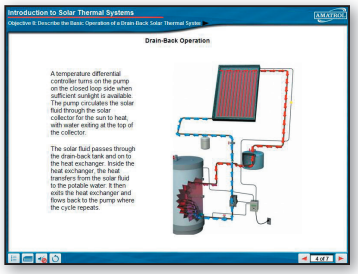
STEM
High School eLearning Program

Learning Topics:

- Structural Engineering
- Wind and Solar Concepts
- Computer-Aided Design
- Computer Numerical Control
- Statistical Process Control
- Mechanical Systems
- Pneumatics
- Hydraulics
- Electrical
- Measurement Tools
- Mathematics
- Machine Tools
- Print Reading
- Manufacturing Processes
- Workplace Effectiveness

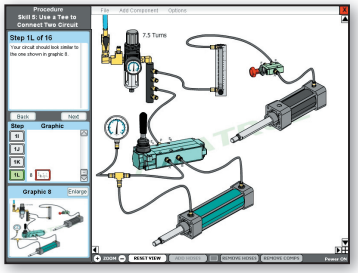
Science

The theoretical knowledge behind how things work is just as important for high-tech professionals as hands-on experience, so scientific courses are prominent within Amatrol's High School eLearning STEM program. Students will study topics like thermal energy, heat transfer, thermodynamic laws, gas laws, chemicals changes in metals during heat treatment, how to translate sun and wind location in order to maximize energy output, and more. This baseline knowledge can be the first step toward careers in innumerable career fields like biology, physics, astronomy, and biochemistry.



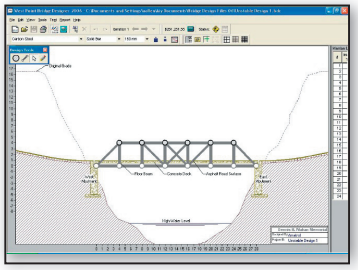
Technology

Technology is the result of taking scientific knowledge and applying it to practical applications. Because technology is applied through countless fields, Amatrol has selected areas related to STEM, such as how wind turbines and solar panels are used to harness energy, how CNC machines are used to quickly and effectively fabricate materials, how programmable logic controllers are used to automate a high-tech manufacturing line, and more. Knowledge accumulated in this area can be applied to career paths in fields like computer science, robotics, nanotechnology, and advanced manufacturing.



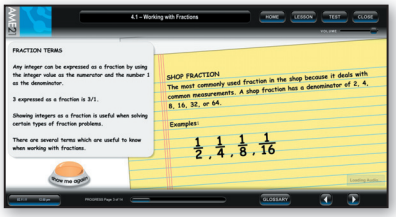
Engineering

Engineering is a combination of science and technology that includes the design, construction, and application of structures, engines, and machines. Courses in this area cover the concepts and application of engineering and surveying to explore what engineers must know in order to design and construct functional and safe structures, such as skyscrapers, bridges, tunnels, dams, and mass transit systems. This knowledge can be used as a starting point for careers in computer, electrical, mechanical, civil, aerospace, and chemical engineering.



Math

Mathematics is the backbone of science, technology, and engineering. Without a thorough understanding of mathematical concepts and applications, pursuing careers in any STEM field is impossible. Amatrol High School eLearning courses in mathematics cover information as elementary as basic measurements and addition, subtraction, multiplication, and division skills to more advanced concepts such as measurement conversion, calculating surface area and volume, right triangle trigonometry, Pythagorean Theorem, variation, and probability. Students can use this information to pursue a career mathematical education or apply the concepts to a limitless amount of professions.



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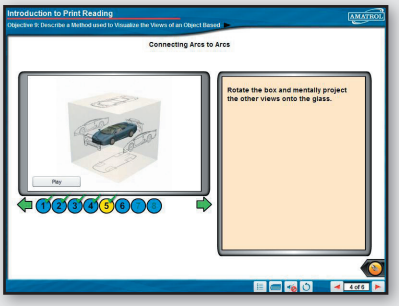

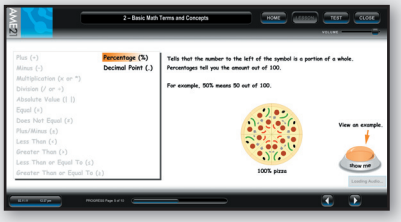

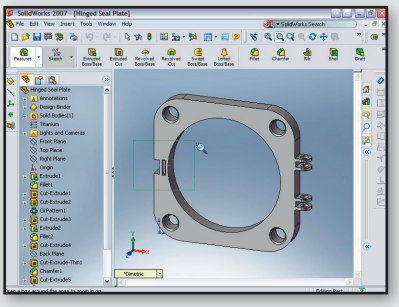

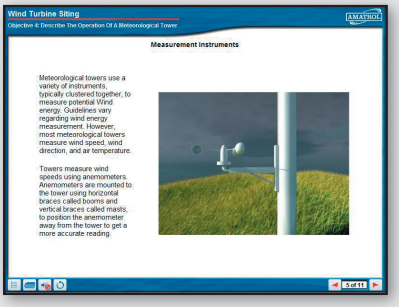

All Amatrol eLearning programs for high school include core courses in mechanical, electrical, and industrial technology. These standard courses include: Basic Electricity, Pneumatics, and Hydraulics; Measurement; Mechanisms; Manufacturing Processes; Electrical Control; Print Reading; Mathematics; Trigonometry; Communication Skills; Conflict Resolution; and Working in Groups. Students will gain valuable knowledge from these courses that can be applied across all areas of our economy.

Course Title	Est. Hours	Functional Software Req.	Course #
AC/DC Electrical	24	-	W-VTB227
Basic Hydraulics	20	-	W-VTB831
Basic Pneumatics	20	-	W-VTB780
CAD 1	8	SolidWorks	W-12273
CAD 2	6	SolidWorks	W-12274
CAM 1	8	Mastercam VX2	W-B723
CNC 1	6	VR Milling	W-B705
CNC 2	6	VR Milling	W-B706
CNC 3	6	VR Milling	W-B709
Communication Skills	2	-	PD101
Computer Control 1	8	Rockwell's RSLogix	W-B763
Computer Control 2	8	Rockwell's RSLogix	W-B764
Conflict Resolution	2	-	PD102
Electrical Relay Control	12	-	W-VTB703
Electronic Sensors	4	-	W-B837
Environmental Applications	8	-	W-11605
Fluid Systems 2	10	-	W-11607
General Dimensioning and Tolerances	2	-	BP203
General Dimensioning and Tolerancing	2	-	BP204
Machine Tools 1	12	-	W-VTB701
Materials Engineering 1	14	NI-DAQ	W-11803
Mathematics 1	2	-	MA101
Measurement Tools	12	-	W-VTB725
Mechanical Systems	12	-	W-VTB728
Plastics 1	6	-	W-B767
Plastics 2	6	-	W-B768
Principles of Heat Treating	2	-	ML203
Print Reading 1	8	-	W-12207
Quality Tools	2	-	QS305
Solar Concepts	6	-	W-20016
Statistical Process Control 1	2	-	QS202
Statistical Process Control 2	2	-	QS304
Structural 1	6	Bridge Designer	W-11600
Structural 2	4	Bridge Designer	W-11601
Surveying	6	-	W-11602
Thermal Science	8	-	W-11604
Trigonometry 1	2	-	MA304
Wind Concepts	6	-	W-20011
Working in Groups	2	-	PD103

2400 Centennial Blvd. Jeffersonville, IN 47130 USA 800.264.8285 812.288.8285 www.amatrol.com