

Methodology for Identifying a Replacement STEM Program for Physics for the Programs of Strategic Emphasis Tuition and Fee Waiver

Background

In June 2021, the Board of Governors selected eight programs of strategic emphasis from the Science, Technology, Engineering, and Mathematics (STEM) category as required by section 1009.26, Florida Statutes. The 2022 Legislature amended the statute, requiring the Board to select two additional programs of strategic emphasis from the gap analysis category to be included in the waiver beginning in the 2022-23 Academic Year. The 2023 Legislature amended the statute, requiring the Board to select two state-approved teacher preparation programs to be included beginning with the 2023-2024 Academic Year. Exhibit 1 below lists the academic programs previously selected by the Board that were available to students during the 2023-24 Academic Year.

Exhibit 1: Eligible Programs, 2023-24 Academic Year

	CIP	Program Title
1	11.0101	Computer and Information Sciences
2	11.0103	Information Technology
3	14.0801	Civil Engineering
4	14.0901	Computer Engineering
5	14.1001	Electrical and Electronics Engineering
6	27.0101	Mathematics
7	40.0801	Physics
8	52.1201	Management Information Systems
9	52.0301	Accounting
10	52.0801	Finance
11	13.1001	Special Education & Teaching
12	13.1202	Elementary Education & Teaching

For more detailed information about the waiver program, including student eligibility requirements, please refer to the [guidance document](#) published on the Board's website.

Programs of Strategic Emphasis Changes

At the November 2023 meeting, the Board of Governors approved a new Programs of Strategic Emphasis list that goes into effect for the 2024-2025 Academic Year. Physics is not on the updated list, but it was one of the eight STEM programs selected by the Board for the Programs of Strategic Emphasis waiver. As a result, the Board must select another STEM program from the new Programs of Strategic Emphasis list to be eligible for the waiver program. The statute requires that students who have been granted the waiver for

Physics continue receiving the waiver until they graduate, exceed the number of allowable credit hours, or withdraw from the program.

Identifying Programs of Strategic Emphasis that are Eligible for the Waiver

Board staff reviewed the revised Programs of Strategic Emphasis list and the State University System Academic Program Inventory to identify programs that would be eligible for the waiver. To be included on the list of programs eligible, the program had to be a STEM program and be offered at seven or more institutions.¹ As shown by Exhibit 2, three STEM programs are eligible to replace Physics for the Programs of Strategic Emphasis Waiver program.

Exhibit 2: Eligible STEM Programs

CIP	Program Title	Area	# Institutions Offering Program
14.1401	Environmental/Environmental Health Engineering	STEM	7
14.1901	Mechanical Engineering	STEM	10
26.0101	Biology/Biological Sciences, General	STEM	10

Source: Board of Governors staff analysis of the [State University System Academic Program Inventory](#)

Methodology for Selecting Another STEM Program

Board staff reviewed program enrollment data from the fall of 2023 and workforce data for the three eligible STEM programs. Staff completed a gap analysis to determine the relative need in the workforce for graduates from each program by analyzing a subset of relevant occupations related to the three academic programs based on the Florida CIP to SOC crosswalk. The methodology used for performing this specialized gap analysis is comparable to the documented gap analysis process used for the Programs of Strategic Emphasis and consistent with previous analyses used to select the other eligible academic programs for this waiver.²

Consistent with prior methodology, programs were ranked based on the most significant workforce gaps and lowest enrollment, aiming to incentivize student enrollment to support the most critically needed workforce areas. The final ranking combines the two

¹ Active STEM lists were researched to identify those that are used nationally to determine whether a program qualifies as STEM. Four such lists were selected as primary references to determine programs eligible to be categorized as STEM, including those produced and published by the Florida Department of Commerce, the Department of Homeland Security, the National Science Foundation, and the Washington State Education Research and Data Center. Programs needed to appear on at least two of the four lists to be considered STEM.

² The gap analysis methodology is consistent with that used in the current Programs of Strategic Emphasis methodology, which can be found at https://www.flbog.edu/wp-content/uploads/2023/11/2023_PSE_Methodology_ES.pdf

approaches using a scoring rubric to evaluate the workforce gap and enrollment data simultaneously when considering the programs. Exhibit 3 shows the data considered for this step.

Exhibit 3: Eligible STEM Programs with Relevant Selection Criteria

CIP	Program Title	Composite Score: Gap & Enrollment	Gap 2024	Gap Score*	Enrollment Fall 2023	Enrollment Score
14.1401	Environmental/Health Engineering	4	266	1	594	3
14.1901	Mechanical Engineering	5	1,828	3	6,313	2
26.0101	Biology	2	269	1	16,471	1

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

*Two programs, Environmental/Health Engineering and Biology, were deemed to be an effective tie for the workforce gap and were scored accordingly.

Staff Recommendation

The methodology resulted in mechanical engineering having the highest composite score, as shown in Exhibit 3. Board staff recommends that the Board of Governors select Mechanical Engineering to replace Physics as an eligible program for the Programs of Strategic Emphasis Waiver beginning in the 2024-25 Academic Year.