

New Visions Engineering



CAREER AND TECHNICAL EDUCATION

An academically rigorous program for college-bound high school seniors who plan to major in pre-med, or other allied health fields

New Visions Engineering students receive instruction in the areas of AP Calculus, AP Physics, and various engineering principles. Students explore the world of engineering through hands-on projects that integrate academics and engineering concepts. Job shadowing opportunities, internships and site visits are coordinated throughout the school year enabling the students to see first hand the activities and responsibilities related to various engineering disciplines.

ADMISSION

Admission to the New Visions Program is competitive and highly selective. Students from 31 school districts compete for a limited number of Engineering positions. Successful applicants must demonstrate above-average ability in math and science, have a strong work ethic, and show genuine interest in the field of engineering.

Specific requirements include:

- Pre-calculus, plus three years each of New York State Regents math, science,
- English and social studies (a year of Regents physics is beneficial) - written transcript required
- Recommendations from a math or science teacher, employer or community member, and a school counselor
- A completed application, including an autobiographical essay stating your reason for applying to the program
- An interview in front of an interdisciplinary team comprised of teachers, engineering professionals, and administrators
- Individual transportation to and from school and work sites

SETTING

Southern Adirondack Education Center and SUNY Adirondack

New Visions Engineering students regularly attend class at the Southern Adirondack Education Center in a classroom equipped with a computer for each student, a CNC and vertical mill, a wind tunnel, miter saw, workbenches and tool chests, and a designated lecture area.

Physics labs are conducted on the campus of SUNY Adirondack where a state-of-the-art lab is made accessible. SUNY Adirondack provides invaluable support for this laboratory requirement. WSWHE BOCES and the college have worked together to create this valuable educational experience for high school seniors interested in pursuing engineering.

SCHEDULE

10am - 2:10pm

New Visions Engineering students attend English and Social Studies classes at their home schools prior to traveling to New Visions for a 10:00 a.m. arrival.



CURRICULUM

Students have the opportunity to observe and participate in various rotations within the field of engineering.

Sample learning modules

Calculus

Functional Analysis
Differential Calculus
Integral Calculus

Engineering

Materials
Structural Analysis
Robotics
CNC Machining
Pneumatics
Electric Motors

Physics

Kinematics
Newton's Laws
Energy Conservation
Rotational Motion
Harmonic Motion

Examples of Site Visits

Aerospace Engineering
Biomedical Engineering
Chemical Engineering
Civil Engineering
Electrical Engineering
Environmental Engineering
Industrial Engineering
Mechanical Engineering
Structural Engineering &
Architecture
Quality Control & Process
Engineering

ACADEMIC CREDIT

Students are provided instruction in preparation to take the advanced placement (AP) exams in both physics and calculus at the end of the school year. WSWHE BOCES offers the following academic credit: one credit in calculus, one credit in physics, and two credits in engineering sciences and career exploration.

Learn more.

For more information, please contact:

Daniel Kittell, Instructor

Southern Adirondack Education Center

1051 Dix Avenue

Hudson Falls, NY 12839

518.746.3431 phone

518.746.3409 fax

email: Dkittel@wswhiboces.com



Results.

Upon successful completion of this rigorous one-year program, students have:

Completed a highly competitive admission process

Immersed themselves in an interdisciplinary experience in the world of engineering

Spent time with engineers in the field

Applied academics to real-life scenarios in a variety of engineering disciplines

Witnessed the application of engineering principles

Communicated effectively through written and verbal presentations

Achieved a level of professional development uncommon to most high school students

College.

New Visions graduates attend various colleges including:

Clarkson University

Cornell University

Dartmouth College

Drexel University

Harvard University

Massachusetts Institute of Technology

Northeastern University

Rensselaer Polytechnic Institute

SUNY Binghamton

SUNY Buffalo

U.S. Air Force Academy

U.S. Naval Academy

Worcester Polytechnic Institute



CAREER AND TECHNICAL EDUCATION

CTE is a Division of the WSWHE BOCES