



ONLINE COURSES

INDUSTRY: PHARMACEUTICAL

ARMSTRONG UNIVERSITY

Knowledge Not Shared is Energy Wasted.®

Welcome to Armstrong University Online for the Pharmaceuticals Industry. We offer a variety of online courses to address the many issues you face each day.

For the pharmaceutical industry, remaining competitive is a growing challenge. Tight margins, rising costs, patent expirations, safety issues, government regulations and sanitation requirements, as well as increasing demands to conserve energy and water while reducing your carbon footprint are just some of the issues that confront you daily. Energy management that addresses these vital concerns can be an obstacle, or an opportunity, depending on where you turn for solutions. As your thermal utility partner, Armstrong makes things easier. We're global leaders in energy management and our intelligent solutions in steam, air and hot water consistently save time, money and energy for some of the world's largest pharmaceutical companies.

From system design for your new facility to custom-engineering solutions for each of your existing plants worldwide, Armstrong does it all. Our experts will manage your system for you, or provide knowledge and training to help you manage it yourself more efficiently. We offer on-site solutions, turnkey installations, hardworking products, innovative services, quality manufacturing, and groundbreaking technology for monitoring, measuring and notification—all demonstrating unparalleled value and improved utility performance. Armstrong can even provide automatic steam quality testing to meet EN285 pure steam validation requirements—we are the only company in the world to offer this solution.

At Armstrong, we apply a uniquely holistic approach to uncover inefficiencies and reveal the root cause of any issues before implementing the best solution. By optimizing your processes, we can increase your productivity and efficiency through proper thermal balancing of your system. Armstrong not only solves your problems, we prevent them with reliable, long-term, sustainable solutions designed to provide superior return on your investment.

More than a century of sage knowledge and in-depth industry expertise enables us to serve you in ways no one else can. You can access this 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-pharma 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 Pharmaceutical Industry - armstronginternational.com/courses-pharma
For a complete listing of courses, click here: [Course Handbook](#)

COMMON ISSUE: INCREASE PRODUCTION AND YIELD

Subject	College	Course
Heat transfer management	College of Steam Users	BASIC HEAT TRANSFER
Hot water generation	College of Hot Water	INDUSTRIAL HOT WATER SYSTEMS FREE COURSE
Digital hot water control	College of Hot Water	INDUSTRIAL WATER TEMPERATURE CONTROLS & WASHDOWN
Steam quality monitoring	College of Steam Principles	STEAM QUALITY
	College of Steam Users	TYPICAL OPTIMIZATIONS ON A STEAM USER

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: INCREASE SUSTAINABILITY

Subject	College	Course
Effective pressure/temp control	College of Steam Distribution	PRESSURE AND TEMPERATURE CONTROL ESSENTIALS
Enhancing steam system performance	College of Steam Distribution	TYPICAL OPTIMIZATION FOR A STEAM DISTRIBUTION SYSTEM
Recognition of system inefficiencies/auditing	College of Steam Users	O&M BEST PRACTICES FOR STEAM USERS
Condensate management	College of Condensate Return	O&M BEST PRACTICES FOR CONDENSATE RETURN SYSTEMS
	College of Condensate Return	CONDENSATE QUALITY & CONTAMINATION

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 Users	HEAT EXCHANGERS
	College of Steam Users	STEAM TRAPS FREE COURSE
	College of Steam Users	TYPICAL STEAM USERS FREE COURSE
	College of Steam Principles	TYPICAL STEAM AND CONDENSATE SYSTEM COMPONENTS FREE COURSE
	College of Steam Principles	STEAM BASICS FREE COURSE
	College of Steam Generation	TYPICAL LAYOUT OF A BOILER HOUSE
	College of Hot Water	HEAT EXCHANGERS FOR DOMESTIC AND PROCESS HOT WATER
	College of Steam Users	DIRECT AND IN-DIRECT STEAM HEATING