



# INDUSTRIALIZED CONSTRUCTION

CERTIFICATE PROGRAM

TRACK 01 - OFFSITE FABRICATION DONE "RIGHT"



PROJECT PRODUCTION  
INSTITUTE



**CAL POLY**

# About

To reduce cost and more effectively control schedules without compromising quality and safety, owners and contractors are looking to modernize construction. This includes productization, moving work offsite and the adoption of manufacturing-type production methods. Known as "Industrialized Construction," this strategy can deliver significant benefit, but is not without challenges that have yet to be addressed by accepted project management practices.

Industrialized Construction requires 1) more detailed and better-quality engineering, 2) the ability to effectively manage supply chains, and 3) knowledge and application of production management, including its underlying theory of Operations Science.

To enable successful deployment of Industrialized Construction, Cal Poly San Luis Obispo, in partnership with the Project Production Institute, is offering education and certification in Industrialized Construction with specific focus on all aspects of offsite assembly / fabrication including supply chain optimization and design.

This program will enable participants to understand the benefits of adopting a modern construction framework and allow companies to effectively deal with the new challenges of moving work offsite using production management.

**WHO SHOULD ATTEND:** This program will benefit specialty contractors, general contractors, owners, construction managers, architects, engineers and suppliers who are involved in or responsible for work offsite, contemplating moving work offsite, and/or looking to adopt production management methods to modernize construction.

# Journey to Certification



## **BASICS COURSES (Level 1)**

Two-day in-person introduction to PPM concepts, tools and applications using simulations and case examples. Course also includes evaluation of various application opportunities and preparation for Level 2 course.

## **APPLICATION COURSES (Level 2)**

Two-day in-person development of participant's specific project along with deep dive into the Operations Science supporting PPM applications and tools. Completion of L1 required, as L2 begins with report outs and presentations based on course homework.

## **CAPSTONE PROJECT**

Using the concepts and tools learned from the first two courses, a participant applies their learnings to a sponsor-supported project. With mentoring and check-ins throughout the project execution (6-12 months), participants will demonstrate project knowledge in PPM, resulting in a PPM Specialty Certificate.

## **MASTER CERTIFICATION**

Master Level Certification is obtained by earning Specialty Certificates in two of the three tracks.

# TRACK 1

## Offsite Fabrication Done "Right"

### BASICS COURSE OBJECTIVES (Level 1)

- Understand the unique attributes of fabrication / job shop vs manufacturing and other forms or production systems
- Learn how to map and model a Fabrication / Job Shop Production System
- Understand the Five Levers of Optimization and how they are used applied to a job shop
- Create a plan to implement course learning

### APPLICATION COURSE OBJECTIVES (Level 2)

- How to lay out and control a fab shop
- How to determine what to fabricate where
- Simulate, analyze and optimize a production system
- Create a plan to prepare for Capstone



# TRACK 2

## Supply Chain Done "Right"

### BASICS COURSE OBJECTIVES (Level 1)

- Identify and define a supply flow
- Map supply flows including supplier visits when necessary and determine associated characteristics (Engineer to Order, Make to Order, Make to Stock)
- Explore the 4-5-3 Framework and how it applies to supply flow
- Learn how to manage Work in Process (WIP) and stocks
- Create a plan to implement course learning

### APPLICATION COURSE OBJECTIVES (Level 2)

- Identify and select monitoring/control points, associated protocols and policies
- Select and deploy enabling technology
- Understand how to use analytics to maintain optimal control and improve performance
- Simulate, analyze and optimize a supply flow
- Create a plan to prepare for Capstone



# TRACK 3

## Design for Offsite Fabrication Done "Right"

### BASICS COURSE OBJECTIVES (Level 1)

- Understand Design for Manufacture and Assembly (DfMA) applied to assembly / prefabrication
- Understand Computer-Aided Production Engineering (CAPE) and how it adds value
- Explore the 4-5-3 Framework and how it affects design for fabrication / assembly
- Understand basis of process and its necessity
- Create a plan to implement course learning

### APPLICATION COURSE OBJECTIVES (Level 2)

- Understand how to design for offsite assembly
- Product and process design for subassembly
- Apply DfMA to assembly / prefabrication
- Create a plan to prepare for Capstone



# Program Logistics

## Investment

### **TWO-DAY COURSES (\$1,500 PER COURSE)**

- TRACK 1 - Offsite Fabrication Done "Right"
- TRACK 2 - Supply Chain Done "Right"
- TRACK 3 - Design for Offsite Fabrication Done "Right"

### **CAPSTONE PROJECT WORK WITH MENTORING (\$6,500)**

- Direct Project Impact
- Six to Twelve Months
- Certificate of Competency

### **SPECIALTY CERTIFICATE (\$9500)**

Total investment for a Specialty Certificate is \$9500, and includes both the Basics and Application Courses in one specific track, as well as Capstone Project with Mentoring

## Contact

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