



Anderson Engineering
T-STEM Renewal Application
2018-2019

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Background

District Affiliation

AUSTIN ISD

DC #: 227901

Region: 13

Mailing Address (Line 1): 1111 W 6TH ST

Mailing Address (Line 2):

City, State, Zip: AUSTIN, TX 78703

School Affiliation

ANDERSON H S

CDC #: 227-901-009

Region:

Mailing Address (Line 1): 8403 MESA DR

Mailing Address (Line 2):

City, State, Zip: AUSTIN, TX 78759

Academy Information

T-STEM Academy Name:

Anderson Engineering

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

9-12

Grade Level	Number of Students
9	60
10	30
11	30
12	20

Contacts

Business Partner

Affiliation: KUKA

Job Title: Applications Engineer I

Full Name: Mr. Kevin Chen

Email: Kevin.Chen@kuka.com

Phone Number: 832-633-0472

Superintendent

Job Title: Superintendent

Full Name: Dr. Paul Cruz

Email: superintendent@austinnisd.org

Phone Number: 512-414-2412

Applicant

Job Title: Campus facilitator

Full Name: Mr. Richard Frazier

Email: dick.frazier@austinisd.org

Phone Number: 512-414-0917

IHE Liaison

Affiliation: The University of Texas

Job Title: Executive Director

Full Name: Dr. Eric. A Roe

Email: eric.roe@utexas.edu

Phone Number: 512-232-5172

IHE Liaison

Affiliation: Austin Community College

Job Title: Dean Science, Engineering and Mathematics

Full Name: Mr. David Fonken

Email: fonken@austincc.edu

Phone Number: 512-233-7346

Business Partner

Affiliation: Boy Scouts of America

Job Title: Capitol Area Boy Scouts

Full Name: Mr. Jon Yates

Email: Jon.Yates@scouting.org

Phone Number: 512-617-8613

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

Industry Certificates

Identify all industry certificates offered to students.

Certificate	Description
Solidworks Associate	Basic Level of design skill with Solidworks
Solidworks Professional	High level of design skills Solidworks
OSHA Certificate	Competency in industry safety procedures
Java Certificate	Competency in Java programming

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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Key Elements for Success

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

https://www.andersononline.org/apps/pages/index.jsp?uREC_ID=221959&type=d&pREC_ID=527196

Provide a link to your mission statement.

https://www.andersononline.org/apps/pages/index.jsp?uREC_ID=221959&type=d&pREC_ID=527196

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

https://www.andersononline.org/apps/pages/index.jsp?uREC_ID=221959&type=d&pREC_ID=527196

Provide a link to the academy's master schedules.

https://www.andersononline.org/apps/pages/index.jsp?uREC_ID=221959&type=d&pREC_ID=527196

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

https://www.andersononline.org/apps/pages/index.jsp?uREC_ID=221959&type=d&pREC_ID=527196

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

https://www.andersononline.org/apps/pages/index.jsp?uREC_ID=221959&type=d&pREC_ID=527196

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://www.andersononline.org/apps/pages/index.jsp?uREC_ID=221959&type=d&pREC_ID=527196

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

https://www.andersononline.org/apps/pages/index.jsp?uREC_ID=221959&type=d&pREC_ID=527196

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

https://www.andersononline.org/apps/pages/index.jsp?uREC_ID=221959&type=d&pREC_ID=527196

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

https://www.andersononline.org/apps/pages/index.jsp?uREC_ID=221959&type=d&pREC_ID=527196

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

https://www.andersononline.org/apps/pages/index.jsp?uREC_ID=221959&type=d&pREC_ID=527196

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

https://www.andersononline.org/apps/pages/index.jsp?uREC_ID=221959&type=d&pREC_ID=527196

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

https://www.andersononline.org/apps/pages/index.jsp?uREC_ID=221959&type=d&pREC_ID=527196

Provide a link to the academy's Assessment strategy.

https://www.andersononline.org/apps/pages/index.jsp?uREC_ID=221959&type=d&pREC_ID=527196

Free-Response

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

Anderson Engineering is fortunate to be located in Austin Texas. There are a number of major technology companies in Austin, and that allows us access to a broad talent pool. We have an excellent facility, strong student interest, an excellent campus reputation, and great working conditions. These factors and others (Austin is a draw) allow access to the best possible professional staff. We have ties with National Instruments, Kuka, Dell, Apple, and others. There are salary challenges and the competition is fierce, but we have held our own. Retaining teachers is a challenge and the previously mentioned assets help as well as excellent administrative and parent support. Our current staff are all engineers or computer programmers, with solid experience outside of education. We highly value our staff and will continue to diligently pursue every avenue to recruit, support, and retain our teaching talent.

Describe the current STEM pathways available at the academy.

We offer a principles of Engineering class that leads to endorsement pathways in Engineering and Robotics. That same course is also an introduction to our pathways in Electronics and Computer Programming/Science. We are adding two dual credit courses (in conjunction with the University of Texas and ACC) to further enhance these pathways. The University of Texas course is entitled "Engineering Your World", while the ACC course will be "Problems and Solutions."

In addition, we have programs in STEM that begin with biology and lead to Biotech and Biotech research. Both of these pathways feature practicum/internship options in local hospitals. We also offer a pathway in Manufacturing using machining as a basic skill while offering hands-on experience in machine work. We have developed a partnership with a local manufacturing company, (Flextronics), and have had a staff member who was also employed by Flextronics. All of our programs are enhanced by our state of the art facility, (including a professional level machine shop and numerous 3-D printers etc.)

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.

We have ongoing partnerships with Kuka, Flextronics, The Boy Scouts, and National Instruments. Our University partners are the University of Texas and Texas A&M as well as our community college partner Austin Community College. We have an extended relationship with several parent donors and a strong community of parent support in myriad ways.

Our business partners work with us in similar, yet unique ways. The Boy Scouts have summer camps in STEM (6 weeks) on our campus as well as events during the school year. They are responsible for the funding that built our \$3.1 million dollar facility. They provide ongoing support, not only for their camps, but for supplies and equipment that the Academy uses year around. National Instruments and Kuka, are major robotics manufacturers and they support by offering mentors for our student's robotics teams and in other similar ways. Flextronics is an Austin manufacturing company (they work for Apple and others) and they off mentors for us as well as employment opportunities for student graduates from Anderson. The University of Texas is our oldest partner, (the original robotics team at Anderson used to meet at the Pickle research facility) and they offer mentors as well as "On-ramps" courses for our students. We have an exchange/study program with Texas A&M's school of engineering. Most of our courses articulate to Austin Community College and we are working to build a stronger relationship with their faculty and staff. Our machining facility is very high level and our hope is to facilitate ACC courses in machining on our campus, with their staff. Next year we will be adding a dual credit course with the University of Texas (Engineering Your World) for our engineering students.

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

We offer work based experiences in all our STEM courses. In engineering our students visit National Instruments, VRTX (drones), and ACC, for examples to see real world applications of the work they are studying and to learn about possible options after high school. In Biology/Microbiology we have been able to place students in area hospitals and other medical related facilities as interns for the school year. These experiences are invaluable to their potential career options. In terms of learning in class, our facilities and equipment give each student a "real world" working space that directly mirrors the current work environment in their field. Through project based learning and by working with faculty members who have industry experience we are able to offer all of our students the opportunity to experience what a career in STEM could look like.

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

Anderson has a well established Robotics program, as well as Science Olympiad, UIL Robotics, and a presence in the community for charitable and community service work. We compete in First and Vex (six teams) each year and have a strong tradition of excellence, success, and sportsmanship. The Team has competed at every level, local, state, and national all over the country. We have also presented at SWSW, National Instruments, and at numerous school district functions. Our Academy students run a summer robotics camp for incoming ninth grade students, as well as work in the summer STEM camps that are offered by the Boy Scouts at Anderson every summer. Academy students have been involved in the "Robot Fashion Show" charity event and in mentoring middle school and elementary school students from the Anderson Vertical Team. They also work other schools in our district to help promote Engineering and Robotics. Many of our Academy students also compete as a part of Science Olympiad and we have been very successful in those competitions at the local level and beyond.