

**SPECIAL  
OFFER FOR  
PRODUCTION  
EMPLOYEES!**  
(SEE P. 7)

# AFS Institute

*Your Education Solution for Metalcasters, Suppliers & Casting Buyers*

## Improved Courses For The Improved Metalcaster

- Aluminum Crucible Furnace Practices
- Aluminum Metallurgy 201
- Introduction to Metalcasting
- Casting Defect Analysis
- Casting Supplier Auditing
- Coldbox Process 101
- Copper Melting 201
- Green Sand Molding
- Iron Melting 201



**ADVOCATE. EDUCATE. INNOVATE.**

[www.afsinc.org](http://www.afsinc.org) • 800/537-4237

Our courses have been designed to follow the best practices in adult learning, providing opportunities for entry level knowledge and skills and building up to advanced technology and applications. Incorporated with your company's training program, this program of courses will provide a foundation of education for improved job performance and better company engagement.

## 2015-2016 Education Calendar

### November

Nov 17	Aluminum Crucible Furnace Practices	Schaumburg, IL
Nov 18-19	Aluminum Metallurgy 201	Schaumburg, IL

### December

Dec 1-2	Introduction to Metalcasting	Schaumburg, IL
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### February

Feb 2-3	Casting Supplier Auditing	South Pittsburg, TN
Feb 2	Coldbox Process 101	Schaumburg, IL
Feb 3-4	Casting Defect Analysis	Schaumburg, IL
Feb 3-5	AFS Labor Relations & Human Resources Conference	Ft. Lauderdale, FL
Feb 10	Identifying the Correct Casting Defect	Milwaukee, WI
	Introduction to Alloys	Milwaukee, WI
	Introduction to Coreless Induction Furnace Operation	Milwaukee, WI
Feb 24-25	Iron Melting 201	Schaumburg, IL

### March

Mar 2-3	Introduction to Metalcasting	Schaumburg, IL
Mar 9-10	Casting Design	Schaumburg, IL
Mar 17-18	Copper Melting 201	Cedar Falls, IA
Mar 30-31	Green Sand Molding 201	Schaumburg, IL

## Aluminum Crucible Furnace Practices #16-16

November 17 / Schaumburg, IL / Member: \$725 / Non-member: \$925



This course covers basic furnace and crucible operations, including optimization, operations and maintenance practices for both electric and fuel-fired aluminum crucible furnaces. Participants of this course will leave with the knowledge and skills needed to:

- Select an appropriate aluminum crucible for their needs.
- Operate and maintain aluminum crucible furnaces.
- Store and handle crucibles to maintain the life of the crucible.
- Avoid premature deterioration of the refractory.
- Monitor and manage heating systems and burners.
- Optimize crucible furnace operations so usage at any stage is efficient.

**NEW  
COURSE**

### Who Should Attend

The target audience for this course consists of individuals responsible for or involved with aluminum crucible melting operations and/or aluminum crucible maintenance and handling in the foundry.

### Instructor

David Neff,  
*Retired, Pyrotek*

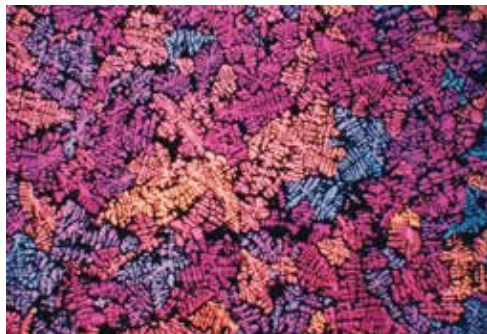
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**Course Information:** The course will begin at 8:00 a.m. and end by 4:00 p.m. Detailed travel information, including available hotel room blocks, will be provided in a confirmation letter e-mailed within one business day of registration.

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## Aluminum Metallurgy 201 #17-16

November 18-19 / Schaumburg, IL / Member: \$925 / Non-member: \$1125



The purpose of this course is to provide target audience participants with knowledge and skills regarding the nomenclature, terminology, principles, and techniques for the metallurgy of aluminum base casting alloys. This course makes clear the reasons why foundry personnel "do what they do" in relation to aluminum casting metallurgy. Attendees will:

- Examine aluminum structure and properties, the effects of alloying elements and the influence of melting operations on impurities.
- Learn how to interpret (read) phase diagrams and recognize characteristics from microstructures.

### Instructors

Salim Khan,  
*Consultant*

David Neff,  
*Retired, Pyrotek*

### Who Should Attend

The target audience for this course consists of individuals responsible for overseeing the efficiency and safety of processes and developing new processes to improve efficiency and/or decrease costs; researching, developing, processing and testing metals to improve capabilities and solve problems; developing best practice procedures that maintain and improve product quality.

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**Course Information:** The course will begin at 8:30 a.m. on the first day and end by 3:30 p.m. on the second day. Detailed travel information, including available hotel room blocks, will be provided in a confirmation letter e-mailed within one business day of registration.

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## Introduction to Metalcasting #18-16, #23-16

December 1-2 / Schaumburg, IL / Member: \$925 / Non-member: \$1125

March 2-3 / Schaumburg, IL / Member: \$925 / Non-member: \$1125

This course introduces the process of metalcasting. It provides a broad picture of what happens in a casting production facility, while illustrating the technology, variables and complexity involved in producing a casting. It covers:

- casting design
- alloy selection
- process selection
- design of the gating system
- pouring and shakeout methods
- cleaning and finishing methods
- quality assurance
- key safety and environmental regulations

**CHOOSE FROM  
TWO DATES,  
TWO LOCATIONS**



### Instructors

Kevin Fleischmann,  
*AFS Institute*

Leo Baran,  
*AFS and the Institute*

Scott Lammers,  
*AFS and the Institute*

Al Spada,  
*AFS and the Institute*

Steve Robison,  
*AFS and the Institute*

### Who Should Attend

The target audience for this course consists of individuals responsible for: foundry production, management, office and administration; buying from casting suppliers; designing/engineering cast components; production and/or sales of supplies and services to the industry.

**Course Information:** The course will begin at 8:30 a.m. on the first day and end by 3:30 p.m. on the second day. Detailed travel information, including available hotel room blocks, will be provided in a confirmation letter e-mailed within one business day of registration.

## Casting Supplier Auditing #19-16

February 2-3 / South Pittsburg, TN / Member: \$1025 / Non-member: \$1225



This course will review the methods supply chain personnel must utilize to effectively perform audits of metalcasting facilities. Topics covered will include: an overview of the audit process; determining audit requirements; developing and preparing to perform an audit; and closing the audit loop. Held at a casting supplier, participants will spend the better part of the second class day auditing several different areas of the foundry as part of this interactive and hands-on course. In addition, the course registration fee includes a networking dinner February 2<sup>nd</sup>. This course is only open to employees from companies who design and/or purchase metal castings, and class size is limited to 20 participants.

### Who Should Attend

The target audience for this course consists of individuals responsible for: purchasing from foundries; maintaining quality control; supplier development.

### Instructor

Nick Fox,  
*Galesburg Castings*



**Course Information:** The course will begin at 8:00 a.m. on the first day and end by 3:30 p.m. on the second day. Detailed travel information, including available hotel room blocks, will be provided in a confirmation letter e-mailed within one business day of registration.



# Classroom Courses

## Coldbox Process 101 #20-16

February 2 / Schaumburg, IL / Member \$725 / Non-member \$925

Coldbox Process 101 is an introduction to the coldbox coremaking process used within a foundry. This course is a prerequisite for advanced coremaking courses. Discussion will include:

- terminology
- common sands and binder systems used to make cold box cores
- the core making process
- using and maintaining equipment
- considerations for identifying core defects

### Instructor

Doug DeSmit,  
*ASK Chemicals*



### Who Should Attend

The target audience for this course consists of: coldbox core makers; foundry foremen or lead persons; sand lab technicians; maintenance personnel; general labor/helpers; new process engineers; quality technicians.



**Course Information:** The course will begin at 8:00 a.m. and end by 4:00 p.m. Detailed travel information, including available hotel room blocks, will be provided in a confirmation letter e-mailed within one business day of registration.

## Casting Defect Analysis #21-16

February 3-4 / Schaumburg, IL / Member: \$925 / Non-member: \$1125

In order to determine the true root cause of a casting defect and select the proper corrective action, a systematic evaluation method must be applied. Implementing the wrong solution can cost the foundry in terms of runtime, cost, waste, safety, reduced return on investment or profit, sales and expertise. The intention of this course is for participants to become proficient in applying a ten-step procedure that will enable them to analyze and reduce metalcasting defects by correctly identifying defects and their root causes, and determining appropriate corrective actions. This course is applicable to sand molding processes (green, nobake, coldbox, shell).

### Who Should Attend

The target audience for this course consists of individuals responsible for: managing and overseeing the production management staff; managing and supervising production staff; purchasing, sales, marketing or office operations; auditing/inspecting/quality control; engineering or design.

### Instructors

Kevin Fleischmann,  
*AFS Institute*

Scott Lammers,  
*AFS and the Institute*

**\$135 Value**

**Two complimentary books  
with course registration**



**Casting defects handbook  
of your choice**

**Choose From Iron & Steel,  
Copper-Base Alloys or  
Aluminum Alloys**

**Course Information:** The course will begin at 8:30 a.m. on the first day and end by 3:30 p.m. on the second day. Detailed travel information, including available hotel room blocks, will be provided in a confirmation letter e-mailed within one business day of registration.

## Iron Melting 201 #22-16

February 24-25 / Schaumburg, IL / Member \$925 / Non-member \$1125



This course provides a detailed coverage of iron melting and related processes. Topics include:

- charge materials selection
- the understanding of cost, value, and risk
- information covering electric and cupola melting procedures
- the relationship between molten metal and refractory lining
- sampling and checks to determine iron quality
- common effects of key major element adjustments
- iron refining technology/treatment practices
- safety procedures

### Who Should Attend

The target audience for this course consists of individuals responsible for: process control; product quality; melting; shop floor operations; casting sales; foundry suppliers.

### Instructors

Gene Ritchie,  
*Melt Consultant*

Dave Williams,  
*ASi International*



**Course Information:** The course will begin at 8:30 a.m. on the first day and end by 3:30 p.m. on the second day. Detailed travel information, including available hotel room blocks, will be provided in a confirmation letter e-mailed within one business day of registration.

## Casting Design #24-16

March 9-10 / Schaumburg, IL / Member: \$925 / Non-member: \$1125

This course addresses principles of effective metalcasting design by delving into the major factors that affect final part design. Participants will explore alloy selection, metalcasting process capabilities and limitations and their effects on casting design, and the impact of secondary operations. Discussion and case studies will be used throughout this two-day course to illustrate effective and practical casting design principles. Participants should have knowledge and experience in designing engineered components prior to attending this course. Other major topics will include:

- design for manufacturability
- dimensional control
- fab to casting design conversions
- importance of casting simulation



### Instructors

Vadim Pikhovich,  
*Magma Foundry Technologies*



Jack Travis,  
*JET Technologies*

### Who Should Attend

The target audience for this course consists of individuals responsible for buying from casting suppliers, designing/engineering cast components, and quality assurance.

**Course Information:** The course will begin at 8:30 a.m. on the first day and end by 3:30 p.m. on the second day. Detailed travel information, including available hotel room blocks, will be provided in a confirmation letter e-mailed within one business day of registration.

# Classroom Courses

## Copper Melting 201 #25-16

March 17-18 / Cedar Falls, IA / Member \$1075 / Non-member \$1275



This laboratory course introduces the principles and best practices for copper melting and pouring for use in producing premium quality castings. This course will examine the various processes involved in melt protection, oxidation and de-oxidation and degassing.

Topics include:

- furnace types and uses
- melting practices
- charge materials
- tests for melt quality

### Who Should Attend

The target audience for this course consists of individuals responsible for: melting; metallurgy; quality and/or process control; management/supervision

### Instructors

Leigh Omer,  
*H Kramer & Co*

**H. KRAMER & CO.**



Mahi Sahoo,  
*Suraja Consulting*

**Course Information:** This course will be held on the campus of University of Northern Iowa in Cedar Falls, IA. The course will begin at 8:30 a.m. on the first day and end by noon on the second day.

## Green Sand Molding 201 #26-16

March 30-31 / Schaumburg, IL / Member \$925 / Non-member \$1125

The second course in the green sand molding series, Green Sand Molding 201, provides participants with the next level of knowledge related to the sand molding processes used within green sand foundries. The first day will focus on an introduction to applications requiring specialty sands; types of sand additives and their effects on green sand; equipment; sand handling and storage; sand reclamation and re-use; and green sand process variables and methods to make adjustments to ensure a quality mold is made. The second day will address green sand quality control tests for ferrous and non-ferrous alloys, reviewing the types, purpose, frequency, and typical result ranges for each, and finish with an introduction to statistical process control for sand systems.

### Instructors

Ed Marczyszak,  
*Burndy Foundry*

Jerry Thiel,  
*University of  
Northern Iowa*



### Who Should Attend

The target audience for this course consists of individuals in the following positions: green sand molder/mold operator; foundry foreman/supervisors or lead persons; sand lab technicians; sand lab supervisors; maintenance personnel; foundry engineers; foundry sales personnel.



**Course Information:** The course will begin at 8:30 a.m. on the first day and end by noon on the second day. Detailed travel information, including available hotel room blocks, will be provided in a confirmation letter e-mailed within one business day of registration.

## Mini-Courses During Wisconsin Regional

Three new small-format courses will be available to the attendees of the Wisconsin Regional, February 10, 2016. These courses are repeated both morning and afternoon providing the opportunity to take two different classes in the same day!

Price \$350 for one session / \$650 for two sessions (\$50 discount)

Morning session: 8:00 a.m.-11:30 a.m. / Afternoon session: 12:15 p.m.-3:45 p.m.

CHOICE  
#1



### Identifying the Correct Casting Defect

Provides participants with a basic overview of the casting defect analysis procedure. Topics include an introduction to the ten step method for casting defect identification; writing a good problem statement; discussion on the importance of recording process parameters; an introduction to navigating the International Atlas of Casting Defects; a path to identifying the right defect and its root cause for corrective action.

### Introduction to Alloys

Provides participants introductory information covering the major alloy families. Topics include characteristics and properties (mechanical and physical), as well as general applications for each alloy type.

CHOICE  
#2



CHOICE  
#3



### Introduction to Coreless Induction Furnace Operation

Provides participants with best practices for safe operating techniques for induction melting. Topics include furnace components; the sequence of operations for daily start up; "normal" furnace operation; types of induction furnaces; differences between small versus large induction furnaces; emergency situations and action plans.

## Conferences

### AFS Labor Relations & Human Resources Conference

Feb. 3-5, 2016 / Ft. Lauderdale, FL

Corp. Member: \$750 / Spouse: \$375 / Reception Only: \$150 / Non-member: \$900

The 2016 Labor Relations & Human Resource Conference will be held at the beautiful Hyatt Regency Pier 66 in Ft. Lauderdale. The conference will include the annual union/non-union breakout sessions, giving participants the opportunity to discuss matters of importance with their peers. This is always a highlight of the conference.

This year's lineup of presentations will include:

- Legal advice on remaining union free.
- Discussion on the NLRB's persistent focus on Employee Handbooks, which may be prohibiting employees' rights to engage in "concerted activity." It may be time to have your handbook reviewed and updated.
- How to create a world class safety culture in your organization.
- Plus more . . .





# Registration Form

## Cast Metals Institute

1695 N. Penny Lane, Schaumburg, IL 60173-4555



All fees payable in U.S. dollars or equivalent.

Remit payment to: 35169 Eagle Way, Chicago, IL 60678-1351

☐ Check Enclosed

For Credit Cards:

To register toll free, call 800-537-4237 or 847-824-0181. FAX: 847-824-2174

The following information is required in order to charge

☐ American Express ☐ MasterCard ☐ VISA

Account Number \_\_\_\_\_ Exp. Date \_\_\_\_\_

Authorized Signature \_\_\_\_\_

Qty.	Reg #	Title	Price
Total			

Name \_\_\_\_\_ Title \_\_\_\_\_

Name \_\_\_\_\_ Title \_\_\_\_\_

Name \_\_\_\_\_ Title \_\_\_\_\_

Name \_\_\_\_\_ Title \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City/State/Zip \_\_\_\_\_

Telephone \_\_\_\_\_ FAX/Email \_\_\_\_\_

**Tax Deduction of Expenses** An income tax deduction is allowed for expenses of education (including registration fee, travel, meals and lodging) undertaken to maintain and improve professional skills. (See U.S. Treas. Regulation 1.162.5.)

**Cancellations and Substitutions** Substitute students will be accepted anytime. However, cancellations of confirmed registrants with full refund of course fees cannot be accepted unless received 15 days prior to course date. *In the unlikely event a course is cancelled for any reason, the Institute liability is limited to the return of the registration fee.*