

Pitsco High School **STEM** Continuum

Shaping the future by reshaping learning



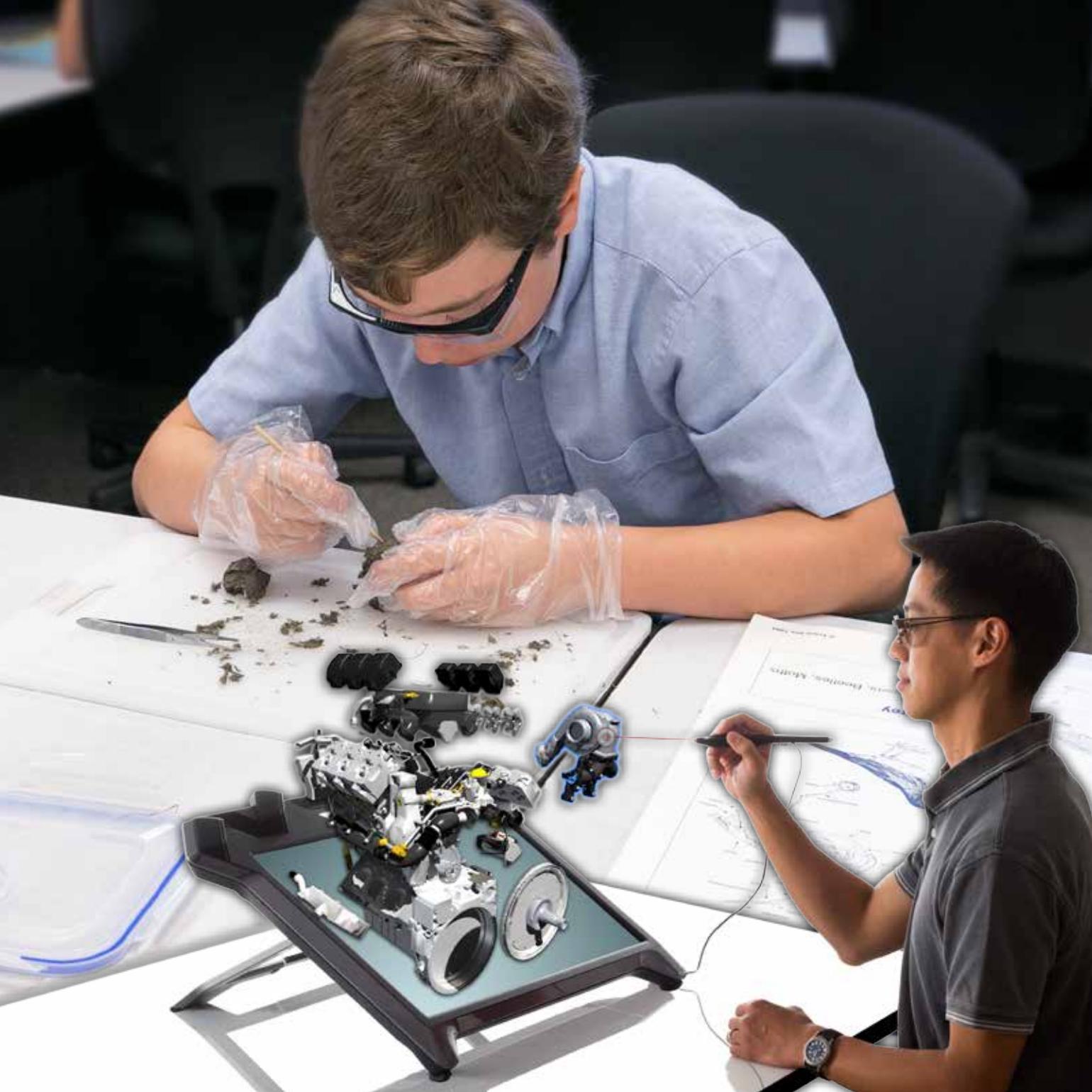
PITSCO
EDUCATION



A four-year approach to promoting **innovation and entrepreneurship**

Pitsco Education understands the need to prepare today's learners for the challenges of tomorrow. Through partnerships with schools and businesses, we strive to transform learning from standardized to **personalized**, from sit and get to **hands-on**, from one correct answer to **open-ended problem solving**, and from individual to **collaborative learning**.

Our High School STEM Continuum was designed not only to engage students in rich, relevant STEM content but to revive education and learning in America's high schools so our future workforce will stand equipped with the knowledge, soft skills, and experiences to **thrive in our global economy**. Each dynamic grade-level experience builds upon the previous, preparing students to solve actual, unsolved problems posed by local business and industry.



A project-based STEM course designed to reinforce core math and science content

Virtual reality STEM labs are equipped with hands-on activities and multimedia STEM instruction that enables students to interact with the topic they're learning about through access to educational instruments, experiments, and leading-edge virtual reality technology that integrates seamlessly into each lesson. All titles are developed to address standards in multiple subject areas such as math, science, technology, and careers.

STEM Challenges focus on the skills students need to guide them through the **engineering design process**. They are designed to supplement science, technology, engineering, and math concepts through the use of small-group investigation and experimentation. Further, the blended instruction element enables the teacher to provide content regarding standards that might not otherwise be fully addressed.

SOFT SKILLS:

Cumulative Collaboration Hours = 98.40

Cumulative Systematic Hands-on Hours = 53.55

Cumulative Independent Hours = 8.55

Cumulative Teacher Time Hours = 8.55



A hands-on course enabling students to make STEM connections through the engineering design process with instant school-based feedback

STEM Units are whole-class, hands-on experiences that provide opportunities for students to make connections between the four areas of STEM learning.

- **3-D Printing Units** get students involved in designing and completing 3-D printing projects. Students are led through the engineering design process as they hone fundamental engineering skills.
- **Science of Speed II Units** focus on engineering principles and design through project-based learning. The challenges involve planning, designing, constructing, and testing CO₂ dragsters.
- **TETRIX® PRIME Robotics Units** enable students to experience the application of STEM concepts through an intuitive robotics building system. Students construct and modify robots and use a robot programming platform to bring their creation to life.

Introduction to Ideation: Feedback is one of the most powerful influences on learning and achievement. With the StartUp Genius (SGI) application, students are introduced to the ideation process through opportunities to solve school-based, hypothetical problems posed by school faculty and staff. Learners have their own creative ideas and solutions vetted by school personnel in preparation for a more vigorous SGI experience in Grades 11-12.

SOFT SKILLS:

Cumulative Collaboration Hours = 80.44

Cumulative Systematic Hands-on Hours = 81.00

Cumulative Independent Hours = 11.81

Cumulative Teacher Time Hours = 11.81



An experiential learning course that addresses the design and prototyping processes used in real-world scenarios with controlled feedback from teachers and higher education institutions

Engineering courses provide an environment where engineering concepts and skills are applied in relevant ways to students. Our curriculum takes students through a series of activities and investigations, building their understanding as they identify and design solutions to solve engineering challenges and problems.

National Instruments myDAQ and Pitsco miniSystems are powerful and portable tools that enable students to measure and analyze the world around them. Created specifically for use with myDAQ, miniSystems are electronic devices that demonstrate principles and provide project-based lab activities for experiential learning while engaging students in the process of designing, building, and testing as they explore the application of science principles and concepts.

Entrepreneurship 101: At this level, students are afforded more exploration and open-ended problem-solving time via the StartUp Genius tool. Through questions submitted from local higher education institutions, heavy emphasis is placed on the stages of developing new ideas. Instant feedback is expanded to include not only school personnel but also a college-level advisory committee.

SOFT SKILLS:

Cumulative Collaboration Hours = 110.81

Cumulative Systematic Hands-on Hours = 78.75

Cumulative Independent Hours = 12.94

Cumulative Teacher Time Hours = 27.57

Student Process



PROBLEM DELIVERY

Connect students to community, industry, and higher education.



IDEA CAPTURE

Formulate and collect ideas and proposed resolutions.



DEVELOP

Expand ideas through SGI process or partner-created plan.



FEEDBACK

Engage mentors and industry for advice, support, and feedback.



ACTION

Build a prototype, get funding, and/or license IP to industry.



Startup Genius In Action



Student Mobile App Dashboard



Student Mobile App My Idea



Administrative Dashboard

An entirely problem-based course that allows students to solve real problems with real-time feedback from community leaders and business mentors

StartUp Genius is an entrepreneurial application that facilitates meaningful community engagement through problem-based active learning. It is an interactive platform enabling educators to guide students through a fully customizable ideation workflow and leverage the human capital and financial resources of the school and industry communities to support students in the development of their ideas. StartUp Genius allows students and teachers to work with local business and industry through a collaborative, mobile platform to solve real-world problems and pitch innovative, entrepreneurial ideas. After students record their initial vision, they are guided through the stages of development including engaging feedback and input from business leaders and school mentors and then prompted to take action and bring their ideas to life.

SOFT SKILLS:

Cumulative Collaboration Hours = 101.27

Cumulative Systematic Hands-on Hours = 0

Cumulative Independent Hours = 33.75

Cumulative Teacher Time Hours = 33.75

Who benefits from this type of shift in teaching and learning? We all do – every single one of us – students, parents, teachers, patrons, businesses, communities, and the global economy. Decisions made in education today impact the future of humanity, but it's not an endeavor schools can tackle alone. Pitsco is here to help.