



PSJA Thomas Jefferson T-STEM Early College High School

T-STEM Renewal Application

2018-2019

Contents

[Background](#)

[Contacts](#)

[Narratives](#)

[Download Assurances Signature Page](#)

Background

District Affiliation

PHARR-SAN JUAN-ALAMO ISD

DC #: 108909

Region: 01

Mailing Address (Line 1): P O BOX 1150

Mailing Address (Line 2):

City, State, Zip: PHARR, TX 78577

School Affiliation

PSJA THOMAS JEFFERSON T-STEM EARLY COLLEGE H S

CDC #: 108-909-009

Region:

Mailing Address (Line 1): 714 E BUSINESS HWY 83

Mailing Address (Line 2):

City, State, Zip: PHARR, TX 78577

Academy Information

T-STEM Academy Name:

PSJA Thomas Jefferson T-STEM Early College High School

What grade level range will your academy serve in the 2018-2019 school year?

9-12

Grade Level	Number of Students
9	200
10	210
11	240
12	190

Contacts

Business Partner

Affiliation: City of Pharr
Job Title: Economic Development Executive Director
Full Name: Mr. Victor Perez
Email: pedc@pharr-tx.gov
Phone Number: 956-402-4332

Superintendent

Job Title: Superintendent
Full Name: Dr. Daniel King
Email: drking@psjaisd.us
Phone Number: 956-354-2000

Applicant

Job Title: Principal
Full Name: Mrs. Virna Bazan
Email: virna.maldonado@psjaisd.us
Phone Number: 956-784-8525

IHE Liaison

Affiliation: South Texas College
Job Title: Director of Early College High Schools
Full Name: Ms. Sofia Pena
Email: sofia21@southtexascollege.edu
Phone Number: 956-872-2600

Narratives

Model Implementation

Which T-STEM model does the district intend to implement at this time? Within these models, there are variations. For this purpose campus is defined as a CDC number not a physical location.

Stand Alone Academy - All students on the campus are enrolled in the T-STEM academy

Endorsements

Identify the current endorsements that are offered:

- Science, Technology, Engineering, and Mathematics (STEM)
- Arts and Humanities
- Multi-disciplinary Studies

Industry Certificates

Identify all industry certificates offered to students.

Certificate	Description
Solidworks	Students learn how to use the engineering program
Microsoft Office Expert	Students acquire application software and digital literacy credentials for Microsoft
Cardio Pulmonary Recesitation	Students gain lifesaving skills that can help you respond to breathing and cardiac emergencies
Certified physical training	Students learn how to offer an individualized plan to train clients to improve their personal health and fitness
IRS Basic Exam, Intake Interview, Standard of Conduct	Students learn how to complete tax returns
Employability Skills	Helps students understand the expectations of employers
OSHA	Students learn the essentials of occupational safety and heakth in general industry worksites
Remote Pilot	Students learn the basics of how to pilot a drone
Multimedia	Students learn to the strategies and tactics used to prepare, create, edit and publish video files compatible with the web and mobile devices

Level One Certificates

Identify all level one certificates offered to students.

Certification	Description
Structural Welding	Prepares students for eerily level positions with skills in four welding processes (SMAW, GMAW, GTAW, and FCAW)
Architectural and Engineering Design Technology	Introductions to the field of architectural, visual and civil engineering technologies. It provides students basic knowledge for a wide range of disciplines in the design-build community.

Patient Care Assistant	Classroom Instruction and related clinical practice in the basic nursing care of adults, children, infants, and the elderly.
Combination Welding	Students gain knowledge in lay out and fabrication as well as blueprint reading, safety, and matalurgy. It includes SMAW, GMAW, GTAW and FCAW.
Precision Manufacturing Technology	Training on a variety of machine tools in area manufacturing shops with an emphasis on practical machining skills. General mathematics, communication skills and technical training.
Automotive Technology	Prepares students for entry-level employment in automotive service industry. Students gain knowledge in automotive systems and the skills to diagnose, troubleshoot, and repair.
Computer and Internet Specialist	Students acquire the foundation to use computers and the internet. They learn entry-level skills needed to use computer and internet technologies in a business environment.
Electrician Assistant	Prepares students to help assemble, install, test and maintain electrical systems. They gain knowledge in installation, diagnostics and regulation of various structural electrical systems.
Emergency Medical Technology	Students learn general anatomy and physiology, patient assessment, lifesaving procedures and administration of certain medications. Eligibility to apply to Texas for EMT Basic Certification
Applications Specialist	Students learn some of today's leading business applications.

Level Two Certificates

Identify all level two certificates offered to students.

Certification	Description
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Key Elements for Success

Provide a link to the job description, roles of design team, leadership team, and advisory board.

<https://www.psjaisd.us/tstem>

Provide a link to your mission statement.

<https://www.psjaisd.us/tstem>

Provide a link to the final, signed, and executed MOU.

<https://www.psjaisd.us/tstem>

Provide a link to the academy's master schedules.

<https://www.psjaisd.us/tstem>

Provide a link to the academy's Student IGPs with CCRS and Performance Acknowledgement Plans.

<https://www.psjaisd.us/tstem>

Provide a link to the academy's written admission policy and enrollment application.

<https://www.psjaisd.us/tstem>

Provide a link to the academy's written recruitment plan including a timeline of recruitment and enrollment events, and recruitment materials for distribution at feeder schools and other appropriate locations in the community

<https://www.psjaisd.us/tstem>

Provide a link to the academy's description of instruction practices.

<https://www.psjaisd.us/tstem>

Provide a link to the academy's STEM-focused extracurricular activities.

<https://www.psjaisd.us/tstem>

Provide a link to the academy's internship and externship opportunities.

<https://www.psjaisd.us/tstem>

Provide a link to the academy's Senior Capstone Project description.

<https://www.psjaisd.us/tstem>

Provide a link to the academy's Student Portfolio Plans.

<https://www.psjaisd.us/tstem>

Provide a link to the academy's Academic Literacy Plan.

<https://www.psjaisd.us/tstem>

Provide a link to the academy's Assessment strategy.

<https://www.psjaisd.us/tstem>

Free-Response

Describe how the Academy will recruit, support, and retain highly qualified teachers.

In order to build effective human capital systems, we have identified and implemented sustainability structures that recruit & support highly qualified teachers to minimize the challenges of staff turnover. Recruitment efforts are ongoing. Encouraging students to return to their high school to teach has had great success. Currently we have hired 3 alumni. Our district has placed great importance in our hiring practices. Applicants must undergo a 3 step process: first, they complete an on-line application; second, they are screened through a series of coaching and teaching sessions; thirdly, applicants meet with principal and/or committee for final recommendation. We have implemented a rubric to rate the prospect on role-specific behaviors to help identify highly qualified educators. Through the PSJA ISD New Teacher Institute (NTI), newly hired teachers are assigned to a mentor teacher at their campus where together they undergo a series of professional development days throughout the year. NTI also assigns a district and campus Instructional Coach who provide feedback, mentoring, and in-class support by sharing best practices. All teachers are provided with site based professional development focused on student achievement, campus culture, sustainability structures, and professional growth. In addition, Professional Learning Communities convene regularly allowing all teachers to provide input during common planning time and collaboratively select best practices to increase student results. PSJA Thomas Jefferson T-STEM ECHS provides growth and leadership opportunities for teachers utilizing the McREL observation and growth system. This teacher evaluation system provides guidance to perfect their craft by receiving two observations annually followed by coaching and feedback to afford guidance for professional growth and performance pay opportunities. PSJA ISD provides incentive pay for Master Level Teachers to encourage furthering their education and positively impacting instruction in their classrooms. In addition, teachers who teach a dual credit course receive a stipend from the district. Through our partnership with South Texas College (STC), PSJA ISD dual credit faculty receives multiple opportunities for professional development workshops, faculty advisor training, and department meetings. STC provides dual credit and adjunct faculty with support on the IHEs faculty expectations, resources, policies, procedures, and creating a college environment through the Developing Excellence in Learning and Teaching Academy (DELTA). PSJA Thomas Jefferson T-STEM ECHS and STC is committed to providing staff with the latest instructional tools and ongoing technical support in order to enhance classroom experience and retain highly qualified teachers.

Describe the current STEM pathways available at the academy.

PSJA Thomas Jefferson T-STEM Early College High School provides a high quality STEM focused curriculum for every student. We provide students with a high school-college-career continuum that helps them understand the direct links between what they are learning today and the worlds of college and work. The school's rigorous program is designed to inspire students to focus and strive. Along with requiring four years of mathematics and science, we support and encourage four years of electives that lead to endorsements in STEM and Public Service. We have developed guided pathways that are coherent and easy to follow programs of study aligned with requirements for success in employment and post-secondary coursework. Our most established pathway is STEM. It consists of a sequence of four courses in mathematics, science, engineering or computer science . Through our Career Technical Education Program students complete their Engineering Pathway by successfully completing coursework in Principles of Engineering, Electronics, Robotics and Engineering Math. The Computer Science Pathway includes Principles of Information Technology, Cyber Security, Computer Programming and Advanced Computer Programming. Offering math classes in an accelerated block schedule allows all students the opportunity to earn the mathematics endorsement while simultaneously pursuing another. The series of courses required in the Mathematics Pathway are Algebra II, Pre-Calculus and AP Calculus AB. Students can complete the Science Pathway by mastering Chemistry, Physics, AP Biology and Anatomy & Physiology courses. Under the Public Service Pathway, our students complete a Health Science Endorsement after achieving satisfactory grades in Principles of Health Science, Forensic Science, Medical Microbiology and Medical Microbiology. Additionally, we offer the following industry certifications: OSHA 10-Hour General, CPR, First Aid, OSHA CyberAwareness, MTA WOS, MTA Security Fundamentals. Furthermore, some of our teachers offer integrated certificates in partnership with South Texas College such as Employability Skills, Remote Pilot, Microsoft and Solidworks. Living the T-STEM blueprint and PSJA's district vision of having all students College Ready, College Connected, and College Complete, has provided our students the benefit of a rich STEM curriculum and the support systems needed to turn college and career dreams into reality.

Describe how strategic alliances with industry partners and IHEs will support the Academy. The description should include details regarding the role of each IHE, business, and/or community partnership; along with parent/family partnerships and communication conventions with the Academy.

As we continue to grow our strategic alliances, students are reaping the benefits. At PSJA Thomas Jefferson T-STEM Early College High School, we truly believe in strengthening our partnerships with all stakeholders. We are continuously working to maintain strong relationships with community partners to improve student achievement and increase opportunities for families to remain actively engaged in their child's learning. Our on-site parental engagement center is led by our parent educator who is solely responsible for connecting families to school. Monthly meetings and specialized events help parents understand the schools mission. We offer College Success Workshops for parents, students and interested community members that provide information about STEM degrees, STEM endorsements, careers, universities, financial aid, scholarships, testing and graduation. Our district partners such as Doctors Hospital at Renaissance, Tropical Texas Behavioral Health Service Center, Boys & Girls Club, the Pharr Police Department, Food Bank, Salvation Army and City of Pharr contribute their expertise at the workshops by providing families with knowledge that can enhance their living conditions and ultimately support an early college student. Our IHE partner, South Texas College offers our staff regular professional growth opportunities. They provide administrators and counselors frequent updates on policies and procedures. They participate in school or district sponsored meetings, events and conferences. Their support is instrumental in achieving our goals and school mission. Business partners such as City of Pharr, Wells Fargo, Double Tree Suites by Hilton offer our school support in ways like externships & internships, guest speaker services and presentations. Most recently, Wells Fargo has offered classes to students about finance and savings. This experience has encouraged students to pursue a mathematics degree and to open a checking or savings account. It is a win-win relationship between our school and the banking industry. Our students continue to intern in local businesses as well as within our district. Students following the technology pathway seem to be the most sought after. They help our district MIS department as well as the City of Pharr with networks and cyber defense. Working with our students, the local business and industry partnerships have increased. Placing students in what they are most passionate about makes all the difference. PSJA Thomas Jefferson continues to network and build relationships with parents, community members and business owners through advisory board meetings, special event invites, celebratory breakfasts or luncheons as well as recognition banquets. Several outreach strategies such as social media, brochures, email, call -messenger, local media outlets, and our district television channel are all utilized to keep all stakeholders informed. PSJA Thomas Jefferson T-STEM Early College High School is committed to supporting students by strategically aligning the schools goals with those of our district, IHE, parents, community and local business and industry.

Describe the Academy's work-based and contextual learning in the curriculum.

We make learning meaningful at PSJA Thomas Jefferson T-STEM Early College High School. We believe in providing rigorous and relevant classroom experiences to every student. Student voice and student choice drive our lessons and extra-curricular activities. We draw upon students diverse skills, interests, experiences and cultures to integrate them in our teaching and learning practices. Project Based Learning is a common practice in our classes. In our engineering classes, students designed a plan for a nearby retention pond. They created a proposal with all the engineering design elements needed to begin construction. The students designed their plan using Solidworks software and presented their proposal to faculty before showcasing their work to the community. The best project was sent to our districts school board for approval. There is evidence of relevant learning like the Engineering PBL in every class. Students work on recycling and gardening through interdisciplinary study. Students learn how to save money and open a bank account in their math and project based research classes. Senior capstone projects in a STEM related area is required of every senior student. Students select a topic and develop a project proposal, select a mentor, conduct research and fieldwork, develop a product, and present their results to a panel of judges. Through the CTE pathway and endorsement courses, students are exposed to STEM related fields in Health Science, Engineering, Technology, and Mathematics. Students are challenged to think critically, innovatively, and solve real-world contextual problems in collaborative learning groups (i.e. Robotics/Automation, CyberSecurity, Verizon Applications Challenge, Senior Capstone Projects). Teachers use technology to enhance instruction, curriculum and learning (i.e. mini iPads, "Bring Your Own Device", Edmodo, Schoology, Kahn Academy, TSI Online tutorials, Remind App 101, Home Access Center, and social media). Dual credit courses such as Biology AP/DC, Engineering DC, Computer Science DC, Anatomy and Physiology DC, Microbiology DC, General Chemistry DC, Organic Chemistry DC, Professional Communication DC, and career technical education STEM endorsement courses require extensive technology use and scientific literacy. Lessons in all content areas are required to incorporate collaboration, critical thinking, communication and creativity to ensure that they are workforce ready. Workforce Solutions works closely with our teachers to enhance connections between academics and employment. The faculty at PSJA Thomas Jefferson continues to take part in summer externships with local businesses to implement work-based learning in the classroom. Teachers, counselors and administrators are afforded the opportunity to take part in week long externships to further promote career readiness. Students participate in an ongoing, sequenced workplace learning curriculum informed by current and future industry standards that include career goals, mentoring, guest speakers, workplace visits and internships. PSJA Thomas Jefferson T-STEM Early College High School is steadfast on strengthening the continuum from school to college and career.

Describe the STEM-focused extracurricular activities (field experiences, clubs, and competitions) offered to students.

PSJA Thomas Jefferson offers numerous STEM activities including competitive programs such as FIRST Robotics, Cyber Patriots, Health Occupations Students of America (HOSA), UIL Science, UIL Number Sense, UIL Mathematics & Accounting, UIL Chemistry, UIL Current Issues and Events, UIL Calculator Applications and UIL Computer Science. Students are provided field experiences through community service projects and capstone internships in clinics, hospitals, butterfly sanctuaries, food bank, recycling centers, nursing homes and 5k races. Often clubs are created due to necessity, as is the case of The Titan Drones, a technology help desk that provides practical experience for our computer literate students and assistance to our technically challenged staff. We work hard to link every student to a club or organization through various activities like an annual club fair. The fair serves to connect all students to all of our school clubs. Almost every staff member sponsors a club related to their subject matter or special interest such as Envirothon, science club, math club and/or chess club. Most of the clubs and organizations we offer to our students are an extension of their classes which reinforces content through relevant work. If we do not have a club students want, students may make arrangements with the school secretary to propose an idea to a select committee that includes the principal. After careful review, almost always their club is formed. We understand the importance of social skills and their connection to extra-curricular activities. PSJA Thomas Jefferson faculty strives to help students reach their highest potential by providing quality experiences in both competitive and non-competitive clubs.