

# Career Profile



VIDEO COVERAGE  
Mark Bennett speaks at  
<http://www.chroniclet.com/Nie>

A weekly series devoted to providing information on career exploration

## Do You Like

- Using mathematics to solve problems?
- Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions?
- Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems?
- Using scientific rules and methods to solve problems?
- Talking to others to convey information effectively?

*Then this might be the career for you.*

## The Type of Work

**Engineers work on power-producing machines** such as electric generators, internal combustion engines, and steam and gas turbines, as well as power-using machines such as refrigeration and air-conditioning equipment, machine tools, material handling systems, elevators and escalators, industrial production equipment, and robots used in manufacturing. Mechanical engineers also design tools that other engineers need for their work. Mechanical engineering is one of the broadest engineering disciplines. Mechanical engineers may work in production operations in manufacturing or agriculture, maintenance, or technical sales; many are administrators or managers.

## Pathways to Success

**Most engineering programs involve** a concentration of study in an engineering specialty, along with courses in both mathematics and the physical and life sciences. General courses not directly related to engineering, such as those in the social sciences or humanities, are often a required component of programs. Many programs also include courses in general engineering. A design course, sometimes accompanied by a computer or laboratory class or both, is part of the curriculum of most programs. In addition to the standard engineering degree, many colleges offer 2- or 4-year degree programs in engineering technology. These programs, which usually include various hands-on laboratory classes that focus on current issues in the application of engineering principles, prepare students for practical design and production work, rather than for jobs that require more theoretical and scientific knowledge.

## What Employers Look For

### Individuals who can:

- Read and interpret blueprints, technical drawings, schematics, and computer-generated reports.
- Confer with engineers and other personnel to implement operating procedures, resolve system malfunctions, and provide technical information.
- Research and analyze customer design proposals, specifications, manuals, and other data to evaluate the feasibility, cost, and maintenance requirements of designs or applications.
- Research, design, evaluate, install, operate, and maintain mechanical products, equipment, systems and processes to meet requirements.
- Investigate equipment failures and difficulties to diagnose faulty operation, and to make recommendations to maintenance crew.

## Job Outlook

**In 2004 engineers held 1.4 million jobs.** Of those, 226,000 were mechanical engineers. Overall engineering employment is expected to grow about as fast as the average for all occupations over the 2004-14 period. Overall job opportunities in engineering are expected to be favorable because the number of engineering graduates should be in rough balance with the number of job openings over this period. Competitive pressures and advancing technology will force companies to improve and update product designs and to optimize their manufacturing processes. Employers will rely on engineers to further increase productivity as investment in plant and equipment increases to expand output of goods and services. New technologies continue to improve the design process, enabling engineers to produce and analyze various product designs much more rapidly than in the past.

## Earnings Potential

Location	Year	Pay Period	Low	Median	High
United States	2004	Yearly	\$45,200	\$69,800	\$104,900
Ohio	2004	Yearly	\$42,500	\$63,000	\$92,200
Cleveland Elyria-Mentor, OH MSA	2004	Yearly	\$43,700	\$62,700	\$89,800

Source: Occupational Information Network, O\*Net Online, <http://online.onetcenter.org>

## Local Education Websites

- Lorain County JVS Manufacturing Engineering Technology Program (A College Tech Prep Program) [www.lcjvs.com](http://www.lcjvs.com)
- Lorain County Community College Engineering Technology and Manufacturing [www.lorainccc.edu](http://www.lorainccc.edu)
- University of Akron through LCCC University Partnership Automated Manufacturing Engineering [www.lorainccc.edu/up](http://www.lorainccc.edu/up)
- University of Toledo through LCCC University Partnership Computer Science and Engineering [www.lorainccc.edu/up](http://www.lorainccc.edu/up)



# Mechanical Engineer

**Definition:** Mechanical engineers research, develop, design, manufacture, and test tools, engines, machines, and other mechanical devices. Engineers apply the principles of science and mathematics to develop economical solutions to technical problems.

**NAME:** Mark Bennett

**COMPANY:** Bendix Commercial Vehicle Systems

**Q. When were a young child, what did you want to be when you grew up?**

**A.** A musician, a writer, and a race car driver.

**Q. How did you become interested in your particular field?**

**A.** My father was an engineer and was always involved with cars, airplanes, and home projects. Every weekend at our house you could find engineering being utilized in some way.

**Q. Who or what influenced your decision the most and why?**

**A.** The weak job market when I graduated high school focused me on careers that were foremost marketable. I remember thinking that work was work, and that was the reason they paid you to do it. I didn't want to make the mistake of picking my career based on my hobbies or what I thought was fun when I was 16, with no consideration given to pay, marketability, and long-term prospects. I wanted to pay my bills comfortably and have time and money left over to enjoy my hobbies.

**Q. What is your educational background?**

**A.** Bachelor of Science, Mechanical Engineering, Kettering U., 1997  
Master of Science, Electrical Engineering, Case Western Reserve U., 2000

**Q. What was the most critical class or training you took and why?**

**A.** Systems Analysis. Everything is a system, not just machines, but people, software, financial transactions, legal arrangements, the environment, and so on. Being able to dissect a system and understand how and why it works is useful in every part of my life.

**Q. How did you get to where you are today? What path did your employment journey take?**

**A.** I started as a co-op student while getting my undergraduate degree and worked full-time as an Engineer while working on my Master's degree. In my 10 years of experience, I have become a "jack of all trades" engineer with experience in mechanical, electrical, electronic, and software engineering. I have worked in general areas of product design, testing, quality, manufacturing, and product liability and legislation issues. I feel fortunate that Bendix was so supportive of both my continuing education and career development.

**Q. What skills do you think are needed to be successful?**

**A.** I think academic math and science skills are over-prioritized for most working engineers. Problem-solving skills are really what is needed, and that includes being able to communicate with people in order to get a decision agreed upon and implemented.

**Q. Did you have any words of advice for someone considering a career in your field?**

**A.** Don't think that because you got good grades in English and bad grades in Calculus that you shouldn't be an Engineer or other technical professional. I'd rather hire an Engineer with a few weak math grades than one that doesn't know how to replace a doorknob or throws out a broken appliance without looking inside it first.

Sources: Occupational Information Network, O\*Net Online, <http://online.onetcenter.org>; \*\* U.S. Department of Labor, Bureau of Labor Statistics, Occupational Outlook Handbook, <http://stats.bls.gov/oco>