

You Can Do It!

A WOMAN'S GUIDE TO CONSTRUCTION CAREERS



**CHICAGO
WOMEN
IN TRADES**

*... Building Equal Opportunity
for More Than 30 Years*

LAKISHA MCKINNIS

electrician



“Being a tradeswoman is very satisfying. You feel like you’re on top of the world, because you’re doing something that traditionally women don’t do. Especially when you can go in every day with guys who don’t expect you to be successful, and every day you come back no matter how hard the job could have been that day. Being an electrician and being in different environments while having to figure out how to connect this pipe to this pipe over here allows me to constantly use my brain to figure things out. It’s great to start with something that wasn’t there, and then you create it and it’s there.”



INTRODUCTION

Chances are if you're reading this guide you have yet to find the career that is right for you. Maybe you have a passion for building and fixing things or maybe you're tired of sitting behind a desk and want more to show for your effort than a filed pile of papers. If so, a career in the construction industry may be more realistic than you think.

Chicago Women in Trades (CWIT) has been helping women build satisfying careers in the construction industry since 1981. Founded by tradeswomen fighting for equal opportunities to work, learn and advance in construction careers, CWIT exists to do just that. We increase women's participation in the skilled construction trades and promote fair treatment in the workplace. With this guide, we want to share our experience with you and help you understand the construction industry, assess your interest and qualifications, and plan for the next steps should you decide to pursue a skilled trade. Most of all, we want to demystify the path to trades apprenticeship programs by introducing you to women who are building successful careers as carpenters, plumbers, electricians, sheet metal workers, bricklayers, pipefitters and iron workers.

If, after reading this book, you believe that a trades career might be right for you, we want to help. We can assist you with:

- Skills Assessment – Find out where you are now so you know where you need to go.
- Career information and guidance
- Preparatory training
- Job search assistance
- Mentorship

Please call us at (312)942-1444 or visit our website, www.chicagowomenintrades.org.

SARAH STIGLER

plumber



“There’s more work for plumbers than any other trade, even if the economy is bad, and being a plumber gives me the gratification of contributing something useful to my community. It’s such a basic and essential thing to have clean water coming into your house and have it effectively removed from your house. It’s the first and foremost thing that separates us from a third world country, and I take a lot of pride in my contribution to that.”



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VANESSA CASILLAS

bricklayer



“I like being outside and working with my hands, and if I feel good doing it, then why should I be limited if I’m a woman? Why shouldn’t I be out there making the big bucks, having health insurance, a double pension and annuity with the union? Why should I stay making \$12 an hour doing something I’m not really happy at when I want a well-paying career that offers me a good future?”



WHY SHOULD I CONSIDER A CAREER IN THE TRADES?

The short answer to this question is simple: these are good careers with better than average pay, benefits, and opportunities to advance. Some of the benefits include:

- High wages – apprentices earn starting wages averaging over \$16 per hour leading to journey-level wages approaching or exceeding \$40 per hour in the Midwest.
- Benefits – union tradespeople receive better than average benefits including health insurance and a pension plan.
- Wages are based on union-negotiated rates and are the same no matter who you are or what company you work for.
- Earn while you learn – unlike most fields where you are expected to fund your own education and then obtain employment, an apprentice receives paid classroom and on-the-job training to learn the skills of their trade.
- Once learned, your skills are portable and your pay is not dependent on the fortunes of a single employer.
- Within the next ten years, demand for labor in the construction industry is projected to increase and long-term projections remain strong locally due to projected retirement and expansion.
- Many tradespeople point to the permanence and beauty of their work as a source of pride and satisfaction.

Why, then, don't more women choose construction careers? As anyone who has ever driven past a construction site knows, it is still rare to catch a glimpse of a tradeswoman on the job. In fact, just 3% of the industry's skilled workforce is female. Our society's conception of gender roles has changed but slowly with regard to construction occupations. The good news is that it is changing because of women like the ones featured in this guide. Many of us remember when police officers, mail carriers and doctors were almost exclusively men, and, today, female workers in these fields are commonplace thanks to the determination of early pioneers.

There are many myths about the construction industry and women's abilities and place in the workforce that limit their participation in these careers.

MYTH 1: You have to have experience or know someone to get a good job in the trades.

FACT: Most trades' apprenticeship programs require only that you have a high school diploma and can pass an aptitude test, which typically requires no specific knowledge of that trade. Apprenticeship programs are designed to provide the training you will need, and they usually prefer to start from the beginning so you can be trained in accordance with their standards.

“I think being a tradeswoman means that I’m able to use all of my strengths in my career – my physical strengths, my intellectual strengths, my problem solving abilities all come into play in the trades. Also, I’m able to set an example for other women since there are so, so few of us in the trades.”

- Sarah Joy Liles
Pipefitter

“I’ve always been fascinated with art, not that I can draw or anything like that, but I like the work. Being a bricklayer is not just a trade, it’s a craft, and it deals with a lot of architectural design and artwork. Right by McCormick place, my job built a couple of town homes, and as we were building them I would take my spouse past them to show her the detail on the outside.”

- Jackie Townsend
Bricklayer

“Nothing compares to building things, actually being a carpenter. Nothing else can even come close. It’s a lot of hard work, but what you do, you can see when you walk away at the end of the day.”

- Kina McAfee
Carpenter

MYTH 2: Blue collar work or heavy, physical labor is nontraditional for women.

FACT: Many jobs now thought to be nontraditional for women have been performed by women in the past. Throughout history, women have done heavy labor on the farm and in the fields alongside men. During World War II, over 6 million women entered the labor force to build ships and airplanes and make factory goods. These jobs are currently considered nontraditional only because women are underrepresented in them.

MYTH 3: Women are not strong enough to do heavy labor.

FACT: The strength requirements for nontraditional jobs are often exaggerated. Many traditional jobs, such as nursing and waitressing, can be as physically demanding as some nontraditional jobs. Moreover, the Occupational Safety and Health Administration (OSHA) requires that special equipment be provided for every heavy job regardless of whether it is being performed by a man or a woman. In addition, mechanization continues to decrease the level of physical strength demanded by many jobs. Finally, while the average man is stronger than the average woman, some women are stronger than some men, and all can develop both upper and lower body strength with training.

MYTH 4: Women won’t like trades work.

FACT: Many women enjoy working with their hands and working outdoors. They take great pride in knowing that they have helped to build or create something. Many tradeswomen report a high degree of job satisfaction.

Changing these attitudes is important if women are to have equal access to the same economic opportunities as men in this country. Did you know that in 2013, women working full-time earned just 77 cents to every dollar earned by a man? This disparity is even more pronounced for African American women who earned 65% of a man’s wage and Latina women whose earnings were just over half.

Among other reasons, this wage gap exists because what is considered “women’s work” very simply pays less than what has traditionally been considered “men’s work.” Though women are enjoying a greater range of occupational choice than ever before, 77% of all working women are employed in just 20 out of 440 occupations and these 20 occupations are 80% or more female. The following chart shows what this could mean for a woman over a lifetime of employment.



The career you choose will have a profound impact on your quality of life, whether you measure that by financial security or personal satisfaction. We hope this guide will introduce you to careers you may not have previously thought possible. Whatever you choose, we encourage you to do so based solely on your interests, talents and needs, and if you do choose a career in construction, know that you will also impact the workplace itself, joining other tradeswomen in breaking down the barriers that limit women’s career choices.

TRACY LOPEZ

sheet metal worker

“I like sheet metal because I think there’s a little bit more variety than some of the other trades in terms of what you can do within your trade. There are so many aspects of sheet metal. You’re not only out in the field. You can be a draftsman. You can work in the shop and fabricate. You can be a welder and it gives you the opportunity to choose what fits you best.”



UNDERSTANDING THE CONSTRUCTION INDUSTRY

The construction industry is engaged in building, restoring and repairing our built environment, from the homes we live in to the roads we drive on. As a result of the complex skills required to complete these projects, there is a great deal of specialization in the industry. You do not, for example, apply to be a construction worker, but instead, choose from over 25 distinct trades. Imagine that the construction industry is an umbrella and each spoke is a trade supporting that umbrella. These spokes are all necessary for the umbrella to do its job, yet each is separate. Likewise, plumbers, carpenters, electricians, and less familiar trades such as sheet metal workers or pipefitters each have their own specific work, their own unions, and their own apprenticeship programs for training new workers.

Apprenticeship programs are the means through which construction trades pass on the skills of their craft from one generation to the next. To achieve this goal, apprentices are required to participate in both classroom and on-the-job training for between two and five years, depending on the trade. The greater percentage of time is spent working for a contractor on a job site and receiving training from an experienced journey-level worker. Apprenticeship programs have widely varying classroom training schedules, ranging from one day a week to one multi-week session per year.

Apprentices are paid a percentage of journey level wages, usually starting between 40% and 60% of the full pay rate and increasing every six months to one year if classroom training and work hour requirements are met.

When selecting an apprenticeship, there are a few variables you should be aware of so you can select the program that is right for you:

PRE-APPRENTICESHIPS

Many apprenticeship programs require that candidates accepted into the program complete a pre-apprenticeship before they are eligible to work on a job site. Pre-apprenticeships can be as short as a week or as long as 12 weeks and may be paid or unpaid, but all are full-time with homework requirements. It is nearly impossible to work in addition to attending these intense preparation classes, so it is important to plan ahead if you are interested in a program that requires a lengthy unpaid pre-apprenticeship. As of the writing of this book, the longest pre-apprenticeship program we are aware of is 11 weeks. The disadvantage from a financial stand point is clear, but there are advantages to this system as well. This training allows inexperienced apprentices to build basic skills and confidence, making that first day on the job site a far less intimidating experience.

JOB SEARCH

Apprenticeship programs usually fall into two categories when it comes to who is responsible for your employment:

“The primary job of a sheet metal worker is to provide comfort to the customer as far as heating and air conditioning go, so that includes the furnaces, air conditioners, the duct work and all the outlets to bring or condition the air. That’s on a residential or commercial level.”

- Tamara McCollough
Sheet Metal Worker

“I am a residential carpenter, so I actually build the framework of a home. I also fabricate cabinets, countertops, and install those, and all the trim, base and doors. With these skills, I could even start my own business if I wanted to.”

- Tammy Guilinger
Carpenter

“Iron workers build bridges and skyscrapers. Those walls and bridges that you see on the Dan Ryan, we do those. Anything that has to do with steel is ours. We also do metal buildings, like warehouses. I’m a proper proud iron worker, and I love it.”

- Japlan Allen
Iron Worker

“Commercial electricians either upgrade service as far as power to a building if you’re remodeling, or if it’s new construction you’re the person to put in all the power.”

- Lakisha McKinnis
Electrician

Apprenticeship school takes responsibility for your employment

Under this model, programs may take apprentices one at a time based on employer requests or may survey the employment needs of its contractors prior to selecting a class of apprentices, taking care to select no more than can reasonably be placed on the job. You will not have a choice of employers, but will be placed with the contractor when your name comes up on the ranking or waiting list. If you are laid off, your name will go on an out-of-work list and you will be re-placed when your name comes to the top. Hiring a new apprentice through this system is a commitment on the part of the employer and they will not be able to dismiss you lightly, nor will you be permitted to quit and find work with another company.

You are primarily responsible for finding your own employment

In addition to those programs that require you to find employment as a condition of acceptance to the apprenticeship program (see next section), some programs that select through testing/interviewing may also expect you to be involved in your own job search. Under this system, the school will assist you with job leads, but employers may interview and choose only those applicants they want. You are also permitted to look for your own work. These programs may or may not be less competitive in their selection processes and they may or may not be more likely to accept more people than are strictly needed to meet the employment demand, but if you are a hard-working, high-achieving apprentice, you will benefit from greater assistance from the school and a reputation that allows you to be successful in your own job search.

INITIATION FEES

When you are accepted into an apprenticeship program, you will have to pay an initiation fee to join the union. This fee, which can be hundreds of dollars, may be required before you start working. If you are required to attend a pre-apprenticeship program, the school may cover the initiation fee for you. In other cases, the employer may pay the fee

and deduct the amount weekly from your check. When you make an application to a program, make sure to ask about the amount of the fee, how it is paid and when it is due, so you can be prepared.

LENGTH OF PROCESS

In almost every case, be prepared for a bit of a wait. In addition to waiting for the program to open for applications, which may only be once a year or less, you may have to wait for your test date and then for your class to begin pre-apprenticeship or for your name to come up on the ranking list. In our experience, the length of time from application to employment can take anywhere from a few months to more than a year or two, depending on the process of the trade you choose, the season/economy, and/or your rank in relation to other program applicants.

Many organizations produce guides detailing the application processes, requirements and structure of local apprenticeship programs, including the construction Industry Service (CISCO) in Chicago, the Construction Employer Association in Cleveland and the Department of Workforce Development, Bureau of Apprenticeship Standards in Wisconsin. Contact information is listed in the resource section of this guide.

“A plumber works on, maintains, installs and repairs all the piping systems that bring clean water from the street into your home, carries all the waste water out to the treatment plant, and everything in between. We spend our days chest deep in the dirt, doing everything from digging ditches, to repairing faucets, to bringing new piping into someone’s home. I think it is one of the most varied trades.”

- **Sarah Stigler**
Plumber

“Bricklayers install the masonry on any job and the reinforcing bar and grout that goes into the wall that makes it a really strong and stable structure. Anyone looking to be a bricklayer should know that they are going to have to lift heavy material and get familiar with the saw. Guys tease me, but I actually have block at home that I lift in my free time to try and keep the form and build up muscle mass.”

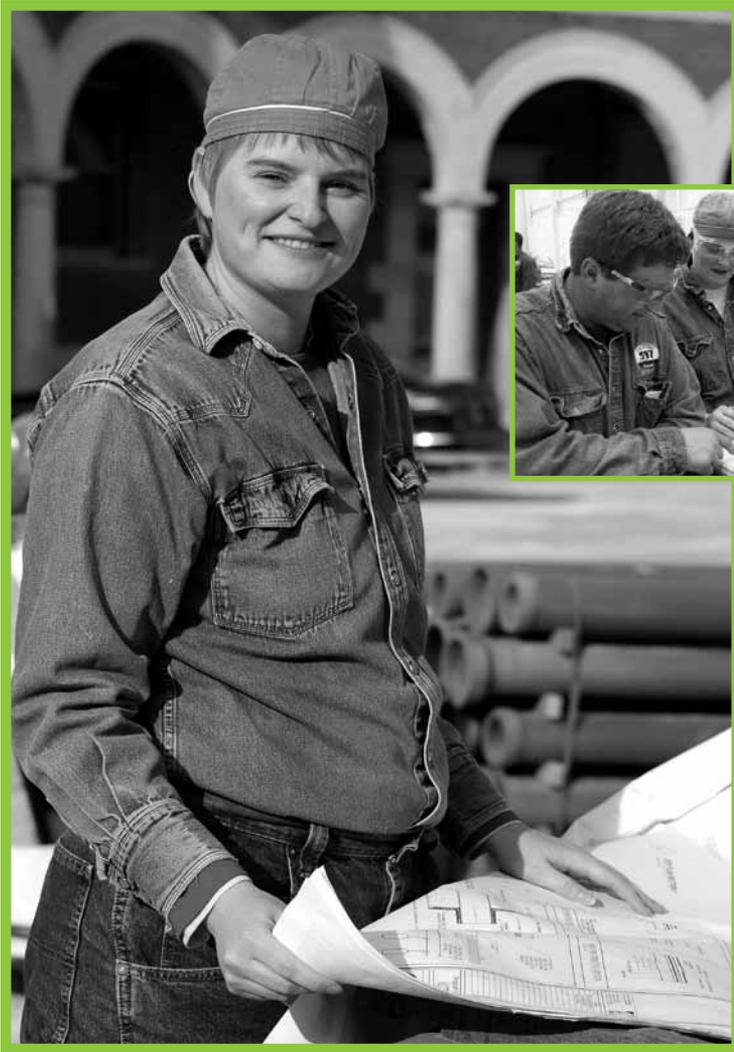
- **Vanessa Casillas**
Bricklayer

“A sprinkler fitter is a pipe fitter. There are lawn and overhead sprinklers. We install, repair, and maintain all kinds of sprinkler equipment, from the pumps to the overhead piping.”

- **Ella Jones**
Sprinkler Fitter

SARAH JOY LILES

pipefitter



“I was kind of a girly girl and it hadn’t occurred to me that the trades were even an option, so I went to college and got a degree in art education. I taught for a while, but I didn’t like teaching. Once I decided that that wasn’t the career for me, I started thinking about what might be. It occurred to me that one of the things that I liked about being an art teacher was that it stretched both my mind and my dexterity, so the trades seemed like another way to do both of those things.”

AM I QUALIFIED?

You might be surprised to learn that even if you have never picked up a hammer in your life, you may be qualified to become an apprentice carpenter. In fact, experience does not play a major role in the selection process for many apprenticeship programs. In some ways, applying for an apprenticeship program is more like applying for school than for a job. What they are often looking for from you is aptitude and commitment. Complete information regarding program requirements can be found in the locally produced apprenticeship guides referred to earlier.

So how do apprenticeship programs select their apprentices?

All apprenticeship programs will require that you provide at least some of the following documentation:

- Driver's License – working in construction requires that you travel to different job sites as needed and, if you are restricted to public transportation routes, it is unlikely that you will be able to maintain employment in the field.
- High School Diploma or GED – there are exceptions to this requirement. For example, the carpenters and laborers programs will accept transcripts showing that you earned two years of high school credit.
- Birth Certificate, Social Security Card and/or other proof of eligibility to work in the United States.
- High School transcripts.
- Application Fee – there is usually a small fee of \$20 or so to submit an application. Make sure you know what form of payment they will accept. A money order is usually required.
- Intent to Hire Letter (not required for most programs).

Supplemental documentation that may improve your application:

- Letters of Recommendation.
- DD-214 to verify military service.
- College transcripts or related training program certificates.
- Intent to Hire Letter.

For complete information on documentation requirements for the program/s you wish to apply for, we refer you again to CISCO's *Build Your Future with a Career in Construction*. Under each listed apprenticeship program is a section detailing documentation requirements. Read these requirements carefully as some programs will accept copies while others want only originals, and some may have specific requirements, such as the electricians, who ask for official transcripts showing that you have taken and passed two semesters of algebra with a "C" or better. We recommend that you call the program you are interested

“Before entering the trades, I was actually a communications networking technician inside of Ameritech buildings. I started out going to college for engineering, but I noticed that I didn’t have a passion to be an engineer. It seemed like boring work, and, even though I graduated, I just knew that I needed to do something else.”

- **Lakisha McKinnis**
Electrician

“I pretty much worked part time jobs. The last job I had before I got into the trades, I was an assistant manager at a clothing store and I did that for about a year. Once I got accepted into the trades, I wound up resigning from the position so that I could focus on that full time.”

- **Jackie Townsend**
Bricklayer

“I tried college for about a year and a half and I was working part time at UPS.”

- **Tracy Lopez**
Sheet Metal Worker

“I was a professional student pursuing a degree in physics.”

- **Anne Kahle**
Pipefitter

in to make sure that you understand the requirements thoroughly before submitting an application. Many programs are only open for applications for a brief period of time each year, so you don’t want to miss your opportunity because of a misunderstanding. If all or some of your application materials will be mailed, we recommend that you send these materials by certified mail and call again before the deadline to confirm that your application package is complete.

Beyond documentation requirements, there is a great deal of variety in how apprenticeship programs select their applicants. Here are the common selection tools, which may be used alone or in combination with each other.

SPONSORSHIP BY SIGNATORY CONTRACTORS

Apprenticeship programs such as the painters, drywall finishers and cement finishers select their applicants based on their ability to get “Intent to Hire” letters from union contractors. The process usually works like this: once you apply to the apprenticeship program, they give you a list of contractors from whom you can solicit employment. If you succeed, you take your letter to the local, pay your initiation fee, and join the apprenticeship program, meaning you are eligible to work almost immediately. Connection to the industry certainly helps in this case, but there are some ways you can increase your chances of obtaining a sponsorship letter. Look for jobs on city, state or federal projects. The contractors on these projects should be looking for women to meet affirmative action goals. Typical government projects are construction and renovation of roads, bridges, schools, government office buildings, hospitals, libraries and other public facilities. A few other programs require a letter and administer a test, and some give additional points for sponsorship letters. For many other programs, however, sponsorship is not required for admission.

TESTING

The vast majority of apprenticeship programs use aptitude testing as a primary, and sometimes only, selection tool. Some programs base their decision solely on test results while most others also require

an oral interview or experience inventory in addition to testing. Tests are fairly standard and could include reading, math (fractions, decimals, percentages, algebra), spatial relations, mechanical reasoning, and numerical reasoning. Before you apply to a program, you should get a sense of the importance of the aptitude test in the selection process, as it is weighted or considered differently from program to program. For example, to become a carpenter, you only have to pass the test, meaning you need to achieve a score of at least 75%. For other, more competitive programs, the test score might be factored into your total score, which could include other assessments such as an interview. After your total points are scored, you get a ranking number, relative to your standing among all the other applicants. How much the test is worth in a given program's ranking system can vary quite a bit, but it is seldom worth much more than about 50%. Since this is the easiest outcome to control, it is very important to prepare so you can maximize your test points.

INTERVIEW

Interviews are generally conducted in pairs by representatives of both the business and labor side of the apprenticeship program, using a standard set of questions with each applicant. There are usually a large number of applicants to interview, so interviews will be very brief and to the point. To succeed, you need to be able to give concise, thoughtful answers explaining why you are interested in that trade and why you are a strong candidate. Related experience is good, but so is proven reliability, a strong work ethic, commitment to and enthusiasm for the opportunity, and good problem solving skills. All these can be demonstrated by examples from a variety of experiences. The key is to think about and prepare logical, persuasive answers, as you have only a small window of opportunity to make an impression.

EXPERIENCE INVENTORY

In an effort to bring greater objectivity to the screening process, some programs have replaced the oral interview with an experience inventory. These

"My first real job I was in the military. I was in the air force and I did steel work and worked on different communication lines in the field. When I left that, I went to the cable company and I started doing installs and from there I went into a dispatch position, and then into the corporate offices dealing with customers, so it was more a customer-based position. And then I came to the trades."

- **Tamara McCollough**
Sheet Metal Worker

"For seven years I took care of my uncle, who was an AIDS patient."

- **Vanessa Casillas**
Bricklayer

"I was working as a secretary for Blue Cross and Blue Shield. I knew I wanted to quit. You top out at a lot of offices and you can't make any more money unless you go back to school and show them a degree or something, and I was just tired of being in the same place all the time. I knew that if I went into the trades I would be moving around and going to various places. I liked not having to be at one place forever, and you are never with the same people on any job site."

- **Ella Jones**
Sprinkler Fitter

“First of all, carpentry is something that I've always wanted to do. I was in graphic arts printing, and it became so computerized I knew they were going to downsize. My bills were at a real bare minimum, and my daughter was older and I was like, I'm going to jump out here and do this.”

Suzette Pickett
Carpenter

“I worked nonunion construction and trades pretty much my whole life. I did machine repair, was a truck driver, and was a foreman at a nonunion shop. The pay sucks, they can lay you off anytime and they can do whatever they want to you. And it's not like I was a “journeyman” at any of the jobs I was doing. I worked as a refinisher, and when I left there I was a foreman and already there was my glass ceiling. At 19 years old with only a high school education, I had hit my glass ceiling.”

- Sarah Stigler
Plumber

“Before I joined the apprenticeship program, I was doing research at the University of Illinois in Champaign. I was a research associate.”

- Kina McAfee
Carpenter

forms require you to answer questions about your life experiences ranging from related work history to your participation on sports teams. You will usually get a copy of this form at the time you make your application and will have time to consider how to record (and document if required) your experiences. Make sure you have a copy of your high school and/or college transcripts and information regarding past employers, teams, clubs, volunteer organizations etc., and if you have any question about whether something is allowable, ask before deciding not to include it. These forms do reward related work experience, but they also reward a wide range of other experiences that may predict your aptitude for the trade, so make sure you do not cheat yourself out of points because you can't remember how many semesters of math you took in high school. Do your research and maximize your score.

DRUG & PHYSICAL TEST

Once accepted, most programs will require you to pass a drug test and possibly a physical exam prior to admission. In addition to urinalysis, many programs require a hair follicle test for drug use. This test cannot be manipulated and can detect drug use going back as far as 90 days. Failing a drug test prior to admission will result in your disqualification from the program and you will have to wait until the following application period to re-apply. Once admitted, you may periodically be required to pass a drug test as well. A physical exam may be a simple check up, but it is possible that the exam will include a test of your physical strength and endurance, include lifting objects weighing fifty pounds or more.

In short, different programs have different criteria and you may qualify for some and not others depending on how they judge their applicants. If you are a great test taker you may look at different programs than if your strength is your experience, and visa versa. If you can meet the basic requirements, chances are good you will be able to qualify for apprenticeship.

TAMARA MCCOLLOUGH

sheet metal worker



“When I first began my apprenticeship, I found out I was pregnant. This is now my fourth year in the trades, and the benefits and money coming in really help because I’m now a single mother. I have pride in what I do and I hope that eventually my son will say, ‘yeah, my mom does that’ and have pride in me as well. Nothing is impossible with the right motivation and determination.”

ANNE KAHLE

pipefitter

“I grew up with the perception that smart people went to college, and the trades were for dummies. Nothing could be farther from the truth. I know real geniuses who are pipefitters. There is a place for everyone in the trades. A college education is not necessary, but the smarter and better educated you are, the farther you’ll go.”



SAMPLE TEST PROBLEMS

Apprenticeship program aptitude tests typically include subjects such as reading comprehension, math, numerical reasoning, spatial visualization and mechanical reasoning rather than questions related to the specific trade to which you are applying. As of the writing of this booklet, most apprenticeship programs in Northeast Illinois administer a math test that primarily measures an applicant's proficiency with basic math such as decimals, fractions, and percentages, similar to those listed below. Often you can purchase a test preparation booklet when you submit your application and resources for ordering test preparation materials are listed in the resource section of this book. Other programs, however, may include more advanced math including geometry and algebra, as well as trades-related math such as adding feet and inches. These are merely examples, tests used vary from program to program and region to region, so be sure to do your research and connect to resources in your area so you can prepare appropriately for your entrance exam. If you have been out of school for a while, you might find it challenging to remember where you stored this information, but re-learning it, especially when you know how you will apply it, may be easier than you think.

MATH

1. $81.6 \times .7 =$

4. $8.00 - 1.35 =$

2. $1/5 + 2/7 =$

5. $3 \frac{1}{4} - \frac{1}{3} =$

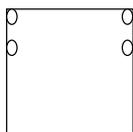
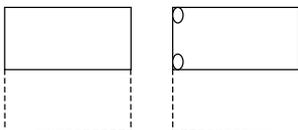
3. $2/7 \times 4/3 =$

6. 27% of 63 is =

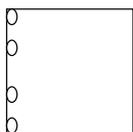
SPATIAL VISUALIZATION

Most apprenticeship program entrance exams test applicants' ability to visualize in two or three dimensions through questions such as the following paper folding or hole punching exercises. Each question shows how a piece of paper is folded and how it is punched, then you must choose which pattern of holes would have been created when the paper is opened.

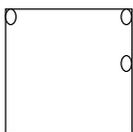
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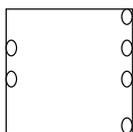
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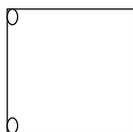
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C

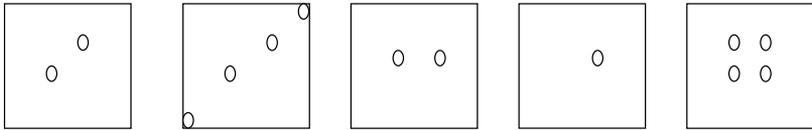
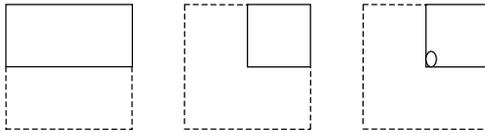


D



E

2.



A

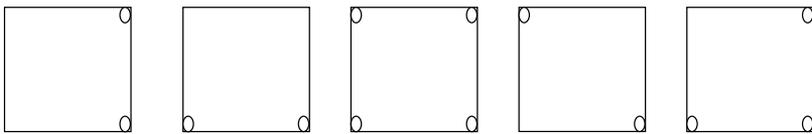
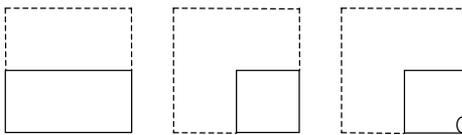
B

C

D

E

3.



A

B

C

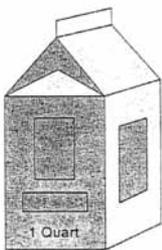
D

E

MECHANICAL REASONING

This section assesses your understanding of some basic laws of physics, which is not to say that you have to have taken a physics course. Many of these concepts are common knowledge. They include force and motion, weight and mass, and simple machines such as levers, inclined planes, pulleys, screws, wheels and axles, and wedges.

1. Which holds more?
 - a. Container A
 - b. Container B
 - c. Equal

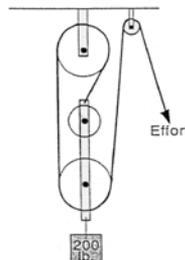


A

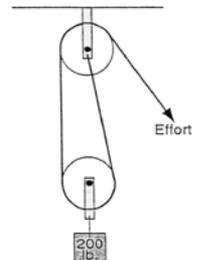


B

2. Which pulley system will lift the load the highest?
 - a. A
 - b. B
 - c. Equal

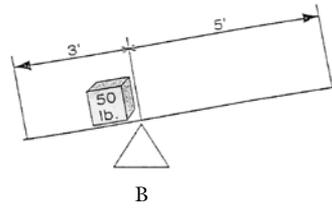
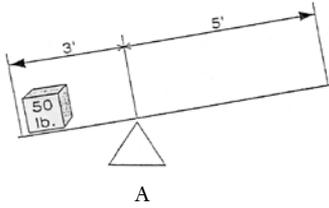


A



B

3. Which will require less effort to lift the load?
 a. Lever A b. Lever B c. Equal



NUMERICAL REASONING

Numerical reasoning exercises test applicants' logic by asking them to find the next number in the pattern as shown below.

1. 3, 5, 9, 15, 23 a) 25 b) 31 c) 33 d) 29 e) 27
2. 20, 19, 17, 14, 10 a) 15 b) 7 c) 9 d) 6 e) 5

READING COMPREHENSION

Reading tests typically include a number of fill in the blank questions such as:

Most cars have _____.

- a) Tires
- b) Leaves
- c) Noses
- d) Colds

followed by more complex passages about which you must answer a series of multiple choice questions.

ANSWERS

Math: 1) 57.12, 2) $17/35$, 3) $8/21$, 4) 6.65, 5) $2^{11/12}$, 6) 17.01

Spatial Visualization: 1) B, 2) E, 3) C

Mechanical Reasoning: 1) C, 2) B, 3) B

Numerical Reasoning: 1) C, 2) E

Reading Comprehension: A

If you are concerned about your ability to pass an apprenticeship exam, many organizations, including Chicago Women in Trades, offer preparatory training classes to assist you in becoming a competitive applicant for the industry. The curriculum includes: math and test preparation, hands-on experience and basic construction skills, aerobics and weight lifting, and industry specific workforce preparation. If you can not find a preparatory course that is accessible to you, work with your local community college to identify courses that will help you prepare independently.

ELLA JONES

sprinkler fitter



“All I can say is that it has afforded me a different lifestyle. A lot of people don’t want to get into the trades because they think it’s seasonal work, but I’ve been working every day that I’ve wanted to since I’ve been here. I like the free atmosphere, and not having to go to one place all the time. I like the moving around, and I like the majority of the people I meet.”

IS A TRADES CAREER RIGHT FOR ME?

So far, this booklet has focused primarily on the benefits of construction careers, but not everyone is suited for this or any other kind of work. Below are some key facts about the industry along with a self-assessment survey to help you to determine if a career in construction is a good match for you.

SEASONAL, PROJECT-BASED EMPLOYMENT

People joke that in the Midwest there are two seasons, winter and construction. There is, of course, some truth to that, and there are clearly many more construction jobs available in summer than in winter. Even within the busy season, work can fluctuate for contractors as they complete and take on new projects. Although you can improve your chances of working consistently throughout the year by being among the most skilled and reliable employees, lay-offs and job searches are an expected part of the trade experience. The trade-off is that you may have the opportunity to earn significant extra cash working overtime in the summer. If you are able to save that money, a winter lay-off may come as a welcome break in a busy year, particularly as construction workers are paid only for their working hours, with no paid sick or vacation leave.

EMPLOYER EXPECTATIONS

In line with the generous wage and benefit package, employers have strict expectations of trade workers. As a general rule, there is far less flexibility than you might find in an office environment. Work schedules, typically 7:00 am to 3:00 pm, are fixed and it is wise to arrive well in advance of your start time as there is little leniency for tardiness or absenteeism. If you're not there, you cannot make up for it independently, and your absence may delay the work of co-workers or other trades. While at work, employers expect you to be in constant motion and to take initiative when you have completed tasks. Breaks will be limited to scheduled times, typically 15 minutes in the morning and 30 minutes for lunch, and overtime may also be required to meet project deadlines.

WORKING CONDITIONS

Most trades work outside or in uncompleted structures all or some of the time. While that might sound great on a bright 70 degree spring day, this is not the norm for the Midwest, and you can expect to work in unpleasant summer and winter weather. The work is physically demanding and constant, requiring workers to lift up to 50 lbs and be fit and flexible enough to spend the day carrying material up stairs for example. You should also be prepared for dirt, dust, and often less than sanitary conditions on the site. If proper safety precautions are not observed, the work can be dangerous as well, and it will not be possible to avoid certain types of work that may make you uncomfortable, such as climbing ladders or working at heights.

The culture of the construction industry is also very different from what most women are accustomed to in the workplace. Topics of conversation,

“Unlike a lot of the people in the business, I’ve been able to keep a job with the same company for more than two years. A lot of people get laid off for anywhere from three months to six months, and I’ve never been laid off my job for more than a week. I’m the only woman on my job, and I’m still there.”

- Jackie Townsend
Bricklayer

“I entered the Pipefitters’ 597 as a second year apprentice through their Hybrid Welding Program. I welded all day, every day, unpaid, for four months. It was grueling. I had to pass a series of weld tests in order to make second year status, and if I had failed even one, I would not have been accepted as an apprentice at all.”

- Anne Kahle
Pipefitter

“My greatest challenge has definitely been working in a male-dominated field. Having to work with basically all men everyday, being maybe one or two women of maybe two hundred men on a job site and literally having to be strong and learn how to defend myself.”

- Tracy Lopez
Sheet Metal Worker

jokes, and language can be crude and supervisors are not likely to search for exactly the right way to phrase a criticism. This is especially true for apprentices who may not be taken very seriously until they have proven their worth. Many tradeswomen relate stories of apprentices being asked to go get nonexistent tools such as “drywall stretchers” or sweeping floors for days on end. This can happen to both male and female apprentices and it is sometimes difficult to distinguish from sex-based discrimination, which still commonly occurs on many job sites.

ISSUES FACING WOMEN IN MALE DOMINATED OCCUPATIONS

Many unions and contractors are supportive of women entering the construction trades, but women are still a rarity in the industry and you are very likely to be the only woman on your crew or perhaps even the project. The range of experiences among tradeswomen is great, but women considering careers in construction should understand that they are still pioneers and may have to fight for acceptance and fair treatment on the job site. At the very least, you can expect greater scrutiny than your male co-workers. Most tradeswomen say that they have to work twice as hard to prove themselves, especially since they are often burdened by the perception that their work is indicative of whether women in general can perform in construction careers.

Sexual harassment, though by no means unique to the construction trades, is more common for women working in male dominated occupations than for women doing more traditional work. Described under federal guidelines issued in 1980 for Title VII of the Civil rights Act, sexual harassment is defined as “unwelcome sexual advances, requests for sexual favors and other verbal or physical conduct of a sexual nature:

- When these advances or requests are a condition of employment.
- When whether you reject or submit to the harassment influences what happens to you on the job.
- When they create an intimidating, hostile

or offensive working environment.”

Sexual harassment is illegal, as is discrimination on the basis of gender, which is still a common experience for tradeswomen. Discrimination in hiring, training and advancement remain issues for many tradeswomen, and Chicago Women in Trades has worked for 30 years to improve conditions for women in the industry, providing sexual harassment prevention training and policy development for unions and contractors and support groups and advocacy for tradeswomen. For more detailed advice for addressing sexual harassment and discrimination, please contact us to receive a copy of our tradeswomen’s manual *Tools for Success*.

Below is a short self-assessment to help you think about whether or not you are a good fit for a construction career.

DO YOU HAVE WHAT IT TAKES?

Will I enjoy construction work?

Do you like making repairs around the house (painting, fixing outlets, radios, stereos etc.)?

YES NO

Do you like working from a pattern, blueprint or diagram to construct or make things?

YES NO

Does it give you satisfaction to see the concrete results of your labor?

YES NO

Do you enjoy math and solving technical problems/puzzles?

YES NO

Do you work-out and enjoy physical challenges?

YES NO

Do you like to work or play outside, even when it’s very hot or very cold?

YES NO

Are you a morning person who enjoys getting an early start to the day?

YES NO

“My biggest challenge is to do my part to maintain my physical strength and be able to do the job everyday without being overwhelmed or exhausted or getting physically hurt.”

- **Lakisha McKinnis**
Electrician

“My greatest challenge is dealing with the racism and sexism that sometimes comes out of the mouths of tradesmen that I respect, and trying to address that in a way that is comfortable to me, that allows me to maintain a good relationship with these guys but also to be true to my own heart and my feeling that that’s really unfair.”

- **Sarah Joy Liles**
Pipefitter

“One challenge is that I’m afraid of heights. Being a bricklayer you’re constructing the exterior before the interior goes in. Sometimes there’s nothing there and you’re looking down and the scaffolds are shaking, and there’s noise, and sometimes the guys are pushy. Challenge-wise, just pushing yourself to get up there and do the work when your body’s paralyzed in fear. It’s hard. Eventually I overcame my fear.”

- **Vanessa Casillas**
Bricklayer

“I had to learn to tell the journey people that just because I’m an apprentice it does not mean I’m stupid, it just means I don’t know what’s happening right here. But it does not mean that I’m stupid, or that I’m not familiar with the world in general, that I don’t have feelings, that you can just talk to me any kind of way, or you can just say anything and I’m not going to say anything. Most of the time, I was the only female on the job and 90% of the time I was the only person of color on the job.”

- **Suzette Pickett**
Carpenter

“My greatest challenge was probably completing the apprenticeship program. That went along with getting my own confidence in doing the job. And a lot of that had to do with getting along with the different crews of carpenters, and being able to navigate through working with different groups of guys.”

- **Kina McAfee**
Carpenter

Will I thrive in this work environment?

Can you work at heights or in small confined spaces?

YES NO

Can you work in environments that may be extremely noisy, dirty, hot, cold, wet, smelly, unsanitary, or potentially dangerous?

YES NO

Are you safety conscious in all your work?

YES NO

Can you lift 50 to 70 lbs or more on a regular basis?

YES NO

Can you maintain your composure when dealing with difficult people or practical jokers?

YES NO

Can you follow the directions of crew leaders even if the directions are given quickly and may sound angry?

YES NO

Can you cope with being the only or one of just a few women on a job site and the extra scrutiny and isolation that might bring?

YES NO

Are you comfortable advocating for yourself if need be?

YES NO

Can you work as a team to complete a project, even with people who may not be particularly welcoming?

YES NO

Do you like change: new co-workers, new duties, new employers?

YES NO

Is this the right time for me to consider a trades career?

Do you have reliable childcare for nontraditional hours, early mornings or late nights?

YES NO

Can you work mandatory overtime?

YES NO

Can you do second or third shift if required?

YES NO

Are you able to drive to where the jobs are, even if that is more than one hour from home?

YES NO

Do you have the ability to meet rigid attendance requirements?

YES NO

Can you manage fluctuation in your income?

YES NO

Do you meet basic requirements?

Do you have a high school diploma or GED?

YES NO

Do you have a valid driver's license?

YES NO

Do you have access to reliable transportation?

YES NO

Are you eligible to work in the United States?

YES NO

Can you pass a drug test and are you prepared to take random drug tests throughout your career?

YES NO

Like any career, working in the construction industry has its share of challenges and, though you may not be able to answer “yes” enthusiastically to every question, to be successful, you should come away from this brief survey feeling that there are no insurmountable barriers and that the positives, for you, outweigh the negatives to the extent that you are confident in your ability to cope with these realities and be happy in your chosen career.

“What to me is a great challenge is when you go to work with people, and you know immediately from the introduction that they really don’t want to work with you. Their body language and everything says, ‘Well, I’d rather not be here with you.’ But by the time the job ends, they’re your best friend. You change people’s opinions.”

- **Ella Jones**
Sprinkler Fitter

“I’m a person who likes challenges. I never knew if I was scared of heights or not, so I challenged myself to it. I took it head on. Walking across the beam on the skyway which is about 200 feet in the air. That was my favorite challenge.”

- **Japlan Allen**
Iron Worker

“You have to love what you do, because there are going to be hard times and you need to plan for the hard times. You’re going to be making money hand over fist, it’s going to seem like you’re making a lot of money, but make sure you sock some away for a rainy day because they are not going to be all good times.”

- **Tammy Guilinger**
Carpenter

JACKIE TOWNSEND

bricklayer

“If you get into a trade that you enjoy and that you can handle, you’re going to love it. The pay increase is great.

Right now I’m an 80 percent apprentice. I get a raise every six months. I get a raise increase of roughly \$3 to \$4 every six months.

Once I top out at journeyman, I’ll still get a \$2 raise every year.

You’re always guaranteed a pay increase, and you get great benefits. You also get a pension.

Pretty much after I retire, I don’t have to do anything.”



CONCLUSION

No one can give you a better idea of what to expect from a career in the trades than the tradeswomen currently working in the field. Here, their answers to two last questions offer some final insight into being a woman in the construction industry.

WHAT DO YOU WANT WOMEN TO KNOW ABOUT BEING A TRADESWOMAN?

“Don’t be afraid of the all-guy environment. I’d be lying if I said that everyone was 100% politically correct 100% of the time. But, overall, the guys are very sweet.”

- **Anne Kahle**
Pipefitter

“It’s not as hard as it looks. It has its ups and downs. Plenty of them. The upside of it is that we make a lot of money for doing what we do. The other upside is that we are, most of the time, the only woman out there, and we can show up thousands and thousands of men. Trust me, I do it all the time. Being a tradeswoman gives me a great opportunity to drive under these bridges and say I built that. That’s mine.”

- **Japlan Allen**
Iron Worker

“When you get something good there has to be work associated with it. I make good money, but I don’t have a job that is an easy job. You have to know that you’re going to have to put the work in to get paid.”

- **Tamara McCollough**
Sheet Metal Worker

“I want them to know that while it’s not as bad as it once was, it’s not the same thing as working in an office with men. It’s probably the last place where men still feel free to openly express sexist and racist views. There are other women who have been through it and can offer a listening ear or help with learning the skills or advice. Whatever it is they feel they need, there are women out there who are willing to offer it.”

- **Sarah Joy Liles**
Pipefitter

“Just because you go out and get dirty doesn’t mean that when you get off of work you have to look the same way that you do at work. A lot of people say that they couldn’t do it and get as dirty as I do, but if they were making the money that I do per hour and then overtime, double on some days, they could do it. And when you get dressed to go out, they don’t have to know what you do. Most think I’m a teacher. When I tell them I’m a sprinkler fitter, they are really surprised.”

- **Ella Jones**
Sprinkler Fitter

JAPLAN ALLEN

iron worker



“As an iron worker, they’re not worried about the color of your skin or whether you’re a man or a woman. They don’t care about your background. They’re looking at whether or not you can do the job. Period. That’s the only thing they care about and that’s the only reason I’m out there. I feel like I belong to something I can be proud of because they expected me to earn my place here and I did.”

“Definitely don’t do it for the money, because if money is the motivating factor, I don’t think you’ll succeed. It’s got to be love, pride, and that kind of stuff. Like I worked at Soldier Field, so I love going by Soldier Field and telling people, ‘I worked there.’ I like the fact that I’ve worked on so many things, especially history-based stuff. I signed the beam in Soldier Field, so a hundred years from now if they tear it down and want to build again, they see that beam with all those hundreds of signatures, and one of those signatures is mine.”

- Suzette Pickett
Carpenter

WHAT ADVICE WOULD YOU GIVE ASPIRING TRADESWOMEN?

“I would say to come in with the attitude that you can do it and be strong and be empowered and do it full force. You can’t just do it halfway because the women coming in after you are affected by that.”

- Tracy Lopez
Sheet Metal Worker

“The first thing I would say is to have or build confidence in yourself. A lot of the women that I’ve seen in these classes, they seem to lack confidence in themselves and their abilities and they give a lot of power to the men of the industry, I guess because they have done it for so long. But what I’ve found here in sheet metal is that, a lot of the time, the women are just as smart and capable, if not more so.”

- Tamara McCollough
Sheet Metal Worker

“Support each other first and foremost. And look inside yourself and find the strength and endurance you need to make and follow through with the decisions that are right for you and your future. Endurance, strength, and sisterhood. That’s what we say.”

- Sarah Stigler
Plumber

“Go for it. We need women out there just like me that are willing to do this job and make the same amount of money as these men. Get out there and do it. Don’t get intimidated because you see a lot of men and a lot of different nationalities out there. Get out there.”

- Japlan Allen
Iron Worker

“Speak up for yourself. People aren’t going to speak up for you, especially men who may not be too happy about having you on the job site. Stand up for yourself, speak up for yourself. Show them where your limits are.”

- Vanessa Casillas
Bricklayer

KINA MCAFEE

carpenter



“Working in the trades is so much more than just a paycheck – so much more self-confidence, the ability to take care of yourself. With this job, you will learn stuff that you take with you. It’s good to be loyal to a company that’s employing you, but if anything happens you know you’ve got that trade and it’s something that is a part of you. It can take care of you even if a company folds. I think the trades are just better than other employment.”

“Well I would say probably the number one thing is to create your support network. Because it’s difficult. It really is. I honestly think that women have to have more skills than the guys do. It’s still that way out there. You have to work harder, you have to be better, you have to have more skills, so the more you stay on top of training no matter what trade it is, the better off you’ll be. You have to be cutting edge.”

- Kina McAfee
Carpenter

“Join Bally’s. As funny as that sounds, I seriously don’t believe that most women realize how hard some of these jobs are. They see something on TV, the Learning Channel, and they’re fixing up houses and everything is lovely and cute, but that’s not really what construction is about. I would suggest that women really get their physical condition in gear before even attempting to think that they want to work in construction. Otherwise that could be a determining factor in them giving up because their bodies physically just won’t be up to the challenge.”

- Lakisha McKinnis
Electrician

“Don’t let anything or anybody deter you if that’s what you want to do. That goes for anything, but especially with the trades. It’s getting better each year, but still there are guys who have yet to work with a woman. I want women to stand their ground, because sometimes they’ll be the deciding factor of whether a company or a guy will want to work with a woman. Some guys will say, ‘I don’t want to work with girls.’ And I’ve worked with some of them, and after working with me they were like, ‘Hey I’d work with a woman again.’

- Suzette Pickett
Carpenter

“Pretty much if this is what you want to do, go for it. Never say I can’t. Always know that you can do it. Don’t be intimidated by men, because this is an industry with a majority of men. Men dominate the field. Just stay strong.”

- Jackie Townsend
Bricklayer

“You might find that you need to work twice as hard as the guys in order to achieve your goals. Do it. Don’t dwell on the injustice; roll up your sleeves and do the work. Complaining loudly as you fail your tests won’t help you or anyone else.”

- Anne Kahle
Pipefitter

“Don’t get in it for the money, get in it for the love of the trade. You have to love what you do, because it’s going to be hard on your body. Put yourself into it. Because if you don’t, you’re not going to like it, and it’s just going to become a burden and nobody wants to be at a job or a profession that becomes a burden on them.”

- Tammy Guilinger
Carpenter

JESSICA KIMBLE

operating engineer & instructor



“I tried college but I really disliked the thought of being stuck inside four walls all day. I worked landscaping the summer after high school and really missed working outdoors, with my hands, and feeling like I earned my wages through hard work.

Going through the apprenticeship program taught me the skills I needed to be an Operating Engineer and the job allows me to have a change of scenery each day. In fact, I change the scenery itself! As an artist at heart, being a heavy equipment operator simply allows me a bigger tool and a bigger palate to express myself – at the end of the day I am very gratified.”

RESOURCES

ILLINOIS RESOURCES

Chicago Women in Trades

2444 W. 16th St., Suite 3E

Chicago, IL 60608

(312) 942-1444

www.chicagowomenintrades.org

cwitinfo@cwit2.org

Chicago Women in Trades provides free pre-apprenticeship training and assistance in preparing for and navigating apprenticeship program application processes and connecting you to the services and resources needed for success.

Construction Industry Service Corporation (CISCO)

616 Enterprise Drive, Suite 100

Oak Brook, IL 60523

(877) 562-9411 • www.cisco.org

Contact to receive a copy of their apprenticeship guide *Build Your Future with a Career in Construction*

Illinois Department of Employment Security

www.ides.illinois.gov/pages/apprenticeship.aspx

IDES' Apprenticeship Information Centers will provide applicants with information about apprenticeship programs and notify them when specific programs are taking applications.

Community Colleges

Illinois Community College Board

www.iccb.state.il.us

(217) 785-0123

Community Colleges are a primary resource for test preparation and technical training. Contact them for a complete list of colleges in Illinois.

OHIO RESOURCES

Chicago Women in Trades - Cleveland Office

c/o Towards Employment

1255 Euclid Avenue, Suite 300

Cleveland, OH. 44115

(216) 696-5750

kkupcak@cwit2.org

Chicago Women in Trades' Cleveland Office provides assistance in preparing for and navigating apprenticeship program application processes and connecting you to the services and resources needed for success.

Construction Apprenticeship Training Center

Advanced Technology Training Center

3409 Woodland Avenue,

Cleveland, OH. 44115

(216) 987-2859

Offers free pre-apprenticeship training

Construction Employers Association

www.ceacisp.org/apprenticeships

Visit this website for detailed information on local apprenticeship programs

Ohio State Apprenticeship Council

PO Box 1618

Columbus, Ohio 43216-1618

Phone (614) 644-0370

Fax (614) 466-7912

apprenticeship@jfs.ohio.gov

<http://jfs.ohio.gov/apprenticeship/>

[Apprenticeship-Opportunities.stm](http://jfs.ohio.gov/apprenticeship-Opportunities.stm)

GREATER CINCINNATI:

Greater Cincinnati

Apprenticeship Council

5455 Glenway Ave

Cincinnati, OH 45238

(513) 372-6512

<http://www.earnandlearn.com>

COLUMBUS/CENTRAL OHIO:

Central Ohio Building and Construction Trades Council Apprenticeship & Training

[http://columbusconstructiontrades.org/
apprenticeship.html](http://columbusconstructiontrades.org/apprenticeship.html)

MISSOURI RESOURCES

Missouri Women in Trades

P.O. Box 435035

St. Louis, MO 63143

(314) 963-3200

info@mowit.org

www.missouriwomenintrades.org

Missouri Women in Trades can help you succeed by providing mentorship and guidance to aspiring tradeswomen.

St. Louis Agency on Training and Employment

1520 Market St., 3rd Fl.

St. Louis, MO 603103

(314) 589.8000 • www.stlworks.com

Contact for apprenticeship: Armaund
Paulet

www.prideconstruction.org

Visit this site for links to St. Louis area
apprenticeship programs

missouriapprenticeship.com

Visit this site for information regarding
apprenticeship and links to additional
resources in your area

The YWCA Women's Economic Stability Partnership (WESP)

3820 West Pine Blvd.,

St. Louis, MO 63108

(314) 531-1115

www.ywcastlouis.org

WESP is an intensive, multi-year
program for single, female heads-of-
households to improve their long-term
earning capability through education
with an emphasis on non-traditional
vocations. The YWCA also hosts
monthly meetings for aspiring and
working tradeswomen in partnership
with MoWIT.

GENERAL RESOURCES

Career Voyages • www.careervoyages.gov

Provides information and resources for career opportunities in the construction industry

Helmets to Hardhats • www.helmetstohardhats.org

Provides application assistance to veterans

U.S. Department of Labor, Office of Apprenticeship • www.doleta/OA/

FOR ALL OTHER STATES

For more information about the resources available in your area, contact your State Apprenticeship Council, your local Building Trades Council, One-Stop Center, or Unemployment Office and ask about opportunities to prepare for and apply to apprenticeship programs. For assistance with your search, please contact Pamyla Berryhill at 312-942-1444 ext. 109.

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www.mistywinter.com

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Chicago Women in Trades

2444 W. 16th St., Suite 3E

Chicago, IL 60608

phone: (312) 942-1444

fax: (312) 942-1599

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