



**AGC'S LEAN CONSTRUCTION  
EDUCATION PROGRAM**



Earn Your Certificate of Management - Lean Construction Today!



Lean Construction  
EDUCATION PROGRAM

**CM-LEAN**  
CERTIFICATE OF  
MANAGEMENT  
LEAN CONSTRUCTION

[www.agc.org/Lean](http://www.agc.org/Lean)  
[www.agc.org/CM-LEAN](http://www.agc.org/CM-LEAN)

Everyone related to the construction process has incentive to get the project done faster and at a lower cost - from the project owners who want to see tangible results for their investment to the contractors and designers who want to do their job well and move on to the next project. Lean Construction is based on the holistic pursuit of continuous improvements aimed at minimizing costs and maximizing value on a construction project: planning, design, construction, activation, operations, maintenance, salvaging, and recycling.

To help contractors develop the knowledge needed to build lean, the Associated General Contractors of America developed the Lean Construction Education Program. Construction professionals at all experience levels will learn the building blocks necessary to transform their projects and companies into a lean operating system.

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### Unit 1: Variation in Production Systems

This half-day, instructor-led course teaches the concept of variation. Following this course, you will be able to:

- Define the different types of variation;
- Explain the concept of throughput;
- Distinguish the concepts of throughput and work in progress;
- Describe the role of variation in production operations;
- List sources of variation in construction settings;
- Explain variation mitigation techniques; and
- Contrast variation mitigation techniques.

### Unit 2: Pull in Production

This is a half-day, instructor-led course that explains the concept of pull as a means to reliable production workflow. Following this course, you will be able to:

- Compare batch-and-queue and continuous-flow production systems;
- Distinguish push systems from pull systems;
- Describe the impact of pull on production systems; and
- Explain pull strategies in construction operations.

### Unit 3 - Unit 3: Lean Workstructuring

This is the first of two units that introduces the Last Planner® System (LPS). This system was developed by the Lean Construction Institute to plan projects in a way that produces predictable workflow and rapid learning. This half-day, instructor-led course describes the process of Lean Workstructuring. Following this course, you will be able to:

- Apply the methods and tools utilized in pull planning;
- Describe the concept of Lean Workstructuring;
- Outline the desired outcomes of Lean Workstructuring; and
- Describe the characteristics and application of the Last Planner® System.

### Unit 4: The Last Planner® System

This is the second of two units introducing the Last Planner® System (LPS). This system was developed by the Lean Construction Institute to plan projects in a way that produces predictable workflow and rapid learning. This half-day, facilitator-led course shows how to conduct make-ready and weekly work planning sessions. Following this course, you will be able to:

- Apply the Last Planner System on a project;
- Hold make-ready and weekly work planning sessions; and
- Calculate, track and analyze percent plan complete for a project.

*"Lean techniques and lean practices are valuable to any job you are going to work on. It's my first step forward in reaching out to everyone involved on my projects to say, hey, we can do these things to better our projects and make them more efficient."*

**Patrick Hennessy**  
Project Controls Engineer  
Aegis Project Controls



## Unit 5: Lean Supply Chain and Assembly

This is a one-day, instructor-led course that explains the concept of lean supply chain and assembly.

Following this course, you will be able to:

- Differentiate between traditional procurement practices and lean supply chain applications;
- Identify waste and value-adding activities within the supply chain and assembly;
- Evaluate the impact of using lean supply chain on waste elimination, continuous flow and site operations pull;
- Identify strategies needed at the project and company levels to support the lean supply chain;
- List examples of process improvements to the lean supply chain;
- Expand lean beyond the individual project; and
- Create a value stream map to diagnose and improve the supply chain.

## Unit 6: Lean Design and Pre-construction

This is a half-day, instructor-led course that explains the concepts of value-based management, lean in the design process and relational contracting. Following this course, you will be able to:

- Distinguish between the varying definitions for design;
- Define value and commonly used methods to maximize it;
- Discuss waste and commonly used methods to minimize it;
- Differentiate between traditional project methods and lean design; and
- Explain the various lean tools used in design and how to deploy them.

## Unit 7: Problem-solving Principles and Tools

This is a seven-hour, instructor-led course that describes the Lean Problem-Solving Process and illustrates how to use tools to solve problems in a lean manner. Following this course, you will be able to:

- Define the difference between traditional and lean problem-solving;
- Describe how to create a team environment to solve problems;
- Explain how to create trust to avoid problems;
- Describe Observation Walks; and
- Identify root causes of problems.

# CM-LEAN CERTIFICATE OF MANAGEMENT LEAN CONSTRUCTION

## Certificate of Management - Lean Construction

The AGC Certificate of Management-Lean Construction (CM-Lean) is an assessment-based certificate credential that denotes knowledge and understanding of concepts related to lean adoption, practice and process transformation outlined in AGC's Lean Construction Education Program. Successful candidates will carry the CM-Lean designation.

**Eligibility Requirements:** CM-Lean candidates must successfully complete the seven Lean Construction Education Program courses, provide AGC with record of completion and have an approved application in advance of exam administration.

For more information visit  
[www.AGC.org/CM-LEAN](http://www.AGC.org/CM-LEAN).

## FREE ONLINE INTRO COURSE

### Lean Construction 101: Foundations of Lean Construction

Lean Construction 101 serves as the introductory course to the AGC Lean Construction Education Program and is the starting point for your Lean Construction journey.

This 50 minute, self-paced e-learning course provides a foundation of the key concepts and terms used in Lean Construction, providing you with the background necessary to further your Lean Construction Education.

Following this course, you will be able to:

- List examples of Lean Construction in practice;
- Discuss benefits of Lean Construction;
- Define Lean Construction;
- Explain the origins of Lean Construction;
- Describe Lean Construction tools; and
- Identify Lean Construction implementation opportunities.

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