

Methodology for Updating Programs of Strategic Emphasis

State University System of Florida, Board of Governors, June 2023

Overview

The Programs of Strategic Emphasis exist as one of several tools for aligning curriculum and the degree production goals of the State University System with the economic and workforce needs of Florida. Additionally, the Programs of Strategic Emphasis are a component of Performance Based Funding.

In January 2023, the Board of Governors directed Board staff to develop a more targeted and workforce-driven list for the 2023 update of the Programs of Strategic Emphasis. In response to this guidance, staff completed a comprehensive review and revision of the prior methodology to better address Florida's workforce needs. During the spring of 2023, Board staff met with key stakeholders to obtain feedback and recommendations regarding methodology and data sources.

The process for identifying Programs of Strategic Emphasis in 2023 differs significantly from that in 2019 and 2020. Previously, Board staff primarily utilized a qualitative approach and supplemented those findings with a gap analysis to quantitatively identify workforce needs. The prior approach focused on academic programs at the bachelor's degree level and automatically applied to all programs at the graduate level. For this iteration, Board staff focused on reviewing Florida workforce demand data, looking at occupations based on the degree level required to enter each occupation. Staff also reviewed projected demand and growth for all Florida occupations and conducted a supply/demand gap analysis to identify occupations across the state requiring a bachelor's degree or higher with substantial annual gaps in the talent supply. The list was further narrowed at the baccalaureate level to include occupations that met or exceeded a \$40,000 wage threshold, consistent with the Board's 2025 Strategic Plan Goal to have 80% of bachelor's degree graduates employed making a \$40,000 or higher. After identifying the initial list of occupations, Board staff matched these to academic programs using the CIP-SOC crosswalk developed in conjunction with the Florida Department of Education, Board staff, the Governor's REACH Office, and other partners. Board staff then reviewed the list of academic programs aligned with these occupations and focused the list by removing programs that were duplicative or unrelated to the mission of the System. In addition, staff included a small number of programs based on stakeholder input and other sources of data to inform the process.

Based on this revised methodology, Board staff developed an initial draft of the 2023 Programs of Strategic Emphasis. It includes 128 bachelor's degree programs, 66 of which are currently being offered in the System. The draft list also includes 66 master's degree programs, 38 of which are currently active and 56 doctoral programs, 52 of which are currently offered. The proposed list reduces the total number of eligible programs from 449 active programs to 156 active programs at the baccalaureate and graduate levels. All programs on the list support Florida's most critical workforce needs and help ensure State University System graduates earn competitive salaries upon graduation.

After completing this initial analysis, Board staff discussed the draft list with various stakeholders. Board staff will consider feedback on the draft list from state universities this summer before recommending a final list to the Board in fall 2023.

The academic degree programs associated with the proposed new list are identified in a document titled "Draft List of Programs of Strategic Emphasis, June 2023." The remainder of this document provides more details regarding the analysis and data sources used to develop the 2023 Programs of Strategic Emphasis draft list.

2023 Proposed Methodology

To develop the 2023 list of proposed Programs of Strategic Emphasis, Board staff used a methodology that included two distinct phases. In the first phase, staff identified academic programs that link to high-demand occupations in Florida based on a supply/demand gap analysis, wage data, and projected job growth thresholds. This new methodology considers the supply of graduates across all Florida education sectors and matches it to labor market demand across all occupations in Florida. Board staff completed this analysis for all occupations that typically require a bachelor's, master's/specialist, or doctoral degree for entry into the occupation. See Appendix B for a final listing of occupations identified during the gap analysis process by the degree level typically required for entry into the occupation.

Consistent with the data sources used by the Credential Review Committee and referenced in section 1001.706, Florida Statutes, demand was based on the Florida Department of Economic Opportunity's (DEO) 2022-2030 Employment Projections.¹ The Department's Bureau of Workforce Statistics and Economic Research produces 8-year employment projections annually for all industries and occupations.² The projections consider transfers and exits rather than just replacement openings. This approach provides a more accurate picture of the workforce by differentiating between those who are leaving the labor force entirely and those who are permanently leaving an occupation to enter a new field.

Each occupation is assigned a Standard Occupational Classification (SOC) code and an educational attainment level by the U.S. Department of Labor, Bureau of Labor Statistics (BLS), consistent with the prior methodology.³ The BLS taxonomy classifies occupations by the typical level of skills needed to enter an occupation. The BLS designation is used to determine the gap between supply and demand for workers in Florida because it provides the most accurate depiction of the actual educational level that workers should complete to meet job requirements.

Board staff used the new Florida CIP-SOC crosswalk developed jointly by the Florida Department of Education, Board staff, the Governor's REACH Office, and other state agency partners, as well as the national crosswalk built by the BLS and the U.S. Department of Education's National Center for Education Statistics (NCES).⁴ Both crosswalks link occupations (the SOC code) to educational programs (the CIP code). For more detailed information about the CIP taxonomy, refer to Appendix A at the end of this document. It is essential to note a given educational program can often lead to multiple occupations, and many different educational programs can often supply a given occupation, as shown in Exhibits 1 and 2 below. It is also important to note that the educational attainment level was maintained when matching occupations and degree programs so that only the appropriate credential level was considered for each occupation.

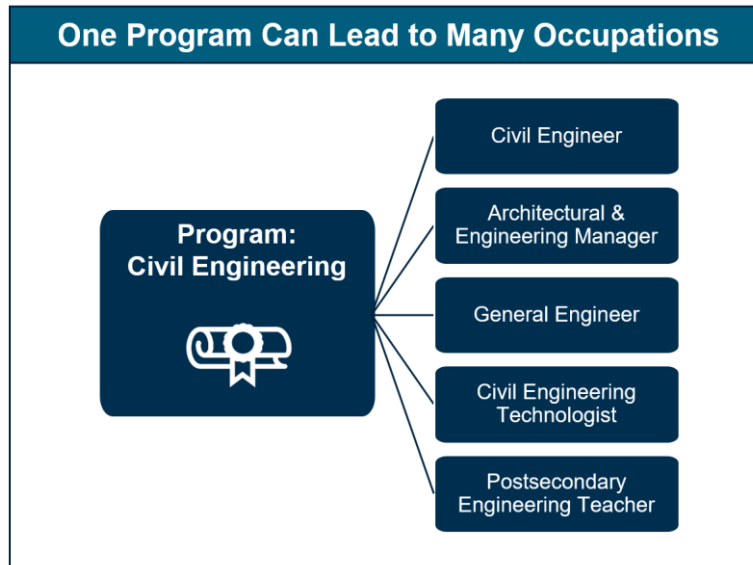
¹ <http://www.floridajobs.org/workforce-statistics/data-center/statistical-programs/employment-projections>

² The data used to create these projections are the Quarterly Census of Employment and Wages (QCEW), the Occupational Employment Statistics (OES), and the Current Population Survey (CPS).

³ <https://www.bls.gov/>

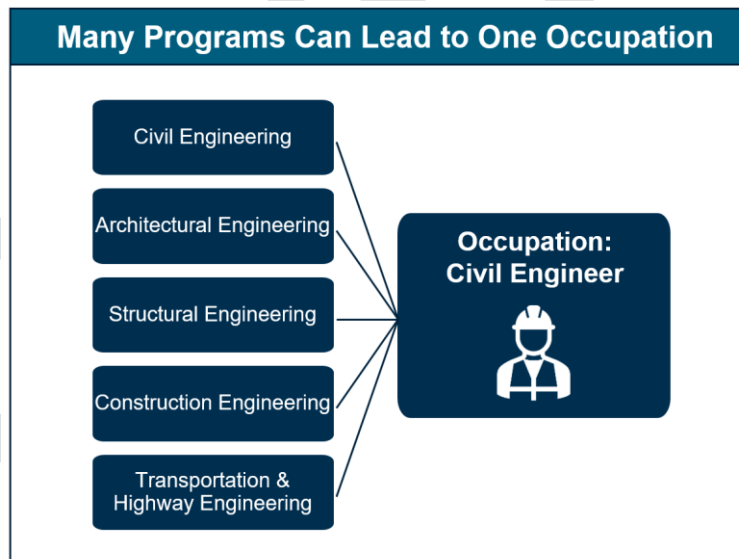
⁴ The Florida developed crosswalk includes only active education programs in in Florida. Board staff used the national crosswalk to identify programs not offered in Florida to align with future workforce demand.

Exhibit 1 – Example of CIP-SOC Linkages



Source: Board staff analysis of the aforementioned CIP-SOC crosswalks.
Note: The above exhibit is not an exhaustive list of all occupations supplied by a Civil Engineering program.

Exhibit 2 – Example of SOC-CIP Linkages



Source: Board staff analysis of the aforementioned CIP-SOC crosswalks.
Note: The above exhibit is not an exhaustive list of all academic programs that can lead to an occupation as a Civil Engineer.

Board staff used two strategies to address the challenge of potentially overstating supply because numerous occupations link to multiple academic disciplines.

- Managerial occupations (SOC codes beginning with '11') were excluded from the analysis because certain levels of work experience are required in addition to a degree, and such occupations link to the highest number of academic disciplines.

- Supply data was adjusted to acknowledge that graduates typically have more than one choice of occupation after graduating. After the initial SOC-to-CIP match to derive the total number of recent graduates qualified for a particular ‘target’ occupation, it is imperative to also look in reverse, or from CIP-to-SOC, to get a sense of all the occupations competing for those graduates. Thus, the adjusted supply was derived by multiplying the total supply of graduates linked to a target occupation by the target occupation’s percentage of projected total openings for all occupations, excluding managers as noted above, linked with the disciplines associated with the target occupation.
 - For example, the Budget Analyst occupation has 305 projected annual openings that could be filled by 7,166 graduates annually earning bachelor’s degrees from eight different academic disciplines: General Finance, Business Analytics, Financial Analytics, Accounting and Finance, Accounting and Other Related Services, Public Finance, Econometrics and Quantitative Economics, and Accounting. At first glance, it appears that there is a substantial oversupply of graduates qualified for the budget analyst openings. However, if one considers the number of other occupations for which graduates of these eight programs could qualify, there are more than 65,000 annual openings across a multitude of occupations.⁵

Supply was calculated using the number of bachelor’s, master’s, and doctoral degrees awarded by Florida postsecondary institutions in 2020-21, as reported to the National Center for Educational Statistics’ Integrated Postsecondary Educational Data System (IPEDS).⁶ All educational institutions receiving Title IV Financial Aid must report these data to IPEDS, assigning a Classification of Instructional Programs (CIP) code to each educational program.

Once the supply and demand data were calculated for each occupation, Board staff narrowed the list by applying minimum calculated gap thresholds for each degree level. The education programs must link to an occupation with a calculated gap of at least 100 unfilled annual openings for bachelor’s degrees, 50 openings for master’s degrees, and 25 openings for doctoral degrees. Additionally, certain occupations and programs were excluded, including those not related to the System mission and those without a strong educational program-to-occupation relationship.

The final stage of the phase one analysis focused on targeting those academic programs meeting the gap threshold that also met the projected growth threshold. Consistent with the data sources used by the Credential Review Committee and referenced in section 1001.706, Florida Statutes, Board staff used the projected growth rates from the Department of Economic Opportunity’s (DEO) Employment Projections and representative starting wages for bachelor’s graduates as identified by the Labor Market Estimating Conference (LMEC).⁷ The growth rate threshold used was 8.6%, based on the DEO projected 2022-30 growth rate for all occupations in Florida. Board staff also applied a starting wage threshold of \$40,000 based on the Board’s 2025 System Strategic Plan.⁸

The second phase of analysis was to remove programs deemed duplicative or unrelated to the mission of the System and to add programs not captured by the phase one analysis but deemed

⁵ The openings for budget analysts comprised only 0.47% of all the jobs available to these graduates (305 budget analyst openings divided by 65,453 total openings). As a consequence, only 0.47% of the initial supply of 7,166 graduates is used in the gap analysis, resulting in an adjusted annual supply of 33.

⁶ <https://nces.ed.gov/ipeds/>

⁷ <http://edr.state.fl.us/content/conferences/labormarket/index.cfm>

⁸ <https://www.flbog.edu/board/strategic-plan/>

appropriate based on the System mission and staff/stakeholder expertise. Programs not aligned with the System’s mission were removed. Additionally, knowledge and expertise regarding Florida’s economy and higher education delivery systems were applied to add appropriate programs not identified in phase one and reduce duplicative or redundant programs. These steps were implemented since the directive from the Board was to reduce the number of programs on the list while remaining focused on critical occupations.

The final stage of phase two will be to receive additional stakeholder input on the initial draft list of programs, including feedback from staff at SUS institutions. The result of the two-phase process described above will be a targeted list of academic programs that warrant strategic emphasis by the System.

Using the above methodology, Board staff narrowed down the list of 2,325 total possible academic programs to identify the preliminary proposed list of Programs of Strategic Emphasis. The preliminary list draws from all possible programs as defined by NCES to identify specific bachelor’s degrees, master’s degrees, and doctorate degrees for inclusion as Programs of Strategic Emphasis, as shown in Exhibit 3.

Exhibit 3 – Preliminary Programs of Strategic Emphasis

	Bachelor’s Programs	Master’s Programs	Doctoral Programs
Total CIP Codes	2,325	2,325	2,325
Proposed CIP Codes- Total Programs of Strategic Emphasis	128 (6%)	66 (3%)	56 (2%)
Proposed CIP Codes- Active Programs of Strategic Emphasis	66 (3%)	38 (2%)	52 (2%)

The academic degree programs associated with the proposed new list are identified in a document currently titled “Draft List of Programs of Strategic Emphasis, June 2023,” provided concurrently with this document. It should be noted that some academic programs found on the list are not currently offered within the State University System. A complete list of program options, including both active and inactive programs, allows institutions to plan for new programs. Programs on this list are also recognized through Performance Based Funding Metric 6 - Bachelor's Degrees Awarded in Areas of Strategic Emphasis and Metric 8a - Graduate Degrees Awarded in Areas of Strategic Emphasis.

Appendix A

In order to identify academic programs that lead to in-demand jobs, Board staff matched Classification of Instructional Programs (CIP) academic program codes with Standard Occupational Classification (SOC) codes from the U.S. Bureau of Labor Statistics.

About CIPs

The Classification of Instructional Programs provides a taxonomic scheme that supports the accurate tracking and reporting of fields of study and program completion activity. The Classification of Instructional Programs was originally developed by the U.S. Department of Education's National Center for Education Statistics (NCES) in 1980, with revisions regularly occurring as new programs emerge and existing program curriculums evolve.

The CIP taxonomy is organized on three levels:

1. The two-digit series represents the most general groupings of related educational programs (e.g., 14. Engineering)
2. The four-digit series represents intermediate groupings of educational programs that have comparable content and objectives (e.g., 14.08 Civil Engineering)
3. The six-digit series represents specific instructional programs with very similar content and objectives (e.g., 14.0803 Structural Engineering as a subset of Civil)

Postsecondary educational institutions use six-digit CIP codes when completing the IPEDS Completions Survey required for participation in federal financial aid programs. Six-digit codes are the most detailed program classifications within the CIP and represent the basic unit of analysis used by NCES and institutions in tracking and reporting program completions and fields of study data.

Source: NCES, *Integrated Postsecondary Education Data System (IPEDS)*, Introduction to the Classification of Instructional Programs: 2020 Edition (CIP-2020).⁹

⁹ https://nces.ed.gov/ipeds/cipcode/Files/2020_CIP_Introduction.pdf

Appendix B

Table 1 - Occupations Identified Using the Programs of Strategic Emphasis Methodology that Typically Require a Bachelor's Degree for Entry

	SOC Code	Occupation
1	13-2011	Accountants and Auditors
2	13-2061	Financial Examiners
3	15-1211	Computer Systems Analysts
4	15-1212	Information Security Analysts
5	15-1244	Network and Computer Systems Administrators
6	15-1245	Database Administrators and Architects
7	15-1256	Software Developers and Software Quality Assurance Analysts and Testers
8	15-2098	Data Scientists and Mathematical Science Occupations, All Other
9	17-1011	Architects, Except Landscape and Naval
10	17-2011	Aerospace Engineers
11	17-2051	Civil Engineers
12	17-2061	Computer Hardware Engineers
13	17-2071	Electrical Engineers
14	17-2072	Electronics Engineers, Except Computer
15	17-2081	Environmental Engineers
16	17-2112	Industrial Engineers
17	17-2141	Mechanical Engineers
18	19-2042	Geoscientists, Except Hydrologists and Geographers
19	25-2032	Career/Technical Education Teachers, Secondary School
20	25-2057	Special Education Teachers, Middle School
21	25-2058	Special Education Teachers, Secondary School
22	29-1141	Registered Nurses

Table 2 - Occupations Identified Using the Programs of Strategic Emphasis Methodology that Typically Require a Master's Degree for Entry

	SOC Code	Occupation
1	15-2041	Statisticians
2	19-3051	Urban and Regional Planners
3	21-1012	Educational, Guidance, and Career Counselors and Advisors
4	21-1013	Marriage and Family Therapists
5	21-1015	Rehabilitation Counselors
6	21-1019	Counselors, All Other
7	21-1022	Healthcare Social Workers
8	21-1023	Mental Health and Substance Abuse Social Workers
9	29-1071	Physician Assistants
10	29-1122	Occupational Therapists
11	29-1127	Speech-Language Pathologists
12	29-1151	Nurse Anesthetists
13	29-1171	Nurse Practitioners

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Table 3 - Occupations Identified Using the Programs of Strategic Emphasis Methodology that Typically Require a Doctorate Degree for Entry

	SOC Code	Occupation
1	19-1021	Biochemists and Biophysicists
2	19-1042	Medical Scientists, Except Epidemiologists
3	19-3031	Clinical, Counseling, and School Psychologists
4	25-1011	Business Teachers, Postsecondary
5	25-1021	Computer Science Teachers, Postsecondary
6	25-1022	Mathematical Science Teachers, Postsecondary
7	25-1031	Architecture Teachers, Postsecondary
8	25-1032	Engineering Teachers, Postsecondary
9	25-1041	Agricultural Sciences Teachers, Postsecondary
10	25-1042	Biological Science Teachers, Postsecondary
11	25-1051	Atmospheric, Earth, Marine, and Space Sciences Teachers, Postsecondary
12	25-1052	Chemistry Teachers, Postsecondary
13	25-1054	Physics Teachers, Postsecondary
14	25-1063	Economics Teachers, Postsecondary
15	25-1071	Health Specialties Teachers, Postsecondary
16	25-1081	Education Teachers, Postsecondary
17	25-1113	Social Work Teachers, Postsecondary
18	29-1123	Physical Therapists
19	29-1131	Veterinarians
20	29-1181	Audiologists
21	29-1215	Family Medicine Physicians
22	29-1223	Psychiatrists
23	29-1228	Physicians, All Other and Ophthalmologists, Except Pediatric