

## SUPPLEMENTAL MATERIALS

Committee on Academic and Workforce Success

### AGENDA ITEM V-L (3)

Consideration of approving the request for a new degree program from The University of Texas at El Paso for a Bachelor of Science (BS) in Aerospace and Aeronautical Engineering

RECOMMENDATION: Approval, beginning fall 2021

#### **Rationale:**

The University of Texas at El Paso (UT-El Paso) is proposing a Bachelor of Science (BS) in Aerospace and Aeronautical Engineering. The proposed face-to-face program would be offered at the institution's main campus in El Paso and prepare students for careers in aerospace and defense industries.

UT-El Paso identified a need for aerospace and aeronautical engineers in the region. There are three public institutions that offer a bachelor's-level aerospace and aeronautical engineering degree in Texas. The proposed program would be housed in the Department of Mechanical Engineering within the College of Engineering and would consist of 128 semester credit hours (SCHs).

The proposed program would be designed to prepare students for careers in aerospace, aeronautical, and defense systems engineering and related disciplines. The focus of the program would be defense, small satellite, propulsion systems, exploration vehicles, autonomous systems, and hypersonics.

The data from the U.S. Bureau of Labor Statistics indicates there is not a need nationally for aerospace and aeronautical engineers. However, the Texas Workforce Commission (TWC) indicates the state workforce need for aerospace and aeronautical engineering jobs is not being met. TWC states there is a shortage of aerospace and aeronautical engineering graduates based on the projected available jobs between 2018-2028. TWC indicates a state average of 490 annual job openings for related jobs for the proposed program in aerospace and aeronautical engineering. In 2020, three Texas public institutions produced 376 graduates with a bachelor's degree in aerospace and aeronautical engineering.

In accordance with the institution's proposed hiring schedule, UT-El Paso will hire five core faculty members. One new core faculty member would be hired and start each year during Years 1 through 5 of the program. By June 1, before the academic year in which faculty are hired, the institution will provide documentation of the hires through submission of a letter of intent, curricula vitae, and list of aerospace and aeronautical engineering courses to be taught.

**The University of Texas at El Paso** (Accountability Peer Group: **Emerging Research**)*Related Programs*

The institution has degree programs within the same two-digit CIP code: **Yes**

UT-El Paso is approved to offer 26 engineering degree programs:

- BS in Engineering (1970)
- BS in Engineering Innovation and Leadership (2014)
- MS, PhD in Biomedical Engineering (2013)
- BS, MS, PhD in Civil Engineering (1956, 1966, 2003)
- MS in Computer Engineering (1983)
- MS in Software Engineering (2014)
- BS, MS in Electrical Engineering (1956, 1966)
- MS in Civil and Environmental Engineering (1995)
- MS in Environmental Engineering (1995)
- PhD in Environmental Science and Engineering (1995)
- BS, MS in Metallurgical and Materials Engineering (1956, 1991)
- PhD in Materials Engineering (1993)
- BS, MS, PhD in Mechanical Engineering (1956, 1967, 2016)
- MS in Systems Engineering (2009)
- BS in Construction Engineering and Management (2015)
- MS in Industrial Engineering (1984)
- BS in Industrial and Systems Engineering (1974)
- MS in Manufacturing Engineering (1989)
- PhD in Electrical and Computer Engineering (1990)

**Proposed Program:**

The proposed face-to-face program in aerospace and aeronautical engineering represents 128 semester credit hours (SCHs) of instruction. The institution anticipates beginning the proposed program in fall 2021. The proposed program would provide students with careers in aerospace, aeronautical, and defense systems engineering and related disciplines. The focus of the program would be defense, small satellite, propulsion systems, exploration vehicles, autonomous systems, and hyper sonics.

The institution estimates that five-year costs would total \$9,916,611. Formula Funding would represent 8% of all funding at \$1,196,278. Total funding is estimated to be \$13,429,880.

<b>FIVE-YEAR COSTS</b>	
Personnel	
Faculty (New)	\$ 5,449,095
Faculty (Reallocated)	\$ 1,658,226
Program Administration (New)	\$ 24,912
Program Administration (Reallocated)	\$ 57,600
Graduate Assistants (New)	\$ 0
Graduate Assistants (Reallocated)	\$ 1,199,716
Clerical/Staff (New)	\$ 173,945
Clerical/Staff (Reallocated)	\$ 105,117
Student Support	\$ 0
Supplies & Materials	\$ 192,000
Library & IT Resources	\$ 0
Equipment	\$ 640,000
Facilities	\$ 320,000
Other	\$ 96,000
<b>Total</b>	<b>\$ 9,916,611</b>

<b>FIVE-YEAR FUNDING</b>	
Formula Funding (Years 3-5)	\$ 1,196,278
Other State Funding	\$ 0
Reallocated Funding	\$ 3,295,484
Tuition and Fees	\$ 8,613,118
Federal Funding	\$ 0
Other	\$ 325,000
<b>Total</b>	<b>\$ 13,429,880</b>

**Evidence of Duplication, Workforce Need, and Student Demand:**

<i>Duplication of Programs is: No program within an hour's drive</i>			
Number of institutions with bachelor's degree programs in the state with the same 6-digit CIP (14.0201): <b>3</b>			
Number of degree programs within a 60-minute drive with the same 6-digit CIP (14.0201): <b>0</b>			
<i>Workforce Need: Regional Demand</i>			
Advertisements for job openings	<b><u>Yes</u></b>	No	N/A
Employer surveys	<b><u>Yes</u></b>	No	N/A
Projections from government agencies, professional entities, etc.	<b><u>Yes</u></b>	No	N/A
<i>Student Demand: High enrollments</i>			
Increased enrollment in related programs at the institution	Yes	<b><u>No</u></b>	N/A
High enrollment in similar programs at other institutions	<b><u>Yes</u></b>	No	N/A
Applicants turned away at similar programs at other institutions	Yes	<b><u>No</u></b>	N/A
Student surveys	Yes	<b><u>No</u></b>	N/A

<b><i>Start-Up Projections:</i></b>	<b><i>Yr. 1</i></b>	<b><i>Yr. 2</i></b>	<b><i>Yr. 3</i></b>	<b><i>Yr. 4</i></b>	<b><i>Yr. 5</i></b>
<i>Student Headcount</i>	50	125	185	280	370
<i>Student FTE</i>	50	125	185	280	370
<i>Core Faculty Headcount</i>	16	17	18	19	20
<i>Core Faculty FTE</i>	8.75	9.50	10.25	11.00	11.75

**Major Commitments:**

In accordance with the institution’s proposed hiring schedule, UT-El Paso will hire five core faculty members. One new core faculty member would be hired and start each year during Years 1 through 5 of the program. By June 1, before the academic year in which faculty are hired, the institution will provide documentation of the hires through submission of a letter of intent, curricula vitae, and list of aerospace and aeronautical engineering courses to be taught.

Dr. Stacey Silverman, Assistant Commissioner for Academic and Health Affairs, will present this item and be available to answer questions.