

**State University System
Education and General
2022-2023 Legislative Budget Request
Form I**

University(s):	Florida Polytechnic University
Request Title:	Engineering Program of Distinction
Date Request Approved by University Board of Trustees:	
Recurring Funds Requested:	\$3,500,000
Non-Recurring Funds Requested:	
Total Funds Requested:	\$3,500,000
Please check the request type below:	
Shared Services/System-Wide Request	<input type="checkbox"/>
Unique Request	XX <input type="checkbox"/>

I. Purpose – Describe the overall purpose of the plan, specific goal(s) and metrics, specific activities that will help achieve the goal(s), and how these goals and initiatives align with strategic priorities and the 2021 University Accountability Plan established by your institution (include whether this is a new or expanded service/program). If expanded, what has been accomplished with the current service/program? 2. Describe any projected impact on academic programs, student enrollments, and student services. University of Distinction proposals should also address the requirements outlined in the separate guidance document.

This Legislative Budget Request outlines how additional recurring investment for critical initiatives necessary to fulfill the University’s mission and position Florida Poly as an Engineering University of Distinction will benefit the state of Florida and its people.

The Florida Chamber 2030, Florida Council of 100 Project Sunrise and the regional Economic Development Councils agree that strong investments in a talented core STEM (engineering, mathematical and physical sciences) workforce are necessary to continue to grow the high-wage, high-tech economy. The dependency on STEM for industries like aerospace are obvious, but others are less so. For instance, the National Institutes of Health (NIH) states that some of the biggest gains in healthcare will come not from the life sciences, but from engineering, computer science, and data analysis as applied to health care problems. The finance and insurance industry employ mathematicians and data scientists to make better decisions, as does the logistics industry. Information

sciences, driven by Artificial Intelligence (AI), Virtual Reality (VR) and the continued sophistication of the tools of the information age, are pervasive throughout many of the high-tech industries and are critical to growing industry sectors like autonomous vehicles, simulation, and defense. But as Project Sunrise pointed out, 80,000 high skill jobs in STEM are left unfilled each month, and Florida is not producing enough STEM graduates, ranking only 38th in the nation for STEM degree production.

Florida Poly was created to meet this need by providing a high-skilled, high-wage workforce in Florida. Our graduates are in high-demand, low supply fields and are getting good paying jobs and graduating with minimal debt. Poly is the only 100% STEM institution in the State University System and has met every legislative mandate it was given since opening in 2014. Florida Poly received professional accreditation through ABET in 2019 (retroactive to October 2017) for our strong engineering programs and offer a high-touch, small classroom experience with applied learning projects. This model becomes increasingly important as 67% of the top high school graduates in Florida interested in an engineering education are looking at universities outside the state. In many cases, these students are not interested in a large comprehensive university experience, but in a smaller setting with a strong work-ethic culture built around competitions, hands-on problem solving, and undergraduate research and work experiences.

The vision for Florida Poly as a university is to be an upper-tier engineering school for the state of Florida, and we have made great progress towards that vision in just five years. As a young university, we are already attracting highly distinguished students from across the state, and we have built a strong curriculum around twelve engineering and related programs. We have built strong relationships with over 200 technology companies and are providing them with a talented workforce. This Legislative Budget Request provides a roadmap and funding request for Florida Poly to become an Engineering University of Distinction and to start the climb to being a top 15 engineering school without a doctorate degree program. To accomplish this, we will need to focus on growing our students, faculty, curriculum, and support services.

1. Growing the Student Body

- a. Having a highly distinguished student body is an important step in becoming an Engineering University of Distinction. This effort will provide funding for additional scholarships to help attract and retain the most talented high school graduates interested in STEM. Our goal is to have a student body with average entering test scores comparable with the top-tier universities in the United States. As part of this effort, we will also grow the student body to over 2250 students by the fall of 2025 to help fill workforce gaps, and we will graduate over 400 engineers per year by 2026.

- b. To attract these students, we must have programs of distinction with world-class faculty. The table that follows shows the funding needed to build a minimum of two new engineering programs that support Florida industry. These new programs will be in emerging fields as determined by market analyses in each program area before bringing them forward for approval.
- c. This growth has already started with our current projection on an incoming class for Fall 2021 to be over 600 students. To put this in context, we welcomed approximately 400 new students to campus two years ago, approximately 500 new students last year. Funds are necessary to continue this growth in incoming students with the appropriate quality.

2. Growing the Faculty

- a. Florida Poly will hire an additional 20 faculty in existing and new programs. With a new Applied Research Center and a growing faculty body, we will strengthen our focus on applied research and strong industry connections in all programs. As we, along with the rest of the nation, began to emerge from the COVID19 pandemic, we opened an aggressive search for new, highly qualified faculty. While these searches were very late in the classic academic faculty hiring cycle, we are projecting that we will welcome several new faculty to the start of the Fall 2021 semester. Included in these hires are two critical leadership hires: a new Chair for the Mathematics from the Air Force Academy, and a high-profile researcher from the University of Maryland, College Park as Chair for Electrical and Computer Engineering. To continue to grow a true world class faculty, we will need to invest in recurring salary funds for these individuals.

3. Growing and Broadening our Curriculum and Support Services

- a. We have continued to commit resources to improvements in the first and second year curriculum. Last year we introduced a new course that ties mathematics to engineering systems at a foundational level; for this year, we will introduce a new course that is project based and supports teamwork and open-ended problem solving. These efforts are focused on building a student culture that is invested in its success and that transitions to academic excellence and self sufficiency early in the undergraduate program. To continue these efforts we will need an ongoing investment.
- b. In addition, we are continuing to grow and improve our graduate program. The Masters in Engineering program provides upper division courses for a few of our ultra-talented undergraduates and also supports the faculty in their research endeavors. This indirectly supports growth in our reputation. Increasing our

number of faculty directly supports the growth in the graduate programs.

- c. Finally, we will enhance student services around retention and 4-year graduation rates, which are troublesome metrics for engineering schools. For the Fall 2021, we have reconfigured our support services personnel and are adding both a leadership program and a peer mentoring program to build a positive student culture. Our overall efforts focus on retention and success and in addition, will continue to implement best practices into the foundational courses for our common freshman year. In addition, we will grow our career services and internships, noting that a cornerstone in our curriculum is the requirement for an internship for each student. Florida Poly will continue to grow the capstone projects motivated by Florida industries and our entrepreneurship program. Project Sunrise highlighted startups as an opportunity, and we will continue to focus on growing and keeping our graduates in Florida to work with small and medium sized businesses that are essential to a strong economy.

Below is the detailed spending plan that builds each initiative over a five-year period:

	2022-23	2023-24	2024-25	2025-26	2026-27
Scholarships:	\$2.0	\$2.0	\$2.0	\$2.0	\$2.0
Programs:	\$0.0	\$1.0	\$1.5	\$1.5	\$1.5
Faculty:	0.75	\$1.0	\$2.0	\$3.0	\$3.0
Services:	\$0.75	\$1.5	\$2.0	\$2.0	\$2.0
TOTALS:	\$3.5	\$5.5	\$7.5	\$8.5	\$8.5

These expenditures support the following Florida Poly strategic plan goals.

Goal 1: Enroll a high quality and diverse incoming class.

Goal 2: Grow a faculty body committed to excellence.

Goal 4: Grow the number of academic programs in strategic disciplines.

Goal 6: Help students achieve academic goals.

Goal 7: Build essential skills in communications, leadership, design and business.

Goal 8: Embed projects in a sustainable manner to enhance professional development.

Goal 9: Support students through work experience programs and career opportunities.

Florida Poly graduates carry low debt loads, earn starting salaries averaging over \$50,000 per year and are prepared to be lifetime employable. But we cannot rest on our achievements thus far. We need the funds to move Florida's 100% STEM

university to the next level of excellence as an Engineering University of Distinction. We believe our past success makes us worthy of investment for the future.

II. Return on Investment - *Describe the outcome(s) anticipated, dashboard indicator(s) to be improved, or return on investment. Be specific. For example, if this issue focuses on improving retention rates, indicate the current retention rate and the expected increase in the retention rate. Similarly, if the issue focuses on expanding access to academic programs or student services, indicate the current and expected outcomes. University of Distinction proposals should also address the requirements outlined in the separate guidance document.*

The overarching goal of this request is to as quickly as possible, raise the profile of Florida Poly to be a top 15 ranked university in the category of Engineering Schools that do not grant a doctoral degree. The ultimate goal is to achieve this ranking in a five-year term. Underpinning this goal are a range of other issues tied to our anticipated outcomes.

1. Growth in the student body

- a. Here we intend to continue to grow the student body both through increased size in each admission class and also through strongly improved retention. Our overarching goal is to reach over 2300 students by the fall of 2025 (noting that we will open the fall of 2021 with ~1450 students).
- b. Funds from this request would improve our recruiting and retention efforts for the entering class, fall of 2023 (the funds need to be in place to use them to improve the campus) and would allow us to exceed our existing goal of ~1850 students. With the help of this funding, we would work to open the fall of 2024 with 2100 students and the fall of 2025 with ~2300 students.

2. Improvements in retention rate (Academic Progress rate)

- o The leading indicator for student success in a four-year degree journey is the formal Academic Progression Rate (APR). This proposal would further our existing efforts and starting in 2024, we would raise our APR projection from 83% to 85%.

Our additional Board of Governor's metrics include:

1. One metric to demonstrate year-one accomplishment of success

- a. Hiring success for the student services positions that ultimately are funded and hiring success (in terms of offers accepted) for new faculty positions.

2. Two metrics that demonstrate a return on investment to the state

- a. Growth of the campus that exceeds our existing growth plans

- i. In terms of direct return on investment, the cost per student at Florida Poly will continue to go down as the campus grows.
 - ii. In terms of indirect return, the economic report done last year indicates that every dollar invested by the state returns over 13 dollars to the state. The degrees that we offer remain in the high value fields so this return on investment will continue to be high.
 - b. Improvements in Academic Progress Rate and Graduation rate
 - i. These measures will show that the university is more efficient at attracting and keeping students. Higher rates show that we invest in more students that succeed at Florida Poly.
3. **Metrics that demonstrate how the program has improved over time as a result of the funding**
 - a. The metric on job placement rate and initial salary received will demonstrate our success, and the success of our students, in the marketplace.
4. **Metrics and/or rankings to demonstrate program elevation to excellence and prominence**
 - a. The ultimate goal is that in five years we reach the top 15 list for undergraduate engineering programs for universities that do not offer a doctorate.

III. Personnel – *Describe personnel hiring and retention plans, making sure to connect both plans to initiative(s) and goal(s) described in section I. State the amount of faculty FTE and staff FTE and estimated funding amounts used for retention and new hires in each category. In describing faculty hires, provide overall hiring goals, including academic area(s) of expertise and anticipated hiring level (e.g. assistant professor, associate professor, full professor. Please describe how funds used for faculty or staff retention will help the institution achieve its stated goals. University of Distinction proposals should clearly note how anticipated hires or retained individuals will help the institution elevate a program or area to national or state excellence.*

For the first year of the program, we have budgeted \$750,000 for faculty hiring, \$400,000 for increases to Academic Support Services, and \$350,000 for Increases to student life.

For Faculty Hiring, this will support 5 to 6 hires with the majority of hires at the Assistant Professor level. Fields will be Computer Science (likely three hires), Environmental Engineering (one hire, Associate Professor or Professor), Data Science (Assistant Professor), and Business Analytics (Assistant Professor). We have currently begun discussions with the foundation to add foundation support to one to three hires either as a distinguished chair, or a developmental chair.

The growth in the student body requires an investment in the support services that are student facing. This is five individuals in the academic support services area that serve advising and retention efforts and then another five individuals to support student life efforts. Both of these areas are starting to show strong signs of strain due to the increase in the student body size, and we must invest in these services to continue to provide services and improve them.

IV. Facilities *(If this issue requires an expansion or construction of a facility, please complete the following table.):*

	Facility Project Title	Fiscal Year	Amount Requested	Priority Number
1.				
2.				

**2022-2023 Legislative Budget Request
 Education and General
 Position and Fiscal Summary
 Operating Budget Form II
 (to be completed for each issue)**

University: Florida Polytechnic University
Issue Title: Engineering Program of Distinction

	RECURRING	NON- RECURRING	TOTAL
<u>Positions</u>			
Faculty	4.00	0.00	4.00
Other (A&P/USPS)	6.00	0.00	6.00
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Total	10.00	0.00	10.00
	=====	=====	=====
Salaries and Benefits	\$750,000	\$0	\$750,000
Other Personal Services	\$521,430	\$0	\$521,430
Expenses	\$0	\$228,570	\$228,570
Operating Capital Outlay	\$0	\$0	\$0
Electronic Data Processing	\$0	\$0	\$0
Financial Aid	\$2,000,000	\$0	\$2,000,000
Special Category (Specific)	\$0	\$0	\$0
	\$0	\$0	\$0
	\$0	\$0	\$0
	\$0	\$0	\$0
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Total All Categories	\$3,271,430	\$228,570	\$3,500,000
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