PURPOSE

The Texas Prefreshman Engineering Program (TexPREP) identifies achieving middle and high school students with an interest in science, technology, engineering, and mathematics (STEM) areas and strengthens their potential for careers in these fields.

The program promotes high achievement and provides students with the necessary reinforcement to successfully pursue higher education and careers in math, science, engineering, and technology. With a focus on building a high quality and diverse 21st century workforce, women and members of minority groups, traditionally underrepresented in these areas, continue to serve as special target groups.

HISTORY

In 1979, a partnership between San Antonio colleges, universities, and school districts was formed to conduct the San Antonio Prefreshman Engineering Program. TexPREP was established in 1986 with the replication of San Antonio PREP throughout the state of Texas. Currently, TexPREP operates in 13 Texas cities (see sites at right). In 1997, through a major NASA grant, PREP was replicated on Hispanic serving institutions in Puerto Rico and states outside of Texas. This program was referred to as Proyecto Access. (Remaining Proyecto Access sites and all new sites beyond Texas are listed on the back page under PREP-USA.)

ACADEMIC PROGRAM

TexPREP is a six to eight week mathematics-based, academic enrichment program, designed for students in grades six through eleven (see curriculum on back). The Texas Education Agency has authorized participating school districts in the state of Texas to award one elective credit toward high school graduation for each successfully completed summer of TexPREP.

TexPREP is a structured and challenging program, which stresses the development of abstract reasoning and problem solving skills through coursework, homework, team projects, class presentations, and examinations. The curriculum emphasizes the application of mathematics and logic.

Staffed by faculty representing various disciplines and industries, such as college faculty, high school teachers, industrial engineers, scientists and mathematicians, the academic program also employs Program Assistant Mentors, typically undergraduate engineering, mathematics, and science majors.

PROGRAM FUNDING

From its inception in 1979, over 40 million dollars has been awarded to TexPREP, including financial and in-kind manpower contributions. The sources include local, state, and national public and private sectors: colleges and universities, the State of Texas, government agencies, public and private industry, individuals, and school districts.

2014 TexPREP SITES

Arlington (1995)
The University of Texas at Arlington

Austin (1990)
Huston-Tillotson University
The University of Texas at Austin

Corpus Christi (1987)
Del Mar College

Dallas (2006)
Brookhaven Community College
Cedar Valley College
Eastfield College
El Centro College
Mountain View College
North Lake College
Richland College
University of Dallas
The University of North Texas at Dallas
The University of Texas at Dallas

Edinburg (1986)
The University of Texas-Pan American

Fort Worth (1998)
Tarrant County College-South Campus
Texas Wesleyan University

Harlingen (1997)
Texas State Technical College

Houston (1989)
University of Houston-Downtown

Laredo (1986)
Texas A&M International Univ.

Lubbock (1986)
Texas Tech University

McAllen (2009)
South Texas College-Pecan Campus,
Mid Valley Campus, &
Starr County Campus

(Additional sites continue on back.)
ELIGIBILITY REQUIREMENTS

Year 1 requirements include:

- Parental permission
- Recommendations from a mathematics teacher and a counselor, science or English teacher
- Satisfactory conduct grades and an essay
- Students in grades 6 and 7 require a 90 average in current mathematics class and a 90 or better average in science and English*
- Students in grades 8, 9, and 10 require an 85 average in current mathematics class, plus an 85 or better average in science and English*

Year 2, 3 and 4 requirements:

Students who successfully complete Year 1, 2, or 3 PREP are invited to apply for the following year of PREP.

*Students in honors or advanced placement may add five points to their average
Students in the 11th grade are admitted with special permission only. Students in 12th (graduating seniors) are not eligible to attend.

PROGRAM RESULTS

Since 1979, 36,118 middle school and high school students have successfully completed at least one summer component of TexPREP. Of these students, 81% have been members of minority groups and 53% have been women. Of the 17,716 former PREP students who are of college age, PREP obtained data* from 14,659. The results (compiled from the 14,659) are as follows:

- 83%** of all students who are of college age have attended (8,992) or graduated from college (5,631).
- 54% of the college attendees graduate from college.
- 73% of the senior college graduates are members of underrepresented minority groups.
- 55% of the senior college graduates are female.
- 44% of the senior college graduates are engineering, mathematics, science or computer science majors.
- 67% of the engineering, science, computer science and mathematics senior college graduates are members of underrepresented minority groups.
- 48% of the engineering, science, computer science and mathematics senior college graduates are female.
- 90% of the college students (8,252), junior college graduates (620), and senior graduates (4,283) attended or graduated from Texas colleges.

*Source: Data derived from THECB, National Student Clearinghouse, and student follow-up surveys.
**This is a minimum number as data is unavailable on the remaining college eligible students.

AWARDS

TexPREP has received numerous state and national awards and citations as a model program. They include:

- Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring (San Antonio PREP, September 1997)
- Citation, 1999 U.S. Department of Education White House Initiative on Educational Excellence for Hispanic Americans publication What Works for Latino Youth, TexPREP (October 1999)
- Citation, Texas Governor’s Special Commission on 21st Century Colleges and Universities; Higher Education in the 21st Century – Moving Every Texan Forward
- TexPREP is recognized as a model to promote the development of PreK-16 programs in college preparatory studies (January 2001)
- Quality Education for Minorities Network, Exemplary MSE Education Partnership Award, TexPREP (February 2001)
- Texas Higher Education Star Award, TexPREP (October 2002)
- Citation, What It Takes: PreK-12 Design Principles to Broaden Participation in Science, Technology, Engineering and Mathematics for the Building Engineering and Science Talent (BEST) Project, a Congressional blue ribbon panel on best practices in PreK-12 education to increase the participation of girls, underrepresented minorities, and students with disabilities in the fields of science, engineering, and technology (April 2004)

San Antonio (1979)
St. Philip’s College-MLK Campus
St. Philip’s College-Southwest Campus
Palo Alto College
Northwest Vista College
Northeast Lakeview College
San Antonio College
St. Mary’s University
Texas A&M University-SA
The University of Texas at San Antonio (Main & Downtown)

Victoria (2007)
The Victoria College

2013 PROGRAM COST $2,884,100

CORE CURRICULUM

Year 1
Logic and Its Applications to Mathematics
Introduction to Engineering

Year 2
Algebraic Structures
Introduction to Physics

Year 3
Introduction to Probability and Statistics
Introduction to Technical Writing

Year 4 (2008)
Computer Science
Advanced Science & Engineering

All Years
Topics in Problem Solving
Career Awareness Seminars

University PREP (U-PREP)
University Level Courses are available at University of Houston-Downtown,
The University of Texas-Pan American,
The University of Texas at San Antonio,
Texas A&M International University

PREP-USA
Bronx, NY
Hostos Community College

Jersey City, NJ
Jersey City University

Las Cruces, NM
New Mexico State University

Stockton, CA
University of the Pacific

Orem, UT
Utah Valley University

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