

Board of Trustees

Education and Workforce Development Committee Meeting

Tuesday, November 09, 2021

3:30 p.m.

**Ann Richards Administration
Building, Board Room
Pecan Campus
McAllen, Texas**



**SOUTH TEXAS
COLLEGE**

In the Making!

Online Copy

**South Texas College
Board of Trustees
Education and Workforce Development Committee
Ann Richards Administration Building, Board Room
Pecan Campus, McAllen, Texas
Tuesday, November 9, 2021 @ 3:30 p.m.**

AGENDA

“At anytime during the course of this meeting, the Board of Trustees may retire to Executive Session under Texas Government Code 551.071(2) to confer with its legal counsel on any subject matter on this agenda in which the duty of the attorney to the Board of Trustees under the Texas Disciplinary Rules of Professional Conduct of the State Bar of Texas clearly conflicts with Chapter 551 of the Texas Government Code. Further, at anytime during the course of this meeting, the Board of Trustees may retire to Executive Session to deliberate on any subject slated for discussion at this meeting, as may be permitted under one or more of the exceptions to the Open Meetings Act set forth in Title 5, Subtitle A, Chapter 551, Subchapter D of the Texas Government Code.”

- I. Approval of Minutes for Tuesday, October 19, 2021 Committee Meeting..... 3 - 6
- II. Review and Recommend Action as Necessary to Offer the Proposed Associate of Arts Degree in Early Childhood Education in Fall 2022..... 7 – 44
- III. Review and Approve Development of the Proposed Associate of Applied Science Degree and Certificate Programs for Surveying and Geospatial Technology ... 45 - 94

Approval of Minutes for Tuesday, October 19, 2021 Committee Meeting

The Minutes for the Education and Workforce Development Committee meeting of Tuesday, October 19, 2021 are presented for Committee approval.

**South Texas College
Board of Trustees
Education and Workforce Development Committee
NAH West & Simulation Center Building B,
Conference Room 3.203 (3rd Floor)
Nursing and Allied Health Campus
Tuesday, October 19, 2021 @ 3:30 PM**

The Education and Workforce Development Committee Meeting was held on Tuesday, October 19, 2021 in Conference Room 3.203 at the Nursing and Allied Health Campus in McAllen, Texas. The meeting commenced at 3:44 p.m. with Mr. Danny Guzman presiding.

Members present: Mr. Paul R. Rodriguez

Other Trustees present: Ms. Rose Benavidez, Mr. Gary Gurwitz, Dr. Alejo Salinas, Jr., and Mr. Rene Guajardo

Members absent: Mrs. Victoria Cantú

Also present: Dr. Ricardo J. Solis, Hon. Javier Villalobos, Dr. Chris Nelson, Dr. Eric Reitinger, Dr. Anahid Petrosian, Dr. Brett Millan, Dr. Ali Esmaeili, Dr. Jesus Campos, Dr. Sylvia Flores, Mr. Serkan Celtek, Ms. Lisa Aleman, Ms. Melanie Espinoza, Mrs. Gardenia Perez, and Ms. Stephanie Hinojosa.

Approval of Minutes for Tuesday, September 14, 2021 Committee Meeting

Upon a motion by Mr. Paul R. Rodriguez and a second by Mr. Danny Guzman, the minutes for the September 14, 2021 Education and Workforce Development Committee meeting were approved as written. The motion carried.

Presentation on Division of Liberal Arts

Dr. Anahid Petrosian, Interim Vice President for Academic Affairs, has coordinated a series of presentations highlighting each of the Academic Divisions of South Texas College.

In October 2021, Dr. Petrosian invited Dr. Christopher Nelson, Dean of Liberal Arts. Dr. Petrosian introduced Dr. Nelson, who will present on the departments and activities within his division

Dr. Nelson presented the background and organizational chart of the Division of Liberal Arts, covering the establishment and growth of the division over time.

This division incorporates courses and majors within the categories of Fine & Performing Arts as well as Humanities, and also houses the Center for Mexican American Studies.

Dr. Nelson also reviewed faculty and staff, as well as enrollment and graduation rates across the division. Division-wide, 303 faculty, including 143 Dual Credit faculty, and 16 staff support 1,357 course sections in Fall 2021.

The presentation included enrollment figures for Fall 2020 and Fall 2021, as well as college-wide headcount for declared majors within each field of study in the division, and a comparison of graduate counts for Academic Year 2020 and Academic Year 2021 for each associate degree included within the division.

Dr. Nelson briefly reviewed the Center for Mexican-American Studies and other recent notable achievements in the Division of Liberal Arts.

No action was requested. This information was presented to the Education and Workforce Development Committee for discussion and feedback.

Presentation on Division of Social & Behavioral Sciences

Dr. Anahid Petrosian, Interim Vice President for Academic Affairs, has coordinated a series of presentations highlighting each of the Academic Divisions of South Texas College.

In October 2021, Dr. Petrosian invited Dr. Eric Reittinger, Dean of Social & Behavioral Sciences. Dr. Petrosian introduced Dr. Reittinger, who presented on the departments and activities within his division

Dr. Reittinger presented the background and organizational chart of the Division of Social & Behavioral Sciences, covering the establishment and growth of the division over time.

This division incorporates courses and majors within a broad category of social and behavioral science disciplines, and also includes the Mid-Valley Campus Child Development Center, which both serves as a child care center for its surrounding community, and also provides hands-on learning opportunities for the College's Child Development students.

Dr. Reittinger also reviewed faculty and staff, as well as enrollment and graduation rates across the division. Division-wide, 119 faculty, including 17 Dual Credit faculty, and 19 staff support 706 course sections in Fall 2021.

The presentation included enrollment figures for Fall 2020 and Fall 2021, as well as college-wide headcount for declared majors within each field of study in the division, and a comparison of graduate counts for Academic Year 2020 and Academic Year 2021 for each associate degree included within the division.

Dr. Reittinger briefly reviewed the Child Development Center at the Mid-Valley Campus, including special events hosted to benefit students at that center and to provide professional development opportunities for childcare center directors and managers in the College's region.

Dr. Reittinger also reviewed the Annual Human Trafficking Conference, which last held its 14th occurrence just prior to the pandemic, as well as the Psychology Club, one of South Texas College's most well-established and most active student organizations.

No action was requested. This information was presented to the Education and Workforce Development Committee for discussion and feedback.

Adjournment

There being no further business to discuss, the Education and Workforce Development Committee Meeting of the South Texas College Board of Trustees adjourned at 4:24 p.m.

I certify that the foregoing are the true and correct minutes of the October 19, 2021 Education and Workforce Development Committee Meeting of the South Texas College Board of Trustees.

Mr. Danny Guzman, Presiding

Review and Recommend Action as Necessary to Offer the Proposed Associate of Arts Degree in Early Childhood Education in Fall 2022

The Education and Workforce Development Committee is asked to recommend Board approval to offer an Associate of Arts Degree in Early Childhood Education in Fall 2022.

The proposed Associate of Arts Degree in Early Childhood Education will prepare students who are interested in pursuing a Bachelor of Science in Early Childhood Education, or related field, and help qualify graduates for career opportunities in public and private daycare centers as teachers or managers, teacher assistants in the public-school system, entry level positions in state/federally funded programs (Head Start and Early Head Start) and community-based programs.

Students graduating with an Associate of Arts in Early Childhood Education will have a well-rounded education that prepares them for success when transferring to other four-year institutions.

For the College, offering this degree will pave the way for potential articulation agreements with local and regional universities, providing graduates with a pathway to pursue further academic training.

The program developers have researched and compiled data from transfer universities and conducted a student survey to document program and student demand.

The following pages contain the Program Development Packet, which includes:

- Program Development Approval Checklist
- Program Development Process and Review
- Program Development Checklist
- Program Development Summary
- Enrollment Management Plan
- Student Survey
- Proposed Curriculum & Course Descriptions
- Instructional Costs and Projected Revenues

Dr. Anahid Petrosian, Vice President for Academic Affairs, will introduce Ms. Christina Cavazos, Director for Curriculum, and Ms. Veronica Rodriguez, Chair for the Child Development/Early Childhood department to review the proposal and respond to questions.

The Education and Workforce Development Committee is asked to recommend Board approval to offer an Associate of Arts Degree program in Early Childhood Education in Fall 2022 as presented.

Program Development Proposal Presentation
Education & Workforce Development Committee Meeting
November 9, 2021



Associate of Arts Early Childhood Education

Presenters:

Dr. Anahid Petrosian, Interim Vice President for Academic Affairs and Chief Academic Officer
Christina Y. Cavazos, Director of Curriculum
Veronica Rodriguez, Department Chair, Child Development and Early Childhood Program



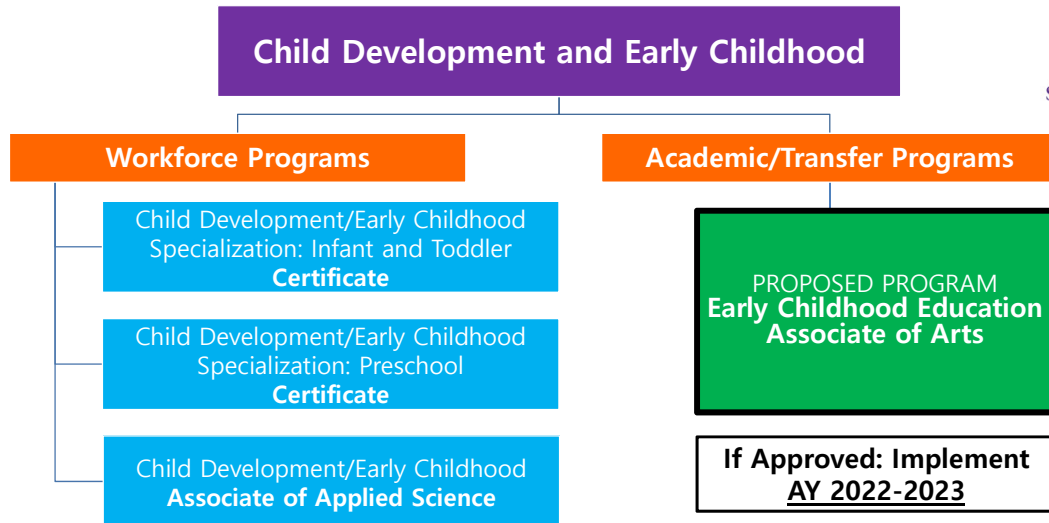
Outline

- Program Development Process
- Program Overview
 - Academic Need
 - Student Demand
 - Existing Programs
 - Program Support
- Educational Pathways
- Projected Enrollment
- Proposed Curriculum



New Program: Associate of Arts in Early Childhood Education

Division of Social & Behavioral Sciences



Approval Process



| APPROVAL PROCESS FOR IMPLEMENTATION | DATE |
|---|-------------------|
| ✓ Department Chair Approval | 09/07/2021 |
| ✓ Dean Approval | 09/14/2021 |
| ✓ Division Curriculum Committee | 09/14/2021 |
| ✓ College-Wide Curriculum Committee | 09/21/2021 |
| ✓ Substantive Change Review | 10/04/2021 |
| ✓ Academic Council | 09/27/2021 |
| ✓ Planning and Development Council (PDC) | 10/15/2021 |
| Education and Workforce Development Committee (EWDC) | 11/09/2021 |
| STC Board of Trustees (Certification Form) | - |
| Texas Higher Education Coordinating Board (THECB) | - |
| Southern Association of Colleges and Schools – Commission on Colleges (SACSCOC) | - |

Program Development Checklist



- **Program Demand** and **Projected Outcomes** must be **documented** prior to the development of any new workforce or academic program.
- The following categories serve as an **initial guide** for program developers to start the development process.

➤ Program Demand

- Academic Need
- Student Demand
- Curriculum Quality & Articulations
- Existing Programs
- Program Linkage

➤ Projected Outcomes

- Program Enrollment & Declared Majors
- Number of Graduates

Program Overview

The proposed Associate of Arts in Early Childhood Education will:

- **Prepare students interested in pursuing a Bachelor of Science** in Early Childhood Education or related field
- **Help qualify graduates for career opportunities**
 - ✓ Public and private daycare centers
 - ✓ Public school system
 - ✓ State/federally funded and community-based programs
- **Provide an opportunity to become a certified public school teacher** after being awarded a Bachelor's degree and completing the Alternative Certification Program



Academic Need

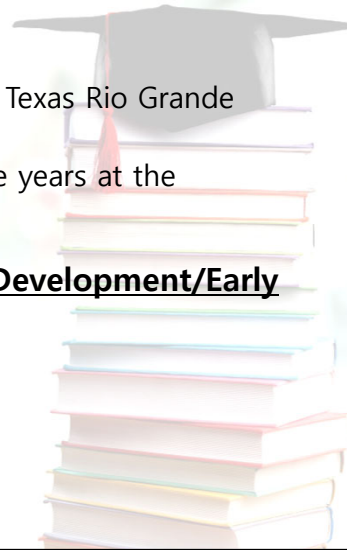


- **Data from four-year institutions:**

- ✓ Over **2,300** declared majors at the University of Texas Rio Grande Valley and Texas Women's University
- ✓ **986.2%** increase in enrollment over the past five years at the University of Texas Rio Grande Valley

- **Data from South Texas College AAS in Child Development/Early Childhood** for the past five academic years:

- ✓ **803** declared majors
- ✓ **143** graduates



Student Demand



Existing enrollment in related courses at South Texas College:

- Enrollment in shared coursework (TECA) for the past five years
 - ✓ Totaled **2,562** students

Student survey administered to 6,000 students:

- **29%** of students preferred the proposed Associate of Arts in Early Childhood Education to their current major
- **51%** felt it sounded like a good-paying job
- **61%** felt it sounded like the kind of job that employers are hiring for in the Rio Grande Valley

Existing Programs



- **Blinn College:** approximately 343 miles from McAllen
 - Associate of Science in Early Childhood Education
- **Alvin Community College:** approximately 351 miles from McAllen
 - Associate of Arts in Child Development
- **Tarrant County Northeast Campus:** approximately 510 miles from McAllen
 - Associate of Science in Child Care
- **Weatherford College:** approximately 523 miles from McAllen
 - Associate of Art in Child Development

Program Support



- **Faculty**

Proposed coursework will be taught by existing faculty; expected that 1 full-time faculty would be hired in the fourth year following implementation
- **Facilities & Equipment**

Existing classrooms and labs would be used for course offerings
- **Program Costs**

Revenue from contact hour reimbursement and student tuition/fees would offset the cost of this program

Educational Pathways



➤ Associate of Arts in Early Childhood Education will be a **transfer-track program**

➤ Coursework can be applied to the following bachelor programs at South Texas College:

- Bachelor's of Applied Technology in Technology Management
- Bachelor's of Applied Science in Organizational Leadership



Educational Pathways



Data from 4-year institutions offering baccalaureate degrees in Early Childhood Education show consistent demand:

| Transfer Universities | Enrollment | | | | |
|---------------------------------------|------------|-----------|-----------|-----------|-----------|
| | Fall 2016 | Fall 2017 | Fall 2018 | Fall 2019 | Fall 2020 |
| Texas Women's University | 332 | 317 | 289 | 300 | 302 |
| University of Texas Rio Grande Valley | 29 | 96 | 179 | 209 | 315 |
| Texas State University | 343 | 330 | 347 | 324 | 314 |
| University of North Texas at Dallas | 62 | 73 | 71 | 79 | 69 |
| Texas Tech University | 258 | 249 | 230 | 217 | 190 |

➤ **Articulation agreements will be pursued to formalize these transfer pathways**

Projected Enrollment



Projected Students Enrolled in TECA Courses (duplicated students)

| Years | 2022-2023 | 2023-2024 | 2024-2025 | 2025-2026 | 2026-2027 |
|-----------|-----------|-----------|-----------|-----------|-----------|
| Associate | 150 | 170 | 190 | 210 | 230 |

Projected Students Majoring in AA in Early Childhood Education (unduplicated students)

| Years | 2022-2023 | 2023-2024 | 2024-2025 | 2025-2026 | 2026-2027 |
|-----------|-----------|-----------|-----------|-----------|-----------|
| Associate | 10 | 15 | 20 | 25 | 30 |

Proposed Curriculum



Associate of Arts Degree in Early Childhood Education Total Credit Hours: 60

- STC Core Curriculum: 42 credits
- **Field of Study: 18 credits**

| | |
|-----------|---|
| TECA 1311 | Educating Young Children |
| TECA 1318 | Wellness of the Young Child |
| TECA 1354 | Child Growth and Development |
| TECA 1303 | Family, School and Community |
| EDUC 1301 | Introduction to the Teaching Profession |
| PSYC 2308 | Child Psychology |

ADDITIONAL QUESTIONS?



Thank you



SOUTH TEXAS
COLLEGE

Program Development Proposal

Associate of Arts Degree

in

Early Childhood Education

Social & Behavioral Sciences



SOUTH TEXAS
COLLEGE



November 2, 2021



AA - Early Childhood Education

| | |
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| Proposed Curriculum & Course Descriptions | 18 |
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AA Early Childhood Education

| APPROVAL PROCESS FOR IMPLEMENTATION | | DATE |
|-------------------------------------|---|------------|
| ✓ | Department Chair Approval | 9/7/2021 |
| ✓ | Dean Approval | 9/14/2021 |
| ✓ | Division Curriculum Committee | 9/14/2021 |
| ✓ | College-Wide Curriculum Committee | 9/21/2021 |
| ✓ | Substantive Change Review | 10/4/2021 |
| ✓ | Academic Council | 9/27/2021 |
| ✓ | Planning and Development Council (PDC) | 10/15/2021 |
| <input type="checkbox"/> | Education and Workforce Development Committee (EWDC) | - |
| <input type="checkbox"/> | STC Board of Trustees (Certification Form) | - |
| <input type="checkbox"/> | Texas Higher Education Coordinating Board (THECB) | - |
| <input type="checkbox"/> | Southern Association of Colleges and Schools – Commission on Colleges (SACSCOC) | - |

Program Development Process

Proposed instructional programs at South Texas College are identified either at the college or divisional level through environmental scans, documented workforce needs, recommendations by Program Advisory Committees, or local business and industry demands. All proposed programs undergo a review process before being approved for development. The approval process includes reviews by department, division, and college-wide curriculum committees, and Academic Council. Programs that receive approval to proceed are then presented to the Planning and Development Council (PDC) for review and recommendation. A program that receives PDC approval to move forward is presented to the Board of Trustees' Education Workforce Development Committee (EWDC) for review and recommendation. Following review by the EWDC, programs are presented to the full Board of Trustees for final review and approval.

Office of Curriculum Review: AA Early Childhood Education

The proposed Associate of Arts in Early Childhood Education will prepare students who are interested in pursuing a Bachelor of Science in Early Childhood Education or related field and help qualify graduates for career opportunities in public and private daycare centers as teachers or managers, teacher assistants in the public school system, entry level positions in state/federally funded programs (Head Start and Early Head Start) and community-based programs. Furthermore, this pathway also provides an opportunity for an individual to become a certified public school teacher by completing the Alternative Certification Program after being awarded a Bachelor's degree.

The AA in Early Childhood Education would require students to complete 60 semester credit hours (SCH) of course work from the Academic Course Guide Manual, which includes the Core Curriculum and field of study courses comprised primarily of coursework from early childhood education. The AA in Early Childhood Education paves the way for potential articulation agreements with local and regional universities, including the University of Rio Grande Valley and Texas Women's University. South Texas College is currently collaborating with the University of Texas Rio Grande Valley to offer some of the current coursework for transfer into

their 4-year degree. A student survey administered to 6,000 students yielded a 6% response rate and revealed that 29% of students preferred the proposed Associate of Arts in Early Childhood Education to their current major and 61% felt it sounded like the kind of job that employers are hiring for in the Rio Grande Valley.

Data exists from four-year institutions indicating demand for the program with over 2,300 declared majors at the University of Texas Rio Grande Valley and Texas Women's University. Additionally, student demand is supported by enrollment in shared coursework (TECA) which totaled **2,562** students for the past five years. These courses are currently offered in the Associate of Applied Science in Child Development/Early Childhood; a program that has reported **803** declared majors and **143** graduates in the past five academic years.

The proposed program anticipates offering additional sections of existing courses for the field of study. Existing faculty would teach the additional sections along with adding part-time instructors as needed. The program anticipates hiring 1 full-time faculty to meet student demand by the fourth year after implementation. If approved, costs for facilities will be minimal as current classrooms will be used for all courses. The cost to implement this program is expected to be below average as it is an academic program and the program would not need to purchase equipment or significant materials. Expenditures would include office supplies and materials for classroom application and department-sponsored group activities, as well as costs for professional development conferences. Revenue from contact hour reimbursement and student tuition & fees, would offset the cost.

A review conducted by the Office of Curriculum indicates the program complies with the criteria set forth from the Texas Higher Education Coordinating Board and recommends the proposed Associate of Arts in Early Childhood Education continue through the established approval process.

Academic Programs

Program Demand and Projected Outcomes must be documented prior to the development of any new workforce or academic program. The following questions and checklist serve as an initial guide for program developers that must be completed at the start of the development process.

Proposed Award:

Program Title: AA – Early Childhood Education

Program Location: Pecan Campus

Academic Year to be Implemented: AY 2022-2023

Please list any related programs currently offered by South Texas College, if applicable:

- AAS – Child Development/Early Childhood, Pre-School Certificate, Infant and Toddler Certificate

For Curriculum Office Use Only

Program Developer Info:

Name: Veronica Rodriguez

Title: Child Dev./Early Childhood Chair

Division: SBS

Phone: 872-7265

Proposed CIP Code: 19.0711

Documentation of Academic Demand:

| Category | Standard | Met the Standard | Did not meet the Standard | Comments |
|-------------------|---|------------------|---------------------------|---|
| 1. Academic Need | The Institution has identified at least 2 specific baccalaureate degree programs that the degree would lead into | ✓ | | <ul style="list-style-type: none"> • University of Texas Rio Grande Valley • Texas Women’s University |
| | Data exists from four-year schools showing demand for the program and/or information exists demonstrating the emergence of a new discipline to support the transfer of programs | ✓ | | <ul style="list-style-type: none"> • University of Texas Rio Grande Valley • Texas Women’s University • Texas State University • University of North Texas at Dallas • Texas Tech University |
| 2. Student Demand | Related programs at South Texas College have increased enrollments in recent semesters/years | ✓ | | |
| | Related programs at South Texas College have an increased number of graduates in the past years. | ✓ | | |
| | High enrollment exists in similar programs at other institutions | ✓ | | |

| Category | Standard | Met the Standard | Did not meet the Standard | Comments |
|--|---|------------------|---------------------------|--|
| | Student demand is documented through the use of student surveys | ✓ | | |
| | An enrollment management plan exists for the program | ✓ | | |
| | Enrollment projections reflect adequate student demand to ensure the financial self-sufficiency of the program | ✓ | | |
| 3. Curriculum Quality & Articulations | The institution has or will initiate a process to establish transfer of credit articulation agreements for the program with senior-level institutions (Please include list of institutions) | ✓ | | South Texas College is communicating with UTRGV and Texas Women's University as both of these schools have shown potential interest with regards to articulation agreements. |
| 4. Existing Programs | Similar programs do not exist within STC's service area – Hidalgo and Starr Counties (Please include documentation of the nearest similar programs) | ✓ | | Blinn College (which is approximately 343 miles from McAllen) offers an AS in Early Childhood Education. Alvin Community College (which is approximately 351 miles from McAllen) offers an AA in Child Development. Tarrant Co. Northeast Campus (which is approximately 510 miles from McAllen) offers an AS in Child Care. Weatherford College (which is approximately 523 miles from McAllen) offers an AA in Child Development. |
| 5. Program Linkage | Courses are currently offered or can be offered within local high schools via the Dual Enrollment Program. (Please provide a list of schools and/or districts) | | ✓ | Although these courses could be offered through dual credit, the demand would depend on whether the high schools can offer credit for these courses in their curriculum. Furthermore, high school faculty do not have the minimum credential requirements to teach the courses and do not wish to pursue these credentials. |

Projected Outcomes:

| Category | Standard | Met the Standard | Did not meet the Standard | Comments |
|--|---|------------------|---------------------------|----------|
| 1. Program Enrollment & Declared Majors | Program projects a steady increase in the number of declared majors in the | ✓ | | |

| | | | | |
|-------------------------------|---|---|--|--|
| | program over the course of five years. | | | |
| 2. Number of Graduates | Program Review Standard: The program will achieve a minimum of 5 graduates per year or 25 graduates during the most recent 5-year period. | ✓ | | |

Program Summary

Institution: South Texas College, McAllen Texas

Proposed Award: Associate of Arts in Early Childhood Education

PROGRAM DESCRIPTION

Program Objective: The Associate of Arts in Early Childhood Education will prepare students who are interested in pursuing a Bachelor of Science in Early Childhood Education or related field and help qualify graduates for career opportunities in public and private daycare centers as teachers or managers, teacher assistants in the public school system, entry level positions in state/federally funded programs (Head Start and Early Head Start) and community-based programs. The Early Childhood Education program offers students the opportunity to complete the core curriculum of general education courses along with key Early Childhood Education and related courses. These courses will provide a well-rounded education that prepares the student for success when transferring to other four-year institutions.

Curriculum: The Associate of Arts in Early Childhood Education would require students to complete 60 semester credit hours (SCH) of course work from the Academic Course Guide Manual. The coursework would consist of a 42-hour general education core and an 18-hour field of study.

Admissions Requirements: The admissions requirements for this program would follow the general admissions policies set forth in the South Texas College catalog.

ACADEMIC NEED & PROGRAM DEMAND

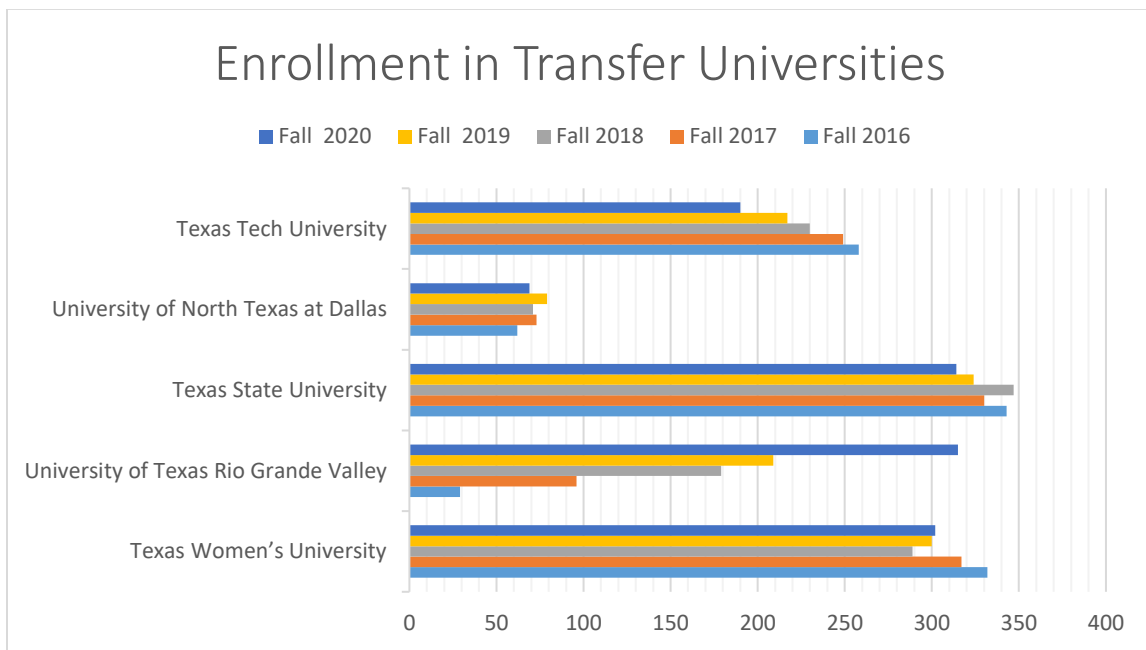
Academic Need:

Potential Articulation Agreements: This is a transfer-track program where graduates are encouraged to transfer to a four-year university offering a Bachelor's in Child Development, or related field, which include the following:

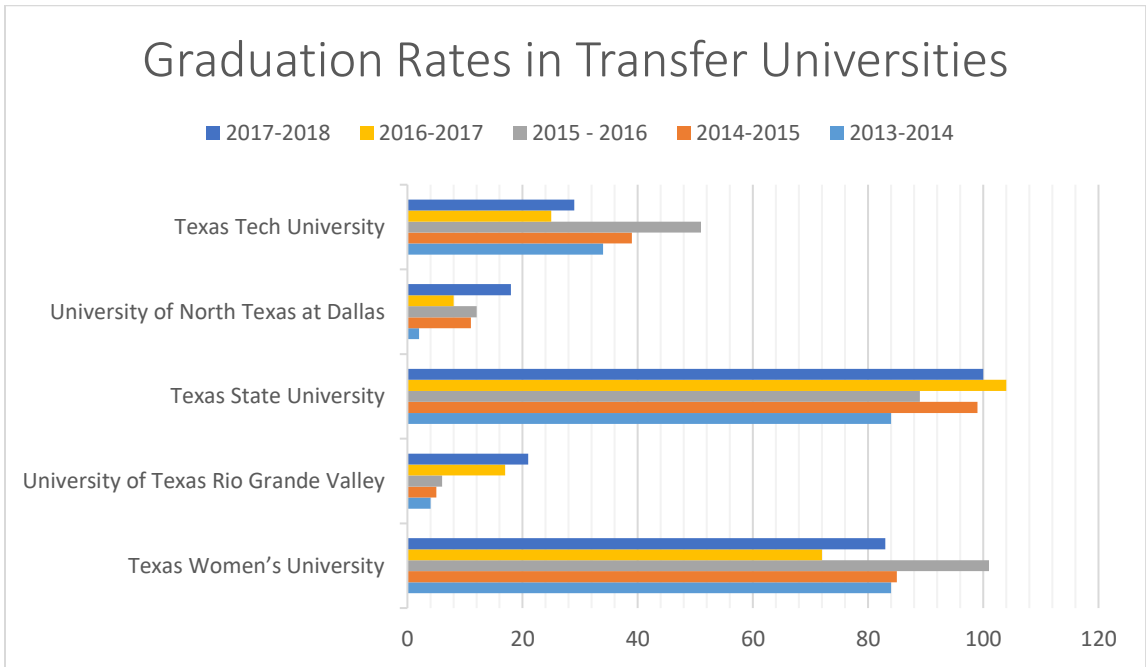
- University of Texas Rio Grande
- Texas Women's University

Program Demand: Enrollment in other Texas schools reveals some schools had a slight decrease over the past 5-year period. However, the University of Texas Rio Grande Valley revealed a 986.2% increase and University of North Texas at Dallas an 11.29% increase in enrollment.

| Enrollment in Transfer Universities | | | | | |
|---|-----------|-----------|-----------|-----------|-----------|
| School | Fall 2016 | Fall 2017 | Fall 2018 | Fall 2019 | Fall 2020 |
| Texas Women's University (19.0706) | 332 | 317 | 289 | 300 | 302 |
| University of Texas Rio Grande Valley (19.0711) | 29 | 96 | 179 | 209 | 315 |
| Texas State University (19.0701) | 343 | 330 | 347 | 324 | 314 |
| University of North Texas at Dallas (19.0706) | 62 | 73 | 71 | 79 | 69 |
| Texas Tech University (19.0708) | 258 | 249 | 230 | 217 | 190 |



| Graduates in Transfer Universities | | | | | |
|---|-----------|-----------|-----------|-----------|-----------|
| School | Fall 2016 | Fall 2017 | Fall 2018 | Fall 2019 | Fall 2020 |
| Texas Women’s University (19.0706) | 84 | 85 | 101 | 72 | 83 |
| University of Texas Rio Grande Valley (19.0711) | 4 | 5 | 6 | 17 | 21 |
| Texas State University (19.0701) | 84 | 99 | 89 | 104 | 100 |
| University of North Texas at Dallas (19.0706) | 2 | 11 | 12 | 8 | 18 |
| Texas Tech University (19.0708) | 34 | 39 | 51 | 25 | 29 |



Student Demand:

Enrollment in Existing Coursework at South Texas College: Enrollment in the early childhood education (TECA) coursework, which is part of the proposed field of study, has been relatively persistent. Although there was a drop in enrollment in AY20, this was attributed to the COVID-19 pandemic that began during that time. Student enrollment for these courses totaled **2,562** students for the past five academic years.

| Enrollment in TECA Coursework | | | | | |
|-------------------------------|------------|------------|------------|------------|------------|
| Semester | AY 2016 | AY 2017 | AY 2018 | AY 2019 | AY 2020 |
| Fall | 257 | 227 | 223 | 230 | 256 |
| Spring | 252 | 210 | 263 | 247 | 193 |
| Summer | 33 | 39 | 41 | 57 | 34 |
| Totals | 542 | 476 | 527 | 534 | 483 |

Enrollment in Related Programs at South Texas College:

| Enrollment in Related Programs | | | | | |
|--|---------|---------|---------|---------|---------|
| Award | AY 2016 | AY 2017 | AY 2018 | AY 2019 | AY 2020 |
| AAS – Child Development/Early Childhood | 204 | 146 | 153 | 142 | 158 |
| CT1 Pre-School | 123 | 103 | 111 | 87 | 63 |
| CT1 Infant/Toddler | 63 | 57 | 54 | 61 | 23 |

Graduates in Related Programs at South Texas College:

| Graduates in Related Programs | | | | | |
|--|-----------|-----------|-----------|-----------|-----------|
| Award | Fall 2016 | Fall 2017 | Fall 2018 | Fall 2019 | Fall 2020 |
| AAS – Child Development/Early Childhood | 30 | 32 | 15 | 32 | 34 |
| CT1 Pre-School | 54 | 37 | 49 | 45 | 32 |
| CT1 Infant/Toddler | 30 | 18 | 31 | 24 | 37 |

Student Survey:

A survey sample of 6,000 students yielded 358 responses (6%). The margin of error associated with this survey is plus/minus 5%. The survey revealed the following results:

- Twenty-nine percent (29%) of students preferred AA Early Childhood Education to their current major;
- Fifty-one percent (51%) felt it sounded like a good-paying job;
- Fifty-seven percent (57%) felt it sounded like a job that would make their family proud; and

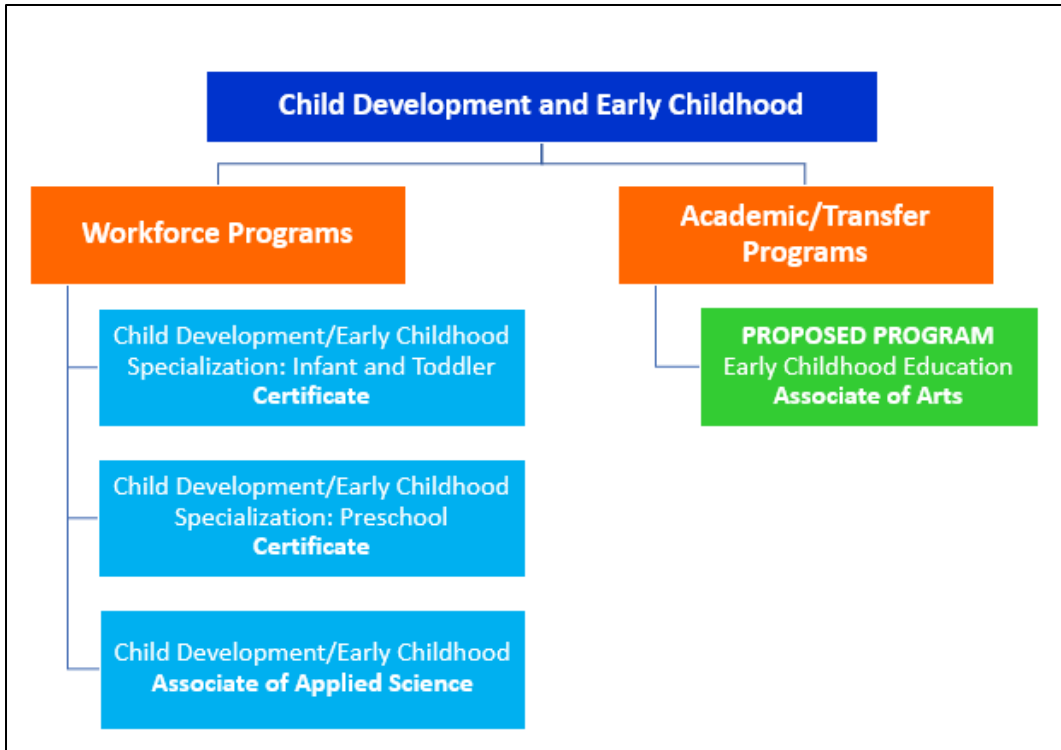
- Sixty-one percent (61%) felt it sounded like the kind of job that employers are hiring for in the Rio Grande Valley.

Existing Programs:

- Blinn College (which is approximately 343 miles from McAllen) offers an Associate of Science in Early Childhood Education
- Alvin Community College (which is approximately 351 miles from McAllen) offers an Associate of Arts in Child Development.
- Tarrant County Northeast Campus (approximately 510 miles from McAllen) offers an Associate of Science in Child Care.
- Weatherford College (approximately 523 miles from McAllen) offers an Associate of Art in Child Development.

Program Linkage and Opportunities for Further Education: The 60 hours of coursework from the Academic Course Guide Manual are transferable to other Texas 4-year institutions. South Texas College is currently collaborating with the University of Texas Rio Grande Valley to offer the TECA courses for transfer into their 4-year degree. Furthermore, coursework from the proposed AA in Early Childhood Education could be applied to the lower-division coursework for South Texas College’s Bachelors of Applied Technology in Technology Management and Bachelor’s of Applied Science in Organizational Leadership.

Students with a declared major in the AAS Child Development & Early Childhood program will also have the opportunity to continue to the AA – Early Childhood Education, if they choose to further their education. In this transition, **27** credits they have would have already completed in the AAS Child Development & Early Childhood program would apply to the AA in Early Childhood Education.



Expected Enrollment:

The projected enrollment is based on two factors. The first being historical enrollment in Child Development and Early Childhood courses. The projected data is based on actual data from enrollment in current TECA courses at STC, derived from the existing Infant/Toddler, Preschool, and the AAS in Child Development and Early Childhood degrees.

Projected Students Enrolled in TECA Courses (duplicated student)

| Years | 2022-2023 | 2023-2024 | 2024-2025 | 2025-2026 | 2026-2027 |
|-----------|-----------|-----------|-----------|-----------|-----------|
| Associate | 150 | 170 | 190 | 210 | 230 |

The second factor to consider in enrollment projections is declared majors in the AA in Interdisciplinary Studies that want to specialize in Early Childhood Education. This is based on interest of currently enrolled students majoring in the AAS in Child Development and Early Childhood, the general STC student population, high school students, current head start employees, veterans returning to school to obtain an education, and interest from our local child care community.

A data request was submitted to the Research & Analytical Services department requesting information on students with a declared major in the AA – Interdisciplinary Studies that have taken the four TECA courses in the proposed field of study. According to the data results, a total of **114** students completed the four courses between Fall 2015 and Fall 2020.

Projected Students Majoring in AA in Early Childhood Education (unduplicated student)

| Years | 2022-2023 | 2023-2024 | 2024-2025 | 2025-2026 | 2026-2027 |
|------------------|------------------|------------------|------------------|------------------|------------------|
| Associate | 10 | 15 | 20 | 25 | 30 |

PROGRAM SUPPORT

Faculty

It is anticipated that some of the proposed coursework will be taught by existing faculty. However, it is expected that 1 full-time faculty would be hired in the fourth year following the implementation. Adjuncts would be hired to support the program, if needed. The courses would average 18 students per course to start and would gradually increase to 22 students by the fifth year.

Supplies and Materials

Funding from the proposed budget will be allocated for the purchase office supplies, materials for classroom application, and department-sponsored group activities. No substantial purchases are required for this award.

Facilities, Equipment and Professional Development

Since this is an academic program, costs for facilities and equipment are almost non-existent. Existing classrooms and labs would be used for course offerings. Costs for professional development would cover registrations and expenses for conferences including the National Association for the Education of Young Children Annual Professional Development Institute, The Council for Professional Recognition yearly conference, and Blackboard World Conference.

New Costs

Total costs for this program are projected to be \$507,119.10. The funding to defray the costs of this program will come from state appropriations: \$244,627.20 and tuition & fees: \$755,220.00. The total projected 5-year revenue is \$999,847.20. See attached specific budget details.

INSTITUTIONAL EFFECTIVENESS

Program Review and Improvement Plans

The Program Review Process at South Texas College is embedded within the bi-annual Institutional Effectiveness Assessment Plan cycle. Every academic and technical program at South Texas College monitors and reports on specific standards. For academic programs, this includes graduation numbers and transfer rates. Action plans are created for each program that does not meet its targeted outcomes.

Accreditation

The Associate of Arts in Early Childhood Education is designed to be consistent with the standards of the Southern Association of College and Schools Commission on Colleges and Schools (SACSCOC).

Enrollment Management Plan

POTENTIAL SOURCE OF STUDENTS

The number of students identified as potential participants for the Associate of Arts in Early Childhood Education will involve various sources. Students in the program will be comprised of the general current STC student body, veterans, dual credit students, STC graduates wishing to pursue a degree in Early Childhood Education, and other industries seeking to advance their workforce skillset, such as Head Start Programs.

MARKETING

The Associate of Arts in Early Childhood Education will be marketed to various members of the public for continued growth of potential applicants and graduates. Targeted individuals will include high school/dual enrollment students, STC student population and additional members of the child care community, including school districts and state/local educational programs (i.e. Head Start). The program will be promoted through various activities that will include student advising sessions, high school career fairs, specialized events hosted by the STC Child Development and Early Childhood department, presentations at various STC campuses, distribution of flyers, brochures, rack cards, and additional advertisement of the program in coordination with the STC Public Relations and Marketing Department.

RETENTION

Faculty support, assistance, and tutoring will continue to be the primary resource for high retention and graduation rates for the program. We also have two student success specialists under Carl Perkins that support students enrolled in Competency-Based courses. Student involvement activities such as clubs, student workshops and industry networking events will be offered. The Early Childhood Education program will continue creating partnerships with for-profit and non-profit child care programs to offer students completing this award transferability to other four-year universities.

ENROLLMENT PROJECTIONS

The projected enrollment is based on two factors. The first being historical enrollment in Child Development and Early Childhood courses. The projected data is based on actual data from enrollment in current TECA courses at STC, derived from the existing Infant/Toddler, Preschool, and the AAS in Child Development and Early Childhood degrees.

Projected Students Enrolled in TECA Courses (duplicated student)

| Years | 2022-2023 | 2023-2024 | 2024-2025 | 2025-2026 | 2026-2027 |
|-----------|-----------|-----------|-----------|-----------|-----------|
| Associate | 150 | 170 | 190 | 210 | 230 |

The second factor to consider in enrollment projections is declared majors in the AA in Interdisciplinary Studies that want to specialize in Early Childhood Education. This is based on interest of currently enrolled students majoring in the AAS in Child Development and Early Childhood, the general STC student population, high school students, current head start employees, veterans returning to school to obtain an education, and interest from our local child care community.

A data request was submitted to the Research & Analytical Services department requesting information on students with a declared major in the AA – Interdisciplinary Studies that have taken the four TECA courses in the proposed field of study. According to the data results, a total of **114** students completed the four courses between Fall 2015 and Fall 2020.

Projected Students Majoring in AA in Early Childhood Education (unduplicated student)

| Years | 2022-2023 | 2023-2024 | 2024-2025 | 2025-2026 | 2026-2027 |
|------------------|------------------|------------------|------------------|------------------|------------------|
| Associate | 10 | 15 | 20 | 25 | 30 |

PROJECTED NUMBER OF GRADUATES

The department projects that at least 32% of students enrolled in the program will complete the AA in Early Childhood Education. This is based off of the institutional average.

A data request was submitted to the Research & Analytical Services department requesting information on students that graduated with an AA – Interdisciplinary Studies that took the four TECA courses in the proposed field of study. According to the data results, a total of **54** graduates from Fall 2015 through Fall 2020 completed the four courses.

| Years | 2022-2023 | 2023-2024 | 2024-2025 | 2025-2026 | 2026-2027 |
|------------------|------------------|------------------|------------------|------------------|------------------|
| Associate | 3 | 4 | 6 | 8 | 9 |

Student Survey



Research & Analytical Services
Student Survey
Early Childhood Education New Program
Field Dates: April 22-May 2, 2020
Sample Size: n=358, margin of error +/- 5%
Matt Dabrowski, Qualitative Researcher

Summary

Research & Analytical Services conducted a survey of students for the Curriculum & Student Learning Office. The eligible cohort was traditional students aged 18 and over enrolled in the Spring 2020 semester, from which a sample of 6,000 was drawn. Three hundred and fifty-eight (n=358, 6%) responded. The sample was post-stratified and weighted by gender and program division to create a representative portrait of the traditional student body. The margin of error associated with this survey is plus/minus 5%. The data reported in this document is weighted.

Student interest in an AA Early Childhood Education program was assessed. RAS tested four programs this semester, and the correct interpretation of the data is to compare against the average of this cohort.

For AA Early Childhood Education, students expressed an average interest of 4.4 on a 1-to-10 scale, compared to 4.2 for the cohort average (cohort maximum 4.5). Social Science (SS) majors expressed an average interest of 6.0. Students rated the program on attributes that included *Prefer this program to my current major* (29% vs. cohort average 28%, cohort maximum 30%, SS 50%), *Sounds like a good-paying job* (51% vs. cohort average 62%, cohort maximum 75%, SS 54%), *Sounds like the kind of job that would make my family proud* (57% vs. cohort average 56%, cohort maximum 64%, SS 60%), and *Sounds like the kind of job that employers are hiring for here in the Valley* (61% vs. cohort average 55%, cohort maximum 61%, SS 61%).

The core market for this program is Social Science majors (6.2) and female students (5.0).

Proposed Curriculum & Course Descriptions

Early Childhood Education

Associate of Art Degree

AY 2022-2023

TSI LIABLE

FIELD OF STUDY

18 credits

| | |
|-----------|---|
| TECA 1311 | Educating Young Children |
| TECA 1318 | Wellness of the Young Child |
| TECA 1354 | Child Growth and Development |
| TECA 1303 | Family, School and Community |
| EDUC 1301 | Introduction to the Teaching Profession |
| PSYC 2308 | Child Psychology |

STC CORE CURRICULUM

42 Credits

In addition to the courses in the Field of Study, the student is required to take 42 hours from the STC Core Curriculum. Students must take SPCH 1311 – Introduction to Speech or SPCH 1318 – Interpersonal Communications to meet the Component Area Option core requirement. Students must take ARTS 1301 – Art Appreciation or MUSI 1306 – Music Appreciation to meet the Creative Arts core requirement.

FIELD OF STUDY: 18

STC CORE CURRICULUM: 42

TOTAL CREDIT HOURS: 60

Early Childhood Education

Associate of Art Degree

Field of Study Proposal

AY 2022-2023

RECOMMENDED COURSE SEQUENCE

| FIRST SEMESTER | | Credit Hours |
|------------------------|---|---------------------|
| ENGL 1301 | Composition | 3 |
| | Language, Philosophy & Culture Elective – Core Curriculum (Recommended: PHIL 1301 or PHIL 2306) | 3 |
| HIST 1301 | United States History I OR HIST 2327 | 3 |
| TECA 1311 | Educating Young Children Component Area Option – Core Curriculum (SPCH 1311 or SPCH 1318) | 3 |
| SECOND SEMESTER | | |
| EDUC 1301 | Introduction to the Teaching Profession | 3 |
| ENGL 1302 | Composition II – Rhetoric | 3 |
| GOVT 2305 | Federal Government | 3 |
| HIST 1302 | United States History I OR HIST 2328 Creative Arts Elective – Core Curriculum (ARTS 1301 or MUSI 1306) | 3 |
| THIRD SEMESTER | | |
| TECA 1318 | Wellness of the Young Child | 3 |
| | Mathematics Elective – Core Curriculum (Recommended: MATH 1414 or 1442) | 3-4 |
| | Life & Physical Sciences Elective – Core Curriculum (Recommended: PHYS 1415 or BIOL 1408) | 4 |
| | Social & Behavioral Sciences Elective – Core Curriculum (Recommended: PSYC 2301 or 2314) | 3 |
| TECA 1354 | Child Growth and Development | 3 |
| FOURTH SEMESTER | | |
| PSYC 2308 | Child Psychology | 3 |
| | Life & Physical Sciences Elective – Core Curriculum (Recommended: PHYS 1417 or BIOL 1409) | 4 |
| GOVT 2306 | Texas Government | 3 |
| TECA 1303 | Family School and Community Component Area Option – Core Curriculum (Recommended: KINE 1164) | 3 |

Early Childhood Education

Associate of Art Degree

Field of Study Course Descriptions

TECA 1303 – FAMILY, SCHOOL AND COMMUNITY

CRT HRS:03 LEC HRS:03 LAB HRS:01 OTH HRS:0

This course is a study of the child, family, community, and schools, including parent education and involvement, family and community lifestyles, child abuse, and current family life issues. Course content must be aligned as applicable with State Board for Educator Certification Pedagogy and Professional Responsibilities standards and coincide with the National Association for the Education of Young Children position statement related to developmentally appropriate practices for children from birth through age eight. Requires students to participate in field experiences with children from infancy through age 12 in a variety of settings with varied and diverse populations. The course includes a minimum of 16 hours of field experiences.

Prerequisite: None.

Course Learning Outcomes

- Identify characteristics and issues relating to diverse cultures and caregiving lifestyles.
- Analyze ways in which factors in the home and community (e.g. parent expectations, availability of community resources, community issues) impact learning, including an awareness of social and cultural factors to enhance development and learning.
- Identify and apply strategies to maintain positive, collaborative relationships with diverse families (e.g. families with children with disabilities, poverty, single-parent, cultural, homelessness, dual-language learners).
- Investigate community/educational resources (e.g. dentist on wheels, library programs, GED programs, family education programs, Early Childhood Intervention Strategies) to empower families to support children's development.
- Recognize signs of abuse and neglect and describe ways to work effectively with abused and neglected children and their families.
- Explain the importance of family involvement/home-school relationships in education.
- Explain the importance of maintaining codes of ethical conduct and legal issues when working with families, colleagues, and community professionals.

TECA 1311 – EDUCATING YOUNG CHILDREN

CRT HRS:03 LEC HRS:03 LAB HRS:01 OTH HRS:00

This course is an introduction to the education of the young child, including developmentally appropriate practices and programs, theoretical and historical perspectives, ethical and professional responsibilities, and current issues. Course content must be aligned as applicable with State Board for Educator Certification Pedagogy and Professional Responsibilities standards and coincide with the National Association for the Education of Young Children position statement related to developmentally appropriate practices for children from birth through age eight. Requires students to participate in field experiences with children from infancy through age 12 in a variety of settings with varied and diverse populations; and the course includes a minimum of 16 hours of field experiences.

Prerequisite: None.

Course Learning Outcomes

- Identify the features of a quality developmentally appropriate program for young children.
- Explain contributions of historical and contemporary professionals and theorists to the field of early childhood education.
- Analyze various early childhood programs and curricular models that have influenced practice.
- Describe current and future trends and issues in the field of education.
- Apply classroom observation and assessment skills to identify developmentally appropriate programs in diverse early childhood educational settings.
- Describe and adhere to professional code of legal and ethical requirements for educators.

TECA 1318 – WELLNESS OF THE YOUNG CHILD

CRT HRS:03 LEC HRS:03 LAB HRS:01 OTH HRS:0

This is a study of the factors that impact the well-being of the young child including healthy behavior, food, nutrition, fitness, and safety practices. Focuses on local and national standards and legal implications of relevant policies and regulations. Course content must be aligned as applicable with State Board for Educator Certification Pedagogy and Professional Responsibilities standards and coincide with the National Association for the Education of Young Children position statement related to developmentally appropriate practices for children from birth to age eight. Requires students to participate in field experiences with children from infancy through age 12 in a variety of settings with varied and diverse populations. Course includes a minimum of 16 hours of field experiences.

Prerequisite: None.

Course Learning Outcomes

- Describe the relationship between health, safety and nutrition.
- Describe the basic principles of healthy behavior and guidance practices that influence health promotion, safe practices and disease prevention for young children.
- Analyze principles of nutrition and the application to nutritional assessment.
- Identify policy and regulatory requirements for nutrition.
- Describe the role of physical fitness as it contributes to healthy behavior.
- Evaluate and make recommendations for modifications of regulations regarding child's safety, safety procedures, and children's environments for safety.
- Describe how physical, social, and emotional environments influence a child's health.

TECA 1354 – CHILD GROWTH AND DEVELOPMENT

CRT HRS:03 LEC HRS:03 LAB HRS:00 OTH HRS:0

This is a study of the physical, emotional, social, language, and cognitive factors impacting growth and development of children through adolescence.

Prerequisite: None.

Course Learning Outcomes

- Summarize principles of growth and development.
- Identify typical stages of cognitive, social, physical, language, and emotional development.
- Compare, contrast and apply theories of development in practice.
- Discuss the impact of developmental processes on educational practices.

- Identify the stages of play development (i.e. from solitary to cooperative) and describe the important role of play in young children's learning and development.
- Demonstrate skills in practical application of developmental principles and theories, observation techniques, assessment, and recognition of growth and development patterns.

EDUC 1301 – INTRODUCTION TO THE TEACHING PROFESSION

CRT HRS:03 LEC HRS:03 LAB HRS:01 OTH HRS:0

This is an enriched, integrated pre-service course and content experience that provides active recruitment and institutional support of students interested in a teaching career, especially in high need fields. This course provides students with opportunities to participate in early field observations at all levels of P-12 schools with varied and diverse student populations and provides students with support from college and school faculty, preferably in small cohort groups, for the purpose of introduction to and analysis of the culture of schooling and classrooms. Course content should be aligned as applicable with State Board for Educator Certification Pedagogy and Professional Responsibilities standards; and the course must include a minimum of 16 contact hours of field experience in P-12 classrooms.

Prerequisite: None.

Course Learning Outcomes

- Identify current issues influencing the field of education and teacher professional development.
- Analyze the culture of schooling and classrooms from the perspectives of language, gender, socioeconomic, ethnic, and disability-based academic diversity and equity.
- Provide examples from classroom observations and course activities that demonstrate understanding of educational pedagogy and professional responsibilities of teachers.
- Evaluate personal motivations, educational philosophies, and factors related to educational career decision making.
- Recognize the various multiple intelligences/learning styles in order to be able to implement instructional practices that meet the needs of all students.

PSYC 2308 – CHILD PSYCHOLOGY

CRT HRS:03 LEC HRS:03 LAB HRS:00 OTH HRS:0

This course is a study of physical, cognitive, emotional and social growth from conception through childhood.

Prerequisite: Completion of READ 0100 with a grade of "C" or better or equivalent.

Course Learning Outcomes

- Describe how human beings change physically, cognitively, socially and emotionally from conception through childhood.
- Identify fundamental concepts and theories, both recent and historical, within the field of child psychology.
- Evaluate research issues and methodologies used to investigate developmental phenomena.
- Describe the process of development and the multiple sources of influence on a developing child.

Instructional Costs & Projected Revenue

**Instructional Costs and Projected Revenue
for
AA in Early Childhood Education**

| Faculty Salary & Benefits | 2022-2023 | 2023-2024 | 2024-2025 | 2025-2026 | 2026-2027 | Total |
|--|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| No. Sections | | | | | | |
| LHE Rate | \$ 750.00 | \$ 750.00 | \$ 750.00 | \$ 750.00 | \$ 750.00 | |
| # of LHE's per Course | 3.67 | 3.67 | 3.67 | 3.67 | 3.67 | |
| Subtotal | \$ 2,752.50 | \$ 2,752.50 | \$ 2,752.50 | \$ 2,752.50 | \$ 2,752.50 | |
| # of Sections Taught by Adjuncts | 0 | 4 | 8 | 4 | 4 | |
| # of Sections Taught by Current F/T | 12 | 16 | 16 | 15 | 19 | |
| # of Sections Taught by New F/T | 0 | 0 | 0 | 9 | 9 | |
| Salary Breakdown | | | | | | |
| Adjunct/Overload Compensation | \$33,030.00 | \$ 55,050.00 | \$ 66,060.00 | \$ 52,297.50 | \$ 63,307.50 | |
| Benefits Rate for Adjunct/Overload (18%) | 1.18 | 1.18 | 1.18 | 1.18 | 1.18 | |
| Compensation + Benefits for Adjunct | \$38,975.40 | \$ 64,959.00 | \$ 77,950.80 | \$ 61,711.05 | \$ 74,702.85 | \$318,299.10 |
| F/T Faculty @ \$53,000 avg salary | \$0 | \$0 | \$0 | \$53,000 | \$53,000 | |
| Benefit Rate for F/T (30%) | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | |
| Salary + Benefits for F/T | \$0 | \$0 | \$0 | \$68,900 | \$68,900 | \$137,800.00 |
| Administrative Costs | \$4,800 | \$4,800 | \$4,800 | \$4,800 | \$4,800 | |
| Benefits Rate for Overload (18%) | 1.18 | 1.18 | 1.18 | 1.18 | 1.18 | |
| Compensation + Benefits for Overload | \$5,664 | \$5,664 | \$5,664 | \$5,664 | \$5,664 | \$ 28,320.00 |
| Total Costs for Faculty Salary/Benefits | \$44,639.40 | \$ 70,623.00 | \$ 83,614.80 | \$136,275.05 | \$149,266.85 | \$484,419.10 |

| Projected Revenue | 2022-2023 | 2023-2024 | 2024-2025 | 2025-2026 | 2026-2027 | Totals |
|---|--------------------|---------------------|---------------------|---------------------|---------------------|----------------------|
| State Appropriations | | | | | | |
| # of Sections (Traditional) | 12 | 20 | 24 | 28 | 32 | |
| # of Students per Section (Traditional) | 18 | 18 | 20 | 20 | 22 | |
| Total # of Students per Year | 216 | 360 | 480 | 560 | 704 | |
| # of Contact Hours per Student | 60 | 60 | 60 | 60 | 60 | |
| Total Contact Hours | 12960 | 21600 | 28800 | 33600 | 42240 | |
| Multiplied by State Funding Rate (2.74) | \$ 2.74 | \$ 2.74 | \$ 2.74 | \$ 2.74 | \$ 2.74 | |
| State Appropriations Generated | \$35,510.40 | \$ 59,184.00 | \$ 78,912.00 | \$ 92,064.00 | \$115,737.60 | |
| State Appropriations Received | \$35,510.40 | \$ 35,510.40 | \$ 35,510.40 | \$ 59,184.00 | \$ 78,912.00 | \$ 244,627.20 |

* State Appropriations funding is based on average funding per contact hour from previous biennium

| Tuition | | | | | | |
|----------------------------------|--------------------|---------------------|---------------------|---------------------|---------------------|----------------------|
| Enrollment # Projected | 216 | 360 | 480 | 560 | 704 | |
| Tuition Rate per Credit Hour | \$ 77.00 | \$ 77.00 | \$ 77.00 | \$ 77.00 | \$ 77.00 | |
| Subtotal | \$16,632.00 | \$ 27,720.00 | \$ 36,960.00 | \$ 43,120.00 | \$ 54,208.00 | |
| # of Credit Hours per Course | 3 | 3 | 3 | 3 | 3 | |
| Total Tuition | \$49,896.00 | \$ 83,160.00 | \$110,880.00 | \$129,360.00 | \$162,624.00 | \$535,920.00 |
| Student Fees | | | | | | |
| Registration Fee (\$150/term) | \$ 3,000.00 | \$ 7,500.00 | \$ 10,500.00 | \$ 13,500.00 | \$ 16,500.00 | |
| Institutional Fees (\$33/SCH) | \$ 9,900.00 | \$ 24,750.00 | \$ 34,650.00 | \$ 44,550.00 | \$ 54,450.00 | |
| Lab Fees (none) | \$ - | \$ - | \$ - | \$ - | \$ - | |
| Total Fees: | \$12,900.00 | \$ 32,250.00 | \$ 45,150.00 | \$ 58,050.00 | \$ 70,950.00 | \$219,300.00 |
| Total Tuition & Fees: | \$62,796.00 | \$115,410.00 | \$156,030.00 | \$187,410.00 | \$233,574.00 | \$ 755,220.00 |

Notes: LHE rate of \$750 was used as this program would likely hire faculty with a Master's Degree in the related field. The number of LHEs per course was derived from the proposed curriculum in which the majority of the field of study courses were 3 lecture/1 lab hours. Contact Hours per student was derived from an average of 60 contact hours per course section, based on overall contact hours for FOS. Number of credit hours per course was 3 for the TECA courses.

Operating Costs and Revenue Projections

| CATEGORY | INITIAL COST | BUDGET 2ND YEAR | BUDGET 3RD YEAR | BUDGET 4TH YEAR | BUDGET 5TH YEAR | TOTAL BUDGET |
|--|---------------------|---------------------|---------------------|---------------------|---------------------|----------------------|
| | 2022-2023 | 2023-2024 | 2024-2025 | 2025-2026 | 2026-2027 | 2022-2027 |
| Faculty Salaries and Benefits | \$ 44,639.40 | \$ 70,623.00 | \$ 83,614.80 | \$136,275.05 | \$149,266.85 | \$ 484,419.10 |
| Supplies and Materials (Operating) | \$ 1,000.00 | \$ 1,000.00 | \$ 1,000.00 | \$ 2,000.00 | \$ 2,000.00 | \$ 7,000.00 |
| Library Resources | \$ 1,000.00 | \$ 1,000.00 | \$ 1,000.00 | \$ 1,000.00 | \$ 1,000.00 | \$ 5,000.00 |
| Equipment and Software (Capital) | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - |
| Facilities (Furniture) (Operating) | \$ 500.00 | \$ 500.00 | \$ 500.00 | \$ 500.00 | \$ 500.00 | \$ 2,500.00 |
| Faculty Professional Development/(Travel) | \$ 1,000.00 | \$ 1,800.00 | \$ 1,800.00 | \$ 1,800.00 | \$ 1,800.00 | \$ 8,200.00 |
| Subtotal - Instructional & Operating Budget | \$ 48,139.40 | \$ 74,923.00 | \$ 87,914.80 | \$141,575.05 | \$154,566.85 | \$ 507,119.10 |
| Total Budget Per Year | \$ 48,139.40 | \$ 74,923.00 | \$ 87,914.80 | \$141,575.05 | \$154,566.85 | \$ 507,119.10 |
| | | | | | | |
| CATEGORY | REVENUE | REVENUE | REVENUE | REVENUE | REVENUE | TOTAL REVENUE |
| | 2022-2023 | 2023-2024 | 2024-2025 | 2025-2026 | 2026-2027 | 2022-2027 |
| State Appropriations | \$ 35,510.40 | \$ 35,510.40 | \$ 35,510.40 | \$ 59,184.00 | \$ 78,912.00 | \$ 244,627.20 |
| Tuition & Fees | \$ 62,796.00 | \$115,410.00 | \$156,030.00 | \$187,410.00 | \$233,574.00 | \$ 755,220.00 |
| TOTAL REVENUE | \$ 98,306.40 | \$150,920.40 | \$191,540.40 | \$246,594.00 | \$312,486.00 | \$ 999,847.20 |

Review and Approve Development of the Proposed Associate of Applied Science Degree and Certificate Programs for Surveying and Geospatial Technology

The Education and Workforce Development Committee is asked to approve development of an Associate of Applied Science Degree and a Certificate in Surveying and Geospatial Technology.

Committee and Board approval would be necessary to offer the programs once developed. Due to the nature of this new program and its difference from current programs offered by the College, an extended, two-phase institutional approval process is required:

- Phase I is the request for approval to initiate the development of the program. If approval to develop this program is granted by the required entities, up to and including the Education and Workforce Development Committee, Phase II of the process would begin.
- During Phase II, an Advisory Committee will be formally established that will guide the development of an appropriate curriculum that meets the business and industry workforce needs. Phase II includes the request to approve the program as proposed by the Advisory Committee and will follow the same approval channels including Education and Workforce Development Committee and South Texas College Board of Trustees, as well as the state and accrediting bodies.

The proposed program offers detailed instruction on land, route, control, and engineering design surveying, focusing on learning the legal principles of boundary location, evaluating property corners, describing the land, calculating land areas, and mapping the collected data of the natural and built environment. The program will prepare students for the use of modern surveying and mapping technologies such as Geographic Information Systems (GIS) and Global Positioning Systems (GPS) to collect, map, and analyze geographic data for projects in the Architectural, Engineering, and Construction (AEC) industry.

Students graduating from the proposed Certificate in Surveying and Geospatial Technology will have an opportunity to be certified in the Level I Site Layout credential from the National Center for Construction Education & Research (NCCER). Students that graduate with the associate degree will have an opportunity to be certified in the Level II Site Layout credential. Furthermore, students that complete the associate degree and accumulate two years of experience working under a Registered Professional Land Surveyor will have the opportunity to qualify for the Surveyor in Training (SIT) exam for the Texas Board of Professional Engineers and Land Surveyors.

The program developers have researched and compiled job projection and wage data from Economic Modeling Specialists, Inc, conducted a student survey, and accumulated letters of support from industry partners to document program and student demand.

The following pages contain the Program Development Packet, which includes:

- Program Development Approval Checklist
- Program Development Approval Checklist
- Curriculum Department Review

- Program Development Checklist
- Program Summary
- Enrollment Management Plan
- Student Survey Summary
- Proposed Curriculum & Course Descriptions
- Instructional Costs and Projected Revenues
- Supporting Documents:
 - Proposed Advisory Committee Membership
 - Letters of Support

Dr. Anahid Petrosian, Vice President for Academic Affairs, will introduce Ms. Christina Cavazos, Director for Curriculum, and Ms. Laura Salas, Chair for the Architectural and Engineering Design Technology department to review the proposal and respond to questions.

The Education and Workforce Development Committee is asked to approve Phase I so faculty can move forward to Phase II of the program development process for an Associate of Applied Science Degree and a Certificate in Surveying and Geospatial Technology as presented.

No Board action will be needed for the development of these programs, though Committee and Board approval would be necessary to offer the programs once developed.

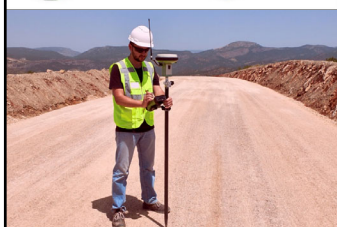
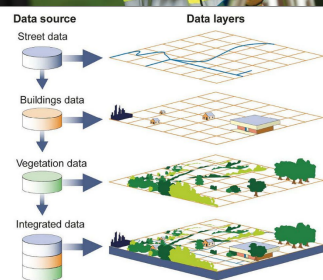
Program Development Proposal Presentation
Education & Workforce Development Committee Meeting
November 9, 2021



Associate of Applied Science & Certificate Surveying and Geospatial Technology

Presenters:

Dr. Anahid Petrosian, Interim Vice President for Academic Affairs and Chief Academic Officer
Christina Y. Cavazos, Director of Curriculum
Laura Salas, Department Chair, Architectural and Engineering Design Technology



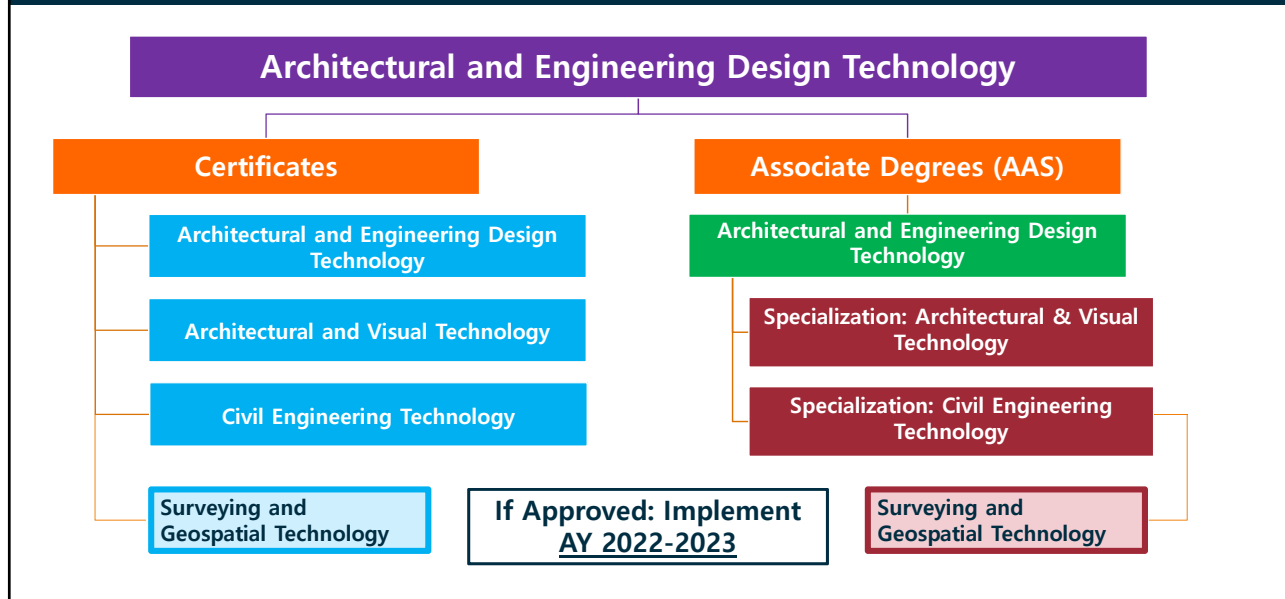
Outline

- **Program Development**
 - Two-Phase Approval Process
- **Program Overview**
 - Occupational Need
 - Student Demand
 - Existing Programs
 - Program Support
- **Educational Pathways**
 - Industry Certifications
- **Projected Enrollment**
- **Suggested Curriculum**



New Program: Surveying and Geospatial Technology

Division of Business, Public Safety and Technology



Approval Process



In accordance with program development procedures outlined in the Faculty Handbook, **an extended two-phase program approval process is required** for the creation of a Certificate and/or Associate of Applied Science degree for which the college has no current offerings in its inventory.

First Phase – Approval Process for Development

- Review and Approval/Recommendation to develop the program
 - ✓ Division Dean Approval
 - ✓ Academic Council
 - ✓ Planning and Development Council
 - **Education and Workforce Development Committee**



Second Phase – Approval Process for Implementation

- Internal
- External

Approval Process – Second Phase



APPROVAL PROCESS FOR IMPLEMENTATION *After EWDC Review/Approval*

| | |
|----------|---|
| INTERNAL | <input type="checkbox"/> Department Faculty/Chair/Dean |
| | <input type="checkbox"/> Vice President for Academic Affairs |
| | <input type="checkbox"/> Advisory Committee (external stakeholders and internal resources) |
| | <input type="checkbox"/> Division Curriculum Committee |
| | <input type="checkbox"/> College-Wide Curriculum Committee |
| | <input type="checkbox"/> SACSCOC Liaison (if substantive change) |
| | <input type="checkbox"/> Academic Council |
| | <input type="checkbox"/> Planning and Development Council |
| | <input type="checkbox"/> STC Board of Trustees (Certification Form) |
| | <input type="checkbox"/> Education and Workforce Development Committee |
| EXTERNAL | <input type="checkbox"/> Higher Education Regional Council/Workforce Solutions (Letter of Intent) |
| | <input type="checkbox"/> Texas Higher Education Coordinating Board |
| | <input type="checkbox"/> Southern Association of Colleges and Schools – Commission on Colleges |
| | <input type="checkbox"/> Department of Education |

Program Development Checklist



- **Occupational Need** and **Projected Outcomes** must be **documented** prior to the development of any new workforce or academic program.
- The following categories serve as an **initial guide** for program developers to start the development process.

➤ Occupational Need

- Student Demand
- Existing Programs
- Educational Pathways

➤ Projected Outcomes

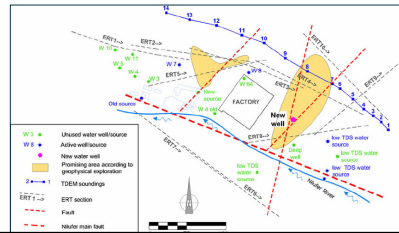
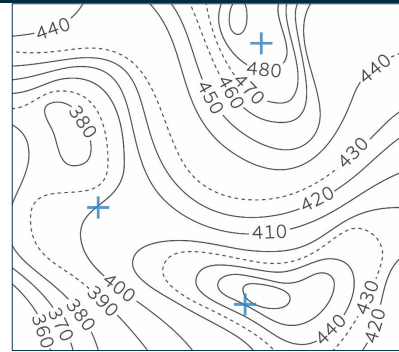
- Program Enrollment & Declared Majors
- Number of Graduates
- Graduate Earnings

Program Overview



Surveying & Geospatial Technology Program will:

- Prepare students in using **modern surveying and mapping technologies** to collect, map, and analyze geographic data for projects in the Architectural, Engineering, and Construction (AEC) industry
- Offer detailed **instruction on land, route, control, and engineering design surveying** focusing on:
 - ✓ The legal principles of boundary location
 - ✓ Evaluating property corners and describing the land
 - ✓ Calculating land areas and mapping the collected data of natural and built environments



Occupational Need



| | |
|----------------------------|--|
| Occupational Growth | <ul style="list-style-type: none"> • Occupational growth in the field of Surveying and Geospatial Technology for the South Texas region is projected to average 8.0% between 2021 to 2031. • Occupational growth for the State of Texas is projected to average 6.35%. |
| Number of New Jobs | <ul style="list-style-type: none"> • In Texas, approximately 5,306 new jobs in the field of Surveying and Geospatial Technology are expected between 2021 to 2031. |
| Pay Level | <ul style="list-style-type: none"> • In the South Texas region, the projected median pay level for professionals in this field is \$20.98 an hour. • The U.S Bureau of Labor Statistics reports a median salary of \$56,598 for professionals in this field. |

Student Demand



Student demand exists and is documented through student survey data collected by the South Texas College Research & Analytical Services department.

Student survey administered to 8,000 students:

- **19%** of students preferred Surveying and Geospatial Technology to their current major
- **70%** felt it sounded like a good-paying job
- **46%** felt it sounded like the kind of job that employers are hiring for in the Rio Grande Valley

Existing Programs



- **Austin Community College:** approximately 313 miles from McAllen
 - Certificate and AAS in Geospatial Engineering
- **Lonestar College – Montgomery:** approximately 378 miles from McAllen
 - Certificate in Land Surveying and AAS in Land Surveying & Mapping Technology
- **Tyler Junior College:** approximately 541 miles from McAllen
 - Certificate in Surveying and an AAS in Surveying & Geomatics Technology

Program Support



- **Faculty**
 - Proposed coursework will be taught by existing faculty for first two years
- **Facilities & Equipment**
 - Existing classrooms and labs would be utilized
 - Equipment costs: surveying tripods, prism pole tripods, prism poles, measuring wheels, a 3D scanner, Trimble R1 GNSS Receivers, and software renewals
- **Program Costs**

The cost to implement this program is expected to be above average due to the purchase of supplies and equipment; however, the **revenue, including contact hour reimbursement and student tuition & fees, would bear the cost**

Educational Pathways



➤ Coursework can be applied to the following bachelor programs at South Texas College

- Bachelor's of Applied Technology in Technology Management
- Bachelor's of Applied Science in Organizational Leadership

➤ Some of the proposed technical coursework is already offered as dual credit



Industry Certifications



Students that complete the following Surveying and Geospatial Technology credentials will have an opportunity to obtain industry certifications.

| STC Credential | Industry Certification |
|--|--|
| Certificate | Site Layout Level I credential from the National Center for Construction Education & Research (NCCER) |
| Associate of Applied Science (AAS) | Site Layout Level II from NCCER |
| AAS + two years experience working under a Registered Professional Land Surveyor | Surveyor in Training from the Texas Board of Professional Engineers and Land Surveyors |

Projected Enrollment



Projected Students Enrolled in New Coursework

| Years | 2022-2023 | 2023-2024 | 2024-2025 | 2025-2026 | 2026-2027 |
|-------|-----------|-----------|-----------|-----------|-----------|
| | 10 | 12 | 12 | 14 | 15 |

Projected Declared Majors in Certificate and AAS in Surveying and Geospatial Technology

| Years | 2022-2023 | 2023-2024 | 2024-2025 | 2025-2026 | 2026-2027 |
|--------------------|-----------|-----------|-----------|-----------|-----------|
| Certificate | 8 | 20 | 32 | 40 | 45 |
| AAS | 12 | 28 | 40 | 44 | 45 |

Suggested Curriculum

for Advisory Committee Review/Revisions

Certificate



| Semester One | | | Lecture Hours | Lab Hours | External Hours | Contact Hours | Credit Hours |
|-------------------------------|------|---------------------------------|---------------|-----------|----------------|-----------------------------|--------------|
| SRVY | 1301 | Introduction to Surveying | 2 | 4 | 0 | 96 | 3 |
| DFTG | 1409 | Basic Computer-Aided Drafting | 3 | 3 | 0 | 96 | 4 |
| SRVY | 2343 | Surveying - Legal Principles I | 3 | 0 | 0 | 48 | 3 |
| DFTG | 1493 | Introduction to Civil Drafting | 3 | 3 | 0 | 96 | 4 |
| Total Semester Hours: | | | 11 | 10 | 0 | 336 | 14 |
| Semester Two | | | Lecture Hours | Lab Hours | External Hours | Contact Hours | Credit Hours |
| SRVY | 1341 | Land Surveying | 2 | 4 | 0 | 96 | 3 |
| SRVY | 1335 | Land Surveying Applications | 2 | 4 | 0 | 96 | 3 |
| SRVY | 2344 | Surveying - Legal Principles II | 3 | 0 | 0 | 48 | 3 |
| SRVY | 2309 | Computer Aided Mapping | 2 | 4 | 0 | 96 | 3 |
| Total Semester Hours: | | | 9 | 12 | 0 | 336 | 12 |
| Current STC Coursework | | | | | | Total Contact Hours: | 672 |
| | | | | | | Total Credit Hours: | 26 |

Suggested Curriculum

for Advisory Committee Review/Revisions

Associate of Applied Science



| Semester One | | | Lecture Hours | Lab Hours | External Hours | Contact Hours | Credit Hours |
|---|------|--|---------------|-----------|----------------|-----------------------------|--------------|
| SRVY | 1301 | Introduction to Surveying | 2 | 4 | 0 | 96 | 3 |
| DFTG | 1409 | Basic Computer-Aided Drafting | 3 | 3 | 0 | 96 | 4 |
| SRVY | 2343 | Surveying - Legal Principles I | 3 | 0 | 0 | 48 | 3 |
| SPCH | 1321 | Business & Professional Communication | 3 | 0 | 0 | 48 | 3 |
| Total Semester Hours: | | | 11 | 7 | 0 | 288 | 13 |
| Semester Two | | | Lecture Hours | Lab Hours | External Hours | Contact Hours | Credit Hours |
| SRVY | 1341 | Land Surveying | 2 | 4 | 0 | 96 | 3 |
| SRVY | 1335 | Land Surveying Applications | 2 | 4 | 0 | 96 | 3 |
| SRVY | 2344 | Surveying - Legal Principles II | 3 | 0 | 0 | 48 | 3 |
| SRVY | 2309 | Computer Aided Mapping | 2 | 4 | 0 | 96 | 3 |
| MATH | 1414 | College Algebra | 4 | 0 | 0 | 64 | 4 |
| Total Semester Hours: | | | 13 | 12 | 0 | 400 | 16 |
| Semester Three | | | Lecture Hours | Lab Hours | External Hours | Contact Hours | Credit Hours |
| PSYC | 2301 | General Psychology or SOCI 1301 | 3 | 0 | 0 | 48 | 3 |
| ENGL | 1301 | Composition I | 3 | 0 | 0 | 48 | 3 |
| Total Semester Hours: | | | 6 | 0 | 0 | 96 | 6 |
| Semester Four | | | Lecture Hours | Lab Hours | External Hours | Contact Hours | Credit Hours |
| GISC | 1311 | Introduction to Geographic Information Systems (GIS) | 2 | 4 | 0 | 96 | 3 |
| SRVY | 2339 | Engineering Design Survey | 2 | 4 | 0 | 96 | 3 |
| SRVY | 2341 | Engineering Design Survey Lab | 2 | 4 | 0 | 96 | 3 |
| MATH | 2412 | Pre-Calculus Math | 4 | 1 | 0 | 80 | 4 |
| Total Semester Hours: | | | 10 | 13 | 0 | 368 | 13 |
| Semester Five | | | Lecture Hours | Lab Hours | External Hours | Contact Hours | Credit Hours |
| SRVY | 2331 | Geodetic Surveying and Mapping | 2 | 2 | 0 | 64 | 3 |
| SRVY | 2335 | Geodetic Surveying and Mapping Application | 2 | 4 | 0 | 96 | 3 |
| ARCH | 1301 | Architectural History I | 3 | 0 | 0 | 48 | 3 |
| SRVY | 1380 | Cooperative Education - Survey Technology/Surveying | 1 | 0 | 20 | 336 | 3 |
| Total Semester Hours: | | | 8 | 6 | 20 | 544 | 12 |
| Identifies courses to fulfill 15 credit hour general education requirement | | | | | | Total Contact Hours: | 1696 |
| Current STC Coursework | | | | | | Total Credit Hours: | 60 |

ADDITIONAL QUESTIONS?



Thank you



SOUTH TEXAS
COLLEGE

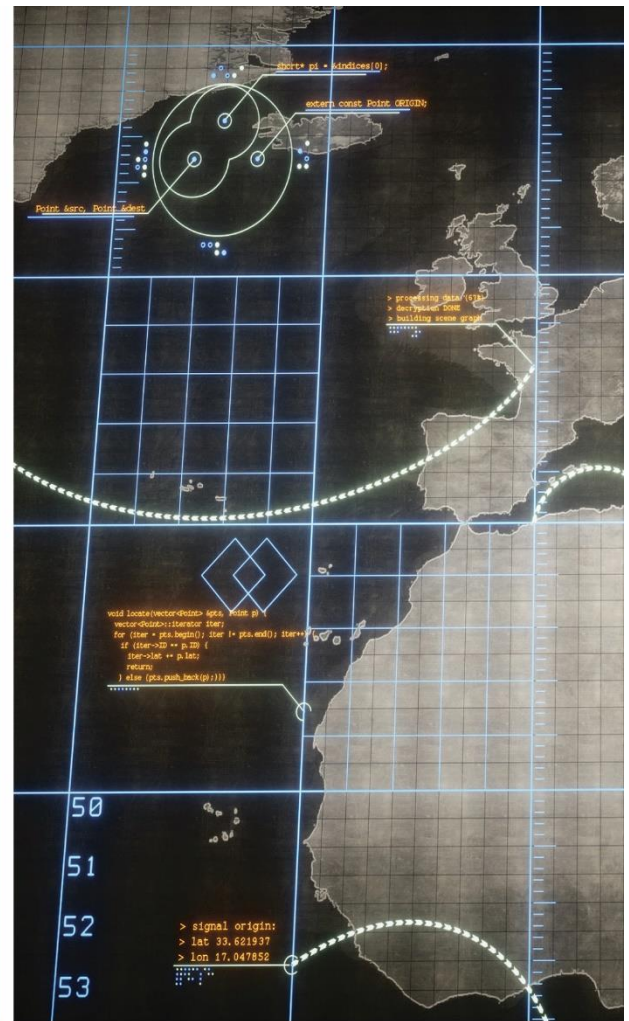
Program Development Proposal

Surveying and Geospatial Technology

AAS & Certificate

Business, Public Safety & Technology

November 2, 2021



SOUTH TEXAS
COLLEGE

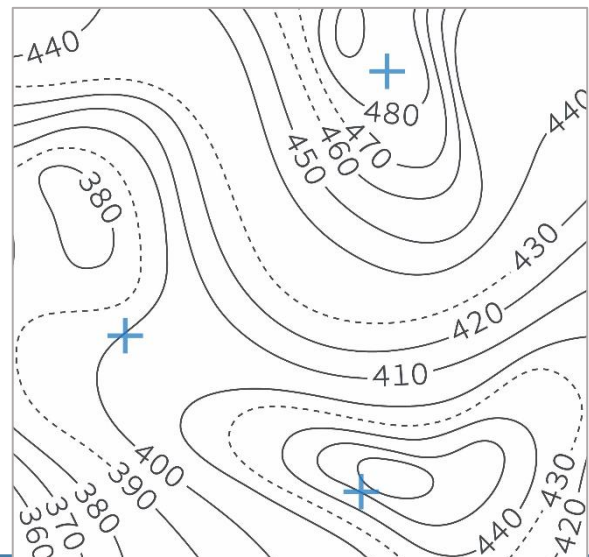


Introduction

The Division of Business, Public Safety and Technology is in the preliminary stages of a new program development that would lead to a Certificate and Associate of Applied Science in Surveying and Geospatial Technology.

In accordance with program development procedures outlined in the Faculty Handbook, **an extended two-phase program approval process is required** for the creation of a Certificate and/or Associate of Applied Science degree for which the college has no current offerings in its inventory.

The **first phase** would entail seeking approval to develop the program. This would include the review and approval/recommendation for the initial proposal from various institutional committees, including Academic Council, Planning and Development Council, and the Education and Workforce Development Committee. The **second phase** would entail the formation of an advisory committee to review and approve the suggested curriculum, leading to a formal program proposal for the STC Board of Trustees to review and approve prior to submission to the state and accrediting bodies. If approved, the program would be offered Spring 2023.





Surveying and Geospatial Technology AAS & Certificate

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| Instructional Costs & Projected Revenue..... | 22 |
| Supporting Documentation | 22 |

Surveying and Geospatial Technology AAS & Certificate

| APPROVAL PROCESS FOR DEVELOPMENT | | DATE |
|-------------------------------------|--|------------|
| <input checked="" type="checkbox"/> | Dean Approval | 5/23/2021 |
| <input checked="" type="checkbox"/> | Academic Council | 6/28/2021 |
| <input checked="" type="checkbox"/> | Planning and Development Council (PDC) | 10/15/2021 |
| <input type="checkbox"/> | Education and Workforce Development Committee (EWDC) | - |

| APPROVAL PROCESS FOR IMPLEMENTATION | | DATE |
|-------------------------------------|--|------|
| <input type="checkbox"/> | Department Chair Approval | - |
| <input type="checkbox"/> | Dean Approval | - |
| <input type="checkbox"/> | Vice President for Academic Affairs Approval | - |
| <input type="checkbox"/> | Advisory Committee | - |
| <input type="checkbox"/> | Division Curriculum Committee | - |
| <input type="checkbox"/> | College-Wide Curriculum Committee | - |
| <input type="checkbox"/> | SACSCOC Liaison <ul style="list-style-type: none"> • Substantive Change | - |
| <input type="checkbox"/> | Academic Council | - |
| <input type="checkbox"/> | Planning and Development Council (PDC) | - |
| <input type="checkbox"/> | Education and Workforce Development Committee (EWDC) | - |
| <input type="checkbox"/> | Higher Education Regional Council/Workforce Solutions (Letter of Intent) | - |
| <input type="checkbox"/> | STC Board of Trustees (Certification Form) | - |
| <input type="checkbox"/> | Texas Higher Education Coordinating Board (THECB) | - |
| <input type="checkbox"/> | Southern Association of Colleges and Schools – Commission on Colleges (SACSCOC) | - |
| <input type="checkbox"/> | Department of Education | - |

Program Development Process

Proposed instructional programs at South Texas College are identified either at the college or at divisional level through environmental scans, documented workforce needs, recommendations by Program Advisory Committees, or local business and industry demands. All proposed programs undergo a review process before being approved for development. The approval process includes reviews by department, division, and college-wide curriculum committees, and Academic Council. Programs that receive approval to proceed are then presented to the Planning and Development Council (PDC) for review and recommendation. A program that receives PDC approval to move forward is presented to the Board of Trustees' Education Workforce Development Committee (EWDC) for review and recommendation. Following review by the EWDC, programs are presented to the full Board of Trustees for final review and approval.

Curriculum Department Review: AAS & Certificate in Surveying and Geospatial Technology

The proposed AAS & Certificate degrees would prepare students in using modern surveying and mapping technologies such as Geographic Information Systems (GIS) and Global Positioning Systems (GPS) to collect, map, and analyze geographic data for projects in the Architectural, Engineering, and Construction (AEC) industry. This also includes the use of mapping and visualization tools like 3D laser scanners, Unmanned Aerial Vehicles - UAV (drones) and specialized software to create 2D or 3D maps of engineering and construction projects. The program offers detailed instruction on land, route, control, and engineering design surveying, focusing on learning the legal principles of boundary location, evaluating property corners, describing the land, calculating land areas, and mapping the collected data. According to Economic Modeling Specialists, Inc., which utilizes data from the Texas Workforce Commission, occupations for the Surveying and Geospatial Technology program are expected to grow by the following from 2021 to 2031 in the Lower Rio Grande Regional Area: 11.6%, resulting in an additional 17 job openings for Civil Engineering Technicians; 6%, resulting in an additional 9 job openings for Surveying and Mapping Technicians; 2.3%, resulting in an

additional 6 job openings for Cost Estimators; and 12.1%, resulting in an additional 69 job openings for Engineering Technicians. Letters of support from Halff Associates, Inc., Hinojosa Engineering, Inc., and SWG Engineering, LLC. have demonstrated strong employer support to address the need for employment of qualified technicians as hands-on engineers and supervisors for municipal projects as the economic development of the surrounding community continues to grow.

Student demand exists and is documented through student survey data. According to a survey conducted by South Texas College's Research & Analytical Services department, the proposed Surveying and Geospatial Technology program revealed a 70% response rate from students that "felt it sounded like a good-paying job" and 51% that "felt it sounded like a job that would make their family proud." Additionally, student demand is supported by enrollment in related programs, which has been persistent over the last five academic years, from the Construction Supervision and Architectural and Engineering Design Technology program. Student enrollment for some of the suggested coursework to be shared with the Surveying and Geospatial Technology program totaled **1,195** students for the past three years. Demand for the profession is also evident in two articles published by The Office of the Texas Governor and Rio Grande Guardian, which discusses the metropolitan planning organization (MPO) merger of Brownsville, Harlingen-San Benito and Hidalgo County to "afford them access to millions of dollars for improvements to transportation infrastructure." This includes a \$2.1 billion budget allocated to a 10-year statewide transportation program in which the funding would go towards transportation infrastructure in the Rio Grande Valley.

The cost to implement this program is expected to be above average, due to the purchase of supplies and equipment; however, the revenue, including contact hour reimbursement and student tuition & fees, would bear the cost. Costs for equipment and supplies include but are not limited to, field books, plotter paper rolls, plotter ink, measuring tapes, surveying tripods, prism pole tripods, prism poles, measuring wheels, Trimble R1 GNSS Receiver, VR headsets, GNSS Smart Antenna, and a 3D scanner. Depending on the final curriculum approved by the proposed advisory committee, current faculty will likely be utilized with one full-time faculty hired during the 5-year period after implementation due to the anticipated growth.

A review conducted by the Curriculum Department indicates the program complies with the criteria set forth from the Texas Higher Education Coordinating Board and recommends the proposed Associate of Applied Science & Certificate in Surveying and Geospatial Technology continue through the established approval process.

Career & Technical Education/Workforce Programs

Program Demand and Projected Outcomes must be documented prior to the development of any new workforce or academic program. The following questions and checklist serve as an initial guide for program developers that must be completed at the start of the development process.

Proposed Award:

Program Title: AAS & Certificate in Surveying and Geospatial Technology

Program Location: Technology Campus

Academic Year to be Implemented: 2022-2023

Please list any similar programs currently offered by STC in this subject area, if applicable (stackable certificates or degrees, AAS Specializations, etc.)

Construction Supervision Assistant Certificate, Construction Supervision AAS, Architectural and Engineering Design Technology Certificate, Architectural and Civil Engineering Technology Certificate, and the AAS Specialization in Architectural and Civil Engineering Technology

For Curriculum Office Use Only

Program Developer Info:

Name: Laura Salas

Title: AEDT Instructor

Division: Business, Public Safety & Technology

Phone: 956-872-6178

Proposed CIP Code: 15.1102

1. Documentation of Program Checklist:

| Category | Standard | Met the Standard | Did not meet the Standard | Comments |
|----------------------|---|------------------|---------------------------|--|
| 1. Occupational Need | A) *EMSI data (provided by the Curriculum Department) projects a significant occupational growth rate in South Texas, the state, and/or nationally. | ✓ | | <u>Civil Engineering Technicians:</u> South Texas: 14.1% (+18 jobs) Texas: 5.9% (+444 jobs) Nation: 3.9% (+2,855 jobs) <u>Surveying and Mapping Technicians</u> South Texas: 5.9% (+9 jobs) Texas: 3.5% (+366 jobs) Nation: 3.9% (+2,261 jobs) <u>Cost Estimators:</u> South Texas: 0.4% (+1 job) Texas: 3.6% (+633 jobs) Nation: 1.6% (+3,329 jobs) <u>Engineering Technicians</u> South Texas: 16.1% (+73 jobs) Texas: 5.3% (+2,427 jobs) Nation: 4.3% (+19,169 jobs) |

| Category | Standard | Met the Standard | Did not meet the Standard | Comments |
|---|--|------------------|---------------------------|--|
| | A-1)*Wage data | | | <p><u>Civil Engineering Technicians:</u> South Texas: \$18.98/hour Texas: \$19.65/hour National: \$25.95/hour</p> <p><u>Surveying and Mapping Technicians:</u> South Texas: \$15.86/hour Texas: \$20.16/hour National: \$22.25/hour</p> <p><u>Cost Estimators:</u> South Texas: \$25.26/hour Texas: \$31.41/hour National: \$31.92/hour</p> <p><u>Engineering Technicians:</u> South Texas: \$23.35/hour Texas: \$28.09/hour National: \$29.35/hour</p> |
| | A-2)*Job Posting Intensity (Average posting intensity is 6:1) | | | <p><u>Civil Engineering Technicians:</u> South Texas: 3:1 (35 unique postings out of a total of 93 postings) Texas: 4:1 (1,255 unique postings out of a total of 4,915 postings)</p> <p><u>Surveying and Mapping Technicians:</u> South Texas: 3:1 (13 unique postings out of a total of 33 postings) Texas: 4:1 (842 unique postings out of a total of 3,036 postings)</p> <p><u>Cost Estimators:</u> South Texas: 2:1 (35 unique postings out of a total of 75 postings) Texas: 3:1 (4,294 unique postings out of a total of 14,911 postings)</p> <p><u>Engineering Technicians:</u> South Texas: 5:1 (146 unique postings out of a total of 797 postings) Texas: 5:1 (10,686 unique postings out of a total of 50,002 postings)</p> |
| <p><i>*Growth rates and wage data are estimated projections for a 10-year period from 2021-2031. Job Posting Intensity is derived from the time period of February 2021 – August 2021. Data sources include the U.S. Department of Commerce, U.S. Department of Labor, U.S. Census Bureau, U.S. Department of Education. For a complete list, refer to the EMSI Data Source Appendix.</i></p> | | | | |
| | B) Occupational Outlook Handbook indicates graduates will have an average or above average job outlook for the next 5 to 10 years (national data). | ✓ | | <p>For Civil Engineering Technicians, the projected growth rate is 2%.</p> <p>For Surveying and Mapping Technicians, the projected growth rate is 4%</p> <p>For Cost Estimators, the projected growth rate is 1%.</p> |

| Category | Standard | Met the Standard | Did not meet the Standard | Comments |
|---|---|------------------|---------------------------|--|
| | C) Program is on Targeted/In-Demand Occupations lists produced by the Texas Workforce Commission OR Program is an emerging and/or evolving occupation for the region or state in the Texas Workforce Commission’s Labor Market and Career Information . | ✓ | | Cost Estimators is listed as one of the occupations projected to add the most jobs from 2018 to 2028 in the Texas Workforce Commission – Report on Texas Growth Occupations – 2020. |
| | D) Job demand and wage data is documented through the survey of 8-12 top local employers . | N/A | | |
| | E) High employer demand exists and is documented through letters of support . | ✓ | | |
| | F) Educational and/or employer publications or news articles document a growth in the industry or demand for employees. | ✓ | | https://gov.texas.gov/news/post/governor-abbott-signs-rio-grande-valley-metropolitan-planning-organization-merger-agreement https://riograndeguardian.com/rgvmpo-announces-1-1-billion-in-new-transportation-funding-for-hidalgo-and-cameron-counties/ |
| 2. Student Demand | Student demand exists and is documented through the use of student surveys . | ✓ | | |
| | High enrollment exists in related programs (Stackable certificates or degrees). | ✓ | | Refer to Program Development Packet |
| | High number of graduates are produced in related programs (Stackable certificates or degrees). | ✓ | | Refer to Program Development Packet |
| 3. Existing Programs | Similar programs do not exist within STC’s service area – Hidalgo and Starr Counties (Please include documentation of the nearest similar programs). | ✓ | | Austin Community College (which is approximately 313 miles from McAllen) offers a Certificate and AAS in Geospatial Engineering. Lone Star College - Montgomery (which is approximately 378 miles from McAllen) offers a Certificate in Land Surveying and AAS in Land Surveying & Mapping Technology. Tyler Junior College (which is approximately 541 miles from McAllen) offers a Certificate in Surveying and AAS in Surveying & Geomatics Technology. |
| 4. Program Linkage & Opportunities for Further Education | Courses are currently offered or can be offered within local high schools via the Dual Enrollment Program . (Please provide a list of schools and/or districts) | ✓ | | Dual credit courses could potentially be offered since there are currently offered courses. Currently DFTG 1409 is offered at Donna, Edcouch, La Joya, Mission, and |

| Category | Standard | Met the Standard | Did not meet the Standard | Comments |
|----------|---|------------------|---------------------------|---|
| | | | | Weslaco ISD. DFTG 1493 is offered at Donna, Edcouch, La Joya and Mission. |
| | Program-specific articulation agreements with other institutions of higher education (IHEs) currently exist or will be pursued in the future (Please include list of IHEs) | ✓ | | For the articulation agreement with UTRGV, we would need to have a class-by-class duplicate for their first two years. At this time, our core for the proposed Surveying and Geospatial Technology is leaning more towards the civil side and does not coincide with their first two years. It will not be possible to form an articulation agreement at this time. However, coursework could be applied to STC's Bachelors of Applied Science in Organizational Leadership and the Bachelors of Applied Technology in Technology Management. |

2. Projected Outcomes:

| Category | Standard | Met the Standard | Did not meet the Standard | Comments |
|--|---|------------------|---------------------------|--|
| 1. Program Enrollment & Declared Majors | Program projects a steady increase in the number of declared majors in the program over the course of five years. | ✓ | | Refer to Enrollment Management Plan. |
| 2. Number of Graduates | Program Review Standard: The Program will achieve a minimum of 5 graduates per year or 25 graduates during the most recent 5-year period. | ✓ | | Refer to Enrollment Management Plan. |
| 3. Graduate Earnings | EMSI data (provided by the Curriculum Department) projects that program graduates will earn a median hourly earnings wage that is above the “living wage” for South Texas, the state, and/or nationally. | ✓ | | <p><u>Civil Engineering Technicians:</u> South Texas: \$18.98/hour Texas: \$19.65/hour National: \$25.95/hour</p> <p><u>Surveying and Mapping Technicians:</u> South Texas: \$15.86/hour Texas: \$20.16/hour National: \$22.25/hour</p> <p><u>Cost Estimators:</u> South Texas: \$25.26/hour Texas: \$31.41/hour National: \$31.92/hour</p> <p><u>Engineering Technicians:</u> South Texas: \$23.35/hour Texas: \$28.09/hour National: \$29.35/hour</p> <p>According to the Bureau of Labor Statistics:</p> |

| | | | | |
|--|--|--|--|--|
| | | | | <p>- Civil Engineering Technicians earned a median salary of \$54,080 as of 2020.</p> <p>-Surveying and Mapping Technicians earned a median salary of \$46,200 as of 2020.</p> <p>-Cost Estimators earned a median salary of \$66,610 as of 2020.</p> <p>Living wage calculation for Texas: \$14.01 per hour Source: http://livingwage.mit.edu/states/48</p> |
|--|--|--|--|--|

Program Summary

Institution: South Texas College, McAllen Texas

Proposed Award: Associate of Applied Science & Certificate in Surveying and Geospatial Technology

PROGRAM DESCRIPTION

Program Objective: The objective of the Surveying and Geospatial Technology program is to prepare students in using modern surveying and mapping technologies such as Geographic Information Systems (GIS) and Global Positioning Systems (GPS) to collect, map, and analyze geographic data for projects in the Architectural, Engineering, and Construction (AEC) industry. This also includes the use of mapping and visualization tools like 3D laser scanners, Unmanned Aerial Vehicles - UAV (drones) and specialized software to create 2D or 3D maps of engineering and construction projects. The program offers detailed instruction on land, route, control, and engineering design surveying, focusing on learning the legal principles of boundary location, evaluating property corners, describing the land, calculating land areas, and mapping the collected data of the natural and built environment. Students that complete the Certificate in Surveying and Geospatial Technology will have an opportunity to be certified in the Level I Site Layout credential from the National Center for Construction Education & Research (NCCER). Students that complete the Associate's degree will have an opportunity to be certified in the Level II Site Layout credential. Furthermore, students that complete the Associate's degree and accumulate two years of experience working under a Registered Professional Land Surveyor will have the opportunity to qualify for the Surveyor in Training (SIT) exam for the Texas Board of Professional Engineers and Land Surveyors.

Curriculum: Upon approval from the Education and Workforce Development Committee (EWDC) for development of the proposed Associate of Applied Science & Certificate in Surveying and Geospatial Technology, an advisory committee will be formed to develop the suggested curriculum and course sequence.

Admissions Requirements: The admissions requirements for this program would follow the general admissions policies set forth in the South Texas College catalog.

PROGRAM DEMAND

Occupational Need:

Civil Engineering Technicians

According to Economic Modeling Specialists, Inc. which utilizes data from the Texas Workforce Commission, Civil Engineering Technician occupations are expected to experience a 14.1% growth from 2021 to 2031 in the Lower Rio Grande Regional Area (Cameron, Hidalgo, Starr, and Willacy counties) with 18 additional job openings expected during this time period; a 5.9% growth

between 2021 and 2031 in State of Texas with 444 additional job openings expected during this time period; and a 3.9% growth between 2021 and 2031 nationally with a total of 2,855 job openings expected during this time period.

According to the Economic Modeling Specialist Occupation, Inc., the median hourly earnings wage for Civil Engineering Technician occupations is \$18.98/hr. for Cameron, Hidalgo, Starr, and Willacy Counties; \$19.65/hr. for the State of Texas; and \$25.95/hr. as a national average.

The job posting intensity for this occupation for the region was 3:1, meaning for every 3 job postings, there was 1 unique job to fill for a total of 35 unique job postings. The job posting intensity for the state was 4:1, with a total of 1,255 unique job postings.

Surveying & Mapping Technicians

According to Economic Modeling Specialists, Inc. which utilizes data from the Texas Workforce Commission, Surveying & Mapping Technician occupations are expected to experience a 5.9% growth from 2021 to 2031 in the Lower Rio Grande Regional Area (Cameron, Hidalgo, Starr, and Willacy counties) with 9 additional job openings expected during this time period; a 3.5% growth between 2021 and 2031 in State of Texas with 366 additional job openings expected during this time period; and a 3.9% growth between 2021 and 2031 nationally with a total of 2,261 job openings expected during this time period.

According to the Economic Modeling Specialist Occupation, Inc., the median hourly earnings wage for Surveying & Mapping Technician occupations is \$15.86/hr. for Cameron, Hidalgo, Starr, and Willacy Counties; \$20.16/hr. for the State of Texas; and \$22.25/hr. as a national average.

The job posting intensity for this occupation for the region was 3:1, meaning for every 3 job postings, there was 1 unique job to fill for a total of 13 unique job postings. The job posting intensity for the state was 4:1, with a total of 842 unique job postings.

Cost Estimators

According to Economic Modeling Specialists, Inc. which utilizes data from the Texas Workforce Commission, Cost Estimators occupations are expected to experience a 0.4% growth from 2021 to 2031 in the Lower Rio Grande Regional Area (Cameron, Hidalgo, Starr, and Willacy counties) with 1 additional job openings expected during this time period; a 3.6% growth between 2021 and 2031 in State of Texas with 633 additional job openings expected during this time period; and a 1.6% growth between 2021 and 2031 nationally with a total of 3,329 job openings expected during this time period.

According to the Economic Modeling Specialist Occupation, Inc., the median hourly earnings wage for Cost Estimators occupations is \$25.26/hr. for Cameron, Hidalgo, Starr, and Willacy Counties; \$31.41/hr. for the State of Texas; and \$31.92/hr. as a national average.

The job posting intensity for this occupation for the region was 2:1, meaning for every 2 job postings, there was 1 unique job to fill for a total of 35 unique job postings. The job posting intensity for the state was 3:1, with a total of 4,294 unique job postings.

Engineering Technicians

According to Economic Modeling Specialists, Inc. which utilizes data from the Texas Workforce Commission, Engineering Technicians occupations are expected to experience a 16.1% growth from 2021 to 2031 in the Lower Rio Grande Regional Area (Cameron, Hidalgo, Starr, and Willacy counties) with 73 additional job openings expected during this time period; a 5.3% growth between 2021 and 2031 in State of Texas with 2,427 additional job openings expected during this time period; and a 4.3% growth between 2021 and 2031 nationally with a total of 19,169 job openings expected during this time period.

According to the Economic Modeling Specialist Occupation, Inc., the median hourly earnings wage for Engineering Technicians occupations is \$23.35/hr. for Cameron, Hidalgo, Starr, and Willacy Counties; \$28.09/hr. for the State of Texas; and \$29.35/hr. as a national average.

The job posting intensity for this occupation for the region was 5:1, meaning for every 5 job postings, there was 1 unique job to fill for a total of 146 unique job postings. The job posting intensity for the state was 5:1, with a total of 10,686 unique job postings.

EMSI Data Summary

| Occupation | Geographic Area | Expected Growth Rate | Additional Job Openings | Median Hourly Wage Earnings | BLS. Gov 2020 Median Pay |
|-----------------------------------|-----------------|----------------------|-------------------------|-----------------------------|--------------------------|
| Civil Engineering Technicians | Regional | 14.1% | 18 | \$18.98 | \$26.00 |
| | State | 5.9% | 444 | \$19.65 | |
| | National | 3.9% | 2,855 | \$25.95 | |
| Surveying and Mapping Technicians | Regional | 5.9% | 9 | \$15.86 | \$22.21 |
| | State | 3.5% | 366 | \$20.16 | |
| | National | 3.9% | 2,261 | \$22.25 | |
| Cost Estimators | Regional | 0.4% | 1 | \$25.26 | \$32.02 |
| | State | 3.6% | 633 | \$31.41 | |
| | National | 1.6% | 3,329 | \$31.92 | |
| Engineering Technicians | Regional | 16.1% | 73 | \$23.35 | N/A |
| | State | 5.3% | 2,427 | \$28.09 | |
| | National | 4.3% | 19,169 | \$29.35 | |

Rev. 9/2021

According to the U.S. Bureau of Labor Statistics, Occupational Outlook Handbook, employment of Civil Engineering Technicians is expected to grow by 2% over the 2020-2030 decade; Surveying and Mapping Technicians are expected to grow by 4%, and Cost Estimators are expected to grow by 1%.

According to the U.S. Bureau of Labor Statistics, Occupational Outlook Handbook, in 2020 the median annual earnings for Civil Engineering Technicians was \$54,080 nationally; for Surveying and Mapping Technicians it was \$46,200; and for Cost Estimators it was \$66,610.

Publications

According to the article from the Office of the Texas Governor “Governor Abbot Signs Rio Grande Valley Metropolitan Planning Organization Merger Agreement”, Brownsville, Harlingen-San Benito and Hidalgo County would merge into one metropolitan planning organization (MPO), affording them access to millions of dollars for improvements to transportation infrastructure. Moving forward, this merged MPO would be responsible for securing federal transportation funding to aid in the improvement of the infrastructure and transportation for the region. The article continues to state, “This region plays such an important role in growing the Texas economy and strengthening our international trade partnerships.” Governor Abbot continued by stating he looked “forward to the tremendous new opportunities this agreement will create for the people of the Rio Grande Valley.”

According to the article “RGVMPO announces \$1.1 billion in new transportation funding for Hidalgo and Cameron counties” by Rio Grande Guardian, the Texas Transportation Commission adopted a 10-year plan where nearly \$1.1 billion in federal and state funding would be available for transportation projects. In addition, \$2.1 billion was awarded to TxDOT for the Pharr district for transportation improvements.

According to the article “President Biden unveils his \$2 trillion infrastructure plan – here are the details” by CNBC, President Joe Biden unveiled an infrastructure plan which outlines \$2 trillion of spending over an eight-year period in an effort to improve the economy following the pandemic and would result in millions of jobs created. The infrastructure plan includes:

- \$621 billion reserved for transportation infrastructure that includes bridges, roads, public transit, ports, and airports,
- \$300 billion for drinking water infrastructure, and
- \$300 billion for retrofitting affordable housing and constructing and upgrading schools.

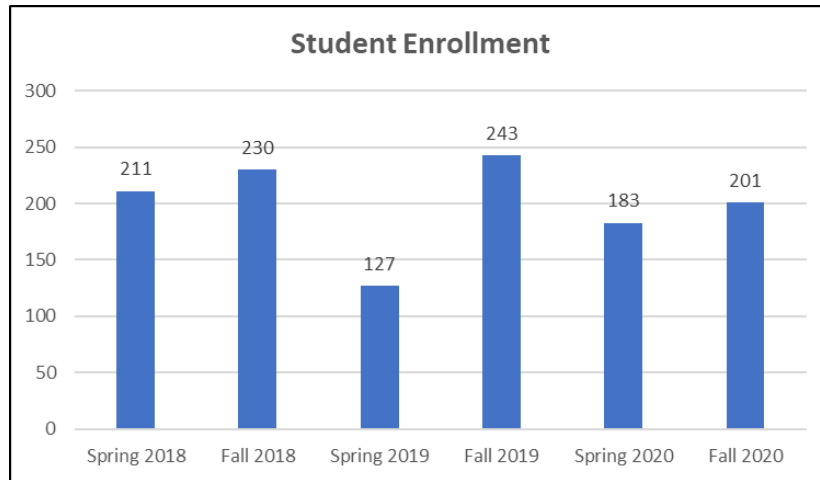
Student Demand:

A survey sample of 8000 students yielded 315 responses (4%). The margin of error associated with this survey is plus/minus 6%. The survey revealed the following results:

- Nineteen percent (19%) of students preferred Surveying and Geospatial Technology to their current major;
- Seventy percent (70%) felt it sounded like a good-paying job;
- Fifty-one percent (51%) felt it sounded like a job that would make their family proud; and
- Forty-six percent (46%) felt it sounded like the kind of job that employers are hiring for in the Rio Grande Valley.

Suggested coursework for this program includes courses currently offered at South Texas College, which include DFTG 1409 – Basic Computer-Aided Drafting and DFTG 1493 – Introduction to

Civil Drafting. ¹Student enrollment for these shared courses totaled **1,195** students for the past three years and revealed steady growth.



Furthermore, ²declared majors and graduates in related programs for the past five years have also been persistent among the Civil Engineering group.

| No. of Declared Majors | | | | | |
|---|-----------|-----------|-----------|-----------|-----------|
| | Fall 2016 | Fall 2017 | Fall 2018 | Fall 2019 | Fall 2020 |
| Construction Supervision Assistant Certificate | 31 | 25 | 30 | 27 | 12 |
| AAS Construction Supervision | 44 | 46 | 30 | 31 | 34 |
| Architectural & Engineering Design Technology Certificate | 150 | 136 | 110 | 139 | 96 |
| Architectural & Civil Engineering Technology Certificate | 13 | 41 | 62 | 79 | 52 |
| AAS Architectural & Civil Engineering Technology | 53 | 99 | 115 | 134 | 129 |

¹ Source: Course Schedules from Spring 2018 – Fall 2020 (as of 3/1/21)

² Source: STC Factbook

| No. of Graduates | | | | | |
|---|-----------|-----------|-----------|-----------|-----------|
| | Fall 2016 | Fall 2017 | Fall 2018 | Fall 2019 | Fall 2020 |
| Construction Supervision Assistant Certificate | 3 | 5 | 6 | 6 | 6 |
| AAS Construction Supervision | 3 | 2 | 9 | 6 | 12 |
| Architectural & Engineering Design Technology Certificate | 11 | 27 | 75 | 26 | 56 |
| Architectural & Civil Engineering Technology Certificate | 0 | 3 | 6 | 18 | 7 |
| AAS Architectural & Civil Engineering Technology | 5 | 0 | 7 | 5 | 8 |

Existing Programs:

- Austin Community College (which is approximately 313 miles from McAllen) offers a Certificate and AAS in Geospatial Engineering.
- LoneStar College - Montgomery (which is approximately 378 miles from McAllen) offers a Certificate in Land Surveying and AAS in Land Surveying & Mapping Technology.
- Tyler Junior College (approximately 541 miles from McAllen) offers a Certificate in Surveying and an AAS in Surveying & Geomatics Technology.

Program Linkage and Opportunities for Further Education: Coursework from the Workforce Education Course Manual (WECM) should transfer to other community or technical colleges offering the same courses within a related program. Currently, the South Texas College Bachelors of Applied Science in Organizational Leadership and Bachelors of Applied Technology in Technology Management would accept credits from the technical coursework for the proposed Associate of Applied Science (AAS) in Surveying and Geospatial Technology towards the lower-division requirements for the degrees. The proposed AAS would have a minimum 15-credit general education requirement to comply with the Southern Association of Colleges and Schools Commission on Colleges accreditation requirements. This 15-credit general education requirement could also be applied towards the Core Curriculum requirements of the Bachelor degrees.

Currently, some of the suggested technical coursework for this award is offered as dual credit. Courses offered include DFTG 1409 – Basic Computer-Aided Drafting, currently offered at Donna, Edcouch, La Joya, Mission, Sharyland and Weslaco ISDs. DFTG 1493 – Introduction to Civil Drafting is offered at Donna, Edcouch, La Joya, and Mission ISDs.

Students that complete the Certificate in Surveying and Geospatial Technology will have an opportunity to be certified in the Level I Site Layout credential from the National Center for Construction Education & Research (NCCER). Students that complete the Associate’s degree will have an opportunity to be certified in the Level II Site Layout credential. Furthermore,

students that complete the Associate’s degree and accumulate two years of experience working under a Registered Professional Land Surveyor will have the opportunity to qualify for the Surveyor in Training (SIT) exam for the Texas Board of Professional Engineers and Land Surveyors.

Expected Enrollment & Declared Majors:

The projected enrollment is based on three factors. The first being current student demand based on historical enrollment in shared coursework. Some of the coursework for the proposed award could be shared with other current programs at STC, such as Architectural & Engineering Design Technology and Construction Supervision. This will factor into the increase of projected enrollment. The projected data below is based on actual data from enrollment in current coursework.

Projected Students Enrolled in New Coursework

| Years | 2022-2023 | 2023-2024 | 2024-2025 | 2025-2026 | 2026-2027 |
|--------------|------------------|------------------|------------------|------------------|------------------|
| | 10 | 12 | 12 | 14 | 15 |

The second factor would be planned recruitment efforts used to increase enrollment. Targeted groups would include former dual enrollment students enrolled in the Architectural & Engineering Design Technology program with an interest in civil engineering related careers or current students, that may want to enhance their degree and expand on other related skills, and individuals from the AEC industries who want a second career in a related industry. The third enrollment factor is based on the Texas Department of Transportation \$8 billion-dollar budget allocation from the Bridge Division, Unified Transportation program, and the traffic division for the Pharr district and the employment opportunities that come with it. These factors will drive projected growth in declared majors and number of graduates in the program.

Projected Declared Majors in Certificate and AAS in Surveying and Geospatial Technology

| Years | 2022-2023 | 2023-2024 | 2024-2025 | 2025-2026 | 2026-2027 |
|--------------------|------------------|------------------|------------------|------------------|------------------|
| Certificate | 8 | 20 | 32 | 40 | 45 |
| AAS | 12 | 28 | 40 | 44 | 45 |

PROGRAM SUPPORT

Faculty

It is anticipated that some of the proposed shared coursework will be taught by existing faculty in the Architectural & Engineering Design Technology program. However, it is expected that 1 full-time faculty would be hired in the third year following the implementation. Adjuncts would be hired to support the program, if needed. The courses would average 12 students per course.

Facilities and Equipment

Supplies & Materials costs would cover, but not be limited to, field books, plotter paper rolls, plotter ink, measuring tapes, flags and vests. Costs for equipment will be used to cover the purchase of equipment needed, including surveying tripods, prism pole tripods, prism poles, measuring wheels, a 3D scanner, Trimble R1 GNSS Receivers, and software renewals. With regards to facilities, existing classrooms and labs will be used for course offerings.

New Costs

Total costs for this program are projected to be \$647,195.10. The funding to defray the costs of this program will come from state appropriations: \$217,797.12 and tuition & fees: \$571,908.00. The total projected 5-year revenue is \$789,705.12. See attached specific budget details.

INSTITUTIONAL EFFECTIVENESS

Program Review and Improvement Plans

The Program Review Process at South Texas College is embedded within the bi-annual Institutional Effectiveness Assessment Plan cycle. Every academic and technical program at South Texas College monitors and reports on the following standards: graduation numbers, transfer rate, job placement rate, professional accreditations or certifications, licensure/credential exam pass rate, and program advisory committee meetings. Action plans are created for each program that does not meet its targeted outcomes.

Accreditation

The Associate of Applied Science and Certificate in Surveying and Geospatial Technology is designed to be consistent with the standards of the Southern Association of College and Schools Commission on Colleges and Schools (SACSCOC).

Enrollment Management Plan

POTENTIAL SOURCE OF STUDENTS

The number of students identified as potential sources of program participants for the Associate of Applied Science & Certificate in Surveying and Geospatial Technology include various sources. Students in the program will be drawn from the general current STC student body, adult learners, and dual credit students. The student applicant pool will include, but not be limited to current students majoring in technology, high school graduates, adults currently working in municipal, state, and commercial businesses, adults completing their GED education programs, returning adults seeking a career change, and staffing agencies like Express Employment and R&D personnel. Technicians working for municipalities like the City of McAllen, Texas Department of Transportation, and subcontracting companies like HALFF Associates, Inc. would benefit from the Surveying and Geospatial Technology program.

MARKETING

The Associate of Applied Science & Certificate in Surveying and Geospatial Technology will be marketed to various potential groups for continued growth. Targeted populations include traditional high school students, state agencies and commercial businesses, as well as dual enrollment students. Continued success of the program will also involve coordination with student recruitment, campus outreach and information centers, and enrollment management. Promotion of the program through posters, brochures, and informational sessions in coordination with human resources departments from the local municipalities will also be utilized.

RETENTION

Faculty advising will be a main source of direct contact with students to ensure retentions and graduation from the program. Students will be encouraged to take advantage of the various student services available from the Center for Learning Excellence (CLE), including academic support and tutoring. Students will also be encouraged to participate in the wide variety of programs and services available to them through student services, including student activities, welcome centers, and supplemental instruction.

ENROLLMENT PROJECTIONS

The projected enrollment is based on three factors. The first being current student demand based on historical enrollment in shared coursework. Some of the coursework for the proposed award could be shared with other current programs at STC, such as Architectural & Engineering Design Technology and Construction Supervision. This will factor into the increase of projected enrollment. The projected data below is based on actual data from enrollment in current coursework.

Projected Students Enrolled in New Coursework

| Years | 2022-2023 | 2023-2024 | 2024-2025 | 2025-2026 | 2026-2027 |
|--------------|------------------|------------------|------------------|------------------|------------------|
| | 10 | 12 | 12 | 14 | 15 |

The second factor would be planned recruitment efforts used to increase projected enrollment. Targeted groups would include graduating high school students enrolled in the Architectural & Engineering Design Technology program with an interest in civil engineering related careers, college students enrolled in the Civil Engineering Technology specialization that want to enhance their degree, and individuals from the AEC industries who want a second career in a related industry. The third enrollment factor is based on the Texas Department of Transportation \$8 billion-dollar budget allocation from the Bridge Division, Unified Transportation program, and the traffic division for the Pharr district and the employment opportunities that come with it. These factors will drive projected growth in declared majors and number of graduates in the program.

Projected Declared Majors in Certificate and AAS in Surveying and Geospatial Technology

| Years | 2022-2023 | 2023-2024 | 2024-2025 | 2025-2026 | 2026-2027 |
|--------------------|------------------|------------------|------------------|------------------|------------------|
| Certificate | 8 | 20 | 32 | 40 | 45 |
| AAS | 12 | 28 | 40 | 44 | 45 |

PROJECTED NUMBER OF GRADUATES

The department projects that 32% of students enrolled in the program will complete the award. This percentage is based on the historical graduation rate for the institution.

| Years | 2022-2023 | 2023-2024 | 2024-2025 | 2025-2026 | 2026-2027 |
|--|------------------|------------------|------------------|------------------|------------------|
| Certificate Graduates (80% enrollment) | 3 | 6 | 10 | 13 | 14 |
| AAS Graduates (80% enrollment) | 4 | 9 | 13 | 14 | 14 |

Student Survey Summary



Research & Analytical Services Student Survey

Geospatial Engineering New Program

Field Dates: October 21-November 11, 2020

Sample Size: n=315, margin of error +/- 6%

Matt Dabrowski, Qualitative Researcher

Summary

Research & Analytical Services conducted a survey of students for the Curriculum & Student Learning Office. The eligible cohort was traditional students aged 18 and over enrolled in the Fall 2020 semester, from which a sample of 8,000 was drawn. Three hundred and fifteen (n=315, 4%) responded. The sample was post-stratified and weighted by gender and program division to create a representative portrait of the traditional student body. The margin of error associated with this survey is plus/minus 6%. The data reported in this document is weighted.

Student interest in an AAS Geospatial Engineering Technology program was assessed. The correct interpretation of the data is to compare against other tested programs.

For AAS Geospatial Engineering, students expressed an average interest of 3.5 on a 1-to-10 scale, compared to 4.1 for the three-year average (three-year maximum 5.3). Math & Science (MS) majors expressed an average interest of 4.6.

Students rated the program on attributes that included:

- *Prefer this program to my current major* (19% vs. three-year average 28%, three-year maximum 42%, MS 26%);
- *Sounds like a good-paying job* (70% vs. three-year average 70%, three-year maximum 88%, MS 72%);
- *Sounds like the kind of job that would make my family proud* (51% vs. three-year average 61%, three-year maximum 83%, MS 60%); and
- *Sounds like the kind of job that employers are hiring for here in the Valley* (46% vs. three-year average 59%, three-year maximum 80%, MS 49%).

The core market for this program is Math & Science (4.6), Business & Technology (4.5), and Technology (4.4) majors. Up to a quarter of students (26%, *job that employers are hiring for*) felt uninformed on this topic to the point that they answered *Don't know* on several metrics.



Suggested Curriculum & Course Descriptions

Surveying & Geospatial Technology

AAS & Certificate Proposal

AY 2022-2023



Program: Surveying and Geospatial Technology

FICE CODE: 031034

Specialization: N/A

CIP CODE: 15.1102

Award Title: CT1 Surveying and Geospatial Technology

Major: CT1-SGT

TSI Exempt

| | | | Lecture Hours | Lab Hours | External Hours | Contact Hours | Credit Hours |
|-------------------------------|------|---------------------------------|---------------|-----------|----------------|---------------------------------|-------------------------------|
| Semester One | | | | | | | |
| SRVY | 1301 | Introduction to Surveying | 2 | 4 | 0 | 96 | 3 |
| DFTG | 1409 | Basic Computer-Aided Drafting | 3 | 3 | 0 | 96 | 4 |
| SRVY | 2343 | Surveying - Legal Principles I | 3 | 0 | 0 | 48 | 3 |
| DFTG | 1493 | Introduction to Civil Drafting | 3 | 3 | 0 | 96 | 4 |
| Total Semester Hours: | | | 11 | 10 | 0 | 336 | 14 |
| Semester Two | | | | | | | |
| SRVY | 1341 | Land Surveying | 2 | 4 | 0 | 96 | 3 |
| SRVY | 1335 | Land Surveying Applications | 2 | 4 | 0 | 96 | 3 |
| SRVY | 2344 | Surveying - Legal Principles II | 3 | 0 | 0 | 48 | 3 |
| SRVY | 2309 | Computer Aided Mapping | 2 | 4 | 0 | 96 | 3 |
| Total Semester Hours: | | | 9 | 12 | 0 | 336 | 12 |
| Current STC Coursework | | | | | | Total Contact Hours: 672 | Total Credit Hours: 26 |



Program: Surveying and Geospatial Technology

FICE CODE: 031034

Specialization: N/A

CIP CODE: 15.1102

Award Title: AAS Surveying and Geospatial Technology

Major: AAS-SGST

TSI LIABLE

| Semester One | | | Lecture Hours | Lab Hours | External Hours | Contact Hours | Credit Hours |
|------------------------------|------|---------------------------------------|---------------|-----------|----------------|---------------|--------------|
| SRVY | 1301 | Introduction to Surveying | 2 | 4 | 0 | 96 | 3 |
| DFTG | 1409 | Basic Computer-Aided Drafting | 3 | 3 | 0 | 96 | 4 |
| SRVY | 2343 | Surveying - Legal Principles I | 3 | 0 | 0 | 48 | 3 |
| SPCH | 1321 | Business & Professional Communication | 3 | 0 | 0 | 48 | 3 |
| Total Semester Hours: | | | 11 | 7 | 0 | 288 | 13 |

| Semester Two | | | Lecture Hours | Lab Hours | External Hours | Contact Hours | Credit Hours |
|------------------------------|------|---------------------------------|---------------|-----------|----------------|---------------|--------------|
| SRVY | 1341 | Land Surveying | 2 | 4 | 0 | 96 | 3 |
| SRVY | 1335 | Land Surveying Applications | 2 | 4 | 0 | 96 | 3 |
| SRVY | 2344 | Surveying - Legal Principles II | 3 | 0 | 0 | 48 | 3 |
| SRVY | 2309 | Computer Aided Mapping | 2 | 4 | 0 | 96 | 3 |
| MATH | 1414 | College Algebra | 4 | 0 | 0 | 64 | 4 |
| Total Semester Hours: | | | 13 | 12 | 0 | 400 | 16 |

| Semester Three | | | Lecture Hours | Lab Hours | External Hours | Contact Hours | Credit Hours |
|------------------------------|------|---------------------------------|---------------|-----------|----------------|---------------|--------------|
| PSYC | 2301 | General Psychology or SOCI 1301 | 3 | 0 | 0 | 48 | 3 |
| ENGL | 1301 | Composition I | 3 | 0 | 0 | 48 | 3 |
| Total Semester Hours: | | | 6 | 0 | 0 | 96 | 6 |

| Semester Four | | | Lecture Hours | Lab Hours | External Hours | Contact Hours | Credit Hours |
|------------------------------|------|--|---------------|-----------|----------------|---------------|--------------|
| GISC | 1311 | Introduction to Geographic Information Systems (GIS) | 2 | 4 | 0 | 96 | 3 |
| SRVY | 2339 | Engineering Design Survey | 2 | 4 | 0 | 96 | 3 |
| SRVY | 2341 | Engineering Design Survey Lab | 2 | 4 | 0 | 96 | 3 |
| MATH | 2412 | Pre-Calculus Math | 4 | 1 | 0 | 80 | 4 |
| Total Semester Hours: | | | 10 | 13 | 0 | 368 | 13 |

| Semester Five | | | Lecture Hours | Lab Hours | External Hours | Contact Hours | Credit Hours |
|------------------------------|------|---|---------------|-----------|----------------|---------------|--------------|
| SRVY | 2331 | Geodetic Surveying and Mapping | 2 | 2 | 0 | 64 | 3 |
| SRVY | 2335 | Geodetic Surveying and Mapping Application | 2 | 4 | 0 | 96 | 3 |
| ARCH | 1301 | Architectural History I | 3 | 0 | 0 | 48 | 3 |
| SRVY | 1380 | Cooperative Education - Survey Technology/Surveying | 1 | 0 | 20 | 336 | 3 |
| Total Semester Hours: | | | 8 | 6 | 20 | 544 | 12 |

Identifies courses to fulfill 15 credit hour general education requirement

Total Contact Hours: 1696

Current STC Coursework

Total Credit Hours: 60

Surveying and Geospatial Technology

Suggested Coursework

Course Descriptions – Workforce Courses

SRVY 1301 – INTRODUCTION TO SURVEYING

CRT HRS:03 LEC HRS:02 LAB HRS:04 OTH HRS:00

An overview of the surveying profession. The history of surveying and its impact on the world. Review of the mathematics used in surveying. Introduction to basic surveying equipment with emphasis on measurements. Instruction on surveying procedures and the limitation of errors. Calculation to determine precision and error of closure.

Course Learning Outcomes

- Describe the surveying profession and its historical impact.
- Apply basic surveying terminology, surveying equipment and measurements.
- List the steps required in performing a survey.
- Apply mathematical principles and use scientific calculators to calculate survey error and adjustment.

DFTG 1409 – BASIC COMPUTER-AIDED DRAFTING

CRT HRS:04 LEC HRS:03 LAB HRS:03 OTH HRS:0

This course is an introduction to basic computer-aided drafting. Emphasis is placed on basic computer operating principles, hardware descriptions and requirements, drawing setup; creating and modifying geometry; storing and retrieving predefined shapes; placing, rotating, and scaling objects, adding text and dimensions, using layers, coordinating systems; as well as input and output devices.

Course Learning Outcomes

- Identify terminology and basic functions used with CAD software.
- Use CAD hardware and software to create, organize, display, and plot/print working drawings.
- Use file management techniques.

SRVY 2343 - SURVEYING - LEGAL PRINCIPLES I

CRT HRS:03 LEC HRS:03 LAB HRS:00 OTH HRS:0

The study of location, conveyance, ownership and transfer of real property under the laws of the State of Texas. Emphasis on the history of disposition of public land, interpreting written descriptions, dignity of calls and evidence, and record search of public and private land records.

Course Learning Outcomes

- Discuss the history of the disposition of public land in Texas and list the sources of public and private land records.
- Identify the documents associated with the conveyance of real property.
- Interpret written descriptions.
- Identify applicable statute law.

DFTG 1493 – INTRODUCTION TO CIVIL DRAFTING

CRT HRS:04 LEC HRS:03 LAB HRS:03 OTH HRS:0

This course discusses basic concepts in civil drafting, map scales, map features, survey fundamentals, contour lines, plot plans, road layout and profiles, earthwork, and utilization of CAD systems in the development of various civil engineering related projects. The topic of study chosen by the instructor may change from semester to semester.

Course Learning Outcomes

- Learning outcomes/objectives are determined by local occupational need and business and industry trends.

SRVY 1341 – LAND SURVEYING

CRT HRS:03 LEC HRS:02 LAB HRS:04 OTH HRS:0

A study of the measurement and determination of boundaries, areas, shapes, location through traversing techniques. Instruction in a variety of adjustment methods using calculators and computers. Addresses methods of traversing and adjustment of errors according to prevailing professional standards.

Course Learning Outcomes

- Analyze a project using collected data.
- Process and reduce measurements.
- Report findings according to prevailing standards.

SRVY 1335 – LAND SURVEYING APPLICATIONS

CRT HRS:03 LEC HRS:02 LAB HRS:04 OTH HRS:0

Structured experience with the equipment, techniques and hardware necessary to measure horizontal and vertical angles and distances used in surveying.

Course Learning Outcomes

- Measure the size, shape and location of a parcel of land and determine the precision and accuracy of the measurements.
- Analyze measurement data.

SRVY 2344 - SURVEYING - LEGAL PRINCIPLES II

CRT HRS:03 LEC HRS:03 LAB HRS:00 OTH HRS:0

An advanced course in legal principles, retracement and boundary location with application of legal principles and Rules of Construction; writing survey reports and property descriptions; and a review of boundary law cases.

Course Learning Outcomes

- Analyze a survey for the placement of a boundary line using evidence and the dignity of calls.
- Prepare a boundary plat.
- Write a field note description and prepare a survey report.
- Research General Land Office records and review boundary location court cases.

SRVY 2309 – COMPUTER AIDED MAPPING

CRT HRS:03 LEC HRS:02 LAB HRS:04 OTH HRS:0

Production of survey maps using appropriate computer aided drafting software. Includes plats, civil engineering design drawings and topographic maps.

Course Learning Outcomes

- Create a variety of survey related maps from an imported database of coordinate points
- Design and produce practical, accurate and attractive maps.
- Create a database of the coordinates for points on a map.

GIS 1311 – INTRODUCTION TO GEOGRAPHIC INFORMATION SYSTEMS (GIS)

CRT HRS:03 LEC HRS:02 LAB HRS:04 OTH HRS:0

Introduction to basic concepts of vector GIS using several industry specific software programs including nomenclature of cartography and geography.

Course Learning Outcomes

- Explain basic concepts of using GIS in mapping the earth in spatial terms and populating the GIS's system to access data.
- Create and access data in the GIS's system using an appropriate software package.
- Develop and print maps with industry standard legends.
- Operate industry standard GIS packages on a personal computer.
- Capture positional and attribute information with correct and accurate geographic referencing.
- Convert geographic information among several coordinate systems.
- Acquire GIS's system information from databases, existing maps, and the Internet.
- Annotate output for finished maps, documents, and reports.

SRVY 2339 – ENGINEERING DESIGN SURVEYING

CRT HRS:03 LEC HRS:02 LAB HRS:04 OTH HRS:0

A study of the theory and field methods of surveying alignments, to include highway routes, pipelines, utility and waterway construction, transmission lines and site stakeout, including the study of horizontal curves, vertical curves, areas, and earthwork volumes.

Course Learning Outcomes

- Explain the concepts and calculations associated with the inspection, evaluation and design of a route.

SRVY 2341 – ENGINEERING DESIGN SURVEYING LAB

CRT HRS:03 LEC HRS:02 LAB HRS:04 OTH HRS:0

The companion lab for Engineering Design Surveying. Emphasis on field methods of surveying alignments.

Course Learning Outcomes

- Stake horizontal and vertical curves; and prepare topographic maps.

SRVY 2331 – GEODETIC SURVEYING AND MAPPING

CRT HRS:03 LEC HRS:02 LAB HRS:02 OTH HRS:0

A study of field astronomy, Polaris and solar observations, State Plane Coordinate Systems, and Global Positioning System.

Course Learning Outcomes

- Calculate the true meridian of line, and set up the orientation of a project based upon such observations.
- Plan the control for projects based upon State Plane Coordinates.
- Plan data capture from satellite observations.

SRVY 2335 – GEODETIC SURVEYING AND MAPPING APPLICATION

CRT HRS:03 LEC HRS:02 LAB HRS:04 OTH HRS:0

Emphasis on the field techniques of making astronomic observations, recovering control monuments, setting control monuments, and the planning and use of Global Positioning System receivers in data collection.

Course Learning Outcomes

- Observe the true meridian of line.
- Recover existing control monumentation.
- Set control for a project.

SRVY 1380 – COOPERATIVE EDUCATION - SURVEY TECHNOLOGY/ SURVEYING

CRT HRS:03 LEC HRS:01 LAB HRS:00 OTH HRS:20

Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component.

Course Learning Outcomes

- As outlined in the learning plan, apply the theory, concepts, and skills involving specialized materials, tools, equipment, procedures, regulations, laws, and interactions within and among political, economic, environmental, social, and legal systems associated with the occupation and the business/industry.
- Will demonstrate legal and ethical behavior, safety practices, interpersonal and teamwork skills, and appropriate written and verbal communication skills using the terminology of the occupation and the business/industry.

Instructional Costs & Projected Revenue

**Instructional Costs and Projected Revenue
for
AAS & Certificate in Surveying and Geospatial Technology**

| Faculty Salary & Benefits | 2022-2023 | 2023-2024 | 2024-2025 | 2025-2026 | 2026-2027 | Totals |
|--|---------------------|---------------------|----------------------|----------------------|----------------------|----------------------|
| No. Sections | | | | | | |
| LHE Rate | \$ 575.00 | \$ 575.00 | \$ 575.00 | \$ 575.00 | \$ 575.00 | |
| Avg. # of LHE's per Course | 4.05 | 4.15 | 4.33 | 4.33 | 4.33 | |
| Subtotal | \$ 2,328.75 | \$ 2,386.25 | \$ 2,489.75 | \$ 2,489.75 | \$ 2,489.75 | |
| # of Sections Taught by Adjunct | 5 | 17 | 9 | 9 | 9 | |
| # of Sections Taught by Current F/T | 3 | 6 | 9 | 9 | 9 | |
| # of Sections Taught by New F/T | 0 | 0 | 8 | 8 | 8 | |
| Salary Breakdown | | | | | | |
| Adjunct/Overload Compensation | \$ 18,630.00 | \$ 54,883.75 | \$ 44,815.50 | \$ 44,815.50 | \$ 44,815.50 | |
| Benefits Rate for Adjunct/Overload (18%) | 1.18 | 1.18 | 1.18 | 1.18 | 1.18 | |
| Compensation + Benefits for Adjunct/OV | \$ 21,983.40 | \$ 64,762.83 | \$ 52,882.29 | \$ 52,882.29 | \$ 52,882.29 | \$ 245,393.10 |
| F/T Faculty @ \$48,000 avg salary | \$0 | \$0 | \$48,000 | \$48,000 | \$96,000 | |
| Benefit Rate for F/T (30%) | 1.30 | 1.30 | 1.30 | 1.30 | 1.30 | |
| Salary + Benefits for F/T | \$0 | \$0 | \$62,400 | \$62,400 | \$124,800 | \$249,600.00 |
| Administrative Costs | \$3,450 | \$3,450 | \$3,450 | \$3,450 | \$3,450 | |
| Benefits Rate for Stipends (18%) | 1.18 | 1.18 | 1.18 | 1.18 | 1.18 | |
| Compensation + Benefits for Stipends | \$4,071 | \$4,071 | \$4,071 | \$4,071 | \$4,071 | \$20,355.00 |
| Cost for Faculty Salary/Benefits | \$ 26,054.40 | \$ 68,833.83 | \$ 119,353.29 | \$ 119,353.29 | \$ 181,753.29 | \$ 515,348.10 |

| Projected Revenue | 2022-2023 | 2023-2024 | 2024-2025 | 2025-2026 | 2026-2027 | Totals |
|---|---------------------|---------------------|---------------------|---------------------|---------------------|----------------------|
| *State Appropriations | | | | | | |
| # of Sections | 8 | 23 | 26 | 26 | 26 | |
| # of Students per Section | 10 | 12 | 12 | 14 | 15 | |
| Total # of Students per Year | 80 | 276 | 312 | 364 | 390 | |
| # of Contact Hours per Student | 96 | 96 | 96 | 96 | 96 | |
| Total Contact Hours | 7680 | 26496 | 29952 | 34944 | 37440 | |
| Multiplied by State Funding Rate (2.74) | \$ 2.74 | \$ 2.74 | \$ 2.74 | \$ 2.74 | \$ 2.74 | |
| State Appropriations Generated | \$ 21,043.20 | \$ 72,599.04 | \$ 82,068.48 | \$ 95,746.56 | \$ 102,585.60 | |
| State Appropriations Received | \$ 21,043.20 | \$ 21,043.20 | \$ 21,043.20 | \$ 72,599.04 | \$ 82,068.48 | \$ 217,797.12 |

* State Appropriations funding is based on average funding per contact hour from previous biennium

| | | | | | | |
|---|---------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Tuition | | | | | | |
| Enrollment # Projected | 80 | 276 | 312 | 364 | 390 | |
| Tuition Rate per SCH | \$ 77.00 | \$ 77.00 | \$ 77.00 | \$ 77.00 | \$ 77.00 | |
| Subtotal | \$ 6,160.00 | \$ 21,252.00 | \$ 24,024.00 | \$ 28,028.00 | \$ 30,030.00 | |
| # of SCH per Course | 3 | 3 | 3 | 3 | 3 | |
| Total Tuition | \$ 18,480.00 | \$ 63,756.00 | \$ 72,072.00 | \$ 84,084.00 | \$ 90,090.00 | \$ 328,482.00 |
| Student Fees | | | | | | |
| Registration Fee (\$150/term) | \$ 3,000.00 | \$ 3,600.00 | \$ 5,400.00 | \$ 6,300.00 | \$ 6,750.00 | |
| Institutional Fees (\$33/SCH) | \$ 7,920.00 | \$ 27,324.00 | \$ 30,888.00 | \$ 36,036.00 | \$ 38,610.00 | |
| Differential Tuition Fee (\$15/SCH) | \$ 3,600.00 | \$ 12,420.00 | \$ 14,040.00 | \$ 16,380.00 | \$ 17,550.00 | |
| Lab Fees (\$96/stu 1st yr, \$120/ stu 2nd yr) | \$ 2,160.00 | \$ 2,592.00 | \$ 2,592.00 | \$ 3,024.00 | \$ 3,240.00 | |
| Total Fees: | \$ 16,680.00 | \$ 45,936.00 | \$ 52,920.00 | \$ 61,740.00 | \$ 66,150.00 | \$ 243,426.00 |
| Total Tuition & Fees: | \$ 35,160.00 | \$ 109,692.00 | \$ 124,992.00 | \$ 145,824.00 | \$ 156,240.00 | \$ 571,908.00 |

Notes: LHE rate of \$575 was used as this program would need faculty with a minimum of an Associate's Degree with demonstrated competencies in Surveying. The average number of LHEs per course was derived from the proposed 5-year course schedule and based on the respective academic year. Contact Hours per student was derived from an average of 96 contact hours per course section. Number of credit hours per course is averaged at 3 for the technical coursework. Number of sections is based on projected enrollment for the shared coursework and new courses in Surveying and Geographic Information Systems.

| Operating Costs and Revenue Projections | | | | | | |
|--|---------------------|------------------------|------------------------|------------------------|------------------------|----------------------|
| CATEGORY | INITIAL COST | BUDGET 2ND YEAR | BUDGET 3RD YEAR | BUDGET 4TH YEAR | BUDGET 5TH YEAR | TOTAL BUDGET |
| | 2022-2023 | 2023-2024 | 2024-2025 | 2025-2026 | 2026-2027 | 2022-2027 |
| Faculty Salaries and Benefits | \$26,054.40 | \$68,833.83 | \$119,353.29 | \$119,353.29 | \$181,753.29 | \$515,348.10 |
| Supplies and Materials (Operating) | \$3,745.00 | \$2,230.00 | \$2,680.00 | \$2,900.00 | \$2,230.00 | \$13,785.00 |
| Library Resources | \$550.00 | \$500.00 | \$350.00 | \$700.00 | \$300.00 | \$2,400.00 |
| Equipment and Software (Capital) | \$23,720.00 | \$600.00 | \$15,100.00 | \$13,584.00 | \$7,700.00 | \$60,704.00 |
| Facilities (Furniture) (Operating) | \$0.00 | \$0.00 | \$48,958.00 | \$0.00 | \$0.00 | \$48,958.00 |
| Faculty Professional Development/(Travel) | \$0.00 | \$0.00 | \$2,000.00 | \$2,000.00 | \$2,000.00 | \$6,000.00 |
| Subtotal - Instructional & Operating Budget | \$54,069.40 | \$72,163.83 | \$188,441.29 | \$138,537.29 | \$193,983.29 | \$647,195.10 |
| Total Budget Per Year | \$54,069.40 | \$72,163.83 | \$188,441.29 | \$138,537.29 | \$193,983.29 | \$647,195.10 |
| | | | | | | |
| CATEGORY | REVENUE | REVENUE | REVENUE | REVENUE | REVENUE | TOTAL REVENUE |
| | 2022-2023 | 2023-2024 | 2024-2025 | 2025-2026 | 2026-2027 | 2022-2027 |
| State Appropriations | \$ 21,043.20 | \$ 21,043.20 | \$ 21,043.20 | \$ 72,599.04 | \$ 82,068.48 | \$ 217,797.12 |
| Tuition & Fees | \$ 35,160.00 | \$ 109,692.00 | \$ 124,992.00 | \$ 145,824.00 | \$ 156,240.00 | \$ 571,908.00 |
| TOTAL REVENUE | \$ 56,203.20 | \$ 130,735.20 | \$ 146,035.20 | \$ 218,423.04 | \$ 238,308.48 | \$ 789,705.12 |

Supporting Documentation

AAS & Certificate Surveying and Geospatial Technology Proposed Advisory Committee Membership

| Name | Title | Contact |
|-----------------------|---|--|
| Robert Tamez | Vice President Melden & Hunt, Inc. | 115 W. McIntyre Edinburg, TX 78541 O:(956) 381-0981 C:(956) 330-9454 robert@meldenandhunt.com |
| Kristina Leal | Business Development / Senior Engineer Half Associates, Inc. | 5000 West Military Highway Suite 100 McAllen, Texas 78503 O: (956) 445-5198 C: (956) 867-3400 kLeal@Half.com |
| Jose Reyes | Civil Engineer Sigler Winston Greenwood Engineering | 611 Bill Summers Intl Blvd Weslaco, TX 78596 (956) 968-2194 jreyes@siglerwinstongreenwood.com |
| Yvette Barrera | McAllen City Engineer | 1300 Houston Avenue McAllen, TX 78501 (956) 681-1150 ybarrera@mcallen.net |
| Andres Palma | President & Chief Geotechnical Engineer Millennium Engineers Group Inc. | 5804 N Gumwood Ave, Pharr, TX 78577 (956) 702-8500 apalma@megengineers.com |
| Jessica M. Maldonado | Civil Engineer & Director of Professional Services SAMÉS Engineering | 200 S. 10th Street, Ste 1500 McAllen, Texas 78501 (956) 702-8880 jessica@samengineering-surveying.com |
| San Isidro P. Navarro | Director of Civil Engineering Hinojosa Engineering, Inc. | 108 W 18th Street Mission, Texas 78572 (956) 581-0143 inavarro@hengineering.com |

Randy C. Winston, P.E., President
Jose Reyes, P.E., Associate
Sergio Gonzalez, BSCE, Associate

SIGLER, WINSTON, GREENWOOD
& ASSOC.
SWG ENGINEERING, LLC
611 Bill Summers Intl Blvd
Weslaco, TX 78596
O 956.968.2194 F 956.968.8300
Firm Registration No. F-592

Joe B. Winston, Jr., P.E., Exec. VP
Isaac Huacuja, EIT, Associate

July 8, 2020

Re: Geospatial Engineering
Technology Program

Ms. Laura Salas, M. Ed.
Program Chair / Associate Professor
South Texas College
3700 W. Military Hwy.
McAllen, TX 78503


Ms. Salas,

SWG Engineering is delighted to hear about the proposed new Geospatial Engineering program being considered at South Texas College.

Geospatial engineers are the newest addition to the engineering family; they play a lead role in land development, mapping, and engineering construction. Steady growth of the Rio Grande Valley has increased the need of geospatial engineers in our region and we look forward to having South Texas College fill that need.

I know that students and our community will benefit greatly from the Geospatial Engineering program and it will open doors otherwise inaccessible. We are excited to support the Geospatial Engineering Program at South Texas College and are eager to work hand in hand with future STC Geospatial Engineering students and graduates.

Sincerely,
SIGLER, WINSTON, GREENWOOD
& ASSOC., LLC.


Jose G. Reyes, P.E.

JGR:cdz



July 16, 2020

Laura Salas, M.Ed.
Program Chair & Associate Professor
Architectural & Engineering Design Technology
3700 W. Military Hwy
McAllen, Tx 78503

RE: Geospatial Engineering Technology

Dear Ms. Salas:

Halff Associates, Inc. (Halff) fully supports South Texas College's (STC) new Geospatial Engineering Technology Program. Our industry relies on quality topographic and boundary surveys to be able to provide the needed planning and design services to our clients who are responsible for our community's critical infrastructure and development. Unfortunately, we have found surveyors to be in short supply locally. Having a program at STC that trains students in both the field work as well as the survey data processing is a step toward filling the need we are seeing now and one that we know will continue into the future.

We are certain that students of STC's new Geospatial Engineering Technology Program will have local employment opportunities. We look forward to having a local program that will help prepare students for the state certification as a surveyor-in-training and supply the local architectural and engineering community with a skilled workforce.

Halff is proud to be part of this community and we appreciate all the efforts STC has taken in support of the architecture and engineering community. We welcome any opportunity to help STC in the quest to educate and train the local community for careers in our industry.

Sincerely,

HALFF ASSOCIATES, INC.

A handwritten signature in blue ink, appearing to read "R. Saenz", is written over a light blue horizontal line.

Robert L. Saenz, P.E., CFM, PMP
Vice President

HALFF ASSOCIATES, INC.

5000 WEST MILITARY HIGHWAY, SUITE 100
McALLEN, TX 78503-7446

TEL (956) 664-0286
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HINOJOSA ENGINEERING, INC.
Civil Engineering • Structural Engineering
Registration Number F-908 Expiration Date 09/30/2020
108 West 18th Street Mission, Texas 78572
(956) 581-0143 Fax (956) 581-2074

July 8, 2020

Ms. Laura Salas, M.Ed.
Program Chair & Associate Professor
Architectural & Engineering Design Technology
South Texas College
3700 W. Military Hwy
McAllen, Texas 78503

Dear Ms. Salas,

It is my pleasure to submit this letter of support for the proposed new program, **Geospatial Engineering Technology**, being submitted by your Architectural & Engineering Design Technology (AEDT) department at South Texas College.

I fully support the efforts of the AEDT department as they seek expanding academic opportunities at South Texas College. The Geospatial Engineering Technology program will provide students more educational options that can help students make better decisions that can lead to other career pathways. This new program, Geospatial Engineering Technology that is being proposed, will benefit students, campus, and the community at large.

Sincerely,



San Isidro P. Navarro
Director of Civil Engineering
Hinojosa Engineering, Inc.
108 W 18th Street
Mission, Texas 78572