



Wildcat STEM Academy
T-STEM Renewal Application
2018-2019

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Background

District Affiliation

ANGLETON ISD

DC #: 020902

Region: 04

Mailing Address (Line 1): 1900 N DOWNING RD

Mailing Address (Line 2):

City, State, Zip: ANGLETON, TX 77515

School Affiliation

ANGLETON H S

CDC #: 020-902-001

Region:

Mailing Address (Line 1): 1900 N DOWNING

Mailing Address (Line 2):

City, State, Zip: ANGLETON, TX 77515

Academy Information

T-STEM Academy Name:

Wildcat STEM Academy

What grade level range will your academy serve in the 2018-2019 school year?

6-12

| Grade Level | Number of Students |
|-------------|--------------------|
| 6 | 536 |
| 7 | 495 |
| 8 | 481 |
| 9 | 40 |
| 10 | 42 |
| 11 | 29 |
| 12 | 37 |

Contacts

Superintendent

Job Title: Superintendent
Full Name: Dr. Patricia Montgomery
Email: drpat@angletonisd.net
Phone Number: 979-864-8025

Applicant

Job Title: Advanced Academics Coordinator
Full Name: Mrs. Angela Neal
Email: aneal@angletonisd.net
Phone Number: 979-997-7318

IHE Liaison

Affiliation: Brazosport College
Job Title: Dean of Instruction
Full Name: Mr. Jeff Detrick
Email: jeff.detrick@brazosport.edu
Phone Number: 979-230-3383

Business Partner

Affiliation: University of Texas Medical Branch at Galveston
Job Title: BSN, RN - Nursing Program Manager for Angleton Danbury Campus
Full Name: Ms. Olivia Garner
Email: omgarner@utmb.edu
Phone Number: 979-549-8693

IHE Liaison

Affiliation: The University of Texas -Austin
Job Title: Senior Program Coordinator, Engineer Your World--Cockrell School of Engineering
Full Name: Ms. Theresa Dobbs
Email: tdobbs@mail.utexas.edu
Phone Number: 512-471-3017

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.

Other: Grades 6-8, all students are enrolled Grades 9-12 uses a school-within-a-school model

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

Industry Certificates

Identify all industry certificates offered to students.

| Certificate | Description |
|--|---|
| Certified EKG Technician (CET) | Set up and administer EKG (electrocardiogram) and stress tests |
| Certified Nurse Aide/Assistant (CNA) | helps patients with daily living and healthcare needs under supervision of RN or LPN |
| Certified Patient Care Technician (CPCT) | Provide help to patients in hospital, doctor's office, or nursing home- Uses a wide skill set, including phlebotomy, EKG, patient care, safety, and emotional support |
| NCCER Core Curriculum | This industry certificate covers basic safety, communication skills, and an introduction to construction drawings |
| AWS D1:1 | The endorsement covers four subject areas: material and design, fabrication, inspection, and qualification |

Level One Certificates

Identify all level one certificates offered to students.

| Certification | Description |
|----------------------------|--|
| NCCER Welding, Level 1 | This certificate covers basic welding practices and the welding trade, training/apprenticeships, and personal protective equipment and safety practices in specific hazards or environment |
| NCCER Millwright, Level 1 | This certificate demonstrates the student shows basic millwright skills including fasteners and anchors, gaskets and o-rings, oxyfuel cutting and more. Certification also requires mastery of |
| NCCER Pipefitting, Level 1 | The certificates the student has demonstrated basic pipefitting skills including pipefitting hand and power tools, oxyfuel cutting, ladders and scaffolds, as well as basic quantitative and s |
| NCCER Electrical, Level 1 | Electrician Level 1 demonstrates the student has basic electrician skills including orientation to the electrical trade; electrical safety and theory, introduction to electrical circuits and |

Level Two Certificates

Identify all level two certificates offered to students.

| Certification | Description |
|---------------|-------------|
|---------------|-------------|

Key Elements for Success

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

<http://www.angletonisd.net/tstem>

Provide a link to your mission statement.

<http://www.angletonisd.net/tstem>

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

<http://www.angletonisd.net/tstem>

Provide a link to the academy's master schedules.

<http://www.angletonisd.net/tstem>

Provide a link to the academy's Student IGPs with CCRS and Performance Acknowledgement Plans.

<http://www.angletonisd.net/tstem>

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

<http://www.angletonisd.net/tstem>

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://www.angletonisd.net/tstem>

Provide a link to the academy's description of instruction practices.

<http://www.angletonisd.net/tstem>

Provide a link to the academy's STEM-focused extracurricular activities.

<http://www.angletonisd.net/tstem>

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

<http://www.angletonisd.net/tstem>

Provide a link to the academy's Senior Capstone Project description.

<http://www.angletonisd.net/tstem>

Provide a link to the academy's Student Portfolio Plans.

<http://www.angletonisd.net/tstem>

Provide a link to the academy's Academic Literacy Plan.

<http://www.angletonisd.net/tstem>

Provide a link to the academy's Assessment strategy.

<http://www.angletonisd.net/tstem>

Free-Response

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

The approach for retaining staff members is based on the concept of joint support and establishing a work environment that develops a strong sense of commitment and dedication to both the children and each other. Sixty-nine percent of Angleton ISD teachers have 6 or more years of experience and the average years of experience of our entire teaching staff is 11.3 years. To recruit, employ and retain such quality staff, Angleton ISD does the following:

- Advertise professional vacancies on both the district website and the websites of professional trade organizations in order to attract a larger applicant pool.
- Continue to manage the online application process.
- Review prospective candidates' applications and resumes; select candidates to be interviewed; and use a campus committee to perform interviews (principal/supervisor makes final recommendation).
- Build our partnerships with additional universities to be a part of student teacher internships prior to graduating and potential hires for our district the following year.
- Continue to grow and develop a comprehensive Teacher Induction Program, which consists of a three-day induction program for all new teachers and 4 sessions that are held throughout the year for monitoring and time specific trainings.
- Mentoring teachers are assigned to each new teacher and the campus principals assist with the mentoring process throughout the year, and participate in required mentee meetings each semester.
- All principals offer a one to two-day campus orientation for new teachers.
- Annual statewide TASB salary survey results are used in the development of the compensation plan in order to be salary competitive.
- All campuses have been designated as "Staff Development Schools" by the University of Houston/Clear Lake for the purpose of providing training sites for teacher interns (student teachers).

In addition, recruitment for STEM Academy teachers will focus on those interested in promoting STEM education, a willingness to use the best research-based teaching practices for STEM education, a willingness to participate in teacher externships and professional development, and peer collaboration. As positions become available, we will seek to find candidates with expertise in STEM education. Teacher support will be provided through orientation, Professional Learning Communities (PLC), the district curriculum department and higher education partners, and the Southeast Regional TSTEM Center.

Describe the current STEM pathways available at the academy.

Wildcat STEM Academy currently includes the STEM endorsement, and pathways for engineering, computer science, manufacturing, health science and agricultural science. They are listed below.

ENDORSEMENT – STEM

PROGRAM OF STUDY – ENGINEERING AND COMPUTER SCIENCE

Engineering Programing Engineering Manufacturing

Professional Communication .5 credit Professional Communication

Year I Principles of Applied Engineering 1 credit Principles of Applied Engineering

Year 2 Engineering Design & Presentation I 1 credit Manufacturing Engineering Tech I PT

Year 3 Engineering Design & Presentation II A-CTE 2 credits Manufact Engineer Tech II P T A-CTE

Year 4 Engineering Design Problem Solving A-CTE 2 credits Pract in Sci Tech, Engineer Math A-CTE

Computer Science Programing

Professional Communication .5 credit

Year I Principles of Information Technology 1 credit

Year 2 Computer Science I 1 credit or AP Computer Science Principles

Year 3 Robotics I 1 credit or AP Computer Science A

Year 4 Pract in Sci Tech, Engineering & Math A-CTE 2 credits

ENDORSEMENT – BUSINESS & INDUSTRY

PROGRAM OF STUDY – AGRICULTURE SCIENCE

Agriculture Science – Animal Agriculture Science – Environment

Year 1 Professional Communication .5 credit Professional Communication .5 credit

Year 1 Principles of Agri, Food, and Nat Resources 1 credit Principles of Agri, Food & Nat Res 1 cr

Year 2 Livestock Production 1 credit Floral Design 1 credit

Year 2 Equine Science .5 credit optional Landscape Design & Mgt .5 cr optional

Year 3 Veterinary Med Appl A-CTE or Food Tech 1 credit Wildlife, Fisheries, & Ecol Mgt. 1 credit

Year 3 Advance Animal Science A-CTE 1 credit (may also count as Sci credit)

Horticulture Sci Range Eco & Mgt. A-CTE

Year 4 Practicum in Agriculture Science A-CTE 2 credits Pract in Agri Sci (Adv Floral Des) 2 cr A-CTE

ENDORSEMENT – BUSINESS & INDUSTRY

PROGRAM OF STUDY – MANUFACTURING

Manufacturing – Welding Millwright

Year 1 Professional Communication .5 credit Professional Communication .5 credit

Year 1 Principles of Manufacturing & Construct 1 credit Principles of Man & Construct 1 credit

Year 2 Welding I 2 credits

Year 3 Welding II A-CTE 2 credits Dual Precision Metal Man I 2 cr

Year 4 Practicum in Manufacturing A-CTE 2 credits Dual Prec Metal Man II A-CTE 2 cr

Manufacturing Engineering Tech I (Dual Process Tech Instrument) 2 cr

Manufacturing Engineering Tech II (Dual Petro Chem Tech) A-CTE 2 cr

ENDORSEMENT – BUSINESS & INDUSTRY

PROGRAM OF STUDY – ARCHITECTURE SCIENCE

Architecture & Construction - Structure

Year 1 Prof Communication .5 credit

Year 2 Principles of Manufacturing 1 credit

Year 3 Dual Electrical Technology 1 cr

Year 4 Dual Elect Tech II A-CTE 2 credits

ENDORSEMENT- PUBLIC SERVICE

PROGRAM OF STUDY- HEALTH SCIENCE

Year 1 Professional Communication .5 credit

Year 1 Medical Terminology 1 credit

Year 2 Principles of Health Science 1 credit

Year 2 Anatomy/Physiology or Pharmacology 1 credit

Year 3 Health Science Theory A-CTE 1 credit

Year 3 Health Science Theory & Health Science Clinical A-CTE 2 credits

Year 4 Practicum in Health Science A-CTE 2 credits

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.

Angleton ISD conducted a STEM Summit in February 2015. We met with local business leaders, community college leaders, Angleton and Hispanic Chambers of Commerce members, parents, and school district staff to identify trends and needs in the Brazoria County and Houston Area workforce and to establish partnerships with those in our community. From that meeting, we have expanded our community connections to include several program and grant opportunities with DOW and UTMB. We are currently meeting with additional business partners to develop our agricultural science opportunities for students. We have already established memorandums of understanding with Brazosport College, Alvin Community College, UTMB, and other area partners. Brazosport College and Alvin Community College will provide dual credit to high school students in the STEM Academy. The Academy partners provide student and teacher support. Brazosport College also provides certification opportunities for students enrolled in welding, process tech and the millwright programs. The college hosts industry and career events several times during the year for students and professional development for teachers. Our partner, UTMB Angleton Danbury Hospital, provides opportunities for health science students to participate in practicum experiences, job shadowing, summer internships, and outside events, such as their Mini Medical School. Additional community partners, such as Walgreens, CVS, Cypress Woods Care Center, and Country Village Nursing Home allow students the opportunity for practicum rotations in the various types of healthcare facilities. The University of Texas provides professional development for the high school teachers participating in the On Ramps program and UTeach Engineering program. Additional webinars and professional collaborative groups provide colleagues and experts via interactive online support. Materials and professional development for the courses are provided by University of Texas. UTMB Southeast Regional Texas STEM Center will provide support to our Wildcat STEM Academy by designing innovative, instructional materials and professional development opportunities, providing technical assistance, and opportunities to make real world connections for teachers and students. Students will also have opportunities to attend summer camps and internships. AISD business partners will provide industry leaders, guest speakers, mentors, externships for teachers and internships for students. Some will provide grant funding for programs. Community stakeholders and/or members of Angleton University, a community group interested in making a difference in the school district, and the Angleton Education Foundation will work with students, teachers, and administrators of the STEM programs by providing mentors, guest speakers, and other resources. Community and business partners may provide jobs, industry tours, shadowing or internship opportunities for our students.

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

Curriculum integration provides coherence to the entire STEM program experience and provides rigor to help

students obtain college level readiness. Also, the work-based and contextual learning provides relevance which is necessary to sustain students' participation and interest in the career pathway they have chosen within the Academy.

Students will take part in numerous opportunities to gain understanding of career options for the career path they

have chosen including field trips to various STEM industry fields and facilities, as well as the ability to watch demonstrations from community STEM partners who give information about real world application of course curriculum. Mentors from business partners, such as Dow Chemical, will visit classrooms and share about career opportunities and types of jobs within the industry. Summer camp opportunities provide experience for fun-filled, hands-on activities and problem solving and will also be used to increase knowledge and skills in science, engineering, technology and math.

Through PBL, students will work in teams or groups to solve a particular problem. Collaborative experience is used by both teachers and students. Teachers will apply effective teaching strategies to develop lessons that will address

state standards and college and career readiness standards. During PBL, the teacher will guide the students as they interact and learn with other students. The teacher will spend less time on the traditional methods of teaching and more one on one time with each student, team, and/or group.

Students and teachers will use various methods of technology to enhance instruction, curriculum, teaching and

learning, and STEM literacy. STEM classrooms will use digital textbooks, electronic books, Discovery Education and other online resources. NEPRIS will be used to interact with professionals in the workplace. Teachers and

students have established Google classrooms to use for online instruction, collaboration and feedback from teacher to student and peer-to peer.

Health science students have access to a simulated hospital room and gain problem solving experience by interacting with a simulation mannequin, which the teacher can control via Ipad to provide authentic learning experiences and challenges.

In the high school agricultural barn, students raise and care for animals, grow and track data for different types of plants, and give back to the community through projects, such as, Dunes Day, the recycled Christmas tree sand dune recovery program.

We are currently piloting a program with business partner, Dow Chemical, called We are Innovators, which allows students to develop solutions to the world's largest sustainability issues. This new organization will offer students at the junior high and high school level the ability to impact local and global change.

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

Angleton Wildcat STEM Academy curriculum is based on the belief that 21st Century curricula should combine

rigorous academics integrated with technical education to prepare students for secondary and post secondary

opportunities, career preparation and advancement, meaningful work, and active citizenship. The Angleton Wildcat

STEM Academy is aligned with the Texas College and Career Readiness Standards as identified by the Texas Higher

Education Board and state standards. The Advisory Board will meet with STEM business leaders to identify industry

standards for STEM. The STEM Academy curriculum along with the core curriculum will create an educational

environment that fosters a personalized learning that gives students a sense of voice, belonging, choice and

community.

High school students will be given both formative and summative assessments which will enable students to

demonstrate specific skills or knowledge that can lead to industry certification and licensure.

Junior high students will be given opportunities to participate in UIL competitions, You Be the Chemist club and national contests, as well as the FIRST Lego League competition and after school robotics club. Some will participate in the We are Innovators organization to solve STEM problems and give back to the community.

High school students will participate in UIL academic competitions and other STEM related competitions, such as

the US FIRST robotics competitions, Skills USA, and Health Organizations Student Association contests, the Society of Hispanic Professional Engineers and We are Innovators organization.

All 12th grade students will be required to complete an internship and or capstone project through local business partners. UTMB offers summer research internship opportunities for our Health Science Students.

Angleton ISD has MOU agreements with other local businesses which provide student experiences at UTMB Angleton, Walgreens, CVS, the Vet clinic, and local nursing homes which provide experiences for our Health Science students. We will continue to incorporate field trips and hands-on medical science experiences for our students.

Welding students will participate in tours of local manufacturing facilities, compete in contests, such as Skills USA competitions, and earn industry certifications. Students will experience job shadowing in local manufacturing facilities and visit the community college welding facility.

Agricultural Science students participate in the Brazoria County Fair contests, Houston Livestock Show competition, and other contests around the state in multiple categories. They will also participate in special projects in the community at Brazoria County Parks and Sea Center.

The STEM Academy students will leave high school having participated in a wide variety of experiences across different fields of study, so that they may find their passion and pursue a successful STEM career.