

SWE NEXT



AN **ENGINEER**
HELPS **CREATE THE**
WORLD'S FUTURE

#BeThatEngineer



 **swe**[™]

Society of Women Engineers
Aspire / Advance / Achieve

JUST WHAT IS AN ENGINEER?

"I want to be an engineer to solve an abundance of problems, whether it's through mechanical engineering, computer engineering or politics."

— A SWENexter and a future engineer

- > **Engineering is essential to our health, happiness and safety.** From the grandest skyscrapers to microscopic medical devices, it is impossible to imagine life without engineering.
- > **Engineers are creative problem-solvers.** They have a vision for how something should work and are dedicated to making it better, faster or more efficient.
- > **Engineers help shape the future.** They use the latest science, tools and technology to bring ideas to life.
- > **Engineers make a world of difference.** From new farming equipment and safer drinking water to electric cars and faster microchips, engineers use their knowledge to improve people's lives in meaningful ways.

DO I WANT TO BE AN ENGINEER?

- > **I have big ideas,** small ideas and, sometimes, never-heard-of ideas.
- > **I'm constantly curious.** I have questions about how things work the way they do.
- > **I love to help others.** I want to make this world better.

WHY SHOULD I BE AN ENGINEER?

I dream about a bright future. I may be young, but that doesn't mean I don't think ahead. I want to take care of myself and my family. I want to make an impact in my community and be a role model for other girls like me.

- > **CREATIVITY:** Jobs in more fields than you could even imagine and the ability to make your dreams into reality.
- > **MONEY:** Higher salaries than the average in other career fields.
- > **HAPPINESS:** Personal satisfaction. Be proud of the work you do.

SOUND FAMILIAR?

Let's explore more about engineering.



HOW CAN **SWE** HELP ME **BE THAT ENGINEER?**

If being an engineer sounds perfect for you, the Society of Women Engineers—or SWE—can help! We've been working hard to help women in engineering and technology succeed and achieve their goals since 1950. SWE has 40,000 members, all around the world, and they were just like you once — girls that wanted to create new things!

IT STARTS WHEN YOU JOIN **swe** **NEXT**

Being a SWENext is a great opportunity to learn more about engineering, meet real engineers and explore a future where you find creative solutions to all kinds of real-world challenges! Any girl under 18 may join SWENext for **FREE** (for those under 13, a parent will need to be the primary contact). You can learn more and sign up for this FREE program by visiting swe.org/outreach/swenext.

There's also **SWENext Clubs**, which offer you a way to meet SWE members—real engineers—and other SWENexters in your area. You can learn more and sign up for this **FREE** program by visiting swe.org/outreach/swenext.

Check out our very own engineering comic books *Constance and Nano Engineering Adventures!* Download them for free at constanceandnano.swe.org.



Join **SWENext** for **FREE** at swe.org/outreach/swenext

Discover—at SWENext:

- Scholarships
- Events
- Awards
- Cool Projects
- Women Engineers
- Contests
- New Friends
- Career and College Options
- Goodies
- And Much More

Pick Your Dream

FIND THE DISCIPLINE OF ENGINEERING THAT'S RIGHT FOR YOU. CONNECT WITH THESE INSPIRING WOMEN AND MORE AT [SWE.ORG/OUTREACH/SWENEXT](https://www.swe.org/outreach/swenext)

AEROSPACE ENGINEER

Fascinated by flight? You can design and develop airborne vehicles, including fighter jets, spaceships and even golf balls.

"I love working on challenging, high-tech jets and aircraft, and we make them safe for our men and women in the military!"

—Frann Shore, SWE Member since 2008



AGRICULTURAL ENGINEER

Modern agriculture is a high-tech industry, where you'll discover ways to get crops the proper nutrients, design harvesting machinery or work on the disposal of agricultural wastes.

"I work in a soybean and corn seed processing facility. I enjoy working in an industry that directly affects everyone in the world through food."

—Katelyn Lichte, SWE Member since 2014



ARCHITECTURAL ENGINEER

Great architecture is beautiful to behold. Major in architectural engineering, and you'll keep buildings lit, plumbed and ventilated, as well as develop better construction methods.

"I get to go to work and impact people's lives in a positive way through my designs."

—Kimberlee McKitish, SWE Member since 2018



BIO/BIOMEDICAL ENGINEER

Apply engineering solutions to medical problems. Your research with doctors and biologists could involve artificial organs, prosthetics and diagnostic tools.

"I work in a cross-functional role that allows me to see so many different sides to the products I support while staying true to my technical roots and training."

—Sarah Dicker, SWE Member since 2018



CHEMICAL ENGINEER

Everything in nature is made of chemicals, and as a chemical engineer, you'll work with raw materials to produce valuable products.

"What I enjoy the most about engineering is having direct contact with nature and science while contributing to advances in our world."

—Catherine Castro, SWE Member since 2016



AVERAGE
STARTING SALARY
BIOMEDICAL
ENGINEERING
\$62,328



CIVIL ENGINEER

If you think big, then be a civil engineer. You'll work on roads, bridges, dams and other key structures.

"As a civil engineer, my goal is to help improve the daily lives of individuals, and I believe that my job is helping me reach my goal."

—Jennifer Weast, SWE Member since 2015

COMPUTER ENGINEER

Do you want to be a leader in the information-technology revolution?

Computer engineers deal with all aspects of computing, like operating systems, networks, software and hardware.

"I hope to gain knowledge and provide it to others by getting a Ph.D. in computer science and working for a laboratory where I would research new technology that could help humanity."

—Anastasiia Makhniaeva, SWE Member since 2017



COMPUTER SCIENCE

Be part of creating the software systems we use everyday! Use your analytical skills to interact with data and study the theory of computation.

"Watching my students receiving their degrees and stepping into the real world with a job they always aspired for makes me feel that I have been able to contribute something to their lives."

—Soma Datta, SWE Member since 2016

ELECTRICAL ENGINEER

As an electrical engineer, you will take energy from power sources and channel it to homes, factories and businesses.

"Without the emission systems that I design the controls strategies for, some of our basic modern amenities would not be where they are. What I make is helping build a greener environment for generations to come."

—Sowmya Nagesh, SWE Member since 2012

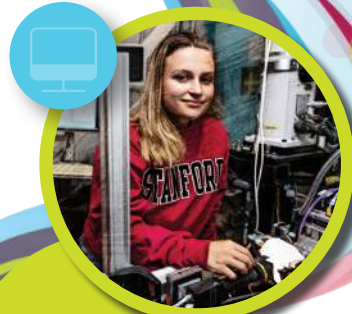


ENGINEERING MANAGEMENT

Are you organized and detail-oriented? Engineers need you to plan, organize and allocate all resources, from people to components.

"One of the best parts of being on a team designing braking systems for autonomous vehicles is working with technology that can save lives."

—Kelly Anne McElreath, SWE Member since 2017



AVERAGE
STARTING SALARY
COMPUTER
ENGINEERING
\$69,365





ENVIRONMENTAL ENGINEER

Want to help solve environmental problems or find ways to prevent ecological disasters? You could work on water distribution, recycling, sewage treatment, and pollution prevention and control systems.

"My favorite part of my research is doing my small part to achieve my childhood dream of saving the world."

— Rachel Tenney, SWE Member since 2014

AVERAGE
STARTING SALARY
ENVIRONMENTAL
ENGINEERING
\$84,560

INDUSTRIAL ENGINEER

You'll create and run systems essential to society, from manufacturing to services. You'll juggle designs, materials, machines, information and people to keep industrial processes functioning smoothly.

"I get to innovate by improving current processes or creating entirely new ones to make the process better and help employees."

—Linda Strauss, SWE Member since 2018



MANUFACTURING ENGINEER

Quality control will be your forte as a manufacturing engineer, whether you oversee automation, production control or materials handling.

"As a manufacturing engineer of engine parts, I ensure that people get home safely without compromising on material, quality and expertise."

—Sandra Adebowale, SWE Member since 2014

MATERIALS ENGINEER

As a materials engineer, you'll render raw substances—plastics, metals and ceramics—into useful products.

"Material development and selection based on customer application is what I enjoy most about my work."

—Vanessa Li, SWE Member since 2016



MECHANICAL ENGINEER

Do you love to tinker? Then head for mechanical engineering to design, build and maintain machines of all types and sizes.

"I absolutely love being a mechanical engineer in the wind energy industry! As a wind turbine technician, my job involves troubleshooting and maintenance of mechanical and electrical systems in the top of wind turbines."

—Jessica Fischer, SWE Member since 2016

MINING ENGINEER

Earth is chock-full of valuable resources. If you're a mining or minerals engineer, you'll work with geologists to find and appraise these minerals.

"My job gives me the opportunity to be out in the field during construction and work on challenging designs to keep people safe from the dangers of historic mining practices."

—Meghan McDonald, SWE Member since 2011





NUCLEAR ENGINEER

Nuclear energy has enormous potential! As a nuclear engineer, you will harness that potential when you research and develop the processes, instruments and systems that derive benefits from nuclear energy and radiation.

"As a nuclear engineer, I help build and maintain nuclear-powered submarines and aircraft carriers for the U.S. Navy. I take pride in knowing that I do a small part in keeping our sailors safe."

—Emily Frantz, SWE Member since 2011

PETROLEUM ENGINEER

As a petroleum engineer, you work to discover and safely retrieve oil wherever it's found. You'll ensure that drilling is safe, economical and environmentally friendly.

"As a petroleum engineer I have had the opportunity to travel to several field locations in different countries. Learning about different cultures and working with people of diverse backgrounds helps to foster unity around the world."

—Lola Obisanya, SWE Member since 2010



ROBOTICS ENGINEER

Robotics help save lives. As a robotics engineer you'll design and/or program robots that can perform tasks too dangerous or dirty for humans to do.

"I'm a firm believer in working smarter, not harder, so integrating robotics into my client sites to increase efficiency and ergonomics is certainly something that breathes passion and purpose into my career."

—Kim Concillado, SWE Member since 2016

SOFTWARE ENGINEER

It takes software to harness the computational power of computers. As a software engineer, you'll analyze, design, construct and test complex programs using engineering methods.

"I created HelpMe, a web app, that provides resources such as help hotlines and legal activist groups to victims of sexual assault, domestic violence and human trafficking."

—Burlyn Andall-Blake, SWE Member since 2018



**AVERAGE
STARTING SALARY
SOFTWARE
ENGINEERING
\$76,304**



SYSTEM ENGINEER

System engineering requires a deep working knowledge of all technical areas. You'll ensure that various disciplines work together and meet cost and performance goals.

"What I love about my job is the collaborative environment. Everyone shares the same vision and is dedicated to the mission."

—Zaria Silvia, SWE Member since 2012

DECIDING WHAT YOU WANT TO DO IS A **HUGE DECISION,** BUT **SWE CAN HELP!**

- > **We have a scholarship program.** We want to help women engineers succeed, and part of that is easing the burden of college tuition.
- > **Check out our website: swe.org/outreach/swenext.** We have a lot more information and tools to help you become an engineer. Be sure to visit the SWENext section.
- > **Be a part of the SWE community.** Sign up for SWENext for free by visiting swe.org/outreach/swenext.
- > **Be recognized.** Apply for SWENext Awards or Challenges.
- > **Connect.** Meet and network with engineering role models.
- > **Learn.** Read up on SWE and SWENext on SWE's *All Together* blog.



Join us @SWENext on Social Media!



#BeThatEngineer

