



ONLINE COURSES

INDUSTRY: REFINERIES

ARMSTRONG UNIVERSITY

Knowledge Not Shared is Energy Wasted.®

Welcome to Armstrong University Online for the Hydrocarbon processing and Chemical refining Industries. We offer a variety of online courses to address the many issues you face each day.

Keeping pace with the demands of a changing climate while remaining productive and profitable is a growing challenge for the hydrocarbon and chemical refining industries. Today's rigorous standards for environmental safety and quality are increasingly difficult to achieve in the face of daily pressures such as tight margins and balancing supply and demand. Addressing these issues effectively, while maximizing worker safety and production uptime, requires vast knowledge and experience that only an industry expert like Armstrong can provide. We're global leaders in energy management, and our intelligent solutions in thermal utilities consistently save time, money and energy for some of the largest, most efficient companies in the industry. In fact, Armstrong products are working hard in a majority of plants, worldwide.

As your thermal utility partner, Armstrong becomes your greatest asset. From piping design to complete system optimization, we do it all. Our experts will apply our global resources and expertise to help you design, build and maintain hydrocarbon and chemical processing plants that meet stringent environmental requirements. The products and services we offer are engineered for improved safety and increased production uptime, and we can provide you with extensive knowledge and training to help you operate and maintain your thermal utilities more efficiently and safely. Armstrong's worldwide network of industry-leading knowledge, expertise and technical resources is here to make things easier for you, solving problems and preventing them with reliable, long-term, sustainable solutions that deliver superior return on your investment.

Armstrong takes a uniquely holistic approach that considers your entire system to uncover inefficiencies and reveal the root cause of an issue before implementing the best solution. We can detect and close steam leaks, prevent water hammer and freeze ups, and reduce greenhouse gas emissions. Armstrong provides proven solutions, turnkey installations, custom engineering, hardworking products and innovative services. Our groundbreaking technological tools include wireless monitoring, continuous auditing, automatic testing, and software that enables your plant to monitor, benchmark and trend the steam utility segment of your business. At Armstrong, everything we offer is designed to demonstrate unparalleled value and improved utility performance.

More than a century of sage knowledge and in-depth expertise enables us to serve you in ways no one else can. You can access our wealth of insight and information conveniently through Armstrong University. To learn more about what Armstrong International can do for you, or to speak with an Armstrong expert from your region of the world, please contact us. When you turn to Armstrong, you can consider it done.

Visit armstronginternational.com/courses-hpi today.

Armstrong provides intelligent system solutions that improve utility performance, lower energy consumption, and reduce environmental emissions while providing an "enjoyable experience."

Recommended courses for the HPI and CPI Industries - armstronginternational.com/courses-hpi
For a complete listing of courses, click here: [Course Handbook](#)

COMMON ISSUE: SAFETY AND SKILL DEVELOPMENT OF UTILITY PERSONNEL

Subject	College	Course
Water Hammer Mitigation	College of Steam Principles	WATER HAMMER
Safety	College of EH&S	SAFETY TRAINING 101 PACKAGE QUALIFIES FOR CEU

COMMON ISSUE: ELIMINATING THREATS TO PROCESS INTERRUPTIONS

Subject	College	Course
Enhancing hi-pressure/superheat systems	College of Steam Principles	SUPERHEATED STEAM
Optimizing tracing system performance to eliminate cold circuits	College of Steam Users	STEAM TRACING
Optimizing heat exchange performance	College of Steam Users	TYPICAL OPTIMIZATION ON A STEAM USER
	College of Steam Users	HEAT EXCHANGERS
Optimized tank farm performance	College of Steam Users	TYPICAL OPTIMIZATION ON A STEAM USER
	College of Steam Users	TANK HEATERS
Enhancing turbine performance/life	College of Steam Generation	TYPICAL OPTIMIZATION IN A BOILER HOUSE
	College of Steam Principles	STEAM QUALITY

COMMON ISSUE: ENERGY COST REDUCTION OBJECTIVES

Subject	College	Course
Optimizing condensate return	College of Condensate Return	TYPICAL CONDENSATE RETURN SYSTEM OPTIMIZATION
	College of Condensate Return	O&M BEST PRACTICES FOR CONDENSATE RETURN SYSTEMS
Steam asset management	College of Steam Users	O&M BEST PRACTICES FOR STEAM USERS
Notification of flare issues	College of Steam Users	SMART SOLUTIONS FREE COURSE
Enhancing steam trap performance	College of Steam Users	TYPICAL OPTIMIZATIONS ON A STEAM USER
Recognition of system inefficiencies/auditing	College of Steam Users	O&M BEST PRACTICES FOR STEAM USERS
Controlling steam costs	College of Steam Generation	STEAM COSTS

COMMON ISSUE: ACCURATE MONITORING AND METERING

Subject	College	Course
Effective flow measurement	College of Flow Measurement	FUNDAMENTALS OF FLOW MEASUREMENT FREE COURSE
	College of Flow Measurement	FUNDAMENTALS OF FLOW MEASUREMENT - ADVANCED

OTHER COURSES YOU MAY FIND HELPFUL

Subject	College	Course
	College of Steam Principles	TYPICAL STEAM AND CONDENSATE SYSTEM COMPONENTS FREE COURSE
	College of Steam Principles	STEAM BASICS FREE COURSE
	College of Steam Users	STEAM TRAPS FREE COURSE
	College of Condensate Return	STALLING THEORY
	College of Heat Recovery	COMBINED HEAT AND POWER (COGEN/TRIGEN)