

MARCH 2019 CURRICULUM

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OVERVIEW



2019 HIGHLIGHTS:

This year's Educational Institute once again will offer 65 full-day classes in 13 different course paths, with the "best of the best" instructors from all over the United States. Class offerings include a number of new classes, as well as many revised and improved versions of our most popular offerings, most based on the **2018** International Codes and the **2017** National Electrical Code.

- **New!** A field inspection class dealing with furnaces and water heaters
- **New!** A class looking at those "other chapters" of the IBC, Chapters 12 and beyond!
- **New!** Reinhard Hanselka brings back his hazardous materials and combustible liquids class but this time for the building inspector!
- **Revised!** Andre Jaen helps us understand the generational issues we face when recruiting and retaining new professionals.
- **Revised!** Five classes based on the 2017 National Electrical Code which comply with the DORA continuing competency requirements for Colorado licensed electricians including a new Solar class that reviews the building, fire and electrical code requirements for PV systems.
- **Revised!** Bart Laemmel puts a spin on his building science meets real world construction with "Construction, What Could Possibly Go Wrong?"
- **Back!** Todd Gilbert is back with special inspection of firestop systems and Rich Walke and the gang are back with the fire resistive construction requirements and the protection of openings classes.
- **Revised!** Full week course paths on plumbing and mechanical, including a new MEP class that looks at the science behind many of the plumbing, mechanical, electric and fuel gas code provisions, plus the return of a class on Manual J, D and S.
- **Back!** The class covering the confusing mechanical ventilation strategies for houses and apartments based on the IMC, IECC and IRC.
- **Hot!** Ten full-day classes to choose from with top notch instruction on the most current fire prevention topics, including a number of new courses on topics such as high piled storage, arson, preparing for unlikely emergencies and fire sprinklers.

REGISTRATION:

- Registration costs are \$400 for the week or \$90 for individual days. If registering as a group, multiple individuals may attend any combination of five classes for the weekly rate of only \$400.
- The registration includes classroom instruction by some of the best instructors in their fields, handout materials if provided, lunch, and morning and afternoon break refreshments.
- You have two ways to register for class at the Educational Institute, either online or by mail.
- Check the web site at www.coloradochaptericc.org for expanded class descriptions and other Educational Institute updates.

Online Registration:

- Registration applications can be submitted online at www.coloradochaptericc.org. Online applications can be paid for by credit card or by mailing in a check, however, service fees will apply to payments made by credit card.
- When registering a group online, one or more persons may attend any combination of classes for 5 days total for the weekly rate. Payment for all online group registrations will be calculated in that manner.

Registration by Mail:

- **PLEASE COMPLETE** the Registration and Course Selection Form by checking the classes you wish to attend. Please fill out a **SEPARATE FORM FOR EACH PERSON** attending and be sure to **PRINT CLEARLY** all the requested information. Full payment must accompany the registration form.
- Register early! The most popular classes fill quickly and often need to be closed. Individual classes will be filled on a first-come, first-served basis. If a selected class is filled, you will be notified by the education committee and asked for your alternative choice(s).
- **REGISTRATION DEADLINE IS FEBRUARY 15, 2019. Registrations or fees received after February 15th will not be accepted.**

Refund Policy:

If the request for a registration fee refund is received by **February 15, 2019**, 100 percent of the fee will be refunded. Fees will not be refunded if the request is received after **February 15, 2019**.

LOCATION:

- **Denver Marriott Tech Center (DTC)**
- 4900 S. Syracuse Street, Denver, CO 80237, south of Denver at I-25 & Belleview (Exit 199).
- Room rates are \$149/night until February 8, 2019.
- Reservations can be made by calling 1-877-303-0104. Hotel reservations can also be made on-line by using the link on www.coloradochaptericc.org, the Colorado Chapter ICC's web site. Be sure to reference the **CCICC Educational Institute** when making your reservations, and be sure to obtain those reservations as soon as possible.

PARKING:

As we have experienced in the past, there are far more attendees than available on-site parking spaces. The Marriott DTC will be making some additional spaces available to attendees, but parking on-site will cost \$5.00 a day. Attendees, especially local attendees, are encouraged to carpool or take RTD's light rail.

EXHIBITS:

Monday, Tuesday & Wednesday in the Atrium. This is your opportunity to learn about the latest building and construction products and services offered by manufacturers, trade associations and related companies. Join us for breakfast on Wednesday morning at 7:00 am for an exhibitor sponsored breakfast buffet.

FELLOWSHIP BREAKFAST:

Tuesday, March 5TH @ 6:30 am. The Colorado Chapter of ICC would like to invite you to our Educational Institute Fellowship Breakfast. This is an informal gathering with a short inspirational message to start your day. No pre-registration is required.

CONTINUING EDUCATION:

The Colorado Chapter of ICC is an Approved Education Provider under the provisions of the ICC Preferred Provider Program. Continuing Education Units will be provided as well as Professional Development Units required by the State of Colorado Electrical Board (DORA) and, Learning Units as required by the American Institute of Architects (AIA). These continuing education credits will be issued to attendees within 30 days of conclusion of the event. (Additional information on Preferred Provider approved classes and continuing education credits will be available at www.coloradochaptericc.org).

ICC CERTIFICATION TESTING:

ICC will again be offering certification testing onsite during the week. Please check for times and registration details at www.coloradochaptericc.org. *Classes in the curriculum were not designed specifically for passing the certification testing.*

CLASSROOM:

- All classes begin at 8:00 am and end at 4:30 pm. Lunch will be provided along with morning and afternoon breaks.
- Most classes will be based upon the **2018 editions** of the IBC, IECC, IFGC, IFC, IMC, IPC, IGCC and the IRC, and the 2017 edition of the NEC. **PLEASE BRING THE APPLICABLE CODE BOOK(S) AND/OR REFERENCE MATERIALS TO YOUR CLASS!**
- **ICC Bookstore.** ICC will once again have an on-site bookstore offering code books and reference materials for viewing and purchase.
- The instructors listed in the brochure are scheduled to teach, however, substitutions may be made. Additional class information is available on the Educational Institute website.

MATERIALS:

Class handouts, if applicable, will be made available to you electronically in February through the Chapter web site. You will be responsible for the downloading or printing of your handouts to bring to your class. Check the Educational Institute website for additional information in February.

COURSE DESCRIPTIONS

Course descriptions are listed by day, Monday – Friday

<p>181: A Code Read on Whiskey and Weed</p>	<p>Steve Thomas, Colorado Code Consulting (CCC), LLC and Brad Emerick, City and County of Denver. This two part class will take a look at the two fastest growing consumer product industries in the United States; cannabis and distilled spirits. The first half of the class will focus on the classification of the facilities and other code requirements for grow facilities, processing, extraction and sales of cannabis. The second half will look at the equipment employed and the processes performed in the production of distilled spirits, along with the applicable regulations distilled from the I-Codes and NFPA standards.</p>
<p>182 & 282: The Complete Permit Technician</p>	<p>Steve Burger, C.B.O., LEED A.P., Shums Coda Associates Code Consultants. This two-day course is intended to provide essential information in the areas of code administration and history, legal aspects, customer service, basic construction, inspection process, zoning requirements, permit fee calculations, basic occupancy and construction types, basic means of egress and dealing with difficult customers. The course is recommended for front counter personnel, other Building Department staff and those who may be interested in preparing for the ICC Permit Technician certification exam. Also will include the 2018 updates to the 2018 International Building Code. *Please bring a calculator, highlighter, 2015 International Building Code, 2015 International Zoning Code, Legal Aspects of Code Administration and Basic Code Enforcement.</p>
<p>183: Building Science Meets Energy Codes</p>	<p>Robby Schwarz, Energy Logic. Enforcement of the 2018 IECC has moved from prescriptive requirements to an understanding of the intent of the code. Therefore, we need to better understand the Building Science so we realize the connections between efficiency, durability, safety, and comfort. This course will walk you through the 2018 IECC, the basic building science incorporated in its compliance paths and the connection between energy and specific sections of the IRC.</p>
<p>184: Soils Identification and Foundation Design</p>	<p>Bill Koechlein, P.E., Cesare, Inc. This class provides a detailed discussion and examples of soils and foundation investigations and how they are implemented into current foundation designs.</p>
<p>185: Decks & Porches by the Code</p>	<p>Glenn Mathewson, BuildingCodeCollege.com. The latest IRC editions include new provisions for prescriptive deck construction and many of them rattle the norm of common construction methods. At the same time, conventional roof construction methods long understood by carpenters are being lost to the ease of prefabricated trusses. Decks and porch roofs pose a challenge to all building departments in that they are incredibly varied in design, not clearly or sufficiently covered by the IRC, and notoriously built by homeowners or new tradesmen that don't completely understand their potential complexity. Rafter ties, collar ties, ridge boards and ridge straps are the difference between a simple shed roof and a not-so-simple gable end roof, and the days of slapping a deck against a house with little more thought than a handful of lag screws are gone. Learn about new codes and old codes and become more prepared to handle the next deck or porch plan review and inspection.</p>
<p>186 & 387: (Offered twice) 2018 IBC Significant Changes</p>	<p>Doug Thornburg, International Code Council. This course walks through important changes in the 2018 International Building Code (IBC). It is designed to assist code users in identifying the specific code changes that have occurred and, more important, understanding the reasons behind the changes. Only a portion of the total number of code changes to the IBC will be discussed in this course. The changes selected were identified for a number of reasons, including their frequency of application, special significance, and change in application.</p>
<p>187: 2018 International Existing Building Code</p>	<p>Bill Clayton, CCC. This one-day seminar addresses the relationship of the International Existing Building Code to existing buildings. The seminar focuses on the fundamental requirements on an existing structure that undergoes repair work, alteration, renovation activity or construction of an addition, and the effect of a change in the building's occupancy classification. Discussion will also include the "Performance Compliance Alternatives" method of evaluating a building.</p>
<p>188: The Backside of the Building Code – Chapter 12 and Beyond</p>	<p>Tom Meyers, Building Intuition, LLC. This class is intended to focus on nonstructural topics that are not typically covered in detail during code training. The class will address little-emphasized areas of the code that have resulted in tragic fire consequences, such as MCM's regulated in Chapter 14 and foam plastics in Chapter 23. The class will also cover interior environment, roofing, glass, special construction, and emerging issues in safeguards during construction. Finally, the typically glossed-over requirements for interior finishes will be considered in detail.</p>
<p>189: Residential Plumbing Inspections 101</p>	<p>John Magee, Colorado State Plumbing Inspector. This course is based on the plumbing provisions of the 2018 IRC and is designed for the beginning inspector. Hands-on and visual presentations of fittings and materials found in a typical residential setting and how the individual fittings are used for water piping, drainage and venting will be included. Pictures and isometric drawings will be shown and discussed, detailing multiple plumbing installation scenarios.</p>
<p>190: Commercial Kitchen Exhaust System Inspections</p>	<p>Guy McMann, Jefferson County Building Division. This class is an in-depth review of Type I and II hood systems and grease ducts with an emphasis on correct hood installation and understanding what type of hood is required over what type of appliances. The proper installation and inspection of grease ducts, make-up air and exhaust systems under the 2018 IMC will be discussed.</p>
<p>191: 2017 NEC Load Calculations</p>	<p>Jaime E. Loza, NJATC, NTI Instructor. This class will focus on the different areas of the 2017 NEC where calculations are required in order to provide a safe and compliant installation. It will review calculations for overcurrent and overload protection, grounding and bonding, transformers and motors. Different scenarios will be explored and the options for each will be considered. Attendees will also be introduced to the use of the ANNEX C – Conduit and Tubing Fill Tables for Conductors</p>

<p>192 & 292:</p> <p>Application of the NFPA 13 Requirements for Storage Occupancies</p>	<p>Scott Stookey, Austin (TX) Fire Department. NFPA 13 has ten chapters that address automatic sprinkler protection for Storage occupancies. The chapters are organized based on the automatic sprinkler design, height and method of storage, and commodity classification. The automatic sprinkler designs must comply with general provisions in NFPA 13 Chapter 12 as well as the required hydraulic demand dictated by the respective requirements for Class I-IV, Plastic or Tire commodities. In many instances specific designs are available for storage conditions employed in Group M occupancies that house High Piled Combustible Storage. Storage occupancy automatic sprinkler system can be a Control Mode or Suppression Mode design, or both.</p> <p>This two day seminar reviews the 2018 IFC Chapter 32 and NFPA 13 (2016 ed.) Group S occupancy requirements. The seminar is based on a series of worksheets developed by the presenter and are used during design reviews for ensuring automatic sprinkler designs for high-piled combustible storage comply with NFPA 13. This seminar works through scenarios that are based on control mode and suppression mode designs after confirming the commodity classification and the storage method(s). Participants need to bring NFPA 13 (2016 ed.) and calculator.</p>
<p>193: Hazardous Materials: A Practical Approach</p>	<p>Reinhard Hanselka, PhD, REA. In addition to providing a plan for the navigation of Chapters 50 – 67 of the 2018 International Fire Code, this class will discuss real life applications and allow the student to learn how to apply general requirements of Chapter 50 as well as any material-specific requirements.</p>
<p>281: Mentoring the Future: What It Takes to Pass the Torch to Millennial Code Officials</p>	<p>Andre Jaen, MCP, Jefferson County. The class will focus on framing social and generational issues between millennials and baby boomers; recruiting, fostering and retaining talented young professionals; and the changing landscape of the building safety profession.</p>
<p>283: Energy Conservation Construction</p>	<p>Glenn Mathewson, BuildingCodeCollege.com. Energy conservation isn't all about insulation and the energy code. There are many ways that framing, plumbing, electrical, and other installations can enhance the energy performance of a home. Dimes add up to dollars and dollars add up to dinner, just the same, small gains in energy conservation can add up to a lot of saved energy. Learn how to keep energy in mind throughout the whole construction process, long before the insulation crew arrives. Upon completion of this course attendees will:</p> <ul style="list-style-type: none"> • Understand code provisions that reduce thermal bridges and increase insulation in the exterior envelope, such as single-ply and box headers, as well as single top plate construction and 24-inch-on-center wall spacing. • Think outside the box about how various trades can enhance energy performance. • Learn the complexities of providing certain air barriers and why they are essential to thermal performance.
<p>284: Building Loads and Wall Bracing</p>	<p>J.R. Whipple and John Peterson, PE, Rivet Engineering. This course is intended to provide a better understanding of the ASCE 7 and ICC requirements for dead, live, snow, wind, and seismic loads on buildings. The course will discuss the ramifications of occupancy, building construction, and environment on the structural framing and foundation systems. A portion of the class will also address requirements for lateral bracing within the codes.</p>
<p>285 & 385:</p> <p>IRC Plan Review</p>	<p>Gil Rossmiller and Hope Medina, CCC. This two-day class is designed to provide a broad overview of the process for residential plan review for dwelling units covered under the 2018 IRC. This course will provide the basic steps involved to complete a comprehensive review of a residence, including building, mechanical and energy reviews. It is designed to increase your awareness of the necessary items required to insure code compliance of the homes built in your jurisdiction. The class will discuss the tools and process for conducting a residential plan review. Bring a scale, calculator and code book as the class will be reviewing construction plans in class.</p>
<p>286: Advanced Occupancies</p>	<p>Steve Thomas, CCC. This class will be an advanced review of Chapters 3, 4, 5 & 6 of the IBC. We will discuss unusual projects that many building departments seldom or ever see come across their counters. Mixed occupancies, unlimited area buildings, malls, motor vehicle occupancies and hazardous occupancies will be discussed. The class will also include case studies of some unusual projects.</p>
<p>287: Assessment of Existing Buildings for Life Safety Professionals</p>	<p>Tom Meyers, Building Intuition, LLC. This course targets the most difficult role posed on a building safety professional: Accurate assessment of existing buildings. The class will present techniques used to understand an existing building's potential safety performance, focusing on major life-safety deficiencies and strategies to mitigate them. The legal and political aspects of the safety evaluation will be emphasized. The final portion of the course will discuss the various mandatory requirements for an existing building included in the International Fire Code.</p>
<p>288: Fire Code for the Building Inspector</p>	<p>Reinhard Hanselka, PhD, REA. This class will look at allowable quantities and proper storage and ventilation of hazardous materials, gases and flammable and combustible liquids. Not every jurisdiction has active fire officials looking at the buildings, plus building inspectors are in the buildings more often than the fire official most of the time, so there are things you need to know in order to report or avoid problems!</p>
<p>289: 2018 International Plumbing Code Venting</p>	<p>James Fernandez, State of Colorado Plumbing Inspector. This class will cover the requirements for venting in Chapter 9 of the 2018 International Plumbing Code. Included in this course will be theory, application, design, and installation of venting systems. Discussion and visual aids (including isometric drawings, pictures, and plumbing fittings) will be included in this course to illustrate code-compliant venting.</p>
<p>290: Residential Mechanical Provisions</p>	<p>Sam Dardano. This class will walk you through the mechanical do's and don'ts of the International Residential Code's residential applications. It will cover topics including mechanical appliances and equipment, fuel gas supply, venting, and air duct. This class should be of interest to residential inspectors, plan reviewers, designers and contractors.</p>
<p>291: PV Solar Plan Review and Inspection</p>	<p>Jim Brown, Steel City Solar. This course will review the building, fire, and electrical code requirements for the installation of photovoltaic solar systems, including a review of typical concerns such as wind loading, snow loading, setbacks, and grounding and bonding requirements. Recent NEC code changes such as rapid shutdown and placarding will also be discussed. The basic principles of designing and sizing a PV solar array as well as a brief discussion on best practices for installation will be included.</p>
<p>293: Fire Sprinklers Systems in Cold Environments</p>	<p>Mark Fessenden, Johnson Controls. This class will discuss how to evaluate the different choices when it comes to installing sprinklers in a cold environment. Different types of sprinkler systems choices will be explored ranging from dry valve, double inter-lock pre-action, anti-freeze.....including requirements for each type of sprinkler system and the acceptance testing requirements.</p>

381: Disaster Assessment	<p>Tom Pitchford, City of Greenwood Village. Disasters create terrible consequences, forcing people out of their homes into temporary shelters and closing down communities. The Safety Assessment Program (SAP) provides experienced professionals who can quickly evaluate damaged structures, identifying those that are safe for occupancy to which people can return, while marking those that are unsafe or have restricted use. SAP Evaluator Training trains civil engineers, architects, and building inspectors to do field evaluations of buildings and other infrastructure for safety. This training is approved by the Federal Department of Homeland Security for homeland security grant funding, and for CEUs through the California State University.</p> <p>SAP has been used successfully in responding to disasters, such as the Northridge, Napa, San Simeon, and Baja earthquakes in California, as well as in response to Hurricane Katrina in 2005. SAP evaluators were sent to Louisiana and Mississippi to assist in building safety evaluation. SAP evaluators were also used in local disasters including the Windsor tornado and the terrible flooding throughout Colorado in 2013.</p>
382: CBO Administration: So You Want to Be a Building Official?	<p>Steve Burger, C.B.O., LEED A.P., Shums Coda Associates Code Consultants Thinking about taking that next step in your career to become a Building Official or already a CBO and wondering what in the world you got yourself into? Let's take a look at what all is involved in being a Building Official. This course will look at the different aspects of the job such as dealing with personnel, politics, the public and the codes.</p>
383: Commercial Energy Plan Review – Mechanical and Lighting	<p>Group 14 Engineering. It's no secret that the most efficient way to save energy in a commercial building is to tackle those internal loads. Let's walk through the mechanical and lighting systems to determine the best way to verify compliance on the plans, and discuss how commissioning ties into all of this.</p>
384: Structural Plan Review	<p>Troy Morgan, Ph.D, P.E and Paul J. Bennett, P.E., Exponent. This course is intended to provide beginning structural engineers, architects, inspectors, plan reviewers and building officials with a basic understanding of structural analysis and structural plan review. The class will start with a description of both lateral and vertical structural systems and their complete load paths. The instructors will discuss how structural loads are determined and applied to the structure as well as the imposed internal forces, which are a part of the structural analysis. Chapter 16 of the IBC will be discussed. The class will include plan review examples. Case studies in structural failures will also be presented. Recommended texts: 2018 IBC</p>
386: Accessibility for Commercial Buildings	<p>Thomas Meyers, CBO, Building Intuition, LLC. This course is intended to provide basic concepts of disabled accessible design and construction using the International Building Code and ICC A117.1 as it relates to non-residential structures. The class format first discusses when accessible features are required (scoped) by the IBC. Then the requirements of ICC A117.1 are illustrated to show how a building and its site is made accessible. This class is intended for the code user who is either new to accessible design or is in need of a refresher on the ever-changing requirements. Application of accessibility requirements for existing buildings will be discussed.</p>
388: Fire-Resistance-Rated Construction Requirements of the 2018 IBC	<p>Rich Walke, Underwriters Laboratories (UL) and Bill Clayton, CCC. This program provides an in-depth look at the requirements of the 2018 International Building Code for fire-resistance-rated construction. It will start with a detailed look at what is fire-resistance-rated construction, where it is required and what is the required rating. From there, it will cover the practical aspects as detailed in Chapter 7, including the unique requirements for structural elements, walls and horizontal assemblies, the referenced standards, the testing process described in the referenced standards, and the available methods of demonstrating code compliance. The protection of breaches within these assemblies will be covered in two subsequent classes on Thursday and Friday.</p>
389: PMGE Fundamentals	<p>Glenn Mathewson, BuildingCodeCollege.com. This class is helpful for everyone in the construction industry, as it explores the reasoning and science behind many plumbing, mechanical, fuel-gas, and electrical code provisions. Whether a contractor or inspector, cross training in these specialized trades offers a better understanding of the work performed and how they "work".</p>
390: 2018 International Mechanical Code Overview	<p>Sam Dardano. This class will walk you through the mechanical do's and don'ts of the 2018 International Mechanical Code's commercial applications. It will cover topics including mechanical appliances and equipment, fuel gas supply, venting, and air duct. This class should be of interest to commercial inspectors, plan reviewers and contractors.</p>
391: 2017 National Electrical Code Update	<p>Shane Clark, Pueblo Electric. This class will review the significant changes found in the newest edition of NFPA 70, the National Electrical Code. Bring your copy of the 2017 NEC or NEC Handbook.</p>
392: Fire Alarm Initial and Reacceptance Testing	<p>Tami Holley, PE, Fire Protection Engineer. This course is a comprehensive class addressing the requirements for initial and reacceptance testing of fire alarm systems to ensure the operational integrity and longevity. Even the savvy and experienced inspectors will discover exceptions and clarifications from NFPA 72. The class will cover the inspection and testing requirements for Fire Alarm Control Panels, DACTs, Annunciators, Remote Power Supplies, Initiating Devices, VESDA, Audible/Visual Notification (Including Voice), fire alarm system interfaces to other systems (Elevators, Sprinklers, Fire/Smoke Dampers) as well as record drawing requirements in compliance with NFPA 72. The class will include examples of rough wire observations, manometer readings, intelligibility readings and hands on demonstrations of different types of fire alarm control panels.</p>
393: Community Risk Reduction - Brilliant Brainstorming	<p>Colleen Potton, South Metro Fire Rescue, Deanna Harrington, Arvada Fire Protection District. Are you trying to teach, prevent, inspect . . . and not sure if anyone hears you? In this workshop, we will discuss overcoming messaging barriers and how to make your messages more meaningful. We will set the stage by presenting some lessons learned and then facilitate an interactive session of brainstorming working toward messaging that will cross languages, cultures, and educational levels. Each participant will leave with new CRR messaging ideas that they can implement in their respective agencies.</p>
481: Management Solutions	<p>Lynn Pollard, Pollard Consulting. This class will look at ways to mentor, coach and develop your employees, while enhancing engagement and ownership. We will also discuss how to motivate for positive results and the importance of retaining and keeping your "best" employees, through how you lead and structure your relationships and development efforts with them.</p>
482: Construction, What Could Possibly Go Wrong?	<p>Bart Laemmel, B2 Building Science. An entertaining adventure into failed building systems. One part practical knowledge one part human behavior analysis. We will talk about building failures and the people that make them possible. This is a class for anyone that wants to understand the multitude of ways a building can fail and how we might be able to prevent it. Not much code talk but whole lot of common sense talk. <i>Caution: Adult language likely.</i></p>
483: IECC Interactive	<p>Jim Meyers, SWEEP and Gil Rossmiller, CCC. We can all read the code book so we don't need another class that just walks through what it says. Let's work together to unveil the misinterpreted sections, work through plan review and inspection issues and learn from each other as we go.</p>

484 & 584: Construction Defects, Failures, Repairs & Building Materials	Paul J. Bennett, P.E., and Morgan Griffith, P.E., of Exponent and Aaron Bakken, Esq. of Godfrey Johnson, P.C. Taught by forensic engineers and an attorney, this two-day course is intended to provide contractors, inspectors, plan reviewers, and designers with an overview of the most common construction defects and their consequences. The codes will be studied in relation to repair of damaged structures as well as defining dangerous and unsafe buildings. Common construction errors and case studies will be presented as well as discussion on various types of building materials failures and installation/design errors. New this year will be a presentation from a construction defect attorney discussing the litigation process in Colorado and tools for avoiding litigation. Recommended texts: 2018 IEBC, 2018 IBC, 2018 IPMC
485: IBC Multi-Family Plan Review	Thomas Meyers, CBO, Building Intuition, LLC. This seminar discusses the most important and often most difficult code provisions specific to plan review of multifamily housing. The class will address the necessary elements in the most common types of construction, emphasizing needed fire resistance and fire protection features. Effective egress systems assessment will be covered. Type A and B accessibility scoping will be addressed as well as tips on how to effectively review required features. Detailed elements review topics such as sound control, wall cladding systems, and window safety will also be considered.
486: Advanced Means of Egress	Steve Thomas, CCC. An advanced look at the means of egress requirements included in Chapter 10 of the 2018 International Building Code. The presentation will include detailed discussions on the design and review of the means of egress in unusual occupancies. Subjects included in the class are malls, assembly occupancies, special egress components, smokeproof enclosures, horizontal exits and exit passageways. Practical examples will be used to illustrate code requirements. This class is designed for those students that have a basic understanding of how the means of egress is designed and reviewed.
487: Furnaces and Water Heaters	Glenn Mathewson, BuildingCodeCollege.com. Furnace and water heater installations and replacements are ubiquitous in every house. Many new contractors and inspectors are often tasked with their installation and inspection, and many homeowners tackle these projects on their own. Not as simple as often believed, these appliances are connected to many systems of a house, including electrical, venting, gas, water and air distribution. This class explores, in depth, all the various code provisions regarding their installation.
488: Protect Your Openings – Doors, Windows & Dampers	Rich Walke, UL and Marty Gissel, Greenheck. This program provides a detailed look at the requirements of Chapter 7 of the 2018 International Building Code for protection of breaches in fire-resistance-rated assemblies. It will cover the installation of fire door and fire window assemblies, and the method of protecting ducts and air transfer openings. For each topic, the program includes a discussion of code requirements, the referenced standards, the testing process, and the available methods of demonstrating code compliance.
489: Commercial Plumbing Inspections 101	Joseph Montoya, All Building Codes Consulting. This class will familiarize you with plumbing inspection methods for field inspection. This class covers the use and interpretation of the 2018 IPC, legal and administrative enforcement procedures, field inspection techniques and procedures, methods and techniques used in plumbing installations, and emerging technologies.
490: Mechanical Ventilation Strategies	Mike Moore, Newport Ventures, Luke Howard, Panasonic. Buildings don't need to "breathe", but occupants do! Come learn about why ventilation is needed, what the residential ventilation requirements of the 2012-2018 codes are, and what systems and design tools can be used for compliance. Get a sneak peak of recent addenda to ventilation requirements in ASHRAE's standards and in the 2021 ICC codes, and learn about recent advances in ventilation solutions.
491: Introduction to Grounding & Bonding- NEC Article 250	Diane Lynch, Electrical Consulting & Education, LLC. This course covers grounding and bonding requirements as defined in Article 250 and other articles of the 2017 NEC. This class will provide easy-to-understand explanations of the key concepts of grounding and bonding requirements including insight to the relationships between short-circuits and ground-faults and the grounding and bonding systems.
492: Hunting for Black Swans: Preparing for Unlikely Emergencies	Einar Jenson, South Metro Fire Rescue Authority. A black swan is a highly unlikely event - often unprecedented - that has massive potential for impact. As code enforcers, engineers and educators, we spend most of our time on common, well known threats but this class will consider clandestine hazards in our communities and explain how human risk perception obstructs our mitigation efforts.
493: Current Events Facing the Fire Service	Bob Sullivan, NFPA. This course deals with current issues facing the fire service in the real world. The class will be broken down in 1.5-2hr sessions using NFPA standards to address these topics. Topics to be discussed are: <ul style="list-style-type: none"> • NFPA 3000™(PS) – Standard for an Active Shooter/Hostile Event Response (ASHER) Program • NFPA 1300 - Standard on Community Risk Assessment and Community Risk Reduction Plan Development • NFPA 855 - Standard for the Installation of Stationary Energy Storage Systems (New) • NFPA 13 - Standard for the Installation of Sprinkler Systems – Significant Changes in the 2019 Edition • NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations • NFPA 96 - Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations - Appendix B: Food Truck Safety
581: Emerging Trends in Building Codes	Thomas Meyers, CBO, Building Intuition, LLC. The class will focus on modern trends in building construction and materials that will affect code officials and designers. The first part of the class will address significant changes occurring in product evaluation agencies and their potential liability for code officials and designer specifiers. The second part will briefly look at the major changes in the new ICC A117.1, resulting in increased clearances for disabled users in buildings. The third and largest segment is devoted to the Tiny House movement and its impact on code enforcement. Emphasis will be placed on regulatory loopholes and recent code changes that will help legitimize this unique product in the IRC. The final portion will look at innovative, emerging material and some unintended consequences. This section will also discuss the use of recycled content in building construction.
582: Single Family Homes, from Application to Occupancy	Glenn Mathewson, BuildingCodeCollege.com. Construction of single-family, detached homes is quite a process. From planning to application to execution to inspection, there are many steps along the way. Like a dance, a beautiful performance comes from smooth steps timed by everyone in the group. Mutual understanding and respect for each professional involved and a good grasp of the choreography helps ensure no one trips up. Learn the many steps of building a new home in this class. No formal wear required!

583: Creating Sustainability Programs	Hope Medina, CCC. Thinking of implementing a sustainability program in your jurisdiction? Maybe your jurisdiction even has their own Sustainability Coordinator. Does that Coordinator talk to the Building Department before writing a policy or code that the Building Department has to enforce? Or maybe you already have a sustainability program? Does the existing program currently exist by paper alone? Let's work through the different program options, how to make them work and who all has to be involved in order for it to succeed.
585: 2018 International Residential Code Overview	Bill Clayton, CCC. This class explores the major provisions of the 2018 IRC. The presentation includes detailed discussions of the provisions addressing the following issues: building planning, foundations, floor, wall and roof construction, exterior wall finishes, and roofing systems.
586: Types of Construction	Steve Thomas, CCC. This seminar provides an in-depth look at Chapter 6 of the 2018 International Building Code. The discussion will examine the five established types of construction, the materials used in the building (combustible / noncombustible), and the fire-resistance rating of building elements such as building frame, roof, walls and floor. The use of combustible materials in Types I and II buildings will also be discussed.
587: Roofing Inspection	Rich Boon, Construction Support Services, Inc. An overview of the provisions of Chapter 15 of the 2018 IBC will be presented. Instruction will focus on proper application techniques and review of all types of roof coverings as well as evaluation reports applicable to roof covering products.
588: Special Inspections of Installed Firestop Systems	<p>Todd Jilbert, Firestop Consulting Associates, LLC. In 2012 the IBC added requirements stating that the owner shall employ an approved agency to provide special inspections of installed firestop systems. This course is intended for Building Officials, Inspectors, Facility Managers, and Building Owners interested in learning more about the proper implementation of these requirements. The course will cover topics including:</p> <ul style="list-style-type: none"> • An introduction to how to identify and read firestop systems. • Construction documents: The deferred firestop submittal. • The fundamentals of inspecting through penetration firestop systems, fire-resistive joint systems, and perimeter fire containment systems. • The history of how the requirements and ASTM standards made it into Chapter 17. • The related requirements in Chapter 17 of the 2018 IBC. • A detailed review of the referenced inspection standards ASTM E 2174 and ASTM E 2393. • The destructive verification method and its advantages. • The witnessed verification method and its disadvantages. • An extensive review of the reporting process as required in the ASTM inspection standards. • Legal aspects of approving a qualified inspection agency and special inspector including tools available to the CBO for use in approving an agency or individual inspector. • The owner's responsibility in hiring a qualified inspection agency. <p>The goal of the course is to equip the participant with the knowledge essential to understand the requirements of inspecting installed firestop systems.</p>
589: Plumbing Plan Review	Joseph Montoya, All Building Codes Consulting. This class will introduce the techniques of conducting the plan review of a plumbing design. This is a basic class designed to provide a thorough understanding of plumbing construction requirements for plumbing plan review. The course will cover plan review methods and techniques used in plumbing installations and emerging technologies.
590: Manuals J, S and D	Gil Rossmiller, CCC. This class will focus on the 2018 IRC requirements for calculating building heating and cooling loads in accordance with ACCA Manual J, equipment selection in accordance with ACCA Manual S and duct sizing in accordance with ACCA Manual D. Proper HVAC design is a critical piece of a home's design that is often overlooked. What does a properly designed HVAC system look like on paper? The class will work through a typical house design to include, total heat gain, total heat loss, latent loads, sensible loads, equipment selection and duct design.
591: 2017 National Electrical Code Wiring Methods	Diane Lynch, Electrical Consulting & Education, LLC. This course is based on a practical, common sense approach to wiring methods as defined in the 2017 NEC. Course content covers general installation requirements from Chapters 1-4 of the NEC. This course provides tips on how to comply with standard wiring methods and how to identify good installation standards based on the 2017 NEC.
592: Origin and Cause Myths and Truths	Jeff Berino and Kim McDonald, Summit Fire & EMS Authority. This class will go over some common myths in fire investigation origin and cause. Many Fire Investigators relied on the beliefs of fire investigators before them and fire behavior principals that were believed at that time to determine the origin and cause of a fire. This triggered mistaken determinations of cause that could not be proven via the scientific method. The class will contain a mix of hands-on demonstrations outside and also include a diverse mix of case studies to help bring all the concepts together. It will provide 7 hours of tested training for IAAI certifications and meet requirements of NFPA 1033 Standard for Professional Qualifications for Fire Investigator. The class will be geared toward investigators starting out in the field with some experience, up to intermediate level investigators.
593: 2018 IFC Update	Dave Lowery, Boulder Fire. This class addresses significant changes to the 2018 IFC as well as gives the beginning fire inspector a quick look at the chapters in the IFC. The class will discuss the intent of the code changes in order to give participants a meaning behind the changes and how to apply it to their everyday work. Discussion in this class will also cover the code development process.

2019 COLORADO CHAPTER EDUCATIONAL INSTITUTE

www.coloradochaptericc.org

REGISTRATION AND COURSE SELECTION FORM

REGISTRATION DEADLINE IS FRIDAY, FEBRUARY 15, 2019.

Complete a SEPARATE REGISTRATION FORM FOR EACH PARTICIPANT. Please PRINT the following as you wish it to appear on your badge:

NAME: (PRINT CLEARLY PLEASE!)

REPRESENTING:

PHONE: () EMAIL:

MAILING ADDRESS:

MAIL TO: COLORADO CHAPTER ICC, EDUCATION COMMITTEE, P.O. BOX 961, ARVADA, COLORADO 80001

Online Registration Available at: WWW.COLORADOCHAPTERICC.ORG

FEE CALCULATION AND COURSE SELECTION - MARK THE APPLICABLE BOXES

Attendance: Full Week (5 days) \$ 400 Per Day \$ 90 Amount Enclosed for This Individual \$

All Classes Are Full Day - Choose Only One Class Per Day Full payment MUST accompany registration form(s)

DAY ONE - MONDAY, MARCH 4, 2019- 8:00 AM

- 181 A Code Read on Whiskey and Weed
182 The Complete Permit Technician (also check Day 2)
183 Building Science Meets Energy Codes
184 Soils Identification and Foundation Design
185 Decks & Porches by the Code
186 2018 IBC Significant Changes
187 2018 International Existing Building Code
188 The Backside of the Building Code - Chapter 12 and Beyond
189 Residential Plumbing Inspections 101
190 Commercial Kitchen Exhaust System Inspections
191 2017 NEC Load Calculations
192 NFPA 13 Req's for Storage Occupancies (also check Day 2)
193 Hazardous Materials: A Practical Approach

DAY TWO - TUESDAY, MARCH 5, 2019 - 8:00 AM

- 281 Mentoring the Future: What It Takes ... to Millennial Code Officials
282 The Complete Permit Technician (also check Day 1)
283 Energy Conservation Construction
284 Building Loads and Wall Bracing
285 IRC Plan Review (also check Day 3)
286 Advanced Occupancies
287 Assessment of Existing Buildings for Life Safety Professionals
288 Fire Code for the Building Inspector
289 2018 International Plumbing Code Venting
290 Residential Mechanical Provisions
291 PV Solar Plan Review and Inspection
292 NFPA 13 Req's for Storage Occupancies (also check Day 1)
293 Fire Sprinklers Systems in Cold Environments

DAY THREE - WEDNESDAY, MARCH 6, 2019 - 8:00 AM

- 381 Disaster Assessment
382 CBO Administration: So You Want to Be a Building Official?
383 Commercial Energy Plan Review - Mechanical and Lighting
384 Structural Plan Review
385 IRC Plan Review (also check Day 2)
386 Accessibility for Commercial Buildings
387 2018 IBC Significant Changes
388 Fire-Resistance-Rated Construction Req's of the 2018 IBC
389 PMGE Fundamentals
390 2018 International Mechanical Code Overview
391 2017 National Electrical Code Update
392 Fire Alarm Initial and Reacceptance Testing
393 Community Risk Reduction - Brilliant Brainstorming

DAY FOUR - THURSDAY, MARCH 7, 2019 - 8:00 AM

- 481 Management Solutions
482 Construction, What Could Possibly Go Wrong?
483 IECC Interactive
484 Construction Defects, Failures, Repairs (also check Day 5)
485 IBC Multi-Family Plan Review
486 2018 IBC Advanced Means of Egress
487 Furnaces and Water Heaters
488 Protect Your Openings - Doors, Windows & Dampers
489 Commercial Plumbing Inspections 101
490 Mechanical Ventilation Strategies
491 Introduction to Grounding & Bonding - NEC Article 250
492 Hunting for Black Swans: Preparing for Unlikely Emergencies
493 Current Events Facing the Fire Service

DAY FIVE - FRIDAY, MARCH 8, 2019 - 8:00 AM

- 581 Emerging Trends in Building Codes
582 Single Family Homes, from Application to Occupancy
583 Creating Sustainability Programs
584 Construction Defects, Failures, Repairs (also check Day 4)
585 2018 International Residential Code Overview
586 Types of Construction
587 Roofing Inspection
588 Special Inspections of Installed Firestop Systems
589 Plumbing Plan Review
590 Manuals J, S and D
591 2017 National Electrical Code Wiring Methods
592 Origin and Cause Myths and Truths
593 2018 IFC Update

Our Federal Tax ID Number is: 23-7421122

Registration deadline is Friday, February 15, 2019.

Telephone: (303) 658-2077 or Email: dhorras@cityofwestminster.us for program information.

Call the Marriott Denver Tech Center (DTC) at 1-877-303-0104 for hotel reservations.

When calling, be sure to reference the 'Colorado Chapter Educational Institute' for the available room rate of \$149 per night.