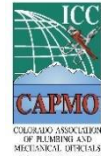




2022 EDUCATIONAL INSTITUTE



The 37th Annual Educational Institute is back in-person! The 2022 Colorado Chapter Educational Institute will be held in-person March 7th to March 11th.

The annual Educational Institute will be returning to the Embassy Suites Hotel Conference Center in Loveland and will once again offer 65 full-day classes in 13 different course paths, with the “best of the best” instructors from all over the United States.

Class registration will be available online starting in November.

The Colorado Chapter is an Approved Preferred Provider for ICC Continuing Education. Classes will also be eligible for continuing education Learning Units as required by the American Institute of Architects (AIA) and designed to meet the continuing education requirements for Professional Development Units required by the State of Colorado Electrical Board (DORA).

The CCICC Education Committee is excited to offer a very exciting curriculum that will include several new classes, as well as many revised and improved versions of our most popular offerings, most based on the 2021 International Codes and the 2020 National Electrical Code. A sample of classes that will be offered this year include:

- BACK! A class on the Tall Wood (CLT) provisions in the IBC.
- NEW! Classes on IEBC Plan Review as well as on the Property Maintenance Code
- BACK! P2904 Sprinkler review for the non-fire code official.
- NEW! Classes that focus on managing from home as well as office ethics and antics.
- NEW! Classes focusing on both firestopping plan review and inspections.
- NEW! A week of Energy classes that look at plan review, inspections, commissioning, and building electrification. Also, a new class on Air Source Heat Pumps is found in the Mechanical path.
- REVISED! Five classes based on the 2020 National Electrical Code which comply with the DORA continuing competency requirements for Colorado licensed electricians, including fire alarms for electrical inspectors & a new class on all things PV.
- NEW! A new class to connect the lines between plumbing plan review and inspections.
- BACK! Joe Lstiburek is back but with two classes this time. A class that tells the story of ventilation requirements in homes over the life of the codes as well as his beloved Building Science Principles.
- NEW! Tom Meyers looks at innovation and design trends to combat an angry climate as well as looks at the backside of the Building Code and then some accessibility for us.

LOCATION:

- Embassy Suites Loveland Hotel, Spa and Conference Center
- 4705 Clydesdale Parkway, Loveland, CO 80538, North of Denver at I-25 & Crossroads Blvd (Exit 259).
- Room rates are \$169/night and includes free made-to-order breakfast, complimentary appetizers, and beverages at the nightly Evening Reception. Reservations must be made by February 4, 2022, to assure this rate.
- Reservations can be made by calling 1-800-EMBASSY. Hotel reservations can also be made on-line by using the link on www.coloradochaptericc.org, the Colorado Chapter ICC's website. Be sure to reference the ICC Colorado Chapter Educational Institute when making your reservations and be sure to obtain those reservations as soon as possible.

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.
- Your registration includes classroom instruction by some of the best instructors in their fields and handout materials, if provided.
- 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.
- Registration deadline is **MONDAY, FEBRUARY 21, 2022**. Registrations or fees received after the registration deadlines will not be accepted.
- Register early! Class sizes will be reduced this year, so it is even more important to register early. The most popular classes fill quickly and will be filled on a first-come, first-serve basis. If a selected class is filled, you will be notified by the education committee and asked for your alternative choice(s).

PAYMENT BY MAIL

- All class registration is online, but you have the option of making payment by check. If paying by check, payment must be received prior the registration deadline for the selected class, or the online registration will be canceled. Payment can be mailed to CCICC Educational Committee, PO Box 961, Arvada, CO 80001.

REFUND POLICY:

If the request for a registration fee refund is received prior to the registration deadline of **MONDAY, FEBRUARY 21, 2022**, 100 percent of the fee will be refunded. Fees will not be refunded if the request is received after registration for the class has closed.

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 and Plumbing Boards (DORA) and, Learning Units as required by the American Institute of Architects (AIA). These continuing education credits will be issued to attendees within a week of the completion of the class. (Additional information on Preferred Provider approved classes and continuing education credits will be available at www.coloradochaptericc.org).

ICC CERTIFICATION TESTING:

- PRONTO certification exams are available through ICC at <https://www.iccsafe.org/professional-development/certifications-and-testing/certification-overview>
- Classes in the curriculum were not designed specifically for passing the certification testing.

CLASSROOM:

- All classes begin at 8:30 a.m. and end at 4:30 p.m. Lunch will be provided along with morning and afternoon breaks.
- All classes will be based upon the **2021** editions of the IBC, IECC, IFGC, IFC, IMC, IPC, IGCC and the IRC unless noted otherwise in the class description, and the **2020** edition of the NEC.
- 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 website. 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.

Check the Educational Institute Series website for additional information in February.

Colorado Chapter Educational Institute Scholarship Program

The Colorado Chapter of the ICC has established a scholarship program for the Educational Institute in honor of Chapter Past President and longtime Education Committee member Gerry George. For 35 years Gerry made enormous contributions and his work had a lasting impact on the Educational Institute. The scholarship will include registration fees, lodging, meal allowance and bookstore credit, up to a \$2,000 value. Application information for the scholarship can be found at: www.ccicc.institute@gmail.com

MARCH 2022 CURRICULUM

COURSE PATH	MARCH 7 MONDAY	MARCH 8 TUESDAY	MARCH 9 WEDNESDAY	MARCH 10 THURSDAY	MARCH 11 FRIDAY
SPECIAL INTEREST	181/281 The Complete Permit Technician		381 CBO Administration: So, You Want to Be a Building Official?	481 Bluebeam Revu	581 Working in Small Jurisdictions- How Many Hats Can I Wear?
SPECIAL INTEREST	182 Ventilation in Everything	282 Building Science Fundamentals	382 Office Ethics and Antics	482 Managing a Team Remotely	582 Residential for the Roaring 20's- Innovation & Design Trends to Combat an Angry Climate
ENERGY CONSERVATION	183 Residential Energy Code Plan Review	283 IECC Residential Provisions	383 HVAC and Lighting Commissioning	483 2021 IECC Building Thermal Envelopes	583 Building Electrification, Its Coming to Colo & States Close to You
ENGINEERING PRINCIPLES	184 Mass Timber Buildings & the IBC	284 Construction Defects, Failures, Repairs & Materials	384 Building Loads and Wall Bracing	484 The Backside of the Building Code – Chapter 12 and Beyond	584 Lateral Loads and Expansive Soil Design and Construction
PLANS EXAMINATION	185 2021 IBC Significant Nonstructural Changes	285 2021 IBC Means of Egress	385 IEBC Plan Review	485/585 IRC Chapter 3	
ADVANCED PLANS EXAMINATION	186 2021 IBC Appendix Chapters, Should You Adopt Them?	286 Marijuana and the Building Code	386 Advanced Means of Egress	486 P2904 Fire Sprinkler Review for the Non-Fire Code Official	586 Firestopping Responsibilities for Code Officials and Design Professionals
FIELD INSPECTION	187 Deck Inspection and Plan Review	287 What Are You Lookin' At?	387 Accessibility for Commercial Buildings	487 2021 IRC Significant Changes	587 Roofing Inspection
FIELD INSPECTION	188 2021 International Property Maintenance Code	288 Multi-Family Construction Inspection	388 Protect Your Openings – Doors, Windows & Dampers	488 Special Inspection of Installed Firestop Systems	588 Residential Energy Code Inspections
INTERNATIONAL PLUMBING CODE	189 International Plumbing Code Venting	289 Residential Plumbing Inspections 101	389 PMGE Fundamentals	489 Connecting the Lines within the 2021 IPC	589 Swimming Pool and Spa Code
INTERNATIONAL MECHANICAL CODE	190 2021 IMC Commercial Mechanical	290 Venting of Gas Fired Appliances	390 Cold Climate Air Source Heat Pump Strategies	490 Residential Mechanical	590 Gas Pipe Sizing & Combustion Air Sizing
NATIONAL ELECTRICAL CODE	191 Photovoltaic Systems NEC/IFC/IBC & IRC	291 Introduction to Grounding & Bonding-NEC Article 250	391 Fire Alarm Systems for the Electrical Inspector	491 2020 National Electrical Code Update	591 2020 National Electrical Code Wiring Methods
INTERNATIONAL FIRE CODE	192 2021 International Fire Code	292 Flammable Refrigerants	392 Active Fire Protection Systems for Storage Occupancies	492 ITM of Fire Pumps, Standpipes and PRV's	592 NFPA Standards Update
INTERNATIONAL FIRE CODE	193 A Practical Application of NFPA 1300	293 Fire Alarm; All the Noise and Planning	393 Mobile/Fixed Cooking Operations & A2L Refrigerants	493 Energy Storage Systems & Lithium-ion Battery Storage	593 Fire Scene Photography and Documentation

COURSE DESCRIPTIONS

EDUCATIONAL INSTITUTE WEEK

Monday, March 7th

181: The Complete Permit Technician	Steve Burger, C.B.O., LEED A.P. This two-day course is intended to provide essential information in the areas of code history and administration, 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 2018 or 2021 ICC Permit Technician certification exam. Please bring a calculator, highlighter, 2018 or 2021 IBC, 2018 or 2021 International Zoning Code, Legal Aspects of Code Administration and Basic Code Enforcement.
182: Ventilation in Everything	Joe Lstiburek, Building Science Corporation. Code changes over time relating to ventilation in houses, ventilation in attics, ventilation in crawl spaces and ventilation behind claddings....a multi-decade story from vented attics and vented crawlspaces to unvented attics and unvented crawlspaces...to unvented conditioned attics and unvented conditioned crawlspaces. From unvented mass walls to drained mass walls to drained and vented mass walls...from unvented frame walls to drained frame walls to drained and vented mass walls...but ones that do not burn and have functional insulation...
183: Residential Energy Code Plan Review	Hope Medina and Heather Whitaker, Shums Coda Associates. Demystifying energy code plan review. This is a full day class designed to break down the residential energy code for the plan reviewer by utilizing actual plans and walking through code section by code section. Participation and collaboration encouraged. Both instructors are residential and commercial plan reviewers, so pick our brains, not our noses! Bring your IECC code book, and a sense of humor.
184: Mass Timber Buildings & the IBC	Buddy Showalter, International Code Council, David P. Tyree American Wood Council. This course will provide an overview of mass timber which includes any product currently permitted for use in Type IV (heavy timber) construction such as cross-laminated timber (CLT), structural composite lumber (SCL), glue laminated timber (glulam), mechanically laminated decking (aka nail-laminated timber, NLT), and large section sawn timbers. NLT, glulam, SCL, and solid-sawn timbers have been adopted in the International Building Code (IBC) and utilized throughout the world for several decades on a wide variety of buildings. Learn what's new in 2015/2018 IBC for Mass Timber Construction as well as an overview of Tall Mass Timber Construction per the 2021 IBC. Topics include heights and areas, construction fire safety, fire and connection design and special inspection, with Tall Mass Timber Construction in accordance with the 2021 IBC.
185: 2021 IBC Significant Nonstructural Changes	Doug Thornburg, ICC. This seminar reviews and analyzes selected significant nonstructural changes from the 2018 to the 2021 edition of the <i>International Building Code</i> (IBC). Although the focus of the presentation is on revisions to the IBC fire- and life-safety provisions, additional areas of discussion include accessibility, construction materials and building services. The seminar assists building officials, fire officials, plans examiners, inspectors and design professionals in identifying the specific code changes that have occurred and understanding the reasoning behind the changes.

186: 2021 IBC Appendix Chapters, Should You Adopt Them?	Steve Thomas, CBO, Shums Coda Associates. This class will discuss some of the appendix chapters in the back of the IBC and whether you should consider adopting them in your jurisdiction. Appendix chapters are only applicable if they are specifically adopted by the jurisdiction. However, can you use them as a guide for alternate design? We will be discussing Employee Qualifications, Board of Appeals, Group U – Agricultural Buildings, Supplementary Accessibility Requirements, Flood-Resistant Construction, Patio Covers, Grading, Administrative Provisions and Replicable Buildings. Join us to see how these chapters can be used in your jurisdiction.
187: Deck Inspection and Plan Review	Glenn Mathewson, Building Code College.com. Previously not specifically addressed in the code, residential decks have seen tremendous attention in the last few IRC editions. Generally thought of as simple structures and often constructed by ill-prepared homeowners or new contractors, the truth of their nuances is now clearly revealed in the recent standards. This course starts with a common under-detailed plan submission and walks through all aspects of the load path from the decking to the foundation. Useful for plan reviewers, inspectors, and contractors and taught by a former deck builder turned inspector who contributed to the creation of nearly all the new provisions. Abandon the guesswork of deck code compliance relied on in past years and get up to speed on how the IRC now provides for these common structures.
188: 2021 International Property Maintenance Code	Bill Clayton, CBO, Shums Coda Associates. Full Day Introduction and Explanation of the significant changes in the 2021 IPMC including an overview of application of the changes and adoption and implementation issues.
189: International Plumbing Code Venting	James Fernandez, State of Colorado Plumbing Inspector. This class will cover the requirements for venting in Chapter 9 of the 2021 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.
190: 2021 IMC Commercial Mechanical	Sam Dardano. This class will walk you through the mechanical do's and don'ts of the 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.
191: Photovoltaic Systems NEC/IFC/IBC and IRC	Jeff Fecteau, UL Codes and Regulatory Services. The installation of photovoltaic systems is increasing due to State and Local regulations. Learn about the installation of PV from a systems approach addressing the requirements from the 2020 NEC, 2021 IFC, 2021 IBC and 2021 IRC. This presentation is designed to address the requirements from all the applicable codes for the installation of solar photovoltaic systems. Learn how to use the codes to conduct a field inspection more effectively and to identify frequently encountered PV installation misapplications. Learn how to identify as well as apply the applicable codes and safety standards to assist in plan checking and inspections. This course is designed for electrical inspectors, plans examiners as well as combination inspectors and plans examiners. This course will also be beneficial for PV designers, engineers, fire code officials and others interested in PV system installation.
192: 2021 International Fire Code	David Lowrey, City of Boulder Fire-Rescue. This class will be a comprehensive overview of the 2021 IFC. It will provide an introduction to the code structure and basic requirements for those interested in obtaining certification or knowledge of the fire code.

193: A Practical Application of NFPA 1300	Rebecca Clark, Windsor Severance Fire Rescue, Ellis Thompson-Ellis, Grand Junction Fire Department, Chris Brunette, Colorado Division of Fire Prevention & Control. This class is designed to walk you through each step of the Community Risk Reduction process, as developed and laid out in NFPA 1300: Standard on Community Risk Assessment and Community Risk Reduction Plan Development. From assessing the risks relevant to your community, to developing a risk reduction plan, and finally implementing and evaluating the effectiveness of your plan, the course attendees will leave with a better understanding of how to effectively apply NFPA 1300 to your community risk reduction program. The class will culminate in a real-world application of the concepts covered.
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Tuesday, March 8th

281: The Complete Permit Technician	See Description Under Class #181. Second Day of a two-day class.
282: Building Science Fundamentals	Joe Istiburek, Building Science Corporation. The principles of environmental separation applied to walls, roofs and foundations. Topics covered include relative humidity, air flow, vapor diffusion, rain, capillarity. Vented and unvented roofs, attics and crawlspaces will be discussed. Stucco failures, freeze-thaw issues and deep energy retrofits will also be examined.
283: IECC Residential Provisions	Robby Schwarz, BUILDTank Inc. What is new in the 2021 IECC is only half of the equation. We will talk to these new provisions, but we will discuss how they integrate with existing provisions as well. How compliance is obtained and what implementation looks like in the field. All of this will be presented from the perspective of applied building science that has been incorporated into the IECC.
284: Construction Defects, Failures, Repairs, and Building Materials	Paul J. Bennett, P.E., and Morgan Griffith, P.E., of Exponent. Taught by forensic engineers, this class 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 material failures and installation/design errors. Recommended texts: 2021 IEBC, IBC and IPMC.
285: 2021 IBC Means of Egress	Doug Thornburg, ICC. This seminar addresses numerous provisions in the 2021 IBC pertaining to establishing a compliant means of egress system in buildings. The course is intended to assist designers, plan reviewers, inspectors and code officials in applying the concepts and applications of both the egress design provisions and the egress component requirements. General topics of discussion include the determination of occupant loads, exit access design, including egress distribution, common path of egress travel, egress illumination and exit signs, and exit components, such as interior exit stairways, exit passageways and horizontal exits.
286: Marijuana and the Building Code	Steve Thomas, CBO, Shums Coda Associates. This class will be a full exploration of the multitude of building uses and mixed uses related to the burgeoning marijuana industry, and how the codes may apply. A further examination of how the industry is reacting and adjusting to the maze of State and local regulations and becoming efficient will be addressed. This course is conducted in a forum style, with opportunities for the attendees to ask questions, compare notes, and share the solutions discovered.

287: What Are You Lookin' At?	<p>Jon Roberts, CBO, CFM, UL LLC. This class will help the in Understanding some of the not so understood components encountered during fire and life safety inspections in both new construction and during annual inspections including items such as:</p> <ul style="list-style-type: none"> • Alarm/Detection systems • Hood/Ducts • Firestopping/SFRM/IFRM • Field evaluations (Fire doors, fire dampers, other related services)
288: Multi-Family Construction Inspection	<p>Bill Clayton, CBO, Shums Coda Associates. This full day class discusses common issues found in multi-family construction including plan review and inspection of Fire Rated assemblies, Mixed use concerns, Podium buildings, and related requirements found in chapters 3,4, 5,6,7,9 and 10 of the 2021 IBC.</p>
289: Residential Plumbing Inspections 101	<p>John Magee, Colorado State Plumbing Inspector. This course is based on the plumbing provisions of the 2021 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>
290: Venting of Gas Fired Appliances	<p>Nancy Swearengin, Pikes Peak Regional Building Department. A class designed to aid the inspector and installer in understanding and properly applying the necessary 2021 IFGC vent code sections. This class will focus on proper sizing of Type B Double Wall Category I appliance vent systems using the vent tables and associated codes and proper sizing of masonry chimney Category I appliance vent systems using the vent tables and associated codes. The class also includes discussion of properly installing and inspecting Category IV appliance vent systems. We will finish up with highlighting various other important sections of the Fuel Gas Code that relate to vents and venting.</p>
291: Introduction to Grounding & Bonding- NEC Article 250	<p>Diane Lynch, Electrical Consulting & Education, LLC. This course covers grounding and bonding requirements as defined in Article 250 and other articles of the 2020 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.</p>
292: Flammable Refrigerants	<p>Reinhard Hanselka, This class will be reviewing the IMC, IBC and IFC requirements of modern day flammable refrigerants. We will be investigating hazards and migration methods of said refrigerants based upon the 2021 IMC, IBC and IFC.</p>
293: Fire Alarm; All the Noise and Planning	<p>Tami Holley PE; TLH FIRE. This class will focus on fire alarm plan review including fire alarm system operating principles, design, battery and voltage drop calculations, sequence of operations, emergency communications systems, acoustically distinguishable spaces, etc. The majority of the class will be spent performing plan reviews, calculations, and other activities to develop these skills. The students will leave with an understanding of how to provide a comprehensive plan review and implement department plan review policies. Bring a calculator, architectural scale, IFC 2021 & NFPA 72 latest edition.</p>

Wednesday, March 9th

381: CBO Administration: So You Want to Be a Building Official?	Steve Burger, C.B.O., LEED A.P. 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? This class will cover the basics of what is required to be a Building Official including politics, personnel issues, budgeting, image, dealing with the public, professional development, staffing, dealing with the media, management, ethics and basic legal matters. Class participation will be encouraged.
382: Office Ethics and Antics	Shaunna Mazingo, The Mazingo Code Group LLC. This class will have you laughing, crying, and questioning your motives and intentions all at the same time. Having worked in Building Departments and for other companies, as well as owning her own business, Shaunna has learned a lot from her mistakes and wants to share her stories with you as well as the resources and tools that she has gathered along the way to help you learn how to redirect your focus, to understand how the things you bring to work affect other people, and how the ethics and/or antics within the office environment will either make you or break you. Don't be shy, get registered, what have you got to lose?
383: HVAC and Lighting Commissioning	Allison Bygott and Matt Cooper, Group 14 Engineering. Commissioning, planning department, inspectors, and fire department professionals (also AHJs), come to discuss the commissioning process and how it relates to Section C408: SYSTEM COMMISSIONING. This course will start off with a review of code requirements for mechanical, plumbing, electrical, lighting, and lighting control systems for commercial buildings. Then we will discuss Commissioning requirements per IECC Section C408 in relation to design drawing review, submittal review, system testing, issue log reporting, and the final commissioning report. We will finish with a discussion on how we can collectively help each other turn over the best building to the owner. For mechanical and plumbing systems, we'll discuss commissioning process and scope, new code requirements, and review common issue log items and how they could be avoided. For lighting and lighting control systems, discover technology advances/limitations, newer code requirements, and how these systems are being configured and commissioned in the field. Attendees will leave with the knowledge of how different commissioning scopes can add value to a project and how the commissioning process interacts with design reviews, inspections, testing, and obtaining the certificate of occupancy.
384: Building Loads & Wall Bracing	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.
385: IEBC Plan Review	Bill Clayton, CBO, Shums Coda Associates. You have adopted the IEBC but never use it because it is confusing. You are not alone! This class will endeavor to put to rest some of that confusion. Class includes an overview and discussion of plan review on existing building projects using the 2021 IEBC Prescriptive compliance path for one project and the Work Area compliance path with a change of occupancy (?) for another project. This will use portions of two different plans to work through the process of IEBC Plan Review.

386: Advanced Means of Egress	Steve Thomas, CBO, Shums Coda Associates. An advanced look at the means of egress requirements included in Chapter 10 of the 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, smoke proof 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.
387: Accessibility for Commercial Buildings	Tom 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 discussed 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.
388: Protect Your Openings – Doors, Windows & Dampers	Rich Walke, Creative Technology and Alex Talwar, Greenheck. This program provides a detailed look at the requirements of Chapter 7 of the 2021 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.
389: PMGE Fundamentals	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 code professional, cross training in these specialized trades offers a better understanding of the work performed and how they “work”. Remember...Science is cool!
390: Cold Climate Air Source Heat Pump Strategies	Shawn LeMons, Mitsubishi Electric Trane HVAC US LLC. Buildings have changed over the past decade. So have Air Source Heat Pumps (ASHPs). This class will review: cold climate heat pump technology, case studies, temperature and altitude derating, and strategies for reliable performance without excessive electrical requirements. Class objectives are to help attendees understand the fundamentals of why cold climate heat pumps are different than traditional HVAC heat pumps, why their numbers are growing in project specification, and tips on how to integrate them into your plan review and inspection process with greater confidence.
391: Fire Alarm Systems for the Electrical Inspector	Tami Holley, PE, Fire Protection Engineer. This course is a comprehensive class addressing the requirements for rough wire observations related to fire alarm systems. Inspectors will learn how to identify box fill, conduit fill, fire stopping, survivability and more. Critical examination of the fire alarm wire and infrastructure ensures system operational integrity and longevity. We will also examine radio communicator requirements and cable survivability in healthcare and assisted living facilities. Even the savvy and experienced inspectors will discover exceptions and clarifications from NFPA 72.

392: Active Fire Protection Systems for Storage Occupancies	Mark Fessenden, Johnson Controls Inc. This presentation will discuss the current trends and requirements involving the protection of storage occupancies. We will discuss the variable that influence when an automatic fire sprinkler system is required and look at how to choose the correct system for our application. This presentation will look at the requirements of NFPA 13 and compare them to FM 8-9 and discuss where IFC requirements differ from NFPA requirements.
393: Mobile & Stationary Cooking Operations (a.m.)/A2L Refrigerants as well as Ducts/Plenums (p.m.)	<p>John Taecker, Senior Regulatory Engineer at Underwriter's Laboratory. The first half of the day will cover the requirements for both mobile and stationary commercial cooking in the mechanical and fire codes. Background will be provided regarding the basis for these requirements. Information will include sizing and installation issues for field-fabricated and listed exhaust hoods, grease ducts, grease filters, and exhaust fans. Also to be discussed will be the various exceptions for exhaust hoods, UL 300 fire suppression systems, grease duct enclosure systems (duct wrap or self-contained duct/wrap), downdraft cooking appliances, and ductless hood systems. Special focus will be provided regarding food trucks.</p> <p>The second half of the day will be A discussion on the new requirements for refrigerants that have a low GWP (Global Warming Potential). Learn more about what these refrigerants are, what the environmental concerns are, and an overview of the research conducted on this subject. Information will be provided on the most current codes and standards requirements, and additional training available for installers and firefighters.</p> <p>And to top it all off, at the end of the day we will have a discussion on Air Ducts and Plenums - Believe it or not, there is a connection to the subject of refrigeration. The focus will be on the different types of air ducts, as well as all the combustible materials that are permitted to be within a plenum (IMC and UMC Section 602). Every code cycle, there are several proposals to Section 602.</p>

Thursday, March 10th

481: Bluebeam Revu	Genevieve Pizinger, City of Westminster. This class will be a basic overview of Bluebeam Revu. We will walk through the basic layout, interface, and navigation of the software. You will learn about profiles and the tool chest and how to customize them to best fit your needs. This includes utilizing the Markups List, Stamps for documents, and the difference between Studio Sessions and Studio Projects.
482: Managing a Team Remotely	Jim Meyers, The Accelerated Edge. Looking back to 2019 would you have thought that working from home (WFH) or even working from anywhere was an option, or even mandatory? Now some teams are operating in a hybrid format; some in-person and some virtual. Are you prepared to continue working virtually or in a hybrid version? Times continue to change. Instructor Jim Meyers has led virtual staff and teams since the 1990s starting in the software industry and moving to energy codes and standards today. Virtual work is out of the bag, will you go back, have you gone back, is your employers next step virtual+. How can we adopt, adapt and excel in this new environment? Are you prepared, continuing to evolve? Come participate in this interactive class where you will gain new insight and strategies to participate in and build a happy productive team.

483: 2021 IECC Building Thermal Envelopes	Jay Candell, P.E., ABTG/ARES Consulting and Thomas Culp, Birchpoint Consulting. The building envelope is on duty 24/7/365. Many of its components will be in service for the life of the building. It plays a significant role in the energy efficiency of a building and the building stock as a whole and this is evident by the fact that buildings account for 40% of total US energy use annually. The building envelope is usually the primary factor in proper sizing of HVAC systems for efficient and effective service. It also determines how well an occupied building will support its intended function in terms of operational costs, aesthetics, durability, and occupant health, safety and comfort. Therefore, it is important to have a practical knowledge of the IECC requirements for building envelopes. This session will dive into code requirements for opaque assemblies, fenestration, air leakage and other matters. It will conclude with a look at the "Top 10" building envelope compliance and enforcement concerns.
484: The Backside of the Building Code – Chapter 12 and Beyond	Tom Meyers, CBO, 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.
485: IRC Chapter 3	Glenn Mathewson, Building Code College.com. The 30 sections of Chapter 3, Building Planning, provide the necessary criteria for the design and construction of homes. This section is critical for design parameters such as geographic criteria, minimum room sizes, and construction geometry in features like stairways and guards. Chapter three sets the general requirements for how a home must be built for the safe use and navigation of the occupants and must be understood prior to applying the more specific code provisions in the following chapters. Learn or refresh the basics of home design in this unique course that covers all the sections of Chapter 3, some in depth and some with a general overview.
486: P2904 Fire Sprinkler Review for the Non-Fire Code Official	Bill Clayton, Shums Coda Associates. This class will focus on the IRC provisions for the prescriptive design and installation of residential fire sprinkler systems in one- & two-family dwellings and townhouses. The location of sprinkler heads, pipe sizing and overall installation requirements will be discussed. Practical installation issues will also be discussed.
487: 2021 International Residential Code Significant Changes	Steve Thomas, Shums Coda Associates. Explores the major revisions and provisions of the most current code year of the International Residential Code. The presentation includes detailed discussions of the provisions addressing the following issues: building planning; foundation, floor, wall, and roof construction; exterior wall finishes; and roofing systems. The class is designed to introduce the provisions of the code.
488: Special Inspection of Installed Firestop Systems	Todd Jilbert, Firestop Consulting Associates, LLC dba FCA Code Consulting. This course is intended for Building Officials, Inspectors, Facility Managers, Building Owners, and Contractors interested in the 2021 IBC requirements for Special Inspections of Installed Firestop Systems. The goal of the course is to equip the participant with the knowledge essential to inspect Installed Firestop Systems, evaluate the qualifications of Special Inspection Agencies and Inspectors, and understand the reporting requirements of the IBC.

489: Connecting the Lines within the 2021 International Plumbing Code.	Jason Van Ausdal, Shums Coda Associates. This course is designed to take an in-depth look at all the systems within the IPC and connect the lines on the construction documents with the inspection processes. In the plumbing realm, it's all about the lines....whether it's drain, vent, storm or water lines shown on the construction documents, OR staying within the lines of the code, to ultimately better understand the lines of the code. This program will take you through important definitions, general requirements and into most all of the plumbing systems outlined within the IPC. The course will provide several detailed explanations and scenarios to help connect the requirements in the code, to real life applications. Please bring your code books and any questions or situations you would like to discuss. This will be a custom course specifically designed on real world application, with focus on some of the common, but more importantly, the more controversial requirements of the IPC. Issues identified by the participants will be used as case examples so be prepared for group discussion, your input will be encouraged throughout the day. Ultimately, this seminar is geared towards better understanding of the position of designer, contractor, plan reviewer and inspector and elevating the value of customer service.
490: Residential Mechanical	Sam Dardano. This class will walk you through the mechanical do's and don'ts of the International Residential Code and the residential applications of the International Fuel Gas Code. It will cover topics including mechanical appliances and equipment, fuel gas supply, venting, and air ducts. This class should be of interest to residential inspectors and home builders.
491: 2020 National Electrical Code Update	Diane Lynch, Electrical Consulting & Education, LLC. This class will review the significant changes found in the newest edition of NFPA 70, the National Electrical Code. Bring your copy of the 2020 NEC or NEC Handbook.
492: ITM of Fire Pumps, Standpipes and PRV's	Joe McElvaney, Hiller Fire Protection. Learning Objectives for this class will include: <ul style="list-style-type: none"> ▶ Identify the appropriate Code sections of NFPA 25 that apply to ITM of Fire Pumps, Standpipes and PRV's. ▶ Describe the purpose of the various Code sections of NFPA 25 that apply to ITM of Fire Pumps, Standpipes and PRV's. ▶ Identify how the ITM of Fire Pumps, Standpipes and PRV's will be done and some issue that may occur during the ITM ▶ Identify some the common deficiency that you may find in the review the ITM report for Fire Pumps, Standpipes and PRV's
493: Energy Storage Systems & Lithium-ion Battery Storage	Robert J Davidson, Davidson Code Concepts, LLC and Kara Gerczynski, Elizabeth Fire Rescue Department. In this seminar, attendees will receive a review of energy storage systems (ESS) and lithium-ion battery storage and the hazards that they may pose. The program includes a review of the regulatory history and current International Fire Code and International Residential Code requirements to deal with the hazards. Special emphasis will be provided on deflagration hazards. UL 9540A large-scale testing will be reviewed including what the code official should expect to be submitted and what to check in the reports utilizing actual reports currently being submitted to AHJs as part of a permit process. Electronic copies of the relevant code language, the reports utilized and the PPT slides will be provided to attendees.

Friday, March 11th

581: Working in Small Jurisdictions- How Many Hats Can I Wear?	Dan Weed, Town of Victor; Mike Metheny, Snowmass Village; John Plano, Town of Carbondale; Dan Reardon, Town of Paonia; Chad Root, City of Louisville; David Basil, Town of Brush. Working for any municipality is not without its challenges, but a lot of small jurisdictions find themselves faced with staff that must wear many hats. Are you the building official, permit tech, plans examiner, inspector, floodplain coordinator, sign code enforcer, code adopter, complaint department, and other duties as assigned? We've gathered a group of code officials from different small-town jurisdictions and given them a bunch of questions to answer on how they each deal with different aspects of the job and what recommendations they have on resources, time saving strategies, and so much more. This isn't a PowerPoint class, this is a "sit and talk to your peers" class. Bring your questions, concerns, trials and ideas. We'll all learn from each other!
582: Residential for the Roaring 20's- Innovation and Design Trends to Combat an Angry Climate	Tom Meyers, CBO, Building Intuition, LLC. Like it or not, climate change policies will affect the way we build and remodel buildings. This class is intended to look at how future residential construction will respond to inevitable policies that will limit carbon release and promote carbon sequestration within materials used in building construction. Discussion topics will include advanced energy and building science strategies, phase-out of fuel fired appliances, limitation on high embodied energy materials, water and wastewater management, artificial intelligence and building management, and other climate-response measures. The class will be partially based on the construction of the presenter's straight-out-of-the-hardware-store, net-positive, climate-resilient house in Western Colorado. Lessons learned from the Solar Decathlon and other international academic experimentation will also be presented.
583: Building Electrification, It's Coming to Colorado and Another State Close to You	Jim Meyers, SWEEP. This class will explain the process of designing electric buildings, code compliance and technology associated with all electric highly energy efficient buildings. The class will provide a review of why this trend is becoming more requested by state and local government leaders. We will look at the I-codes with current requirements and conceptual requirements developed to support municipalities who are implementing electrification policy within their codes. These technologies will be discussed that support all electric buildings; HVAC Heat Pumps, Heat Pump Water Heaters, Electric Vehicles and other technology such as load management tools. A quick review of where the 2024 IECC is aligned with electrification. The IECC development is now through the continuous development process following the ICC standards process.

584: Lateral Loads and Expansive Soil Design and Construction	<p>Edward L. Fronapfel, MSCE, PE, SBSA, LLC. Mr. Fronapfel will present on expansive soils and geotechnical considerations in regard to foundation design systems. Discussion topics will include: evaluation of geotechnical reports in regard to the requirements of the building codes, determination of the foundation type for serviceability and performance, proper evaluation of on-site soils conditions, and the potential need for reconditioning of the soils to reduce problems associated with the selection of foundation and floor systems. Evaluation of the lateral and vertical load capacity systems will be included as a necessary means to determine interior framing, façade, and egress issues.</p> <p>Lateral load systems will be examined as they primarily relate to single- and multi-family wood frame structures. An evaluation of the standard of practice versus the standard of care will include: the need for 2-hour fire wall design, separation and independence of structures, and veneer applications.</p> <p>Post-tension (PT) design aspects for serviceability and performance criteria will be outlined as an understanding of the needs of the architectural, structural, and MEP systems to handle the expectations of the PT design systems.</p> <p>SBSA will provide the analysis of these systems based on years of forensic evaluation experience and the peer review of current projects. Additionally, the needs of the design, construction, and building officials' input to properly design, review, and construct these building systems will be considered.</p>
585: IRC Chapter 3	See Description Under Class #485. Second Day of a two-day class.
586: FIRESTOPPING Responsibilities for Code Officials and Design Professionals	<p>Brice Miller, Fire Containment Training Services LLC. This course will focus on reviewing the firestopping requirements of the International Building Code, as well as discuss <i>Why Firestopping has proven to be one of the most Difficult Challenges for Code Officials</i>. We will provide code compliant solutions for effective and efficient firestop plan review submittals, including methods to streamline the process for joints, perimeter containment, and penetrations. We'll also identify what code officials need to understand concerning the new ASTM Standards for Firestop Special Inspections. Overall, attendees will leave this program informed, encouraged, and equipped with numerous tips and techniques to help them in their field of work.</p>
587: Roofing Inspection	<p>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.</p>
588: Residential Energy Code Inspections	<p>Robby Schwarz, BUILDTank Inc. and Hope Medina, Shums Coda Associates. Bringing energy field inspections to the classroom by way of pictures, videos, and our everyday experiences. We will walk through the inspections found in the IECC through the eyes of an energy rater and a code official and provide you with the opportunity of gaining insight of how and what should be looked at from the two perspectives. Joins us as we present key energy inspections to support and promote your energy compliance and provide tools to assist you along the way.</p>
589: Swimming Pool and Spa Code	<p>Kenneth Gregory, Pentair. This seminar will introduce the 2021 International Swimming Pool and Spa Code® (ISPSC®) and addresses the needs of code officials, contractors, installers, architects, and pool builders for both commercial and residential pools. The seminar includes information regarding barriers, suction entrapment, circulation systems and much more. We will also be covering energy requirements and the need to calculate the Total Dynamic Head Loss, the new push for energy savings and the use of variable speed pump technology. We will also discuss the benefits of adopting this all-encompassing code and what it means for enforcement agencies.</p>

590: Gas Pipe Sizing & Combustion Air Sizing	<p>Sam Dardano. This interactive class addresses the intent to minimize the hazards associated with the use and distribution of highly flammable and explosive fuel gas through fuel-gas piping systems. This class will assist you in being able to identify and locate critical information and to determine compliance of a gas piping system. (sizing/fittings/location/etc.). We will cover sizing, material, and location of combustion air with some actual working problems for you to solve. We will address supplying adequate combustion air to fuel-burning appliances, as insufficient oxygen for CA will result in the formation of carbon monoxide.</p>
591: 2020 National Electrical Code Wiring Methods	<p>Diane Lynch, Electrical Consulting & Education, LLC. This course is based on a practical, common-sense approach to wiring methods as defined in the 2020 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 2020 NEC.</p>
592: NFPA Standards Update	<p>Bob Sullivan, NFPA. This UPDATED course deals with updated NFPA Standards that address fire protection systems, and fire and life safety issues. The class will be broken down into separate 1-hour sessions. During each session, various NFPA standards will be discussed with updates for the newest editions. Topics will include:</p> <ul style="list-style-type: none"> • NFPA 4 (2021 Edition) – Std. for Integrated Fire Protection and Life Safety System Testing; • NFPA 30 (2021 Edition) – Flammable & Combustible Liquids Code; • NFPA 30A (2021 Edition) – Code for Motor Fuel Dispensing Facilities & Repair Garages; • NFPA 99 (2021 Edition) – Health Care Facilities Code; • NFPA 1126 (2021 Edition) – Std. for the Use of Pyrotechnics Before a Proximate Audience; • NFPA 13D (2019 Edition) – Std. for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes, along with information about Home Fire Sprinkler Incentives that AHJs can offer to Developers; • A Review of other NFPA Standards Updates and Resources. <p>Attendance is required for the full day of all sessions in order to receive CEUs for this course.</p>
593: Fire Scene Photography and Documentation	<p>Todd J Hedglin, IAAI-CFI®, IRIS Fire Investigations. This presentation outlines a systematic approach and the application of the scientific method for photography documentation techniques. Understand forensic fire scene photography as it relates to an origin and cause investigation. Learn the fundamentals of using your camera beyond 'Auto Mode'. Discover programs and photography related items that can be an asset in documenting the fire scene. Explain the importance of an accurate representation of the fire scene, and how it can affect possible testimony years later.</p>

2022 Colorado Chapter Educational Institute

COURSE SELECTION FORM

Register Online at: <https://coloradochaptericc.org/education/education-institute>

REGISTRATION DEADLINE is **MONDAY, FEBRUARY 21, 2022**

NAME: **(PRINT CLEARLY PLEASE!)**

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FEE CALCULATION AND COURSE SELECTION – MARK THE APPLICABLE BOXES

Attendance: Full Week (5 days) ☐ \$ 400 Per Day ☐ \$ 90

Amount for **This Individual**

\$

All Classes Are Full Day - Choose Only One Class Per Day

DAY ONE - **MONDAY, MARCH 7, 2022**

- ☐ 181 - The Complete Permit Technician, Day 1 of 2
- ☐ 182 - Ventilation in Everything
- ☐ 183 - Residential Energy Code Plan Review
- ☐ 184 - Mass Timber Buildings and the IBC
- ☐ 185 - 2021 IBC Significant Non-structural changes
- ☐ 186 - 2021 IBC Appendix Chapters, Should We Adopt Them?

- ☐ 187 - Deck Inspection and Plan Review
- ☐ 188 - 2021 International Property Maintenance Code
- ☐ 189 - International Plumbing Code - Venting
- ☐ 190 - 2021 IMC Commercial Mechanical Provisions
- ☐ 191 - Photovoltaic Systems- NEC/IFC/IBC/IRC
- ☐ 192 - 2021 International Fire Code Update
- ☐ 193 - A Practical Application of NFPA 1300

DAY TWO - **TUESDAY, MARCH 8, 2022**

- ☐ 281 - The Complete Permit Technician, Day 2 of 2
- ☐ 282 - Building Science Principles
- ☐ 283 - IECC Residential Provisions
- ☐ 284 - Construction Defects, Failures, Repairs and Building Materials
- ☐ 285 - 2021 IBC Means of Egress
- ☐ 286 - Marijuana and the Building Code

- ☐ 287 - What Are You Looking At?
- ☐ 288 - Multi-Family Construction Inspection
- ☐ 289 - Residential Plumbing Inspections 101
- ☐ 290 - Venting of Gas Fired Appliances
- ☐ 291 - Introduction to Grounding and Bonding-NEC Article 250
- ☐ 292 - Flammable Refrigerants
- ☐ 293 - Fire Alarm: All the Noise and Planning

DAY THREE - **WEDNESDAY, MARCH 9, 2022**

- ☐ 381 - So You Want To Be a Building Official?
- ☐ 382 - Office Ethics and Antics
- ☐ 383 - HVAC and Lighting Commissioning
- ☐ 384 - Building Loads and Wall Bracing
- ☐ 385 - International Existing Building Code Plan Review
- ☐ 386 - Advanced Means of Egress

- ☐ 387 - Accessibility for Commercial Buildings
- ☐ 388 - Protect your Openings- doors, Windows & Dampers
- ☐ 389 - PMGE Fundamentals
- ☐ 390 - Cold Climate Air Source Heat Pump Strategies
- ☐ 391 - Fire Alarm Systems for the Electrical Inspector
- ☐ 392 - Active Fire Protection Systems for Storage Occupancies
- ☐ 393 - Mobil/Fixed Cooking (a.m.)/ A2L Refrigerants (p.m.)

DAY FOUR - **THURSDAY, MARCH 10, 2022**

- ☐ 481 - Bluebeam Revu
- ☐ 482 - Managing a Team Remotely
- ☐ 483 - 2021 IECC Building Thermal Envelopes
- ☐ 484 - The Backside of the Building Code - Chapters 12 and Beyond
- ☐ 485 - IRC Chapter 3 - Day 1 of 2
- ☐ 486 - P2904 Fire Sprinkler Review for the Non-Fire Code Official

- ☐ 487 - 2021 IRC Significant Changes
- ☐ 488 - Special Inspection of Installed Firestop Systems
- ☐ 489 - Connecting the Lines within the 2021 IPC
- ☐ 490 - Residential Mechanical Provisions
- ☐ 491 - 2020 National Electrical Code Update
- ☐ 492 - ITM of Fire Pumps, Standpipes and PRVs
- ☐ 493 - Energy Storage Systems and Lithium-ion Battery Storage

DAY FIVE - **FRIDAY, MARCH 11, 2022**

- ☐ 581 - Working in Small Jurisdictions- How Many Hats Can I Wear?
- ☐ 582 - Residential for the Roaring 20's- Innovation & Design Trends...
- ☐ 583 - Building Electrification-Its Coming...
- ☐ 584 - Lateral Loads and Expansive Soil Design and Construction
- ☐ 585 - IRC Chapter 3, Day 2 of 2
- ☐ 586 - Firestopping Responsibilities for Code Officials and Designers

- ☐ 587 - Roofing Inspections
- ☐ 588 - Residential Energy Code Inspections
- ☐ 589 - Swimming Pool and Spa Code
- ☐ 590 - Gas Pipe Sizing and Combustion Air Sizing
- ☐ 591 - 2020 NEC Wiring Methods
- ☐ 592 - NFPA Standards Update
- ☐ 593 - Fire Scene Photography and Documentation

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