

“Metallurgy for the Non-Metallurgist”

Dates and Times:

Four Consecutive Wednesday Evenings
March 28, April 4, 11, and 18
Time: 6:00 - 9:00 pm

Location:

University of Wisconsin-Milwaukee
Kenwood Interdisciplinary Research Complex
Rm 1140
3135 N Maryland Ave, Milwaukee, WI 53211

Metals and alloys are used in the greatest variety of applications of all engineering materials. As such, it is essential for those involved in manufacturing, engineering and construction to have an understanding of what metals are, how they behave, and why they behave differently than ceramics, glass, and plastics. It is also important to understand how they can be made stronger or more corrosion-resistant, how they can be shaped by casting, forging, forming, machining, or welding, and how these processes can alter properties. This course provides this important knowledge to those who are not metallurgists.

COURSE OUTLINE

Lesson 1: The History of Metals
Lesson 2: Extractive Metallurgy
Lesson 3: Solidification of Metals
Lesson 4: Metal Forming
Lesson 5: Mechanical Properties
Lesson 6: Steels and Cast Irons
Lesson 7: Heat Treatment
Lesson 8: Case Hardening of Steel
Lesson 9: Strengthening Mechanisms
Lesson 10: Nonferrous Metals
Lesson 11: Joining
Lesson 12: Corrosion
Lesson 13: Quality Control
Lesson 14: Materials Characterization

TARGET AUDIENCE

- Technicians
- Salespeople and managers
- Engineers with no metallurgy background
- Designers
- Employees from forging and casting shops

3.0 CEUs**ENROLLMENT DEADLINE: TUESDAY, MARCH 27****OPTION 1:****Online:**

Register/pay securely online at
asm-milwaukee.org

OPTION 2:**Mail registration and fee to:**

Jim Schwaegler
ASM Milwaukee Chapter
12965 Myrtle Avenue
Brookfield, WI 53005

For more information:

Adam Hustad
Element Materials Technology
262-901-0539

Make checks payable to:

ASM Milwaukee Chapter

**** \$50 DISCOUNT IF YOU REGISTER BY WEDNESDAY MARCH 14! ****

ASM Milwaukee Chapter
2018 MEI: “Metallurgy for the Non-Metallurgist”

ENROLLMENT DEADLINE: TUESDAY, MARCH 27

Name: _____ Email: _____

Title: _____ ASM Member No.: _____

Company: _____

Address: _____

City/State/Zip: _____ Phone: _____

PRICE

When this course is taught at Materials Park in Ohio, the price is \$2,600 for non-members and \$2,400 for members. When transportation and hotel expenses are added, the course in Milwaukee is truly a cost-effective choice!

ATTENDEES / COSTS

\$500 – Employees of Sustaining Member Companies	# _____	X \$500 = _____
\$550 – Current ASM members	# _____	X \$550 = _____
\$600 – Non-members	# _____	X \$600 = _____
\$250 – Students/retirees/members between jobs	# _____	X \$250 = _____
TOTAL	# _____	COST \$ _____

Register/pay securely online at asm-milwaukee.org

**** \$50 DISCOUNT IF YOU REGISTER BY WEDNESDAY MARCH 14! ****

LEARNING OBJECTIVES

Upon completion of this course, you should be able to:

- Describe how metals behave and why; including why and how they can be formed
- Recognize how metals can be strengthened by alloying, cold-working, and heat treatment
- Determine why metals and alloys are not behaving as expected and can be made to behave as needed
- Choose what metal or alloy to use for specific combinations of properties

3.0 CEUs