



Advisory Committee Minutes
June 2, 2023
 Time: 8:30 am
 Building 69 – 21

Attending Members:

X	Lanny Richardson. Faculty. Mt. SAC	X	Fred Kobzoff. Department Chair. Mt. SAC	X	Mario Hernandez. Faculty. Mt. SAC	X	Art Cardina. Faculty. Mt. SAC	X	Rachael Brown. Director, Work Based Learning. Mt. SAC
X	Darrow Soares. Faculty, Emeritus. Mt. SAC		Jason Fey. Director of Training, Arcticom Group. Mira Loma, CA.	X	Jim Alboard Arcticom Group. Mira Loma, CA.	X	Monsoor Ghelani. CEO, California Industrial Refrigeration		Raheem Ghelani California Industrial Refrigeration
X	Grant Golding CEO Alliance Industrial Refrigeration. Walnut, CA	X	Richard Dones VP Operations. Alliance Industrial Refrigeration	X	Keith Horton Service Manager. Alliance Industrial Refrigeration	X	Dave Muro. Technical Training Manager. Climatec	X	Ed Roman. Operations Manager, Service. Siemens
X	Eric Torres Service Manager. TCI Mechanical Services. Chino, CA.	X	Richard Chiera E.V.P. Athena Engineering Inc.	X	Anthony Porras. Air Conditioning Solutions Anaheim, CA	X	Craig Reynolds, Systems Operations Manager. ACCO. Pasadena, CA	X	Jose Covarrubias. Trainer. Accutherm. Garden Grove, CA
X	Jim Hindman CEO. TEM Temporary HVAC Solutions. Anaheim, CA	X	Matthew Randolph Install Department Manager. TEM Temporary HVAC Solutions	X	Laura Leonard Corporate Recruiter, Albireo Energy. Poway, CA	X	David Muro. Technical Training Manager, Climatec. Mineola, Texas		Tim McKinley. Service Manager, Emcore Group Inc. Irvine, CA
	Justin Keough. Area Service Manager. Trane Inc. Brea, CA		Archie McLay. Owner, McLay Services. La Verne, CA		Hector Chacon. Refrigeration Maintenance Manager, Albertsons Companies		Jeff Ferguson Emcore Group Inc. Irvine, CA		Tom Thermal Concepts
	Joel Walsh ACS Altadena, CA		Valarie Rodreguiz. BAS Technician. Schnieder Electric		Tom Wulf Service Technician TCI Mechanical Services. Chino, CA.		Ben Peeples Siemens		Archie McLay McLay Services La Verne, CA

Welcome and Introductions

Kobzoff

The Department Chair, Fred Kobzoff, welcomed the Air Conditioning and Refrigeration Advisory Committee Members to Mt. San Antonio College. Members introduce themselves and indicated the company they worked for, their position, and their background in the industry. Kobzoff explained the purpose and function of the Advisory; to review the curriculum and maintain the relevance of the program level Student Learning Outcomes. Kobzoff expressed his sincere appreciation of the Advisors and their importance to the program.

Curriculum Review

Kobzoff / Richardson

Kobzoff indicated that 4 of the 10 courses in the AIRC certificate were up for review. The courses were identified as:
 AIRC 10 Technical Math for Air Conditioning and Refrigeration
 AIRC 14 Air Conditioning Codes and Standards
 AIRC 32 Air Properties and Measurement
 AIRC 34 Commercial Systems

AIRC 10. Kobzoff presented the Student Learning Outcomes (SLOs) and Measurable Objectives (MO s) for the Technical Math course. Assignment samples were also provided.

Kobzoff asked the Advisors to consider additional or different content based on new technologies or deficiencies that Mt. SAC students may have presented after being hired. D. Muro of Climatec suggested more instruction using instrumentation that include depth micrometers, calipers, and other measuring devices.

Other suggestions included time management and the costs associated with running a business. Specific examples included: how unbilled and misbilled time affects the clients, the business and company morale.

V. Rodreguez of Schnieder Electric emphasized the need for a business component to the program. After additional discussion, L. Richardson indicated that a specific business class would be more appropriate than infusing business content into the technical math course. The Advisors were satisfied with the AIRC 10 content if assignments on instrumentation usage were to be developed.

AIRC 12. Kobzoff presented the SLOs and the MO s for the Air Conditioning Codes and Standards course. Former Mt. SAC students now serving on the Advisory were critical of this course. T. McKinley of Trane described the AIRC 12 course as painful and of little value to his career. Other advisors agreed that the course emphasis on residential codes was of little value in the commercial sector. M. Ghelani, CEO, California Industrial Refrigeration, however, argued that an understanding of codes remains critical to the safety and well-being of the community. After Ghelani's plea and significant discussion, it was determined that a stand-alone course in residential codes may not serve the business community as well as effectively infusing the code subjects into the existing program courses. Examples include but not limited to:

- California Mechanical Code (CMC) Chapter 7, Combustion Air, would shift to AIRC 26 Heating Fundamentals.
- CMC Chapter 8, Venting Systems, would shift to AIRC 26, Heating Fundamentals.
- CMC Chapter 6, Duct Systems, would be taught in Air Properties *and* Heat Load Calculations.
- California Electrical Code (CEC) Article 310, Conductors for General Wiring would be infused into AIRC 31 Advanced Electrical.

The AIRC Program would still teach how to navigate and apply CMC and the CEC, but codes would be taught *across* the curriculum rather than in isolation.

G. *Golding* of Alliance Industrial Refrigeration asked what content would fill the "gap" if the AIRC 12 course was deactivated. L. Richardson indicated that instructional hours would *not* be reduced, but transferred to other courses where the specific codes are most relevant. He noted that the Heating Fundamentals course would increase in hours and unit value. Other courses would take on additional content and hours to cover the code subject matter.

AIRC 32. Kobzoff presented the SLOs and MO s for the Air Properties and Measurement course. The Advisors identified the content of this course to be relevant to current industry standards.

AIRC 34. Kobzoff presented the SLOs and MO s for the Commercial Systems course. The content of the course was presented as well as assignments. Kobzoff asked if additional content should be considered for the Commercial Systems course. **G. *Golding* of Alliance Industrial Refrigeration and H. Chacon of Albertsons requested instructional content in applying and handling CO₂ and other natural refrigerants.** Discussion ensued on how climate change, EPA regulations, and the phase down of chemical refrigerants were "ruling" the commercial refrigeration industry. CO₂ has a neutral Global Warming Potential and is not affected by the imposition of phase downs or government regulations. Its refrigeration cycle is significantly more complicated and its safety standards more rigorous. **The content for CO₂ transcritical**

systems could not be infused into existing course work or developed into a single stand-alone course. According to Chacon of Albertsons, CO2 refrigerant is considered the refrigerant of choice for markets and cold storage because of the large structure of the equipment and its tendency to leak refrigerant through complicated valves and mechanical fittings. According to the advisors, CO2 systems are becoming a distinct occupational pathway that may require their own attention (program). These comments were echoed by D. Muro of Climatec, R. Dones of Alliance Industrial, and R. Ghelani of California Industrial Refrigeration.

L. Richardson indicated that the Building Automation Program (BAS) was developed as the result of similar shifts in technology and economic needs. Richardson reported that the BAS program is a stacked certificate and degree above the original Air Conditioning and Refrigeration program. Content for CO2 transcritical systems would have to be developed the same way. Richardson detailed the space limitations for CO2 equipment at Mt. SAC.

J. Fey of the Arcticom Group and other Advisors indicated their companies had solutions to Mt. SAC's space limitations.

The outcomes of the curriculum review are as follows:

- Infuse the content of the AIRC 12 Air Conditioning Codes and Standards course across the AIRC curriculum. This will cause the AIRC 12 course to become deactivated while increasing the hours and unit value of the courses taking on the content.
- Explore and develop a stacked certificate for commercial refrigeration systems using CO2 refrigerant. This will require significant industry support because of the size and scope of the equipment used in commercial refrigeration and cold storage.

Work Based Learning.

Rachael Brown reported on the purpose and function of Work Based Learning at Mt. SAC.

- Word Experience covers the Workers Comp if the students are not compensated.
- Employers are not obligated to permanently hire work experience students if they are not satisfied with their work.
- R. Brown described the structure of work experience, answered all questions, and promoted the program.

M. Hernandez asked the advisors to consider the students' academic obligations. He reminded them to allow students involved in work-based learning or employment -while still in the program- to attend classes and finish the program. Hernandez indicated that students often job out of the program once they enter the workplace. Students are of more value as employees and go further in the trade if they are allowed to complete the program.

Student Speed Interviews

L. Richardson and F. Kobzoff organized the advisors for the next phase of the meeting: Student Speed Interviews. During this phase, students demonstrate lab projects and explain the procedures, and demonstrate what they learned. The advisors use this opportunity to interview program completers and those close to graduation to consider them for employment. The Speed Interviews began at 10:00 am with lunch at 12:15 pm. The students were prepared by Rachael Brown to present their resumes and discuss their career goals.

Respectfully submitted,

Mario Hernandez
Air Conditioning and Refrigeration.