



Application for T-STEM Designation - New/Provisional

2016-2017

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Texas Education Agency

Application for T-STEM Designation

Statutory Authority: Texas Education Code §39.235

Overview of Designation

In order to operate as a Texas Education Agency (TEA)-approved Texas - Science, Technology, Engineering, and Math (T-STEM) Academy, a district must seek and receive T-STEM designation from TEA. In order to receive the T-STEM designation, a school must exhibit key traits from the T-STEM Academy Design Blueprint included in this application. The intent of this designation is to ensure that districts operating T-STEM Academies: integrate all the key characteristics of well-researched and well-designed STEM education while serving students who may not have otherwise considered the fields of science, technology, engineering, and math.

Benefits of Designation

Recognition as an Approved T-STEM Academy:

Schools designated by TEA as state-approved T-STEM Academies will receive various forms of media recognition including, but not limited to: identification on TEA's website as a state-approved T-STEM Academy and recognition in press releases.

Participation in T-STEM Convenings:

Special events hosted by TEA for T-STEM Academy administrators and principals to provide input on policies and procedures that impact T-STEM Academies.

Membership in the T-STEM Network:

Frequently opportunities are provided for principals, teachers, and students in designated T-STEM Academies through the T-STEM network to share best practices through conferences and technical assistance sessions. Membership in the T-STEM Network allows T-STEM Academies to access online exemplars, professional development, and webinars.

Access to Professional Development and Technical Assistance:

Designated T-STEM academies will have access to high-quality technical assistance which includes advice and information from a Leadership Coach who has successfully facilitated the design and implementation of the majority of T-STEM Academies operating in Texas.

Strength of T-STEM Model:

- Through the designation process, TEA will recognize those T-STEM Academies that effectively incorporate T-STEM Design Blueprint elements. The designation process will enable districts and their partners to engage in the research and planning necessary to ensure that their T-STEM Academies are set up in the most effective way possible.
- The T-STEM Blueprint provides a framework for T-STEM Academies to access college and career opportunities that support post secondary success.

Questions about Completing the Application

Who can fill out a T-STEM Academy designation application?

Any district or charter school campus may apply to be designated as a T-STEM Academy. Potential applicants are encouraged to carefully review the [T-STEM Design Blueprint](#) to determine readiness for implementation of the model.

Will have to fill out the same application each year?

No. New designation applicants and those T-STEM Academies that are provisionally designated will complete the comprehensive form. T-STEM Academies that are fully designated must complete the abbreviated T-STEM designation application yearly. The abbreviated renewal application will require a designated T-STEM Academy to provide updates regarding changes in the design and operation of the Academy. However, the primary focus of the annual renewal will be to gather evidence on the Academy's progress along the T-STEM Academy Design Blueprint continuum.

Will this application be required for T-STEM Academy grantees in the future?

Yes. In future funding cycles, completion of this application will be a program requirement for T-STEM Academy grant recipients.

Who can I contact for help filling out this application?

- **New applicants** may contact the T-STEM Program Manager at tstem@tea.state.tx.us.
- **2016-2017 designated T-STEM Academies** may contact their current T-STEM coach.

Application Information

General Information:

- A district or charter must submit a separate application with the required attachments on behalf of each proposed T-STEM Academy.
- The application must be submitted via the online system by **5:00pm, March 4th, 2016**
- A campus must be designated prior to the beginning of the school year in order to operate as a T-STEM Academy for that year. T-STEM Academy approval is valid for a maximum of one year. T-STEM Academy designated must be applied for each year via the TEA T-STEM designation process.

Timeline & Process:

- March 4th, 2016: Applications are due to TEA in order to open a campus as a designated T-STEM Academy during the 2016-2017 school year.
- June 2016: Districts submitting applications by March 4th, 2016 will be notified of the selection or non-selection of the campus as a designated T-STEM Academy on or about June 2016. Applications submitted prior to the March 4th, 2016 deadline may be approved prior to June 2016.
- The district will receive a notification letter of selection or non-selection for each campus it proposes to operate as a T-STEM Academy.

Required Attachments:

- **Official signature:** Official signature of a district or charter official authorized by the local board to bind the applicant organization in a legally binding contractual agreement.

Required Supporting Documents:

- The Academy must have current versions of the following documents on file.
- Each applicant is required to provide an assurance that each of the supporting documents is current for the 2016-2017 school year, signed by all parties, and provides detailed information regarding the specific assurance.
 - **Dual Credit MOU**
 - **Professional Development Plan**
 - **Business/Industry Agreement**
 - **2016-2017 Master Schedule**

Questions:

T-STEM Program Manager
tstem@tea.state.tx.us

Required T-STEM Academy Design Program Elements

The following design elements are the minimum required components that must be demonstrated through this application in order to be designated as a T-STEM Academy:

- The T-STEM Academy must serve grades 9 through 12 and may serve grades 6, 7, and 8.
- A campus must be designated prior to the beginning of the school year in order to operate as a T-STEM Academy for that year. T-STEM Academy approval is valid for a maximum of one year. T-STEM Academy designated must be applied for each year via the TEA T-STEM designation process.

I. Mission Driven Leadership:

- The Academy's mission statement and planned advisory board must reflect the mission and vision of the T-STEM Initiative.
- The Academy must use program review and formative evaluation to achieve its mission and goals.
- The Academy must promote leadership development and collaboration within the Academy and T-STEM Network.
- For Academies that include 6th, 7th, and 8th grades, leadership teams from the middle school and high school must collaborate on a regular basis.

II. Academy Culture and Design:

- The T-STEM culture must foster positive student identities through meaningful adult and peer relationships.
- All students graduating from the Academy must be prepared for postsecondary coursework and careers in the STEM fields through the integration of the Governor's economic workforce clusters and AchieveTexas STEM cluster into the curriculum.
- The Academy must support all students to graduate high school with four years of math, four years of science, four years of STEM electives, an Endorsement (with a primary focus on STEM endorsements), and a Performance Acknowledgement for a Distinguished Level of Achievement.

III. Student Access, Success, and Persistence:

- The Academy must have a clear plan for student support and success to achieve persistence rates above 70%.
- The Academy must instill the expectation that students expand their participation and leadership in STEM activities outside the classroom and provide the opportunity to do so.

IV. Teacher Selection, Development, and Retention:

- The Academy faculty must possess extensive subject knowledge and integrate project based learning (PBL) and STEM pedagogy into the classroom.
- The Academy must adopt and implement a plan for sustained professional development.

Required T-STEM Academy Design Program Elements cont.

V. Curriculum, Instruction, and Assessment:

- The Academy must align curriculum, instruction, and assessment to provide students with rigorous STEM focused instruction.
- The Academy must deliver Innovative STEM programs that are well-defined, embed critical thinking and problem solving, foster innovation and invention, and are aligned to state and/or national standards, and industry expectations.
- The Academy must integrate science, technology, engineering, and mathematics throughout the curriculum.
- The Academy must continually monitor student progress through assessments and data collection.
- The Academy must promote STEM literacy and prepare students with 21st Century skills.
- The Academy must support three years of STEM electives at middle school and four years of STEM electives at high school.

VI .Strategic Alliances:

- The Academy must promote family involvement in student success.
- The Academy must integrate business partnerships into the curriculum and student learning experience.
- The Academy must partner with IHEs and college/career-preparation entities to ensure that students graduate with college credits and prepared for postsecondary success.

VII. Sustainability and Advancement:

- The Academy must have a plan for continuous improvement and growth.
- The Academy must adopt and implement a plan for sustained professional development.

Scoring of the Application

- Each applicant will be reviewed by T-STEM subject-matter experts from across the state.
- New applicants will be reviewed based on the proposed plan and a follow up with the applicant, if necessary.
- Each applicant will receive a notification letter from TEA indicating which designation category it has been assigned: Designated, Provisionally Designated, or Denied.
- The T-STEM Academy Design Blueprint has been consolidated in the application to highlight priorities for the planning period of designation. Applicants should focus on the benchmarks presented in answering the questions.

PART 1: CONTACTS

1.1 T-STEM Academy

T-STEM Academy Name	Wharton ISD STEM Academy
County District Campus Number	241904001
Mailing Address - Line 1	#1 Tiger Avenue
Mailing Address - Line 2	
Mailing City	Wharton
Mailing Zip Code	77488

1.2 School District

School District name	Wharton ISD
Mailing Address - Line 1	2100 N Fulton
Mailing Address - Line 2	
Mailing City	Wharton
Mailing Zip Code	77488

1.3 Education Service Center Region	03
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1.4 Person Completing this Application

First Name	Cindy
Initial	
Last Name	Mahalitc
Title	Instructional Facilitator
Phone	(979) 532-6800
Email	cmahalitc@whartonisd.net

1.5 Academy Principal/Director

First Name	Mark
Initial	
Last Name	Anglin
Title	High School Principal
Phone	(979) 488-4841
Email	manglin@whartonisd.net

1.6 Superintendent

First Name	Tina
Initial	
Last Name	Herrington
Phone	(979) 532-3612
Email	therrington@whartonisd.net

1.7 T-STEM Academy Partner Information

IHE Partner	Wharton County Junior College
STEM Business Community Industry Partner	Nuclear Power Institute

1.8 Authorized School District or Charter Official

First Name	Tina
Initial	
Last Name	Herrington
Title	Superintendent
Phone	(979) 532-3612
Email	therrington@whartonisd.net
Signature	(Attached)

PART 2: BACKGROUND

2.0 Is your campus currently designated as an Early College High School (ECHS) through the TEA ECHS designation process? Yes

2.1 First year of Academy Operation 2015

2.2 Years in Operation 1

2.3 Academy Model: School Within a School - Multiple Campuses: A subset of students in grades 6-12 are enrolled in the T-STEM Academy; this model typically spans a middle school and high school

What is the design of the T-STEM Academy requesting designation?

2.4 Target Population

Grades of students to be served	6th	7th	8th	9th	10th	11th	12th	Total Enrollment
2016-2017 projected enrollment	0	10	10	20	20	0	0	60
2015-2016 enrollment (if designated in the 2015-2016 school year)	0	10	10	20	0	0	0	40

PART 3: BENCHMARKS

T-STEM Blueprint Instructions

The T-STEM Academy Design Blueprint consists of seven benchmarks that drive the success of an Academy. Each benchmark highlights program requirements and offers a rubric score of developing, implementing, mature, or role model. T-STEM Academies use this tool to measure growth and progress along the continuum.

All seven benchmarks are included in the application. However, applicants may notice the program requirements are not numbered sequentially. This is because not all program requirements are included in the Designation Application. Applicants are not expected to meet or even consider all program requirements at this stage in the process. Instead, those program requirements that form the building blocks of a successful designated Academy are included in the Designation Application. Focused consideration of those particular program requirements will mean a successful applicant will have a strong foundation as a designated T-STEM Academy. The technical assistance that comes as a result of designation will allow the designated Academy to implement the Blueprint Benchmarks' full program requirements over time.

Benchmarks 1-4, 6 & 7

Applicants should first review the program requirements for each benchmark presented in the body of the application. The questions that follow pertain to those specific requirements (i.e. Benchmark 1 questions pertain to Benchmark 1 program requirements). Applicant responses should reflect a close consideration of the highlighted rubric areas in the context of what the campus has in place currently and could feasibly implement during the first designated year. Applications will be scored on the response's evident understanding of the continuum of growth along the rubric, evidence of existing programs, and feasible plan to move forward for each requirement.

Benchmark 5: Curriculum, Instruction, and Assessment

Applicants should review the program requirements presented in each section and rate the campus's existing system in the rubric's check boxes. Applicants are then asked to justify the ratings with evidence, reflection, and a plan to move forward, bearing in mind that with designation comes the tools and assistance necessary to progress along the continuum. Successful applicants will reflect an understanding of Benchmark 5 and are not necessarily expected to have all elements in place before designation.

Benchmark 1: Mission-Driven Leadership

Program Requirements

1.2.C.	Develops and demonstrates support from an advisory board (AB) consisting of representatives from the Academy, school board, district, community, higher education, and STEM businesses to support and guide facility requirements, resource acquisition, curriculum development, internship, externships, and student/community outreach to ensure a successful 6-20 STEM academic and career pipeline.
1.3.A.	Integrates and assesses the level of mission-driven and data-driven decision making evident in the daily work of the Academy.
1.4.A.	For 6-12 campuses, middle school and high school leadership teams regularly collaborate to advance 6-12 alignment and student retention in STEM.

Key Elements for Success

- Job descriptions and roles for design team, leadership team, and advisory board
- Mission is posted and can be articulated by teachers, staff, students, key stakeholders, etc.
- MOUs with T-STEM Centers

	Developing	Implementing	Mature	Role Model
1.2.C.	Advisory Board (AB) established.	AB positions and subcommittees are identified.	AB develops innovative and creative approaches to support Academy mission and vision.	AB addresses major shifts in STEM, educational standards, industry expectations, and analyzes SWOT of Academy, resulting in measurable action items.
1.3.A.	Little or no evidence of data-driven and mission-driven decision making.	Data is used to design student interventions, Annual Action Plan (AAP), and to inform teaching and learning aligned to the mission.	Teachers work interdependently as teams to review data across content areas, develop targeted interventions, and develop common formative assessments.	The Academy's continual analysis of results for improvement is critical to the school's system of interventions and culture of celebration.
1.4.A.	Academy leadership occasionally collaborates with each other (6th - 12th), with T-STEM centers, and T-STEM Coaches.	Academy leaders and staff collaborate with each other (6th - 12th), and with T-STEM Centers and Coaches to integrate STEM teacher preparation, teaching, and learning. <i>And meets criteria from Developing</i>	Academy plans with regional T-STEM Center, vertical alignment teams 6th - 12th (at least quarterly), and meets with their T-STEM Coach, virtually or Face-to-Face (at least monthly). <i>And meets criteria from Developing and Implementing</i>	Academy dialogues on a regular, ongoing basis in vertical alignment teams (6th - 12th), with T-STEM Centers and Coaches, and utilizes available T-STEM resources to improve student achievement and teacher preparation. <i>And meets criteria from Developing, Implementing, and Mature</i>

Benchmark 1: Mission-Driven Leadership

- Program Requirement 1.3.A. addresses the use of data to drive design, decision making, and program review in a T-STEM Academy.
- Designated campuses will be expected to meet or exceed “Implementing” on the rubric above (Data is used to design student interventions, Annual Action Plan, and to inform teaching and learning aligned to the mission) by the end of the first designated year.

Describe below how the campus will meet or exceed this expectation.

Wharton ISD is data-driven, student centered and focused on success. Stakeholders at all levels meet on a regular basis to review and improve student achievement. Academic Departments meet three times a week as a professional learning community (PLC) to discuss and analyze student data. In this process, each question on the exam, as well as individual student progress is thoroughly discussed. For example, if the report shows weaknesses in certain objectives then the PLC will plan accordingly to reteach and reassess the objective. Furthermore, we are striving to make project based learning (PBL) a central part of our curriculum. We understand that this type of learning will enhance their interest and develop their intelligence in mathematics, science and engineering. We feel it is important for the teachers to be well versed and trained in the pedagogy of PBL.

If a student is in danger of failing, certain interventions will take place. These interventions include pullout tutoring, after school tutoring and peer tutoring programs to name a few. The response to intervention (RtI) team, comprised of teachers, counselors, and administrators, meets bi-weekly to review students who are in danger of failing, set up parent/student conferences and recommend interventions for students who are not meeting standards. They conduct their own data dialogues to plan for student success. Toward the end of the year, RtI and PLC teams will discuss past meetings and data to improve instruction and student performance for the following year. The Assistant Superintendent of Curriculum and Instruction will play an active role in these instructional meetings. The changes in the curriculum will be made according to the action plans of the committees including adding projects and modifying existing ones.

In addition to the campus based meetings, campus leaders and other instructional staff (Instructional Leadership Team) meet at least monthly at one of the campuses to complete instructional rounds. This gives campus leaders a chance to dialogue and keep focused on instructional strategies. District level administrators meet monthly with campus administrators to discuss student success and other areas that may need to be addressed.

Quarterly DAT meetings occur at each of the campuses. The data that is presented at these meetings incorporates academic, attendance and discipline so that the focus is the overall success of the students.

Wharton ISD and Wharton County Junior College currently have an Early College High School that requires quarterly advisory meetings.

We have a separate committee made up of math, science and engineering teachers, administrators, representatives from the work force and members of higher learning institutions that discuss the STEM program at WISD. At the end of the year, all teams modify annual action plans. These plans will include changing current projects as well as adding new ones and making improvements to the overall STEM program.

- Program Requirement 1.2.C. details the requirements for an Academy's advisory board (AB).

List the planned AB members and their job title (example: John Smith, School Board Member; Jan Smith, STEM Business Leader, etc.). Detail how this board will support the Academy work.

Advisory Board Members include:

STEM Coordinator - Cindy Mahalitic

Assistant Superintendent of Curriculum and Instruction - Dr. H. Brian Yearwood

Campus Math and Science Department - Mohammad Barada and Sonya Thaysen

Business/Industry Partners - Dr. Aaron Drake, Representative from Nuclear Power Institute

Higher Education - Marybelle Perez, Director of Grants Management (T-STEM Center); UTMB-Valerie Blackburn; WCJC Academic Dean - GG Hunt

Region 3 - Cheryl Shamberger, CTE

An advisory board collaborates and offers a forum for program stakeholders. These stakeholders communicate their opinions, share their expertise and coordinate services to enrich the education of our STEM students. The Advisory board and the leadership board meet face to face twice a year to review the academy goals; annual action plan; make connections for mentors; discuss job shadowing opportunities; and celebrate academy successes. In our implementation to expand the advisory board, a quarterly newsletter will be sent to our advisory board members to keep them informed and build our STEM academy pipeline.

In the future, our plans involve bringing in a student member to voice positives and negatives of the program.

Program Requirement 1.1.A: Provide the Academy mission statement below.

WISD STEM Academy Mission: Wharton High School STEM Academy strives to provide students a collaborative and innovative structure in which to develop scientific and mathematical literacy, emphasizing critical thinking, problem-solving, natural utilization of technology and effective communication skills.

- Program Requirement 1.4.A details the requirements for 6th-12th campuses to collaborate on a regular basis to advance 6th-12th alignment and student retention in STEM.

Describe below how the campus will meet or exceed this expectation. If Academy is 9th-12th write, "Not Applicable".

Wharton ISD provides for vertical alignment in all areas of instruction. We will continue to provide this collaboration next year. In order to provide the greatest opportunity for our students to be successful, we offered a Gateway STEM course at the junior high level to all of our students in the district. This Gateway course will allow students to determine their interest in STEM prior to actual application at the end of their eighth grade year.

Counselors from the high school will meet with every eighth grade student to facilitate the construction of their high school plan and endorsement selection.

Our sixth grade students visit the junior high at the end of the Spring semester. We will include a STEM session to increase interest in the program for seventh grade students. Additionally, our elementary school will create after school programs to increase interest in STEM. Our current eighth grade students will visit the high school at the end of the Spring semester. We will include visits to all of the CTE and STEM classes and clubs during their visit.

Texas Science, Technology Engineering and Mathematics

Benchmark 2: T-STEM Academy Culture and Design**Program Requirement: 2.1 Personalization**

- 2.1.A** Addresses in AAP and strategic plan the details for remaining small, allowing for personalization and maintaining collaborative learning communities of students.
- 2.1.B** Plans and implements a non-graded student advisory program that is regularly scheduled, noted in the master calendar/schedule, and focuses on personalizing the student experience, (builds relationships with students and parents, develops character, and fosters global literacy).
- 2.1.C** Develops a process for hearing and responding to student voice.

Key Elements for Success		Example Artifacts	
- Student IGPs w/ CCRS, Endorsements, and Performance Acknowledgement plans - Master schedule for advisory - Student enrollment		- Opportunities for orientation sharing and team building activities both on- and off-site - Advisory class curriculum - Student goal setting and reflection logs - Teacher mentors assigned to students - Pre- and post-assessments of advisory class goal - Students sit on advisory board and/or have voice in student work products, clubs, competitions, governance, and course offerings - School wide activities to build/share culture - Student ambassadors serving as classroom greeters and/or guide tour groups - Teacher/student ratios, actual class sizes - Surveys documenting students' elective requests	
Developing	Implementing	Mature	Role Model
1. District and Academy resources are allocated to ensure teaching staff and facilities remain small. 2. Student advisory is regularly scheduled and focuses on relationships, building school capital, developing and fostering global literacy.	1. Annual Action Plan and Academy handbook address plan for maintaining personalized, small, learning communities. 2. Advisory class has written curriculum with goals, expectations, scope, sequence, and pacing guides. <i>And meets criteria from Developing</i>	1. Students are regularly afforded multiple opportunities to build relationships with staff and peers such as working in academic and/or competitive teams horizontally and vertically. 2. Teachers work in teams to develop systemic advisory programs with horizontally and vertically aligned student outcomes. <i>And meets criteria from Developing and Implementing</i>	1. Protocols are developed to ensure students have a clear and documented voice in the Academy (student council, advisory committee to the director, suggestion box, etc). 2. Annual resources are allocated to develop, revise, and sustain advisory program with input from students, teachers, parents, and external partners. <i>And meets criteria from Developing, Implementing, and Mature</i>

Texas Science, Technology Engineering and Mathematics

Benchmark 2: T-STEM Academy Culture and Design**Program Requirement: 2.1 Personalization**

- 2.1.D** Arranges for a flexible school day with blocks of time that support student learning (tutorials, collaboration, meetings).
2.1.E Celebrates high quality student work through student exhibits on-site, web-based, and/or in state and national forums.
2.1.F Provides every 6th – 12th student with an individualized STEM-focused high school graduation plan that addresses: four years of math and science; an Endorsement in STEM, Business and Industry, Public Service, or Arts and Humanities; identifies target areas for Performance Acknowledgements; and is at least annually reviewed and revised with the counselor, student, and family.

Example Artifacts

- Honor roll, grade level/school-wide celebrations
- Classroom and building displays
- Number of students participating in student exhibits
- Agendas/signatures for IGP meetings with students and family
- IGP, record folder/portfolio, 6th-16th course plan
- Master schedule, tutoring schedule
- Minutes/action items from site based committees, etc.
- Website showcasing student work
- Documentation of at least annual 6th – 12th IGP meetings with parents and students

Developing	Implementing	Mature	Role Model
1. Academy develops a flexible schedule that supports student success.	1. Schedule is developed with input from teachers, counselors, content coaches, extracurricular and internship/capstone requirements.	1. Teachers work in teams to adjust daily schedule to facilitate interdisciplinary PBL.	1. Schedule is adjusted to meet student needs according to data, student, teacher, and parent voice; intervention and extension plans.
2. Academy regularly schedules for students to share their knowledge and work products.	2. Students participate in panel presentations, debates, academic fairs, webinars, online challenges, competitions, design challenges, etc.	2. Resources are allocated to provide students with opportunities to participate in state and national forums, conferences, and competitions (financial, facilities, staffing, transportation, etc.).	2. Academy establishes protocols with input from key stakeholders to gauge the effectiveness of student participation in competitions, challenges, etc. towards promoting college and career readiness as well as Academy goals.
3. Academy develops IGP for each 6 th – 12 th student that addresses STEM pathways, THECB College and Career Readiness Standards.	3. Student, counselor, and family regularly review and revise the IGP to address student goals for courses, grades, Endorsements, Performance Acknowledgements, college entrance exams, PSAT/ACT/SAT, career aspirations, etc.	3. Annually reviews and revises IGP according to previously established protocols and timelines.	3. Mentors are assigned to students to develop intervention contracts to address deficiencies or acceleration opportunities in IGP.
	<i>And meets criteria from Developing</i>	<i>And meets criteria from Developing and Implementing</i>	<i>And meets criteria from Developing, Implementing, and Mature</i>

Texas Science, Technology Engineering and Mathematics

Benchmark 2: T-STEM Academy Culture and Design**Program Requirement: 2.2 Culture**

- 2.2.A** Collaborates with stakeholders to develop a new handbook or modify the existing handbook with clear procedures, policies, and consequences that support the development of a strong T-STEM culture.
- 2.2.B** Involves all stakeholders in developing a culture of respect, responsibility, trust, and meaningful adult and peer relationships throughout the Academy in order to foster positive student identities.
- 2.2.C** Creates a professional learning community environment of collaboration, teaming, and high expectations among administrators, teachers, and stakeholders, with a focus on and a commitment to the learning of each student.

Example Artifacts

- Handbook, attendance/discipline goals/data
- Customs and celebrations, modeling lessons for respect, responsibility, trust
- Student, teacher, parent surveys address culture
- Sharing of ideas and strategies and joint problem-solving are widespread.
- School developed common vocabulary for evidence of "good teaching"
- PLC protocols and expectations (meeting times, book studies, goals, results based on interventions, reflections on results – new actions, etc.)
- Collaborative planning of learning and teaching activities
- Widespread teamwork involving teachers and support staff
- Peer walkthroughs, lesson evaluations, and critical friends reflections

Developing	Implementing	Mature	Role Model
1. Handbook is developed to address student, parent expectations and a culture of respect, responsibility and trust. 2. Professional Learning Community (PLC) is developed which supports staff devoting effort, energy, time, and resources into incorporating valuable new strategies into their practice.	1. Handbook addresses key tenets of cultural beliefs of Academy (student ability and achievement, efficacy and effort, power, distributed leadership, cultural sensitivity, proactive and reflective practice, etc.). 2. An inquiry-based continuous improvement orientation to practice is pervasive, with data informing practice and learning widely shared. <i>And meets criteria from Developing</i>	1. Handbook is developed with input from key stakeholders with clear policies, procedures, and consequences (attendance, discipline, student contracts, teacher extended days, etc.). 2. Staff regularly and consistently plans together, collaborates and shares ideas through meetings, website resources, teaming, team teaching etc., and garners input from external experts. <i>And meets criteria from Developing and Implementing</i>	1. There is a high degree of commitment to school-wide professional values and a strong sense of cohesion and consistency of approach, with protocols to analyze, build, and assess effectiveness of culture. 2. A desire to do the best for <i>all</i> students pervades the school as evidenced by protocols for regular and deep school-wide dialogue about good teaching, assessment, learning, projects, and successes of individual students. <i>And meets criteria from Developing, Implementing, and Mature</i>

Benchmark 2: T-STEM Academy Culture and Design

- Applicants should consider the program requirements listed above as they pertain to a student's individualized learning experience.

Describe the campus's efforts to support students to reach this goal. This description should include plans for: an advisory period, a positive school culture, enhanced relationships with parents, and responding to student voice.

STEM counselors will work with each STEM Academy student to develop a personal graduation plan (PGP). In addition, the STEM student will work with a WCJC Liaison as part of their PGP to receive additional guidance on academic goals and plans for the future. Academic progress will be monitored by the STEM counselor through various data sources.

To determine student success in STEM, students will be exposed to STEM methodologies that will promote their individual skills through degree or certification completion which will occur upon completion of high school. This success should also be seen as STEM students continue with postsecondary experiences at a 4 year college or other postsecondary certification programs.

WISD will develop and utilize surveys for parents and students to allow input regarding school culture and design. Stakeholders will meet to review and analyze these surveys to determine areas of need that need to be addressed. Students will also individual survey students through formative assessments daily to assist in improving instructional content and strategies.

Applicants should consider the program requirements listed in the "Benchmark 2 Program Requirements" link above as they pertain to postsecondary college and career success.

- 6th-12th STEM-focused high school graduation plan: IGP with Endorsement, Performance Acknowledgement, and Distinguished Achievement.
- 6th-12th STEM career and college exploration, and college readiness preparation with students and parents to include college transition plan.
- Collaboration with IHE.
- All students should graduate with 12-30 hours college credit and be prepared for postsecondary coursework in STEM fields.

STEM investigation begins at the junior high with the implementation of a Gateway Course offered to 7th and 8th grade.

The STEM ACADEMY will provide academic support to the students by personalizing the learning environment through student engagement. The following strategies will be implemented school-wide at our STEM ACADEMY: Collaborative Group Work, Writing to Learn, Questioning, Scaffolding, Classroom Talk and Literacy Groups.

Project Based Learning will be a positive method used to provide instructional support. Training will occur with staff to develop a powerful learning process with the success of our students always the end measure.

Students for 2016/17 in STEM Academy will be reflective of the true college environment by following a modified curriculum schedule by allowing student schedules to be blocked to M/W and T/T classes for all core areas. Wharton ISD is positive that this will help better prepare them for academic scheduling for college course work since many students voice difficulty in the self-discipline that is needed for skipping days of the week.

Wharton County Junior College and Wharton ISD are currently working to build relationships and encourage post-secondary education for all students and are excited about the opportunity to provide STEM for our students. The district superintendent and school board are supportive of new areas that will provide post-secondary excellence. The district is currently working on ways to enhance certification programs offered on the high school campus with Wharton County Junior College. Our students at STEM will have equal access to all of the college benefits.

Wharton ISD and WCJC have been involved and will continue to participate in joint planning and review of crosswalks to ensure that curriculum is aligned.

Wharton ISD is now a TSI testing site. As a testing site we will be able to monitor student progress towards the college readiness standards and plan intervention based on testing data.

Wharton ISD currently offers Dual Credit hours in Speech, US History, English III, English IV, Pre-Calculus, Calculus, Government and Economics. More Dual Credit courses will be added with this designation that concentrate on STEM. All dual credit courses are offered to Wharton ISD with fees and dues waived. Students that are in our Early College High School receive courses at no charge.

- Program requirement 2.2.C. highlights the importance of a strong Professional Learning Community for the success of all students.
- Review at the rubric continuum and tools in Example Artifacts from a successful Academy.

Describe how the campus will use these tools to progress into a "Mature" campus over time. "Staff regularly and consistently plans together, collaborates and shares ideas through meetings, website resources, teaming, team teaching, etc., and garners input from external experts." This description may include inquiry-based approaches, data informed decision making, Professional Learning Communities, collaboration, and integration of technology.

WISD is definitely on its way to moving into a mature district as designated in the blueprint. As a result, we will continue to grow and improve through initiatives involving scheduling. Schedules are designed to allow junior high and core specific teachers at the high school to have a common planning time. During this time staff are able to disaggregate data, plan Response To Intervention, professional development, and participate in Book Studies. The shared planning time allows teachers to share ideas and resources, plan Project Based Learning, and collaborate on teaching activities. Technology training occurs monthly and focuses on technology integration in classrooms. District and campus administration monitor teacher performance and provide valuable insight into instructional pedagogy.

District staff is continually seeking new and innovative ways to work toward: Fostering College Going Aspirations; Promoting College and Career Readiness; Promoting College and Career Readiness; Providing Early Opportunities for College and Career Readiness; Designing Seamless HS to College Curricular Pathways; Building P-20 Partnerships and Scaling College Success Efforts Through Professional Development.

A STEM specific handbook including an advisory component will be developed during the 2016-2017 school year.

Texas Science, Technology Engineering and Mathematics

Benchmark 3: Student Outreach, Recruitment, and Retention**Program Requirement: 3.1 Recruitment and 3.2 Open Access**

- 3.1.A** Develops structures and processes for marketing and recruitment to encourage participation from underserved students and families (transportation or plans for transportation to the school, child care for family events, and translation of all recruitment and marketing materials).
- 3.1.B** Actively partners with feeder middle and/or elementary schools to develop student interest in STEM education and to increase advancement rates from middle school STEM to high school STEM.
- 3.1.C** Develops a systemic recruitment plan that includes students, parents, counselors, teachers, district, and community.
- 3.2.A** Develops an admission policy to include an open access, lottery-based selection process that encourages applications from all students. The application will not be based on state assessment scores, discipline history, teacher recommendation, minimum GPA, or other requirements that would be used to limit selection.
- 3.2.B** Consists of a population that is 50% or greater economically disadvantaged and underrepresented students.

Key Elements for Success		Example Artifacts	
Written admission policy and application with lottery explained		- Recruitment schedule and locations (schools, churches, community centers, etc.) - Brochures and marketing items in English, Spanish, and/or relevant second language - Survey data (community input, enrollment trends, etc.) - STEM feeder school crosswalk recruiting curriculum - Plan to recruit with feeder schools - Documented support efforts (transportation, child care, etc.) - Needs assessment - Number and percentage of students matriculating from middle school STEM to high school STEM	
Developing	Implementing	Mature	Role Model
- Academy details a plan and process for marketing to and recruiting from appropriate communities and feeder schools to reach high need and underrepresented students. - Academy has at least 50% economically disadvantaged and underrepresented students, via an open, lottery based admission policy, where the application <i>does not</i> include requirements that might deter students such as STAAR, grades, teacher recommendation, discipline, or attendance.	- Marketing and recruitment plan developed with input from key stakeholders, and targets feeder pattern, community needs, and cultural relevance. - Clearly communicated admission policy that indicates target enrollment goals and implements support processes structures such as transportation, child care, etc. to meet goals. <i>And meets criteria from Developing</i>	- Marketing plan highlights Academy's STEM pathways and Endorsements; and industry and higher education partners. Recruitment efforts include Academy staff, students, and parents. At least 80% of 8th grade MS STEM students matriculate to HS STEM Academy. - Academy tracks enrollment data and indicates some increases in recruitment/enrollment rates. <i>And meets criteria from Developing and Implementing</i>	- Students and staff from Academy collaborate with feeder schools to develop, deliver, and monitor recruitment results from STEM crosswalk engagement lessons conducted at the feeder middle schools. At least 90% of 8th grade MS STEM students matriculate to HS STEM Academy. - Academy employs a needs assessment to analyze demographic trends to ensure equitable access and recruitment of greater than 50% economically disadvantaged and underrepresented students and sustains a full complement of students at each grade level. <i>And meets criteria from Developing, Implementing, and Mature</i>

Texas Science, Technology Engineering and Mathematics

Benchmark 3: Student Outreach, Recruitment, and Retention**Program Requirement: 3.3 Student Support and Retention**

- 3.3.A** Develops and implements systemic, tiered strategies for student support and retention (outreach, early intervention strategies, mentoring, tutoring, counseling, and other supports for academic and socio-emotional growth).
- 3.3.B** Hosts 5th – 6th and 8th – 9th orientation session(s) and summer bridge program(s) to facilitate successful student transitions and retention into a STEM-focused, college preparatory, project-based learning environment.
- 3.3.C** Provides all students with opportunities and the expectation to assume roles of responsibility within the classroom, Academy, and community.
- 3.3.D** Supports and monitors 6th – 12th student participation in STEM activities both within and outside the classroom to ensure that all students engage in STEM clubs, STEM competitions, and STEM field experiences.
- 3.3.E** Hosts parent seminars to develop deep understanding and commitment to the rigor of college readiness and the high expectations of a STEM Academy.

Example Artifacts

• Student, parent, staff contracts • Student retention and persistence plan • Orientation and bridge agendas • Exit interviews • IGP Minutes from persistence meetings, retention/attrition data		• Program adjustments due to student and community voice • Copies of trainings and participation of parents/community • Satisfaction/interest surveys from students, parents, community, staff, etc. • Lists of clubs, service learning projects, STEM activities, STEM field experiences, and planned competitions	
Developing	Implementing	Mature	Role Model
1. Academy develops a strategic plan for student retention and persistence, and maintains persistence rates above 70%.	1. Student persistence rates range between 70-80% and the strategic plan addresses research-based supports such as annual IGP review, parental involvement, tiered interventions, and cultural relevance.	1. Student persistence rates range between 81-90%, and the strategic plan includes yearly metrics, analysis of why students leave, and a plan to identify and prevent at-risk students from leaving.	1. Campus engages in ongoing dialogue to address persistence data (lack of course credit, leaving the Academy) and uses data to ensure persistence rates above 90%.
2. Academy develops student orientation/summer bridge program(s), student clubs, and plans for external STEM activities and competitions.	2. The orientation/summer bridge program sets priorities and includes a timeline with skills, tools, and resources for students to successfully transition to a STEM environment.	2. The orientation/summer bridge program is implemented as planned and continually refined annually, with a complete scope and sequence and supporting materials.	2. The orientation/summer bridge program monitors initial student success, identifies struggling students early on, and ensures those students have additional support.
3. Students can select from a small number of leadership opportunities available.	3. The staff encourages students to select leadership opportunities.	3. The staff monitors student involvement in leadership and STEM activities, clubs, and competitions; and develops interventions for students who have minimally participated.	3. Student leadership is evidenced in nearly every non-classroom related initiative or event and at least 90% of students participate in leadership and/or STEM activities, clubs and competitions.
4. Academy creates STEM Academy orientation for parents and stakeholders.	4. Opportunities exist for parents and stakeholders to participate in service learning, and/or attend student presentations.	4. At least bi-annual opportunities exist for parents and stakeholders to participate in STEM activities.	4. Annual parent and stakeholder participation goals are developed and monitored for continued improvement.
	<i>And meets criteria from Developing</i>	<i>And meets criteria from Developing and Implementing</i>	<i>And meets criteria from Developing, Implementing, and Mature</i>

Benchmark 3: Student Outreach, Recruitment, and Retention

- Review Program Requirement 3.1.A/B/C and 3.2.A/B.

Describe the Academy's open-access admission policy, the marketing, and recruitment plan to parents, students, and the community; and partnering with feeder schools to increase advancement rates in STEM from elementary to middle to high school.

Wharton ISD will utilize its HR Department to promote the STEM designation. Wharton ISD will continue to use its media resources to begin the initial recruitment process through media releases, including WISD Facebook, Instagram, and local newspapers. The information is also available on the Wharton ISD website. Local business partners assist in the distribution of program information related to STEM at WISD. Information is disseminated in English and Spanish to ensure that all potential students and parents are aware of the STEM designation at WISD. WISD will hold open forum meetings to address the potential benefits of participation in STEM at WISD. Efforts to reach local home and private school students for recruitment into STEM at WISD will be an area of improved focus. Incoming freshman students who have completed the gateway STEM course will be encouraged to continue with STEM, as well as targeting at risk and economically disadvantaged students. The STEM academy at WISD is an open enrollment program.

WISD's ultimate goal remains to accept the enrollment of all students that are interested in the STEM program.

- STEM Academies host orientation, summer bridge, and college preparatory seminars for parent and students; encourage student leadership, monitor student participation in STEM activities, clubs, competitions and field experiences; and develop intervention plans for students who minimally participate.
- STEM Academies maintain persistence rates above 70%, with a goal of at least 90%

Describe the campus plan to progress to "Mature" on the continuum for Program Requirement 3.3 Student Support and Retention (review the "Benchmark 3 Program Requirements" link at the top of this page).

WISD will continue to add extra-curricular programs to the currently operating Robotics club, Power Set, WIT, Knowledge Bowl, and Academic Rodeo. The goal of WISD will be to compete in Robotics competitions at the middle and high school level. Students will serve as leaders in STEM organizations as well as continue to serve as leaders in UIL competitions and student council. Additional clubs will be added as often as possible based on student interest with a focus of 5% gain in clubs and activities per year.

Science on Saturday, summer science enrichment, and other PBL activities will continue to be offered with a focus on increasing PBL.

The Nuclear Power Institute collaboration will allow WISD to continue offering Science on Saturday, which allows high school students to mentor younger students. Science on Saturday has a particular focus on the hands-on components and expanding PBL. WISD Science on Saturday has been a successful tool, as has participation in other district's Science on Saturday.

Each STEM academy student will have a Personal Graduation Plan completed in the district wide data management system (DMAC). Student data will be monitored and taken into consideration as college and career goals are developed. Goals will focus on students' interests and strengths. WISD counselors and administrators will continue to monitor student progress and intervene quickly.

WISD will continue to provide additional support through mentoring programs such as IMPACT, Boy's and Girl's Club, and Just Do It Now, as well as STEM clubs, Summer Bridge, and Orientation.

Benchmark 4: Teacher Selection, Development, and Retention

4.1.E.	Provides opportunities for ongoing professional development to improve teachers' content knowledge, technology embedded instruction, integrative STEM pedagogy, college and career readiness standards, instructional strategies for ensuring a successful P-20 pipeline, and leadership capacity.
4.2.A.	Develops a Professional Development (PD) plan for a sustained professional development model of continuous learning based on student results, teacher development, and the short- and long-term goals of the Academy.
4.2.B.	Adopts a systemic professional development model of continuous learning that addresses prioritized needs as informed and evaluated by multiple sets of quantitative and qualitative data (student assessment data, instructional/classroom evaluations, technological developments, workforce demands, demographic changes, and community/societal expectations and needs).
4.2.C.	Sustains a PLC by instituting job-embedded ongoing opportunities for continuous learning, peer coaching/mentoring, STEM externships, and participation in STEM teacher and leader cadres for teachers and administrators (research-based practices, content competence, new instructional strategies, technology integration, reflective inquiry, and student artifact analysis).
4.3.C.	Adopts and implements a plan for new teachers to include orientation, induction, acculturation, mentoring, professional development, and administrative support.
4.3.D.	Designs or employs innovative programs to support the recruitment and selection of highly qualified STEM teachers.

Key Elements for Success

- Master schedule with common planning time
- Teacher turnover rate
- Teacher mentoring program
- Written recruitment plan

	Developing	Implementing	Mature	Role Model
4.1.E	Academy has authority to hire "best" qualified for goals of the Academy and STEM blueprint requirements.	Develops a written plan for creative recruiting to ensure high qualified, effective teachers.	Develops annual needs assessment and actively implements a teacher recruitment and placement program.	Resources are allocated for recruitment of best qualified candidates, with the Academy partnering with teacher preparation programs such as UTeach, to recruit highly qualified teachers for Academy needs.
4.2.A. 4.2.B.	Develops PD plan with clear pedagogy expectations, aligned with mission goals, teacher needs, and student needs	Academy regularly uses diverse assessment tools/processes, enhanced media, adult learning theories, professional reflection time, problem-solving protocols, and self-paced learning with computer and human interaction for support, coaching, mentoring, and collegial interaction.	Needs assessment and PD plan address teacher and student retention to include teacher, student, and parent voice in decision-making process.	Meaningful partnerships with external organizations ensure progressive expectations for educators' application of content knowledge, curriculum design, and delivery.
4.2.C.	Develops a PLC plan that identifies ways in which teachers will work in collaborative teams to build shared knowledge and formative/summative data.	Teachers collaboratively develop 6th - 12th common essential student outcomes which reflect their efforts to build shared knowledge regarding best practice, (STEM integration, college and career readiness, 21st century skills.).	Teachers collaboratively clarify the criteria they use to judge quality of student work and criteria is consistently applied horizontally and vertically.	Teachers participate in externships and mentorships with higher education and industry. PLC plan is annually monitored, evaluated, and revised for effective practice.
4.3.C	Develops an Orientation plan aligned to Academy mission and vision, and teacher enculturation.	Induction plan addresses Academy expectations for instructional skills; interactions with students, parents, and community; classroom management; assessment of learning; technology; professional development; and mentoring.	Induction process is clearly enunciated, consistently practiced, and evaluated and revised for effectiveness.	Each new teacher participates in the induction process, is assigned a mentor teacher, understands the strategic goals of the Academy, and completes a Needs Assessment that identifies areas for individual professional development.
4.3.D.	Common planning time within the school day focuses on PLC collaboration.	Teams develop team-time norms, set goals, and evaluate effective use of team-time for curriculum development, student artifact reflection, parental involvement, etc. <i>And meets criteria from Developing</i>	Teams develop common metrics to measure and inform, in order to identify strengths and weakness in their individual practice, and to collaboratively improve their individual and collective efforts to help all students learn. <i>And meets criteria from Developing and Implementing</i>	Collaborative school-level planning is judged effective as evidenced by student learning outcomes. <i>And meets criteria from Developing, Implementing and Mature</i>

Benchmark 4: Teacher Selection, Development, and Retention

- Review program requirements for benchmark 4 in the link above.

Describe how the Academy will recruit, support, and retain highly qualified teachers. This should include plans for:

- Teacher recruitment and retention plan
- Sustained professional development (PD) plan which incorporates project-based learning and an integrated STEM curriculum into instructional practices based on qualitative and quantitative student data. (A timeline of planned PD will be uploaded in Benchmark 7.)
- A job-embedded Professional Learning Community with common planning times for collaboration.
- New teacher support (new to Academy and/or teaching profession).

Wharton ISD will be facilitating professional development for selected teachers in regards to PBL through UTMB. All teachers will be highly qualified. Stipends will be given as incentives for those pursuing and obtaining a master's degree in core content areas, high demand areas of secondary math and secondary science.

Teachers for the STEM Academy will be trained initially by the UTMB STEM Center to prepare them for project based teaching, STEM culture, 21st century skills and college and career readiness skills. Teachers, administrators, and district personnel plan to attend the STEM Conference annually send members to continue our stem vision.

All new teachers will be assigned a mentor. Monitoring will occur throughout the first semester to determine if the teacher needs additional support. Those teachers who require additional support will be assigned an administrative mentor to grow their abilities.

A mentoring program will be investigated in which STEM teachers will be partnered with an appropriate counterpart at WCJC for instructional coaching. This will be built to be a purely constructive and peer coaching experience. This will be helpful with curriculum alignment and instructional practices for both entities. Classroom visits will be scheduled once each grading period with written feedback shared between both teachers. A form will be provided for this purpose. Administrators from WISD and WCJC will partner to observe in WISD classrooms to give pertinent and timely feedback to teachers regarding the quality of their instruction.

Wharton ISD shall implement an annual professional development plan based on the needs of the Academy faculty.

Leaders have created a Professional Learning Community to help create a positive learning environment and empower staff.

Common planning time is scheduled during the school days for Professional Learning Communities. One of the goals of the Professional Learning communities is to provide an opportunity through job embedded ongoing professional development through the disaggregation of data from DMAC, teacher needs assessment surveys for their needs of professional development and input from IHE Advisory board members and designated STEM Coach. Data includes TEKS benchmarks results, discipline, attendance, and participation in extracurricular events/clubs. During PLCs teacher collaborative develop common assessments to ensure our students are STEM College and career ready our assessments will include 21st century skills.

Based on the data targeted interventions are developed to target academic need and/or social/behavior needs.

Instructional practices for qualitative and quantitative data Benchmark data analyzed In PLCs – review PBLs student artifact

Breakdown and in depth, detailed review of all PBL's performed throughout the year to analyze data: successes and areas of weakness to improve for following year.

Benchmark 5: Curriculum, Instruction, and Assessment

Example Artifacts: 5.1

- Course syllabi, lesson plans, unit lessons, PBL, scope, sequence, pacing guides
- Lessons include STEM standards, state standards, national standards, college and career readiness standards, 21st century skills
- Benchmark schedule, course passing rates, retention rates
- Student portfolios, IGPs, counseling, advising, college crosswalk, and feedback loop
- Plans for PSAT, Accuplacer, TSI, CTE, interventions, etc.
- Horizontal and vertical alignment of curriculum
- Students graduate with Endorsements & Performance Acknowledgements

In Benchmark 5, all program requirements are scored individually. There are no separate metrics. Assess the level of implementation for the program requirements below according to the standards to the right.		Developing Investigate, Research, and Create	Implementing Formalize, Revise, and Publish	Mature Data-driven evaluation of effectiveness of program requirements	Role Model Continually assesses to document successes and challenges with action plans implemented to correct deficiencies in performance
5.1.A.	Aligns curriculum, instruction, and assessment (such as, but not limited to, Texas CCRS, national and state standards, content, context, culture, cognitive level, competencies, skills, processes, 21st century skills, and STEM synthesis).	<i>Implementing</i>			
5.1.B.	Develops a scope, sequence, and pacing guide for a vertically and horizontally aligned curriculum centered on state standards, career and college readiness standards, STEM integration, and industry expectations.	<i>Developing</i>			
5.1.C.	Develops an assessment and intervention plan to address gaps in student achievement and areas for extension.	<i>Implementing</i>			
5.1.D.	Supports and encourages all students to successfully complete four years of mathematics, four years of science, four years of STEM electives, and at least one Endorsement in STEM, Business and Industry, Public Services, or Arts and Humanities, with a primary focus on a STEM Endorsement; and earn a Distinguished Level of Achievement as well as a Performance Acknowledgement in order to graduate college ready.	<i>Implementing</i>			
5.1.E.	Offers dual credit, articulated concurrent enrollment, AP or IB courses that all students will graduate with 12-30 college credit hours.	<i>Implementing</i>			
5.1.F.	Establishes curriculum expectations, monitoring, and accountability mechanisms that are reflectively revised to ensure a constancy of mission purpose (aligned resource allocation, integrated STEM curriculum development, teacher professional growth, and student results).	<i>Developing</i>			

5.1 Rigor

- Review the program requirements for Benchmark 5.1 Rigor on the previous page.

Describe how the Academy will progress along the continuum. This should include plans for:

- Alignment of curriculum and instruction as supported by assessment
- Assessment/intervention or acceleration plans for students
- Plan for four tears of math, science, and 12-30 college credit hours (dual credit/AP/IB)
- HS Endorsements available to Academy students

WISD has undergone intense curriculum alignment district-wide for the past two years under the new administrative team. Through the use of TEKS Resource System our Curriculum Department has aligned curriculum with state standards as well as articulated (vertically) between grade levels. Scope and Sequence documents ensure alignments with standards as well as optimal pacing of the curriculum. TEKS and CCRS will be integrated through STEM projects to ensure student mastery for met standard and advanced standard ratings. Projects will include local industry standards as to real life application to ensure our students are prepared for college and career STEM fields. District benchmark assessments are in place and are aligned with the written and taught curriculum.

Academy teachers continually revise and improve curriculum documents throughout the year, integrate STEM units of instruction, interdisciplinary learning, and PBL into the District Curriculum. District Curriculum Coordinators and Campus Curriculum Coaches facilitate ongoing curriculum alignment.

STEM students have the opportunity through existing Dual Credit partnerships to choose from courses that correspond with their interests from a set of pre-selected choices. Through our partnership with WCJC, we are working to expand from those courses offered traditionally to students to a more comprehensive core complete model. Teachers, advisors, and the college recruiter promote and encourage enrollment in these programs and emphasize college readiness.

PLC time is set aside for teachers to review curriculum and projects to ensure students are being exposed to the rigor necessary. We give the TSI to our students at the beginning of their freshman year to better gauge the level of rigor of our STEM/ECHS/Comprehensive courses. Additionally, our high school teachers meet three times a week during PLC to review data, individualize instruction based on student needs and collaborate with both faculty and staff to increase rigor and relevance in the classroom. Intervention is provided for struggling students in many different ways including teacher lead tutoring, peer tutoring and computer enhanced remediation/acceleration.

To support students achievement in STEM electives, Math, Science and Dual Credit Courses over four years, our teachers and staff continue their education. Professional Development is delivered both through PLCs and after-school sessions. Content of PLCs is determined by teacher identified needs and needs gleaned from weekly classroom observations.

Furthermore, to assist students in the transition from high school to college, we will hold students to the standard of applying to at least two colleges/universities and two scholarship applications each their junior and senior year. To further develop relations with the family, we hold a FASFA night in order to help parents fill out paperwork to qualify for financial aid. Our students academic success will extend farther than their high school career.

Benchmark 5: Curriculum, Instruction, and Assessment

Example Artifacts: 5.2

- Defined engineering coursework (Infinity Project, Project Lead the Way)
- Student journals, student presentations, peer performance assessment rubrics, and peer mentors
- Self-paced learning, student contracts, progress reports, exit interviews, parent/teacher/student conferences
- Lessons include work force clusters, expert practitioners, field-based learning, research of current issues, PBLs, guest speakers, differentiation, intervention and acceleration plans, student choice
- Number of offerings and number of students participating in co-curricular activities, clubs, academic teams, and competitions (UIL, Brain Bowl, Science Olympiad, Model UN, FIRST, BEST, Vex etc.)
- Design conceptual internships, identify STEM opportunities, business partners, scientific organizations, and universities
- IGP w/capstone project (research, annual review, and analysis)

In Benchmark 5, all program requirements are scored individually. There are no separate metrics. Assess the level of implementation for the program requirements below according to the standards to the right.		Developing Investigate, Research, and Create	Implementing Formalize, Revise, and Publish	Mature Data-driven evaluation of effectiveness of program requirements	Role Model Continually assesses to document successes and challenges with action plans implemented to correct deficiencies in performance
5.2.A.	Delivers innovative STEM programs that are well-defined, embed critical thinking and problem solving, innovation and invention, and are aligned to state and/or national standards and industry expectations.	Implementing			
5.2.B.	Supports and encourages students to complete three years of STEM electives at middle school and four years of STEM electives at high school.	Implementing			
5.2.C.	Develops performance-based and project-based assessments aligned to these innovative programs and state/national/industry standards.	Developing			
5.2.D.	Develops and implements a plan for supporting accelerated student achievement for students with demonstrated deficiencies or proficiencies in mathematics and science, to promote all students graduating ready for enrollment in credit-bearing postsecondary courses (e.g. Algebra I enrollment by 8th grade).	Implementing			
5.2.E.	Incorporates into the curriculum work-based contextual learning with a global perspective.	Developing			
5.2.F.	Participates in extra-curricular academic activities centered on science, technology, engineering, and mathematics; i.e. STEM field experiences, clubs, and competitions.	Implementing			
5.2.G.	Develops 6th-12th students' portfolios of interest in: STEM capstone projects, STEM internship opportunities, and global STEM college, degree, and career explorations. Requires all high school students to complete an internship, and/or a STEM-related capstone project, presentation, and defense; primarily focused in the state's STEM-related economic development clusters (information and computer technology, energy, petroleum refining and chemical products, advanced technologies and manufacturing, aerospace and defense, biotechnology and life sciences.).	Developing			

5.2 STEM-Focused Curriculum

- Review program requirements for Benchmark 5.2 STEM-Focused Curriculum on the previous page.

Describe how the Academy will progress along the continuum. This should include plans for:

- Well-defined STEM programs that are aligned with state, college and career readiness, and industry standards and embed critical thinking and problem solving, and foster innovation and invention
- Three years of STEM electives at middle school and four years of STEM electives at high school. For high schools, list the CATE elective pathways and courses that support each Endorsement offered by the Academy
- Performance and project-based assessments aligned to state, college and career readiness, and industry standards
- Work-based and contextual learning in the curriculum
- STEM-focused extracurricular activities (field experiences, clubs, and competitions)
- STEM-related internships and/or senior capstone projects, presentation, and defense
- Plan for 6th-12th student STEM portfolios

WISD will continue to add extra-curricular programs to the currently operating Robotics club, Power Set, WIT, Knowledge Bowl, and Academic Rodeo. The goal of WISD will be to compete in Robotics competitions at the middle and high school level. Students will serve as leaders in STEM organizations as well as continue to serve as leaders in UIL competitions and student council. Additional clubs will be added as often as possible based on student interest with a focus of 5% gain in clubs and activities per year.

Science on Saturday, summer science enrichment, and other PBL activities will continue to be offered with a focus on increasing PBL.

The Nuclear Power Institute collaboration will allow WISD to continue offering Science on Saturday, which allows high school students to mentor younger students. Science on Saturday has a particular focus on the hands-on components and expanding PBL. WISD Science on Saturday has been a successful tool, as has participation in other district's Science on Saturday.

Each STEM academy student will have a Personal Graduation Plan completed in the district wide data management system (DMAC). Student data will be monitored and taken into consideration as college and career goals are developed. Goals will focus on students' interests and strengths. WISD counselors and administrators will continue to monitor student progress and intervene quickly.

WISD will continue to provide additional support through mentoring programs such as IMPACT, Boy's and Girl's Club, and Just Do It Now, as well as STEM clubs, Summer Bridge, and Orientation.

Benchmark 5: Curriculum, Instruction, and Assessment

Example Artifacts: 5.3

- Peer observations, mentors, cross-curricular teams
- Walkthroughs, observations, model lessons
- Data informs scaffolding, re-teaching, and extension
- Team planning that defines student products, assessments, rubrics, and standards for cross-curricular and other PBLs, teacher research on STEM field expectations, current issues, and technology.
- Student presentations include digital materials, peer and internal/external expert evaluation
- Academy teachers have mentors at university and industry level that provide input to curriculum development
- Year-at-a-glance checklist documenting course coverage of state standards, 21st century skills, college readiness standards throughout grading period

In Benchmark 5, all program requirements are scored individually. There are no separate metrics. Assess the level of implementation for the program requirements below according to the standards to the right.		Developing Investigate, Research, and Create	Implementing Formalize, Revise, and Publish	Mature Data-driven evaluation of effectiveness of program requirements	Role Model Continually assesses to document successes and challenges with action plans implemented to correct deficiencies in performance
5.3.A.	Incorporates data-driven instruction.	Mature			
5.3.B.	Creates an environment for shared teacher responsibility and accountability for student learning across programs, content areas, and classrooms.	Implementing			
5.3.C.	Organizes instructional expectations around problem-based and project-based learning with clearly defined learning outcomes for students and teachers that address state and national performance standards, college and career readiness standards, and industry expectations.	Developing			
5.3.D.	Ensures teachers' use of the aligned scope and sequence and integration across the disciplines.	Implementing			
5.3.E.	Ensures teachers' use of high-quality curricular materials aligned with state and national standards, college and career readiness standards, and industry standards.	Implementing			
5.3.F.	Provides opportunities for students to exercise choice and voice within a relevant and rigorous context.	Developing			

5.3 Instructional Practices

- Review the program requirements for Benchmark 5.3 Instructional Practices on the previous page.

Describe how the academy will progress along the continuum. This should include plans for:

- Data driven instruction
- Shared teacher responsibility and accountability (PLC)
- Project Based Learning (PBL)
- Alignment of scope and sequence with state, CCRS, and industry standards
- Students exercise choice/voice within relevant and rigorous curriculum

Teachers meet three times a week during PLC to discuss data driven instruction and determine both student and teacher needs. Campus administration is present at least one time a week in PLCs to help facilitate the professional development that is needed based on those identified needs.

Campus administration is currently working on determining how to best implement PBL for the upcoming school year. Several teachers have begun to implement PBL in their classrooms. However, additional professional development will be provided to ensure the successful implementation of PBL campus wide.

Alignment with the state will come from the TEKS Resource System. Local industry standards will come from input from our Advisory Board member and our partnership with UTMB Stem Center. CCRS will be embedded in PBLs and included in core content areas through collaborative planning with WCJC. This planning has already taken place in the areas of Math and English Language Arts through participation in the Gulf Coast PASS grant and implementation of the Early College High School.

Department, grade level and faculty meetings are held regularly to track the individual student data and overall group data. Teachers implement required intervention plans based on discussions and decisions from these meetings.

The PLC culture fosters teacher's responsibility for helping other teachers where they are proficient and working with other teachers where they are strong in addition to the accountability created by the sharing of data teacher teams review completed student work to determine ways change curriculum and instruction to ensure more students meet mastery.

Benchmark 5: Curriculum, Instruction, and Assessment

Example Artifacts: 5.4

- Project Based Learning (PBL)
- Systemic expectations for number of presentations per class, documentation of students presenting to internal and external panels
- Design teams, group projects, multiage projects, simulations, robotics teams, green teams
- Project scenarios based on real-world issues (Future City, FIRST, Odyssey of the Mind, etc.)

In Benchmark 5, all program requirements are scored individually. There are no separate metrics. Assess the level of implementation for the program requirements below according to the standards to the right.		Developing Investigate, Research, and Create	Implementing Formalize, Revise, and Publish	Mature Data-driven evaluation of effectiveness of program requirements	Role Model Continually assesses to document successes and challenges with action plans implemented to correct deficiencies in performance
5.4.A.	Promotes instructional strategies that challenge students to think critically, innovate and invent to solve real-world, contextual problems.	<i>Implementing</i>			
5.4.B.	Exposes students to critical readings in STEM-related fields and requires students to demonstrate their understanding of STEM disciplines in a work-based, contextual environment.	<i>Developing</i>			
5.4.C.	Offers standards-based STEM programs that incorporate integrative STEM literacy and innovative instructional tools.	<i>Developing</i>			
5.4.D.	Promotes applied and collaborative learning, and provides students with opportunities to present/defend their work to peers, community, industry, and university leaders.	<i>Implementing</i>			
5.4.E.	Promotes a rich culture that incorporates a natural use of current technologies to enhance instruction, curriculum, teaching, and learning, and STEM literacy.	<i>Implementing</i>			

5.4. STEM Education Integration

- Review the program requirements for Benchmark 5.4. STEM Integration on the previous page.

Describe how the Academy will progress along the continuum. This should include plans for:

- Students apply critical thinking, innovation and invention, to problem-solve real-world scenarios.
- Student exposure to STEM related fields and understanding of STEM disciplines in a work-based, contextual environment
- Students present/defend their learning (PBLs and capstone projects) to external experts
- Use of current technologies to enhance instruction, curriculum, teaching and learning, and STEM literacy

The primary instructional model in the academy will be student-centered, indirect instruction. This includes PBL, problem solving, inquiry, and decision making. This type of learning takes advantage of student's interest and curiosities, encouraging them to generate alternatives, innovate, and invent. The Academy will embrace an interdisciplinary approach, integrating science, technology, engineering, and mathematics within all subject areas.

As part of our PLC teachers will research current STEM articles to enhance instruction, curriculum, teaching, and literacy.

Our goal is to have all of our teachers trained on PBL prior to the 2017/18 school year. Once adequate training has taken place PBL projects will be implemented. These projects will receive input from the IHE members of the Advisory board for their implementation of real world applications. PBL projects will be implemented in both core and elective curriculum which will ensure our students are given opportunities to present/defend their work to peers, community, industry, and university leaders. In addition our STEM students will participate in a wide variety of design teams via gaming and robotics competitions with more added in the following years.

In addition, we are working currently to incorporate the use of current technologies to enhance instruction and curriculum. For example, interactive white boards are available for use in classrooms with internet access. As deemed appropriate by the course students will be able to utilize top of the line calculators.

Our district is currently striving to integrate more STEM based instructional strategies and new technologies to better prepare our students. For our STEM academy, we are using UTMB as a resource to expose our students to STEM related fields. In addition, more dual credit courses will be offered as well as more engineering courses. We are working to implement one-to-one technology so that students will have access to the appropriate tools.

District administrators, campus administrators and teachers will continue to prepare for the full implementation of PBL, STEM, and technology in the classroom by attending related trainings and workshops as possible.

Benchmark 5: Curriculum, Instruction, and Assessment

Example Artifacts: 5.5

- Academy-developed process in place to identify STEM and content relevant vocabulary and just-in-time literature
- Plan for vertical and horizontal expectations, per grade level, of STEM vocabulary and relevant literature
- Literature- and language-rich environment which includes technical language journals, articles, periodicals, current events newspapers, online resources, webinars, and texts
- STEM-focused strategies and activities such as word walls, student journals, literature circles, mock trials, student forums, debates
- Stakeholder input into selection of STEM instructional materials student goals and reflections (literacy in STEM, 21st century skills, technology, etc.)
- Integrative instruction and instructional materials

In Benchmark 5, all program requirements are scored individually. There are no separate metrics. Assess the level of implementation for the program requirements below according to the standards to the right.		Developing Investigate, Research, and Create	Implementing Formalize, Revise, and Publish	Mature Data-driven evaluation of effectiveness of program requirements	Role Model Continually assesses to document successes and challenges with action plans implemented to correct deficiencies in performance
5.5.A.	Promotes technologically proficient and scientifically literate students with highly developed academic vocabulary and STEM technical vocabulary.	<i>Implementing</i>			
5.5.B.	Graduates 21st century literate students proficient in: English, reading, speaking, writing, numeracy, arts, health, sciences, and world languages; government, civics, history, and geography; environmental science; global awareness; information, communications, and media technology; and financial, economic, business, and entrepreneurship.	<i>Implementing</i>			
5.5.C.	Selects appropriate STEM curriculum and culturally relevant instructional materials that foster widespread use of literacy strategies within the STEM curriculum.	<i>Developing</i>			
5.5.D.	Provides opportunities for students to demonstrate the relevancy of the content through reading, writing, speaking, and presenting.	<i>Implementing</i>			

5.5. Literacy

- Review the program requirements for Benchmark 5.5 Literacy on the previous page.

Describe how the Academy will progress along the continuum. This should include plans for:

- Technologically and scientifically literate students
- 21st Century skills-literate students
- STEM curriculum and culturally relevant instructional materials
- Academy literacy plan

Literacy instruction in the academy is designed to foster essential skills such as the comprehension of complex texts, determining the meaning of obscure, unfamiliar, and technical vocabulary; use of higher order thinking skills to analyze a wide variety of literary and expository texts and media and the development of skills for expressing ideas by writing informative, persuasive, and creative texts.

It is our plan to work with UTMB and WCJC to make sure our curriculum includes the requisite scientific and technology vocabulary for success in college STEM fields.

We will graduate 21st century literate students by implement 21s skills in our PBLs such as collaboration, persistence, critical thinking, independent learning, global and entrepreneurial literacy, etc.

Students will have multiple opportunities throughout the year to demonstrate content mastery via reading writing, speaking, and presenting as part of the PBLs and extra-curricular STEM clubs and competitions.

The leadership team will gather input from the Advisory board and community to purchase additional STEM curriculum materials.

We will enhance the campus library with STEM journals which will be readily available for research and project based learning activities.

We are planning to invite professors and engineers as lecture speakers and key-note speakers at luncheons and seminars held on the campus for the purpose of promoting awareness and understanding of STEM related education. Parent and students are invited to attend these luncheons and seminars. The Nuclear Power Institute will be participating in this endeavor.

Benchmark 5: Curriculum, Instruction, and Assessment

Example Artifacts: 5.6

- Data informs instruction, plan for gaps and extension
- Curriculum aligned with standards, STEM, industry, and higher education
- Formative, diagnostic, and summative assessments, lesson redesign
- Student artifact reflection is used to inform diagnostic tools and processes
- Pre/post tests, cumulative folders, parent conferences, parent portal, student learning logs
- Pre-assessments/ post-assessments, course offerings for interventions, grades, end of course exams, student presentations, narrative assessments, oral assessments, product based assessment
- IGP's, progress reports, student information sheets, home visits, parent conferences, PEIMS info, call logs, counseling schedule/visits
- Student designed projects, project rubrics, peer reviews, panel reviews, adult/expert reviews
- Project lists knowledge and skills, 21st century skills and levels of skill mastery; course syllabus provides list of performance-based assessments; PD for teachers on developing PBLs

In Benchmark 5, all program requirements are scored individually. There are no separate metrics. Assess the level of implementation for the program requirements below according to the standards to the right.		Developing Investigate, Research, and Create	Implementing Formalize, Revise, and Publish	Mature Data-driven evaluation of effectiveness of program requirements	Role Model Continually assesses to document successes and challenges with action plans implemented to correct deficiencies in performance
5.6.A.	Uses diagnostic, ongoing, and vertically and horizontally aligned formative and summative assessments for all students to drive instructional decisions.	Implementing			
5.6.B.	Uses state and national standards, college and career readiness standards, industry standards, and STEM program requirements to develop common benchmark assessments.	Implementing			
5.6.C.	Employs student readiness assessments or diagnostics to identify and address gaps in learning.	Implementing			
5.6.D.	Tracks and reports student progress using student information systems.	Mature			
5.6.E.	Uses performance-based assessments that allow students to demonstrate their understandings of STEM concepts.	Mature			

5.6 Assessments

- Review the program requirements for Benchmark 5.6 Assessments on the previous page.

Describe how the Academy will progress along the continuum. This should include plans for:

- diagnostic, ongoing and vertically and horizontally aligned formative and summative assessments;
- state, college and career readiness, and industry standards alongside STEM program requirements;
- student readiness assessment to address gaps;
- student information systems to track progress; and
- performance based assessments that demonstrate student understanding of STEM concepts

Wharton ISD has in place the TEKS Resource System curriculum which ensures a viable, vertically and horizontally aligned scope and sequence. Through PLCs, teachers analyze data from formative and summative assessments which dictate decisions for interventions and delivery method of the curriculum.

Wharton ISD uses state and nations standards to assess our students. We review ACT and SAT data. We also have access to the TSI data through our designation as a TSI testing site.

Through DMAC, teachers have access and use student assessment data to drive decisions made in PLCs and to decide what interventions are most successful in helping student's master content. In addition teacher teams discuss what best instructional practices are helping students to succeed.

Readiness assessments and diagnostics are performed through district benchmarks and common campus assessments as developed by the teachers. Previous standardized test results also helps guide teachers in early identification for student gaps. In coming years, PSAT and TSI results will also help guide decisions made by the PLC.

Teachers will be trained over the summer and throughout the 2016/17 school year on how to implement performance based assessments as part of the PBL training

Benchmark 6: Strategic Alliances

Program Requirements

6.2.A.	Identifies and secures key business, industry, and community partners to support STEM Academy efforts (mentorships, service learning projects, etc.).			
6.2.C.	Identifies and secures key business and industry partners to provide STEM-related job shadowing, internships, and externships for students and teachers.			
6.3.A	Develops a Memorandum of Understanding (MOU) for dual credit.			
6.3.C	Develops partnerships to support a college going culture and to provide STEM graduates access to college support services (college trips, college entrance aid, GEAR UP and P-20 initiatives).			
6.1.B	Provides opportunities to educate students/parents on STEM Academy expectations such as parental engagement, college connections, scholarship opportunities, mentorships, etc.			
	Developing	Implementing	Mature	Role Model
6.2.A 6.2.C	Initiates a few partnerships with business, community, and industry.	Initial contact made and some support is provided by community business partners. Business and industry relationships are limited to onsite mentoring activities and some minor financial support.	Partnership with business and industry is formalized via established agreements. Outcomes and expectations are concrete and regularly reviewed. Partnership is evident by two-way communication of goals and vision as to what the STEM program provides.	Each major academic area is sponsored by corporate or community partners. Industry representation is a key component of the STEM strategic planning process. Integration of Academy students in business and community activities is visible.
6.3.A 6.3.C	Initial contact made and some support is provided by higher education organizations. Some courses are available to enhance STEM curriculum integration.	Develops Higher Ed connections to facilitate MOUs, crosswalk plans, teacher mentors, and externships.	Partnerships and MOUs with higher education communities are an integral component of Academy delivery model.	College credit is given to STEM students upon completion of academic work sanctioned by accredited colleges. Admission rates for STEM students to IHE exceed the normalized rates for all students within the sponsor school system.
6.1.B	Minimal strategic communications with parents and families.	Regularly scheduled distribution of communications is planned and presented to key stakeholder groups. <i>And meets criteria from Developing.</i>	Strategic communications are timely and are developed ad hoc as conditions warrant. Key messages are presented by leadership emphasizing the importance of the communication to the intended audiences, via community town halls, PTO meetings, advisory board meetings, and school board presentations. <i>And meets criteria from Developing and Implementing.</i>	Real time communications are evident via communications technologies such as websites, newsletter articles, and media presentations using the community's public service forums, (public television and radio). Leadership is easily accessible and continuously engages partnerships with stakeholders in community and student families. <i>And meets criteria from Developing, Implementing, and Mature.</i>

Benchmark 6: Strategic Alliances

- Review the program requirements for Benchmark 6 above.

Describe how these strategic alliances 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.

The Wharton ISD STEM Advisory Board will provide mentorship and over site to the STEM Academy. Community members of the board will help cultivate community support and possible resources to the Academy. Higher Education members will ensure that students are learning and graduating with STEM skills needed at the college level.

Business members will ensure that students are learning and graduating with the skills needed to enter the work force after graduating from the STEM Academy as well as provide job shadowing; internships and externships for students and teachers; and field experiences for students.

UTMB and WCJC will also provide coaching and ongoing professional development for STEM teachers and administrators.

Wharton ISD has formed strategic alliances with key business, industry and community partners to support STEM efforts through the implementation and creation of the District Ambassadors that meet monthly to discuss opportunities in the community for the students as well as reviewing all aspects of the day to day operation of WISD. This group serves as the districts' voice within the community. Committee members are encouraged to bring concerns of the community to the attention of the administration and to provide community information regarding the positive occurrences in the district.

Wharton Economic Development Corporation offers students with STEM field experiences throughout the school year and during the summer months.

Dr. Aaron Drake, Alamont Veterinary Clinic will provide job shadowing opportunities for our students.

Benchmark 7: Assurances

The following document must be attached in order for the T-STEM Designation application to be submitted.

Official signature: Official signature of a district or charter official authorized by the local board to bind the applicant organization in a legally binding contractual agreement.

[View Document](#)

Dual Credit MOU: The district or CMO provides assurance that a Memorandum of Understanding (MOU) with an Institution of Higher Education that defines the dual credit agreement is current (for the 2016-2017 school year). The MOU must be signed by all parties and ensure that sufficient detail are included and is on file at the T-STEM Academy. The executed IHE MOU for dual credit must be available for review by TEA upon request.

☒ Assurance Provided

If the T-STEM Academy is only providing AP coursework, list the AP courses that will be taught in the 2016-2017 school year.

Professional Development Plan: The T-STEM Academy applying for designation, provides assurance that a Professional Development Plan detailing the types, frequency, the provider of STEM professional development to be provided during the 2016-2017 school year, and is on file at the T-STEM Academy. The professional development plan must be available for review by TEA upon request.

☒ Assurance Provided

Business Agreement: The T-STEM Academy applying for designation, provides assurance that a minimum of one business agreement is current (for the 2016-2017 school year), signed by all parties, provides sufficient detail regarding the role of each party, (which allows students to participate in internship programs, capstone projects, or conduct field work) and is on file at the T-STEM Academy. The business agreement must be available for review by TEA upon request.

☒ Assurance Provided

2016-2017 Master Schedule: The T-STEM Academy applying for designation, provides assurance that the proposed master schedule, demonstrating a commitment to STEM education, rigorous coursework including Dual Credit, AP, or IB courses, and a vertically and horizontally aligned curriculum is on file at the T-STEM Academy. The 2016-2017 master schedule must be available for review by TEA upon request.

☒ Assurance Provided