

Robotics 1 Syllabus

Course Description/Goals:

Students in this course will design, build and test robots to solve a problem. Coursework will include professional standards for employment, safety, equipment/tools and skills necessary for success in a technical career. Students will work in teams to manage a project through planning, scheduling and meeting criteria in order to develop a product. Course studies in robotics will include torque and gear ratio, robotic arm construction, testing and using knowledge of simple machines. This course will utilize PLTW Automation & Robotics as a curriculum framework.

Course TEKS/Objectives:

The Robotics 1 TEKS (Texas Essential Knowledge and Skills) are organized into reporting categories, each focusing on a specific area of Robotics. In Robotics I, students will transfer academic skills to component designs in a project-based environment through implementation of the design process. Students will build prototypes or use simulation software to test their designs. Additionally, students will explore career opportunities, employer expectations, and educational needs in the robotic and automation industry. Each category contains specific standards (TEKS) that students are expected to master.

<https://tea.texas.gov/about-tea/laws-and-rules/sboe-rules-tac/sboe-tac-currently-in-effect/ch130o.pdf>

Course Outline:

Semester 1	Semester 2
-Automating Mechanisms - Moving Your Robot -Repeating Behaviors -Looping Shuffles -Gears -Bevels -Automating Mechanisms -Sensors and Systems	- Automation - Building Clawbots - Brains - Programing - Range of Motion - Loops - Driver Control