



Lean Construction
EDUCATION PROGRAM

AGC's LEAN CONSTRUCTION EDUCATION PROGRAM



Transforming Your Projects Into a Lean Operating System

AGC of America
THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA
Quality People. Quality Projects.



OVERVIEW OF LEAN CONSTRUCTION EDUCATION

Lean Construction is driven to minimize costs and maximize value on each project completed, challenging all stakeholders to develop and apply better ways to manage the overall construction process. 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 designers and contractors who want to do their job well and move on to the next project.

Throughout the construction process — planning, design, construction, activation, operations, maintenance, salvaging, and recycling — the holistic pursuit of continuous improvement drives more efficient, effective, and economic projects.

On a corporate level, lean is most effective when embraced by all areas of the company. To do so, senior management must understand the need for and advantages of lean implementation. But lean is also an individual journey. All project team members must work together on a daily basis, incorporating lean principles into their most basic work, to see the true benefits of lean.

The Lean Construction Education Program (LCEP) is the curriculum available to help you reach these goals. The LCEP consists of seven units that instruct all aspects of lean, allowing practitioners to benefit from these principles.

BECOME A LEAN CONSTRUCTION CHAMPION

LCEP courses are held nationwide at AGC Chapters and facilitated by AGC-approved instructors. The seven-unit series is intended for those individuals who will design and implement a lean transformation strategy within an organization.

- Unit 1: Variation in Production Systems
- Unit 2: Pull in Production
- Unit 3: Lean Workstructuring
- Unit 4: The Last Planner® System
- Unit 5: Lean Supply Chain and Assembly
- Unit 6: Lean Design and Pre-construction
- Unit 7: Problem-solving Principles and Tools

Unit 1: *Variation in Production Systems* is an introductory course in the Lean Construction Education Program. 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
- Contrast variation mitigation techniques

Unit 2: *Pull in Production* 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
- Explain pull strategies in construction operations

Unit 3: *Lean Workstructuring* is the first of two units that introduces the Last Planner® System (LPS). This system was developed by the Lean Construction Institute (LCI) 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
- Describe the characteristics and application of the Last Planner® System

Unit 4: *The Last Planner® System* is the second of two units introducing the Last Planner® System (LPS). This system was developed by the Lean Construction Institute (LCI) 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.

Unit 5: *Lean Supply Chain and Assembly* 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* 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.
- Explain the various lean tools used in design and how to deploy them.

Unit 7: *Problem-solving Principles and Tools* is a six 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
- Identify root causes of problems.

Earn Your Lean Credential

Following completion of all seven units of the Lean Construction Education Program, participants will be qualified to sit for an exam to earn AGC's Certificate of Management—Lean Construction (CM-LC), which will be available in 2015.

How to Access LCEP

Interested in taking an LCEP course?

LCEP is offered nationwide through select AGC chapters, individual construction firms and educational institutions. Visit www.agc.org/LCEP for the Nationwide Calendar to find course dates and AGC chapter locations.

Interested in hosting LCEP at your organization?

LCEP can be offered at your organization by purchasing the Instructor's Guides and Participant's Manuals from AGC's store at <http://store.agc.org> or by calling 1-800-242-1767. If you have questions about hosting LCEP training, please e-mail curriculum@agc.org or contact AGC at (703) 837-5366.

Join an AGC Chapter | The Associated General Contractors of America is committed to improving the profitability of its members by promoting the skill, integrity and responsibility of those who build America. Operating in strong partnership with a nationwide network of Chapters, the association provides a full range of services to its members, including:

- Education and Professional Development
- Government Relations/Legislation
- Employee and Labor Relations
- Safety and Health Training

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