

DELTA COLLEGE
COUNSELING/ADVISING & CAREER SERVICES
ELECTRICIAN

Salary range: \$12.76 to \$37.03 per hour

Personal Interests: Working with your hands and tools

Work Environment: Both indoors and outdoors

Description

Electricians lay out, assemble, install, maintain and test electrical systems. Some of the systems they work on include electrical fixtures, control equipment and wiring used in heating and refrigeration, lighting, power, intercommunications, air conditioning, and electrical systems of homes, factories and other buildings. Electricians often specialize in either construction or maintenance, although they may do both.

Electricians also plan installations consistent with specifications and local electrical codes. They may prepare sketches or follow blueprints showing the location of wiring equipment. Electricians' measures, cut, bend, thread, assemble and install electrical conduit, pull wires through it and connect them to lighting fixtures and other equipment. They also troubleshoot to find and repair malfunctions in many different electrical systems.

An electrician's job also includes installing control and distribution apparatus such as switches, relays and circuit breaker panels. They also connect power cables to equipment and install ground leads. After they finish the wiring, they use testing equipment, such as ohmmeters, voltmeters and oscilloscopes to check for proper connections, ensuring electrical compatibility and safety.

Some of the tools and equipment electricians use include screwdrivers, wire and cable cutters, conduit and pipe benders, multimeters, hand and power

tools, blueprints and wiring diagrams, test probes, voltmeters, oscilloscopes, electricians' knives and cable pullers.

Working Conditions

Most electricians work a standard 40-hour week, although overtime may be required. They may have to work nights and weekends or be on call. Their work is sometimes strenuous; they may stand for long periods of time and frequently work on ladders and scaffolds. They also have to squat, stretch and frequently lift and carry tools.

Their working environment varies, depending on the type of job. Some may work in dusty, dirty, hot or wet conditions, or in confined areas, ditches or other uncomfortable places. Electricians risk injury from electrical shock, falls and cuts. To avoid injury, they must follow strict safety procedures.

Training, Other Qualifications

Most people learn the electrical trade by completing a 4 or 5 year apprenticeship program. Apprenticeship gives trainees a thorough knowledge of all aspects of the trade. Although most electricians are trained through apprenticeships, some still learn their skills on the job. Large apprenticeship programs are usually sponsored by joint training committees made up of local unions of the International Brotherhood of Electrical Workers, and local chapters of the National Electrical Contractors Association.

The typical apprenticeship program provides at least 144 hours of classroom

instruction each year, and 8000 hours of on-the-job training over the course of the apprenticeship. In the classroom, apprentices learn blueprint reading, electrical theory, electronics, mathematics, electrical code requirements and safety and first aid. They also receive specialized training in welding, communications, fire alarm systems, cranes and elevators. On the job, under the supervision of experienced electricians, apprentices must demonstrate mastery of the electricians' work. Most electricians are required to be licensed.

Those who do not enter a formal apprenticeship program can begin to learn the trade informally by working as a helper for an experienced electrician. They will learn to install conduit, connect wires and test circuits.

At Delta College, students can earn an Associate in Applied Science Degree for Skilled Trades. The program requires successful completion of all courses in a specific training program and receipt of a journeyman card of equivalent trade experience. A total of sixty-two credits are required for an Associate Degree.

Some personal qualifications electricians should possess include good health, average physical strength, agility and dexterity. Good color vision is needed for working with color-coded wires.

Job Outlook

Employment of electricians is expected to grow as fast as the average for all occupations through the year 2014. Ups and downs in the construction and manufacturing industries may lead to periods of unemployment. There will be about 31,850 electricians employed in Michigan by 2014. Most of them working in urban areas.

As the population and economy grow, more electricians will be needed to install and maintain electrical devices and wiring in homes, factories, offices and other structures.

Earnings

In May 2004, median hourly earnings of electricians were \$20.33. The middle 50 percent earned between \$15.43 and \$26.90. The lowest 10 percent earned less than \$12.18, and the highest 10 percent earned more than \$33.63. The average rate in Michigan in May 2006 was \$26.76.

In selected areas of Michigan, electricians earned hourly rates of (May 2006):

Area	Rate	Area	Rate
Ann Arbor	\$31.73	Kalamazoo	\$19.06
Bay City	\$27.16	Lansing	\$22.89
Detroit/Livonia/ Dearborn	\$30.61	Muskegon	\$25.29
Grand Rapids	\$22.75	Niles/Benton Harbor	\$25.52
Jackson	\$23.98	Warren/Troy	\$29.37

Related Occupations

Some occupations related to electricians are electronics engineering technicians, household appliance installer and repairer, elevator installer and repairer, telephone installer and repairer.

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Sources: Occupational Outlook Handbook, MI Occupational Information System, SIGI Plus and Delta College Catalog.

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<http://www.delta.edu/careercenter>



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