

SWE NEXT



How to Learn Engineering Skills in High School

Do you wish there were more ways to learn engineering skills while in high school? Maybe you are going to a high school that offers engineering classes, like Computer Aided Design (CAD), Computer Science, Robotics or Engineering Design. If so, great! Take as many as you can fit into your schedule.

But if your school doesn't have classes like this, no worries! There are many opportunities to learn more about engineering using online resources!

In this month's SWEet Wisdom, we are sharing resources where you can learn about new engineering topics and even build skills, such as coding! We hope that you explore these as they can be great resources for you, even later on when you are in college.

Happy learning!

Lisa

Biomedical Engineer



1. TEDx

- a. TEDx events include live speakers and recorded TED Talks with many topics by curious individuals who seek to discover ideas and spark conversations in their own community, including engineering! Make sure to check out the "Talks by brilliant women in STEM" (link below).
 - i. [General website](#)
 - ii. [Engineering TED talks](#)
 - iii. ["Talks by brilliant women STEM"](#)

2. Coursera

- a. This resource is like an interactive textbook, featuring pre-recorded videos, quizzes, and projects.
- b. [General website](#)
- c. [Physical sciences and engineering](#)

3. **Khan Academy**
 - a. This site has free courses that include (but not limited to) math, science and computer programming. The courses come with instructional videos, practice exercises and a personalized learning dashboard so learners can study at their own pace.
 - b. **[General website](#)**
 - c. **[Science & Engineering Courses](#)**
4. **Websites to learn coding**
 - a. Learn Matlab for free (without needing the software) with hands-on practice sessions and demonstrations with the **[Matlab Onramp website](#)**.
 - b. Codecademy offers courses on various coding languages, but can help guide you to the coding language that might be most useful to your application / what you would like to learn. When you sign in, there is a quick series of questions that ask you about what you want to learn, and then will suggest a course or programming language for you. These include "Code Foundations" for beginners to coding, such as Computer Science History, Career Exploration and Applications. **[Visit the Codecademy website](#)**.
 - c. HackerRank offers a very wide range of programming languages, including (but not limited to): C, C++, C++14, C#, Go, Java 7, Java 8, JavaScript, Julia, Perl, PHP, PyPy 2, PyPy3, Python 2, Python 3, Ruby, Scala, SQL, Swift, VB.NET. **[Visit HackerRank here](#)**.
5. **Massive Open Online Courses (MOOC)**
 - a. Massive Open Online Courses (MOOC) are free online courses with a wide range of topics.
 - b. Computer science courses offer opportunities to learn coding, such as Python, Java, HTML, CSS, Cloud Computing and App Development.
 - c. Engineering courses include Principles of Mechanical, Electrical, Structural and Aerospace Engineering.
 - d. Biology and Life Science courses cover Biology, Physics, Chemistry, Environmental Science and Anatomy.
 - i. **[General Website](#)**
 - ii. **[Computer science courses](#)**
 - iii. **[Engineering courses](#)**
 - iv. **[Biology and Life Sciences courses](#)**
6. **EngineerGirl**
 - a. Learn more about engineering and see what current female engineers are working on at **[EngineerGirl](#)**.





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