



**What does the STEM cluster have to offer?**  
**Innovative and Engaging Courses**

State Developed Courses	Project Lead the Way Courses
Middle School Technical Education	Introduction to Engineering
Middle School Robotics	Principles of Engineering
Introduction to Technical Education	Digital Electronics
Aerospace Technology	Biotechnical Engineering
Alternate Energy Systems	Civil Engineering & Architecture
Aviation	Computer Integrated Manufacturing
Computer Assisted Drafting	Aerospace Engineering
Electronics	Engineering Design and Development (Capstone)
Engineering Design and Development	<b>Webpage</b>
Fundamentals of Engineering	The state developed courses can be found on the STEM Wiki page
Integrated Computer Manufacturing	( <a href="http://www.sdstem.wikispaces.com">www.sdstem.wikispaces.com</a> )
Introduction to Energy and Power	To learn more about becoming an approved program, please visit the South Dakota Department of Education Website ( <a href="http://doe.sd.gov/octe/index.asp">http://doe.sd.gov/octe/index.asp</a> )
Introduction to Engineering	
Mechatronics/Robotics	
Production Systems	

**Innovative Curriculum and Programming**

Program	Description	Web Page	Phone Number
Project Lead the Way	<p>Project Lead The Way (PLTW) Engineering and Biomedical Sciences programs offer students an array of advantages, from career readiness and hands-on experience to college preparatory-level classes, labs, and creative exercises. PLTW students succeed in the classroom and in life.</p> <p>Our programs are designed to appeal to all students, from those already interested in STEM-related fields, to those whose experience in the sciences and math has been less comprehensive or who find themselves uninterested in traditional STEM curricula.</p> <p>PLTW classes are hands-on, based in real-world experience, and fun for students and teachers. We set the highest standards for rigorous, focused, and engaging study, and develop students' innovative, collaborative, cooperative, and problem-solving skills.</p> <p>Our relationships with teachers, parents, local and national business leaders, and university partners allow us to offer a complete experience both for students wishing to pursue a secondary degree in a STEM-related field and for those planning</p>	<a href="http://www.pltw.org">www.pltw.org</a>	<p><b>Project Lead The Way,</b>            21 Corporate Dr,            Ste 105, Clifton Park, NY 12065-8463            Toll Free 877-335-PLTW (7589)   518-877-6491   fax 518-877-5892  </p>



	to join the workforce after high school. STEM literacy reduces dropout rates, increases attendance, and helps students find better-paying jobs after school.		
Aviation Project	Our partnering schools are actively searching for project-rich, science-based programs that can increase student achievement. We see aviation as the key to this puzzle. Aviation has the potential to capture the interest of students of all ability levels, and we are excited about the state standards that are currently under development. In the meantime, our teachers want guidance on how to start infusing aviation into their existing lessons. When the curriculum is broken down into elemental parts, we see just how transferable this knowledge can be. For example, students that understand the physics of flight will be able to see the relevance of wind energy, the power of turbines, the impact of the mechanical design, and the importance of electronics when monitoring such a system. Simply put: aviation presents teachers with dozens of opportunities for introducing project-based learning, all of which will increase scientific literacy in an engaging manner that the students will understand. Several pilots and the aviation faculty at SDSU have helped us develop the framework of a teachers' workshop that includes 13 hands-on lab experiences that would be easy to replicate in a classroom.		Call <b>Kristi Jackson</b> at East Dakota Educational Cooperative 715 East 14th Street   Sioux Falls, SD 57104 P: 605 367-7680   F: 605 367-6036
Real World Design Challenge	The Real World Design Challenge (RWDC) is an annual competition that provides high school students, grades 9 to 12, the opportunity to work on real world engineering challenges in a collaborative environment. Each year, student teams are asked to address a challenge that confronts one or more of our nation's leading industries. Students utilize professional engineering software to develop their solutions and generate presentations that convincingly demonstrate the value of their solutions. The RWDC provides students with opportunities to apply the lessons of the classroom to the technical problems that are being faced in the workplace.	<a href="http://www.realworlddesignchallenge.org/">http://www. realworldde signchallen ge.org/</a>	
Synergistics	<b>Hands-on, Real-world K-12 Curriculum in Science, Technology, Engineering, and Math</b> As the leading provider of age-appropriate, student-centered learning systems, we are committed to providing students with the most positive and meaningful learning experiences possible. Each system encourages students to take ownership of their learning and empowers teachers to facilitate a classroom unlike any other. Pitsco Education Missions delivers engaging, hands-on science experiences to elementary students, Pitsco Education Modules engages students at the middle-level grades, and Pitsco Education Suites provides innovative, team-based learning opportunities to high school students. Pitsco Education Career Ports provides real-world career exploration to high school students through virtual career internships. Pitsco Education Algebra is a two-course solution designed to address a critical need in education: helping students succeed in "the gateway course." Pitsco Education Curriculum: the revolution continues.	<a href="http://www.pitsco.com/">http://www. pitsco.com/</a>	Phone: 800-835- 0686 Fax: 800-533- 8104
FIRST Robotics	Our mission is to inspire young people to be science and technology leaders, by engaging them in exciting mentor-based programs that build science, engineering and technology skills, that inspire innovation, and that foster well-rounded life capabilities including self-confidence, communication, and leadership.	<a href="http://www.usfirst.org/">http://www. usfirst.org/</a>	
SDMyLife	My Life is an online comprehensive career guidance program. This guidance program provides career assessment tools, ACT Test Prep, student personal learning plan, and career information provided by multimedia interviews with people in every occupation.	<a href="https://www.careercruising.com/SD/default.aspx">https://www .careercruisi ng.com/SD/ default.aspx</a>	