

2018 International Residential Code Course Descriptions

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EIGHT-HOUR CLASSES

Deck Inspection and Plan Review

Description: 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 are 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.

Length: 8 hours.

Objectives: Upon completion of this course, attendees will...

...Understand the limits of prescriptive design for decks.

...Learn the information that should be asked for during plan review.

...Be more confident to review and inspect residential decks according to the latest code provisions.

Single Family Homes, from Application to Occupancy

Description: 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 steps of building a new home in this brand new class. No formal wear required!

Length: 8 hours.

Objectives: Upon completion of this course, attendees will...

...Have been immersed in a photographic journey through all parts of new home construction.

...Better understand the inspections required for new home construction.

...Understand the complexity of coordinating over 100 individual tradesmen involved in home construction.

Chapter 3 of the IRC

Description: The 27 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.

Length: 8 hours

Objectives: Upon completion of this course, attendees will...

...Learn the required geometry of guards, handrails, emergency openings and room design.

...Understand the minimum fire-protection provisions for home construction.

...Be introduced to many different fundamentals of home design and construction.

FOUR- TO SIX-HOUR CLASSES

Building Codes for Building Decks (four unique classes)

Description: This two-day course is designed as four four-hour courses, described below, and can be provided individually as stand-alone classes. The two-day class provides a comprehensive explanation of how the 2018 International Residential Code regulates deck construction, from initial design to project completion.

Decks, The Existing Structure

Description: This course is related to how a new deck will interact with an existing site and building. Building, plumbing, mechanical, electrical, and fuel-gas codes must all be considered when designing a deck to effectively work with a home.

Length: 4 hours.

Objectives: Upon completion of this course, attendees will...

...Know how to identify building systems and components located on the exterior of a typical home.

...Learn how to safely design a deck that will work with emergency escape and rescue windows.

...Understand the various ways an improperly designed deck can negatively and hazardously affect building systems of the existing structure.

Decks, Ledgers and Lateral Loads

Description: This course reviews the basics of a deck structural system, including tributary loading and the load path. Lumber grading, treatment, and decay issues are discussed as well as hardware and hanger corrosion resistance requirements. Ledger connections and lateral load resistance is explained in detail, including practices necessary for a variety of exterior claddings. This class is complimented well with Decks, Down The Load Path where details of the other structural members are explained.

Length: 4 hours.

Objectives: Upon completion of this course, attendees will...

...Understand the limitations of the IRC's prescriptive design criteria and when alternatives are necessary.

...Comprehend the concept of a load path and how to determine the tributary load on a bearing point.

...Realize the significance provisions related to the attachment of a deck ledger to a home.

Decks, Down the Load Path

Description: From the decking to the foundation, this course covers, in detail, all segments of a deck load path, except for ledgers and lateral loads. New IRC tables specific to deck joist and beam spans and deck foundations are explained with a deep understanding allowing for interpolation and use on more creative deck designs. This class is complimented well with Decks, Ledgers and Lateral Loads.

Length: 4 hours.

Objectives: Upon completion of this course attendees will...

...Understand the basics of deck foundation design and construction.

...Understand the variety of manufactured decking products and how to ensure their proper installation.

...Realize the potential flexibility of the joist and beam span tables not obvious in the code provisions.

Decks, Non-Structural Provisions

Description: Decks often contain many features typical inside a home, such as stairs, ramps, landings, guards, and handrails. These features, as well as common deck amenities, are explained in detail. Photos and graphics provide a clear understanding of the specific geometry required for the safe use and navigation of these features. Code provisions discussed in this class are useful in applications other than just decks.

Length: 4 hours.

Objectives: Upon completion of this course, attendees will...

...Understand the differences and similarities of guards and handrails.

...Learn the strict geometric requirements of various stairways, including straight, winder and spiral, and the uniformity required of their components.

...Understand how to work with the code more successfully through an understanding of some basic administrative principles related to adoption and enforcement.

Building Codes for Building Garages

Description: This class reviews the IRC provisions related to the construction of detached and attached garages. Topics such as location, foundations, walls, bracing, framing, roofing and many others will be discussed.

Length: 4 or 6 hours.

Objectives: Upon completion of this course, attendees will...

- ...Understand various code provisions that regulate the design and construction of garages.
- ...Learn the basics of garage foundations, framing, and required electrical provisions.
- ...Be introduced to prescriptive, braced-wall design provided in the IRC.

Building Codes for Basement Finish

Description: Finishing a basement requires nearly all the trades and construction required for a new house, short of foundations and roofs. However, many applications are unique when transforming the former guts below a home into finished living space. Building, plumbing, mechanical, fuel-gas and electrical provisions involved with these projects will be reviewed in detail.

Length: 4 or 6 hours.

Objectives: Upon completion of this course, attendees will...

- ...Understand and identify the building components in the basement that need evaluation and consideration prior to concealment.
- ...Be introduced to code provisions that regulate the overall design of the finished space.
- ...Learn how emergency escape and rescue openings must be handled.

Construction Vocabulary

Description: This class is designed for those new to the construction and code industry or those in administration, sales, or other supporting roles. It provides an overview of many common terms and jargon used in construction through photos and graphics. Unlike reading a definition, terms are explored and explained as they apply to construction, from the foundation to the roof.

Length: 4 or 6 hours.

Objectives: Upon completion of this course, attendees will...

- ...Feel confident and aware of the conversations had throughout their role, whether in a construction company office or a building department.
- ...Understand jargon and slang that can often only be learned in the field.
- ...Be encouraged to continue expanding their knowledge and role in the construction and code industry.

PMGE Fundamentals

Description: 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”.

Length: 4 or 6 hours.

Objectives: Upon completion of this course, attendees will...

- ...Realize the old saying “\$hit runs downhill” is completely false.
- ...Understand how natural draft venting works.
- ...Trust that there are sensible reasons for many seemingly arbitrary code provisions.

Asphalts Shingles

Description: This class is designed for inspectors, roofers, foremen, general contractors, remodelers and other professionals involved with roofs or roofing. Asphalt shingle installation requirements are discussed in detail. A general overview of standards and manufacturer requirements rolled asphalt products, tile and clay shingles, and wood shingles is also provided. Common issues related to roof modifications and additions will also be discussed.

Length: 4 hours.

Objectives: Upon completion of this course, attendees will...

...Have a better understanding of residential roofing systems.

...Be introduced to various problems that can occur in connecting a new roof to an existing roof.

...Learn how to inspect asphalt shingles for proper installation.

Don't Mess with Egress (residential)

Description: Getting people out of buildings safely is a core objective of any building code, and that includes the path through a house to the exterior doors and emergency escape and rescue openings (egress windows). This course reviews all the code provisions related to movement through and out a house, including doors, halls, stairs, and escape windows, to include decks over windows and door landings on the exterior.

Length: 4 hours.

Objectives: Upon completion of this course, attendees will...

...Learn all the details of emergency escape and rescue openings, including various methods for designing a deck over a below grade egress window.

...Understand the regulations related to stairways, doors and landings.

...Be introduced to the various requirements related to the addition of an exit door to home.

Porch Roof Construction and Codes

Description: Like decks, porch roofs are often considered easy construction and are typically attempted by new contractors or weekend warrior homeowners. However, the truth is quite the contrary. Porch roofs require significant evaluation depending on the extreme variety of their design. This class reviews the code application of these projects from the foundation to the roofing.

Length: 4 or 6 hours.

Objectives: Upon completion of this course, attendees will...

...Understand the significant differences between constructing with a ridge board or a ridge beam.

...Learn the various ways to connect a porch roof to an existing house.

...Realize the limitations of prescriptive, structural design and when engineered design is necessary.

Energy Conservation Framing

Description: This course introduces some less-than-usual framing techniques that maximize the thermal envelope and explains how the International Residential Code (IRC) supports them.

Length: 4 hours.

Objectives: Upon completion of this course, attendees will...

...Understand code provisions that reduce thermal bridges 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.

...Be introduced to various construction techniques for a greater thermal envelope, such as double-stud wall framing.

...Learn the complexities of providing certain air barriers and why they are essential to thermal performance.

Furnaces and Water Heaters

Description: 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.

Length: 4 or 6 hours.

Objectives: Upon completion of this course, attendees will...

...Understand the large list of requirements for a water heater temperature and pressure relief valve.

...Learn the various venting methods: natural, induced, and forced.

...Gain a greater respect for the various complications regarding their installation and inspection.

TWO-HOUR CLASSES (can be reduced to 90 min.)

Windows and Safety Glazing

Description: Window replacements and installations are a popular construction project. Every new home will have windows and millions of existing homes are upgraded to better efficiency windows. While much focus is on proper flashing and energy conservation standards, too often required safety glazing is overlooked. Various conditions within and outside a home must be evaluated to determine which window panes are in “hazardous locations” and must be safety glazed. This course takes a deep look at those locations and the standards for safety glazing.

Length: 2 hours.

Objectives: Upon completion of this course, attendees will...

...Understand when windows must be safety glazed.

...Learn how to identify the various means of safety glazing.

...Be better prepared to sell, install, and inspect window replacements.

Understanding Codes and Inspectors

Description: Great for contractors and designers, this course discusses how a model code becomes law and the process used by the International Code Council to develop and modify their codes. General, yet important, building code concepts and organization will be discussed. Suggestions and insight for working effectively with building departments and inspectors will also be provided.

Length: 2 hours.

Objectives: Upon completion of this course, attendees will...

...Understand what is involved in code development and how jurisdictions adopt and administer them.

...Learn why municipal inspectors do what they do and how to work effectively with them.

...Be introduced to universal concepts that make up the majority of model codes.

The Plague of Roof Replacements

Description: When calamity strikes and insurance is footing the bill, the permit approval and inspection process gets turned upside down. Hail and wind storms can make a mess for building departments. Learn how to handle the difficult questions and situations that arise when roofing gets out of control and the building department gets stuck between the homeowner, insurance agent, and contractor.

Length: 2 hours.

Objectives: Upon completion of this course, attendees will...

...Understand the limits of the code and when “policies and procedures” must be implemented.

...Learn how to carefully answer the specific and contradictory questions asked by insurance agents and homeowners.

...Understand how to stay non-bias and pure to the code in the midst of tremendous pressure from the other involved parties (owner, insurance, and contractor).

Everything But the Deck

Description: Today's homeowners are demanding more from their decks, as the interest in "outdoor living" continues to grow. Contractors involved with elaborate outdoor living spaces need more knowledge than just how to build a deck. Lighting, fire-pits, new doors, sinks, hot tubs, and other deck amenities require additional design and building code considerations. Understanding what to expect from such installations not only makes for a smooth project, but also can provide confidence and knowledge in the design and sale of amenities.

Length: 2 hours.

Objectives: Upon completion of this course, attendees will...

- ...Learn how to properly design common deck amenities to work with the deck, home, and building codes.
- ...Understand considerations that must be made in preparation for immediate or future amenity installations.
- ...Realize the hazards and liabilities associated with the installation of common deck amenities.

Designing a Deck like a Home

Description: This course discusses the concept of designing an outdoor living space by identify the various functions of the space and the movement of the occupants between them. Code provisions essential to this design are provided throughout the course.

Length: 2 hours.

Objectives: Upon completion of this course, attendees will...

- ...Learn how to prepare a deck living space tailored to the owners' intended uses.
- ...Understand the space needed for comfortable and safe movement in an outdoor living area.
- ...Apply building code principals to occupant egress and movement.

Decks, Preparing for the Permit Process

Description: This course highlights the information that should be collected from a site and included in the plans when submitted for a deck building permit. Suggestions for preparing the construction documents (plans) and general expectations of building departments will be discussed.

Length: 2 hours.

Objectives: Upon completion of this course, attendees will...

- ...Know what information to collect from the site and include on their plans.
- ...Know how to increase their chance for plan approval.
- ...Understand what is expected on construction documents by a building department.

Commercial Decks and the Building Code

Description: This course provides an overview of the significant differences between designing a residential deck and a commercial deck.

Length: 2 hours.

Objectives: Upon completion of this course, attendees will...

- ...Understand the human dynamics that make construction of public decks different than private decks.
- ...Learn the geometric differences in various construction elements between residential and commercial decks.
- ...Be introduced to the concepts of fire-resistive-rated construction, type of construction, occupant type, occupant load and means of egress, and how it can affect deck design and construction.

Decay and Corrosion of Decks

Description: Being located in the exterior environment, decks experience many conditions that interior construction does not. From decay of lumber to corrosion of hangers, new codes and standards address these issues in ways often overlooked or not understood. Which products must be used is dependent on the varying exterior conditions as well as how the deck is constructed. Learn the facts from codes, standards, manufacturer's requirements, and science and build not just a code-compliant deck, but also a long-lasting one.

Length: 2 hours.

Objectives: Upon completion of this course, attendees will...

- ...Understand when ground-contact lumber must and should be used for construction.
- ...Learn the variety of corrosion resistant hangers and hardware and how to select the appropriate products.
- ...Be introduced to the science of metal corrosion and why galvanization protects metal.

Residential Fire Sprinklers, Unforeseen Considerations

Description: Hear the story of one jurisdiction's yearlong journey of implementing residential fire sprinklers soon after the provisions were added to the IRC. Not a technical or comprehensive class about the system's code provisions; this class reveals the bumps in the road and the domino affect that is not printed in the IRC. Learn many lessons of implementation from an instructor who lived through the process and learned by mistake and oversight.

Length: 2 hours.

Objectives: Upon completion of this course, attendees will...

...Be more prepared to implement residential fire sprinkler system requirements in their jurisdiction.

...Understand issues that don't reveal themselves on the sprinkler plans.

...Realize the team effort required by the building plan reviewer, inspector, fire department, water department, contractor, and tradesmen.

Top Ten Residential Code Mistakes

Description: There are some long-standing code provisions that just never seem to be fully understood and they're other new ones that don't seem to be catching on. This class picks out the top ten and explains in detail why they are important not to miss.

Length: 90 minutes.

Objectives: Upon completion of this course, attendees will...

...Understand the differences in handrail and guard geometry and requirements.

...Learn the nearly foolproof way to use any product.

...See the humor in learning from others' mistakes.