IMAGINE a BETTER future.

Our Engineering program is taught through the Project Lead the Way® curriculum. The first year focuses on the foundations and principles of engineering, as well as digital electronics. During the second year, students will be studying civil engineering and architecture, as well as computer integrated manufacturing. The highlight of the second year will also be an exciting capstone engineering project. We believe this will lay a solid foundation and provide an unprecedented opportunity to create an engineering career path in high school. After two years, students can be awarded up to 12 college credits from Rochester Institute of Technology.
COURSE TITLE: ENGINEERING

COURSE DESCRIPTION
Our Engineering program is based upon the Project Lead the Way® curriculum. Project Lead the Way® Inc. (PTLW)® is a national program forming partnerships among Public Schools, Higher Education Institutions and the Private Sector to increase the quantity and quality of engineers and engineering technologists graduating from our education system. Our program is actually a sequence of courses which, when combined with traditional mathematics and science courses in high school, introduces students to the scope, rigor and discipline of engineering prior to entering college. However, those not intending to pursue further formal education will benefit greatly from the knowledge and logical thought processes that result from taking some or all of the courses provided in the curriculum. In addition to the PTLW® curriculum, the course offerings are enhanced by Carnegie Mellon University Robotic and Coding Modules. Also, in addition to RIT articulated college credits, if qualified, local articulations are offered as well.

COURSE CONTENT– FIRST YEAR
Introduction to Engineering Design: This course teaches problem-solving skills using a design development process. Models of product solutions are created, analyzed and communicated using solid modeling computer design software. In NYS, the course is called Design and Drawing for Production and follows the syllabus developed by the State Education Department.

Principles of Engineering: This course helps students understand the field of engineering/engineering technology. Exploring various technology systems and manufacturing processes help students learn how engineers and technicians use math, science and technology in an engineering problem-solving process to benefit people. This course also includes concerns about social and political consequences of technological change.

COURSE CONTENT– SECOND YEAR
Digital Electronics: This course in applied logic encompasses the application of electronic circuits and devices. Computer simulation software is used to design and test digital circuitry prior to the actual construction and circuits.

Computer Integrated Manufacturing: This course applies principles of robotics and automation and builds on computer solid modeling skills developed in Introduction to Engineering Design and Design and Drawing for Production. Students use CNC equipment to produce actual models of their three-dimensional designs. Fundamental concepts of robotics used in automated manufacturing and design analysis are included.

PTLW® Engineering Design and Development Capstone: The knowledge and skills students acquire throughout PTLW® Engineering come together in Engineering Design and Development as they identify an issue and then research, design and test a solution, ultimately presenting their solution to a panel of engineers. Students apply the professional skills they have developed to document a design process to standards, completing Engineering Design and Development ready to take on any post-secondary program or career.

EDUCATIONAL OPPORTUNITIES
After two years, students can be awarded up to 12 college credits from Rochester Institute of Technology if qualified.

SUGGESTED SUPPORTIVE COURSES
Math A and B
Physics
Students enrolling in this program are expected to show proficiency in math and science by scoring a minimum of 80 on the Integrated Algebra Regents and a minimum of 80 on the Living Environment Regents.

ADDITIONAL INFORMATION
RELATED COURSES .............................................. Aviation/Professional Pilot Training
                                                                                                                                                              Computer Technology and Repair
COSTS .......................................................... Approximately $200 for Uniform, Supplies
LENGTH OF COURSE ............................... 1 or 2 years
LOCATION ...................................... Gary D. Bixhorn Technical Center
CTE/Academic Credit .......................... 1 year = 1 credit Art*

*Design and Drawing for Production