Sound Reason Academy
Online Classes

Course Syllabus

How to Build a House!

Course Summary:

This class will teach students what is involved in building a house using materials widely available in the U.S. and other Western nations.

This course does NOT provide specifics regarding trade practice – meaning we will not be getting into detail like how to measure and cut lumber or how to use a plumb bob or laser level or prepping and gluing PVC for example. Rather this course will provide the student with an overall understanding of the tasking involved in a house building project.

Course Experience:

We all live in some kind of shelter and many of us live in houses. A house is by far the most common type of shelter that people live in all around the world. From large stone castles to small mud huts, all people need shelter from the elements.

Did you ever wonder what was involved in building a house? To many people, how to build a house is a complete mystery. Others know some elements to the project but don't know how to connect the dots, so to speak.

This class will describe what is involved in building the 'typical' light framing materials (typically wood purchased from major suppliers) house. This class will teach and equip you to understand the steps required to build a house.

In this class, students will learn the following steps on house construction:

- Planning: Materials to use; site selection factors, site improvement considerations;
- Design: Basic design and layout principles using either pencil and paper or software;
- Specific site preparation – specific house orientation and improvement considerations;
- Foundations;
- Framing methods;
- Electrical and Plumbing layout and preparation;
- Waste removal and venting;
- Roofing considerations;
- Framing to finish;
- Finishing methods – just when you think the project is almost finished!

Mr. Spiess is qualified to instruct on this topic since Mr. Spiess successfully built his family's own 2,400 square foot, two story house (see the house photo on the About page of the web site).

Prerequisites & Age & Ability Recommendations:

No prerequisites are recommended for this class. This course is appropriate for middle school children to adults.

Content Review by Week:

Planning & Design: (Week 1)

- Planning and design are the first and arguably the most critical steps to successfully completing the building of a good quality house. From finding good property for the project to designing the house, good planning is essential to a high quality and successful project.
- This class will provide a comprehensive overview of the planning and design process along with suggestions as to best approaches.

Site Selection & Foundations: (Week 1-2)

- We will look at the typical steps necessary to ensure your house is located on the property in an optimal way – including passive solar considerations; flooding considerations; tree considerations; grade considerations; neighbors, etc.
- The foundation of your house is perhaps the most important aspect of house stability, soundness and durability. We will look at different foundation methods, and consider costs in regard to the different foundation method options.

Framing: (Week's 2-3)

- We will look at the materials available to build a house in the U.S. and the different framing methods carpenters use to frame the house.
- We will look at the tool necessary to frame the house as well as the different components that make up a house's framing – walls, floors, doors, windows, etc.
- We will learn the terms used to describe the lumber pieces used to build different components of a house's framing – plates, joists, headers, etc. – and how those framing members are used in the construction of those components.

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Electrical: (Week 4)

- We will first learn the how electricity is created and made available to residential housing.
- We will learn what electricity is, how it works, and how it can be dangerous to work with.
- We will cover how to plan for and execute providing electricity to your house. We will briefly consider solar power and what is required to make that work..

Plumbing & Finish Carpentry (Week 5-6)

- We will learn how houses in different areas – city to country - are supplied with fresh drinking water.
- We will learn about the two plumbing systems – fresh water delivery and waste water removal – and how they work.
- We will learn the different components of building a plumbing system and how to run the pipes.

What Items or materials are provided with the course?

- This syllabus.
- A student version of each class's content will be made available prior to the class on the Materials page for the class on the web site, so students don't have to take notes (creating a logic account on the web site is required to access these documents).
- Homework is not required but will be provided upon student's request. If a student requests homework, the answers will also be available in documents on the Materials page for the class on the web site, so students don't have to take notes (creating a logic account on the web site is required to access these documents).