STEM CITIZEN:
LEARNING OPPORTUNITIES

Are you interested in learning even more about different STEM topics, like learning how to code online, advancing your math skills, or reading up on biology, ecology, engineering, and more? While there are a ton of online resources out there, here are some free resources to get you started!

Disclaimer: The majority of these sites are not affiliated with Ohio University. Always follow common sense internet safety guidelines when participating in online activities and get parent/guardian approval when setting up individual accounts.

Learning to Code

Codewars: If you have already mastered the basics of coding, Codewars is a website that offers challenges in a variety of coding languages to help you perfect your coding skills by solving or fixing broken codes. This is a free site run by a user community, but for more intermediate-advanced coders who are seeking a challenge!
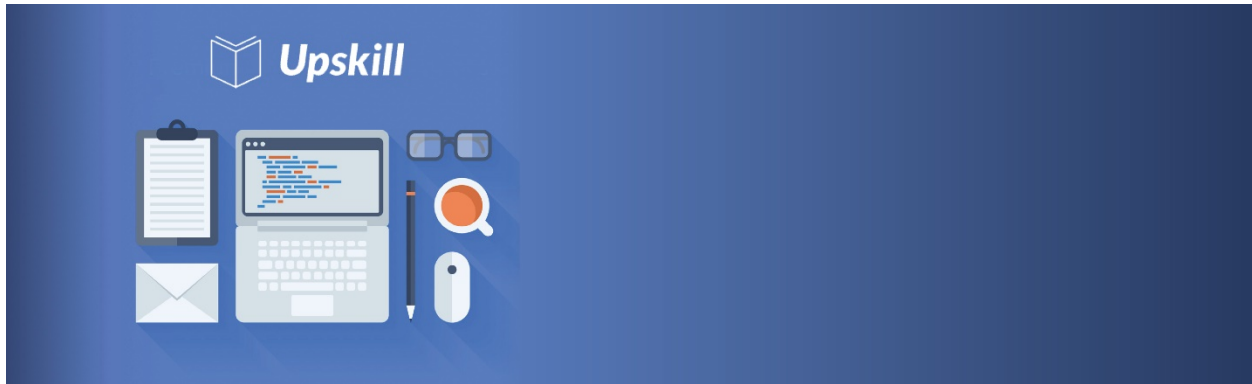
[freeCodeCamp:](#) Thinking about a career in software design or engineering? FreeCodeCamp is a nonprofit community that aims to teach people to code for free by providing lessons that build on each other to create a full coding repertoire. Each certification takes around 300 hours of dedicated learning but is completely self-paced. FreeCodeCamp also has an alumni network on LinkedIn, so you can check out the types of jobs other participants have gone on to pursue for inspiration!

[The Odin Project:](#) Interested in really diving into web design? Check out the Odin Project, founded and designed by experienced coders who wanted to create a useful learning resource. The site provides free and accessible computer curriculum for anyone starting as a beginner who wants to work as a web developer, do freelancing work, build a startup, or just hack together a homepage for yourself. The extensive curriculum offers different pathways and courses depending on your interests.

[Upskill](): Thinking about a web job? Upskill is a website that teaches you how to code from scratch using their 200+free coding lessons (and more with a paid account). You will learn the basics of computer science, followed by coding languages such as HTML and JavaScript, and finish with more advanced content.

Tip: You can preview the lesson titles to get a feel for the type of content they offer prior to signing up here: https://upskillcourses.com/courses.

General STEM Learning Resources

[COOL4Ed](): If you are interested in learning more from free eTextbooks, course materials, online courses, and academic journals, the California Open Online Library for Education (COOL4Ed) website contains an extensive collection of free online educational resources on a variety of topics.

Tip: By navigating to the Find Free and Open Online Course page, you can explore an extensive listing of additional resources as well, many sorted by topic.

[Coursera](): Coursera offers free (and paid) college-level courses online in a variety of topics, including STEM topics. When you take Coursera classes, you will watch lectures taught by world-class professors, learn at your own pace, test your knowledge, and reinforce concepts through interactive exercises. Filter your search by skill level (beginner through advanced) to find the best courses to challenge you! Even if you are in middle or high school, you can take beginner courses for free at your own pace and learn for fun!

edX: EdX aims to increase access to high-quality education for everyone, everywhere. Founded by Harvard and MIT, edX works with dozens of top universities to provide free online courses that are offered by universities across the globe. The courses have start dates varying throughout the year, so you can find a program to fit your schedule. EdX offers interactive online classes in subjects including law, history, science, engineering, business, social sciences, computer science, public health, and artificial intelligence (AI). If you want to learn it, you can find it here!

Khan Academy: Khan Academy is very accessible free online resource that has lessons, articles, videos, and practice quizzes related to a variety of topics including math, sciences, computer programing, literature, history, and even life skills. You can learn about topics of interest at your own pace and review what you learn whenever you like.

Tip: Preview the course offerings by navigating to the Course dropdown menu. Numerous Advanced Placement course modules are available, as are college test prep modules!
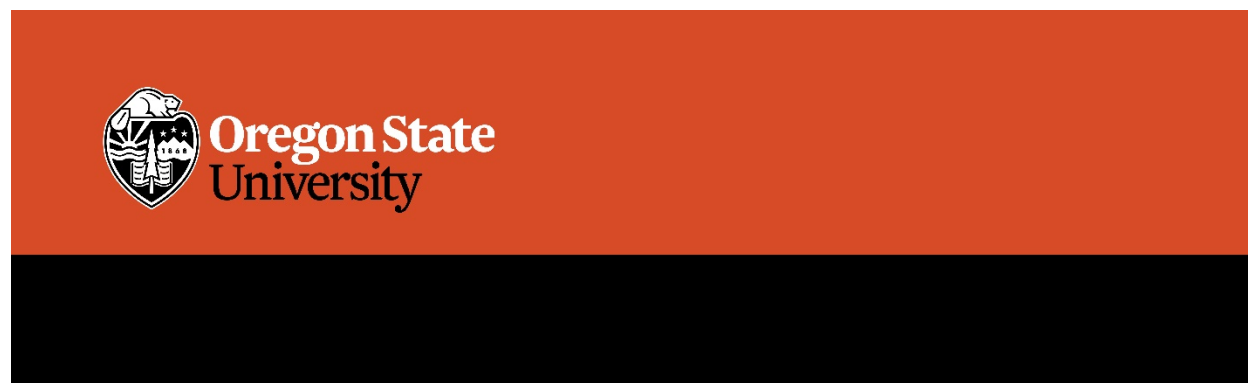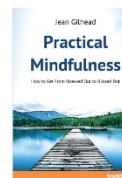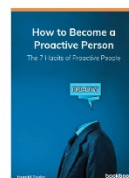
[MIT Open Courseware:](#) MIT, the Massachusetts Institute of Technology, is a famous university known for its STEM research. MIT has created MIT Open Courseware which features much of MIT's course content in STEM (and non-STEM) topics. You can find online textbooks, course notes, practice problems, or even lab protocols. Some courses also have recommended readings or have audio or video lectures by MIT professors. Super amazing resource to access university-level content!

Free Online Textbooks

[Biochemistry Free and Easy](#): If you have an interest in biochemistry, you're not alone! Did you know that professors at Oregon State University in the Biochemistry and Biophysics Department have created a free textbook and online, self-paced course all about biochemistry? If you're looking to explore a new subject, or get a refresher, this might just be your jam!

[Bookboon](#): Bookboon features free online textbooks. The free account gives you access to more than 1,000 different books in many categories, including on STEM topics. These textbooks are created by professionals in their fields and can give you the opportunity to explore new topics.

Tip: Before signing up, check out their free ebook topics and titles by navigating to the "Discover 1000+ free textbooks" button on the homepage.

LibreTexts: LibreTexts is a free online resource for texts related to a variety of fields, including STEM. The site also provides free lab protocols, experiments, and online simulators. All content from their extensive networks of libraries is free and some resources are interactive—cool!

Open Textbook Library: Operated by Center for Open Education at the University of Minnesota, the Open Textbook Library offers more than 800 free quality, college-level textbooks online. These textbooks can be used to explore new ideas and topics such as computer science, engineering, math, and natural sciences at your leisure.

OpenStax: OpenStax is a clearinghouse for free online textbooks for anyone to use run by Rice University. These high-quality, peer-reviewed textbooks were created by professionals for both high school and college level students. There are free textbooks on numerous topics including sciences, math, social studies, business and more!