



# ALLEN ACADEMY

## Principles of Engineering I 2017-2018

### Course Description

Principles of Engineering I \* is a high school level course that is appropriate for the student who is interested in design and engineering. The major focus of the course is to expose students to design process, research and analysis, teamwork, communication methods, global and human impacts, engineering standards, and technical documentation. This course gives students the opportunity to develop skills and understanding of course concepts through activity, project, and problem-based learning. Students will combine skills obtained from the course with their personal passions, creativity and interests and have the opportunity to participate in a number of activities including, but not limited to, robotics, rocketry and numerous STEM and STEAM based challenges and competitions. The course will begin with fundamentals of design, tool knowledge and safety and application in the maker space. It will then branch into a variety of options individualized to the interests of the students.

### The course of study includes:

- The Engineering Design Process
- Modeling and Analysis
- Sketching and design by hand and software
- Presentation
- CAD Solid Modeling

Note: I have called it Principles of Engineering I as in future years students in their second year may be in the same room as first year students but working on the next level, Principles of Engineering II and so on through III and IV. This will allow students to take the course again but rather than it being the same class, they will move on to cover more complex curriculum, skills and projects with each year.