

Principles of STEM & Applied Engineering

Local Course #: 800

State Course ID: 13036200

Course Description:

Principles of STEM and Applied Engineering is a comprehensive middle school course that delves into the diverse and interconnected fields of science, technology, engineering, and mathematics (STEM). Through hands-on projects and assignments, students develop essential engineering communication skills, including graphics, modeling, and presentations, fostering creativity, problem-solving abilities, and collaborative skills. This dynamic course provides a holistic understanding of STEM disciplines and offers practical experience in working on design teams to create innovative products and systems. By engaging with real-world challenges, students gain valuable insights into various engineering fields, empowering them to make informed career decisions and excel in the ever-evolving world of STEM. Students who successfully complete this course will receive high school credit.

Link to TEKS:

[https://texas-sos.appianportalsgov.com/rules-and-meetings?\\$locale=en_US&interface=VIEW_TAC_SUMMARY&queryAsDate=08%2F12%2F2025&recordId=225551](https://texas-sos.appianportalsgov.com/rules-and-meetings?$locale=en_US&interface=VIEW_TAC_SUMMARY&queryAsDate=08%2F12%2F2025&recordId=225551)

First 9 Weeks Major Topics:

What is the Design Process - students learn the overall process and what happens in steps 1 and 2. Students also look at ethics in engineering.

Second 9 Weeks Major Topics:

Students focus on Step 3 & 4 - they learn tool safety and how to use various powered and non-powered tools, technical drawings and how to make decisions related to the project. Students design, build and test their derby cars.

Third 9 Weeks Major Topics:

Students learn Step 6 - Presentations and how to prepare and present their solutions

Fourth 9 Weeks Major Topics:

Students practice the Design Process by solving a problem their group comes up with using the 6 steps of the Design Process and presents their solution.

