Tab 23
Fast Track Program Designation

Coordinating Board for Higher Education
June 5, 2019

BACKGROUND

The legislation establishing the Fast Track Workforce Incentive Grant program authorizes the Coordinating Board for "designate eligible programs of study by January 1, 2020, in connection with local education institutions, regional business organizations, and other stakeholders." That legislation also defines an eligible program, in part, as one "that has been designated by the Coordinating Board as preparing students to enter an area of occupational shortage as determined by the Board." The intent of this agenda item is to provide a description of the process MDHE followed to develop a potential list of eligible programs and recommend approval of that list.

CURRENT STATUS

The legislation directs that Fast Track eligibility be restricted to instructional programs that lead to employment in high need occupations. In order to develop a preliminary list of those programs, staff from MDHE and the Missouri Economic Research and Information Center (MERIC) used the following process.

Every two years, MERIC produces long-term occupational projections that are used by a variety of agencies to understand the changes and trends within the state's workforce. This process is nationally standardized and is used in every state for this purpose. The results of those projections include "career grades" that rank each occupational category based on the level of job growth, the number of annual openings that are expected within that category and the wages that individuals earn that work in that category. Those grades follow an A through D taxonomy, with "A" careers being the fastest growing and highest paid and "D" careers falling at the other end of that spectrum.

To translate those projections into a listing of related instructional programs, the first decision must be to determine what career grades to include. Because A and B grades indicate the most in-demand occupational categories, the decision was made to limit the preliminary list to those career grades, if they held that grade either at a regional or statewide level. Additionally, the use of the two top career grades corresponds to the ones used by the Department and Elementary and Secondary Education for their Career and Technical Education Enhancements Grants.

Finally, staff took the resulting list of occupational categories and used the nationally standardized crosswalk to establish which instructional programs are connected to the occupational area. This comparison was developed at the four-digit Classification of Instructional Programs (CIP) level in order to provide a broad array of programs within each general category. Attached to this agenda item is the resulting list of program areas by CIP.

The CIP taxonomy was developed decades ago by the National Center for Education Statistics in order to provide a mechanism to categorize and group programs along subject area and content lines. The CIP codes can be broken down by two, four, and six digit levels. Two digit codes are at the highest level and identify very broad subject areas of study. For example, the two digit code "01" relates to programs in agriculture, agriculture operations and related sciences and is described as including "instructional programs that focus on agriculture and related sciences and that prepare individuals to apply specific knowledge, methods, and techniques to the management and performance of agricultural operations." The four-digit level drills a little deeper into the identified program area. To follow our example, the four-digit code "01.01" relates to programs in agricultural business and management, which is more specific in scope. Finally, the six digit code, in our example "01.0101", relates to a specific type of program within agricultural business and management described as "a general program that focuses on modern business and economic principles involved in the organization, operation, and management of agricultural enterprises."

This dive into the CIP system is intended to highlight that while the attached list includes 114 categories of academic programs, each of those program categories includes a number of specific program areas. To continue the agricultural example, within the four digit CIP (01.01) titled Agricultural Business and Management are the following programs.

- Agricultural Business and Management, General
- Agribusiness/Agricultural Business Operations
- Agricultural Economics
- Farm/Farm and Ranch Management
- Agricultural/Farm Supplies Retailing and Wholesaling
- Agricultural Business Technology
- Agricultural Business and Management, Other

For Fast Track, the 114 categories of programs (four-digit CIP level), translate into 635 program types (six digit CIP level). While we have not calculated the total number of available instructional programs, it is important to note that multiple institutions may offer programs within a single six digit CIP code.

Feedback

The MDHE undertook an extensive effort to provide information about the program identification process and opportunities for input from a broad spectrum of constituencies. These activities included establishing a webpage and online process to solicit input, publications encouraging input, providing direct presentations to interested parties, and formal and informal presentations to legislators and legislative committees. The following groups were included in this process.

- Public (through web slider, webinars and social media)
- Talent for Tomorrow Task Force
- Best in Midwest Advisory Group
- Public and private colleges and universities
- State and local chambers of commerce
- Missouri Economic Development Council
- Associated Industries of Missouri
- Missouri Association for Workforce Development
- Local Workforce Development Boards
- Missouri Community College Association
- Council on Public Higher Education
- Joint Committee on Education

In summary, the MDHE received 15 total comments from a variety of constituencies. Among the recommended additions were Computer Science and Cybersecurity, Behavioral Health support, and several engineering fields (electrical, mechanical, and general). Recommended deletions were real estate agent and homeland security/law enforcement/firefighting/related protective services. The narrative of these comments are attached to this agenda item. MDHE staff added program areas for cybersecurity, heating, ventilation and air conditioning (HVAC), behavioral health and telecom/cybersecurity.

Based on the feedback received and a more detailed review of the initial draft program areas, MDHE and MERIC staff made several additional changes. These include, with limited exceptions, all of computer and information sciences (CIP 11), engineering (CIP 14) and engineering technology and engineering related fields (CIP 15).

Conclusion

The attached roster of program areas is the result of this extensive and inclusive process. As indicated above, it includes 114 program areas, which constitutes 635 program classifications. While regular review and revision of the list will be necessary and is anticipated in the legislation, MDHE staff believe this list is consistent with the intent of the legislation and adequately covers the scope of programs for which Missouri is experiencing a shortage of available labor.

RECOMMENDATION

Staff recommends that the Coordinating Board designate all programs contained within the MDHE program inventory that are classified in the Classification of Instructional Programs (CIP) within the program areas listed in the attached document as eligible for the Fast Track Workforce Incentive Grant.

ATTACHMENTS

      A. Roster of Recommended Designated Program Areas
      B. Public Comments on Draft Program Roster

Proposed Fast Track Eligible Academic Programs
using the Classification of Instructional Programs (CIP)

STEM   STEM-related

Agriculture, Agriculture Operations, and Related Sciences - 01

- 0101 - Agricultural Business and Management
- 0106 - Applied Horticulture and Horticultural Business Services
- 0108 - Agricultural Public Services

Natural Resources and Conservation - 03

- 0302 - Natural Resources Management and Policy

Architecture and Related Services - 04

- 0410 - Real Estate Development

Communication, Journalism, and Related Programs - 09

- 0901 - Communication and Media Studies

Computer and Information Sciences and Support Services - 11

- 1101 - Computer and Information Sciences, General
- 1102 - Computer Programming
- 1103 - Data Processing
- 1104 - Information Science/Studies
- 1105 - Computer Systems Analysis
- 1107 - Computer Science
- 1108 - Computer Software and Media Applications
- 1109 - Computer Systems Networking and Telecommunications
- 1110 - Computer Information Technology Administration and Management

Personal and Culinary Services - 12

- 1204 - Cosmetology and Related Personal Grooming Services
- 1205 - Culinary Arts and Related Services

Education - 13

- 1302 - Bilingual, Multilingual, and Multicultural Education
- 1312 - Teacher Education and Professional Development, Specific Levels and Methods
- 1313 - Teacher Education and Professional Development, Specific Subject Areas
- 1315 - Teaching Assistants/Aides

Engineering - 14

- 1401 - Engineering, General
- 1402 - Aerospace, Aeronautical and Astronautical Engineering
- 1403 - Agricultural Engineering
- 1404 - Architectural Engineering
- 1405 - Biomedical/Medical Engineering
- 1406 - Ceramic Sciences and Engineering
- 1407 - Chemical Engineering
- 1408 - Civil Engineering
- 1409 - Computer Engineering
- 1410 - Electrical, Electronics and Communications Engineering
- 1411 - Engineering Mechanics
- 1412 - Engineering Physics
- 1413 - Engineering Science
- 1414 - Environmental/Environmental Health Engineering
- 1418 - Materials Engineering
- 1419 - Mechanical Engineering
- 1420 - Metallurgical Engineering
- 1421 - Mining and Mineral Engineering
- 1423 - Nuclear Engineering
- 1425 - Petroleum Engineering

- 1427 - Systems Engineering
- 1428 - Textile Sciences and Engineering
- 1432 - Polymer/Plastics Engineering
- 1433 - Construction Engineering
- 1434 - Forest Engineering
- 1435 - Industrial Engineering
- 1436 - Manufacturing Engineering
- 1437 - Operations Research
- 1438 - Surveying Engineering
- 1439 - Geological/Geophysical Engineering
- 1440 - Paper Science and Engineering
- 1441 - Electromechanical Engineering
- 1442 - Mechatronics, Robotics, and Automation Engineering
- 1443 - Biochemical Engineering
- 1444 - Engineering Chemistry
- 1445 - Biological/Biosystems Engineering

Engineering Technologies and Engineering-Related Fields - 15

- 1501 - Architectural Engineering Technologies/Technicians
- 1502 - Civil Engineering Technologies/Technicians
- 1503 - Electrical Engineering Technologies/Technicians
- 1504 - Electromechanical Instrumentation and Maintenance Technologies/Technicians
- 1505 - Environmental Control Technologies/Technicians
- 1506 - Industrial Production Technologies/Technicians
- 1507 - Quality Control and Safety Technologies/Technicians
- 1508 - Mechanical Engineering Related Technologies/Technicians
- 1509 - Mining and Petroleum Technologies/Technicians
- 1510 - Construction Engineering Technologies
- 1511 - Engineering-Related Technologies
- 1512 - Computer Engineering Technologies/Technicians
- 1513 - Drafting/Design Engineering Technologies/Technicians
- 1514 - Nuclear Engineering Technologies/Technicians
- 1515 - Engineering-Related Fields
- 1516 - Nanotechnology

Family and Consumer Sciences/Human Sciences - 19

- 1902 - Family and Consumer Sciences/Human Sciences Business Services
- 1906 - Housing and Human Environments
- 1907 - Human Development, Family Studies, and Related Services

Legal Professions and Studies - 22

- 2203 - Legal Support Services

Mathematics and Statistics - 27

- 2703 - Applied Mathematics

Multi/Interdisciplinary Studies - 30

- 3016 - Accounting and Computer Science

Parks, Recreation, Leisure, and Fitness Studies - 31

- 3103 - Parks, Recreation and Leisure Facilities Management

Homeland Security, Law Enforcement, Firefighting and Related Protective Services - 43

- 4301 - Criminal Justice and Corrections.
- 4303 - Homeland Security

Public Administration and Social Service Professions - 44

- 4405 - Public Policy Analysis
- 4407 - Social Work

Construction Trades - 46

- 4602 - Carpenters
- 4603 - Electrical and Power Transmission Installers
- 4604 - Building/Construction Finishing, Management, and Inspection
- 4605 - Plumbing and Related Water Supply Services

Mechanic and Repair Technologies/Technicians - 47

- 4702 - Heating, Air Conditioning, Ventilation and Refrigeration Maintenance Technology/Technician (HAC, HACR, HVAC, HVACR)
- 4703 - Heavy/Industrial Equipment Maintenance Technologies
- 4706 - Vehicle Maintenance and Repair Technologies

Precision Production - 48

- 4805 - Precision Metal Working

Transportation and Materials Moving - 49

- 4902 - Ground Transportation

Health Professions and Related Programs - 51

- 5106 - Dental Support Services and Allied Professions
- 5107 - Health and Medical Administrative Services
- 5108 - Allied Health and Medical Assisting Services
- 5109 - Allied Health Diagnostic, Intervention, and Treatment Professions
- 5115 - Mental and Social Health Services and Allied Professions
- 5126 - Health Aides/Attendants/Orderlies
- 5138 - Registered Nursing, Nursing Administration, Nursing Research and Clinical Nursing
- 5139 - Practical Nursing, Vocational Nursing and Nursing Assistants

Business, Management, Marketing, and Related Support Services - 52

- 5201 - Business/Commerce, General
- 5202 - Business Administration, Management and Operations
- 5203 - Accounting and Related Services
- 5204 - Business Operations Support and Assistant Services
- 5208 - Finance and Financial Management Services
- 5210 - Human Resources Management and Services
- 5217 - Insurance
- 5218 - General Sales, Merchandising and Related Marketing Operations
- 5221 - Telecommunications Management

Tab 23 Attachment B
Fast Track Program Designation

Below is an anonymous list of comments received through the MDHE website comment portal for the Fast Track Workforce Incentive Grant.

Recommendations for Additional Program Areas

- Caretakers (elderly, specials needs, etc.) - this field has such a high turnover rate yet it is something that is direly and desperately needed.

- Computer Science (11.07) and Cybersecurity (11.10). Those two fields have huge market demands in the State of Missouri and the US. Including those two CIPs can definitely prepare the future workforce needs for Missouri.

- Behavioral Health Support--High need

- North Central College has developed a Behavioral Support Program to specifically train people to work in the field of behavioral healthcare as community support workers (CSWs). This is a program that is vitally needed, in 22 years as Pres./CEO of Family Guidance Center, a community mental health center, we have never been fully staffed with CSWs. Currently we have approximately 50 CSWs positions & 15 of them vacant. Historically, these positions require a bachelor's degree. The Missouri Department of Mental Health has developed a specific curriculum in cooperation with participating community colleges that allows students to complete a 2 year program that will qualify them to be hired as a CSW. The starting salary for a CSW at Family Guidance Center is $35,000 with opportunities for career advancement. The Behavioral Support Program graduates will be sought after by community mental health centers throughout the state. There is a national, state & local shortage of behavioral healthcare staff at all levels of care. This shortage restricts our ability to meet the growing demand for access to behavioral healthcare. It is common for mental health centers across the state to have waiting lists of people needing help & often the waiting list is due to staff shortage. The Behavioral Health Support Program will significantly help address the behavioral health workforce shortage in Missouri.

- Mental health---specifically the Behavioral Health Support associate degree program that several of the community colleges have specifically worked with the MO Department of Mental Health and the MO Coalition of Community Behavioral Healthcare Centers to develop. There is a growing demand for mental health and substance use services and there is a severe workforce shortage.

- Missouri State University supports Fast Track and is happy to help establish this important workforce development program. Administrators at MSU have reviewed the Classification of Instruction Programs list and believe it represents a very good start to an implementation plan for the Fast Track program. Two particular items worth noting: The list did not appear to include many of the academic programs in the STEM fields that receive a 1.5x weighting in the current performance funding model. This may be perfectly appropriate, but we anticipated seeing those programs represented on the list. Missouri State University has done a significant amount of work

in creating bachelor degree pathways for nontraditional students who have obtained a significant amount of college credit but not yet earned a degree. Many of these situations involve creating a Bachelor of General Studies (BGS) degree plan for the student. BGS programs would not likely fall under the CIP codes represented on the list. We would advocate that Fast Track be implemented in a way that allows non-traditional students to pursue a BGS degree, perhaps with an emphasis area in one of the subject matter areas represented on the CIP list.

- I believe that studying ENGLISH in college yields writing proficiency and critical thinking skills that are integral to many professions: Consulting / Management; Writing, Copywriting and Marketing; Editing; Law and Public Policy; Human Resources.

- Please include CIP codes 1109 and 1110 as these training programs are closely related to the already approved Computer professions within CIP codes of 1101 and 1102. Similarly, please include CIP code 4702, which is almost identical to HVAC technician CIP code 1505. Lastly, please include CIP code 1401, since similar to CIP codes 1408, 1418, and 1435, this program prepares students for careers in Engineering.

- The Missouri Coalition for Community Behavioral Healthcare and the Department of Mental Health entered into a partnership in 2014 to address the workforce shortage in the Community Support Specialist position that all Community Mental Health Centers have been experiencing for many years. Conservative numbers indicate that it costs the centers roughly $2600 every week that a position remains open. More importantly, for every open position is approximately 20 consumers that are not able to receive services that are very much needed. It is also estimated that it takes approximately 4 months to bring a new hire online to begin serving a full caseload. To address this issue the Coalition and DMH engaged Ozark Technical College and in collaboration with experts from provider agencies developed the Associates of Behavioral Health Support Associates Degree. The first cohort of 10 graduated the summer of 2018 and all 10 have been employed by Burrell Behavioral Health in Springfield. Reports from Burrell indicate that onboarding of these students has taken only 1 month, and they arrived more prepared to meet the needs of this position than their bachelor level counterparts. Due to this success the Coalition and provider agencies have outreached other community colleges throughout the state and have worked with them to bring this program to their campuses. Currently there are 4 additional institutions in different stages of readiness to bring these programs to their campuses.

- Manufacturing; Building Trades; Transportation; Technicians; and Mechanics. These are all fields that are local businesses are in high demand.

- Prosthetics. There are very few Prosthetics programs nationally, so having one locally would benefit us in many ways! We could be leaders in providing this program to our residents as well as bringing in students from other states.

- Computer Science (11.07) and Cybersecurity (11.10). Computer Science will provide a solid foundation of any computer related jobs. Cybersecurity talent gaps exist across the country. The White House has released a new Executive Order on America's Cybersecurity Workforce. The Executive Order will implement programs that will grow and strengthen our Nation's cybersecurity workforce to meet the challenges of the 21st century. So it should be included.

- Computer Science is not included in your list. Computer Science is related to computer information systems and is an extremely high demand occupation in Missouri.

- The following comments are submitted on behalf of Southeast Missouri State University. The list of Proposed Fast Track-Eligible Academic Programs include Civil, Materials and Industrial engineering; however, Electrical (CIP 14.1001), Mechanical (CIP 14.1901) and General Engineering (CIP 14.0101) have been omitted. According to the Missouri Occupational Projections for 2016-2016 Top Job Outlook Report all of these areas have an outlook rating of "B" and are projecting significant growth during the stated time period – Electrical (+8.7%), Mechanical (+10.7%), and General/All other Engineers (+8.7%) – all of these exceed the projections for Materials engineers and are near even with the Civil projections. Additionally, MERIC data does not include listings for Engineering Technology, however, these degrees often lead to engineering title jobs. As such, Engineering Technology programs and their related areas of study should be considered. The list includes the Mechanical-side of Engineering Technology, but not the Electrical – some areas of the state such as in southeast Missouri, Electrical is in much higher demand.

  Another consideration should be the inclusion of the Bachelor of Applied Science (CIP 15.1501). The point of this program (and some of those in Technology Management) are to train production supervisors, which has a B rating according to the Missouri Occupational Projections reports. While a high school diploma is often the minimum requirement, employer and industry feedback suggests they want something beyond high school. Given this is similar to agriculture, which has many programs included on the proposed eligibility list, consideration should be given for adding the BAS.

  Other programs that do not appear on the proposed list are those related to STEM Education. Nearly all of the STEM Education programs have an A or B+ rating per the Missouri Occupational Projections reports. However, the proposed list does include programs with CIP 1313, which would appear to capture many, if not all, STEM Education Programs. Given the lack of explicit reference, clarification is sought to verify that STEM Education programs are in fact eligible under the proposal.

  Clarification is also sought to determine whether Computer Programming (CIP 1102) which is included on the list of proposed programs includes cybersecurity. If not, consideration should be given to add CIP 11.1003, CIP 43.0303, and CIP 52.2101 and related codes, which are often associated with the high-demand and growth area of cybersecurity. Additional clarification is sought as to whether technology management programs (e.g. industrial production managers, network and computer systems administrators, construction managers, etc.) would be eligible under the proposed list. The proposed list does include programs with CIP 1506, which would appear to capture many, if not all, technology management-related programs. Given the lack of explicit reference, however, clarification is sought to verify that they are in fact eligible under the proposal.

  Consideration is also requested for inclusion of programs of study related to Applied Behavior Analysis (CIP 42.2814). The Caring for Missourians work groups included ABA as a critical need, and the Missouri Occupational Projections reports seem to indicate that all areas of counseling and psychology related fields are prime for growth by 2026.

Recommendations for Removal of Program Areas

- Yes, this category should be removed: Homeland Security, Law Enforcement, Firefighting and Related Protective Services. The reason to remove Homeland Security is that, according to Federal Reserve Bank of New York, Homeland Security majors are by far the most underemployed college graduates (https://www.cbsnews.com/news/english-majors-rejoice-employers-want-you-more-than-business-majors/).

- 41-9022 Real Estate Agent should be removed because so many part-time realtors have become available.