AFS Institute

Your Education Solution for Metalcasters, Suppliers & Casting Buyers

Providing You the Foundation for Improved Job Performance

Designed Specifically for You:

- Ergonomics
- Casting Design
- Casting Defect Analysis
- Aluminum Crucible Furnace Practices (NEW)
- Aluminum Metallurgy 201
- Introduction to Metalcasting
- Casting Supplier Auditing

AFS AND THE INSTITUTE

ADVOCATE. EDUCATE. INNOVATE.

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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

October

Oct 5-7	Design and Production of High Quality Aluminum Castings Conference	Nashville, TN
Oct 7-9	International Ferrous Melting Conference	Nashville, TN
Oct 7-8	NFPA 70E, OSHA and You... Insight for Implementation	Schaumburg, IL
Oct 13	Ergonomics: Optimizing Efficiency, Quality & Safety	Schaumburg, IL
Oct 14-15	Casting Design	Schaumburg, IL
Oct 20-21	Casting Defect Analysis	Lancaster, PA
Oct 27-29	Foundry Process Improvement	Schaumburg, IL

November

Nov 3-4	Casting Defect Analysis	Neenah, WI
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

February

Feb 2-3	Casting Supplier Auditing	South Pittsburg, TN
Feb 3-5	AFS Labor Relations & Human Resources Conference	Ft. Lauderdale, FL

Ergonomics: Optimizing Efficiency, Quality & Safety in Foundries #11-16

October 13 / Schaumburg, IL / Member: $725 / Non-member: $925

This course covers the use of ergonomic principles to recognize, evaluate, and control work-place conditions that cause or contribute to employee safety and productivity issues.

Participants who attend this course will acquire the knowledge necessary to:

- Initiate a new or improve an existing ergonomics program for controlling health and performance problems.
- Educate and convince management of the cost benefits of an ergonomically sound workplace.
- Pro-actively identify potential risks and determine cost effective and sustainable job site modifications.
- Increase the effectiveness of existing lean and Six Sigma programs by integrating ergonomics to improve work processes which result in increased employee engagement, greater efficiency and better margins.

Instructor

Jill Kelby,
Kelby Ergo Design

Who Should Attend

The target audience for this course consists of individuals responsible for safety, human resources, and operations.

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 Design #12-16

October 14-15 / 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
- fab to casting design conversions
- dimensional control
- importance of casting simulation

Instructors

Vadim Pikhovich,
Magma Foundry Technologies

MAGMA
Committed to Casting Excellence

Mark White,
Pratt & Whitney

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. and end at 4 p.m. on the first day, the second day will begin at 8:30 a.m. and end by 3:30 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 #13-16, 15-16

CHOOSE FROM TWO DATES, TWO LOCATIONS

October 20-21 / Lancaster, PA / Member: $1025 / Non-member: $1225
November 3-4 / Neenah, WI / Member: $1025 / Non-member: $1225

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.

Foundry Process Improvement #14-16

October 27-29 / Schaumburg, IL / Member: $1100 / Non-member: $1300

Foundries today often struggle with problem solving. This 2.5-day course provides participants with basic root cause analysis training. At its core, this course provides foundry personnel with disciplined problem solving techniques and emphasizes tools to better understand process data and performance using unique examples and case studies drawn from foundry settings. Some of the topics taught include:

- problem solving approaches
- process thinking
- problem characterization
- data collection analysis
- tools for analyzing process variation
- process capability
- testing the root cause
- developing solutions and countermeasures
- methods for sustaining improvement

Who Should Attend

The target audience for this course consists of individuals responsible for quality control; process improvement (technical/manufacturing); resolving acute and/or chronic quality or productivity issues; developing problem solving and/or process control plans and effective control strategies; effecting process improvement change within their own organization.

Instructors

Walter Evans, *Process Improvement Consultant*

Ted Schorn, *Enkei America*

Course Information: The course will begin at 8:30 a.m. on the first day and end by 12:00 p.m. on the third day. Detailed travel information, including available hotel room blocks, will be provided in a confirmation letter e-mailed within one business day of registration.

Aluminum Crucible Furnace Practices #16-16

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

NEW COURSE

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.

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.

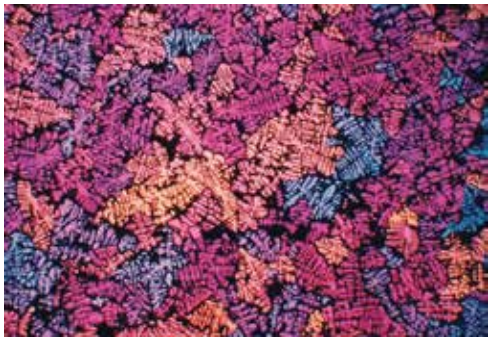
Instructor

David Neff,
Retired, Pyrotek

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.

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.

Instructor

Salim Khan,
Consultant

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.

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.

Introduction to Metalcasting #18-16

December 1-2 / 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.

Instructors

Leo Baran,
AFS and the Institute

Kevin Fleischmann,
AFS and the Institute

Scott Lammers,
AFS and the Institute

Al Spada,
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 8:00 a.m. on the first day and end by 4:00 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 need to 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 Lodge Mfg., participants will spend the better part of the second class day auditing several different areas of the plant. The registration fee includes a networking dinner February 2. This course is only open to employees from companies who design and/or purchase metalcastings, 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.

Instructors

Mark White,
Pratt & Whitney

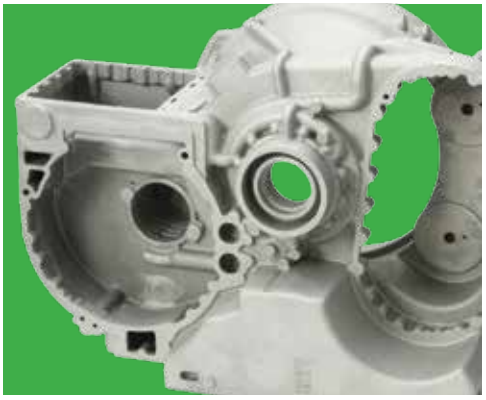
Nick Fox,
Galesburg Castings

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.

Design and Production of High Quality Aluminum Castings

Oct. 5-7, 2015 / Nashville, TN / Member: $695 / Non-member: $845

Top experts are gathering in the Music City to present the right notes required to produce structural castings for critical applications. Topics include: design principles for aluminum components; melt treatment and cleanliness; gating, feeding and simulation; process optimization; heat treating; inspection and quality assurance; current and future research in light metals casting.



International Ferrous Melting Conference

Oct. 7-9, 2015 / Nashville, TN / Member: $795 / Non-member: $945

Metalcasters will take center stage in Music City, gathering the industry's top experts to find the best processes of production for treating and melting alloys. You will learn about: Alloy and Treatment Process Optimization for quality ductile iron production; controlling slag inclusion; opportunities for heat recovery in the cupola furnace plant; effective slag control in a coreless furnace; refractory and repair reline of channel furnaces and slag sampling and testing

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 speakers 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 . . .

Casting Process Optimization

Member: $450 / Non-member: $550

This self-paced course gives the tools and techniques essential to understand the various sub-processes in your casting facilities. Participants will be given generic process maps and FPR (Factor-Process-Response) diagrams for various sub-processes in the foundries and then are required to create diagrams specific to the sub-processes in their respective foundries. Software used during the course is included in the registration fee.

Participants will learn to:

- Identify the various sub-processes in the metalcasting facility.
- Create process maps for the various sub-processes in the metalcasting facility.
- Collect data on the factors and responses for any one sub-process in the foundry and determine the level of optimization.

Six Sigma Green Belt Certification

Member: $1295 / Non-member: $1445

This course gives the tools and techniques essential to be an effective member of the Six Sigma Green Belt Team. This course focuses on effective data collection and covers the Define, Measure, Analyze, Improve and Control (DMAIC) phases of Six Sigma methodology, with special reference to metalcasting processes.

Participants in this course will learn how to:

- Identify and measure critical customer requirements.
- Identify and collect relevant data.
- Lead project teams through the DMAIC process improvement methodology.
- Use the basic statistical tools and techniques for defect elimination and process simplification.
- Use chart runner statistical software to perform statistical analysis.
- Turn data into information and information into knowledge to make process improvements.
- Support Black Belts on Six Sigma Foundry projects.

Aluminum 101: An Introduction to Aluminum & Aluminum Casting Processes

Member: $625 / Non-member $775

Scan QR Code For a Sample Course

This is an introductory course covering the characteristics and properties of aluminum, alloying elements and their general applications as well as considerations for working with aluminum shape-cast parts. This course also covers melting technology and foundry casting technology and looks at the decision making process behind specific technologies used. This online course engages the learner through interactive activities, videos, knowledge checks and case studies.

Metalcasting 101: An Introduction to Metalcasting

Member: $725 / Non-member $875

This introductory 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, gating system design, pouring and shakeout methods, cleaning and finishing methods, quality assurance, and key safety and environmental regulations. This online course engages the learner through interactive activities, videos, knowledge checks and case studies.

Participants will learn to:

- Describe the metalcasting industry by defining the term metalcasting, listing at least five end-use markets for metalcastings, and listing at least two challenges facing the industry
- Summarize the overall process of how a casting is made from part design through delivery to the customer

Scan QR Code For a Sample Course

Casting Processes: An Introduction

Member: $100 / Non-member: $150

This mini course will introduce the various metalcasting processes, including their advantages and disadvantages, as well as rapid prototyping technologies available.

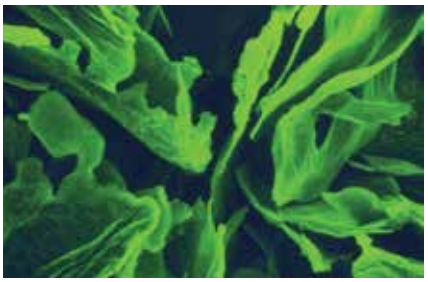
Participants will learn about:

- Patterns and pattern materials.
- Rapid prototyping technologies.
- Investment mold casting.
- Permanent mold casting.
- Centrifugal casting.
- Plaster casting.
- Green sand & bonded sand molding.
- Investment mold casting.

Metalcasting Alloys: An Introduction

Member: $100 / Non-member: $150

This mini course will introduce the various alloys used for metalcasting, including applications.



Defects Related to Gating & Riser Design

Member: $50 / Non-member: $100

Learn about types of green sand casting defects that result from design issues in the gating system. Learn the functions of the gating system, basic design principles, and detailed information about various defects that result from poor gating design and how to correct them. Defects discussed include those that result from poor metal fluidity and improper layout, such as shrinkage and inclusions.

Basic Metallurgy of Ductile Iron

Member: $50 / Non-member: $100

Great for new employees or anyone wanting a basic introduction to ductile iron metallurgy, this course covers the following topics: the members of the cast iron family; comparisons of the cast iron family; the specifications of the cast iron family; the chemistry of the cast iron family; inoculants used to create ductile iron; production problems; changes in properties when production problems occur; the microstructure of ductile iron; the alloy content of ductile iron; treatment methods; physical limitations; nodulizing problems; process control.

Topics covered include:

- Members, comparisons, specifications and chemistry of the cast iron family.
- Inoculants used to create ductile iron.
- Production problems.
- Changes in properties when production problems occur.
- The microstructure and alloy content of ductile iron.
- Treatment methods.
- Physical limitations.
- Nodulizing problems.
- Process control.

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.*