

# STEM

## Introduction to Engineering Design & Principles of Engineering



### Principles of Engineering: (year-long course in the A.M.)

Through problems that engage and challenge, students explore a broad range of engineering topics, including mechanisms, the strength of structures and materials, and automation. Students develop skills in problem solving, research, and design while learning strategies for design process documentation, collaboration and presentation.

### Concurrent Enrollment for College Credit:

Principles of Engineering, 3 credits, St. Cloud State University  
Precalculus 1, 3 credits, Vermont Technical College  
Precalculus II, 3 credits, Vermont Technical College



### Industry Certifications:

Conover® Workplace Readiness; and CPR/AED and First Aid.

**Articulation Agreement:** Keene State College

### High School Credit Options:

2/3 credits in Engineering OR 1 credit Physics (optional)

### Units of Study:

- Energy and Power: Mechanisms; Energy Sources; Energy Applications; Design Problem - Energy and Power
- Materials and Structures: Statics; Material Properties; Material Testing; Design Problem - Materials and Structures
- Control Systems: Machine Control; Fluid Power; Design Problem - Control Systems
- Statistics and Kinematics