



**CPMCA**

California Plumbing & Mechanical  
Contractors Association

# **Mechanical Construction Education Alliance (MCEA)**

## **Seminar Catalog January–June 2022**

**Computer Skills & Technology • Estimating • Project Management  
Foreman Training • People Management/Skills • Sales/Service/Safety  
Certified Safety – Safety Risk Control • Webcasts**





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# CPMCA Executive Committee, Board of Directors

## Executive Committee – 2021/2022

### **Jay Chase, President**

Muir-Chase Plumbing Co., Inc.

### **John Feikema, Vice President**

California Spectra, Inc.

### **Steve Fosdick, Secretary**

Murray Company

### **Jay Lusita, Treasurer**

Tier One Mechanical

### **Steve Cornelius, Past President**

University Mechanical & Engineering Contractors

## CPMCA Board of Directors

### **Harry Bederian**

ARB, Inc.

### **Mike Cables**

Kinetic Systems, Inc.

### **Matt Cunningham**

Jackson and Blanc

### **Tom Finell**

Murray Company

### **Pete Fortin**

ACCO Engineered Systems

### **Jason Gordon**

Xcel Mechanical Systems, Inc.

### **Jeff Hachey**

H.L. Moe Company, Inc.

### **John Modjeski**

University Mechanical & Engineering  
Contractors – San Diego

### **Ed Newville**

Southland Industries

### **Bryan Suttles**

Suttles Plumbing & Mechanical Corporation

### **Michael Teague**

Schultz Industrial Services, Inc.

### **Larry Verne**

Verne's Plumbing, Inc.

## Education Committee

### **Harry Bederian – Chairperson**

ARB, Inc.

### **Travis Craven**

ACCO Engineered Systems

### **Jason Gordon**

Xcel Mechanical Systems, Inc.

### **Beni Monaco**

Monaco Mechanical

### **Diana Morell**

California Spectra, Inc.

### **Dan Naylor**

Murray Company

### **Bryan Suttles**

Suttles Plumbing & Mechanical Corporation

## CPMCA Staff

### **Chip Martin**

Executive Director

### **Dana Giambalvo**

Office Manager

### **Michelle Lynn**

Director of Education

## Executive Director's Message



Happy New Year! We hope that you and yours have been well, safe, and healthy. We cannot thank you enough for your patience and support as we continue to navigate a new normal. This is a year of new beginnings, and we are excited to share a few of them with you.

- 1) We have rebranded our Education Program and would like to introduce you to CPMCA's **Mechanical Construction Education Alliance (MCEA)**. This new name better reflects our first in class offerings, extensive reach, and partnership with other trade associations. It also better aligns with the mission and vision for the CPMCA Education Program.
- 2) CPMCA has a new training facility! In addition to our new office in downtown Los Angeles, we now have a brand-new training room, which will host our in-person classes moving forward. We can't wait for you to see and attend classes in this new space!

We are excited to offer new classes in Fabrication, LEAN construction, decision making and judgement, and workplace violence. Please check them out! We strive to structure our classes to meet your needs while also addressing the industry's most relevant and current topics. We hope you find this year's course selection valuable in your personal and professional growth. CPMCA continues to pride itself in offering seminars in many areas of training with one goal in mind; for the overall betterment of our contractors and their workers in Southern California. We welcome you to attend as many seminars as fit your interest and career!

While we are optimistic about COVID developments, we will continue to closely track updates and confirm the class details when registration opens one (1) month before each class date. Make sure to get onto our email distribution list, to receive the most up to date and detailed information about our classes (see page 4).

## Goal & Guarantee

Our goal is to offer a comprehensive first-in-class educational program unparalleled in the industry which will continue to advance the professional, technical and managerial skills of our member contractors and their employees. If you are not fully satisfied with a particular program, we will gladly provide a full refund.

## CPMCA Mission Statement

The mission of CPMCA is to provide representation of its members to enhance their business and profitability through education and labor relations. This Association will provide a partnership for progress between Labor and Management; setting aside differences, to unite in the common goal of expanding the market share of the union mechanical contracting industry.

## Vision Statement

CPMCA is the organization of choice, a progressive leader and voice for the union plumbing and mechanical contracting industry in Southern California, providing business opportunities, education, fair employment, honesty, integrity and family values.



# SCHEDULE AT A GLANCE BY MONTH

## January

26 Microsoft Project 2019 – Part 1

## February

9 Controlling Chaos and Thriving Under Pressure  
10 Microsoft Project 2019 – Part 2  
11-12 Project Management 1 & 2  
17 Foreman Training Program (Session 1) \*  
23 Microsoft Excel 2019 – Part 1  
24 Foreman Training Program (Session 2) \*

## March

3 Foreman Training Program (Session 3) \*  
4-5 Project Management 3 & 4  
9 Microsoft Excel 2019 – Part 2  
23 Estimating & Blueprint Reading  
24 Foreman Training Program (Session 4)  
30 Microsoft Excel 2019 – Part 3  
31 Foreman Training Program (Session 5) \*

## April

1-2 Project Management 5 & 6  
6 Leading a Cross-Generational Workforce  
14 Foreman Training Program (Session 6) \*  
21 Fabrication, Shop Drawings, and BIM  
27 Bluebeam BEGINNER  
28 Foreman Training Program (Session 7) \*

## May

4 Change Order Management  
5 Foreman Training Program (Session 8) \*  
12 Bluebeam INTERMEDIATE  
18 California Construction Law Essentials  
19 Foreman Training Program (Session 9) \*

## June

2 Foreman Training Program (Session 10) \*  
8 Bluebeam ADVANCED  
9 Thinking Fast & Slow  
15 Crisis at Work: workplace Violence & Active Shooter  
16 Introduction to Project Level Lean – What's the Big Deal?  
17 Project Engineering Basics in Construction

**\*These classes have been pre-scheduled and will remain as VIRTUAL classes.**

**\*\*Due to promising COVID developments, all other classes are scheduled as in-person classes. In the case that classes transition to a virtual platform, we will notify you through our email class invitations. If you do not already receive our class emails, please contact [michelle@cpmca.org](mailto:michelle@cpmca.org).**

**\*\*\*All classes listed in this course guide are approved and will count toward the Journeyman Upgrade Training Requirement. Please take advantage of these valuable opportunities. Visit [www.ajtraining.org](http://www.ajtraining.org) for more information.**

## How to Register for CPMCA Classes

There are two ways to register:

- 1) Go to [www.cpmca.org](http://www.cpmca.org), hover over the "Education" tab, click on "Course Training Schedule." You will see a list of classes for which registration is open. Click on "More Details" and then "Website" to view specific information about the class and/or to register online.
- 2) Online invitations are emailed a month before each class date. The invitation will contain specific information about the class (time, location, parking directions, speaker information) as well as links to register online. If you are not on the email distribution list, please email [michelle@cpmca.org](mailto:michelle@cpmca.org).

# SCHEDULE AT A GLANCE BY TRACK



SEMINAR CATALOG  
January-June 2022

## Computer Skills & Technology

- Microsoft Project 2019 – Part 1  
Wednesday, January 26, 2022
- Microsoft Project 2019 – Part 2  
Thursday, February 10, 2022
- Microsoft Excel 2019 – Part 1  
Wednesday, February 23, 2022
- Microsoft Excel 2019 – Part 2  
Wednesday, March 9, 2022
- Microsoft Excel 2019 – Part 3  
Wednesday, March 30, 2022
- Bluebeam BEGINNER  
Wednesday, April 27, 2022
- Bluebeam INTERMEDIATE  
Thursday, May 12, 2022
- Bluebeam ADVANCED  
Wednesday, June 8, 2022

## Foreman

- Foreman Training Program (Session 1)  
Thursday, February 17, 2022 **\*VIRTUAL**
- Foreman Training Program (Session 2)  
Thursday, February 24, 2022 **\*VIRTUAL**
- Foreman Training Program (Session 3)  
Thursday, March 3, 2022 **\*VIRTUAL**
- Foreman Training Program (Session 4)  
Thursday, March 24, 2022 **\*VIRTUAL**
- Foreman Training Program (Session 5)  
Thursday, March 31, 2022 **\*VIRTUAL**
- Foreman Training Program (Session 6)  
Thursday, April 14, 2022 **\*VIRTUAL**
- Foreman Training Program (Session 7)  
Thursday, April 28, 2022 **\*VIRTUAL**
- Foreman Training Program (Session 8)  
Thursday, May 5, 2022 **\*VIRTUAL**
- Foreman Training Program (Session 9)  
Thursday, May 19, 2022 **\*VIRTUAL**
- Foreman Training Program (Session 10)  
Thursday, June 2, 2022 **\*VIRTUAL**

## Estimating

- Estimating & Blueprint Reading  
Wednesday, March 23, 2022

## Project Management

- Project Management 1 & 2  
Fri. & Sat., February 11-12, 2022
- Project Management 3 & 4  
Fri. & Sat., March 4-5, 2022
- Project Management 5 & 6  
Fri. & Sat., April 1-2, 2022
- Fabrication, Shop Drawings, and BIM  
Thursday, April 21, 2022
- Change Order Management  
Wednesday, May 4, 2022
- California Construction Law Essentials  
Wednesday, May 18, 2022
- Introduction to Project Level Lean –  
What's the Big Deal?  
Thursday, June 16, 2022
- Project Engineering Basics in Construction  
Friday, June 17, 2022

## People Management

- Controlling Chaos and Thriving Under Pressure  
Wednesday, February 9, 2022
- Leading a Cross-Generational Workforce  
Wednesday, April 6, 2022
- Thinking Fast & Slow  
Thursday, June 9, 2022

## Sales/Service/Safety

- Crisis at Work: Workplace Violence  
& Active Shooter  
Wednesday, June 15, 2022

## Webcasts

- Active Listening
- BIM 101
- Excel: Excel Solver Procedure
- Excel: Insert Excel Sheet into Word
- Excel: Microsoft Word fill-In Forms
- Excel: Summarizing Data with Subtotals  
in Excel
- Going Green - Valuable Opportunities for  
Mechanical Contractors

*And many more – please see [www.cpmca.org](http://www.cpmca.org)  
for complete listing*

# IMPORTANT EVENTS



Plan Accordingly! Take note of these important MCAA Events:

<b>IPM 79 Class, Week 2 - Austin, TX</b>	January 16-20, 2022
<b>IPM 80 Class, Week 2 - Austin, TX</b>	January 17-21, 2022
<b>2022 Safety Directors' Conference - Lake Buena Vista, FL</b>	January 18-20, 2022
<b>Advanced IPM Class 17 - Austin, TX</b>	January 23-28, 2022
<b>2022 MEP Innovation Conference with SMACNA &amp; NECA - Tampa, FL</b>	January 24-26, 2022
<b>MCAA 2022 Annual Convention - San Diego, CA</b>	March 13-17, 2022
<b>Field Leaders Conference - Fairport, NY</b>	May 11-13, 2022

## MCAA Contacts:

Please call MCAA directly for additional information on any of their events at 301-869-5800

For conference & conventions, contact Melissa Funyak at [mfunyak@mcaa.org](mailto:mfunyak@mcaa.org)

For Advanced Leadership Institute and/or Institute for Project Management contact Amy Harding at [amy@hardingworks.org](mailto:amy@hardingworks.org)

For online webcasts & technology conference, contact Sean McGuire at [smcguire@mcaa.org](mailto:smcguire@mcaa.org)

For online webcasts & MSCA, contact Barbara Dolim at [bdolim@mcaa.org](mailto:bdolim@mcaa.org)





**Troy Aichele** became involved with the mechanical contracting industry while obtaining his B.S. degree in Construction Management at the University of Washington as an intern for a Seattle Mechanical Contractor. After graduating and working full-time, he went on to secure an A.A.S. degree in HVAC and Refrigeration Design and has since worked in every facet as a Mechanical Contractor in the Pacific Northwest over the last 25 years. Currently, Troy serves as Project Executive/Business Development at Holmberg Mechanical in Seattle and teaches mechanical construction courses nationally under his consulting company Aichele and Associates, LLC. Troy is a member of the MCAA's (Mechanical Contractors Association of America) Board of Directors, Past-Chairman of the MCAA Career Development Committee, which oversees 52 student chapters in North American and manages the popular Student Chapter Competition held yearly at MCAA's National Convention, and former member of the MCAA's Board of Trustees, MCERF (Mechanical Contracting Education & Research Foundation).



Throughout both public and private sectors, **C. Richard Barnes** is an internationally recognized mediator, facilitator, skills trainer and speaker. He provides dispute resolution services, dispute resolution systems design, workforce training and development, facilitation and leadership coaching to a cross-section of industry, labor, private, public and service organizations, both nationally and internationally. In 1998, President Clinton appointed Richard to serve as the 14th Director of FMCS, becoming the first career mediator in FMCS history to receive both the Presidential Appointment and Senate Confirmation, a testament to his vast experience in leadership development, strategic negotiations and dispute resolution processes.

A native of Chattanooga, Tennessee, Richard is a Vietnam era veteran of the U.S. Army and served three years as an instructor at the Medical Field Service School at Brooke Army Medical Center, Fort Sam Houston, Texas. Richard is a graduate of the U.S. Army's prestigious Faculty Development Program and as a graduate of Antioch University and the George Meany Center for Labor Studies, he holds academic degrees in Labor Studies and Organizational Leadership. Richard and his wife Audrey reside in Atlanta, Georgia.



**Harry Bederian** became interested in the mechanical contracting industry when he was an undergraduate student at California State Polytechnic University, Pomona (Cal Poly Pomona) and served as the president of the MCAA/CPMCA Student Chapter in 2009/2010. He majored in Engineering Technology with an emphasis in Mechanical and Manufacturing Engineering and a minor in Business. Harry began his career in the HVAC industry then 2 years later, transitioned to the industrial industry. He has been a Project Engineer at ARB, Inc. since 2012 and worked in a leadership role on various projects that include the construction of, but are not limited to: Gas Fired Power Plants, Solar Power Plants, Gas Compressor Stations, and construction within refineries. His involvement in the industry is diverse, having also served as the CPMCA Education and Scholarship Committee Chair since 2010, CPMCA Board Member, and a mentor to the USC Student Chapter. Harry recognizes that constantly improving and adding to his skillset is vital to being successful in this industry and thus, obtained his project management certificate at The University of California, Los Angeles (UCLA). He is currently studying for his Masters in Project Management at the University of Wisconsin.

# 2022 INSTRUCTORS



**Carol Cambridge** is CEO of The Stay Safe Project, an international conference speaker and is a workplace violence expert. Highly profiled for her expertise, she is often sought by the media for comments when tragedies occur. Carol has been interviewed by: ABC, NBC, USA Today, CBC and as far away as News Channel Asia in Singapore.

As a thought leader, she wants people to move away from Fear Based Thinking, which is limiting, paralyzing and just plain negative! Instead Carol shows people how to navigate fear & use their critical thinking skills to guide them through an emergency

or a crisis.

Her career began as a communications specialist in emergency services and disaster preparedness with a Canadian Law Enforcement Agency. Today, 27 years later, Carol has taught over a quarter of a million people how to make smart, powerful and life-saving decisions. Known for her customization, compelling storytelling and experiential training, Carol masterfully facilitates and delivers information in a way that people find intriguing!

When Carol is not speaking and training, she is at home in Glendale, Arizona with the love of her life and her three beautiful dogs.



**Rebecca Campbell** is a long-time teacher/trainer. Having taught ninth-grade English, it is no wonder she enjoys teaching our brothers and sisters! After her tenure as a teacher, Rebecca came to Pan-Pacific Mechanical as the Director of Risks where she oversees the safety department as well as the company's claims and lawsuits. She is a true safety-nerd and wants nothing more than to find ways to engage people in their jobs with safety always in their mind.



As a speaker and presenter, **Eric Herdman** has trained employees in a broad range of corporate environments for more than 20 years. From multi-billion dollar pharmaceutical companies to top financial institutions and the world's largest franchise fitness center, he uses his accomplishments in sales, retail, health and fitness to help companies achieve top-level success.

Focusing on results, Eric has successfully facilitated a variety of courses related to strategic business practices, leadership and management, productivity and motivation. Eric has developed a proven system that helps students prioritize their work, effectively schedule their days, delegate to employees, manage information flow and teach negotiation skills. As a record setting ultra-runner, he also shares his passion for perseverance and endurance with his students.



**John R. Koontz** has over 30 years of wide-ranging mechanical industry experience that includes contracting, academics, and consulting. He is a former Tenured Associate Professor in Purdue University's Department of Building Construction Management. He is also the founder and former director of Purdue's Mechanical Construction Management Specialization Program. In addition to his academic career, he spent 15 years in the employment of MCAA contractors in a variety of positions including senior project manager, project manager, project engineer, and estimator

and is the founder of the 1st ever MCAA student chapter which was started at Purdue in 1993. Professor Koontz's family heritage of long-term UA family members (grandfather, great uncle, and father) provides a sincere and deep-rooted pride, interest, and concern for the future success and survival of all parties involved in union mechanical construction.

PHOTO  
NOT  
AVAILABLE

Wise, compassionate and intuitive – these are all words that have been used to describe **Heather Stolte**. She is a natural motivator who truly enjoys affecting a positive change in the people and organizations she works with. Whether your group is large or small, she knows the right approach to ensure training success. Heather has more than two decades of experience in helping to improve the performance of organizations and their employees. Heather is proficient at teaching both technical and soft skills. If you enjoy a facilitator who exudes positivity and facilitates with a dynamic attitude and motivating facilitation style, this trainer is right for you. Whatever your event, Heather will make sure to leave your employees with the tools they need to succeed.



**Stephane A. McShane** is a Director at Maxim Consulting Group responsible for the evaluation and implementation processes with her clients. Stephane works with construction-related firms of all sizes to evaluate business practices and assist with management challenges. With a large depth of experience working in the construction industry, Stephane is keenly aware of the business and, most specifically, operational challenges that firms face. Her areas of expertise include: Leadership development, executive coaching, organizational assessments, strategic planning, project execution, business development, productivity improvement, and training programs.



Pre-fabrication with Revit has been a passion of **Christopher Suggs** since before Autodesk acquired MAP Software. At the time, Suggs was building fabrication level content for customers, a painstaking task, because he believed in the Revit engine. Since the acquisition, it has been an exciting and patient journey as the fabrication tools continue to find their way into Revit. Building RFA fittings is a past-time Suggs does not miss, and he can now focus on helping customers take their databases they have been using in CAD for so many years and turning them into Revit friendly versions of their previous selves, as well as building databases from the ground up to support specific needs of the end user.



**Theresa Crawford Tate** is a partner in the firm of Crawford & Bangs. Her legal practice for the last 23 years has focused on construction contracts, claims and litigation. Crawford & Bangs is a small firm that specializes in all aspects of construction law. Ms. Tate graduated with honors from both the California State University at Fullerton and Loyola Law School. Ms. Tate is admitted to practice before all the state courts of California and the U.S. District Court for the Central District. Ms. Tate has been actively involved with many trade associations, including the Orange County Chapter of the Construction Financial Management Association (CFMA), Real Property Section of the Los Angeles County Bar (LACBA), Building Industry Association (BIA), and Orange Empire Sheet Metal & Air Conditioning Contractor's National Association (SMACNA). Ms. Tate is a frequent author and speaker on construction related topics, and her articles, as well as those authored by other members of her firm, are posted on the Crawford & Bangs website at [www.BuildersLaw.com](http://www.BuildersLaw.com).

# COMPUTER SKILLS/TECHNOLOGY

## Microsoft Project 2019 – Part 1

**New Horizons Computer Learning Center – Anaheim**

**Wednesday, January 26, 2022**

**8:00 a.m. – 4:00 p.m.**

**Member: Free**

**Non-Member: \$299**



This course is designed for a person with an understanding of project management concepts, as well as general desktop computer skills, and who will be responsible for creating and maintaining project plans. This course will give you the fundamental understanding of Microsoft Project necessary to construct basic project plans. In this course, you will be able to construct basic project plans using Microsoft Project. You will: identify project management concepts and navigate Microsoft Project Professional, create a new project plan, add tasks to a project, manage task relationships within a project, manage project resources, and finalize a project plan.

## Microsoft Project 2019 – Part 2

**New Horizons Computer Learning Center – Anaheim**

**Thursday, February 10, 2022**

**8:00 a.m. – 4:00 p.m.**

**Member: Free**

**Non-Member: \$299**



This course is designed for a person with an understanding of project management concepts and who is responsible for creating and maintaining project plans. Target students will be looking to acquire the advanced knowledge and skills needed to update a project plan in Microsoft Project during the execution, monitoring, and controlling phases of a project. In this course, you will maintain project plans during the execution, monitoring, and controlling phases of a project. You will: update a project plan, generate project views to manage a project, create project reports to share a project's status, reuse project plan information, and work with multiple projects.

## Microsoft Excel 2019 – Part 1 (of 3)

**New Horizons Computer Learning Center – Anaheim**

**Wednesday, February 23, 2022**

**8:00 a.m. – 4:00 p.m.**

**Member: Free**

**Non-Member: \$299**



This course aims to provide you with a foundation for Excel knowledge and skills, which you can build upon to eventually become an expert in data manipulation. Excel can help you organize, calculate, analyze, revise, update, and present your data in ways that will help the decision makers in your organization steer you in the right direction. If you're interested in learning how to use Excel or responsible for creating spreadsheets or performing basic data manipulation, this course is perfect for you. It will also make these tasks much easier for you to accomplish, and in much less time, than if you used traditional

pen-and-paper methods or non-specialized software. Upon successful completion of this course, you will be able to create and develop Excel worksheets and workbooks in order to work with and analyze the data that is critical to the success of your organization. You will: Get started with Microsoft Office Excel 2019. Perform calculations. Modify a worksheet. Format a worksheet. Print workbooks. Manage workbooks. The journey doesn't stop here; continue building on your skills and attend Excel 2019 Part 2!

## Microsoft Excel 2019 – Part 2 (of 3)

**New Horizons Computer Learning Center – Anaheim**

**Wednesday, March 9, 2022**

**8:00 a.m. – 4:00 p.m.**

**Member: Free**

**Non-Member: \$299**



This course builds upon the foundational knowledge presented in the Microsoft® Office Excel® 2019: Part 1 course and will help start you down the road to creating advanced workbooks and worksheets that can help deepen your understanding of organizational intelligence. This course is designed for students who already have foundational knowledge and skills in Excel 2019 and who wish to begin taking advantage of some of the higher-level functionality in Excel to analyze and present data. To ensure success, students should have completed Microsoft® Office Excel® 2019: Part 1 or have the equivalent knowledge and experience. The ability to analyze massive amounts of data, extract actionable information from it, and present that information to decision makers is at the foundation of a successful organization that is able to compete at a high level. Upon successful completion of this course, you will be able to leverage the power of data analysis and presentation in order to make informed, intelligent organizational decisions. You will: Work with functions. Work with lists. Analyze data. Visualize data with charts. Use PivotTables and PivotCharts. The final stop, Excel 2019 Part 3 is just around the corner!

## Microsoft Excel 2019 – Part 3 (of 3)

**New Horizons Computer Learning Center – Anaheim**

**Wednesday, March 30, 2022**

**8:00 a.m. – 4:00 p.m.**

**Member: Free**

**Non-Member: \$299**



This course builds upon the foundational and intermediate knowledge presented in the Microsoft® Office Excel® 2019: Part 1 and Microsoft® Office Excel® 2019: Part 2 courses to help you get the most of your Excel experience. The ability to collaborate with colleagues, automate complex or repetitive tasks, and use conditional logic to construct and apply elaborate formulas and functions will put the full power of Excel right at your fingertips. The more you learn about how to get Excel to do the hard work for you, the more you'll be able to focus on getting the answers you need from the vast amounts of data your organization generates. This course is intended for students who are experienced Excel 2019 users and have a desire or need to advance their skills in working with some of the more advanced Excel features. Students will likely need to troubleshoot large, complex workbooks, automate repetitive tasks, engage in collaborative partnerships involving workbook data, construct complex Excel functions, and use



# COMPUTER SKILLS/TECHNOLOGY

those functions to perform rigorous analysis of extensive, complex datasets. To ensure success, students should have practical, real-world experience creating and analyzing datasets using Excel 2019. Specific tasks students should be able to perform include: creating formulas and using Excel functions; creating, sorting, and filtering datasets and tables; presenting data by using basic charts; creating and working with PivotTables, slicers, and PivotCharts; and customizing the Excel environment.

## Bluebeam – BEGINNER

**Christopher Suggs**

**Wednesday, April, 27, 2022**

**7:30 a.m. – 2:30 p.m.**

**Member: Free**

**Non-Member: \$299**

This session will focus on getting you acquainted with the interface and out-of-the-box every-day tools. Agenda will include:

### Revu Basics:

- Interface, Navigation and Profiles
- Document Manipulation
- Markup Tools
- Stamps
- Tool Chest
- Markup List

### Revu Document Control:

- AutoMark & Page Extraction
- Creating a Navigable Drawing Set
- Document Comparison & Overlay Pages
- Sets

### Revu Measurements & Takeoffs:

- Calibration
- Measurement Tools
- Custom Measurement Tools & Legends
- Basic Estimation in the Markups List

## Bluebeam – INTERMEDIATE

**Christopher Suggs**

**Thursday, May 12, 2022**

**7:30 a.m. – 2:30 p.m.**

**Member: Free**

**Non-Member: \$299**

In this session, we'll get under the hood of Revu to get a deeper understanding of every-day tools as well as building custom content. Agenda will include:

### Interface, Navigation, & Profiles (In Depth)

- Toolbars & Menus
- Panel Access Bar & Panel Management
- Profiles & Profile Management
- Standardizing Profiles
- Opening a PDF
- PDF Navigation

### Markup Tools

- Types of Markup Tools
- Customizing the Properties of Markup Tools
- Using the Snapshot Tool

### Stamps

- Applying a Stamp
- Creating Custom Stamps

### Tool Chest

- Basics of the Tool Chest
- Custom Tool Sets
- Creating Legends
- Adjusting & Updating Legends



## Bluebeam – ADVANCED

**Christopher Suggs**

**Wednesday, June 8, 2022**

**7:30 a.m. – 2:30 p.m.**

**Member: Free**

**Non-Member: \$299**



This last session will focus on advanced tools and workflows for extracting data and collaborating in the cloud. Agenda will include:

### Markups List.

- Organizing, Sorting, & Filtering
- Statuses, Custom Columns
- Importing & Exporting
- Custom Formulas
- Quantity Link & Excel Templates

### Revisions

- Inserting Sheets & Batch Insert
- Sets
- Overlaying Sheets & Batch Overlay
- Document Comparison
- Updating a Takeoff

### Introduction to Studio

- Sessions vs. Projects
- Getting into Studio

### Studio Sessions

- Setting up a New Session
- Live Session Participation
- Record Reports
- Closing out a Studio Session

### Studio Projects

- Setting up a New Project
- Inviting Attendees & Setting Permissions
- Working with Documents
- Viewing Revisions History

# PROJECT MANAGEMENT

## Project Management 1 & 2

John Koontz

Fri. & Sat., February 11-12, 2022

Day 1: 7:30 a.m. – 4:00 p.m.

Day 2: 7:00 a.m. – 11:30 a.m.

Member: \$100

Non-Member: \$179

This two-day course will cover the following topics:

- **Planning Skills for the Project Team:** All great project managers are master planners; there is no such thing as a great project manager who is a “decent” planner. All wildly successful projects are incredibly well planned by all members of the project team; project manager, foreman, fabrication manager, coordination manager, safety manager, warehouse manager, purchasing manager, etc. The project manager is the “president of the project” and is ultimately responsible for all project planning and the quality of that planning. This session will focus on both the project manager’s role and responsibilities in project planning and the three stages of planning; 1) Information Turnover, 2) Preconstruction Planning, and 3) Short Interval Planning. This session will also focus on direct relationship between planning, productivity, and profitability.
- **Productivity Improvement for Mechanical Projects:** Great project management, by both the foreman and project manager, is primarily responsible for creating excellent productivity on every project. Due to the endless number of variables, which negatively effect worker efficiency, excellent productivity is the project team’s greatest challenge. Productivity also has the greatest positive or negative impact on project and company profitability. Excellent productivity requires proactive, diligent, and detailed planning by the project manager and foreman at each step of the project. In this session, the instructor will provide proven methods and practices for creating, controlling, and improving project productivity on all types of projects.

## Project Management 3 & 4

John Koontz

Fri. & Sat., March 4-5, 2022

Day 1: 7:30 a.m. – 4:00 p.m.

Day 2: 7:00 a.m. – 11:30 a.m.

Member: \$100

Non-Member: \$179

This two-day course will cover the following topics:

- **Fundamentals of Job Cost Control (MANAGING PROJECT LABOR COST):** In this session the instructor will help attendees to gain an understanding of the job cost control and labor cost trending methods as detailed in the Job Cost Control section of the *MCAA Project Manager’s Manual*. All project managers must learn to use their job cost control system as a primary management tool to control and cause a positive project outcome rather than simply focusing on cost documentation and cost history. Great project managers CONTROL their project cost while their average peers only

tend to WATCH project cost. This "basic" session is geared to new or potential project managers with minimal experience in job cost control systems and procedures and as a great refresher to more experienced project managers.

- **Project Billings and Maintaining Positive Cash Flow:** Maintaining positive cash flow is one of the mechanical contractor's greatest challenges. The construction industry's standard billing and payment model is a formula that has the potential to create poor cash flow on almost every project. This session focuses on how the project manager, through planning, creativity, excellent project execution, and positive customer relationships can regularly create positive project cash flow on most projects.
- **Essential Management Skills:** Learn the unique, basic management skills required to be a successful mechanical project manager. The primary focus of this session is "People Management". Gain an understanding of the essential traits, skills, and behaviors that allow effective management.

## Project Management 5 & 6

**John Koontz**

**Fri. & Sat., April 1-2, 2022**

**Day 1: 7:30 a.m. – 4:00 p.m.**

**Day 2: 7:00 a.m. – 11:30 a.m.**

**Member: \$100**

**Non-Member: \$179**

This two-day course will cover the following topics:

- **Contracts:** Using the Contract as a Tool for Project Management: Gain a basic understanding of contract types and components, and learn how to use the contract to maximize profitability while managing a mechanical construction project. Learn skills to help you know what the contract says and how to organize and manage the project accordingly.
- **Effective Project Documentation:** Documentation is a very time consuming but necessary evil in the construction process. Due to the great risk accepted when a Mechanical Contractor signs a contract, all mechanical projects must have a contemporaneously written factual record/history of all significant events, written by the people closest to the work. The key with documentation is having the right amount and the right types of documentation based upon the specific characteristics of the customer and the project. Over documenting a project wastes valuable company resources and can distract the project team from solving difficult project problems. Under documenting a project gives the project team a false sense of security and puts the company in an unnecessary position of risk if something goes terribly wrong on the project. Great project managers and foremen understand that excellent project documentation can prevent or protect your company from problem "escalation." In this session, the instructor will review all the basic project documentation types and discuss the steps necessary to plan and implement the project documentation process.

# PROJECT MANAGEMENT

## **Fabrication, Shop Drawings, and BIM**

**Troy Aichele**

**Thursday, April 21, 2022**

**7:30 a.m. – 11:30 a.m.**

**Member: Free**

**Non-Member: \$179**



Review the entire process of Fabrication, Shop Drawings and BIM while learning best Project Management practices in optimizing efficiencies and cost control.

- Review the importance of Fabrication, Shop Drawings & BIM to Mechanical Contractors and Construction Projects
- Learn the process and workflow in building a model and coordination with other trades
- Learn the deliverables and definitions of this process (Material Bill of Materials, Installation Drawings, Spool Packages, Penetration Drawings, In-Wall Rough-In, Trimble Files)
- Learn Project Manager responsibilities and best management practices in:
  - Creating and managing a BIM Execution Plan
  - Tracking, documenting and defending detailing change orders
  - BIM, Coordination and Detailing contract review
- VDC (Virtual Design & Construction) Kick-off Meeting and weekly status update SCRUMs
- Ensuring timely approved submittals (with adequate detail to allow inserting into the model)
- Analyzing the BIM Coordination Schedule and understand its critical relationship to our deliverables and field installations
- Maintaining accurate and easily accessible drawings, submittals and RFI's for detailers
- Building the Material Matrix
- Real life scenarios will be reviewed on what happens when a construction team is unable to follow best practices

## **Change Order Management**

**Stephane McShane**

**Wednesday, May 4, 2022**

**7:30 a.m. – 11:30 a.m.**

**Member: Free**

**Non-Member: \$179**

Effective change order management can dramatically reduce a subcontractor's risk and increase profitability. This four-hour interactive course explores the change order process from a subcontractor's view point and provides participants with hands on training in recognizing, scoping, pricing, and negotiating change orders. This course culminates in a mock negotiation where participants can immediately practice the skills that they have learned.



## Learning Objectives

- How to properly notify owners and general contractors of changed conditions to reserve your rights
- How to scope, price and sell a change order
- Negotiation strategies to maximize outcomes

## Introduction to Project Level Lean – What's the Big Deal?

**Stephane McShane**

**Thursday, June 16, 2022**

**7:30 a.m. – 11:00 a.m.**

**Member: Free**

**Non-Member: \$179**



The construction industry is increasingly utilizing formal production management principles and techniques known as 'Lean Construction' to increase reliability, jobsite productivity, and superior control over schedule. Using case studies, this course provides participants with a clear understanding of the background of Lean in Construction, why it's important, why it's effective and why they should care.

### Following this course, participants will be able to:

- Understand clearly what 'Lean' is and why the construction industry needs it.
- Understand 'Lean' terminology and be able to define it relative to other Project Management processes.
- See real life examples of the various methods for implementation and the results it generates
- Gain an introductory understanding of best practices and common pitfalls.

## Project Engineering Basics in Construction

**Harry Bederian**

**Friday, June 17, 2022**

**7:30 a.m. – 2:00 p.m.**

**Member: Free**

**Non-Member: \$179**

This seminar provides a practical overview of project engineering in construction. It is designed for individuals who have recently become a Project Engineer, are on the path to becoming a Project Engineer, have just transferred to this position, or are simply interested in what this role entails. A project engineer's task is to bridge the gap between engineering and management/construction. This course will cover the basics of how to fill and navigate this gap. Topics covered include: 1) The role/duty of a project engineer, 2) Request for Information, 3) Submittals, 4) Quality/Specifications, 5) Meetings/Meeting Minutes, 6) Scheduling, 7) Types of training/certificates, and 8) Do and Don'ts.

# FOREMAN TRAINING

## Foreman Training Program **\*VIRTUAL**

**C. Richard Barnes**

**Various Dates**

**7:00 a.m. – 9:00 a.m.**

**Member: \$50 per session** *\*Contractors will receive a full refund if registrant attends all 10 sessions.*

At no time in modern America has the need for effective leadership in construction organizations been more pronounced. Economic challenges, emerging competitive giants around the globe, innovative technologies, increased regulation, as well as entangled legal and ethical problems all confront our drive for success. America and our industry will only continue its international leadership if it sets the pace in technology, service and the development of its human capital. The problem solvers of the future are going to need a new and expanded set of problem-solving tools to deal with the challenges they will face as they assume larger and more important roles in their organizations. Their challenges will not be the same as in the past. Neither should their education and training. Based on the premise that academic education, while essential as a building block, is limited in its scope and format, this program goes beyond traditional education to offer a unique program for those who lead and will influence the success of our organizations into the next generation.

This is an entirely virtual 10-session series of videos and discussion with the instructor. Each student will be asked to watch a 15-20 minute video before each session, after which the students will attend a 2-hour virtual discussion with the instructor. Students who register for this class will be registering for the entire 10 sessions.

<b>Session 1</b>	Introduction, Organizational Cultures, and Market Share	Thursday, February 17, 2022	7:00-9:00 a.m.
<b>Session 2</b>	Communication – Part 1	Thursday, February 24, 2022	7:00-9:00 a.m.
<b>Session 3</b>	Communication – Part 2	Thursday, March 3, 2022	7:00-9:00 a.m.
<b>Session 4</b>	Leadership Styles, Image, and Professionalism	Thursday, March 24, 2022	7:00-9:00 a.m.
<b>Session 5</b>	Decision Making Processes	Thursday, March 31, 2022	7:00-9:00 a.m.
<b>Session 6</b>	Consensus Exercise	Thursday, April 14, 2022	7:00-9:00 a.m.
<b>Session 7</b>	Critical Thinking Skills, Workplace Conflict, and Working with Difficult People	Thursday, April 28, 2022	7:00-9:00 a.m.
<b>Session 8</b>	Negotiation Styles	Thursday, May 5, 2022	7:00-9:00 a.m.
<b>Session 9</b>	Negotiation Practice and Theory – Part 1	Thursday, May 19, 2022	7:00-9:00 a.m.
<b>Session 10</b>	Negotiation Practice and Theory – Part 2	Thursday, June 2, 2022	7:00-9:00 a.m.

## Estimating & Blueprint Reading

**Troy Aichele**

**Wednesday, March 23, 2022**

**7:30 a.m. 2:00 p.m.**

**Member: Free**

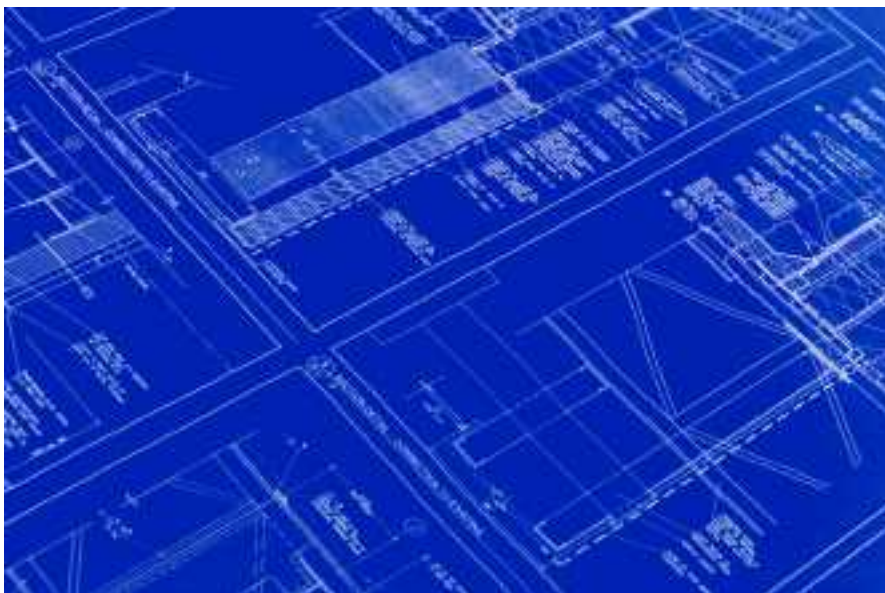
**Non-Member: \$179**

### Estimating

In this course, instructor Troy Aichele, Aichele & Associates, LLC will walk attendees through the gamut of mechanical estimating, from start to finish. Troy will review estimating philosophy, facilitate an actual in-class QTO (quantity take-off), cover the LEM (Labor Estimating Manual) uses, basic assumptions and productivity factors, perform a mock bid (utilizing the actual estimates created in class) and end with an activity where attendees use a one-of-a-kind estimate risk analysis worksheet that can be immediately added as one your company's estimating department tools.

### Blueprint Reading

In this course, instructor Troy Aichele will review all that is contained inside the Contract Documents, the importance of knowing each as a Mechanical Contractor and then learn the basics of Blueprint reading by discovery via multiple scavenger hunt document search activities.



# PEOPLE MANAGEMENT/SKILLS

## Controlling Chaos and Thriving Under Pressure

**Heather Stolte**

**Wednesday, February 9, 2022**

**7:30 a.m. – 2:30 p.m.**

**Members: Free**

**Non-Members: \$179**



Your workday may seem so out of control that you feel like throwing up your hands in frustration. After all, what can you do to change it? And where do you start? Turn off your laptop...put your cell phone on mute...and carve time out of your busy schedule for this exciting training program. We'll show you the core principles and innovative strategies that'll help you simplify your hectic schedule, control your day instead of letting it control you and ease stress in all areas of your life — no matter what constraints you face. Some topics include: gaining the upper hand on your time, replacing old habits with a new effective approach, eliminating time wasters, and easing stress.

## Leading a Cross-Generational Workforce

**Eric Herdman**

**Wednesday, April 6, 2022**

**7:30 a.m. – 2:30 p.m.**

**Members: Free**

**Non-Members: \$179**



Today's workplace is more diverse than ever before. Not only are more people from different backgrounds and cultures working together, but for the first time in history, there could be up to five generations of employees working together. So, how do you get the different generations to pull together as a team?

This course will help you understand generational trends and learn why people may respond differently to the same situation. We will also guide you through the skill sets and tools you need to get the most from your highly skilled, but very diverse, team. Some topics include: understanding the generations, managing cross-generational teams, addressing generational conflict, looking beyond generational trends, building a successful cross-generational team.

## Thinking Fast & Slow

Rebecca Campbell

Thursday, June 9, 2022

7:30 a.m. – 11:30 a.m.

Members: Free

Non-Members: \$179



Using lessons from Daniel Kahneman's Award-winning book *Thinking, Fast and Slow*, we will examine how the human brain thinks and how we can use this information to help us in our work and personal life. Based on the research of a Nobel prize winning psychologist, this class will take you through two systems in our brain that shape our judgement and decision making and teach you how to think and avoid mistakes in situations when the stakes are high.

## SALES/SERVICE/SAFETY

### Crisis at Work: Workplace Violence & Active Shooter

Carol Cambridge

Wednesday, June 15, 2022

7:30 a.m. – 2:00 p.m.

Members: Free

Non-Members: \$179



As hate, violence & tension rises in our communities, so does workplace violence and active shooter situations. Most companies in North America still do not have an effective plan in place to reduce violence and increase reporting. This leaves companies and organizations vulnerable and at a higher risk for escalating violence.

In this interactive workshop, you'll learn:

- #1 strategy for reducing workplace violence
- Identify dangerous blind spots that could mean your employees are in harm's way
- The behavior that may be predictive of violence
- Relevant and immediately actionable strategies to reduce your liability
- 7 tips to survive an active shooter situation

In an active shooter scenario, you have only seconds to make a decision! In the midst of panic and chaos anyone can play an integral role in mitigating the impacts of an active shooter situation.

This workshop will answer your questions & concerns; calms your fears; train your brain to respond and gives you the information you need to make quick life-saving decisions.

This is a MUST-SEE program that will provide you with life-saving skills! The focus is on survival not on fear.

\*If we have enough people sign up – we will do an active shooter drill!! You won't want to miss this!



# CERTIFIED SAFETY – SAFETY RISK CONTROL

## ClickSafety – Online Safety Courses

**Anytime – Accessible 24/7  
online from your computer**

**Member: Free** (however CPMCA will bill for the cost of the class if the class is not completed)

**Non-Member: Not Available**

As the leader in online safety training solutions, ClickSafety offers a comprehensive library of over 300 courses, specifically engineered to help you build a world-class safety culture. Developed by Certified Safety Professionals and Certified Industrial Hygienists, our courses are designed to protect your most valuable asset – your employees. A complete list of topics is available on CPMCA's website.



**Please note: all classes must be completed within 6 months from the start date. Classes are offered free of charge to members, however CPMCA will bill for the cost of the class if the class is not completed by due date.**

### **OSHA Online 10-Hour Safety & Health** *Anytime Online*

OSHA 10-Hour Construction is a part of an online OSHA outreach program that results in a valid DOL/OSHA 10-Hour Card. This OSHA 10 online training course teaches recognition, avoidance, abatement and prevention of safety and health hazards in workplaces. This course also provides information regarding workers' rights, employer responsibilities and how to file a complaint. It was also designed to help individuals stay up-to-date with their OSHA safety requirements.

### **OSHA Online 30-Hour Construction** *Anytime Online*

OSHA 30-Hour Construction is an OSHA-Authorized online course featuring the required steps for completing OSHA Outreach training and receiving an OSHA 30 Card. This online training covers everything from Electrical Hazard Safety to Fall Protection. ClickSafety's OSHA 30-Hour Construction course is a proven way to receive a valid OSHA 30-Hour Card and achieve the safety level required by your company for work in the construction industry.

### **OSHA Updates Confined Spaces in Construction Standard** *Anytime Online*

OSHA's final rule for Confined Spaces in Construction went into effect August 3, 2015. Are you and your coworkers prepared for the changes? Pete Rice, CSP, CIH discusses OSHA's Final Rule for Confined Spaces in Construction, including how it differs from the Confined Spaces in General Industry standard. Pete shares the Top 5 Changes to the CS in Construction rule and why the new rule was enacted.

**ClickSafety has 2 new Confined Spaces in Construction online safety training courses that meet OSHA's final rule for Confined Spaces in Construction:**

- **Confined Spaces in Construction Awareness (20-minute)**
- **Confined spaces in Construction; An Instruction (75-Minute)**

## Cal/OSHA Heat Illness Prevention for Workers

Cal/OSHA Heat Illness Prevention is intended for employers in all industries that have employees working in California with the potential for exposure to heat illness and heat stress. This course is intended to familiarize the student with the basics of Cal/OSHA's standard, titled Heat Illness Prevention, and found in Section 3395 of the Title 8 California Code of Regulations, effective on May 1, 2015.

## Asbestos

Asbestos exposure happens when workers disturb asbestos-containing materials during demolition and renovation of buildings. In this introductory course, we will teach you about the properties and exposures of asbestos as covered by OSHA Standard Subpart Z 29 CFR 1910.1001 for General Industry. This course also covers how to protect workers from exposure of asbestos in the workplace.

## 100% Fall Protection

This course is intended to inform students of basic guidelines and methods employed for a 100% fall protection program. It reviews elements of fall hazards, fall hazard evaluation, and fall hazard control. This training references applicable OSHA requirements and other pertinent information. Real life case studies and lessons learned are presented to illustrate the "why" and the "need" for compliance and following OSHA requirements and industrial best practices.

**To sign-up for online training through our partners at [ClickSafety.com](https://ClickSafety.com), please contact CPMCA or the A & J for more information. CPMCA processes enrollment for contractor members' staff personnel while the Apprenticeship & Journeymen Training Trust Fund processes class assignments for Union members.**



## WEBCASTS ARE AVAILABLE AT [WWW.CPMCA.ORG](http://WWW.CPMCA.ORG)!

**NOTE:** All Webcasts are Online Courses that can be accessed on CPMCA's website at any time. They are available to CPMCA members only. Your company login information is required to access these courses.

### Active Listening

**Mark Matteson**

**Online Course – Please contact our office to obtain or create login credentials.**

Active Listening is vital in today's business environment. In this webcast, you will learn from Mark Matteson the 4 Steps to Active Listening and how to apply them in everyday business communication with your customers. According to Mark Matteson, the 4 Steps to Active Listening are: listen actively, listen with intention, pause 3–5 seconds before responding, and question for clarification & paraphrase. Incorporating these 4 basic steps into your customer relations will improve your effectiveness and increase your sales with your customers

### BIM 101

**Dwayne Lindsey**

**Online Course – Please contact our office to obtain or create login credentials.**

There is simply no easier way to learn about BIM (Building Information Modeling) than viewing this easy to understand webcast. You will learn exactly what BIM is and why it's good for your industry in a non-technical way.

### Excel: Insert Excel Sheet into Word

**Ginnie Floraday**

**Online Course – Please contact our office to obtain or create login credentials.**

You can incorporate an Excel workbook into your Word document. You have the choice of linking to the actual Excel sheet or bringing in a static copy of the worksheet. If you link to the original file it is called embedding. If changes are made to the original selection they will appear in the copied text within Word. A static copy will not transfer any of the changes back to the spreadsheet.

### Excel: Solver Procedure

**Ginnie Floraday**

**Online Course – Please contact our office to obtain or create login credentials.**

This webcast will show you how to use the Solver function in Excel to streamline formulas in spreadsheets. Solver allows you to calculate a formula backwards. Participants will learn how to change the value of a cell that is dependent on a formula. An example of the application of this function is budgets. After setting individual projections within

each department, a department total is generated for each department. If you know that a certain department cannot exceed a certain amount, the Solver can modify the individual numbers that impact the total. All you have to do is identify what the total should be, and Solver will modify any of the related cells.

### Excel: Summarizing Data with Subtotals in Excel

**Ginnie Floraday**

**Online Course – Please contact our office to obtain or create login credentials.**

When the data is in list form, Microsoft Excel can calculate and insert subtotals in a worksheet. When you specify the items you want to create subtotals for, the values to be summarized, and the functions to use on the values, Microsoft Excel outlines the worksheet so that you can show or hide as much detail as you need. If you have summarized data by using formulas that contain functions such as SUM, Microsoft can automatically outline the data.

### Going Green – Valuable Opportunities for Mechanical Contractors

**Jeff Grossberg**

**Online Course – Please contact our office to obtain or create login credentials.**

Jeff Grossberg will inform member contractors about the growing demand of sustainable technology. Grossberg encourages contractors to become leaders, rather than followers, and offers guidance on how contractors can grow their business and garner market share by entering the green building marketplace.

### Green Building: LEED Certification and Sustainable Design

**Lincoln Pearce**

**Online Course – Please contact our office to obtain or create login credentials.**

Once considered a passing fad, green building has driven its roots deep into the American landscape. City Halls in Chicago and Atlanta have green rooftops and green building initiatives are thriving in Los Angeles, Seattle, Denver, Dallas and other major cities nationwide. Even the United Nations headquarters in New York will be renovated with green principles in mind.

### **Green Building: LEED Certification "So You Want to be a Green Contractor"**

**Dan Bulley**

**Online Course – Please contact our office to obtain or create login credentials.**

Learn what it takes to become a green contractor with Dan Bulley.

### **Mechanical Estimating Techniques**

**Keith Rahn**

**Online Course – Please contact our office to obtain or create login credentials.**

If you can expertly estimate the cost of a construction project you have the edge in the bidding process. Keith Rahn will teach you how to analyze contract documents and estimate more accurately than your competition. Keith's techniques will give you the tools you need to win the bid and establish long-term trusted relationships with your customers.

### **Microsoft Office 2007 Excel**

**Ginnie Floraday**

**Online Course – Please contact our office to obtain or create login credentials.**

This webcast will give an overview to the updated version of Excel including improvements to Pivot tables, Filters and advanced formatting.

### **Microsoft Office 2007 Overview**

**Ginnie Floraday**

**Online Course – Please contact our office to obtain or create login credentials.**

This webcast will give an overview to the updated versions of Excel, Word, PowerPoint and Outlook. Some of the new features to be reviewed will be the Ribbon (the replacement for the toolbar), the Mini Toolbar, document Themes and Quick Styles in Word. Excel enhancements include improvements to Pivot tables, Filters and advanced formatting.

### **Microsoft Word Fill-In Forms – Build a Word document with Fields**

**Ginnie Floraday**

**Online Course – Please contact our office to obtain or create login credentials.**

A form is a structured document with spaces reserved for entering information. You design the form, and others can fill it in on paper or in Microsoft Word.

### **PowerPoint: Introduction to PowerPoint 2007**

**Ginnie Floraday**

**Online Course – Please contact our office to obtain or create login credentials.**

This webcast will provide an overview to the updated version of PowerPoint.

### **Retro-Commissioning**

**Chris Philbrick**

**Online Course – Please contact our office to obtain or create login credentials.**

Retro-Commissioning is a commissioning process applied to existing buildings that have never been commissioned. It is a systematic, documented process that identifies low-cost operations and maintenance improvements in existing buildings and brings the building up to the design intentions of its current usage. Retro-commissioning assures that the mechanical systems are optimally integrated and perform together as efficiently as possible. Retro-commissioning's primary focus is on using O&M tune-up activities and diagnostic testing to optimize the building systems. This course will outline the process and phases of RCx: planning, investigation, implementations, measurement and verification. Chris Philbrick will cover a typical project that has moved through the retro-commissioning process and will include a summary of cost and savings for multiple projects. Typical low-cost measures will be discussed as well as how the retro-commissioning process relates to LEED EB credits.

### **Water Efficiency and How It Relates to Green Building**

**Jim Allen**

**Online Course – Please contact our office to obtain or create login credentials.**

Seventy percent of the Earth's surface is water...and yet only 3 percent is fresh water, and 57 percent of that fresh water is frozen in polar ice caps and glaciers. Only 1 percent of the Earth's water is available for human consumption – and the green building movement is working to conserve that vital, limited supply. This online course will inform member contractors about the importance of water conservation, as well as ways to improve water efficiency in a building project. The online course covers how different industries use water and provides an overview of national conservation initiatives. Upcoming technologies and emerging trends to conserve water are also discussed.





**CPMCA**

California Plumbing & Mechanical  
Contractors Association

**California Plumbing & Mechanical  
Contractors Association  
445 S. Figueroa St. Ste. 2580  
Los Angeles, CA 90071**

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