Advance Your Metalcasting Career.

New Courses
- Aluminum Melting
- Aluminum Metallurgy
- Nobake Molding & Coremaking

Featuring
- New Format
- Updated Content

Education Solutions For Metalcasters, Designers & Buyers By Metalcasters

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We are responding to **YOUR NEEDS**. We are developing **NEW COURSES** with **NEW CONTENT** following the best practices for how adults learn. This catalog is full of these new opportunities that start with entry level knowledge and skills and then build up to the more advanced technology and applications. With our new courses, you’ll see a clear delineation of 100, 200, 300 and 400 level content.

### Fall 2013 Course/Conference Calendar (Tentative)

#### October
- Oct. 14-17: Keith Millis Symposium on Ductile Cast Iron Nashville, TN
- Oct. 22-23: Advanced Foundry Waste Seminar Atlanta, GA
- Oct. 23-24: Conference on Post Casting Processing Indianapolis, IN
- Oct. 24: Nobake Molding & Coremaking 101 Schaumburg, IL
- Oct. 29-30: Gating & Riser Design Schaumburg, IL

#### November
- Nov. 12-13: Aluminum Melting 201 Schaumburg, IL
- Nov. 13-14: Aluminum Metallurgy 201 Schaumburg, IL

#### December
- Dec. 3-4: Casting Defect Analysis Schaumburg, IL

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**Nobake Molding & Coremaking 101 #05-14**

**October 24 / Schaumburg, IL / Member $625 / Nonmember $775**

This course provides participants with a basic foundation of the nobake molding and coremaking process used within a foundry. Discussion will include basic terminology, common chemical binders used, the mold and coremaking process, equipment and mold defect analysis. Participants will receive hands-on practice, walk through the decision-making process in evaluating casting deficiencies and leave with a customized troubleshooting list for use back on the job. This course is a pre-requisite for advanced molding, testing and control courses.

**Who Should Attend:**
The target audience for this course consists of individuals responsible for: making molds and cores using the nobake/air set molding process; supervisors; quality assurance personnel and anyone wanting to learn about the nobake molding and coremaking process.

View the detailed course syllabus, including lesson plan, through the Education Calendar at [www.afsinc.org](http://www.afsinc.org).
Classroom Courses

Gating & Riser Design #06-14
October 29-30 / Schaumburg, IL / Member: $725 / Nonmember: $875

This course, for horizontal sand molding applications, covers ferrous and nonferrous theory and practice. Topics covered in the two-day lecture course include turbulence, solidification, shrinkage, metallocstatic pressure effects, gating and riser system design and calculations, mold-wall movement and computer modeling, pouring times, and placement and feeding distance of risers.

Who Should Attend
The target audience for this course consists of foremen, patternmakers, foundry engineers, supervisors, metallurgists, quality control personnel and estimators.

Receive two complimentary books with course registration!

View the detailed course syllabus, including lesson plan, through the Education Calendar at www.afsinc.org.

Aluminum Melting 201 #07-14
November 12-13 / Schaumburg, IL / Member: $725 / Nonmember: $875

This one and a half day course introduces basic principles and practices of cast aluminum melting. The course will examine furnace charging, furnace temperature and its effect on the melt, and in-furnace treatments to reduce impurities. Melt sampling, transfer and pouring methods and the corresponding equipment will be analyzed, with demonstrations of various techniques given throughout the course. The course will end at lunchtime on the second day.

Who Should Attend
The target audience for this course consists of individuals responsible for furnace tending or mold pouring or for new personnel and individuals with little experience in aluminum melting practices.

View the detailed course syllabus, including lesson plan, through the Education Calendar at www.afsinc.org.
Aluminum Metallurgy 201 #08-14
November 13-14 / Schaumburg, IL / Member: $725 / Nonmember: $875

This one and a half day course covers the scientific principles needed to understand the metallurgy of important aluminum-based casting alloys. Emphasis is placed on the structure (microstructure) formed during solidification. Topics include phase diagrams, thermal analysis, segregation, dendritic solidification and best practices for grain refinement and modification. The course will begin after lunch on the first day, and run all day on the second day.

Who Should Attend
The target audience for this course consists of individuals with no prior training in aluminum metallurgy, those responsible for metallurgical and/or quality control and anyone wanting to learn about aluminum metallurgy.

Casting Defect Analysis #09-14
December 3-4 / Schaumburg, IL / Member: $725 / Nonmember: $875

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. This course will help participants become more proficient in applying a 10-step procedure that will enable them to analyze and reduce metalcasting defects by correctly identifying them 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 production management staff, managing and supervising production staff, purchasing, sales, marketing or office operations, auditing/inspecting/quality control and production or engineering.

Two Complimentary Books With Course Registration

Casting Defects Handbook of Your Choice
Choose From Iron & Steel, Copper-Base Alloys or Aluminum Alloys
Conference on Post Casting Processing of Aluminum

October 23-25, 2013 / Indianapolis, IN / Member: $595 / Nonmember: $695

The various processing steps performed after casting require proper planning, control and methodology to produce a quality finished part. This event covers:

- Heat Treatment.
- Non-Destructive and Destructive Testing.
- Cleaning.
- Visual Inspection Effectiveness.

Keith Millis Symposium on Ductile Cast Iron

October 15-17, 2013 / Nashville, TN / Member/Nonmember: $595 / Late: $645 / Spouse: $150

Since it’s discovery in 1942, ductile iron has grown successfully in the marketplace. Learn how to capitalize on this revolutionary metal. Conference highlights:

- Keynote Address: What Would Keith Say
- The Mechanism of Nodular Iron Formation
- Identifying and Reducing Ductile Iron Defects
- The Importance of Rare Earths on the Inoculation of Ductile Iron

Advanced Foundry Waste Seminar

October 22-23, 2013 / Atlanta, GA / Member: $595 / Nonmember: $750

Waste not, want not so says the old adage. Does this describe what your facility currently is doing by waste and violation citations? Improve your profits by joining us for this in-depth seminar covering environmental waste issues and concerns affecting the metalcasting industry in the U.S. This seminar covers:

- Regulatory Overview.
- Identification and Characterization of Wastes.
- Agency Inspections.
- Beneficial Reuse.
Casting Process Optimization

Member: $400 / Nonmember: $500 / Just in Time Education Course

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

Six Sigma Green Belt Certification

Member: $1295 / Nonmember: $1445 / Just in Time Education Course

This course provides 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 provide data collection support to Black Belts and how to fulfill the project leader’s role on small Green Belt metalcasting projects.

Introduction to Metalcasting

Member: $675 / Nonmember $825 / Just in Time Education Course

This introductory course presents a general overview of the metalcasting process. Individuals view the same presentations as our popular three-day lecture course. Topics covered include patterns and tooling, molding and coremaking processes, alloys poured, furnaces, gating and risering, cleaning and finishing, and inspection techniques. Video segments are interspersed throughout the content, and engaging interactions allow for the opportunity to review key concepts before completing the final assessment.
Internet Courses

Casting Processes: An Introduction
**Member: $100 / Nonmember: $150 / Just in Time Education Course**

This short-format course is Unit 2 of our full-length *Introduction to Metalcasting* online course. Available as a stand-alone for those who don’t want to complete the full course, this mini course will introduce you to the various metalcasting processes, including their advantages and disadvantages, as well as rapid prototyping technologies available. If you decide you like this course and wish to complete the remaining units, we will apply the fee from this course to the registration fee for the full-length course.

Metalcasting Alloys: An Introduction
**Member: $100 / Nonmember: $150 / Just in Time Education Course**

This short-format course is Unit 3 of our full-length *Introduction to Metalcasting* online course. Available as a stand-alone for those who don’t want to complete the full course, this mini course will introduce you to the various alloys used for metalcasting, including applications. If you decide you like this course and wish to complete the remaining units, we will apply the fee from this course to the registration fee for the full-length course.

Defects Related to Gating & Riser Design
**Member: $50 / Nonmember: $100 / Just in Time Education Course**

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. (54 minutes)

Basic Metallurgy of Ductile Iron
**Member: $50 / Nonmember: $100 / Just in Time Education Course**

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. (48 minutes)
Registration Form

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
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Account Number     Exp. Date
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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.