



MECH/ELTR Advisory Committee Minutes, Fall 2023

Date: November 15, 2023

Number of Attendees: 25

Called to order: 1:30 pm

Adjourned: 2:20 pm

Chairperson: Sharon Gordon Moffett/Phelan Gavaldon

Recorder: Jennifer Woods

Location: CNM Advanced Tech Center and Zoom

Members present from industry: Rick Bishop, 3D Glass Solutions; Calvin Bovee, Intel; Frank Gallegos, Intel; Michael Hill, Applied Materials; Genneysburgh Izquierdo, Intel; Jonathan Kathol, CVI Laser Optics; Dave Morgan, NIMS Accreditation; Jonathan Shodean, SNL; Andy Spurgeon, Pro-Fab; Garry Tomerlin, Tech Labs; Loretta Torrez, SNL; Derek VanOrman, Array Technologies

Members present from CNM: Eric Barros, ELTR Instructor; Marlene Brown, PV Instructor; Jorge Canales, MECH Instructor; Paul Clark, MECH Instructor; Phelan Gavaldon, ELTR Instructor/Program Chair; Sharon Gordon Moffett, Interim Dean; Jackie Lamoureux, Interim Assoc. Dean; Carlos Nevarez, ELTR Instructor; David Ortiz, Lab Manager; Roderigo Padilla, Interim Assoc. Dean; Ashley Prelo, WCS Outreach Mgr.; Kambiz Shahroudi, MECH Instructor; Jennifer Woods, Academic Technical Assistant

Next scheduled meeting: To be decided

I. **Welcome/Introductions:** Phelan started the meeting and everyone introduced themselves.

II. **Minutes:** Minutes from the Spring 2023 meetings for MECH and ELTR approved as written. These two programs will now be combined, meeting twice a year.

III. Reports:

- College Updates:** Sharon reported that we now have a new VP of Education and Learning, who will come on board in January. She will then start the search for a new permanent Dean and two permanent Associate Deans for STA. The college is starting its yearly college integrated program review (CIPR), where we reflect on our work with all of our programs, and seek ways to improve them. The CNM bond passed at last week's local election. The money will be used to improve and update aging facilities and technologies. Sharon would like the members to review the Student Learning Outcomes for both programs (attached to these Minutes). She would also like the members to take a moment to fill out the feedback survey, links below.

Sharon appealed to the members to help us find new instructors. We need a new FT MECH instructor, in addition to PT instructors, and a critical need for HVAC and Machine Tool instructors. We need to fill about 13 faculty positions.

We are planning another *Women in Trades* event which will be at the end of March. College Day is next March 8. The SkillsUSA State competition will be the first week of April.

- Enrollment/Graduation Stats:** Jackie reported on enrollment. For the spring term, enrollment is higher in MECH. In all of STA, we are up by about 100 students. We had to wait for some new machinery for the MECH program, so our fall numbers were a little lower. We have 48 trainers, with four more on the way. They were paid for by Perkins and other sources. We awarded 7 First Term Certificates (17 credit hours) in MECH. We hope we can request additional equipment for the spring term through the Perkins grant or other funding sources.



School of Skilled Trades & Arts

Roderigo reported on the ELTR program. For the fall term, we have 378 enrolled students. Fill rate is 79%, which is great. Fall grads for 2022 – one Associate Degree, 29 for the Electrical Trades Certificate, 8 in the PV Certificate, one in the PLC Certificate. In Spring of 2023 – Ten Associate Degrees, 14 Electrical Trades Certificates, 5 PV Certificates, and 20 PLC Certificates. In the summer we had 8 Associate Degrees, 13 Certificates, for a total of 109 program graduates.

Roderigo gave a shout out to the ELTR instructors, who were a huge help when our TC building flooded two months ago. They made sure the students lost no lab or classroom time after the labs had to be evacuated. The ELTR classes have already moved back into the building, and we will fully occupy the building next week.

- 3. Procurement/Perkins:** Sharon reported that Perkins is a federal grant that supports trades programs (Career Technical Education). The new MECH and ELTR programs have been able to use this funding source for new equipment. The grant can also be used for professional development for faculty and staff.

IV. Old Business: None at this time

V. New Business: Workforce and Community Success: Ashley discussed the function of the WCS. aprelo@cnm.edu. Employers are invited to list job openings through the website Hirecnm.edu. Ashley can help employers set up apprenticeships, internships, create networking events, and assist in all work-based learning opportunities. employersupport@cnm.edu.

Sharon said that we are working with our partners at Ingenuity in order to set up custom training opportunities. This means that all of our faculty should be trained appropriately on our training equipment. We are working to have our faculty SACA Silver certified.

VI. Reports from Industry Members: Dave Morgan with NIMS has new credentialing for MECH. This information can be viewed at the NIMS website www.nims-skills.org. (Click on ISV). The website features videos for seeing the processes. He said that there is a shortage of instructors across the nation.

Michael Hill is looking to create an apprenticeship as Field Service Technician. He is not sure of the location yet.

Genneysburgh I. said that Intel is still interested in hiring from CNM. Two of our graduates are now part of her in-house student program. She would like to have more students who have completed term two. We will have 12-16 students registered in the spring for term two. Hopefully we will have additional cohorts in the spring, once we receive more equipment and hire new faculty.

Jonathan K. said he has two openings for maintenance technicians. He is available to help support the program any way he can.

Lori Torrez from SNL said she will have opportunities for internships this summer.

Jonathan S. with SNL is involved in semi-conductors. He is looking for electricians and mechatronics techs. He has one tech who is enrolled at CNM right now, and has summer internships available for both electricians and techs.

Andy S. is at an independent shop that works with other companies and with automation.

Carlos Nevarez said that his class was able to go to Mandy's farm and install heaters in horse troughs. One of his former students is in the lineman program at Ingenuity, and just received a \$15 K scholarship to pay for the program. He hears from some of his former students and they are doing really well.

Jorge told the group that we need robotics trainers and asked what brand the members would suggest.

Right now, we are using Universal equipment, but was wondering if the members had any other suggestions. Suggestions were for EPSON Robotic Arm and Kinco Arduino. Please contact Jackie at lamoureux@cnm.edu.

VII. Adjournment: 2:20 pm

Member survey:



<https://bit.ly/cnmadvisory>

Electrical Trades Learning Outcomes

Fall 2023

Electrical Trades (AAS), Photovoltaic (PV) Concentration

Upon successful completion of this program the students will be able to:

1. Demonstrate the ability to design and safely install electrical branch and feeder circuits in accordance with the National Electrical Code.
2. Demonstrate the ability to interpret, design, wire, and troubleshoot electromechanical motor control circuits to the applicable electrical codes and safety standards.
3. Identify electrical materials and components used in three-phase power distribution systems.
4. Research information and determine a correct method to complete assignment/project.
5. Utilize in class labs and trainers to simulate real world situations common in the electrical field. Students are required to work together with others from diverse backgrounds in group settings in order to complete class projects.
6. Demonstrate knowledge of design and installation of various types of systems including racking, modules, inverters, balance of system parts, and utility interconnection.
7. Demonstrate knowledge of principal types and configurations of PV systems, their advantages and disadvantages, and their uses.
8. Recognize and practice proper job site safety awareness and using appropriate PPE when working on PV systems.
9. Demonstrate knowledge of commissioning, operations, and maintenance of a grid direct system.
10. Demonstrate knowledge of one and three-line drawings for different PV system configurations.
11. Identify the electrical codes, regulations and practices applicable to PV systems and verify code compliant, safe wiring methods and selection of the appropriate materials for specific sites and installations.
12. Demonstrate knowledge of the functions and requirements for electrical balance of system (BOS) components.

Electrical Trades (AAS), Programmable Logic Controls (PLC) Concentration

Upon successful completion of this program, the students will be able to:

1. Apply the principles of operation of a programmable controller including numbering systems, logic and programming.
2. Install, program and troubleshoot programmable logic controllers in accordance with manufacturers specifications and National Electrical Code requirements.
3. Demonstrate the ability to design and safely install electrical branch and feeder circuits in accordance with the National Electrical Code.
4. Students will identify and install electrical materials and components used in three phase power distribution power systems.
5. Apply the principles of operation of a programmable controller including numbering systems, logic and programming.
6. Design and install timer instructions for PLC's.
7. Design PLC programs that perform given criteria for industrial processes.
8. Install, program and troubleshoot programmable logic controllers in accordance with manufacturers specifications and National Electrical Code requirements.
9. Students will demonstrate the ability to design and safely install electrical branch circuits and feeder circuits in accordance with the National Electrical Code.
10. Students will identify and install electrical materials and components used in three phase power distribution power systems

Electrical Trades, Certificate of Completion

Upon successful completion of this program, the students will be able to:

1. Student will demonstrate the ability to design and safely install electrical branch and feeder circuits in accordance with the National Electrical Code.
2. Students will demonstrate the ability to interpret, design, wire, and troubleshoot electromechanical motor control circuits to the applicable electrical codes and safety standards.
3. Students will identify electrical materials and components used in three-phase power distribution systems.
4. Students are given assignments/projects that are directly related to practical application in real world situations. The students must resource information and determine a correct method to complete assignment/project.
5. Students will utilize in class labs and trainers to simulate real world situations common in the electrical field. Students are required to work together with others from diverse backgrounds in group settings in order to complete class projects.
6. Critical Thinking will be assessed through embedded Life Skills/Teamwork assessment contained within the program assessments.

Programmable Logic Controls (PLC) Systems, Certificate of Completion

Upon successful completion of this program the students will be able to:

1. Apply the principles of operation of a programmable controller including numbering systems, logic and programming.
2. Install, program and troubleshoot programmable logic controllers in accordance with manufacturers specifications and National Electrical Code requirements.
3. Demonstrate the ability to design and safely install electrical branch and feeder circuits in accordance with the National Electrical Code.
4. Students will identify and install electrical materials and components used in three phase power distribution power systems.
5. Apply the principles of operation of a programmable controller including numbering systems, logic and programming.
6. Design and install timer instructions for PLC's.
7. Design PLC programs that perform given criteria for industrial processes.
8. Install, program and troubleshoot programmable logic controllers in accordance with manufacturers specifications and National Electrical Code requirements.
9. Students will demonstrate the ability to design and safely install electrical branch circuits and feeder circuits in accordance with the National Electrical Code.
10. Students will identify and install electrical materials and components used in three phase power distribution power systems.

Residential Wiring, Certificate of Completion

Upon successful completion of this program, the students will be able to:

1. The student will be able to interpret blueprint plot plans and electrical plans in accordance with the National Electrical Code.
2. The student will be able to "Rough-In" and "Trim-Out" standard residential dwelling rooms in accordance with the National Electrical Code.

Solar Electric (PV), Certificate of Achievement

Upon successful completion of this program, the students will be able to:

1. Demonstrate knowledge of design and installation of various types of systems including racking, modules, inverters, balance of system parts, and utility interconnection.
2. Demonstrate knowledge of principal types and configurations of PV systems, their advantages and disadvantages, and their uses.
3. Recognize and practice proper job site safety awareness and using appropriate PPE when working on PV systems.
4. Demonstrate knowledge of commissioning, operations, and maintenance of a grid direct system.
5. Demonstrate knowledge of one and three-line drawings for different PV system configurations.
6. Identify the electrical codes, regulations and practices applicable to PV systems and verify code compliant, safe wiring methods and selection of the appropriate materials for specific sites and installations.
7. Demonstrate knowledge of the functions and requirements for electrical balance of system (BOS) components.

Industrial Automation Technology (Mechatronics) Learning Outcomes

Fall 2023

Industrial Automation Technician, Certificate of Completion

Upon successful completion of this program, the students will be able to:

1. Operate electrical, mechanical, hydraulic and pneumatic equipment in a safe manner.
2. Perform basic maintenance on a variety of Industrial machines and equipment.
3. Perform troubleshooting on a variety of Industrial machines and equipment.
4. Safely operate and program an industrial robot.

Industrial Technician, Certificate of Completion

Upon successful completion of this program, the students will be able to:

1. Operate electrical, mechanical, hydraulic and pneumatic equipment in a safe manner.
2. Perform basic maintenance on a variety of Industrial machines and equipment.

