

Course Syllabus

Nobake Molding & Coremaking 101



Course Code 2-120	CEUs 0.8 CEUs
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Course Introduction

This course provides participants with a basic foundation of the nobake molding and coremaking process used within a foundry, and is designed for those with little or no prior experience in making nobake molds. Discussion will include basic terminology, common chemical binders used, the mold and coremaking process, equipment and mold defect analysis. This course is a pre-requisite for advanced molding, testing and control courses.

Benefits to Taking the Course: 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.

Learning Outcomes

After attending this course, participants should be able to:

1. Identify the important safety measures and operating practices to use while making nobake molds and cores.
2. Recognize the various types of raw materials and equipment used in the mold and coremaking process.
3. Prepare nobake molds and cores that meet quality specifications.
4. Examine molds and cores for defects and determine the appropriate corrective action.

Lesson Outline

Module 1: Introductions

Module 2: Making a Nobake Mold, Part 1 (Group Activity)

Lesson 1: Safety Equipment and Binder System Safety

Lesson 2: Make Your Own Mold

Lesson 3: Group Comparisons

Module 3: Metalcasting Principles and Terminology

Lesson 1: Setting the Scene

Lesson 2: The Parts of a Mold

Lesson 3: Patterns

Lesson 4: Molding Equipment & Maintenance

Lesson 5: Sand Reclamation

Module 4: Sand and Binder Systems

Lesson 1: Sand and Sand Types

Lesson 2: Binder Systems

Lesson 3: Calibrating Sand & Chemicals

Lesson 4: Variables Affecting Performance

Lesson 5: How Sand & Binders Work Together

Module 5: Making a Quality Nobake Mold, Part 2 (Group Activity)

Lesson 1: Make Your Own Mold

Lesson 2: Group Comparisons

Module 6: Quality Control & Communication with Management

Lesson 1: Quality Control

Lesson 2: Communication with Management

Module 7: Course Conclusion & Evaluation

Instructional Methods:

- Group activities
- Class discussion
- Materials comparison
- Materials demonstration and use (Foundry-In-A-Box)
- Mold making
- Individual problem solving

Assessment Methods:

- Group reports
- Facilitator observation
- Knowledge checks
- Q&A sessions

Attendee Requirements to Earn CEUs:

1. Present at least 7.5 hours of the total 8.25 hours of instructional time (90%), which does not include meals or breaks.
2. Active participation (can include asking questions, communicating with other attendees during and taking part in group activities, providing responses during whole class or group discussions).
3. Successful achievement of learning outcomes.

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
- Recognizing simple sand casting defects
- Modifying molding and coremaking processes to correct casting deficiencies
- Quality assurance