

## Methodology for Identifying Eight Programs for the Select STEM Tuition and Fee Waiver

### Overview

House Bill 1261, passed by the 2021 legislature, requires that the Board of Governors adopt eight Programs of Strategic Emphasis (PSE) in science, technology, engineering, or math (STEM) for which a student may be eligible to receive a new tuition and fee waiver authorized by the legislation. If signed into law, the new waiver takes effect in the 2021-22 academic year.

### Identifying Programs that Qualify for Consideration

The bill states that the programs adopted by the Board must reflect the priorities of the state and be offered at a majority of state universities. Board staff began the process of identifying qualifying programs by reviewing the academic program inventory and selecting those programs in the STEM PSE category. The selection was further refined by distinguishing those programs offered at seven or more institutions, which resulted in 11 programs. These 11 programs, shown in Exhibit 1 below, are the only programs from which the final eight programs can be selected.

### Exhibit 1 – The Eleven Eligible Programs

|    | CIP     | CIP Title                              | Area | Offered at |
|----|---------|--|------|------------|
| 1  | 11.0101 | Computer and Information Sciences      | STEM | 9          |
| 2  | 11.0103 | Information Technology                 | STEM | 7          |
| 3  | 14.0801 | Civil Engineering                      | STEM | 9          |
| 4  | 14.0901 | Computer Engineering                   | STEM | 9          |
| 5  | 14.1001 | Electrical and Electronics Engineering | STEM | 10         |
| 6  | 14.1901 | Mechanical Engineering                 | STEM | 10         |
| 7  | 26.0101 | Biology/Biological Sciences            | STEM | 10         |
| 8  | 27.0101 | Mathematics                            | STEM | 10         |
| 9  | 40.0501 | Chemistry                              | STEM | 10         |
| 10 | 40.0801 | Physics                                | STEM | 9          |
| 11 | 52.1201 | Management Information Systems         | STEM | 7          |

Source: BOG staff analysis of the academic program inventory.

### Estimating the Fiscal Impact of the Waiver

Board staff next estimated the fiscal impact for each program as a point of reference utilizing the required tuition and fee rates for each institution. In order to be eligible for the waiver, students must meet all of the following requirements.

- 1) be residents for tuition purposes
- 2) earn at least 60 semester credit hours towards a baccalaureate degree within two academic years after initial enrollment at a Florida public postsecondary institution
- 3) enroll in one of eight Programs of Strategic Emphasis as adopted by the Board of Governors, as defined in the bill

Per the bill, for every course in an eligible program in which a student is enrolled, a state university shall waive 100 percent of the tuition and fees for an equivalent course in such program. This

concept is comparable to a buy one, get one free approach. To estimate the cost of the waivers, the most recent fall credit hours of upper-division resident students were used to calculate the estimated dollar value waived for each program at each institution. The fees included in calculating the cost estimates represented fees typically covered by other tuition and fee waivers: the tuition differential fee, the financial aid fee, the technology fee, the capital improvement fee, the activity and service fee, the athletic fee, the health fee, the campus access/transportation fee, the green fee, the USF Marshall Center fee, the FSU student affairs facility use fee, and the UNF student life and services fee. Student eligibility based on the number of credit hours earned during the first two years of enrollment was also factored into the estimates. Exhibit 2 below details the final results of the fiscal impact analysis.

### Exhibit 2 – Estimated Fiscal Impact per Term

|    | CIP     | CIP Title                              | Estimated Waiver Cost Per Term |
|----|---------|--|--------------------------------|
| 1  | 11.0101 | Computer and Information Sciences      | \$4,138,077                    |
| 2  | 11.0103 | Information Technology                 | \$1,664,133                    |
| 3  | 14.0801 | Civil Engineering                      | \$1,662,018                    |
| 4  | 14.0901 | Computer Engineering                   | \$1,555,066                    |
| 5  | 14.1001 | Electrical and Electronics Engineering | \$1,675,840                    |
| 6  | 14.1901 | Mechanical Engineering                 | \$3,754,249                    |
| 7  | 26.0101 | Biology/Biological Sciences            | \$6,381,278                    |
| 8  | 27.0101 | Mathematics                            | \$653,610                      |
| 9  | 40.0501 | Chemistry                              | \$1,024,549                    |
| 10 | 40.0801 | Physics                                | \$443,490                      |
| 11 | 52.1201 | Management Information Systems         | \$707,720                      |

Source: BOG staff analysis of data provided by the Office of Data Analytics and the Budget Office.

### Developing Programmatic Recommendations

Board staff next gathered a number of relevant data points for the eleven eligible programs. A selective gap analysis was completed to determine relative need in the workforce for graduates from each program by analyzing a subset of relevant occupations related to the eleven academic programs based on the National Center for Education Statistics CIP to SOC crosswalk. The methodology used for performing this specialized gap analysis is analogous to the documented gap analysis process used for the Programs of Strategic Emphasis<sup>1</sup>. Program enrollment, the percentage of Pell-eligible students, and the percentage of African-American and Hispanic students in each program were also reviewed. These data were examined in detail to compare and contrast the various programs and to develop potential methodologies for selecting the eight programs. Exhibit 3 shows the various data considered.

---

<sup>1</sup> The PSE gap analysis methodology can be found at [https://www.flbog.edu/wp-content/uploads/SPC\\_06d\\_2019\\_Gap\\_Analysis\\_Methodology\\_CE.pdf](https://www.flbog.edu/wp-content/uploads/SPC_06d_2019_Gap_Analysis_Methodology_CE.pdf)

## Exhibit 3 – Relevant Data for the Eligible Programs

| CIP     | CIP Title                              | Gap 2021 | % Pell Fall 2019 | % African-American & Hispanic Fall 2020 | Upper Division Resident Enrollment Fall 2020 |
|---------|--|----------|------------------|---|--|
| 11.0101 | Computer and Information Sciences      | 1,898    | 36%              | 45%                                     | 6,265  |
| 11.0103 | Information Technology                 | 2,556    | 41%              | 47%                                     | 3,002  |
| 14.0801 | Civil Engineering                      | 1,352    | 35%              | 47%                                     | 2,317  |
| 14.0901 | Computer Engineering                   | 762      | 38%              | 47%                                     | 1,961  |
| 14.1001 | Electrical and Electronics Engineering | 675      | 37%              | 40%                                     | 2,205  |
| 14.1901 | Mechanical Engineering                 | 435      | 32%              | 38%                                     | 4,817  |
| 26.0101 | Biology/Biological Sciences            | 340      | 42%              | 53%                                     | 11,192                                       |
| 27.0101 | Mathematics                            | 40       | 33%              | 37%                                     | 954  |
| 40.0501 | Chemistry                              | 261      | 37%              | 44%                                     | 1,808  |
| 40.0801 | Physics                                | 18       | 35%              | 38%                                     | 692  |
| 52.1201 | Management Information Systems         | 633      | 34%              | 41%                                     | 1,031  |

Source: BOG staff analysis of the academic program inventory, data provided by the Office of Data Analytics, and an internal gap analysis for selected programs/occupations.

As a point of reference, 41% of all Florida undergraduates received a Pell grant in 2018-19 per the National Center for Education Statistics. Additionally, the percentage of all resident, upper-division students in all active programs that are African-American & Hispanic is 46%. The goal in the Board of Governors' Strategic Plan for percent of bachelor's degrees awarded to African-American & Hispanic students is 46%.

### Methods for Selecting the Eight Programs

Board staff developed several potential methods for selecting the top eight programs. Options considered focused on on programs with the most significant workforce gap, aiming to recognize the greatest need in the marketplace and on programs with the lowest enrollment, with the goal being to incentivize enrollment in the least populous programs. Another option considered was to combine the approaches using a scoring rubric such that both the workforce gap and enrollment data are taken into consideration when selecting the eight programs. Exhibit 4 shows the outcome of the composite method.

#### Exhibit 4 – Eligible Programs Ranked by Composite Score (Workforce Gap & Enrollment)

|    | CIP     | CIP Title                              | Composite Score: Gap and Enrollment |
|----|---------|--|-------------------------------------|
| 1  | 11.0103 | Information Technology                 | 15                                  |
| 2  | 14.0901 | Computer Engineering                   | 15                                  |
| 3  | 52.1201 | Management Information Systems         | 15                                  |
| 4  | 14.0801 | Civil Engineering                      | 14                                  |
| 5  | 14.1001 | Electrical and Electronics Engineering | 13                                  |
| 6  | 11.0101 | Computer and Information Sciences      | 12                                  |
| 7  | 27.0101 | Mathematics                            | 12                                  |
| 8  | 40.0801 | Physics                                | 12                                  |
| 9  | 40.0501 | Chemistry                              | 11                                  |
| 10 | 14.1901 | Mechanical Engineering                 | 8                                   |
| 11 | 26.0101 | Biology/Biological Sciences            | 5                                   |

Source: BOG staff analysis of data provided by the Office of Data Analytics and an internal gap analysis for selected programs/occupations.

#### Staff Recommendation

Board staff recommends using the combined approach described above, which is to select the eight programs using a composite score that considers both large workforce gap and low enrollment simultaneously. Exhibit 5 below provides the final eight recommended programs employing the recommended method.

#### Exhibit 5 – Recommended Program List

|   | CIP     | CIP Title                              |
|---|---------|--|
| 1 | 11.0103 | Information Technology                 |
| 2 | 14.0901 | Computer Engineering                   |
| 3 | 52.1201 | Management Information Systems         |
| 4 | 14.0801 | Civil Engineering                      |
| 5 | 14.1001 | Electrical and Electronics Engineering |
| 6 | 11.0101 | Computer and Information Sciences      |
| 7 | 27.0101 | Mathematics                            |
| 8 | 40.0801 | Physics                                |

#### Incentive Funding

The Legislature appropriated \$25 million for incentive funding in budget proviso language with specific stipulations. The Board of Governors shall distribute no more than \$12.5 million for waivers provided during the fall 2021 semester, and the remaining funds shall be distributed based on waivers provided during the spring 2022 semester. The estimated cost for one semester is approximately \$12.5 million, which matches the amount of funding authorized by the Legislature. If the waiver is offered in the summer, the estimated cost is roughly \$4.8 million, although no incentive funding was provided by the legislature for summer.