

Climate Change

IEEE: Enabling Innovation and Technology Solutions

Educating the Energy Education Workforce in STEM Skills

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¹ climate-change.ieee.org



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Global Reach



409,000+

Members
60% of whom are
from outside the
US



39

Technical
Societies
and seven
Technical Councils



160+
Countries
across 10
geographic
Regions

Technical Breadth



1,900+

Annual Conferences

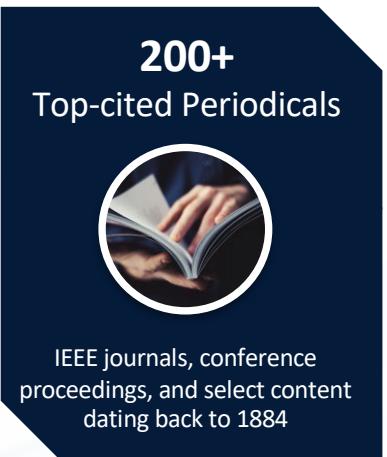
in 96 countries while
contributing over 3.6 million
total conference papers to
IEEE Xplore® since 1936

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5,000,000+
Technical Documents

via IEEE Xplore digital library,
with more than **15 million**
downloads each month



200+

Top-cited Periodicals

IEEE journals, conference
proceedings, and select content
dating back to 1884



1,000+

Active Standards

and **900+**
more in development

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Pre-University STEM Education Resources

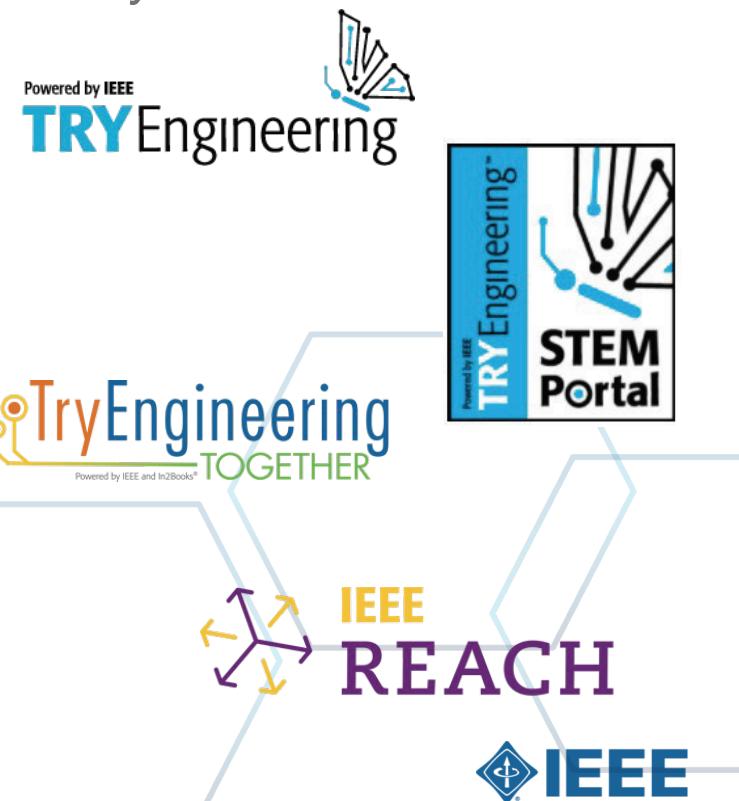
Visit ieee.org/education

IEEE offers STEM education opportunities for pre-university students and teachers across the globe.

- [**TryEngineering.org**](#): Free STEM education content, including lesson plans for teachers, online engineering games, engineer profiles, an accredited engineering program university finder, and much more.
- [**Volunteer STEM Portal**](#): A free website for IEEE volunteers to share their pre-university STEM programs. The portal also serves as a resource for other IEEE Volunteers interested in teaching STEM.
- [**TryEngineering Together**](#): A virtual mentoring program that pairs engineers and STEM enthusiasts with students (ages 9 to 15) in under-resourced school districts.
- [**TryEngineering Summer Institute**](#): A two-week, on-campus summer engineering experience for high school students.
- [**IEEE REACH**](#): Provides **STEM and Social Studies teachers with free resources** that, through the lens of history, situate science, technology, and engineering in their social and humanistic contexts.



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IEEE TryEngineering for Teachers

TryEngineering provides K-12 teachers with free resources to as they integrate engineering into their classroom. With TryEngineering teachers can...

- Download over 100 free [Engineering lesson plans](#)
- Engage students with [TryEngineering Tuesday](#) student guides to explore engineering and technology careers and concepts
- Discover new STEM education methods, strategies and events across the globe with [STEM articles](#).
- Submit resources to our new [STEM Community Resources page](#)



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Lesson Plans

All STEM Fields ▾ All Categories ▾ All Ages ▾

Search by keyword SEARCH

| | | |
|---|---|---|
|  3D Printing by Hand Lesson Plans Manufacturing Engineering, Mechanical Engineering 8-10, 11-12 |  A Century of Plastics Lesson focuses on how plastics of all sorts have been engineered in to everyday products over the past century, with emphasis on materials selection and engineering. Lesson Plans Chemical Engineering, Materials Properties 8-10, 11-12, 14-18 |  A Question of Balance Lesson focuses on the use of weight scales and measurement by manufacturing engineers. Teams of students are posed with the challenge... Lesson Plans Forces and Motion, Systems Engineering 8-10, 11-12, 14-18 |
|  AC Motors Lesson Focus The lesson begins by outlining the work of some of the early experimenters and the sequence which eventually led to the realization of the... Lesson Plans Electrical/Electronics Engineering, Mechanical Engineering 8-10, 11-12, 14-18 |  Adaptive Device Design Lesson focuses on the engineering of adaptive or assistive devices, such as prosthetic devices, wheelchairs, eyeglasses, grab bars, hearing aids, lifts, or braces. Lesson Plans Biomedical Engineering, Mechanical Engineering 8-10, 11-12, 14-18 |  An Eye on Optics The goal of this lesson is to provide students with an open-ended opportunity to explore and work with materials, make and share... Lesson Plans Design, Physics (light, sound, heat) 8-10, 11-12 |
| <input type="button" value="Electromagnet, Motors"/> | <input type="button" value="Biotechnology, Simple Machines"/> | <input type="button" value="Light and Heat"/> |

1 2 3 ... 23



Enhancing Secondary Teacher STEM Engagement in Africa

With Open Education Resources from IEEE REACH

- ▶ In 2020, IEEE and UNESCO, conducted a co-branded pilot program introducing students, predominantly girls, to the IEEE REACH resources.
 - ▶ Delivered in the classroom and in rural villages, by way of a traveling classroom trailer
 - ▶ More than 70 teachers and approximately 1,000 students impacted

Operating at a national level, the **Uganda National Commission for UNESCO and Uganda Ministry of Education (MoES)** held teacher workshops that introduced both the REACH content and its unique teaching format to school principals, headteachers, and other educators.

The **UNESCO Regional Office in Kenya** also learned about the program and recognized the synergies with work being done in four African countries (Kenya, Rwanda, Ghana and Uganda) aimed at promoting the participation of girls in STEM.



Shaping the Future of Technology through Education

STEM and technology education is crucial to not only solving today's issues, but also to preparing for the challenges of tomorrow.



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Thank you.

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