

RTTT Career and Technical Education STEM Program Descriptions

| | |
|---|--|
| Program Title | Pathways to Engineering (PLTW) 9400300– Biotechnical Engineering |
| CTE Courses and Descriptions | <p>In this program, students are required to complete the three core courses plus their pathways course. The core courses prepare students for the rigor of the pathways courses.</p> <p>8600550 Introduction to Engineering Design 8600520 Principles of Engineering 8600530 Digital Electronics 8600630 Biotechnical Engineering - This program applies and concurrently develops secondary level knowledge and skills in biology, physics, technology, and mathematics. It includes experiences from the fields of Biotechnology, Bioengineering, Biomedical engineering, and Biomolecular engineering.</p> |
| Integrated Core Course(s) | Biology, Algebra |
| Teacher Certification(s) | Technology Education (TECH ED) Teacher must complete Project Lead The Way training for each course. |
| Industry Certification(s) | Autodesk Certified Associate – Inventor (ADESK024) |
| Number of Articulated Credits | None, although there are a number of universities and technical colleges nationwide that grant credit for completion of the PLTW curriculum. The University of South Carolina offers 3 semester hours of college credit per course for Introduction to Engineering Design, Principles of Engineering, and Digital Electronics. |
| Implementation Costs | <p>Startup Costs (approximate): \$122,000 This is a turnkey 20-seat estimate and includes computers, software, peripheral equipment, furniture, course-specific equipment, textbooks, and training for one teacher. This estimate does not include any instructional technology items such as smart boards, computer projection devices, etc.</p> <p>Recurring Costs (approximate): \$8,200 This includes software lease renewals and replacement consumables.</p> |
| Recommended Feeder Programs/Course | <p>It is recommended that districts also implement Gateway to Technology (GTT), an activities oriented PLTW middle school program to engage students and ensure their readiness for the Pathways to Engineering program. Taught in conjunction with a rigorous academic curriculum, this program consists of the following independent nine-week units: <i>Design and Modeling, Magic of Electrons, Science of Technology, Automation and Robotics, Flight and Space, and Energy and the Environment.</i></p> <p>Startup Costs (approximate): \$105,000 This is a turnkey 26-seat estimate and includes computers, software, peripheral equipment, furniture, course-specific equipment, textbooks, and training for one teacher. This estimate does not include any instructional technology items such as smart boards, computer projection devices, etc.</p> <p>Recurring Costs (approximate): \$2,400 This includes software lease renewals and replacement consumables.</p> |

| | |
|----------------------|---|
| Program Title | Pathways to Engineering (PLTW) 9400300– Biotechnical Engineering |
| | <p>Districts are encouraged to incorporate the PLTW Aerospace Engineering curriculum for grades 3-5 students. Additional engineering activities will be made available students in grades K-2 to complete the Florida K-16 STEM pipeline.</p> <p>Startup Costs (approximate): \$50,000 This estimate does not include any instructional technology items such as smart boards, computer projection devices, etc.</p> <p>Recurring Costs (approximate): \$2,000 This includes replacement consumables.</p> |