2020-2022 P-TECH and ICIA Planning and Implementation Grant
COMPETITIVE GRANT Application Due 5:00 p.m. CT, December 10, 2019

Texas Education Agency

NOGA ID

Authorizing legislation: **General Appropriations Act, Article III, Rider 66, 86th Texas Legislature**

Applicants must submit one original copy of the application **and** two copies of the application (for a **total of three copies of the application**). All three copies of the application MUST bear the signature of a person authorized to bind the applicant to a contractual agreement. **Applications cannot be emailed.** Applications must be received no later than the above-listed application due date and time at:

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Grant period from **March 1, 2020 to July 8, 2022**

[X] Pre-award costs are not permitted.

Required Attachments

1. Attachment 1 (as detailed on page 14 of the Program Guidelines)
2. Attachment 2 (as detailed on page 14 of the Program Guidelines)

Amendment Number

Amendment number (For amendments only; enter N/A when completing this form to apply for grant funds):

Applicant Information

Organization	San Antonio ISD (SAISD)	CDN	015907	Vendor ID	74-2861587	ESC	20	DUNS	069451631
Address	141 Lavaca St.	City	San Antonio	ZIP	78210	Phone	210-554-2280		
Primary Contact	Johnny Vahalik	Email	jvahalik1@saisd.net	Phone	210-554-2610				
Secondary Contact	John Strelchun	Email	jstrelchun@saisd.net	Phone	210-554-2535				

Certification and Incorporation

I understand that this application constitutes an offer and, if accepted by TEA or renegotiated to acceptance, will form a binding agreement. I hereby certify that the information contained in this application is, to the best of my knowledge, correct and that the organization named above has authorized me as its representative to obligate this organization in a legally binding contractual agreement. I certify that any ensuing program and activity will be conducted in accordance and compliance with all applicable federal and state laws and regulations.

I further certify my acceptance of the requirements conveyed in the following portions of the grant application, as applicable, and that these documents are incorporated by reference as part of the grant application and Notice of Grant Award (NOGA):

- [X] Grant application, guidelines, and instructions
- [X] General Provisions and Assurances
- [X] Application-specific Provisions and Assurances
- [X] Debarment and Suspension Certification
- [X] Lobbying Certification
- [X] ESSA Provisions and Assurances requirements

Authorized Official Name	Pedro Martinez	Title	Superintendent of Schools
Email	pmartinez1@saisd.net	Phone	210-554-2200
Signature		Date	12/06/2019
Grant Writer Name	Hannah Sullivan	Signature	Hannah Sullivan
		Date	12/06/2019

(•) Grant writer **is** an employee of the applicant organization. ( ) Grant writer is **not** an employee of the applicant organization.

2020-020847

701-20-106-009

Shared Services Arrangements

[X] Shared services arrangements (SSAs) are **not** permitted for this grant.

Identify/Address Needs

List up to three quantifiable needs, as identified in your needs assessment, that these program funds will address. Describe your plan for addressing each need.

Quantifiable Need	Plan for Addressing Need
Traditionally, Highlands High School students are primarily Hispanic or Black (97%), economically disadvantaged (89%), and At Risk of quitting school (84%). The P-TECH Academy will provide students with opportunities for high-demand, high-wage careers.	To support students' career pursuit of high-demand, high-wage occupations, SAISD's Aerospace, Engineering, and Manufacturing P-TECH (Highlands P-TECH) will offer students a pathway to a career in Aviation Mechanics, Engineering, or Advanced Manufacturing, regardless of the students' circumstances, English language proficiency, or failure of a state administered assessment.
Highlands High School's Class of 2018 had a TSI passing rate of 15.8% for all 3 areas (Math, WR, RD, Science, Social Studies). Students also lack knowledge of college admittance and entry requirements.	To increase Highlands High School students' college and career readiness, Highlands P-TECH will provide its students with the ability to obtain an Associates degree or up to 60 hours of tuition-free college credit as well as industry certifications, in addition to their Diploma, at no cost to the students or families.
Texas and San Antonio are currently lacking an adequately trained workforce in major industries, including Advanced Manufacturing, Machinery Mechanics, and Engineering (2019, WSA).	The Highlands P-TECH will prepare the future aerospace, engineering, and manufacturing workforce to meet rising regional workforce demands (+ 8% - 19% by 2024). Highlands P-TECH will provide relevant work-based learning experiences such as hands-on skill training with industry mentors from local employers.

SMART Goal

Describe the summative SMART goal you have identified for this program (a goal that is Specific, Measurable, Achievable, Relevant, and Timely), either related to student outcome or consistent with the purpose of the grant.

San Antonio Independent School District (SAISD) seeks a planning and implementation grant to establish an Aerospace, Engineering, and Manufacturing P-TECH program at Highlands High School. In partnership with St. Philip's College and the Texas Federation for Advanced Manufacturing Education (TX FAME), SAISD's Career, College, and Military Readiness (CCMR) Department and Highlands High School will spend School Year 2020-2021 planning the P-TECH School; deliver an implementation plan by April 2021; and execute a P-TECH implementation plan and establish the school-within-in-school Aerospace, Engineering, and Manufacturing P-TECH at Highlands High School (Highlands P-TECH) with its inaugural 9th grade class starting in School Year 2021-2022.

Measurable Progress

Identify the benchmarks that you will use at the end of the first three grant quarters to measure progress toward meeting the process and implementation goals defined for the grant.

First-Quarter Benchmark

SAISD and the Highlands P-TECH Team will complete the following for the first grant quarter: MAR 1 2020 - OCT 2, 2020

1.1. Draft Memorandum(s) of Understanding between SAISD and St. Philip's College;
1.2. Draft Memorandum(s) of Understanding between SAISD and TX FAME;
1.3. Draft Articulation Agreements between SAISD and St. Philip's College;
1.4. Begin and document P-TECH Leadership Design Team meetings to review project goals and milestones as well as establishing a detailed project timeline;
1.5. Document meetings between SAISD, St. Philip's College, TX FAME, and Workforce Solutions Alamo; and
1.6. Establish a Highlands P-TECH Recruitment and Enrollment Plan.

Measurable Progress (Cont.)

Second-Quarter Benchmark

SAISD and the Highlands P-TECH Team will complete the following for the second grant quarter: OCT 3, 2020 - MAY 6, 2021

2.1. Continue documenting Leadership Design Team meeting minutes, as appropriate;
2.2. Continue documenting progress on curriculum alignment between SAISD and St. Philip's College;
2.3. Provide relevant and necessary professional development, procure necessary supplies and materials, and other expenses related to the planning and implementation of the Highlands P-TECH program;
2.4. Hire the Work-Based Learning Coordinator by January 2021;
2.5. Establish 9th Grade Work-based Learning Experience lesson plans in partnership with industry and pacing guide; and
2.6. Create an annual Highlands P-TECH Teacher training schedule.

Third-Quarter Benchmark

SAISD and the Highlands P-TECH Team will complete the following for the third grant quarter: MAY 7, 2021 - DEC 8, 2021

3.1. Host Summer Bridge Program for incoming 9th Grade Highlands P-TECH students;
3.2. Continue documenting Leadership Design Team meeting minutes, as appropriate;
3.3. Finalize Memorandums of Understanding(s) and Articles of Articulation among Highlands P-TECH partners;
3.2. Continue training Highlands P-TECH teachers in relevant instruction, as appropriate;
3.3. Enroll a projected 120 9th Grade Highlands P-TECH students in SY 2021-2022;
3.4. Review Beginning of Year (BOY) Highlands P-TECH student outcomes and establish baseline; and
3.5. Establish 10th Grade Work-based Experience lesson plans in partnership with industry and pacing guides.

Project Evaluation and Modification

Describe how you will use project evaluation data to determine when and how to modify your program. If your benchmarks or summative SMART goals do not show progress, describe how you will use evaluation data to modify your program for sustainability.

The Leadership Team utilizes the District Improvement Plan, Campus Improvement Plan, and Program Improvement Plan that encompasses best practices of collecting data, reviewing multiple measures of data, setting goals, and creating action plans. District student information systems allow for multiple quantitative, outcome-based measures of data to be routinely collected and reviewed. Student-level academic data for Highlands P-TECH, including achievement and attendance, will be stored in a comprehensive internal database and tracked every three weeks using SAISD's long-established data collection procedures. Highlands personnel will be identified to ensure students' daily attendance, grades, standardized test scores, graduation rates, and college enrollment rates are recorded and reported to SAISD Office of Accountability, Research, Evaluation, and Testing (ARET) throughout each year. ARET personnel will analyze all of this data to determine P-TECH's impact on these traditional measures of student success at least twice each year.

Bi-monthly Leadership Design Team meetings will provide opportunities for the Highlands P-TECH Team to ensure that any problems with project implementation are addressed immediately via leadership and directives from Superintendent Pedro Martinez. The Highlands P-TECH Team will ensure all benchmarks and milestones are met or amended, as necessary. Action plans developed by the P-TECH Team to ensure interventions that seamlessly support students, measurable outcomes, and progress towards goals. Additionally, Highlands P-TECH and St. Philip's College will track and measure student's progress to ensure Outcomes-Based Measurements are met. Industry specific project-based learning lessons, including integrated work-based learning through industry engagement, will be designed, reviewed annually, and approved by the Leadership Team consisting of both college and industry partners. Further, a dedicated Highlands P-TECH database will track student and industry engagement, including mentorships, externships, and work-based learning interactions, to provide data and improve the quality of engagements. Finally, work-based learning experiences will be monitored, evaluated, and modified as necessary to increase student engagement and interest in high-demand, high-wage regional occupations.

Statutory/Program Assurances

The following assurances apply to this grant program. In order to meet the requirements of the grant, the grantee must comply with these assurances.

Check each of the following boxes to indicate your compliance.

☒ The applicant provides assurance that program funds will supplement (increase the level of service), and not supplant (replace) state mandates, State Board of Education rules, and activities previously conducted with state or local funds. The applicant provides assurance that state or local funds may not be decreased or diverted for other purposes merely because of the availability of these funds. The applicant provides assurance that program services and activities to be funded from this grant will be supplementary to existing services and activities and will not be used for any services or activities required by state law, State Board of Education rules, or local policy.

☒ The applicant provides assurance that the application does not contain any information that would be protected by the Family Educational Rights and Privacy Act (FERPA) from general release to the public.

☒ The applicant provides assurance to adhere to all Statutory Requirements and TEA Program Requirements as noted in the 2020-2022 P-TECH and ICIA Planning and Implementation Program Guidelines.

☒ The applicant provides assurance to adhere to all Performance Measures, as noted in the 2020-2022 P-TECH and ICIA Planning and Implementation Program Guidelines, and shall provide the Texas Education Agency, upon request, any performance data necessary to assess the success of the program.

☒ The grantee will develop a P-TECH and ICIA Implementation Plan, based on the P-TECH and ICIA Blueprint and in the template format to be provided by TEA, which will be submitted to TEA for review and approval prior to applying for the 2021-2022 P-TECH and ICIA designation.

THE FOLLOWING ASSURANCES ARE REQUIRED BY STATUTE:

☒ P-TECH and ICIA schools will provide participating students with flexibility in class scheduling and academic mentoring.

☒ The P-TECH and ICIA school will be open enrollment. Enrollment decisions will not be based on state assessment scores, discipline, history, teacher recommendations, minimum grade point average (GPA) or any other criteria that create barriers for student enrollment.

☒ P-TECH and ICIA schools will allow participating students to complete high school and, on or before the sixth anniversary of the date of the student's first day of high school: receive a high school diploma, an associate degree, a two-year postsecondary certificate, or industry certification; and complete work-based education through an internship, apprenticeship, or other job training program.

☒ P-TECH and ICIA program will be provided at no cost to participating students.

☒ P-TECH and ICIA schools will ensure that the students are entitled to the benefits of the Foundation School Program in proportion to the amount of time spent by the student on high school courses, in accordance with rules adopted by the commissioner, while completing the program/course of study established by the applicable IHE articulation agreement or Industry/Business Partner memorandum of understanding.

Statutory Requirements

1. Describe the recruitment and enrollment plan. Include a general timeline and describe the specific activities planned to serve the target population.

Highlands P-TECH will operate as Choice School-within-a-School with open enrollment that offers school-wide programmatic models and pedagogical philosophies aligned with national best practices. Annually, Choice Schools' entry occurs through an application and selection process managed by the SAISD Office of Access and Enrollment Services. Highlands P-TECH will utilize a blind, computerized lottery process to ensure the program does not exclude or discourage subpopulations of SAISD students. Early-phase activities (Aug. 2020 - Oct. 2020) include planning meetings to determine seat availability, review of administrative procedures, overview of Choice process, timeline, recruitment, and requests for marketing materials. Late-phase activities (Nov. 2020 - Mar. 2021) include parent information sessions, opening the application window, presenting at the District-wide showcase and resource fair, hosting "mini fairs" to 8th grade students, host visitors and student shadows for Tour week, closing the application window, then finalizing acceptances and waitlists.

Statutory Requirements (Cont.)

2. Describe the course of study that the school is planning to offer and how it expands upon current offerings. Include how the course of study will enable a student to combine high school courses and postsecondary courses and identify crosswalks, sequence of courses, degrees/certificate/certifications earned, and work-based education that will be available to students at every grade level. Describe how the selected course of study will address regional workforce needs.

Highlands P-TECH will expand the existing engineering pathway to offer 3 distinct programs of study, each aligned to workforce needs and based on program capacity of the IHE (e.g. student capacity of 50 for the St. Philip's Advanced Manufacturing program). All programs emphasize outcomes required for success in high-wage, high-demand STEM industry clusters in identified regional workforce needs. Core skills identified by industry partners include mechanics, computer-aided drafting, and electronics. Having 3 programs with shared core skills and three distinct outcomes will also allow for student flexibility based on interest and academic levels (TSI readiness, calculus readiness, post-secondary goals, etc.). In the Engineering program of study students will pursue coursework that aligns with St. Philip's Field of Study Voluntary Transfer Compact for transfer to a 4-year university engineering program. In the Advanced Manufacturing program of study students will pursue an Associates of Applied Science (AAS) in Advanced Manufacturing and Technology (AMT). In the Aerospace program of study, students will pursue an Associates of Applied Science (AAS) in Aircraft Technician Airframe or Powerplant. Industry certifications available to Highlands P-TECH students will include: OSHA 30 Hour Safety; AutoDesk AutoCAD and Inventor; MSSC Certified Production Technician; FAA Part 107 Drone Pilot; as well as Aircraft Mechanic Level 1 and Level 2 Certificates. St. Philip's College will award students with occupational skills award(s), Level I-II certificate(s), and/or an AAS. Highlands P-TECH students will be provided with a college degree plan that will provide the pathway leading to the target AAS degree, stackable Level I or Level II certificates related to the AAS degree, related industry certifications, and corresponding high school diploma resulting from the sequence of courses that prepare students for high-wage, high-demand career fields. Students will begin taking dual credit CTE courses as early as 9th grade. The P-TECH Team will work with industry partners and the IHE to develop the course sequence that best aligns with the associates degrees and industry certifications. This program of study will prepare students to pursue careers aligned to Alamo regional in-demand occupations including: Engineers, Electrical and Electronic Engineering Technicians; Mechanical Engineering Technicians; Engineering Technicians, Ex. Drafters; Aircraft Mechanics and Service Technicians; Industrial Machinery Mechanics; and Maintenance and Repair Workers.

3. Name the IHE and describe how the proposed program will meet the requirements for the partnership with the IHE.

Through an articulation agreement and MOU, SAISD's Highlands P-TECH and St. Philip's College will develop a course of study plan for grades 9-12 which meets the requirements of Applicable Law, provides a seamless transition for students from grade level to grade level, allows students to transition from high school classes to a gradual integration of college level courses with high levels of rigor, acceleration, and support. The plan provides a pathway to a certificate, associate, or baccalaureate degree whose courses and fields of study are as followed by the Texas Higher Education Coordinating Board, Lower Division Academic Course Guide Manual and/or courses required for Level I or II certificates.

Additionally, St. Philip's College Academic Chairs, or faculty liaison, alongside the campus Principal and SAISD CCMR Department are responsible for working with P-TECH faculty to develop and refine a clear, coherent academic program across the two institutions for curriculum alignment. The Dual Credit P-TECH course curriculum will include principles of leadership with the same curriculum at the same level it is included in the College's curriculum.

SAISD will provide all required course materials needed for enrollment to classes for high school graduation credit and college-level texts. The instructional calendar for the high school portion of P-TECH, based on the School District calendar, will comply with all related TEA regulations for school attendance. SAISD will adjust its schedule as necessary to enable P-TECH students to enroll in and attend college-level courses at St. Philip's. Other components to be coordinated include State testing examinations and requirements as well as grading periods and policies. During days when the two institutions are out of alignment on days of operation, and students must attend classes in-session at St. Philip's, SAISD will provide at least one staff member with administrative authority to be present in the case of an emergency.

Statutory Requirements (Cont.)

4. Name the regional industry or business partner and describe how the proposed program will meet the requirements for the partnership with the industry/business partner.

TX FAME's mission is to drive workforce development initiatives across Bexar County by collaborating with companies, such as Toyota Motor Manufacturing, CPS Energy, H-E-B, Joyson Safety Systems, Toyotetsu America, Kautex, Metalsa, C.H. Guenther & Son, and Caterpillar, Inc., to provide valuable work experience and hands-on instruction. It is TX FAME's primary focus to develop and grow a skilled pipeline of workers through the engagement of the current and future workforce in partnership with the regional industry partners and the community.

Highlands P-TECH will provide the building blocks of work-based and contextual learning for all students at each grade level. Our regional industry/business partner, TX FAME, will support Highland P-TECH's work-based and contextual learning for students through: industry mentorships, on-site and virtual job shadow days, paid internships, project-based learning (PBL), and college credit provisions. Students will meet with individually-assigned mentors for academic and career support as well as explore industry-related topics and careers through PBL assignments.

TEA Program Requirements

1. Describe the current leadership team. Include a list of the individuals and their titles, along with how often the leadership team will meet, the dates of meetings that have already been held, any upcoming meetings, and agenda topics.

The Highlands P-TECH Leadership Team (PLT) consists of high-level, decision-making personnel from SAISD, Highlands HS campus, industry/business partners, and IHE leadership. It is the responsibility of the PLT to oversee the design, governance, operations, accountability, curriculum development, professional development,.outreach, sustainability, and continual monitoring and improvement of Highlands P-TECH. The current Highlands PLT consists of: Pedro Martinez, Superintendent of Schools (SAISD); Johnny Vahalik, Senior Executive Director of College, Career, and Military Readiness (SAISD); Konise Millender, Career and Technical Education Coordinator (SAISD); Michelle Garcia, P-TECH Coordinator (SAISD); Dr. Adena Loston, President (St. Philip's College); Edith Orozco, Business Information Solutions (St. Philip's College); Dr. Karlene Fenton, Director of High School Programs (St. Philip's College); Daniel Girard, Assistant Superintendent of School Leadership (SAISD); Randall Dawson, Vice President for Academic Success (St. Philip's College); Dr. Julio Garcia, Principal of Highlands HS (SAISD); Dr. Penny Pruitt, Associate Principal of Highlands HS (SAISD); Elizabeth Ozuna, Director of Advanced Academics and Post-Secondary Success (SAISD); and the TX FAME Board Members (Industry Partners). The Highlands PLT has not yet met all at once, but key stakeholders have been meeting monthly among all project partners from Spring 2019 to Fall 2019. Future meetings will be continued monthly. Agenda topics include: overall school design, curriculum alignment, crosswalks, required program equipment, summer bridge programming, mentorships, recruitment and enrollment activities, advisory council meetings, work-based learning, student support services, and community engagement.

2. Describe the current wrap-around strategies and services the campus is offering, as well as the additional strategies and services that are planned to support P-TECH.

Highlands P-TECH will use multiple wrap-around support strategies including the campus-based College and Career Hub staffed by five advisors, UT Outreach, Upward Bound Math & Science program, Communities in Schools, a Family and Community Engagement Specialist, a Social Worker, a Counseling Team, a Behavior Specialist, a Restorative Practices Team, and an Attendance and Retention Specialist. To support students academically, the Highlands Summer Bridge program will provide Texas Success Initiative (TSI) preparation; AVID courses including time management and organizational skills; individual course tutorials throughout the school year; ongoing parent and student conferences and outreach events; as well as the Upward Bound Math and Science program. To support students individually, Career and college exploration throughout school year, personal graduation plans, post-secondary goals, professional skill development, college and career hub services with college bound advisors, student support services from St. Philip's College. To support students' technical skill development, the summer bridge program will include workplace safety skills training, industry advisory council for skill-gap identification, equipment and software training workshops, industry-based mentorship program, work-based learning opportunities including internships, guest speakers, and job shadows. Further, the Highlands P-TECH will embed skill building for professionalism, written and oral communication, technology literacy, self-evaluation, and goal setting.

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Equitable Access and Participation

Check the appropriate box below to indicate whether any barriers exist to equitable access and participation for any groups that receive services funded by this grant.

- (•) The applicant assures that no barriers exist to equitable access and participation for any groups receiving services funded by this grant.
- ( ) Barriers exist to equitable access and participation for the following groups receiving services funded by this grant, as described below.

Group		Barrier	
Group		Barrier	
Group		Barrier	
Group		Barrier	

PNP Equitable Services

Are any private nonprofit schools located within the applicant's boundaries?

(•) Yes ( ) No

If you answered "No" to the preceding question, stop here. You have completed the section. Proceed to the next page.

Are any private nonprofit schools participating in the grant?

(•) Yes ( ) No

If you answered "No" to the preceding question, stop here. You have completed the section. Proceed to the next page.

5A: Assurances

- [x] The LEA assures that it discussed all consultation requirements as listed in Section 1117(b)(1) and/or Section 8501(c)(1), as applicable, with all eligible private nonprofit schools located within the LEA's boundaries.
- [x] The LEA assures the appropriate Affirmations of Consultation will be provided to TEA's PNP Ombudsman in the manner and time requested.

5B: Equitable Services Calculation

1. LEA's student enrollment	48,335
2. Enrollment of all participating private schools	305
3. Total enrollment of LEA and all participating PNPs (line 1 plus line 2)	48,640
4. Total current-year grant allocation	200,000
5. LEA reservation for direct administrative costs, not to exceed the grant's defined limit	0
6. Total LEA amount for provision of ESSA PNP equitable services (line 4 minus line 5)	200,000
7. Per-pupil LEA amount for provision of ESSA PNP equitable services (line 6 divided by line 3)	4
LEA's total required ESSA PNP equitable services reservation (line 7 times line 2)	1,254

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Request for Grant Funds

List all of the allowable grant-related activities for which you are requesting grant funds. Include the amounts budgeted for each activity. Group similar activities and costs together under the appropriate heading. During negotiation, you will be required to budget your planned expenditures on a separate attachment provided by TEA.

	Description of Activity or Cost	Amount Budgeted
	Payroll Costs	
1.	Work-Based Learning Coordinator (18 months of Salary & Benefits, January 2021 - July 2022)	$121,542
2.	Substitute Pay (e.g. for events, conferences, trainings, etc.)	$10,000
3.	Extra-Duty Pay (e.g. Teacher tutoring and student interventions)	$991
4.		
	Professional and Contracted Services	
5.	Planning and Implementation Consulting (e.g. ESC Region 20)	$10,000
6.	Professional Development (e.g. Teachers to be trained in related P-TECH content areas)	$10,000
7.		
8.		
9.		
	Supplies and Materials	
10.	Recruitment & Marketing	$4,000
11.	Program Specific Supplies & Materials (i.e. classroom set-up, WBL supplies, certification materials)	$15,000
12.	Technology (i.e. laptops, display screens, etc.)	$3,000
13.	PNP Equitable Services Allotment - Supplies and Materials (i.e. curriculum, etc.)	$1,254
	Other Operating Costs (include direct and indirect administrative costs, if allowable)	
14.	In-State Travel to model P-TECH Campuses for Program Planning	$10,000
15.	P-TECH Program Conferences (Two per year)	$5,000
16.		
	Capital Outlay	
17.		
18.		
	Indirect Costs	$9,213

Total grant award requested $200,000

ATTACHMENT #1: 2020-2022 P-TECH AND ICIA PLANNING AND IMPLEMENTATION GRANT

Crosswalk Template

You may delete or expand rows but **do not exceed one page**

CDN: 015907

Program of Study	IHE Partner	Program Previously Offered in District? (Y/N)	Expected Program Student Outcomes
Advanced Manufacturing Technology	St. Philip's College	Y	AAS and/or Industry-based Certifications
Mechanical Engineering F.O.S.	St. Philip's College	Y – but not for college credit	Transfer credit to university and Certs.
Aerospace	St. Philip's College	Y	AAS and/or Industry-based Certifications

Year / Grade Level	High School Course			Post-Secondary Course		
	PEIMS Course/Code #	High School Course Name	High School Credits	Texas Common Course Numbering System Number	College Course Name	College Credit Hours
Year 0 / Grade 8	03100500	Algebra I	1			
		Total Year 0 High School Credits	1		**Total Year 0 College Credit Hours**	
Year 1 / Grade 9	03220100	English I/ PAP English I	1			
Year 1 / Grade 9	03100500/03100600	Algebra I/Algebra II	1			
Year 1 / Grade 9	A3360100	World Geo/AP Human Geography	1			
Year 1 / Grade 9	03010207	Biology/PAP Biology	1			
Year 1 / Grade 9	13032200	Principles of Manufacturing	1	ELMT 1305	Basic Fluid Power	3
Year 1 / Grade 9	N1290001	AVID	1			
Year 1 / Grade 9		Foreign Language (*i.e. Spanish I*)	1			
Year 1 / Grade 9		Elective/P.E.	1			
		Total Year 1 High School Credits	8		**Total Year 1 College Credit Hours**	3
Year 2/ Grade 10	03220200	English II/ PAP English II	1			
Year 2/ Grade 10	03100600/03100600	Algebra II/Geometry	1			
Year 2/ Grade 10	A3370100	World History/AP World History	1			
Year 2/ Grade 10	03010207	Chemistry/PAP Chemistry	1			
Year 2/ Grade 10	13032650	Diversified Manufacturing I	1	CETT 1409/INTC 1357	DC-AC Circuits/AC-DC Motor Control	4/3
Year 2/ Grade 10		Fine Art	1	ARTS 1301	Art Appreciation	3
Year 2/ Grade 10		Foreign Language (*e.g. Spanish II*)	1			
Year 2/ Grade 10		Elective (*e.g. Band I*)	1			
		Total Year 2 High School Credits	8		**Total Year 2 College Credit Hours**	10
Year 3/Grade 11	03220300	English III/AP English III	1	ENGL 1301	English Comp. I	3
Year 3/Grade 11	03100600/03101100	Algebra II/PAP Pre-Calc.	1	Math 1314	College Algebra	3
Year 3/Grade 11	A3340100	US History/AP US History	1			
Year 3/Grade 11	03050000	Physics	1	PHYS 1305	Introductory Physics	3
Year 3/Grade 11	13032660	Diversified Manufacturing II	1	INMT 2303/RBTC 1347	Pumps & Compressors/ Electromechanical Devices	3/3
Year 3/Grade 11	13032300	Welding I	2	MCHN 1438/WLDG 1428	Basic Machine Shop/ Intro to Shielded metal Arc Welding	4/4
Year 3/Grade 11		Elective (*e.g. Band II*)	1			
		Total Year 3 High School Credits	8		**Total Year 3 College Credit Hours**	23
Year 4/Grade 12	03220400	English IV/AP English IV	1			
Year 4/Grade 12	13032900	Manufacturing Engineering Technology I	1	INTC 2433/2330	Instr. Systems Install./ Instr. Sys. Trouble.	4/3
Year 4/Grade 12	A3310200/A3330100	Eco/AP Eco & AP US Gov't/Gov't	1	Econ 1301	Introduction to Economics	3
Year 4/Grade 12	13037000	Robotics I	1	RBTC 1305/1301	Robotic Fund./PLC	3/3
Year 4/Grade 12	13011400	Business Info. Management I	1	ITSC 1301	Introduction to Computers	3
Year 4/Grade 12	13033000	Practicum in Manufacturing I	2	EECT 2206/ RBTC 2339	Practicum Electrical Eng. Tech/Robotic programing	2/3
Year 4/Grade 12	03150200	Elective (*e.g. Music II*)	1			
		Total Year 4 High School Credits	8		**Total Year 4 College Credit Hours**	18
Optional Year 5		Any course not completed				
		Total Years 5 & 6 High School Credits	0		**Total Years 5 &6 College Credit Hours**	0
		Total High School Credits	32		**Total College Credit Hours**	60

Certification (s) to be earned by high school graduation:	Level I Certification; FANUC Robotics; others to be determined
Degree (s) to be earned by high school graduation:	Advanced Manufacturing Technology AAS; Mechanical Engineering F.O.S. Aircraft Technician AAS

Table 7. Target Occupation List (2019)

Workforce Solutions Alamo
Target Occupation Career Paths (2019)

Num	Occ Code	Occupational Title	Annual Average Employment 2016	Annual Average Employment 2026	Number Change 2016-2026	Percent Change 2016-2026	2017 Mean Hourly Wage	2017 Entry Hourly
		Healthcare						
1	21-1094	Community Health Workers[11]	341	407	66	19.4	$18.19	$13.73
2	29-1126	Respiratory Therapists[Δ1]	1484	1781	297	20.0	$28.89	$23.70
3	29-1141	Registered Nurses[•Δ12]	19702	23555	3853	19.6	$32.59	$24.85
4	29-2021	Dental Hygienists[•Δ]	1103	1336	233	21.1	$35.58	$29.49
5	29-2034	Radiologic Technologists[Δ,1,12]	1578	1927	349	22.1	$26.69	$19.74
6	29-2031	Cardiovascular Technologists and Technicians[Δ,1]	381	446	65	17.1	$19.25	$12.94
7	29-2032	Diagnostic Medical Sonographers[•Δ]	485	661	176	36.3	$38.61	$24.21
8	29-2055	Surgical Technologists[Δ,1]	1215	1430	215	17.7	$22.25	$15.87
9	29-2061	Licensed Practical and Licensed Vocational Nurses[•Δ,12]	7286	8406	1120	15.4	$21.73	$17.27
10	29-2071	Medical Records and Health Information Technicians[•Δ]	2010	2346	336	16.7	$19.79	$13.47
11	31-1014	Nursing Assistants[•Δ]	8391	9873	1482	17.7	$12.39	$10.17
12	31-2011	Occupational Therapy Assistants[Δ1]	513	671	158	30.8	$38.96	$29.50
13	31-2021	Physical Therapist Assistants[Δ1]	619	819	200	32.3	$35.88	$19.74
14	31-9091	Dental Assistants[•Δ]	3460	4176	716	20.7	$15.88	$13.12
15	31-9092	Medical Assistants[•Δ,12]	5895	7955	2060	34.9	$15.16	$12.38
16	43-6013	Medical Secretaries[•]	8398	10740	2342	27.9	$15.69	$11.95
		Manufacturing/Aerospace						
17	17-3023	Electrical and Electronic Engineering Technicians[•Δ,6,7,9]	855	970	115	13.5	$29.95	$20.52
18	17-3027	Mechanical Engineering Technicians[•Δ,7]	249	297	48	19.3	$26.39	$14.81
19	17-3029	Engineering Technicians, Except Drafters, AO[•Δ,1,6,7,9]	843	991	148	17.6	$33.02	$19.73
20	19-4099	Quality Control Analysts/Life, Physical & Social Science Technicians, Other[•Δ,1,6,7]	246	286	40	16.3	$23.54	$15.99
21	47-2031	Carpenters[•Δ,7]	4034	4711	677	16.8	$19.03	$13.74
22	47-2211	Sheet Metal Workers[•Δ,7]	1167	1377	210	18.0	$18.89	$13.68
23	49-2091	Avionics Technicians[•Δ,7]	197	228	31	15.7	$30.43	$21.05
24	49-3011	Aircraft Mechanics and Service Technicians[•Δ,7]	1694	1823	129	7.6	$25.14	$18.29
25	49-3023	Automotive Service Technicians and Mechanics[Δ,1]	5315	5931	616	11.6	$20.86	$11.39
26	49-9041	Industrial Machinery Mechanics[•Δ,6,7]	1868	2210	342	18.3	$24.42	$16.86
27	51-4041	Machinists[Δ,1,4]	825	876	51	6.2	$22.16	$14.04
28	51-4121	Welders, Cutters, Solderers, and Brazers[•Δ,8]	2766	3244	478	17.3	$20.67	$13.62
		IT /Cybersecurity						
29	15-1121	Computer Systems Analysts[•Δ,9]	2729	3130	401	14.7	$46.37	$28.36
30	15-1122	Information Security Analysts[•Δ,9]	1246	1699	453	36.4	$44.06	$30.44
31	15-1131	Computer Programmers[•Δ,9]	1338	1403	65	4.9	$47.08	$28.44
32	15-1132	Software Developers, Applications[•Δ,9]	5644	7388	1744	30.9	$50.02	$32.15
33	15-1133	Software Developers, Systems Software[•Δ]	1435	1674	239	16.7	$69.35	$35.88
34	15-1134	Web Developers[•Δ]	872	1022	150	17.2	$31.79	$18.93
35	15-1141	Database Administrators[•Δ,9]	1440	1659	219	15.2	$39.62	$26.30
36	15-1142	Network and Computer Systems Administrators[•Δ,9]	2818	3161	343	12.2	$40.16	$28.22
37	15-1151	Computer User Support Specialists[•Δ]	4920	5746	826	16.8	$25.20	$16.46

Num	Occ Code	Occupational Title	Annual Average Employment 2016	Annual Average Employment 2026	Number Change 2016-2026	Percent Change 2016-2026	2017 Mean Hourly Wage	2017 Entry Hourly
Construction/Utilities/Architecture								
38	17-3011	Architectural and Civil Drafters[•Δ]	895	1081	186	20.8	$24.46	$18.19
39	47-1011	Supervisors of Construction and Extraction Workers[Δ,1]	5507	6720	1213	22.0	$30.34	$20.47
40	47-2111	Electricians[•Δ]	5227	6076	849	16.2	$22.39	$15.50
41	47-2152	Plumbers, Pipefitters, and Steamfitters[•Δ]	2614	3179	565	21.6	$21.66	$15.09
42	47-2221	Structural Iron and Steel Workers[•Δ,7]	699	890	191	27.3	$17.69	$12.99
43	49-9052	Telecommunications Line Installers and Repairers[•Δ,13]	1416	1688	272	19.2	$24.38	$14.89
44	49-9071	Maintenance and Repair Workers, General[•Δ]	10591	12461	1870	17.7	$16.58	$11.41
45	53-7021	Crane and Tower Operators[4]	419	495	76	18.1	$23.11	$16.07
Oil and Gas/Warehousing & Transportation/Finance								
46	11-3071	Trans., Storage, and Distribution Managers / Logistics Managers[Δ,1,3]	598	690	92	15.4	$49.67	$31.28
47	13-1081	Logisticians[Δ,3]	1050	1179	129	12.3	$38.85	$26.56
48	43-3031	Bookkeeping, Accounting, and Auditing Clerks[•Δ]	11801	12713	912	7.7	$18.48	$12.68
49	43-4051	Customer Service Representatives[•]	30023	34713	4690	15.6	$15.64	$10.78
50	49-3031	Bus & Truck Mechanics & Diesel Engine Specialists[•Δ,10]	1971	2378	407	20.6	$21.76	$16.29
51	53-3032	Heavy and Tractor-Trailer Truck Drivers[•Δ,4,6]	13135	15000	1865	14.2	$21.96	$14.08
Education								
52	25-2011	Preschool Teachers, Except Special Education[Δ,5]	3045	3488	443	14.5	$18.12	$9.16
53	25-2012	Kindergarten Teachers, Except Special Education[Δ,5]	1296	1474	178	13.7	$26.47	$20.91
54	25-2021	Elementary School Teachers, Except Special Ed.[•Δ]	12162	13802	1640	13.5	$27.42	$21.71
55	25-2022	Middle School Teachers, Except Special and Career/Technical Education[•Δ]	5687	6462	775	13.6	$27.55	$21.62
56	25-2031	Secondary School Teachers, Except Special and Career/Technical Education[•Δ]	8840	10043	1203	13.6	$27.44	$21.38
Hospitality								
57	11-1021	General and Operations Managers / Front Office and Revenue Manager[Δ,2,12]	13859	16391	2532	18.3	$59.61	$25.42
58	13-1071	Human Resources Specialist[Δ,2,12]	5492	6149	657	12.0	$32.22	$19.92
59	13-1111	Management Analysts / Revenue Manager / Analyst[Δ,2,12]	5284	6193	909	17.2	$40.67	$27.33
60	13-2011	Accountants and Auditors[Δ,2,12]	9580	11415	1835	19.2	$36.20	$21.94

Source: Texas Workforce Commission/Labor Market & Career Information/Tracer2

Each occupation is inclusive of occupational-educational career pathways with industry-recognized credentials leading up to the occupation (e.g., up to a Bachelors Degree).

[•] Initially identified by WSA (including local targets for investments).

[Δ] Newer "mid-skill" occupations. "Mid-wages" as reflected by the Alamo region's average wage for all industries and occupations was $22.07.

Local Wisdom (specifically requested/proposed by a local industry group, employer, association, etc.).

[1] Local Social Service Organizations/Delegate Agencies

[2] Hospitality/Accommodations industry

[3] Economic Development partner / rural area

[4] Economic Development partner / rural area

[5] Bexar Early Childhood Organizations

[6] Oil & Gas industry / employers

[7] Aerospace industry/employers

[8] Manufacturing industry

[9] Cybersecurity industry

[10] Transportation industry

[11] Community Healthcare/Local Network

[12] Economic Development partner/rural area

[13] Energy industry/Utility

Ms. Krystal Garza
Statewide Coordinator of College and Career Readiness School Models
College, Career and Military Preparation
Texas Education Agency
400 W 15th St.
Austin, TX 78701

October 23, 2019

Ms. Garza:

Texas Federation for Advanced Manufacturing Education's (TX FAME) mission is to drive workforce development initiatives across Bexar County. TX FAME collaborates with companies, such as Toyota Motor Manufacturing Texas and Caterpillar, Inc., to provide valuable work experience and hands-on instruction. TX FAME's primary focus is to develop and grow a skilled pipeline of workers through the engagement of the current and future workforce in partnership with industry and the community.

TX FAME is pleased to support San Antonio Independent School District's (SAISD's) application to plan and develop a P-TECH program at Highlands High School. **Our understanding is that:**

> This school model will include authentic work experiences designed to prepare students for post-secondary course work and positions in Advanced Manufacturing, Aerospace, or Engineering. The program is free of charge and open to all students regardless of background and ability, to include struggling learners, English language learners, and students with disabilities. Students will enter the program in the ninth-grade year with an estimated student body of 150 students. By 2022, the goal is to reach capacity of 300 students in the program, which at full scale will enable students to earn their high school diploma and an associate of applied science (AAS) in one of several Advanced Manufacturing concentrations, preparing them for high-demand jobs within our company and many others in San Antonio and beyond.

TX FAME pledges to work with SAISD as part of this project over the next 28 months to develop and implement work-based learning experiences for P-TECH students with industry partners involved with TX FAME. After obtaining the AAS diploma, students will be eligible to apply for full time employment with TX FAME companies.

We hope you will join us in supporting this innovative program which aims to put predominantly low-income, underrepresented SAISD students on the path toward employment in advanced manufacturing. Please feel free to contact me with any questions you may have.

Sincerely,

Leslie Cantu

Leslie Cantu
President, TX FAME

Ms. Krystal Garza
Statewide Coordinator of College and Career Readiness School Models
College, Career and Military Preparation
Texas Education Agency
400 W 15th St.
Austin, TX 78701

November 21, 2019

Ms. Garza:

San Antonio Works (SA Works) is an industry-led strategic workforce development organization aligning education providers with private sector demand to promote economic mobility. As a uniquely positioned entity, SA Works convenes industry, education, and the public sector to address San Antonio's workforce development needs.

SA Works is pleased to support San Antonio Independent School District's (SAISD's) application to plan and develop a P-TECH program at Highlands High School. **Our understanding is that:**

> This school model will include authentic work experiences designed to prepare students for post-secondary course work and positions in Advanced Manufacturing, Aerospace, or Engineering. The program is free of charge and open to all students regardless of background and ability, to include struggling learners, English language learners, and students with disabilities. Students will enter the program in the ninth-grade year with an estimated student body of 150 students. By 2022, the goal is to reach capacity of 300 students in the program, which at full scale will enable students to earn their high school diploma and an associate of applied science (AAS) in one of several Advanced Manufacturing concentrations, preparing them for high-demand jobs within our company and many others in San Antonio and beyond.

SA Works pledges to work with SAISD as part of this project over the next 28 months to develop mentoring opportunities and work-based learning experiences for P-TECH students at Highlands High School. After obtaining the AAS diploma, students will be eligible to apply for full time employment at partnering industries and businesses.

We hope you will join us in supporting this innovative program which aims to put predominantly low-income, underrepresented SAISD students on the path toward employment in advanced manufacturing. Please feel free to contact me with any questions you may have.

Sincerely,

Romanita Matta-Barrera
Executive Director, SA Works