**Strong Workforce Mechatronics Advisory Meeting Minutes**

**8/8/18—2:00 to 4:30 p.m.**

**Chaffey College InTech Center, 9400 Cherry Ave., Fontana**

Attendees:

Bill O’Neil, Rebecca Elmore, Vanessa Thomas, Mike Hansen, Ron Johnson, Joe Morgan, Natalie Weaver, Alva Smith, Rosalinda Rivas, Angie Nett, Karena Jimenez, Rick Pettit

The meeting began at 2:40.

Attendees introduced themselves and their roles/job titles. Manufacturing companies represented include California Steel Industries, S & H Cabinets, Sorenson, and Pacific Precision. Associate Dean of Strong Workforce for Chaffey College, Vanessa Thomas, began with an overview of Strong Workforce. It is an allocation from the Chancellor’s Office for California Community Colleges which was created to address the shortage of skilled workers in California through the creation/strengthening of CTE (Career Technical Education) programs at colleges. Vanessa noted that although the unemployment rate is relatively low (3.9% nationally as of July 2018,) it is disappointing that the “living wage” in the Inland Empire is designated at $12.81/hour, which in reality is not a wage that can sustain a family and offer economic prosperity. Completion of CTE programs in demand occupations can fulfill industry requirements for their job openings as well as provide much better wages than this “living wage” for graduates.

Rebecca Elmore, Project and Grant Coordinator for Chaffey/InTech, clarified that Mechatronics is one CTE program that the Chancellor’s Office funds through Strong Workforce, and Chaffey College is the lead college. Norco College and San Bernardino Valley College are also a part of the regional project, with Victor Valley College attending some regional meetings as well since they are interested in Mechatronics and want to learn more about it. She also reviewed the program activities for the Mechatronics project, one of which is to work with industry to develop curriculum. Rebecca and Vanessa expressed gratitude to the industry partners present for their participation in a critical role for the success of this regional program.

Bill O’Neil, Industrial Electrical Technology faculty at Chaffey College, explained the origin of the word “mechatronics” as a term coined in Japan that has been around industry for some time. It is the intersection of robotics, mechanical, and electrical technology and is essentially industrial automation. Bill then spoke about the difference between the Tabletop Mechatronics unit and the larger Mechatronics unit with the Festo robotic arm. The Tabletop unit is the current not-for-credit offering taking place at InTech. Bill discussed the prerequisites needed for this program which are the higher levels of Industrial Electrical Technology at InTech (typically equivalent to Level 4 of the Industrial Electrical Pathway.) Knowledge of Programmable Logic Controllers (PLCs) is essential. Rebecca covered the hybrid model and curriculum currently being utilized (Amatrol—the manufacturer of the equipment.) The Amatrol curriculum is online. Trainees do approximately 4 hours online from home and then come to InTech one night a week for 4 hours to do the hands-on in the lab. 1 cohort successfully completed in May with another scheduled to complete in August. Natalie Weaver, Grant Liaison for InTech/Chaffey, assisted with an overview of the online modules and demonstrated the Amatrol online portal. Bill then moved on to discuss the large unit with the robotic arm which is equipment for the credit Mechatronics A.S. degree. IETMECH400, 401, and 402 have been approved at the local level and are currently at the Chancellor’s office in the queue for approval. Bill handed out detailed curricula and major sheets which showed all of the courses for the A.S. degree. Industry asked which classes can be challenged for college credit (credit by exam,) and Bill stated the following: IET401A and B, IET411, and IETELMT430 and 436. They also asked which classes were appropriate for HS students to take (concurrent/dual enrollment,) and Bill stated the following: IET401A, IETELMT430 and 436. Bill’s goal is that the credit Mechatronics classes will start fall 2019 pending final approval. They are also hybrid classes using Amatrol curriculum.

Industry feedback/input:

* Employers are not seeing very many robots yet in their operations yet (with the exception of CSI which uses them in their Hot Strip and Pipe mills.)
* Employers noted the following skills that they were looking for in their candidates:
	+ Employees who can do both maintenance/repair and programming of equipment
	+ Support to work on machines and be a “middle ground” between the operator and engineer
	+ Well-rounded employees who have knowledge of electrical, engineering, operations, mechanical, and computer networking
	+ Soft skills are hugely valued: work ethic, good attendance, positive attitude
	+ “Old-fashioned” skills—being able to work with your hands
		- Employers noted that engineering graduates from Cal Poly Pomona do not have hands-on skills…this is highly desired
* Other training needs: employers highlighted the following topics as areas of need
	+ AutoCAD
	+ Production software (Microbella)
	+ MasterCAM
	+ SolidWORKS
	+ Delcam
	+ Databases
	+ Inventor
	+ TwinCAD (programming software for robots)
	+ PLCs
	+ HMI (machine interfacing)
	+ Computer networking programs
	+ Level 1 Networks
* One employer cautioned against highlighting a trainees’ high wages upon graduation/placement in marketing materials, citing that other for-profit training companies compromised their reputation by not fulfilling this “promise.” CSI cited that they offer very competitive entry-level wages. B-level electricians earn $22/hour, and A-level electricians top out at $34/hour.
* All of the employers present approved of the current Mechatronics curriculum that has been developed at Chaffey College.

The meeting concluded at approximately 4:10 p.m. Industry was then given a tour of the Mechatronics/Pre-engineering lab at InTech, and Bill explained the equipment and hands-on portion of the curriculum in detail.