

**Fuel Cell Technician...**  
**Become a Skilled Professional is Easier Than You Thought Possible!**

By Sandra Curtin

So you think fuel cells are a fascinating technology, part of a growing alternative energy field that is with ripe with opportunity and you would like to become part of it. Or maybe you think this would be a great field for a relative or friend. So how do people develop the needed skills, and where do they go for training?

**Fuel Cell Engineers** work in research and development (R&D), designing fuel cell prototypes, performing system analysis, simulation and integration, and developing test methodologies. Entry level positions typically require a Bachelor of Science degree in Chemical or Mechanical Engineering. Senior fuel cell engineers, who assume lead positions in fuel cell testing and design, typically have advanced degrees. Although pursuing this level of education may seem daunting to some, those willing to devote their time to study are rewarded with an exciting and well-paying career. In fact, Smart Money magazine rated Fuel Cell Engineer as one of the Next Hot Jobs (June 2002) (<http://www.smartmoney.com/consumer/index.cfm?story=working-june02#fuel>).

However, those looking to spend less time in school, or to move into the workforce more quickly, can train as **Fuel Cell Technician**. Fuel cell technicians can be on the job in as little two years, or less, of training, working in research and development under the auspices of a fuel cell engineer, assembling and testing fuel cells. A technician can also obtain employment as a field service technician that services, maintains and troubleshoots fuel cell installations. An experienced fuel cell technician can assume more responsibility, managing projects, analyzing and reporting data, and recommending product design revisions to engineers.

As the need for skilled fuel cell technicians has grown, more and more community colleges are offering Fuel Cell Technician training programs leading to an Associate degree or a certificate. These are often located in states striving to become a hydrogen or fuel cell technology leader, who are facilitating the development of training programs through a collaboration of government, business, academia and non-profits to ensure that a knowledgeable workforce is ready to serve new fuel cell businesses locating within their state borders. These Fuel Cell Technician training programs are offered in six states, at the following colleges:

**Texas State Technical College, Waco** (Waco, Texas) offers an Associate of Applied Science (A.A.S.) degree in Fuel Cell Technology, focusing on basic installation, maintenance, troubleshooting, and repair of fuel cells. Hands-on training is provided at the school's Fuel Cell Laboratory which includes a fuel cell connected to the building electrical system, a fuel cell system connected with solar panels to serve as a back-up laboratory lighting system, a demonstration fuel cell with an electrolyzer, as well as several other fuel cells. Completion of the TSTC program will qualify a student for entry-level work as a fuel cell technician. This program was developed through the Texas Fuel Cell Technology Consortium, a group of Texas colleges with a shared interest in development of fuel cell curriculum.  
[http://www.waco.tstc.edu/epc/epc\\_fuelcell/dept.php](http://www.waco.tstc.edu/epc/epc_fuelcell/dept.php)

**Houston Community College, Northeast** (Houston, Texas) has a Fuel Cell specialization certificate track through the Instrumentation and Controls Engineering Technology A.A.S. program. The curriculum focuses on basic concepts and principles of fuel cells, training students to work in industrial, institutional, or commercial transportation applications.  
<http://www.hccs.edu/hcc/System%20Home/Departments/Communications/Catalog/PDF/Manufacturing.pdf>

**Stark State College of Technology** (North Canton, Ohio) offers a Mechanical Engineering Technology A.A.S. program with an optional track in Fuel Cell Technology. A U.S. Department of Labor fuel cell technology scholarship is available to encourage students to enroll in the school's program. The Fuel Cell Technology training program was developed through a grant from the National Science Foundation

and was implemented through the Power Partnership for Ohio. In addition, the school has opened a Fuel Cell Prototyping Center and is working with its business tenants to develop training opportunities for students.

[http://www.starkstate.edu/academics/engineering/mechengtech.htm#Fuel\\_Cell](http://www.starkstate.edu/academics/engineering/mechengtech.htm#Fuel_Cell)

**Hocking Technical College** (Nelsonville, Ohio) recently developed two new fuel cell curricula – Alternative Energy Technology and Fuel Cells, and Automotive Hybrids and Fuel Cells – leading to an A.A.S. degree. Graduates of the two programs will be able to work as technicians that construct, install, troubleshoot, modify, and test fuel cell and other alternative energy-powered equipment or vehicles. Students gain real-life experience by working at a company or laboratory, and lucky Alternative Energy Technology and Fuel Cells program students will receive further training at an alternative energy field station in the Bahamas. In addition, Hocking's new Alternative Energy Center facility will be completed in Fall 2009, providing Energy Technology students additional hands-on learning experiences.

<http://www.hocking.edu/energy-institute/index.htm>

**Naugatuck Valley Community College** (Naugatuck, Connecticut) has a unique Fuel Cell Technology Certificate program that is offered absolutely free-of-charge! The one-semester program is funded by a Connecticut company, FuelCell Energy, who covers the costs of tuition, lab fees and books, and also provides a small stipend to students. Upon successful completion of the courses, graduates receive a job interview at FuelCell Energy's Connecticut manufacturing facility, but there is no obligation to take a position with the company if employment is offered.

<http://www.nvcc.commnet.edu/buseng/fuelcell-factsheet.shtml>

**Midlands Technical College** (Columbia, South Carolina) delivers fuel cell technician training through its two-semester Power Engineering and Delivery certificate, offered by the Engineering Technology Program. Coursework covers the fundamentals of power generation and alternate energy sources, including three phase power circuits, transmission lines, transformers, and fuel cells, and the associated systems. Midlands' fuel cell laboratory opened in 2006 to offer basic fuel cell training, and two new laboratories - a fuel cell subsystems lab and a commercial-variety analytical testing lab – will be open within a year.

<http://www.midlandstech.com/edu/sds/sas/hb/pgd6.html>

**St. Paul College** (St. Paul, Minnesota) offers a Fuel Cell Technician certificate to students that already possess a foundation in related fields by having completed one of the school's related A.A.S. programs (electronics, electricity, energy production, energy systems, chemical laboratory technician). The four-course, 16 credit program includes coursework in fuel cell installation and operation, fuel data acquisition and analysis, and fuel cell product design and manufacturing.

<http://www.saintpaul.edu/academics/programs/Technical/FuelCellTech/programreq.aspx>

Although graduates of fuel cell technician training programs often start at entry-level positions, experienced technicians have the potential to advance to more senior-level technician positions. Or they can continue their education to become Fuel Cell Engineer. But no matter what level of training the student aspires to, the nation's strong growth in green energy jobs makes a potential fuel cell career a desirable and exciting one. Check out the Fuel Cell Career and Education Center at [www.fuelcells.org](http://www.fuelcells.org) to start your future today.

---

Several universities offer specializations in hydrogen and fuel cell studies through their engineering programs. These include:

**Kettering University** (Flint, Michigan) - Kettering's goal is to become a leader for the development of fuel cell systems and components and to provide highly educated and professionally trained graduates for the industry. The school's Mechanical Engineering Program offers a Fuel Cell & Hybrids minor. Students in the program have the opportunity to work with faculty and graduate students on various research projects at Kettering's Center for Fuel Cell Systems Integration.

[http://www.kettering.edu/futurestudents/undergraduate/fuelcells\\_curriculum.jsp](http://www.kettering.edu/futurestudents/undergraduate/fuelcells_curriculum.jsp)

The **University of Michigan** is developing three new hydrogen and fuel cell technology programs that include Hydrogen Technology concentrations for most Engineering B.S. degree programs, an Interdisciplinary Professional Program (InterPro) in Hydrogen Technology, and a continuing education certificate program in Fuel Cell Technology.

<http://www.nextenergy.org/cm/attach/C2876E18-7C31-46C7-BDB2-73797F8FFFC/presentation%20re%20UM%20for%20workshop.pdf>

The **University of Central Florida's Engineering Technology program** is also developing a Hydrogen and Fuel Cell Education concentration for B.S. students. The program will prepare graduates for research, development, and demonstration activities in government, industry, and academia. Courses will be offered both in class and on line.

<http://www.ent.ucf.edu/>

Fuel cell training is also available through some Alternative Energy Technology programs. Schools offering this training include:

**Lansing Community College** (Lansing, Michigan) – Lansing offers an Associate degree in Alternative Energy Technologies to prepare technicians for building, operating, or repairing alternative energy applications in geothermal, wind, solar, biomass or fuel cells. The school has two-state-of-the-art classrooms for hands-on training in commercial alternative energy equipment, including hydrogen fuel cell systems with computer aided diagnostics.

[http://www.lcc.edu/manufacturing/alternative\\_energy/](http://www.lcc.edu/manufacturing/alternative_energy/)

**Wayne State University** (Detroit, Michigan) - The College of Engineering offers an Alternative Energy Engineering Technology 12-credit Graduate Certificate Program, as well as a graduate Alternative Energy Technology degree program and undergraduate Alternative Energy Technology specialty. The program focuses strongly on hydrogen and fuel cell technologies.

<http://www.eng.wayne.edu/page.php?id=1505>

**Long Beach City College** (Long Beach, California) has an Advanced Transportation Technology – Electric Vehicle certificate that is offered through the school's Auto Mechanics program. Students are trained for entry-level work in the automotive service industry, through specialized classes focusing on hybrid, fuel cell, and electric vehicles.

<http://osca.lbcc.edu/curriculumguides/2007-2008/AUTOMECH.pdf>