



# MHS Eagle TSTEM Academy

## T-STEM Renewal Application

### 2019-2020

# Contents

[Background](#)

[Contacts](#)

[Narratives](#)

[Download Assurances Signature Page](#)

# Background

## District Affiliation

MISSION CISD

CD #: 108908

Region: 01

Mailing Address (Line 1): 1201 BRYCE DR

Mailing Address (Line 2):

City, State, Zip: MISSION, TX 78572

# School Affiliation

MISSION H S

CDC #: 108-908-001

Region:

Mailing Address (Line 1): 1201 BRYCE DR

Mailing Address (Line 2):

City, State, Zip: MISSION, TX 78572

## Academy Information

**T-STEM Academy Name:**

MHS Eagle TSTEM Academy

**Are you currently in the 2018-2019 planning year or are a 2018-2019 planning grantee?**

No

**What grade level range will your academy serve in the 2019-2020 school year?**

9-12

Grade Level	Number of Students	School / CDC # Where Students are Enrolled
9	202	MISSION H S (108908001)
10	201	MISSION H S (108908001)
11	140	MISSION H S (108908001)
12	172	MISSION H S (108908001)

# Contacts

## Business Partner

**Affiliation:** Mission Economic Development Council

**Job Title:** Program Director

**Full Name:** Mrs. Cristina Garza

**Email:** cgarza@missionedc.com

**Phone Number:** 956-221-0835

## Superintendent

**Job Title:** Superintendent, Mission Consolidated Independent School District

**Full Name:** Dr. Carol Perez

**Email:** cgpere95@mcisd.org

**Phone Number:** 956-323-5500

## Applicant

**Job Title:** MHS Eagle TSTEM Administrator

**Full Name:** Mr. Eric Gutierrez

**Email:** eaguti14@mcisd.org

**Phone Number:** 956-323-5700

## IHE Liaison

**Affiliation:** South Texas College

**Job Title:** Director of Early College High Schools

**Full Name:** Ms. Sofia Pena

**Email:** sofia21@southtexascollege.edu

**Phone Number:** 956-872-2303

## IHE Liaison

**Affiliation:** South Texas College

**Job Title:** Coordinator of Early College High Schools - South Texas College

**Full Name:** Mr. Aaron Guajardo

**Email:** aguaja18@southtexascollege.edu

**Phone Number:** 956-872-7217

## IHE Liaison

**Affiliation:** South Texas College

**Job Title:** Dual 2 Degree Specialist

**Full Name:** Ms. Jimena Olivares Hinojosa

**Email:** jolivarez\_9952@southtexascollege.edu

**Phone Number:** 956-872-6434

# Narratives

## Model Implementation

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

School-Within-School (SWS) - A subset of students on the campus are enrolled in grades 9-12 are enrolled in the T-STEM academy.

## Endorsements

**Identify the current endorsements that are offered:**

- Science, Technology, Engineering, and Mathematics (STEM)
- Business and Industry
- Public Services
- Arts and Humanities
- Multi-disciplinary Studies



## Certificates

Does this academy offer Associate Degrees to students?

Yes

## Industry Certificates

Identify all industry certificates offered to students.

Certificate	Description
EKG	130 continuing education hours to provide principles and procedures of 12 lead electrocardiography (EKG) which may include stress testing and Holter monitoring and care and care and maintena
Phlebotomist	124 continuing education hours in the development in the performance of a variety of blood collection methods using proper techniques and standard precautions
CPR Certification	4 hours to prepare to handle cardiac and respiratory emergencies
Pharmacy Technician	112 continuing education hours to provide students with pharmacy history, communication and custoemr care, pharmacy law and ethics, terminology and abbreviations, and math computations

## Level One Certificates

Identify all level one certificates offered to students.

Certification	Description
Patient Care Assistant Certificate	16 credit hours in Nurse Aide for Health Care, Clinicals I/II, Patient Care Technician, Phlebotomy, EKG

## Level Two Certificates

Identify all level two certificates offered to students.

Certification	Description
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## TSIA

Does this academy administer the TSIA exam?

Yes

What ID number do students use when taking the TSIA exam?

Unique State Assigned ID

## Key Elements for Success

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

[https://mhseagletstemacademy.wordpress.com/about-us/b description, roles of design team, leadership team, and advisory board.](https://mhseagletstemacademy.wordpress.com/about-us/b-description,roles-of-design-team,leadership-team,and-advisory-board) <https://mhseagletstemacademy.wordpress.com/about-us/>

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

<https://mhseagletstemacademy.wordpress.com/memorandums-of-understanding/>

**Provide a link to the academy's master schedules.**

<https://mhseagletstemacademy.wordpress.com/tstem-master-schedule/>

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

<https://mhseagletstemacademy.wordpress.com/admission-policy/>

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

<https://mhseagletstemacademy.wordpress.com/recruitment-plan/>

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

<https://mhseagletstemacademy.wordpress.com/internships-capstone/>

## Free-Response

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

Academy teachers are recruited based upon their interests in STEM; all academy teachers have a passion for challenging students, being innovative, and insuring students are successful. They have been PLC trained and are vital members of the academy's Professional Learning Community; teachers participate in and become leaders in various PLCs to impact student learning and to strengthen their bond. They have a common planning period as well as department planning periods. The teachers not only collaborate and plan together, but work well with each other, always focusing on improving delivery of instruction and student engagement and achievement. They implement "book studies" to improve instruction. They collaborate in the development of lessons for co-teaching and across disciplines, including elective courses in the STEM pathway. Teachers work together to develop integrated, inter-disciplinary project-based learning units, to monitor, and mentor students and collaborate to provide meaningful, engaging enrichment activities.

Professional development is aligned to the district and campus improvement plans and the Academy Annual Action Plan, while also targeting areas of growth for the TSTEM Academy teachers. Since the district is implementing the Ford Next Generation Learning, professional development targeting the transformation of teaching and learning is being planned. The academy's professional development continues to be data-driven and mission-driven. Teachers have been trained in the data-driven decision-making framework implemented through Margaret Kilgo training and Lead4Ward. Unpacking the TEKS trainings insure alignment/integration of CCRS into the curriculum. The academy professional development includes PBL training each year in addition to any professional development individual teachers would like to attend such as TSTEM Center PD, Project Lead the Way training, AVID, Conference for the Advancement of Mathematics, Teaming, Scheduling, GT training, Laying the Foundations and Pre-AP/AP Summer Institutes. Teachers participate in teacher externships for teachers to acquire on-the-job training; these experiences are incorporated into the delivery of instruction for students. All planned professional development is systemic and insures integration and implementation of a horizontally and vertically aligned rigorous STEM curriculum, integrating the CCRS, and best practices in delivery of instruction. Moreover, teachers are provided opportunities to pursue district-funded masters degrees in the areas they teach, so they become experts in their fields. Eagle TSTEM teachers are committed to success for every student and model collaboration as a team, while being innovative, flexible, and supportive of individual student needs, interests, and objectives to insure students are engaged with learning.

**Describe the current STEM pathways available at the academy.**

The academy pathways include four years of coursework in each content area (math, science, English language arts, social studies). Plans for academy students are successful graduation at the Distinguished Level with Performance Acknowledgements for college credit since the goal of the academy is to insure students graduate with an associate degree in a STEM-field or THECB core complete. Academy students are encouraged to graduate not only with a STEM, multi-disciplinary or public service endorsement, but with an additional endorsement such as fine arts/humanities or business/industry. The academy provides the opportunity for its students to complete pathways in engineering, computer science, health science, and a combination of a coherent sequence of CTE under the STEM-endorsement. The TSTEM Academy provides the opportunity for students to earn associate degrees through South Texas College in engineering (Associate of Science in Engineering/74 college credit hours), computer science (Associate of Science in Computer Science/60 college credit hours), medical science (Associate of Science in Biology/62 college credit hours), or interdisciplinary studies (Associate of Arts in Interdisciplinary Studies/60 college credit hours with 18 hours in a STEM field of study). In addition, the TSTEM Academy provides pathways in certifications which may lead to associate degrees. Certifications currently available include certified nurse assistant, certified phlebotomy technician, certified pharmacy technician, electrocardiogram technician, and certified patient care technician.

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

For the past couple of years, Mission High School has been undergoing renovation; by August 2018, the campus should be completed, so the Eagle TSTEM Academy can better function as a school-within-a-school. The TSTEM Academy will be better able to insure all students focus on becoming STEM-ready, college-ready/college-connected high school graduates along the associate degree pathway. For the past couple of years, the shared common vision between the TSTEM Academy, IHE, businesses, the community and families has continued to be that education is the key to breaking the cycle of poverty for first generation, lower SES students by immersing them in a college-going culture where failure is not an option. Mission Eagle TSTEM Academy has planned strategic alliances with its IHE partner, local and regional businesses, the community, and parents to build an infrastructure of support for students transitioning through the STEM pipeline. The STC-Mission Eagle TSTEM Academy partnership will continue to transform lives by our commitment to building and expanding the college-going culture to include STEM businesses, the community, and parents. Strong partnerships have proven to be a successful mode for building rigor and relevant instruction and innovation through systemic change in the region. TSTEM students are also provided opportunities to visit IHEs in the region and state so each student can receive a "hands-on" view of a college or university they wish to attend.

Business partners for Eagle TSTEM have a vested interest in students graduating college-ready and college-connected in STEM-fields, since they are established businesses in the local and regional community. The local STEM business partners continue to expand their involvement with Eagle TSTEM Academy by serving on the Advisory Board, providing opportunities for mentorships and service learning projects, allowing job shadowing, and by participating in academy events such as career fairs. In addition, many of our business partners have been providing externship opportunities for our teachers.

The parental involvement plan, specific to the academy, includes providing more opportunities for parents to become actual partners through parent orientation sessions and regularly scheduled meetings with the academy teachers (every six weeks/semester, parents will meet with teachers to review student progress and coursework). The academy plans to provide workshops and seminars focusing on the importance of postsecondary education and STEM-fields. Through a systemic parental involvement model, parents will become more involved with the academy, even leveraging their skills to possibly provide workshops, presentations, and joint community service projects.

Business partners, the community, and parents will be informed at regular meetings of the importance of the structure of Eagle TSTEM Academy, including coursework, qualitative and quantitative data, goals and expectations, and college transition and admissions requirements. The partners will work together to build capacity to serve all Eagle TSTEM Academy students and will meet to communicate to insure all students are successful in STEM-related fields.

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

The TSTEM Academy's work-based and contextual learning in the curriculum have primarily been through classroom instruction and activities such as FIRST Robotics, the NASA Aerospace Scholars Program, HESTEC Robotics Day, the Mission EDC Civic Innovation Summit, and the CREW (Career Readiness and Empowerment of Women) internship program, which is a program designed to provide interns with the soft and technical skills needed to success in the Entrepreneurship and STEAM fields through the core areas of Career Lab, Mentorship, Social Innovation, and Coding. In addition, TSTEM students present at the Student by Student Technology Leadership Conference.

Since the Mission Eagle TSTEM Academy provides pathways under the STEM, Public Service, Business and Industry, Arts and Humanities, and the Multi-disciplinary Studies endorsements, contextual learning within the curriculum is addressed through the selected pathway. Students in STEM engage with robotics and coding through their engineering courses, while implementing Project Lead the Way (PLTW) curriculum. Computer science students learn coding, computer programming, and computer science through PLTW courses, while integrating this into core content. Students in the health science pathway engage with the real world through clinicals and practicums. Since the TSTEM Academy encourages the development of well-rounded students and active student engagement on campus, students are encouraged to participate in pathways to earn an endorsement in Fine Arts and Humanities, while participating in extracurricular activities in these areas.

In the 2018-2019 school year, plans are to integrate the core content with the career pathways through project-based learning and Capstone Projects. Professional development in these areas is being schedule to insure teachers in the TSTEM Academy work together to create opportunities for students to hone their skills in communication, collaboration, cooperation, creativity, and critical-thinking.



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

Students in the TSTEM Academy not only compete in FIRST Robotics Competition (FRC) and FIRST Technical Challenge (FTC) competition, but they compete at HESTEC in robotics and underwater robotics, UIL, and participate in the NASA Aerospace Scholars Program and HOSA (Health Occupations Students of America). TSTEM Academy students prepare and present at the Student by Student Technology Leadership Conference, the CREW (Career Readiness and Empowerment of Women) Internship, and the Mission EDC Innovation Summit. Each year, students take field trips to NASA, United Launch Alliance, the TSTC Challenger Center, and the USS Lexington, while visiting colleges and universities such as UTRGV, UT-Austin, Texas A&M Corpus Christi, and South Texas College.