

Strategic Workforce Initiative Proposal
Industrial Automation Technician
Salt Lake Community College
January 6, 2017

Summary

Salt Lake Community College (SLCC) in collaboration with educational and industry partners will design and create pathways within a wide variety of industries that utilize Industrial Automation Technology (IAT). This Strategic Workforce Initiative creates a linear pathway that presents career opportunities upon completion of high school, with a direct path for additional education that leads to upward career mobility within this industry.

Currently, there are in excess of 1,500 Electronics Assemblers, 1000 Electronics Technicians, and 700 Electrical Engineering positions available within the SLCC service region.¹ Considering the immediate demand for employment in the IAT field and the anticipated growth in the next five years, there is an urgent need to produce a qualified and skilled workforce.

- This pathway utilizes courses in Science, Technology, Engineering, Mathematics (STEM) and Electrical Engineering Technology (EET). The courses will be developed for secondary school concurrent enrollment in year one of the grant. The selected courses provide the primary skill sets to enter the IAT workforce immediately.
- The concurrent enrollment courses transfer as credit towards the Applied Associates of Science (A.A.S.) degree in Electrical Engineering Technology at SLCC. This program offers both full-time or part-time enrollment while working full-time.
- Industry offers paid internships after completion of year one of the A.A.S. degree to gain work experience and provide an introduction to the industry.
- The A.A.S. degree completion provides opportunity for career advancement in Industrial Automation Technology and move from an hourly wage to a competitive salaried employee.
- The A.A.S. degree credits directly transfer to a Bachelor's of Science (B.S.) in Electrical Engineering Technology.
- Completion of the B.S. degree program provides opportunity for further career advancement.

¹ Occupation Overview. *Economic Modeling Specialists International*. Q4 2016 Data Set, December 2016. www.economicmodeling.com

Stackable Sequence of Credentials

1) Secondary School Program Completion

Science, Technology, Engineering, Mathematics (STEM) 1010
 Electrical Engineering Technology (EET) 2150

Career Step 1: Entry-level position, Assembler

2) A.A.S. Degree in Electrical Engineering Technology at SLCC

Concurrent enrollment courses in secondary school transfer as credit to SLCC for the A.A.S. degree in Electrical Engineering Technology. This degree program can be taken full-time or part-time while working in the field. This A.A.S. degree provides the student with a solid foundation in electronics theory, application as well as established and emerging technologies. Below is a list of the required technical courses that each student takes to complete the degree program, in addition to five general education courses:

MATH 1060	Trigonometry	EET 2140	Design & Visual Communications
EET 1010	Intro to Electronics Engineering Tech	MEEN 2655	Engineering Manufacturing Lab
EET 1130	Digital Systems	EET 2160	Troubleshooting
EET 1140	AC and DC Circuits	EET 2170	Industrial Controls
EET 2110	Electronics Drafting	PHYS 1010	Elementary Physics
EDDT 2180	Power and Motors	MATH 1040	Intro to Statistics
EET 2120	Communications Systems		

Career Step 2: Completion of A.A.S. and advance career to Technician with an increase in hourly wage or a **salaried position**

3) Bachelor’s of Science in Electrical Engineering Technology

The A.A.S. at SLCC degree satisfies the requirements of the first two years of the four-year degree in Electrical Engineering Technology at Weber State University

Career Step 3: Completion of B.S. degree and advance career to Engineer with significant salary increase

(See Appendix A for Career Pathways)

- Secondary students can take the concurrent enrollment STEM and EET courses, or general education concurrent enrollment courses that will transfer as credit towards the A.A.S. in Electrical Engineering Technology degree at SLCC.
- Credit earned from the A.A.S. degree at SLCC can be applied to a four-year, B.S. degree program in Electrical Engineering Technology at Weber State University. The credits fulfill the first two years of the B.S. degree.
- This pathway provides opportunities to gain experience working in the field directly out of secondary school or the opportunity to pursue further education for upward career mobility.

Enrollment, Attainment and Job Placement

- This proposal will launch a pilot program of 30 students at Jordan High School in the Canyons School District. Students will complete the two concurrent enrollment courses (STEM and EET). After the pilot program, an additional 120 students will be added from the other three high schools in Canyons School District, with potential to expand to all districts in the Wasatch Front Consortium.
- The Electronics Engineering Technology degree program at Salt Lake Community College has an attainment rate of 85% for first semester students and 95% to 100% for second semester students.
- With commitment from industry to support incumbent employees to pursue the A.A.S. degree and the creation of a clear pathway, enrollment is anticipated to increase within the first year. Additionally, the opening of the new Westpointe CTE Center in the Fall semester of 2018 will enhance the program and provide further capacity for matriculation.
- The current job placement rate for the A.A.S. Electrical Engineering Technology degree is 95%. With more than 1,000 positions currently available and a positive growth rate we expect the placement rate to continue.

Industry Support

- IM Flash Technologies is partnering with SLCC to lead in the organizational efforts for this strategic workforce initiative.
- The Dannon Company Inc., Hexcel Corporation, Kimberly-Clark Corporation, L3 Communications, and Arco, Inc. have agreed to support ongoing facilitation and implementation.
- This industry consortium is helping to identify necessary skills and competencies for curriculum development, providing resources to support education/workforce development

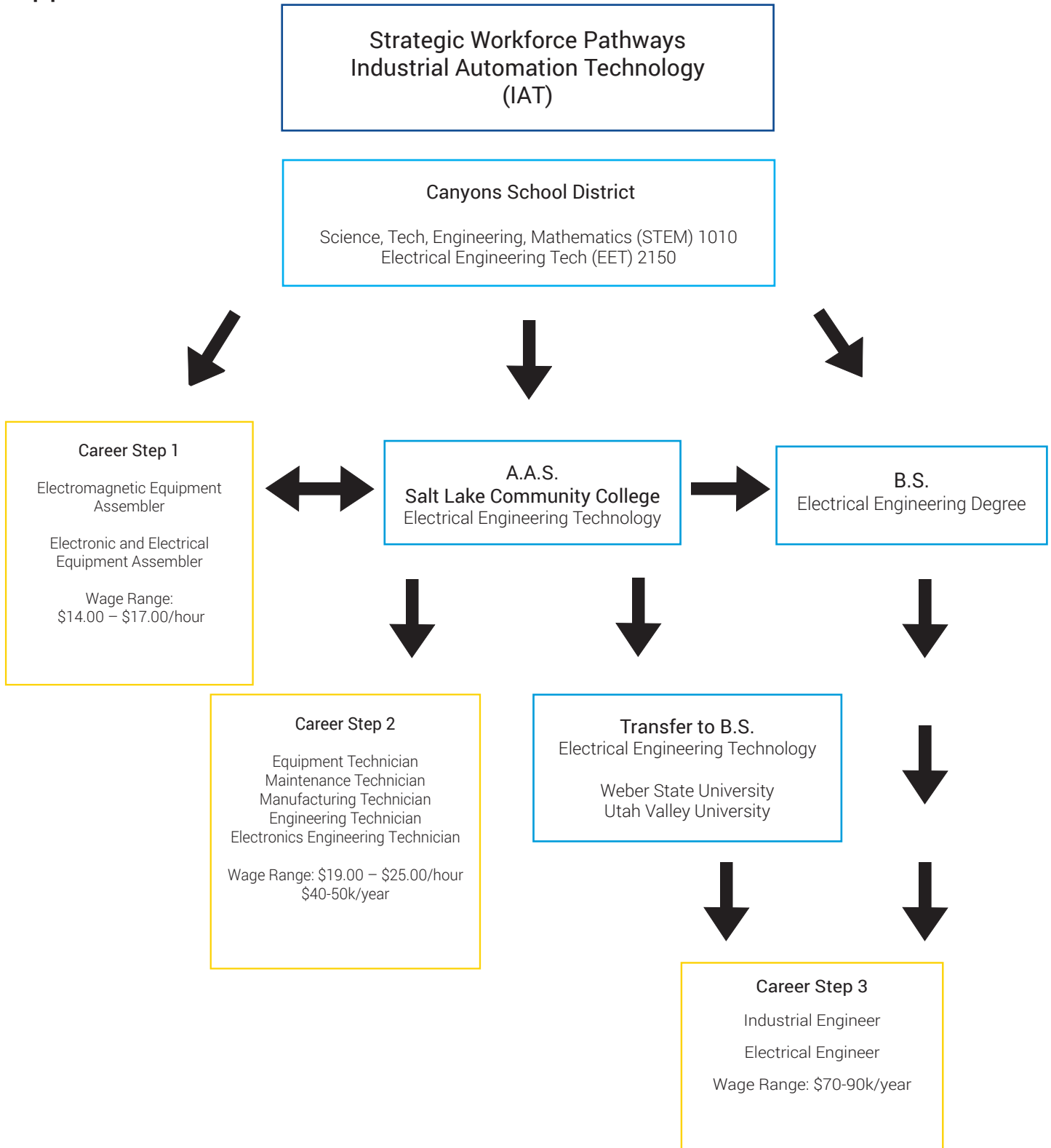
(such as equipment, instructors, funding, internships, access to laboratory facilities, or other work-based learning activities or situations), and where appropriate, hiring qualified program participants.

(See Appendix B for letters of support)

Funding Request

Year 1			Salt Lake Community College	Canyons School District	Totals
Category	Budget Item				
Salaries	50% Technology Faculty	\$ 30,000.00			
	100% Lab Coordinator	\$ 44,000.00			
Benefits	50% Technology Faculty	\$ 16,500.00			
	100% Lab Coordinator	\$ 24,200.00			
1 Time Supplies				\$ 36,000.00	
Supplies				\$ 3,000.00	
Equipment	Student Lab Tools	\$ 55,300.00			
Year One Total		\$ 170,000.00	\$ 3,000.00	\$ 3,000.00	\$ 173,000.00
1 Time Total				\$ 36,000.00	\$ 36,000.00
Year 2					
Category	Budget Item				
Salaries	100% Technology Faculty	\$ 60,900.00			
	100% Lab Coordinator	\$ 44,660.00			
Benefits	100% Technology Faculty	\$ 33,495.00			
	100% Lab Coordinator	\$ 24,563.00			
Supplies				\$ 3,000.00	
Equipment	Ongoing Maintenance	\$ 6,382.00			
Year One Total		\$ 170,000.00	\$ 3,000.00	\$ 3,000.00	\$ 173,000.00
Year 3					
Category	Budget Item				
Salaries	100% Technology Faculty	\$ 61,813.50			
	100% Lab Coordinator	\$ 45,329.90			
Benefits	100% Technology Faculty	\$ 33,997.43			
	100% Lab Coordinator	\$ 24,931.45			
Supplies				\$ 3,000.00	
Equipment	Ongoing Maintenance	\$ 3,927.73			
Year One Total		\$ 170,000.00	\$ 3,000.00	\$ 3,000.00	\$ 173,000.00
Three Year Total		\$ 510,000.00	\$ 9,000.00	\$ 9,000.00	\$ 519,000.00
1 Time Supplies				\$ 36,000.00	\$ 36,000.00
Grand Totals		\$ 510,000.00	\$ 45,000.00	\$ 45,000.00	\$ 555,000.00

Appendix A



Appendix B

Letters of Support

Industry

- 1) The Dannon Company, Inc.
- 2) Hexcel Corporation
- 3) IM Flash Technologies
- 4) Kimberly-Clark Corporation
- 5) L3 Communications

Secondary School

- 1) Canyons School District



January 4, 2017

Mr. Allen Tanner
Associate Professor
Salt Lake Community College

Dear Allen,

Having qualified employee candidates is very important to the success of our business here at Dannon. To that end, I want to confirm that I and others here at Dannon are very much interested in providing assistance in developing course curriculum that will meet the needs of your students and industry. As you are aware, we currently have one of our employees, Angel Leon, enrolled at SLCC as part of our internal technician apprenticeship program and by all indications it is going well.

I want to extend an invite to you and others of the SLCC staff to tour our state of the art yogurt manufacturing facility here in West Jordan to see the types of equipment and level of automation we use. Please give me a call next week so we can coordinate a tour. I can be reached on my cell phone at (801) 618- 9822.

Regards,

A handwritten signature in black ink, appearing to read "Craig Dinehart".

Craig Dinehart
Technical Manager - Utilities

Cc: Gustavo Ferraro, Maintenance Director

The Dannon Company, Inc.

• 6165 Dannon Way • West Jordan, UT • 84081 • Phone (801) 280-7414



PROGRAM SUPPORT LETTER

January 4, 2017

Hexcel has been committed to supporting the Electronics Engineering Technology Program at Salt Lake Community College with the following assets:

1. Hexcel has hired an employee from the EET program and is excelling in the company.
2. Hexcel is supporting the EET Program by having an employee teach within the program as an adjunct.
3. Hexcel plans to continue to recruit from the EET Program.
4. Hexcel will be involved with the development of future curriculum for the EET Program and future Industrial Automation Program.
5. Future assets will be provided at Hexcel's discretion.

A handwritten signature in black ink, appearing to read "Larry Phaup", is written over a horizontal line.

Larry Phaup

Maintenance Manager SLC Fibers

A handwritten date "1-4-17" is written in black ink over a horizontal line.

1-4-17

January 4, 2017



SLCC / Jordan High School GOED Grant

GOED Committee:

IM Flash Technologies, LLC is very pleased to support Salt Lake Community College (SLCC) and Jordan High School's (JHS) application for GOED funding.

Attracting high school students into science, engineering, technology and math (STEM) careers is a must for industries like ours to survive and thrive in the United States. SLCC's Electronics Engineering Technology (EET) program in partnership with JHS would provide a pipeline for IM Flash to find qualified candidates for both internships and full time positions in the semiconductor industry. We feel that the new partnership and curriculum proposed will be vital to producing skilled employees in our industry. We will continue our support and involvement with this initiative. We therefore commit our support with the following:

- \$ to EET Program for ongoing student support at SLCC
- \$ to STEM Symposium at SLCC
- Have hired 4 excellent employees from the SLCC EET program in the last year
- Plan to continue to recruit graduates from SLCC EET program
- Partner with SLCC & Jordan High School to pilot STEM Community Effort
- New Year - Round internship program for students in the EET program
 - Available to SLCC Students after their first year
 - Currently recruiting summer interns
 - Available to JHS Students after completion of two concurrent courses
- Leading industrial curriculum design team
 - Partners already recruited: Dannon, Kimberly-Clark, Arcko
 - Increase productivity of new hires

The IM Flash Technologies' mission is to be a preeminent manufacturer of non-volatile memory through innovative solutions. We pioneer technology that enriches people's lives. Our core values of Teamwork, Execution, Commitment and Integrity provide the differentiation that allows us to lead the engineering market in this technology.

We are happy to have this opportunity to work with SLCC and JHS to encourage students towards technical careers. We believe strongly in preparing the workforce of the future.

Sincerely,

A handwritten signature in black ink, appearing to read 'Todd C. Russell'. The signature is fluid and cursive, with a long horizontal stroke extending to the left.

Todd C. Russell

Academic Relations / Intern Program Manager

IM Flash Technologies



Kimberly-Clark Corporation

To: Allen Tanner - Salt Lake Community Collage

Date 1-4-17

Subject: Developing Technical curriculum to support Industry

Over the past several years we have seen a nationwide decline in qualified Automation and Mechanical Technicians. From our vantage point the more troubling trend is that our higher education institutions have not had the enrollment numbers to keep their technical programs viable. I'm glad to hear about your partnership with Jordan High School and the work you are doing promoting the STEM based careers. We welcome your invitation to provide input on course curriculum to better meet industry's needs

Dan Bell

Maintenance Team Leader

Kimberly-Clark Corporation

2010 N. Rulon White Blvd

Ogden, Utah 84404

E-mail: dan_bell@kcc.com

(801) 786-2334



Communication Systems-West

Operations Test & Product Support
L-3 Communications - Communication Systems-West
640 North 2200 West, Salt Lake City, UT 84116-0850
(801) 594-2400

5 January 2017

To Whom It May Concern:

The purpose of this letter is to express support for the AS EET program – and the proposed Radio Frequency Technology pathway. L-3's primary business is designing, building and testing wireless data links. Therefore, the Operations Test & Product Support group has a strong interest in both hiring new employees and developing existing employees with the skills necessary to test these data links.

These skills benefit both the employee and the company. The employee can progress in their career development since an Associate's Degree in Electronics is required for promotion from a Tester (high school graduate) to Technician (Technical AS degree required). And the company benefits by having a work force with an increased skill set – and can assign more difficult tasks to these employees.

L-3 has funded several current employees in the SLCC EET program. L-3's Tuition Reimbursement Policy will continue to fund employees interested in pursuing their EET Associate's Degrees. The current EET program at SLCC provides foundational training in electronic principles and test equipment use.

L-3 will support the additional Radio Frequency Technology emphasis by offering advice on the RF curriculum and making knowledgeable L-3 employees available as advisors to SLCC as needed.

Sincerely,

A handwritten signature in black ink, appearing to read 'Clayton Wahlquist'.

Clayton Wahlquist
Director, L-3 Communications – CSW
Operations Test & Product Support



Janet Goble, Career and Technical Education, Director
9361 S. 300 East Sandy, UT 84070
T: 801-826-5510 | C: 801-201-8796 | www.canyonsdistrict.org

December 20, 2016

To Whom It May Concern:

The Canyons School District is joining with Salt Lake Community College, IM Flash, and Rocky Mountain Power to create an Industrial Automation Pathway. Our goal is to educate high school students about the many lucrative careers in manufacturing industries and to encourage high school students to pursue a career as a systems technician. Currently the value of these careers is not widely known.

The Industrial Automation pathway will be a three-year program. Our long-term goal is for students to begin the pathway as a junior, with students taking STEM 1010, a concurrent enrollment class through Salt Lake Community College that will focus on innovative engineering and programming projects, and having this class meet their Secondary Math 3 requirement. Initially, students will take Industrial Maintenance to get the course established. Limited internships will be available to these first-year students.

The second year, students will take EET 2150 (Engineering Tech) and an electronics course. These will also be current enrollment classes through Salt Lake Community College that will focus on making more complicated projects and programming, and we plan to structure the curriculum to meet the senior year math requirement. Internships will be made available for these students during the summer as well as during the school year.

Upon graduating from high school, students will enter the third year of the pathway at Salt Lake Community College. They will take one to two years to complete the requirements for their Associates of Science degree. The industry partners will plan on hiring the students in an intensive internship capacity after they have graduated from high school and have begun the third year of the pathway at SLCC.

Canyons District is in full support of the Industrial Automation Technology pathway. Additional districts along the Wasatch front will also be invited to adopt this pathway to help satisfy the growing demand for systems technicians in Utah.

Sincerely,

Janet C. Goble