogallala, NE 69153

Telephone: (308) 284-3611 • FAX Numbers: (308) 284-2708 • (308) 284-8324 • (308) 284-4141

Hose Products Division
400 South Street
P.O. Box 1448
McCook, NE 69001

Plant: 308 345 1700

To whom it may concern:

McCook Community College is considering an Electrical Automation Controls Associate Degree. We want you to know that this is an incredible opportunity not only for the students but will strengthen the community and businesses in our community and the surrounding area.

As technology continues to evolve and automation exists in every facet of manufacturing, it's imperative to find an alternative for individuals to further their education and remain working at the same time.

We are excited to commit our maintenance employees to this opportunity. This is not just another educational program, its an absolute need in industry today.

This degree is evolutionary, and we applaud your team for thinking outside the box. You have our complete support in this endeavor.

Scott Sloggett

Scott Sloggett

Maintenance Manager
Parker Hannifin
McCook, NE 69001
308-344-3223

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To whom it may concern:

I willingly write this letter of support for the Associate of Applied Science Degree Electrical Automation Control at Mid-Plains Community College in North Platte Nebraska.

Industry headwinds combined with feedback from associates are prompting us to adjust as we continue to refine our business. Strategic programs such as WPS, Reliable Operations and Overall Equipment Effectiveness greatly depend on staffing our DCs with trained maintenance technicians.

We are challenged by a tight labor market with low unemployment. It's a challenge to find qualified technicians to staff our Maintenance departments.

It is our belief that a partnership with Mid-Plains Community College to assist with the training and develop our general maintenance associates through the Electrical Automation Control program will prepare them for the advancement into our maintenance technician position.

We feel that the combination of the PLC courses and the Pneumatics and Hydraulics course will be beneficial to our specific operations in our grocery facility.

Sincerely,

Reece Miller, Maintenance Operations Manager