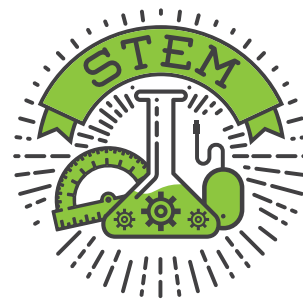


# STEM PATHWAY BRIEF

## PLTW PRE-ENGINEERING



### OVERVIEW

From launching space explorations to delivering clean water to communities, engineers find solutions to pressing problems and turn their ideas into reality. The Project Lead the Way Pre-Engineering Pathway empowers students to step into the role of an engineer, adopt a problem-solving mindset, and make the leap from dreamers to doers. Pathway courses engage students in compelling, real-world challenges that help them become better collaborators, problem-solvers, and critical and creative thinkers. Students take from the courses in-demand knowledge and transportable skills they will use in high school and for the rest of their lives, on any career path they take.

### COLLEGE AND CAREER CONNECTIONS

College Ready	Career Ready
<ul style="list-style-type: none"> <li>• Aerospace Engineering</li> <li>• Biological Engineering</li> <li>• Chemical Engineering</li> <li>• Civil Engineering</li> <li>• Computer Engineering</li> <li>• Computer Science</li> <li>• Construction Management</li> <li>• Electrical Engineering</li> <li>• Environmental Engineering</li> <li>• Industrial Engineering</li> <li>• Mechanical Engineering</li> <li>• Petroleum Engineering</li> <li>• Structural Engineering</li> <li>• Architecture</li> </ul>	<ul style="list-style-type: none"> <li>• Engineering Assistant</li> <li>• Engineering Technician</li> <li>• Architectural Drafter</li> <li>• Civil Drafter</li> <li>• Mechanical Drafter</li> <li>• Computer Programmer</li> <li>• Software Engineer</li> <li>• Computer-integrated Manufacturing Technician</li> </ul>

### STATEWIDE CREDENTIALS INCLUDED

All students who successfully complete the 4 Required Courses within the pathway will be prepared to attain the following credential:

- *Autodesk Inventor Certified User **Advanced***

Depending upon coursework selected from the Additional Courses list, students may also be prepared to attain the following credentials:

- *Autodesk AutoCAD **Basic***

### STEM DIPLOMA SEALS

#### GOLD SEAL

Students will earn a Gold STEM Diploma Seal by satisfying the requirements for a Silver STEM Diploma Seal and completing four additional courses from the Qualifying Course list.

#### SILVER SEAL

Students who successfully complete four of the required courses will earn a Silver STEM Diploma Seal.

# STEM PATHWAY

**CORE COURSES:**



**MATH**



**SCIENCE**

Required Courses (choose 4)					
Course Title	Course Code	Carnegie Credits	CTE 6%	CDF 6%	5-Point Scale
PLTW Intro to Engineering Design	110802	1	✓	✓	
PLTW Principles of Engineering 	080109	1	✓	✓	
PLTW Engineering Design and Development	110862	1	✓	✓	
<b>One Specialization Course:</b> Computer Integrated Manufacturing, PLTW Civil Engineering and Architecture, <b>OR</b> AP Computer Science Principles	Computer Integrated Manufacturing 110850	1	✓	✓	
	PLTW Civil Engineering and Architecture 110841	1	✓	✓	
	AP Computer Science Principles 061177	1	✓	✓	
Additional Courses (choose an additional 4)					
Course Title	Course Code(s)	Carnegie Credits	CTE 6%	CDF 6%	5-Point Scale
PLTW Aerospace Engineering	110831	1	✓	✓	
PLTW Civil Engineering and Architecture	110841	1	✓	✓	
AP Computer Science Principles	061177	1	✓	✓	
PLTW Digital Electronics	110821	1	✓	✓	
PLTW Environmental Sustainability	312098	1	✓	✓	
Computer Integrated Manufacturing	110850	1	✓	✓	
Calculus: AP Calculus AB <b>OR</b> BC 	AP Calculus AB 160327	1			✓
	AP Calculus BC 160328	1			✓
Statistical Reasoning <b>OR</b>	Statistical Reasoning 165031	1			
Probability and Statistics: AP Statistics 					
AP Computer Science A 	061175	1	✓	✓	✓
Chemistry I: DE - CCEM 1103 Chemistry I, Chemistry II, <b>OR</b>	Chemistry (DE) 150414	1			✓
	Chemistry II 150402	1			
Chemistry II: AP Chemistry 	AP Chemistry II 150410	1			✓
Physics I: AP Physics I- Algebra Based, Physics: AP Physics II - Algebra Based, AP Physics C: Electricity and Magnetism, <b>OR</b> AP Physics C: Mechanics 	AP Physics I 150724	1			✓
	AP Physics II 150725	1			✓
	AP Physics C: Elec 150794	1			✓
	AP Physics C: Mec 150795	1			✓
Environmental Science <b>OR</b> Environmental Science: AP Environmental Science 	Environmental Science 150310	1			
	AP Environmental Science 150311	1			✓
For Jump Start Tops Tech Diploma: Required Career Readiness Courses (1)					
Course Title	Course Code(s)	Carnegie Credits	CTE 6%	CDF 6%	5-Point Scale
Quest for Success	080411	1	✓	✓	
Agriscience I	010301	1	✓		
Jobs for America's Graduates I	042010	1	✓	✓	

**DE:** Dual Enrollment, **AP:** Advanced Placement