



# COURSE GUIDE



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## Course Description

## Professional Development Hours

### **AIA-001 Allotting the Proper Space for Ventilation Equipment and Minimizing System Effect to Reduce Fan Energy Consumption.** 1LU/HSW

Each ventilation fan size and type is designed to operate efficiently over a narrow range of airflow and duct resistance. Additionally, fan performance is tested and rated with near ideal inlet and outlet conditions, which rarely occur in real world applications. Efficient fan selection is often compromised by applying undersized fans and restricting airflow into and out of the fans. Learn how to quantify the effects of improper duct connections and witness the impact in power consumption through a full scale live demonstration. Evaluate the trade-offs between space savings and fan energy consumption to optimize the investment of the building owner considering both first cost and annual energy costs.

### **AIA-003 Understanding Industry Standard Water Penetration and Wind Driven Rain Testing for Louvers and the Building Code Requirements for Louvers in the Hurricane-Prone Region.** 1 LU/HSW

There are seemingly countless louver types available that provide mechanical function, architectural aesthetics or a combination of both. Selecting the right louver product depends largely on the intended application and physical location. Protection from weather elements should always be considered. Water rejection effectiveness is measured based on several industry standard, laboratory controlled test procedures. This course will provide you with a better understanding of the industry endorsed weather test procedures to aid in appropriate selection for both conventional and Hurricane-Prone Region louver applications.

### **AIA-005 Energy Recovery Ventilation Benefits and Building Code Requirements** 1 LU/HSW

The predominant method of ensuring Indoor Air Quality (IAQ) is to exhaust stale indoor air and replace it with fresh outdoor air. Unfortunately, the air to be removed has been mechanically heated or cooled, so exhausting air without capturing the energy in it is literally throwing money out the window. This course will explore common technologies used to capture energy and keep it in the building while still removing poor quality air and replacing it with fresh outdoor air. By the end of the course, attendees will have an understanding of energy recovery technologies, benefits of using energy recovery and the codes/legislation requiring energy recovery.

### **AIA-006 Requirements and Constraints of Life Safety Dampers and Their Impact on Building Design** 1 LU/HSW

Life-safety dampers carry several installation, operation and maintenance requirements that are dictated expressly by the International Building Code (IBC) or by the standards cited therein. Mindful communication of key criteria across the various disciplines employed in the design and construction of a commercial building can aid significantly in the efficiency and schedule attainment of the construction process while adding sustained value for the building's owner. Learn how the specification of a UL rated fire resistive barrier can impact the ability to penetrate said barrier with duct openings and in a code compliant manner. Ensure that your construction documents contain the information needed to provide the consulting engineer and installing contractor the opportunity to determine the correct products and accurately estimate installation labor. Develop an awareness of the space envelope that must be maintained around any life-safety damper to allow for proper installation and to minimize the building owner's responsibilities.

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## Professional Development Hours

### **AIA-008 Energy Code Compliance for Building Ventilation Systems and Sustainable Ventilation Technologies**

**1 LU/HSW**

This course will focus on Commercial Building Energy Codes in the United States used in Heating Ventilating & Air Conditioning (HVAC) systems that utilize air distribution components. Attendees will learn where to find the proper version of codes being used at the national and state and levels. This course will provide attendees with information that the U.S. Department of Energy is currently in the process of regulating fan energy and how code revisions are affecting ventilation system designs. Additionally, attendees will learn about new technologies to address greater demanding energy codes.

### **AIA-009 Understanding Ventilation Acoustics**

**1 LU/HSW**

Acoustical considerations are critical design criteria for occupancy comfort in facilities. This course will focus on understanding acoustic terminology pertaining to the application of HVAC equipment inside and outside of the building envelope. You will learn the different sound ratings utilized by manufacturers and engineers, the difference between sound pressure and sound power, inlet, outlet and radiated sound from equipment. Acoustical considerations for equipment mounted inside and outside of building space will be presented along with a live demonstration on measurement and calculation of noise criteria levels (NC Levels) in an occupied space.

### **AIA-010 Architectural Tour: Greenheck's Education Center and Greenheck's Fan Development Laboratory, the Innovation Center**

**1 LU/HSW**

Experience a live tour of Greenheck's Education Center in Schofield, Wisconsin that is guided by the architect responsible for the design and renovation of the space. The 25,000 square foot facility was opened in 1995 for education and training. In 2016, the building was expanded to 37,500 square feet and remodeled to include five acoustically separated product galleries that allow for operational equipment demonstrations while minimizing sound transfer to other locations in the building. New meeting, office and collaboration space was also added during renovation.

Greenheck's Innovation Center in Schofield, Wisconsin is a 69,500 square foot facility that was completed in October 2015 and is houses personnel and laboratory test equipment to develop innovative energy efficient and low noise heating, ventilating and air conditioning (HVAC) equipment for generations to come. You will witness an office space with technology-embedded conference rooms, huddle spaces and cafes. The air and sound laboratory tour will demonstrate how HVAC equipment is tested to industry standards and how it must be incorporated into building mechanical systems to obtain the optimum performance, i.e., lowest energy consumption and lowest sound levels.