

Course Overview

Content Area: **Applied Technology and Engineering**
Course(s):
Time Period: **Year**
Length:
Status: **Published**

Course Overview

Aligned to Standards: NJSLs 2014-2020; ITEEA STEL 2020

Revision Date: 2026

In compliance with the NJ Student Learning Standards, climate change, career readiness, DEI (Diversity, Equity, & Inclusivity), as well as other standards have been integrated within the NBCRSD curricula (NJ Administrative Code Title 6A: chapter 8; Title 18A: chapter 35).

Course Overview

Sequence- Unit Titles, Summaries, and Number of weeks per unit (total = 18 semester/36 year)

Unit 1: Autonomous Control using Sensors - 6 weeks

Unit 1: User-Centered Design - 16 weeks

Students will learn about adaptive and assistive technology to help meet user-specific needs. They will use the Engineering Design Process to design and create custom prototypes that will be used by members of the school community.

Unit 2: Electricity and DC Circuits - 6 weeks

Unit 2: Upcycling and Sustainability - 4 weeks

Students will learn about sustainable practices and how to evaluate material properties. They will use what they learn to propose solutions for upcycling and reusing materials effectively.

Unit 3: Microcontroller Circuits - 8 weeks

Unit 3: Data Analysis and Intro to Programming - 4 weeks

Students will enhance prior knowledge of spreadsheets to enter data, apply functions, and calculate information. Students will pick a topic of interest and understand how data analysis is a critical component of programming

Unit 4: Systems Control and Automation - 8 weeks

Unit 4: Microcontroller Circuits - 5 weeks

Students will learn how to use microcontrollers, such as Arduino, to control various electronic components. Students gain knowledge on how they can create code and pair a microcontroller to accomplish real-world objectives.

Unit 5: Product Design

Unit 5: Systems Control and Automation - 7 weeks

Students will utilize knowledge from previous units to control and troubleshoot robotic systems. This unit will serve as a culminating project where students build, code, test, and evaluate their product.

[Reporting Student Progress](#) (link to NB's Assessment System)

All courses follow a balanced assessment system with Practice and Assessments. Each category includes formative, summative and alternative assessments.

[Accommodations and Modifications](#) (link to menu)

Integrated accommodations and modifications for special education students, English language learners, students at risk of school failure, gifted and talented students, and students with 504 plans.