

SKILLED CRAFT TRADES RESEARCH – EDUCATION INDUSTRY

ELECTRICIANS

Electricians are regulated and licensed by the Texas Department of Licensing and Regulation (TDLR). There are 12 available licenses for electricians with the traditional A-J-M hierarchy prevalent. More information on licensing can be found at <http://www.license.state.tx.us/electricians/elec.htm>

There are business licenses which include an assumption of personal liability/insurability for the business; and, there are individual licenses (as extracted from the above website):

Master Electrician

- **12,000 hours** of on-the-job training under the supervision of a master electrician;
- Hold a journeyman electrician license for at least two years;
- Passing score on the master electrician examination.

Master Sign Electrician

- 12,000 hours of on-the-job training under the supervision of a master or master sign electrician;
- Passing score on the master sign electrician examination.

Journeyman Electrician

- **8,000 hours** of on-the-job training under the supervision of a master electrician;
- Passing score on the journeyman electrician examination.

Journeyman Sign Electrician

- 8,000 hours of on-the-job training under the supervision of a master or master sign electrician;
- Passing score on the journeyman sign electrician examination.

Residential Wireman

- **4,000 hours** of on-the-job training under the supervision of a master electrician or residential wireman;
- Passing score on the residential wireman examination.

Maintenance Electrician

- 8,000 hours of on-the-job training under the supervision of a master electrician or a maintenance electrician;
- Passing score on the maintenance electrician examination.

Residential Appliance Installer

- Be at least 16 years old;
- Pass the residential appliance installer examination.

Electrical Apprentice

- Be at least 16 years old;
- Assisting in the installation of electrical work under the supervision of a master electrician.

Electrical Sign Apprentice

- Be at least 18 years old;
- Assisting in the installation of electrical work under the supervision of a master electrician.

	Salary (per hour) ¹		
	Listed High	Listed Low	Average Salary
Master Electrician	\$32.00	\$18.00	\$21.10
Journeyman Electrician	\$31.00	\$16.00	\$18.60
Apprentice Electrician	\$16.00	\$10.25	\$12.50

¹ All salary data realized from a cross-reference of Work in Texas (www.workintexas.com) listed wages for 10-20 titled positions (as available in the data set) in the Houston area and summary report of titled occupations from PayScale.com with Schools/School District as the targeted industry

PAINTERS

Painters do not have a uniform certification process nor are there tiered designations for the occupation that are under consistent regulation by the State of Texas. Positions, however, are often combined with other surface treatment duties (i.e. drywall or blasting) that would increase required KSAs and thus usually increase the wage scale.

In Texas, there is an **Environmental Lead Program (ELP)** which is under the umbrella of The Department of State Health Services (DSHS) that is particularly relevant to the Education Industry – information below is extracted from the website at <http://www.dshs.state.tx.us/elp/default.shtm>

The mission of the **Environmental Lead Program (ELP)** is to protect the public, especially young children, from exposure to lead in their environment. The ELP achieves this goal by assuring that persons conducting lead inspections, lead risk assessments, and lead abatements in target housing (built before 1978) and child-occupied facilities² (built before 1978) are properly trained and certified and are following minimum standards that protect the health of workers and building occupants.

The ELP administers the Texas Environmental Lead Reduction Rules (TELRR), which require, among other things:

- Certification of persons and companies conducting lead inspections, lead risk assessments, and lead abatements;
- Accreditation of lead training programs;
- Performing inspections of lead abatement projects and other lead-based paint activities to determine compliance with the TELRR; and
- Conducting enforcement-related activities, when necessary, in response to compliance inspections.

Painters are also informally delineated as either residential or industrial with a pay scale increase for industrial work. Job descriptions for industrial work include increased familiarity and experience with industrial painting equipment (mechanical sprayers, for example) and specialized paint types (i.e., Epoxy). Industrial painters are often expected to have additional surface treatment knowledge.

	Salary (per hour)		
	Listed High	Listed Low	Average Salary
Painter (only)	\$10.00	\$7.25	\$9.19
Industrial/Commercial (only)	\$14.00	\$10.00	\$12.67
I/C + Other KSAs	\$15.00	\$10.00	\$12.13
[Collective - Listed in WIT]	\$13.00	\$9.08	\$11.33
[Collective - PayScale.com]	\$17.66	\$8.48	\$12.26

² **Child-occupied facility** – A building or part of a building constructed before 1978, including, but not limited to, a day-care center, preschool, or kindergarten classroom, that is visited regularly by the same child, six years of age or younger, at least two days in any calendar week if the visits are for at least: (A) three hours each day; and (B) 60 hours each year.
(<http://www.dshs.state.tx.us/elp/certreq.shtm>)

PLUMBERS

Plumbers are regulated and licensed by the Texas State Board of Plumbing Examiners (TSBPE). There are 8 available designations (7 are licenses, whereas the Apprentice title is a registration with the TSBPE) for plumbers with the traditional A-J-M hierarchy prevalent. However, the Tradesman credential is an intermediate designation available to Apprentice registrants achieving 4,000 hours of trades work. More information on credentials can be found at <http://www.tsbpe.state.tx.us/>

Those most common in traditional trades work are the four listed below (as extracted from the above website). A minimum Apprentice registration is required to perform any plumbing work, residential or commercial:

Plumber's Apprentice

- **Must be registered as a Plumber's Apprentice** with the TSBPE before any work can be performed as an Apprentice
- Before an applicant may take an examination for a Tradesman Plumber-Limited license or Journeyman Plumber license, the applicant **must complete classroom training** provided by a board-approved instructor in a board-approved training program as required by Board Rule Section 363.12 for at least:
 - (1) 24 hours, if the applicant is applying to take a Tradesman Plumber-Limited License examination; or
 - (2) 48 hours, if the applicant is applying to take a Journeyman Plumber examination.

Tradesman Plumber-Limited

- Must **have a current Texas Plumber's Apprentice** registration.
- Must have accumulated **at least 4,000 hours of experience working at the trade** during the period in which the applicant was registered with the Board as a Plumber's Apprentice, and under the direct supervision of a licensed plumber and general supervision of a Responsible Master Plumber, or have a valid Journeyman or Master Plumber license from another state and at least 4,000 hours of experience working at the trade under the general supervision of a Master Plumber.

Journeyman Plumber

- Must **have a current Plumber's Apprentice registration, a current Tradesman Plumber-Limited license, or a valid Journeyman or Master Plumber license from another state.**
- Must have accumulated **at least 8,000 hours of experience working at the trade** during the period in which the applicant was registered with the Board as a Plumber's Apprentice or licensed as a Tradesman Plumber-Limited, and under the supervision of a Responsible Master Plumber, or have a valid Journeyman or Master Plumber license from another state and at least 8,000 hours of experience working at the trade under the general supervision of a Master Plumber.

Master Plumber

Must be **currently licensed as a Journeyman Plumber in Texas or another state with at least 8,000 hours working at the trade and must have held the Journeyman license for at least:**

- one (1) year, and have successfully completed a training program approved by the United States Department of Labor Office of Apprenticeship, or
- one (1) year, if you meet all current requirements and are applying prior to January 1, 2010, or
- four (4) years, if you meet all current requirements and are applying on or after January 1, 2010, or
- hold a current Master Plumber license in another state with at least 8,000 hours working at the trade.

The following four licenses are specialized or advanced plumbing certifications most applicable to those with some oversight and/or multi-site inspection/QA responsibility:

- Plumbing Inspector
- Med Gas Piping Installation
- Water Supply Protection Specialist
- Multipurpose Residential Fire Protection Sprinkler Specialist

Wage data was not collected for these specialized certifications due to inapplicability to the Education sector (i.e., fire safety is usually an outsourced service).

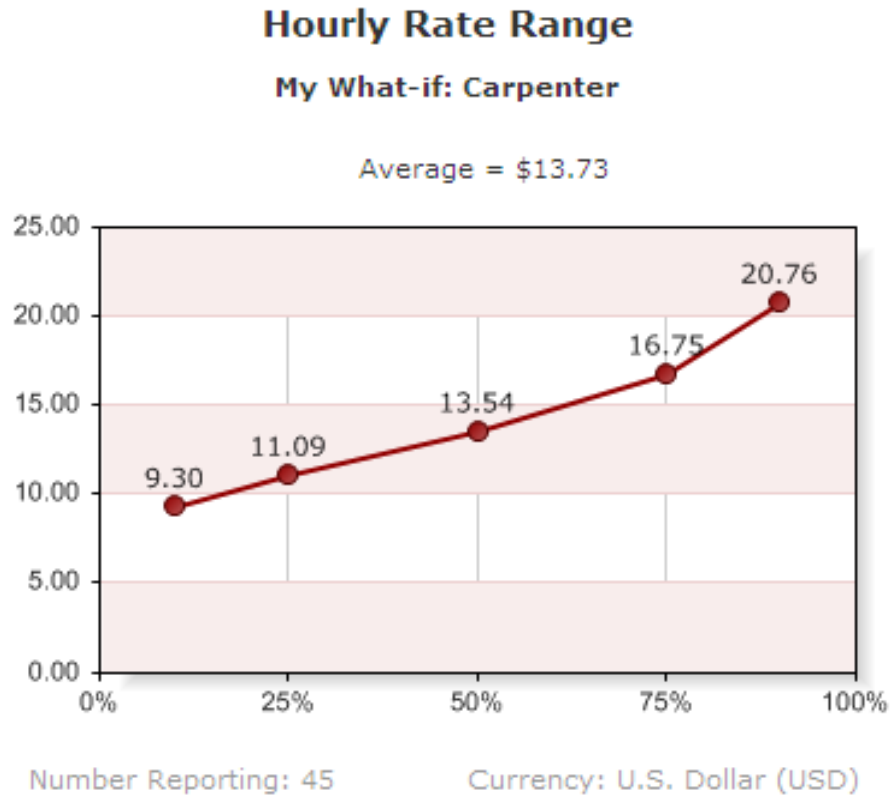
	Salary (per hour)		
	Listed High	Listed Low	Average Salary
Plumber's Apprentice	\$13.00	\$9.00	\$11.31
<i>Tradesman Plumber³</i>	\$25.61	\$10.19	\$14.98
Journeyman Plumber	\$23.50	\$15.00	\$17.10
<i>Master Plumber</i>	\$29.78	\$12.56	\$18.37

³ Limited data was available for the Tradesman Plumber and Master Plumber designations within Work in Texas (1 and 7 listings, respectively with no useable salaries included in either case). The figures included here reflect the information gathered from PayScale.com based on a first-year worker within each designation. Specifically, the Tradesman at 4,000 hours would be assumed to have worked at least 2 years to obtain this work experience and is thus coded accordingly. Similarly, the Master Plumber figures are correlated to those of a typical individual with the requisite experience and qualifications for this designation as entered into PayScale.com. In both cases, the Houston area and Schools/School Districts were again applied as qualifiers.

CARPENTERS

Carpenters do not have a uniform certification process nor are there tiered designations for the occupation that are under consistent regulation by the State of Texas. While various specializations (i.e. trim carpentry, form carpentry, et cetera) are listed, a formal designation or certification is not available as a regulated credential from the State of Texas. Some carpenters may be licensed as General Contractors, but for the purpose of this study, this information was not deemed relevant.

The wage data included here reflects wage data provided by PayScale.com for Carpenters with 1 year of experience in the Houston-area with Schools/School Districts as the industry qualifier.



Positions listed as “Carpenter” in Work in Texas yielded a wide wage range from \$9.00 - \$26.00/hr, but align closely with the data charted above. Positions listed as “Carpenter Helper” (or similar) yielded a wage range of \$8.00 - \$9.50/hr.

HVAC TECHNICIANS -- Heating, Ventilation, Air Conditioning (to include Refrigeration)

HVAC Technicians (or those of similar duty and title) are regulated and licensed by the Texas Department of Licensing and Regulation (TDLR). There are two (2) primary licenses available and three (3) endorsement codes for specialized work. More information on licensing can be found at <http://www.license.state.tx.us/acr/acr.htm>

Briefly, the available license and endorsement options are outlined as follows (as included on the website above):

CLASS A and CLASS B LICENSE

Class A allows you to work on any size unit. Class B allows you to work on cooling systems of 25 tons and under, and heating systems of 1.5 million BTUs/hour and under.

License numbers shall have the following form: Title/Class/Number/Endorsement code-TACL/A/000000/C.

ENDORSEMENT CODES are as follows:

- (1) Environmental Air Conditioning-**E**;
- (2) Commercial Refrigeration & Process Cooling and Heating-**R**;
- (3) Combined Endorsements-**C**

"Environmental Air Conditioning" means treating air to control temperature, humidity, cleanliness, ventilation, and circulation to meet human comfort requirements.

"Environmental" includes central air conditioning and heating.

"Commercial Refrigeration" means the use of mechanical or absorption equipment to control temperature or humidity to satisfy the intended use of a specific space.

"Process Cooling or Heating" includes controlling temperature, humidity, or cleanliness solely for production requirements or the proper operation of equipment.

"Commercial Refrigeration/Process Heating and Cooling" is limited to coolers, freezers, ice machines, and equipment that provides temperature and humidity controls.

There are many caveats to Air Conditioning maintenance and repair which exclude some groups from having to hold a current **license**. Conversely, individuals whose primary duty is Air Conditioning Maintenance and Repair must **register** with the State. Those who must register are those who perform the following work (from the above referenced website):

All work, including repair work, required for the continued normal performance of an environmental air conditioning system, a process cooling or heating system, a commercial refrigeration system, or commercial refrigeration equipment. Maintenance work does not include total replacement of a system, nor does it include work to install and test equipment in new construction.

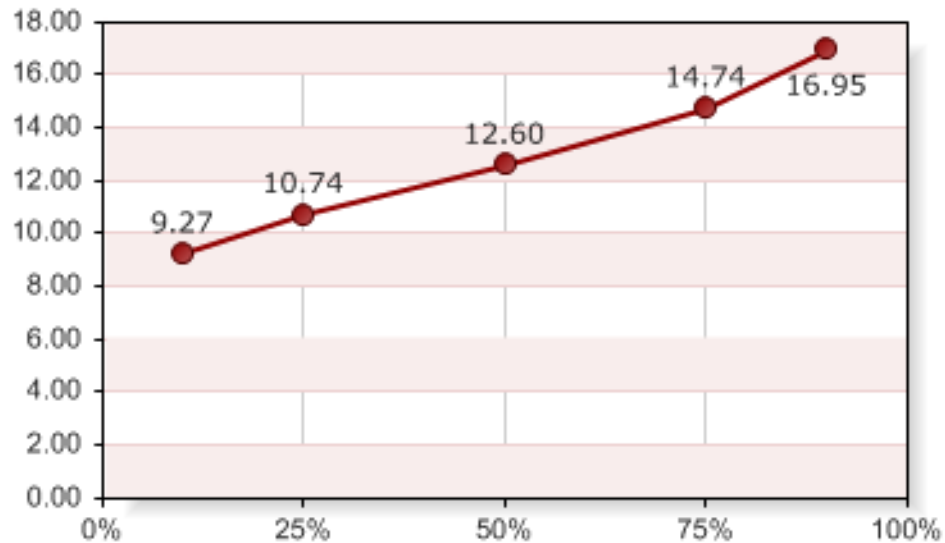
Because of the various designations and exclusions, it is difficult to normalize one wage scale for the industry. However, the following charts have been provided as extracted from PayScale.com for related occupations across the industry as general reference. Each is qualified by 1 year of experience within the titled occupation within the Houston area and Schools/School Districts as the industry qualifier.

The Facilities/Maintenance Supervisor has an additional qualifier of supervising 10 employees in a permanent position. This occupation is not listed as HVAC Supervisor/Manager explicitly but was included as general reference.

Hourly Rate Range

My What-if: HVAC Service Technician

Average = \$12.67



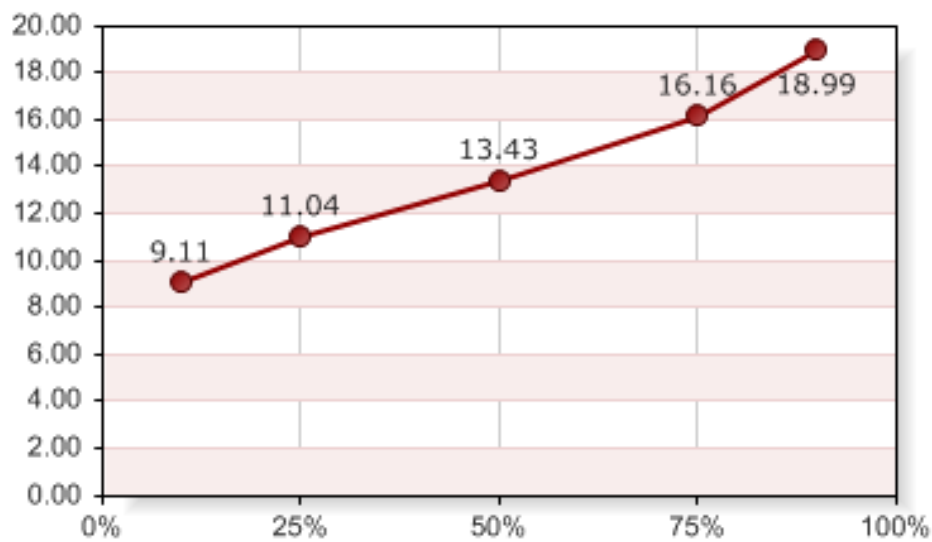
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Hourly Rate Range

My What-if: HVAC Mechanic

Average = \$13.52



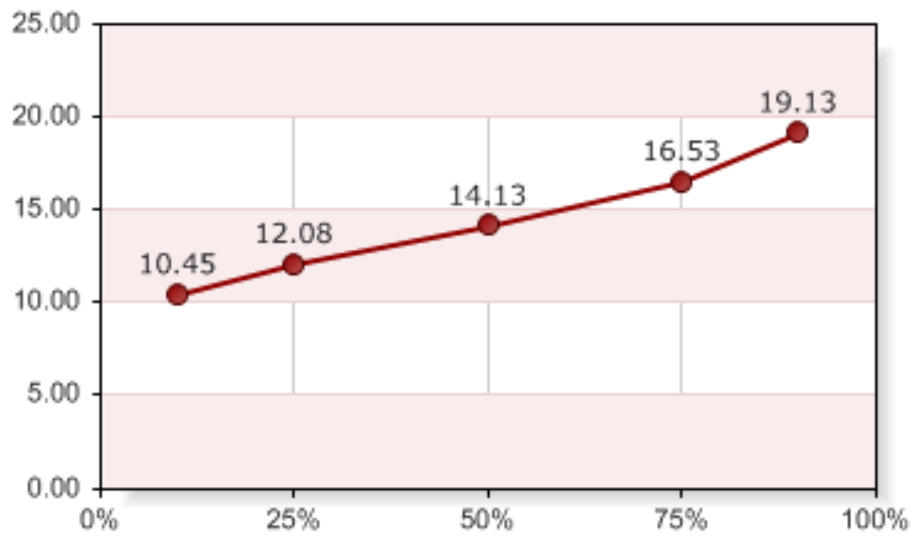
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Hourly Rate Range

My What-if: HVAC Maintenance Technician

Average = \$14.22



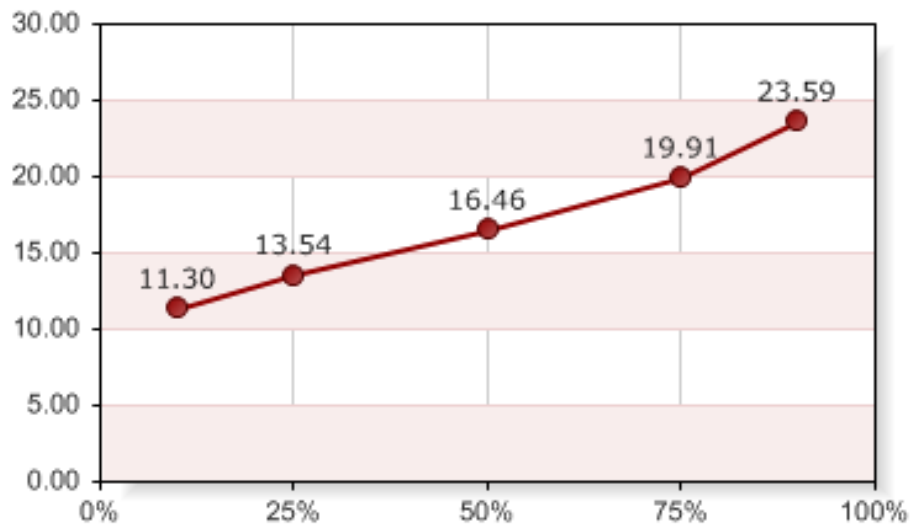
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Currency: U.S. Dollar (USD)

Hourly Rate Range

My What-if: Facilities / Maintenance Supervisor

Average = \$16.59



Number Reporting: 45

Currency: U.S. Dollar (USD)