



Application for T-STEM Designation - Full Designation

2017-2018

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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.

Any district or charter school campus that is utilizing 2016-2017 as a planning year, and if designated will begin implementation at the beginning of the 2017-2018 school year.

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 31st, 2017**
- 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 31st, 2017: Applications are due to TEA in order to open a campus as a designated T-STEM Academy during the 2017-2018 school year.
- June 2017: Districts submitting applications by March 31st, 2017 will be notified of the selection or non-selection of the campus as a designated T-STEM Academy on or about June 2017. Applications submitted prior to the March 31st, 2017 deadline may be approved prior to June 2017.
- 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 2017-2018 school year, signed by all parties, and provides detailed information regarding the specific assurance.
 - **Dual Credit MOU**
 - **Professional Development Plan**
 - **Business/Industry Agreement**
 - **2017-2018 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:

- A campus must be designated prior to the beginning of the school year to operate as a TEA designated T-STEM Academy for that year. T-STEM Academy designation is valid for a maximum of one year school year. Any campus wishing to be a designated T-STEM Academy must apply each year via the TEA T-STEM designation process.
- The T-STEM Academy must serve grades 9 through 12 and may serve grades 6, 7, and 8.
 - If an academy implements a 9-12 model, it must at least serve students in 9th grade.
 - If an academy implements a 6-12 model, it must, at a minimum, serve students in 9th grade and a middle school grade.
- A campus will select their campus model from one of the options below:
 - Stand-Alone Academy Single Campus: All students are enrolled in the T-STEM Academy.
 - Stand-Alone Academy Multiple campuses: All students on each campus are enrolled in the T-STEM Academy. This model typically spans a middle school and a high school for those academies that are serving students in grades 6-12.
 - School-within-School: A subset of student enrolled in grades 9-12 are enrolled in the T-STEM Academy.
 - School-within-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 a high school
 - School-within-School Other Grade Levels: all students enrolled in grades 6-12 or 9-12 are enrolled in the T-STEM Academy but other grade levels exist on the campus (such as grades K-5).
 - Other: Applicant must describe their model in detail.
- All designated T-STEM Academies are required to report student enrollment on the PEIMS Indicator during submission 1 (Fall Snapshot), 3, and 4. Submission data must be in alignment with the model selected above.
- A campus must implement during the initial designation year. Campuses that intend to enter a planning year should not apply for designation until they are ready to begin implementation.

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.

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.

CONTACTS

1.1 T-STEM Academy

T-STEM Academy Name	Alief ISD STEM Academy
Mailing Address - Line 1	2811 Hayes Road
Mailing Address - Line 2	
Mailing City	Houston
Mailing Zip Code	77082

1.2 School District

School District name	Alief ISD
Mailing Address - Line 1	4250 Cook Road
Mailing Address - Line 2	
Mailing City	Houston
Mailing Zip Code	77072

1.3 Education Service Center Region	04
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1.4 Person Completing this Application

Name Prefix	Dr.
First Name	Karen
Last Name	Jacobs
Job Title	Secondary Science Coordinator
Phone	(281) 414-0429
Email	karen.jacobs@aliefisd.net

1.5 Academy Principal/Director

Name Prefix	Ms.
First Name	Kerry Beth
Last Name	Johnson
Job Title	Principal
Phone	(281) 988-3010
Email	kerrybeth.johnson@aliefisd.net

1.6 Superintendent

Name Prefix	Mr.
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First Name	HD
Last Name	Chambers
Phone	(281) 498-8110
Email	hd.chambers@aliefisd.net

1.7 T-STEM Academy Partner Information

Institute of Higher Education Partner (dual credit provider)	Houston Community College
STEM Business Community Industry Partner	Citgo

1.8 Authorized School District or Charter Official

Name Prefix	Mr.
First Name	HD
Last Name	Chambers
Job Title	Superintendent
Phone	(281) 498-8110
Email	hd.chambers@aliefisd.net
Uploaded Signature	View Uploaded Document

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 T-STEM Academy Operation 2015-16

2.2 Academy Model: What is the design of the T-STEM Academy requesting designation? School-within-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 a high school.

2.3 Target Population

What is the grade level range of students your academy will serve? 6th-12th

The T-STEM academy must serve grades 9-12 and may serve grades 6,7, and 8.
 If an academy implements a 9-12 model, it must serve at a minimum grade 9 during the initial designation school year.
 If an academy implements a 6-12 model, it must serve at a minimum grade 9 and one middle school grade during the initial designation school year.

Current (if applicable) and projected student enrollment:								
Grades of students to be served	6th	7th	8th	9th	10th	11th	12th	Total Enrollment
2017-2018 projected enrollment	250	300	300	110	110	110	N/A	1180
2016-2017 enrollment (if designated in the 2016-2017 school year)	0	260	260	110	110	N/A	N/A	740

County-District-Campus numbers where students from each grade level are enrolled:							
Grades of students to be served	6th	7th	8th	9th	10th	11th	12th
9-Digit CDC #:	101903141	101903042	101903043	101903012	101903012	101903012	

Part 3: Provisions and Assurances

To be designated through the T-STEM Designation process, a campus must exhibit, at a minimum, specific design elements from the T-STEM Blueprint. Campuses previously designated in the 2016-2017 school year as “fully designated” may apply to renew their designation for the 2017-2018 school year by assuring the Texas Education Agency that the T-STEM Designated campus continues to comply with these elements. All campuses that receive designation through the T-STEM Designation process must continually exhibit the design elements to be T-STEM designated for the 2017-2018 school year.

The following T-STEM Blueprint benchmarks are the minimum required elements, which the campus must assure through this application, will be implemented in the 2017-2018 school year. If requested by the Texas Education Agency, the campus must provide evidence that the minimum elements listed are in practice at the campus. If the campus is unable to provide evidence that the minimum design elements listed below are in practice at the campus, TEA may revoke the T-STEM Designation.

- **Target Population:**

- The T-STEM Academy must serve grades 9 through 12 and may serve grades 6, 7, and 8.

- **Partnership Agreements:**

- The T-STEM Academy recruitment and enrollment processes and requirements shall not exclude or discourage the enrollment of any of the subpopulations of at-risk students (as defined by PEIMS), including, but not limited to, students who are of limited English proficiency or who have failed a state administered assessment. Enrollment decisions shall not be based on state assessment scores, discipline history, teacher recommendations, or minimum grade point average (GPA).
- Each Academy must assure that a Professional Development Plan detailing the types and frequency of STEM professional development that will be provided during the 2017-2018 school year for Academy staff. The plan should also include the entity providing professional development.
- The T-STEM Academy must have current agreements signed with local businesses allowing students to participate in internship programs or capstone projects.

- ***The following are mandatory elements that demonstrate success within a T-STEM Academy. In order to comply under the guidelines set forth for designation, an academy must meet these standards.***

1. **Mission Driven Leadership:**

- The Academy must have a mission statement and planned advisory board that reflects 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.

2. **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.

- **An effective T-STEM education focuses on improving instruction and academic performance in science and mathematics-related subjects and increasing the number of students who study and enter STEM careers. In order to achieve this, the following are necessary elements proven to have an impact student performance and success.**

1. 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.

2. 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.

3. 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.

4. 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.

- **Sustainability and Advancement:**

- The Academy must have a plan for continuous improvement and growth.

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

5.1 Rigor

Identify the endorsement areas that the T-STEM Academy will be offering to students in the 2017-2018 school year by checking each individual endorsement area.

- STEM (All designated T-STEM academies are required to offer the STEM endorsement)
- Business and Industry
- Public Service
- Arts and Humanities
- Multidisciplinary Studies

5.2 STEM-Focused Curriculum

Describe the current STEM pathways available at the academy and list all industry certifications that students have the opportunity to earn by graduation.

In Alief ISD, we offer multiple pathways toward getting a STEM or Public Service endorsement for Pre- Medicine, Pre-Dentistry, etc. students. Our kids can get endorsed through Science, Math, Engineering, Computer Science, and/or with a combination of courses. We do not limit out students. Certifiable curricula in use are STEM Scopes, Project Lead the Way, NXT Robot Curriculum, Career Portals in STEM developed by Pitsco, the Navy's SeaPerch Underwater Robotics, JASON Learning, Action based- learning, Consumer Energy Alliance, Citgo- endorsed Ocean Exploration Trust, the Children's Museum of Houston, PBLs, etc. Industry certifications include, but not limited to Pharmacy Technician, Certified Nurses' Assistant, Welding, Plumbing, HVAC, SAE, etc.

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. By signing the designation application, the district assures the minimum requirements for T-STEM Designation will be implemented in the designation year.

[View Uploaded 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 2017-2018 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 2017-2018 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 2017-2018 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 2017-2018 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

2017-2018 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 2017-2018 master schedule must be available for review by TEA upon request.

Assurance Provided