

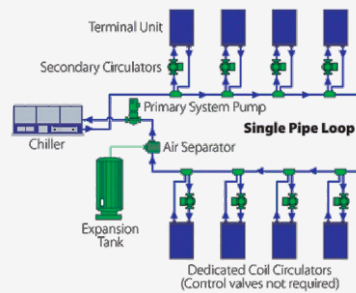
# Taco Comfort Solutions®

## UNIVERSITY

### 2019 Mechanical Systems: **ON-SITE TRAINING**



#### HSS Software



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## MECHANICAL SYSTEMS TRAINING

Taco University Mechanical Systems Trainings were created to provide commercial HVAC professionals with information and insights about the latest hydronic heating and cooling technologies and design tools.

These fast-paced programs are packed with practical information that the working professional can utilize immediately in their projects and presented in an informal, small-group setting that encourages ample interaction among participants and presenters.



## MEET OUR TRAINER

Rich Medairos, P.E.



Mr. Medairos is a Senior Systems Engineer and Director of Commercial Training at Taco Comfort Solutions. He has over forty years of experience with demonstrated expertise in engineering, project management and planning. Throughout his career, he has worked on projects with major clients such as NASA's Kennedy Space Center, Disney World, Universal Studios Florida, Boston University, Rhode Island School of Design, First Data Corporation, and Taco's Innovation & Development Center.



# 2019 Mechanical Systems: On-Site Training Agenda

TIME	SUBJECT	TRAINER
7:50 - 8:00	WELCOME	RICH MEDAIROS
8:00 - 9:15	DOE COMMERCIAL PUMP REQUIREMENTS	RICH MEDAIROS
9:15 - 9:30	BREAK	
9:30 - 10:45	FUNDAMENTALS AND MODES OF ECM PUMPS	RICH MEDAIROS
10:45 - 11:00	BREAK	
11:00 - 12:00	SELF-SENSING PUMP THEORY AND APPLICATIONS	RICH MEDAIROS
12:00 - 12:30	LUNCH	
12:30 - 1:45	HYDRONIC PIPING DESIGN / HSS SOFTWARE	RICH MEDAIROS
1:45 - 2:00	BREAK	
2:00 - 3:00	PROPER EXPANSION TANK SIZING	RICH MEDAIROS
3:00 - 3:15	BREAK	
3:15 - 4:15	CENTRIFUGAL PUMP SELECTIONS	RICH MEDAIROS

End of Class



# Taco University Mechanical Systems: On-Site Training Topics



## 1. DEPARTMENT OF ENERGY (DOE) COMMERCIAL PUMP REQUIREMENTS

- A. DOE commercial pump standards
- B. What is PEI
- C. How does the new DOE requirements effect pump selection



## 2. FUNDAMENTALS AND MODES OF ECM PUMPS

- A. The importance of NSPH
- B. How to calculate pipe system resistance at design flow
- C. How to calculate pipe system resistance at minimum flow
- D. Modes of Operation
- E. Applications



## 3. SELF-SENSING PUMP THEORY AND APPLICATIONS

- A. Self-Sensing pump mapping
- B. Self-Sensing pump control curve
- C. Self-Sensing pump control head



## 4. HYDRONIC PIPING DESIGN AND HSS SOFTWARE

- A. How to calculate GPM
- B. Proper HVAC hydronic pipe sizing
- C. How to use a computer program for hydronic system design



## 5. PROPER EXPANSION TANK SIZING

- A. What is an expansion tank
- B. What are the different types
- C. How to properly size an expansion tank



## 6. CENTRIFUGAL PUMP SELECTIONS

- A. How to select a centrifugal pump
- B. What is meant by NOL
- C. Flat curve versus steep curve



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