



MERCEDES H S
T-STEM Renewal Application
2019-2020

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Background

District Affiliation

MERCEDES ISD

CD #: 108907

Region: 01

Mailing Address (Line 1): P O BOX 419

Mailing Address (Line 2):

City, State, Zip: MERCEDES, TX 78570

School Affiliation

MERCEDES H S

CDC #: 108-907-001

Region:

Mailing Address (Line 1): 1200 S FLORIDA

Mailing Address (Line 2):

City, State, Zip: MERCEDES, TX 78570

Academy Information

T-STEM Academy Name:

MERCEDES H S

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	100	MERCEDES H S (108907001)
10	71	MERCEDES H S (108907001)
11	62	MERCEDES H S (108907001)
12	72	MERCEDES H S (108907001)

Contacts

Business Partner

Affiliation: Magic Valley Electric Cooperative

Job Title: Eastern Division Manager

Full Name: Mr. Brian Acosta

Email: bacosta@magicvalley.coop

Phone Number: 956-496-5956

Superintendent

Job Title: Superintendent

Full Name: Dr. Daniel Trevino

Email: daniel.trevino@misdtx.net

Phone Number: 956-514-2022

Applicant

Job Title: Dean of Instruction- Mercedes High School

Full Name: Mrs. Debra Quist

Email: debra.wilson@misdtx.net

Phone Number: 956-514-2100

IHE Liaison

Affiliation: South Texas College

Job Title: Dean for Dual Credit Programs & School District Partnerships

Full Name: Dr. Rebecca De Leon

Email: rdeleon_8106@southtexascollege.edu

Phone Number: 956-872-2607

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
Certified Nursing Assitant	Certification to work in a nursing home or hospital
Phlebotomy	Certification to draw blood in a medical facility
Electrical Apprenticeship	Apprenticeship License to work along with a master electrician
OSHA Certification	Certificate for safety to work on any industrial job

Level One Certificates

Identify all level one certificates offered to students.

Certification	Description
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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.

<http://mercedeshs.weebly.com/stem-academy.html>

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

<http://mercedeshs.weebly.com/stem-academy.html>

Provide a link to the academy's master schedules.

<http://mercedeshs.weebly.com/stem-academy.html>

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

<http://mercedeshs.weebly.com/stem-academy.html>

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

<http://mercedeshs.weebly.com/stem-academy.html>

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

<http://mercedeshs.weebly.com/stem-academy.html>

Free-Response

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

The Academy looks for teachers who will provide rigorous, student-centered experiences in the classroom through a challenging, yet supportive environment. To support these teachers, opportunities are provided for them to attend STEM-related professional development through the Region One Service Center, as well as local professional development provided through the district. Teachers are also encouraged to attend regional and state STEM and/or content related conferences, such as: CAST, CAMT, and the STEM Summit. Additionally, the MENTORS Project through Texas A & M College Station offers academy teachers a four-week educator fellowship in biomedical sciences and a six-week research fellowship in biomedical engineering and technology. Teachers are encouraged to participate and help in the development of lessons in their content in order to better promote STEM-related topics. Furthermore, as we work to meet the T-STEM goals of having students graduate with associates degrees and 15 hours in college math and/or science, teachers in the Academy are encouraged to pursue a master's degree in their content area in order to be able to serve as adjunct professors offering college-level courses to our Academy students.

When students are recruited into the Academy, they understand that they are held to a higher expectation for academics and behavior. These expectations coupled with engaging lessons have resulted in fewer classroom management issues with STEM students which serves as an incentive for teacher recruitment. Teachers in the Academy are given additional financial support to purchase materials that encourage STEM-related hands-on projects and student collaboration. During the 2019-2020 school year, MHS will be shifting to an accelerated block schedule which will allow extended learning time for students and increased planning time for teachers to develop project-based learning opportunities.

Describe the current STEM pathways available at the academy.

The STEM Academy currently offers students the ability to pursue the following pathways:

Engineering

Health Science

Science

Mathematics

Information Technology

Audiovisual Technology

Architecture & Construction

Through these pathways, students are able to obtain the following endorsements:

Science, Technology, Engineering, and Mathematics (STEM)

Business and Industry

Public Services

Multi-disciplinary Studies

Students can also achieve industry certificates in:

CNA

Phlebotomy

Electrical Apprenticeship

OSHA Certification

Students are also able to obtain associates degrees in the following areas:

Biology

Engineering

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.

Strategic alliances are a strength of the MHS STEM Academy. We are supported by our local community college, South Texas College, as well as Texas A & M Kingsville and Texas A & M College Station. South Texas College and Texas A & M Kingsville support MHS through the use of adjunct professors, visiting college professors, and online courses. By blending the support of both IHEs, we are able to offer college courses in the areas of English, History, Government, Math, Science, Spanish, and a variety of electives, allowing us to ensure that the majority of students in the STEM Academy can earn credits towards their college education. Plans for the future include expanding college credit options to include career and technology fields, as well as offering Academy students the ability to earn an Associates of Science in Biology, Engineering, or Interdisciplinary Studies.

The MENTORS Project through Texas A & M College Station has established a program to benefit both MHS students and teachers. The main objective of the MENTORS Project is to stimulate interest in and enhance student preparation for careers in science (medicine, research, health), technology, engineering, and math, particularly among underserved and under-represented communities. Through this program, students are able to participate in programs such as the Health Ambassadors, where students research health concerns in their area and present informational sessions to the community, and Lab Rats, which is a paid summer internship working with a college based study group at Texas A & M College Station. For teachers, the MENTORS Project offers a four-week Educator Fellowship in Biomedical Sciences and a six-week Research Fellowship in biomedical engineering and technology. Teachers from all content areas are encouraged to participate and help in the development of lessons in their content in order to better promote STEM-related topics.

Our business, community and family partners assist us in the success of our senior capstone projects which are highlighted through an end of the year presentation and evaluation ceremony. As students research and prepare their capstone project, these business, community, and family partners help in a variety of ways; including, serving as project mentors, providing financial support, and assisting in setting up networks that support the students' endeavors. As we continue to develop our internship and externship programs, these partners will become an even greater part of the success of our students.

The MHS STEM Academy has a well established advisory board made up of representatives from the campus, district, community, institutions of high learning, businesses, and parents. The board meets at least twice a year, as well as meeting with the CTE/STEM advisory board. The STEM advisory board helps in setting goals, mentoring student capstone projects, and promoting the academy within the community.

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

Currently, the Academy's work-based and contextual learning has been limited to our certified nursing assistant program and our partnership with the Mentors Program at Texas A & M College Station. Students in our CNA program have the opportunity to participate in work-based field experience and take the certification exam prior to graduation. Additionally, through Texas A & M College Station, our students are able to apply for internships as "Lab Rats" where they work alongside college professors as research lab assistants for six-weeks during the summer. Students are eligible for hands-on, hypothesis-driven, project-based research internships in biomedicine, public health, environmental health science, and biomedical engineering at the science laboratory at Texas A & M University.

Next year MHS will integrate job shadowing and internships into the STEM program at each grade level. Students will be taking BIM 1 as freshmen where the curriculum will be combined with job shadowing and career exploration. As sophomores, students will take speech and advertising sales where the focus will be on successful workplace skills such as teamwork and communication while providing students the opportunities to practice their classroom skills in the workplace. During their junior and senior years, students will be working on their capstone projects. As juniors, the focus will be on research and internships, while seniors will focus on implementing their projects in the workplace or community.

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

The MHS STEM Academy sponsors a Robotics club that participates in competitions throughout the Fall and Winter. This year the school had two teams, including one all girl team. We have found that robotics is one of our most successful recruiting tools and our district will continue to support and encourage the growth of this program.

The Texas A & M College Station Mentors project offers MHS STEM students with two extracurricular opportunities. The sponsor the Health Ambassadors whose goal is to serve their community by increasing awareness of health concerns in our region. Students in this program research and develop informational materials to present during a local health fair. The second opportunity this organization offers to STEM students is field experience as "Lab Rats".

This is an internship where students work alongside college professors as research lab assistants for six-weeks during the summer. Students are eligible for hands-on, hypothesis-driven, project-based research internships in biomedicine, public health, environmental health science, and biomedical engineering at the science laboratory at Texas A & M University.

The Career and Technology department at MHS offers a certified nursing assistant program which requires students to participate in field-experiences at local medical centers prior to taking their certification exam.

Senior Capstone projects involve students working hand in hand with business and community partners to solve a STEM-related need in our community. These projects allow students to look at their projects through a real-world lense.