Curriculum and Program Highlights

Year 1

- **Logic and Its Application to Mathematics**: compound statements, truth tables, elementary set theory, Boolean algebra and switching networks.
- **Introduction to Engineering**: introduction to the engineering profession, measurements, simple mechanics, work-energy and engineering design, in-class laboratory demonstrations of engineering principles and team designs of bridges, towers, gliders and more.
- **Topics in Problem Solving 1**: problem solving as a method of inquiry and application so that students can use problem solving approaches to investigate and understand mathematical content, formulate problems, develop and apply a variety of strategies to solve problems, verify and interpret results, generalize solutions and strategies to new problem situations and acquire confidence in using mathematics meaningfully.

Year 2

- **Algebraic Structures**: study of groups, rings and fields using systems of integers and rational numbers as models, derivation of algebraic properties of these systems.
- **Introduction to Physics**: mechanics, units and physical quantities, equilibrium of a particle, motion of a straight line, Newton's Second Law, motion in a plane, work and energy, inertia and momentum, electricity and magnetism, Coulomb's Law, electric fields, potential, direct current circuits, magnetic fields and capacitors in series and parallel.
- **Topics in Problem Solving 2**: Problem solving as a method of inquiry and application so that students can use problem solving approaches to investigate and understand mathematical content, formulate problems, develop and apply a variety of strategies to solve problems, verify and interpret results, generalize solutions and strategies to new problem situations and acquire confidence in using mathematics meaningfully.

Year 3

- **Technical Writing**: Clear and persuasive technical reports using word processing software and graphics techniques, original research, logic, invention, assessment of purpose and audience, organization and development, revision, editing, style, grammar, and mechanics.
- **Probability and Statistics**: basic probability theory- counting procedures, addition and multiplication rules, independence, probability models- binomial, Poisson, exponential, and normal, descriptive statistics- tables and charts, measures of center and spread, analytical statistic- confidence intervals for means and proportions, test of hypothesis for means and proportions, simple regression, how to collect, organize, and evaluate data, analyze, conjecture, and build arguments based on data analysis, ability to sort, analyze, and interpret numerical data using statistical software.
- **Computer Science**: Software Development Life Cycle, important programming aspects as students storyboard, design, and code their own computer game.

All Years

- Career Awareness Presentations: Local industry leaders, business professionals, scientists, professors and more give daily 45-minute presentations to the students to encourage them to pursue careers in STEM (science, technology, engineering and mathematics) fields by providing information about the actual occupation, the career path, necessary schooling, etc.
- Field Trips & Special Events: Fridays are reserved for on campus special events and field trips. Field trips include Zion National Park, Health Sciences Day, SUU Aviation Program and St. George Airport, DSU Department Presentations, Dixie Technical College, and more!