

# Creating Mixed Model Value Streams



***“How do you flow different parts, all with different cycle times, through the same processes? By creating mixed model value streams.”***

## Overview

Based on the book Creating Mixed Model Value Streams written by Kevin J. Duggan and published by Productivity Press.

Advance from stable demand and low product variety into a complex world with diverse products, variable demand, different cycle times and shared resources. This workshop takes the concepts of value stream mapping to the next level by showing you how to apply lean principles in a high-variety environment to create Operational Excellence. The case example begins with an existing current state map of a complex production environment, then teaches you step-by-step how to develop the future state.

## What Participants Say

***“This class should be called real life manufacturing!”***

***“Our company is much more complicated than the basic case studies. Now we know what to do!”***

***“Our instructor was great! Very knowledgeable and practical!”***

***“This excellent how-to guide will help set free those of us who have been handcuffed by complexity in our manufacturing systems. It translates theoretical lean into practical guidance for us in the trenches.”***

## Learning Objectives

In this course, we will introduce product family selection in complex environments. Next, you will learn how to create a value stream of multiple products flow at the pull of the customer. These concepts include:

- Determining true product families
- Creating continuous flow in a mixed model environment
- Calculating Takt time for a mix of products
- Creating standard work for a mix of products with varying cycle times
- Setting up first in/first out (FIFO) lanes
- Developing pitch and scheduling the pacemaker
- Leveling the schedule with Mix Logic Charts

## Class Duration:

2 days

## Recommended Class Size:

15-25

## Languages:

English, Spanish, French, German, Dutch



## Prerequisites:

To take this advanced course, participants must have completed a course in *Value Stream Mapping*. Creating value stream maps will not be covered in this class as we will start with an existing current state and teach how to create a future state in a complex environment.

## Class Location:

On-site preferred

## Who Should Attend:

A good cross-functional group of management and support personnel will provide the most benefit to the company. This includes:

- Team Leaders
- Continuous Improvement Leaders
- Production Control
- Manufacturing Engineering
- Industrial Engineering
- Inventory Control
- Quality Control
- Finance
- Support Groups

# Creating Mixed Model Value Streams

## Program Agenda

continued

The facilitator spends a total of 2.5 days at the host company. The first half-day is for preparation with the company's team, and the second and third days are spent with the participants facilitating the workshop.

Prep Day

On the day before class starts, the trainer and key sponsor members from the local team make preparations to ensure a rewarding experience for the students.

### Preparation Work:

- Tour the work area to become familiar with the lean activities being performed
- Review the present value stream maps and product families
- Review the data collected by the host company prior to the session
- Prepare data sheets for the class for their practical exercises
- Review the class participant list and divide the students into mapping teams
- Prepare the classroom for the session the next day
- Brief senior managers about the training, and implement the appropriate advance communications in the host facility

Day One

- Quick review of Value Stream Mapping
- Where EMC example left off (3 products, same cycle time, steady demand)
- Determining product families

**Exercise 1** – product family development. Using the data sheets provided (developed during the prep day or workbook exercise), fill in the process map and determine the product families

- Determine family by work content

**Exercise 2** – product family development using work content

- Takt time by family

**Exercise 3** – Determining Takt time for the mix

- Equipment needed to support Takt

**Exercise 4** – Determining equipment loading for the mix

- EPEI for machines

**Exercise 5** – Determining the interval for the mix

- Balancing processes to Takt time for the mix of products

**Exercise 6** – Balancing charts for the mix

Day Two

- Creating standard work for the mix
- Developing pitch for mixed model
- Leveling the mix each interval

**Exercise 7** – Heijunka Scheduling

- Changes in customer demand

### Materials Provided by

#### Duggan:

Creating Mixed Model Value Streams Textbook (optional), Value Stream Mapping Pads, Student Guides (containing all instructor's slides)

### Materials Provided by Client:

LCD projector, flipcharts, large whiteboard, dry erase markers, flipchart markers, pencils, one calculator per team, and refreshments (coffee, lunches, etc.)

### Recommended Support Classes Include:

- Creating Lean Cells
- SMED
- FIFO Sizing
- Creating Flow for Static Build

