

Coordinating Board for Higher Education

December 13-14, 2017

**Truman State Office Building
301 W. High Street
Jefferson City, MO 65101**



COORDINATING BOARD FOR HIGHER EDUCATION

Doug Kennedy, Acting Chair, District 8

Mike Thomson, Secretary, District 6

Samuel Murphey, Member, District 1

Carl Bolm, Member, District 2

Joe Cornelison, Member, At-Large

Bobby Robertson, Member, District 7

Shawn Saale, Member, District 3

VACANT, District 4

VACANT, District 5



COORDINATING BOARD FOR HIGHER EDUCATION SCHEDULE OF EVENTS

December 13-14, 2017

Wednesday, December 13, 2017

- 1:00 – 2:45 p.m. **CBHE Budget and Financial Aid Committee Meeting**
Truman State Office Building
301 W. High Street, Room 490
Jefferson City, MO 65101
- 1:00 – 2:45 p.m. **CBHE Academic Affairs Committee Meeting**
Truman State Office Building
301 W. High Street, Room 492
Jefferson City, MO 65101
- 3:00 – 4:30 p.m. **CBHE Work Session**
Truman State Office Building
301 W. High Street, Room 490
Jefferson City, MO 65101
- 4:30 – 5:00 p.m. **CBHE Audit Committee Meeting**
Truman State Office Building
301 W. High Street, Room 490
Jefferson City, MO 65101

Thursday, December 14, 2017

- 9:00 a.m. – 12:00 p.m. **CBHE Meeting**
Truman State Office Building
301 W. High Street, Room 490
Jefferson City, MO 65101

It is the policy of the Coordinating Board for Higher Education that all public meetings and events are accessible to people with disabilities. Individuals needing special accommodations relating to a disability should contact Samantha Dickey at the Missouri Department of Higher Education, 205 Jefferson Street, P. O. Box 1469, Jefferson City, MO 65109, by emailing Samantha.Dickey@dhe.mo.gov, or by calling (573) 751-1876 at least three working days prior to the meeting.



COORDINATING BOARD FOR HIGHER EDUCATION PRESIDENTIAL ADVISORY COMMITTEE

Representatives by Statute

Public Four-Year Universities

Dr. Dwaun Warmack, President
Harris-Stowe State University

Mr. Michael Middleton, Interim President
Lincoln University

Dr. Alan Marble, President
Missouri Southern State University

Mr. Clif Smart, President
Missouri State University

Dr. Christopher Maples, Interim Chancellor
Missouri University of Science & Technology

Dr. Robert Vartabedian, President
Missouri Western State University

Dr. John Jasinski, President
Northwest Missouri State University

Dr. Carlos Vargas-Aburto, President
Southeast Missouri State University

Dr. Sue Thomas, President
Truman State University

Dr. Charles Ambrose, President
University of Central Missouri

Dr. Mun Choi, President
University of Missouri System

Dr. Alexander Cartwright, Chancellor
University of Missouri-Columbia

Dr. Barbara Bichelmeyer, Interim Chancellor
University of Missouri-Kansas City

Dr. Thomas George, Chancellor
University of Missouri-St. Louis

Public Two-Year Colleges

Dr. Jennifer Methvin, President
Crowder College

Dr. Jon Bauer, President
East Central College

Dr. Raymond Cumiskey, President
Jefferson College
PAC Chair

Dr. Kimberly Beatty, Chancellor
Metropolitan Community College

Dr. Steven Kurtz, President
Mineral Area College

Dr. Jeffrey Lashley, President
Moberly Area Community College

Dr. Lenny Klaver, President
North Central Missouri College

Dr. Hal Higdon, Chancellor
Ozarks Technical Community College

Dr. Barbara Kavalier, President
St. Charles Community College

Dr. Jeff Pittman, Chancellor
St. Louis Community College

Dr. Joanna Anderson, President
State Fair Community College

Dr. Wesley Payne, President
Three Rivers College

Public Two-Year Technical College

Dr. Shawn Strong, President
State Technical College of Missouri

Independent Four-Year Colleges and Universities

Dr. Michael Shonrock, President
Lindenwood University

Dr. Roger Drake, President
Central Methodist University

Dr. Greg Gunderson, President
Park University

Ms. Rose Windmiller, Associate Vice Chancellor
Washington University
PAC Vice-Chair

Four-Year Alternate:

Dr. Ron Slepitz, President
Avila University

Independent Two-Year Colleges

VACANT

Two-Year Alternate:

Dr. Jann Weitzel, President
Cottey College

Association Chairs

COPHE – Dr. Charles Ambrose, President, University of Central Missouri

MCCA – Dr. Jeff Pittman, Chancellor, St. Louis Community College

ICUM – Dr. Roger Drake, President, Central Methodist University



**COORDINATING BOARD FOR HIGHER EDUCATION
ACADEMIC AFFAIRS & WORKFORCE NEEDS COMMITTEE**

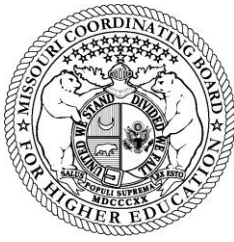
December 13, 2017 | 1:00 p.m. to 2:45 p.m.

Harry S Truman State Office Building, Room 492
301 W. High Street, Jefferson City, MO 65101

MEETING AGENDA

Doug Kennedy, Chair

	TAB	PRESENTERS	ACTION?
1. Committee Process and Desired Outcomes		Rusty Monhollon	
2. University of Central Missouri program proposal	J	Rusty Monhollon Chuck Ambrose Steve Graham	YES
3. Revision of Program Approval Rule	K	Rusty Monhollon	YES
4. Core Transfer Curriculum		Rusty Monhollon	
5. Statewide Review of Existing Academic Programs	M	Rusty Monhollon	
6. Five-Year Provisional Program Review	L	Rusty Monhollon	YES
7. Academic Program Actions	I	Rusty Monhollon	



**COORDINATING BOARD FOR HIGHER EDUCATION
BUDGET AND FINANCIAL AID COMMITTEE**

December 13, 2017 | 1:00 p.m. to 2:45 p.m.

Harry S Truman State Office Building, Room 490
301 W. High Street, Jefferson City, MO 65101

MEETING AGENDA

Mike Thomson, Chair

	TAB	PRESENTERS	ACTION?
1. Committee Process and Desired Outcomes		Leroy Wade	
2. Revision of the CBHE Performance Funding Model	D	Leroy Wade	YES
3. FY 2019 Institutions' Core Budget Appropriations	E	Leroy Wade	
4. FY 2019 Institutions' New Decision Items		Leroy Wade	
5. FY 2019 Capital Improvement Priorities	F	Leroy Wade	
6. Student Loan Program Background		Leanne Cardwell	



COORDINATING BOARD FOR HIGHER EDUCATION

December 13, 2017 | 3:00 p.m.

Harry S Truman State Office Building, Room 490
301 W. High Street, Jefferson City, MO 65101

Call-in options: (573) 526-5622 / (866) 630-9348

WORK SESSION AGENDA

1. Introduction of New MDHE Employees
2. Review CBHE Bylaws
3. Discuss New Committee Process
4. Follow-Up on Committee Discussion:
 - a. Review of CBHE Performance Funding Model
 - b. FY 2019 Public Institutions' Core Budget Appropriations
 - c. FY 2019 Capital Improvements Priorities
 - d. University of Central Missouri Program Proposal
5. Review slate of officers and discuss committee assignments
6. Review meeting logistics
7. Adjourn



**COORDINATING BOARD FOR HIGHER EDUCATION
AUDIT COMMITTEE**

December 13, 2017 | 4:30 p.m.

Harry S Truman State Office Building, Room 490

301 W. High Street, Jefferson City, MO 65101

Call-in options: (573) 526-5622 / 866-630-9348

MEETING AGENDA

Sam Murphey, Chair

	TAB	PRESENTERS	ACTION?
1. Audit report on the Missouri Student Loan Program 2017 financial statements		RubinBrown	



COORDINATING BOARD FOR HIGHER EDUCATION

December 14, 2017 | 9:00 a.m. to 12:00 p.m.

Harry S Truman State Office Building, Room 490

301 W High Street, Jefferson City, MO 65101

Call-in options: (573) 526-6012 / (866) 630-9353

MEETING AGENDA

COMMITTEE ITEM	TAB	PRESENTER
GENERAL BUSINESS		
<u>Action</u>		
1. Review Consent Agenda		
a. Minutes of the September 13, 2017, Work Session		
b. Minutes of the September 13, 2017, No MO Red Tape Hearing		
c. Minutes of the September 14, 2017, No MO Red Tape Hearing		
d. Minutes of the September 14, 2017, Meeting		
e. Minutes of the December 1, 2017, Nominating Committee Meeting		
f. Distribution of Community College Funds	A	Leroy Wade
<u>Information</u>		
1. Proposed 2019 Meeting Dates	B	Doug Kennedy
REPORT OF THE COMMISSIONER		
ZORA MULLIGAN		
<u>Information</u>		
1. Partners in Prevention Presentation		Joan Masters
2. The Missouri Budget: 2018 and Beyond		Joel Walters
PRESIDENTIAL ADVISORY COMMITTEE		
VACANT, CHAIR		
<u>Information</u>		
1. 2018 Legislative Preview	C	Leroy Wade
BUDGET AND FINANCIAL AID COMMITTEE		
MIKE THOMSON, CHAIR		
<u>Action</u>		
1. Revision of the CBHE Performance Funding Model	D	Leroy Wade
<u>Information</u>		
1. FY 2019 Public Institutions' Core Budget Appropriations	E	Leroy Wade
2. FY 2019 Capital Improvement Priorities	F	Leroy Wade
3. Missouri Student Loan Program Update	G	Leanne Cardwell
4. Journey to College	H	Leanne Cardwell
ACADEMIC AFFAIRS AND WORKFORCE NEEDS COMMITTEE		
DOUG KENNEDY, CHAIR		
<u>Action</u>		
1. Five-Year Provisional Program Review	I	Rusty Monhollon
2. University of Central Missouri Program Proposal	J	Rusty Monhollon
3. Revision of the Rule on Program Approval	K	Rusty Monhollon
<u>Information</u>		
1. Academic Program Actions	L	Rusty Monhollon
2. Statewide Review of Existing Academic Programs (Interim Report)	M	Rusty Monhollon
3. English Language Proficiency Report	N	Rusty Monhollon
4. Fall 2017 Enrollment: A Preliminary Report	O	Jeremy Kintzel
5. Proprietary School Certification Actions and Reviews	P	Leroy Wade
AUDIT COMMITTEE		
SAM MURPHEY, CHAIR		
<u>Information</u>		
1. Committee Report on the RubinBrown Audit		Sam Murphey

STRATEGIC PLANNING AND EXTERNAL AFFAIRS COMMITTEE

DALTON WRIGHT, CHAIR

GENERAL BUSINESS

Action

1. Nominating Committee
2. Adjourn Public Session of the Coordinating Board for Higher Education

Doug Kennedy

Information

1. Good and Welfare of the Board
 2. CBHE Members by Congressional District
 3. CBHE Statutory Functions
 4. CBHE Bylaws
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**COORDINATING BOARD FOR HIGHER EDUCATION
MINUTES OF WORK SESSION
September 13, 2017**

The Coordinating Board for Higher Education held a work session at 2:00 p.m. on Wednesday, September 13, 2017, in room 493/494 of the Truman State Office Building in Jefferson City, Missouri. Board members Carolyn Mahoney, Doug Kennedy, Mike Thomson, Carl Bolm, Bobby Robertson, and Shawn Saale were present. Board members Sam Murphey and Dalton Wright were absent.

Performance funding; budget recommendations for the department's operating budget, student financial assistance programs, institutions' budgets, and capital projects; new academic program approval process; common course library update; emerging issues; the governor's initiatives; committee role and appointments; and meeting logistics were discussed with no action taken.

The meeting adjourned at 4:43 p.m.



**COORDINATING BOARD FOR HIGHER EDUCATION
NO MO RED TAPE PUBLIC HEARING MINUTES
September 13, 2017**

The Coordinating Board for Higher Education held a public hearing to receive public input on the Department of Higher Education's rules and regulations in accordance with Executive Order 17-03 at 5:00 p.m. on Wednesday, September 13, 2017, in room 493/494 of the Truman State Office Building in Jefferson City, Missouri. Board members Carolyn Mahoney, Doug Kennedy, Mike Thomson, Carl Bolm, Bobby Robertson, and Shawn Saale were present. Board members Sam Murphey and Dalton Wright were absent.

The meeting adjourned at 6:00 p.m.



**COORDINATING BOARD FOR HIGHER EDUCATION
NO MO RED TAPE PUBLIC HEARING MINUTES
September 14, 2017**

The Coordinating Board for Higher Education held a public hearing to receive public input on the Department of Higher Education's rules and regulations in accordance with Executive Order 17-03 at 8:30 a.m. on Thursday, September 14, 2017, in room 139 of the James C. Kirkpatrick State Information Center in Jefferson City, Missouri. Board members Carolyn Mahoney, Doug Kennedy, Mike Thomson, Carl Bolm, Bobby Robertson, and Shawn Saale were present. Board members Sam Murphey and Dalton Wright were absent.

Paul Wagner, Executive Director of the Council for Public Higher Education, provided input on behalf of his organization.

The meeting adjourned at 8:59 a.m.



**COORDINATING BOARD FOR HIGHER EDUCATION
MINUTES OF PUBLIC HEARING
September 14, 2017**

The Coordinating Board for Higher Education held a public meeting at 9:00 a.m. on Thursday, September 14, 2017, in room 139 of the James C. Kirkpatrick State Information Center in Jefferson City, Missouri. Board members Carolyn Mahoney, Doug Kennedy, Mike Thomson, Carl Bolm, Bobby Robertson, and Shawn Saale were present. Board members Sam Murphey and Dalton Wright were absent.

General Business

1. Dr. Mahoney welcomed new board members and announced the appointment of Mr. Robertson to the Audit Committee; Mr. Bolm and Mr. Robertson to the Budget & Financial Aid Committee; Mr. Bolm and Mr. Saale to the Academic Affairs & Workforce Needs Committee; Mr. Saale to the Strategic Planning & External Affairs Committee; and Mr. Thomson, Mr. Kennedy, and Mr. Murphey to the Nominating Committee.
2. Mr. Kennedy moved to approve the consent agenda in its entirety. Mr. Thomson seconded. Motion carried unanimously.

Report of the Commissioner

1. Dan Haug, Budget Director of the State of Missouri, presented the budget forecast for FY 2018. No action was taken.
2. Zora Mulligan, Commissioner of Higher Education, gave a presentation on challenges and opportunities ahead in Missouri higher education. No action was taken.

Presidential Advisory Committee

1. Leroy Wade and Jeremy Kintzel gave a presentation on performance funding with no action taken.
2. Kerry Branch provided a budget overview with no action taken.

Budget and Financial Aid Committee

1. Mr. Thomson moved to approve the budget requests described for submission to the Governor and General Assembly. Mr. Kennedy seconded. Motion carried unanimously.
2. Mr. Thomson moved to approve the FY 2019 Department of Higher Education internal budget and student financial assistance appropriation requests as presented for submission to the Governor and General Assembly. Mr. Kennedy seconded. Motion carried unanimously.
3. Mr. Kennedy moved to approve the applications from Ozarks Technical Community College, Missouri State University, and Northwest Missouri State University to be eligible for consideration for matching funds from the Higher Education Capital Improvement Fund totaling \$4,521,808, for submission to the Governor and General Assembly. Mr. Thomson seconded. Motion carried unanimously.
4. Mr. Thomson moved to approve Carthage Technical Center to participate in the Access Missouri Financial Assistance Program until recertification of institutional eligibility occurs in September 2019. Mr. Kennedy seconded. Motion carried unanimously.
5. Mr. Kennedy moved to direct the Commissioner of Higher Education to take all actions necessary to ensure the Missouri Prospective Teacher Loan Program administrative rule is rescinded as soon as possible. Mr. Thomson seconded. Motion carried unanimously.

Academic Affairs & Workforce Needs Committee

1. Mr. Thomson moved to approve the actions listed in the five-year provisional review summary of recommendations table. Mr. Kennedy seconded. Motion carried unanimously.
2. Approval of the Manufacturing Engineering Technology option at Missouri Western State University was discussed with no action taken.

Adjournment

1. Mr. Kennedy moved to adjourn the meeting. Mr. Thomson seconded. Motion carried unanimously.



**COORDINATING BOARD FOR HIGHER EDUCATION
MINUTES OF NOMINATING COMMITTEE MEETING
December 1, 2017**

The Nominating Committee of the Coordinating Board for Higher Education held a phone meeting at 9:00 a.m. on Friday, December 1, 2017. Committee members Doug Kennedy, Mike Thomson, and Sam Murphey were present. No members were absent.

The committee agreed to nominate Doug Kennedy to Chair, Mike Thomson to Vice Chair, and Sam Murphey to Secretary.

With all members in agreement, the meeting adjourned at 9:15 a.m.

AGENDA ITEM SUMMARY

AGENDA ITEM

Distribution of Community College Funds
Coordinating Board for Higher Education
December 14, 2017

DESCRIPTION

State aid payments to community colleges will be made on a monthly basis. All FY 2018 state aid appropriations are subject to a three percent statutory reserve. The Truly Agreed To and Finally Passed (TAFP) core state aid appropriations reflect an equity adjustment to the distribution formula as proposed and agreed to by the community college presidents and chancellors. An additional component included in state aid for FY 2018 is an appropriation of \$10,044,016 for the purpose of equity adjustments. There was no appropriation for performance funding this fiscal year.

Expenditure restrictions made by the governor in June 2017 for FY 2018 currently include a reduction of \$3,821,231 from the general revenue core appropriation for community colleges.

The total TAFP state aid appropriation for community colleges in House Bill 3 for FY 2018 is \$147,391,746. The amount available to be distributed (TAFP appropriation less the three percent statutory reserve less expenditure restrictions) is \$139,263,400.

The total payment of state aid distributions to community colleges for September and October 2017 is summarized below.

State Aid (excluding Maintenance & Repair) – General Revenue	\$19,180,103
State Aid – Lottery portion	1,695,878
Equity Distribution	1,623,786
Maintenance and Repair	<u>464,338</u>
TOTAL	\$22,964,105

The total distribution of state higher education funds to community colleges from July 2017 through October 2017 is \$45,463,874.

STATUTORY REFERENCE

Section 163.191, RSMo – State aid to community colleges

RECOMMENDED ACTION

Assigned to Consent Calendar

ATTACHMENT(S)

None

AGENDA ITEM SUMMARY

AGENDA ITEM

Proposed 2019 Meeting Dates
Coordinating Board for Higher Education
December 14, 2017

DESCRIPTION

The Coordinating Board for Higher Education (CBHE) is statutorily required to meet at least four times annually. Historically, meetings occur in February, April, June, August, September, and December. In June, the CBHE agreed to merge the February and April meeting into a March meeting. The proposed meeting dates for 2019 are as follows:

- March 6-7
- June 5-6
- September 11-12
- December 11-12

STATUTORY REFERENCE

Section 173.005.3 – Department of Higher Education created, Coordinating Board duties

RECOMMENDED ACTION

This is an information item only.

ATTACHMENT(S)

None

AGENDA ITEM SUMMARY

AGENDA ITEM

2018 Legislative Preview
Coordinating Board for Higher Education
December 14, 2017

DESCRIPTION

The intent of this item is to provide background information about the upcoming legislative session.

Legislation

Higher education continues to be a topic of considerable interest to legislative leaders. We anticipate the introduction of legislation in several areas that could impact the department and the state's colleges and universities.

Higher Education System Review. In early 2016, legislative leadership requested the Missouri Department of Higher Education (MDHE) facilitate a meeting of stakeholders and begin the process of reviewing the current structure of public higher education in Missouri. They asked that the group discuss recommendations on the overall structure of public two- and four-year institutions, varying institutional missions, and the degree review and approval process. In February 2017, the Coordinating Board for Higher Education established as a legislative priority the implementation of the recommendations from the resulting task force. Legislation to provide the needed framework was introduced but, while there was limited opposition, did not successfully complete the legislative process. Because these legislative changes underpin the proposed revisions of the degree program approval administrative rule and also provide needed clarity regarding degree authorization, staff will encourage the introduction of that legislation by key legislative champions and anticipates working to secure its adoption.

Student Aid Programs. It is expected legislation will again be introduced to create a new category of financial aid-eligible institution designed to make Missouri residents enrolled at Western Governors University eligible for state aid. It is also likely legislation will be introduced to restructure Bright Flight as a loan forgiveness program requiring recipients to repay the funds received if they do not remain and work in Missouri after graduation. It is possible that changes to other state aid programs will be proposed, including. Revision of the current three-year high school enrollment requirement for the A+ program and efforts to reduce the student loan debt incurred by graduates.

With regard to the administration of the Federal Family Education Loan Program (FFELP), the MDHE will seek approval to modify the statute that authorizes the department to administratively garnish the wages of borrowers with defaulted loans. The current law restricts garnishment to ten percent of a borrower's earnings, while federal statutes governing FFELP permit garnishment of up to 15 percent of a borrower's earnings. MDHE recommends changing the statutory language to specify that the garnishment must be "in an amount not to exceed federal wage garnishment limitations."

Guns on Campus. Missouri law currently prohibits firearms on the campus of any higher education institution without the consent of the governing body of the higher education institution. However, possession of a firearm in a vehicle on the premises of any higher education institution is permitted so long as the firearm is not removed from the vehicle or brandished while the vehicle is on the premises.

Changes to these requirements continue to be of legislative interest, and we anticipate the 2018 session will likely see such proposals introduced. Nine states, including two that border Missouri (Kansas and Arkansas), either already allow carrying firearms on campus or will in the near future.

Other Possible Issues. During the 2017 legislative session, several bills were introduced to require the release of specific information about higher education costs and outcomes. These included publication of information about the total cost of degree programs, likely employment areas for graduates, and employment rates and earnings information for graduates. There are several projects underway at both the MDHE and within the Department of Economic Development to make this type of information

available. Regardless, it is likely there will continue to be legislative interest in the types of information published about postsecondary education and how it is made available to students and families.

On a related subject, the General Assembly has discussed for the past several sessions, but failed to enact, proposals to provide additional data security for sensitive electronic records, including educational records, and to limit the manner in which those records can be shared. Staff expects continued legislative interest in this subject. While the department understands the need to provide the greatest protection possible to individually identifiable data, that effort should not undermine the use of that data to conduct important research on such issues as student persistence, completion, and employment.

FY 2019 Higher Education Budget

While the state's economy continues to show signs of slow but steady improvement, there are some indicators that financial challenges remain for the state. While total year-to-date revenues through October are up by almost nine percent over last year, this obscures some underlying weakness in revenue growth. First, the current growth is being driven by sources other than income and sales tax revenues. Income and sales tax revenues, which make up approximately 95 percent of state General Revenue, are increasing much more modestly. In fact, sales tax revenues for October were down slightly over the previous year. In addition, recently enacted reductions in the state income tax rate will begin implementation during the last half of this fiscal year. Finally, congressional action to implement federal tax reform has the potential to dramatically impact state level revenues since Missouri's income tax process is closely tied to the federal process.

Clearly this picture is not positive and staff anticipates limited, if any, additional funding for higher education in FY 2019. In fact, given the factors cited above, additional reductions both for institutions and the department are possible. Specific recommendations for funding of institutional core operations are included behind Tab E of these board materials. Funding increases for student aid programs administered by the department are needed to maintain their value to students, but it is unclear if resources will be available to fund the increases recommended by the CBHE in September.

Capital Improvements. Over the past several years, higher education institutions have received substantial support for capital improvements projects. Because the current revenue picture likely does not support a continuation of that level of support, the capital improvements information found under Tab F does not include a request for FY 2019 funding for capital improvements. Hopefully, the state revenue picture will stabilize in the near future which would allow a return to developing and recommending funding for capital improvements.

STATUTORY REFERENCE

N/A

RECOMMENDED ACTION

This is an information item only.

ATTACHMENT(S)

None

AGENDA ITEM SUMMARY

AGENDA ITEM

Revision of the CBHE Performance Funding Model
Coordinating Board for Higher Education
December 14, 2017

DESCRIPTION

At the September Coordinating Board for Higher Education (CBHE) meeting, Missouri Department of Higher Education (MDHE) staff provided an update on the progress toward a revised performance funding model. The intent of this board item is to update the board regarding recent work to update the model and to gain CBHE approval of revisions to the model recommended by the task force.

Background

In May, Commissioner Mulligan appointed a task force to conduct a comprehensive review of the performance funding model and recommend changes to keep the model updated and to address issues raised by legislators and other policy makers. The Commissioner's charge to the task force and a roster of its members are attached to this agenda item. The task force met throughout the summer to work through issues with the current model and to update the structure in response to questions and concerns from constituents and to maintain currency with existing best practices for performance funding models.

After the September CBHE meeting, MDHE staff and the task force continued to work to resolve outstanding issues. The task force held its final in-person meeting on October 11 and reached tentative agreement on a set of nine recommendations for changes to the model. During November, MDHE staff finalized the content of a draft report of the task force and developed a preliminary technical manual describing the revised measures in sufficient detail to allow institutions to understand the mechanics of each measure. Those documents were distributed to the committee for a final review on November 22. The task force met by conference call on December 5 and gave final approval to the report and directed the report be delivered to the CBHE for consideration and action. A copy of the final report is attached to this agenda item.

Task Force Recommendations

While not comprehensive, the following narrative highlights several of the most crucial recommendations included in the task force final report.

Institutional Efficiency. In order to address the calls for greater accountability and to provide measures that demonstrate the continued focus on this issue by institutions, the task force determined the model should address the issue of institutional efficiency through a focus on administrative overhead. The task force recommendation is to incorporate a measure focused on the relationship between core operational expenditures and total expenditures. In addition, the four-year model will include a measure comparing changes in operational salary expenditures to changes in household income.

Affordability. Although not an area specifically identified in the charge to the task force, the importance of developing a measure to reflect changes in the ability of Missouri students and families to pay for higher education emerged during the task force deliberations. The task force recommendation is for the four-year model to incorporate a measure of affordability based on changes to adjusted tuition and fee revenue compared to changes in household income. For the community colleges, the related measure would compare in-district tuition and fees to district household income. Given the somewhat limited nature of this measure, the community colleges will continue to explore more comprehensive approaches to this issue. State Technical College of Missouri will include a measure similar to that used by the community colleges.

Peer Selection. The use of external benchmarking has been an integral part of the Missouri performance funding model. Concerns about the rigor and validity of this process were raised by the state auditor and legislative leaders. In response, particularly for the four-year institutions, the task force recommends a reduced reliance on this approach and revision of how peer groups are selected. The community college

sector will continue to use the National Community College Benchmarking Project for peer comparisons. The task force recommendation is that peer group selection for the public four-year institutions and State Technical College of Missouri be based on a centralized and uniform process administered by the MDHE.

Graduate Outcomes. The 2014 legislation that incorporated performance funding into state statutes also mandated the establishment of a measure relating to graduate outcomes. Over the past three years, considerable work has been accomplished to identify, structure, and pilot test how each sector would approach the development of this measure. Because the expected outcomes for graduates are substantially different by design, each sector has developed a somewhat different measure in this area. The task force confirmed the sector measures should be retained and focused its primary attention on how and when this measure should be fully incorporated into the model. The task force recommends implementation of this measure as part of the FY 2019 budget process. However, because of the timing of final data collection by the four-year institutions, the final data analysis will need to be delayed until January 2018. The second part of this discussion related to determining how successful performance would be determined. The task force recommendation is to require a minimum response rate of 60 percent in order to participate in this measure. Institutions that cannot confirm responses from at least 60 percent of the graduates for an academic year would not be eligible for funding through this measure. Success on the measure is established by year over year improvement or a rate in excess of 75 percent (sustained excellence). The thresholds and success options will be reevaluated once data for a sufficient number of years are available.

Data Verification. The validity of the data used to determine success on a measure is central to maintaining trust that the model is a reliable gauge of institutional performance. Concerns about this issue were raised as part of the 2017 audit of the performance funding model. In order to better ensure confidence in the supporting data, the task force recommends the MDHE establish a minimum four year institutional record retention policy. The task force also recommended the implementation of a periodic desk audit process to check data validity on a routine and ongoing basis.

Measure Selection. Missouri has a wide variety of public colleges and universities. In order to provide some flexibility to reflect that diversity, the existing model has included the ability of institutions to select measures, particularly in the four-year sector. However, this approach raised concerns from several stakeholders about the ability of institutions to avoid hard choices through the selection process. In response, the task force recommends discontinuing measure selection within the model. The only exception is the four-year student assessment measure. Within that measure, MDHE will work with each institution to select one of three measures, with a change of that selection only possible as part of the general review/revision process.

Weighting. Weighting for certain student and program characteristics is a method commonly used to encourage outcomes identified as high priorities. The current funding model includes a weighting factor for science, technology, engineering and mathematics (STEM) and healthcare-related fields. However, it is clear that if the state is to reach its goal for a better educated workforce, we must enroll and graduate more individuals from underserved populations. Consequently, in addition to retaining the current weighting factors, the task force recommends an additional weighting of 50 percent for Pell Grant-eligible students.

Implementation

One important aspect of the revised model concerns what extent the recommended changes will be implemented for the FY 2019 budget process. The changes in some areas are substantial and there has been limited opportunity to fully evaluate some of the newer measures. Members of the task force and MDHE staff discussed options for implementation including delaying the implementation of any changes until the FY 2020 budget cycle, a phased implementation incorporating a mix of new and existing measures, and full implementation for FY 2019.

Ultimately, the department is responsible for making a recommendation to the Governor and the General Assembly regarding the timing of implementation of the revised model. MDHE staff believes the best approach is to implement all of the changes for the FY 2019 budget cycle. Attempting to use a phased

approach, which would result in a hybrid of the old and new models, would likely cause considerable confusion and weaken the comprehensive approach the revised model attempts to achieve. Additionally, implementation prior to the 2018 legislative session will demonstrate the good faith effort made by the MDHE and public colleges and universities to be responsive to the concerns and questions expressed by the General Assembly and the Governor's office.

Conclusion

The open and collaborative process used to review and recommend changes to the current model incorporates several of the performance funding design tips highlighted in materials published by the [National Conference of State Legislatures](#) including:

- Allowing postsecondary institutions with different missions to be measured by different standards;
- Engaging all stakeholders in the design;
- Keeping the funding formula simple, with unambiguous metrics, so expectations are clear to everyone;
- Including a measure to reward colleges that graduate low-income, minority and adult students;
- Aligning the funding formula with state economic and workforce needs; and
- Preserving academic quality by incorporating student learning measurements.

No performance funding system is perfect, including the revised model proposed in this item. However, all models seek to strike an appropriate balance across measures, goals, and institutional sectors. The work of the task force to develop and bring forward these revisions has been characterized by deep and professional engagement, dedication to improving the model, and a desire to develop a performance funding model that reflects the unique circumstances of Missouri public higher education. The result is an improved model that reflects input from all stakeholders and focuses the model on the important institutional and state goals for improving higher education in Missouri.

STATUTORY REFERENCE

Section 163.191, RSMo – State Aid to Community Colleges
Section 173.1006, RSMo – Performance Measures to be Utilized
Section 173.1540, RSMo – Annual Budget Requests
Section 178.638, RSMo – State Technical College of Missouri

RECOMMENDED ACTION

Staff recommends the CBHE thank the members of the Performance Funding Task Force for their diligent work to develop the attached final report.

Staff also recommends the CBHE accept the final report of the task force and direct MDHE staff to implement the recommended changes for incorporation as part of the FY 2019 budget process.

ATTACHMENT(S)

Attachment A: Task Force Membership Roster
Attachment B: Charge to the Task Force
Attachment C: Final Report of the Performance Funding Task Force

2017 Performance Funding Task Force Membership Roster

Four-year Institutions

Kathy Mangels – Vice President, Finance and Administration, Southeast Missouri State University

Brad Hodson – Executive Vice President, Missouri Southern State University

Clif Smart – President, Missouri State University

Bob Vartabedian – President, Missouri Western State University

Cuba Plain – Assistant Vice President, Budget Planning and Development University of Missouri System

Paul Wagner – Executive Director, Council on Public Higher Education

Community Colleges

Hal Higdon – Chancellor, Ozarks Technical Community College

Jon Bauer – President, East Central College

Lenny Klaver – President, North Central Missouri College

Shelley Kneuvean – Vice Chancellor, Financial and Administrative Services, Metropolitan Community College

Kelli Burns – Director, Institutional Research and Planning, St. Louis Community College

Brian Milner – President and CEO, Missouri Community College Association

State Technical College

Rick Mihalevich – Director of Institutional Research and Planning

Legislative Staff

Trevor Foley – Senate Appropriations Staff

Kate Hangle – House Appropriations Staff

Kevin Gwaltney – Executive Director, Joint Committee on Education

Governor's Office

Drew Erdmann – Chief Operating Officer



MEMORANDUM

TO: Performance Funding Task Force Members

FROM: Zora Mulligan
Commissioner of Higher Education

RE: Draft Task Force Charge

DATE: May 30, 2017

Thank you for agreeing to serve on the Performance Funding Task Force. I appreciate the time you will dedicate to this important task. Deputy Commissioner Leroy Wade will review the following draft charge during the May 31 task force conference call. Your feedback is welcome. I will present a final charge to the Coordinating Board at their June 8, 2017, meeting.

As you are likely aware, questions have been raised about the credibility of our existing performance funding model. A [report](#) from the state auditor noted that institutions have considerable latitude in selecting and changing the peer institutions to which they are compared. Conversations with legislators suggest skepticism about the model's definitions of successful performance and about reliance on data about the performance of a narrow subset of students – those enrolled for the first time and on a full-time basis – and a belief that graduate outcomes is an essential component of the model. Finally, Governor Greitens has expressed his intention to make individual recommendations about institutions' core operating appropriations and to use data about each institution's performance to make those decisions.

Together, these factors establish a compelling rationale for the Department of Higher Education to convene this task force. I ask that you consider the following issues and make recommendations regarding each:

1. Reward collaboration.
2. Develop a credible and comprehensive measure or index of institutional efficiency.
3. Make the peer selection process credible, transparent, and robust.
4. Evaluate the existing approach to measuring graduate outcomes and determine whether changes are warranted.
5. Evaluate the existing practice of allowing institutions to choose among measures.

6. Consider alternatives or additions to first-time, full-time data to ensure that all students are counted and all institutions' performance is properly considered.
7. Identify elements in the model for which weighting can be applied to encourage alignment with the state's postsecondary education goals.
8. Review the threshold for "sustained excellence," which is the shorthand in the existing model for a level of performance that is sufficiently high that improvement is not required to "succeed" on the measure.
9. Establish a floor for "successful performance."
10. Develop protocol for ensuring that data can be verified.
11. Other issues identified by the task force.

I ask that you complete your work in time to present recommendations at the September 14, 2017, Coordinating Board meeting, and I thank you again for your service.

CBHE Performance Funding Task Force Final Report

(Adopted by the task force on December 5, 2017)

Allocating some state funds to higher education institutions based on performance has a long history in the state. Missouri was an early entrant into performance funding, developing the “Funding for Results” initiative in the early 1990s. From FY 1994 through FY 2001, more than \$66 million in state funding was appropriated through that initiative. With the economic downturn of the early 2000s, funding for the program was eliminated and the initiative was abandoned. The Coordinating Board for Higher Education adopted the basic structure of the current funding model in April of 2012, based on recommendations from a task force of representatives from public higher education institutions, legislative staff, the governor’s office and the Missouri Department of Higher Education. Funds were first allocated using the model in Fiscal Year 2014.

During the 2014 legislative session, performance funding was incorporated into state statute. The legislation also called for the establishment of an additional performance measure based on “student job placement in a field or position associated with the student’s degree level and pursuit of a graduate degree.” In order to implement the statutory requirements and to make necessary adjustments to the existing model, a second performance funding task force, with similar membership as the original, was impaneled in 2014. That task force recommended revisions that were adopted by the Coordinating Board in November and December of 2014. In 2015, in response to major changes in the delivery of developmental education by Missouri community colleges, new measures of student success were adopted for that sector.

As directed by Coordinating Board policy, the Missouri Department of Higher Education reviews the performance funding model every three years. While this regular review was already scheduled for 2017, additional issues raised by the state auditor, legislators and other policy makers prompted a more in-depth review of the model. In May, Commissioner of Higher Education Zora Mulligan appointed a task force to undertake this effort. The Commissioner charged the task force with reviewing the current model and recommending revisions that would improve and strengthen the model. The task force met during the summer and fall of 2017 to work through issues with the current model and to update the structure in response to questions and concerns from constituents and to maintain currency with existing best practices for performance funding models. This report, which is structured around the charge issued by the Commissioner, represents the final report of the task force.

1. Develop a credible and comprehensive measure or index of institutional efficiency.

As various higher education constituencies call for greater accountability, it has become imperative that public higher education identify measures that will help demonstrate the efficiency of public institutions and document improvement in this area. While efficiency can be defined differently for different sectors of public higher education, the task force determined it was important for all sectors to address this issue and the resulting measures should be as similar as possible in order to ensure an appropriate level of simplicity and transparency. After consideration of numerous options, including the development of an index that would coalesce multiple measures into a single item, the task force determined the basic issue with efficiency is best represented by a focus on administrative overhead.

RECOMMENDATION: The task force recommends the model incorporate efficiency measures focused on the relationship between expenditures on core operations, as defined by each sector, and total expenditures and/or a measure comparing changes in salary expenditures classified as operational in purpose to changes in household income as identified in the sector summary document included as an appendix to this report.

2. Affordability.

Over the past two decades, the issue of the affordability of higher education has become a central focus in discussions about the value of and the support for higher education. In Missouri, 2007 was a

watershed year in this regard, due to the passage of Senate Bill 389, which linked tuition increases at the public universities and State Technical College to the Consumer Price Index (CPI). Since that time, Missouri institutions have led the nation in holding down increases in tuition and general fees. However, the issue of affordability from the perspective of citizens has continued to play a central role in higher education policy discussions. In addition, a recent review by the Missouri state auditor raised concerns about the growth of fees not covered by the legislation and the impact of those fees on affordability.

Although not an item in the task force charge, the task force determined an affordability measure should be added to the performance funding model. As options for this measure were considered, a major factor in reaching a decision was minimizing the potential that such a measure would create unintended incentives and ensuring the result would provide the best possible reflection of efforts by institutions to limit cost increases for students. Additionally, addressing the issue of growth in fees not covered by the statutory limits enacted as part of SB 389. After reviewing numerous options for addressing this issue, the task force determined a measure linking tuition and fees, with those fees to include all fees charged of students, to household income was the best approach.

RECOMMENDATION: The task force recommends the four-year model incorporate a measure of affordability based on changes to adjusted tuition and fee revenue compared to changes in household income as identified in the sector summary document included as an appendix to this report. The task force also recommends the community college sector incorporate a measure comparing in-district tuition and fees to district household income, with the understanding to continue to explore other measures in this area. The task force recommends State Technical College model incorporate a measure similar to that used by the community college sector.

3. Make the peer selection process credible, transparent, and robust.

From its inception, the Missouri performance funding model has relied heavily on external benchmarking in order to provide comparison data and to establish thresholds for “sustained excellence.” This concept of “sustained excellence” acknowledges that institutions that have achieved a high level of performance on a particular measure have little room for improvement but should be encouraged to sustain this high level over time. Performance in the top third of the relevant comparator group has been the threshold for sustained excellence for some measures.

The community college sector has primarily relied on the National Community College Benchmarking Project to provide a set of comparison institutions for this purpose. For the four-year institutions and State Technical College, no such independently established comparison group exists. As a result, the MDHE established a process by which institutions identified a group of institutions to which they could be compared. Each institution delineated a group of comparator institutions whose performance on a particular measure established an external benchmark for sustained excellence. In nearly all cases, the peer groups used for performance funding were established for internal institutional purposes prior to the development of the performance funding model.

While there was no direct evidence the peer selection process was being manipulated, concerns about the possibility of such manipulation were raised in the review of the performance funding model by the state auditor and in discussions with legislative leaders. In response, the task force recommends a reduction in the number of measures that include benchmarking or “sustained excellence” thresholds. While most measures have previously utilized this mechanism, peer benchmarking has been substantially reduced. The task force also recommends the model discontinue the current approach, which uses institutionally-selected peer groups, and replace it with a centralized, MDHE administered process for peer selection.

RECOMMENDATION: The task force recommends the model continue to use the National Community College Benchmarking Project for community college peer comparisons. The task force further recommends peer group selection for the public four-year institutions and State Technical College be performed by the MDHE based on a centralized and uniform process.

4. Evaluate the existing approach to measuring graduate outcomes and determine whether changes are warranted.

The statute codifying the basic structure of the performance funding model includes a measure relating to graduate outcomes. The statute provides that institutions “shall adopt, in collaboration with the coordinating board for higher education, an additional institutional performance measure to measure student job placement in a field or position associated with the student's degree level and pursuit of a graduate degree.” The initial determination of how to implement this provision began during the 2014 review cycle and was discussed extensively by the related task force. The current process grew out of those discussions and has resulted in one year of pilot data being collected. By design, once sufficient data are available, this additional measure can be fully incorporated into the model.

Each sector has developed a different approach based on its unique circumstances. For the four-year sector, institutions have begun administering the “First Destination Survey,” which was developed by the National Association of Colleges and Employers. This nationally administered test is intended to capture information regarding whether new college graduates are employed within six months of graduation. For the community colleges, a combination of data sources are used. Data for students graduating from identified career and technical programs will be collected using the existing 180 day follow up process required by the federal Perkins program. Data for students not a part of that process will be collected from state wage and salary information and from the National Student Clearinghouse. Once integrated, these sources will include data for nearly all of the individuals completing degree and certificate programs at these institutions. State Technical College will continue to use the standard 180 day follow-up survey as their data source for this measure.

RECOMMENDATION: The task force recommends the model retain the existing data collection processes for each sector. It is further recommended that implementation of this measure begin with the FY 2019 budget process, with a delay of final data analysis until January 2018 in order to provide sufficient time for institutional reporting of full year data for the 2016-2017 academic year. It is further recommended that a response rate minimum be established at 60 percent in order to participate in this measure, with success to be determined by year over year improvement in the career outcome rate or a rate in excess of 75 percent (sustained excellence). Failure to meet or exceed the minimum response rate means the institution cannot satisfy this measure regardless of the level of performance. It is further recommended that successful placement be defined to exclude part-time employment and that thresholds be reevaluated once a sufficient number of data reporting years (at least four full years) have been accumulated.

5. Develop protocol for ensuring that data can be verified.

The 2017 audit of the performance funding model raised concerns about the accuracy of the data the MDHE relies upon to determine institutional satisfaction of the performance criteria. That report stated that “the MDHE should ensure the summarized PF [performance funding] data used for determining success on the measures are supported by detailed records. The MDHE should obtain detailed student-level supporting records from the institutions and use those records to verify the PF data. The MDHE should follow up on any significant differences between the PF data and totals of the details.”

In response, MDHE staff is developing a process by which institutions will maintain more complete records that support the reported data and a data retention policy for those records. In addition, a desk audit process will be implemented in order to provide an additional layer of verification for the information. The task force reviewed this proposal and is recommending its implementation.

RECOMMENDATION: The task force recommends the MDHE establish a minimum four year record retention policy that institutions must follow with regard to the performance funding model. The types of records required to be maintained under this policy will be defined by the MDHE. The task force also

recommends the MDHE implement a periodic desk audit process to be used to check data validity on a routine and ongoing basis.

6. Evaluate the existing practice of allowing institutions to choose among measures.

In a reflection of the varied missions of four-year institutions, the original funding model provided institutions with a menu of measures within broad goal categories. For example, within the category of degree attainment, institutions could choose either total degrees awarded (weighted for STEM and health awards) or six-year cohort graduation rates. Although this menu approach provided flexibility for institutions to customize their measures, it also resulted in questions and concerns from the state auditor and legislative leaders.

RECOMMENDATION: The task force recommends measures with menu options be discontinued with the exception of the four-year student assessment measure (assessment of general education, major field assessment, and professional/occupational licensure). The task force also recommends the MDHE work with each institution to select one of the three measures, typically based on the institution's historical choice, and the selection should only be changed as part of the general review/revision process.

7. Consider alternatives or additions to first-time, full-time data to ensure that all students are counted and all institutions' performance is properly considered.

As the demographic make-up and attendance patterns of students have changed, more and more students no longer fit the profile of a "traditional" college student. The number of students that attend part-time, that work during their studies, and that defer their education for various reasons has increased substantially. For many institutions, particularly those that are open enrollment and serve financially needy students, part-time attendance is the pattern for the majority of their students. However, since much of the performance data is based on IPEDS which is currently limited to data about first-time, full-time students, several institutions raised concerns about the validity of measuring and reporting performance when the underlying data excluded a large portion or, in some cases, the majority of the students attending the institution.

In response, the revised measures recommended by the task force largely move away from first-time, full-time data and instead base student measures on full-time equivalent (FTE) enrollment, which includes student participation regardless of whether the student is attending full-time or part-time.

RECOMMENDATION: The task force recommends the model replace, to the extent currently feasible, measures based solely on first-time, full-time data with measures that include other attendance statuses. The task force further recommends community colleges explore the possibility of including an FTE-based measure of completion but in the interim retain the existing completion rate measure (which includes transfers). State Technical College will retain a cohort-based completion rate measure.

8. Identify elements in the model for which weighting can be applied to encourage alignment with the state's postsecondary education goals.

Weighting for certain student and program characteristics is a method commonly used in performance funding models and other frameworks for incentivizing outcomes that have been identified as high priorities. For example, in order to recognize their growing importance in the workforce, the current performance funding model incorporates a special weighting factor for STEM, health and allied health completions into any existing measure where applicable and appropriate, including measures that involve actual degree completions and total degree production. Each graduate in any of these fields is given an additional 50 percent weight for the corresponding measure.

While this arrangement addresses identified workforce needs, the current model does not address the growing appreciation for the need to enroll and graduate more underserved populations. The CBHE attainment goal of 60 percent of the working population with a degree or high quality credential

can only be achieved if we are successful in this endeavor. Performance funding models in several other states incorporate various types of weighting approaches to address this issue, including financial need, ethnicity, and first-generation status. Because Pell Grant eligibility is widely accepted as a proxy for these characteristics, the task force identified students in this category for additional weighting. Although the task force also discussed the value of adding a weighting factor for teacher education graduates, it was determined this issue would need to be addressed in a future update of the model.

RECOMMENDATION: The task force recommends the model retain the current weighting pertaining to student completion for students enrolled in identified science, technology, engineering and mathematics (STEM) and healthcare related programs. The task force further recommends an additional weighting of 50 percent be included in student completion measures for individuals meeting the eligibility requirements for the Pell Grant program.

9. Reward collaboration.

Data reported to IPEDS have formed the basis for several measures used in the performance funding model. In this context, in order to maintain the connection to IPEDS data reporting information and definitions, graduation rates and the number of graduates were reported by the institution issuing the related diploma. For most circumstances, this is an appropriate reporting method. However, for programs involving two or more institutions delivering content or support services, this approach meant only one institution could report the graduates while the remaining partners were left with what appeared to be unsuccessful students.

As the Coordinating Board and the department continue to promote the establishment of collaborative programs among institutions, it has become apparent this policy is an impediment to further collaboration.

RECOMMENDATION: The task force recommends the Department of Higher Education develop criteria and procedures to permit all institutions in a CBHE/MDHE recognized cooperative/collaborative program to report graduates to the MDHE for purposes of performance funding measures. Those criteria should include that a written agreement to deliver the program has been signed by officials from all participating institutions and that at least 25 percent of the program content or support be offered or funded by any collaborating partner in order to participate.

10. Review the threshold for “sustained excellence,” which is the shorthand in the existing model for a level of performance that is sufficiently high that improvement is not required to “succeed” on the measure.

One of the three options for demonstrating successful performance in the current model is sustained excellence. This approach compares current performance to an established benchmark rather than improvement over a previous period. It is designed to acknowledge that institutions that have achieved a level of excellence on a particular measure may have little room for improvement but should be encouraged to sustain this high level over time. Performance in the top third of the relevant comparator group is the threshold for sustained excellence for most measures. In some instances, sustained excellence is based on a set percentage, such as a licensure pass rate of 90 percent or above, or on the institution’s admissions selectivity category. Because external benchmarks are not always available, this component is not used for some measures.

The task force discussed the appropriateness of these existing thresholds and whether they should be adjusted to ensure sustained excellence does not become a “safe zone” for a large number of institutions. Review by the MDHE staff indicated no institution was heavily relying on this component for performance success. Where certain measures had a large number of institutions meeting success through this mechanism, staff determined the issue was with the measure rather than this process. Based on this conclusion and the belief by the task force that current thresholds continue to represent excellent performance, support for the current approach was reaffirmed and the task force

does not recommend change in this area. It should also be noted that the importance of this component has been reduced substantially for the four-year institutions in that many of the measures currently using this approach have been recommended for elimination.

RECOMMENDATION: The task force recommends no change for existing measures. The recommended threshold for a new measure is included in the section of this report describing that measure.

11. Establish a floor for “successful performance.”

Not only does Missouri public higher education contain a diverse set of institutions but their performance on some measures covers a very wide range. For example, graduation rates at Missouri public institutions range from below 20 percent to in excess of 70 percent. Given this variation, concerns have been raised about rewarding performance when the base rate is perceived to be well below expected performance levels.

Discussion by the task force focused on the underlying intent of performance funding being to foster improved outcomes. While each institution serves a unique population and faces specific challenges in finding success with those populations, improved performance is the expected outcome regardless of the initial starting point. Additionally, excluding institutions based on comparisons to other institutions or an arbitrary threshold would undermine the model’s ability to serve as a broad-based incentive for statewide change. Consequently, the task force does not recommend the establishment of a performance floor for the performance funding model.

RECOMMENDATION: The task force recommends no change in this area.

APPENDIX

Each sector model includes six individual measures organized into three general goal areas.

FOUR-YEAR INSTITUTION MEASURES

- Student Success and Progress
 - Completions per FTE (weighted)
 - Percent of students meeting/exceeding assessment performance threshold
- Efficiency and Affordability
 - Operating salaries/FTE compared to MHI (change)
 - Core expenditures as percent of total expenditures
 - Net tuition and fee revenue from MO UG residents per MO UG FTE compared to statewide MHI (change)
- Graduate Outcomes
 - First Destination Survey – w/in 6 months of graduation

TWO-YEAR INSTITUTION MEASURES

- Student Success and Progress
 - Three year completion rate (including transfers)
 - Percent attempted credit hours successfully completed
 - Percent career and technical education graduates passing licensure/certification exam
- Efficiency and Affordability
 - Non-core expenditures (research, public service, and institutional support) compared to total expenditures
 - In-district tuition and fees as a percent of in-district MHI
- Graduate Outcomes
 - Percent total degree/certificate completers employed or continuing education

STATE TECHNICAL COLLEGE OF MISSOURI MEASURES

- Student Success and Progress
 - Three year completion rate
 - Completions per FTE
 - Percent of students successful on major field assessment
- Efficiency and Affordability
 - Core expenditures compared to total expenditures
 - Tuition and fees as percent of statewide MHI
- Graduate Outcomes
 - Percent of graduates employed at 180 days

AGENDA ITEM SUMMARY

AGENDA ITEM

FY 2019 Public Institutions' Core Budget Appropriations
Coordinating Board for Higher Education
December 14, 2017

DESCRIPTION

The intent of this agenda item is to provide information about the Coordinating Board for Higher Education's (CBHE) recommendations for institutions' operating core appropriations for the upcoming fiscal year.

Background

Missouri Department of Higher Education (MDHE) staff works closely with the Office of Administration's Division of Budget and Planning (B&P) in the development of their budget recommendations. B&P provides guidance to all agencies in their annual budget instructions. That guidance is based on strategic direction established by the governor's office, projected fiscal conditions, and other factors deemed relevant.

In addition to guidance from B&P, Governor Greitens' stated intent with regard to institutional core appropriations is to take a differential approach to decisions about public colleges' and universities' funding and to implement an increased emphasis throughout state government on funding programs based on performance measures.

FY 2019 Institutions' Core Operating Appropriations. Staff proposes that institutions' core appropriation begin at the level appropriated for FY 2018, after the withholdings announced in July 2017 were applied. However, staff also proposes the reappropriation of ten percent of that base using the new performance funding model described in Tab D of these agenda materials. As the attached table indicates, the total amount available to reappropriation is approximately \$90.8 million.

Each institution's actual reappropriation amount will be determined by the dollar amount subject to reappropriation for that institution and the number of performance measures the institution meets. For example, if an institution received a core appropriation for FY 2018 of \$10 million after withholdings, \$1 million would be subject to the reappropriation process. If that institution meets three of its six performance measures, it will receive a reappropriation of \$500,000 or three-sixths of the \$1 million. The institution's total core appropriation would then be \$9,500,000. Any funds not reappropriated, in this example \$500,000, would be appropriated to an institutional performance improvement fund administered by the MDHE. The purpose of the performance improvement fund would be to assist any institution that is experiencing ongoing issues with meeting its performance targets. Parameters for the distribution of these funds will be developed prior to the beginning of FY 2019.

Conclusion

In order to provide institutions with at least two weeks to review and comment on this approach, no recommendation is included for action at this time. Once comments have been received and reviewed, a conference call meeting will be scheduled later in December to provide the CBHE with the opportunity to take final action on this proposed plan.

STATUTORY REFERENCE

Section 163.191, RSMo – CBHE statutory responsibility to develop an appropriations request for community colleges
Sections 173.005.2(2), 173.030(3), and 173.040(5), RSMo – CBHE statutory responsibility to establish guidelines for appropriations requests and to recommend a budget for each state-supported university
Section 173.005.2(7), RSMo – CBHE statutory responsibility for gathering data from state-supported institutions

RECOMMENDED ACTION

No action is recommended at this time.

ATTACHMENT(S)

Attachment A: FY 2019 Institutional Core Appropriation Information

Higher Education Institutions' FY 2019 Core Budget

Institution	FY 2018 Funding	FY 2019		Fall 2017 Headcount	Fall 2017 FTE
	Core TAFP	FY 2019 Core	10% Reappropriation		
Community Colleges	\$ 147,391,746	\$ 147,391,746	\$ 14,739,175	85,587	54,221
State Technical College of Missouri	\$ 5,677,566	\$ 5,677,566	\$ 567,757	1,256	1,242
University of Central Missouri	\$ 55,784,610	\$ 55,784,610	\$ 5,578,461	12,333	9,468
Southeast Missouri State University	\$ 46,073,968	\$ 46,073,968	\$ 4,607,397	11,437	9,000
Missouri State University	\$ 85,620,837	\$ 85,620,837	\$ 8,562,084	25,614	19,741
Lincoln University	\$ 17,832,513	\$ 17,832,513	\$ 1,783,251	2,619	2,035
Lincoln University Land Grant Match	\$ 2,500,000	\$ 2,500,000	\$ 250,000	-	-
Truman State University	\$ 41,742,526	\$ 41,742,526	\$ 4,174,253	6,260	5,482
Northwest Missouri State University	\$ 30,989,542	\$ 30,989,542	\$ 3,098,954	6,337	5,316
Missouri Southern State University	\$ 23,644,235	\$ 23,644,235	\$ 2,364,424	6,170	4,859
Missouri Western State University	\$ 21,812,252	\$ 21,812,252	\$ 2,181,225	5,551	4,074
Harris-Stowe State University	\$ 9,713,078	\$ 9,713,078	\$ 971,308	1,442	1,254
University of Missouri	\$ 419,172,068	\$ 419,172,068	\$ 41,917,207	72,814	55,342
Subtotals	\$ 907,954,941	\$ 907,954,941	\$ 90,795,494	237,420	172,034

AGENDA ITEM SUMMARY

AGENDA ITEM

FY 2019 Capital Improvements Projects
Coordinating Board for Higher Education
December 14, 2017

DESCRIPTION

The intent of this agenda item is to provide the Coordinating Board for Higher Education (CBHE) with information about the most pressing of capital improvement needs at all public institutions in the state.

Background

During the past decade, the vast majority of capital improvement projects have been funded by specialized sources – i.e., the Lewis and Clark Discovery Initiative and the American Recovery and Reinvestment Act. However, these funds are no longer available and new funding sources have been scarce.

Beginning in the 2015 legislative session, however, interest in funding these much-needed projects was renewed, and funding has been appropriated for a range of projects between then and FY 2017. There were no new capital improvements projects approved for FY 2018. The only funding for capital projects in the current year is to continue previously approved projects.

Process

In the past, Missouri Department of Higher Education (MDHE) staff has assembled and ranked a listing of each institution's top capital improvement priority. The guidelines for reviewing those projects are approved by the CBHE, with the most recent guidelines approved at the CBHE meeting on June 8, 2017. Based on the comments received during the review process, the MDHE consolidated institutions' top requests into a single, unranked list. A copy of the list is attached to this agenda item.

While appropriations for capital projects have been primarily a result of the political process, MDHE staff believes a more rigorous procedure is needed to make the CBHE capital project recommendations more reliable and defensible. Although the previous process is workable in developing a comprehensive list of institutional projects, it is not adequate for this more selective process. In addition, given the virtual certainty there will not be a capital improvements bill for new projects in FY 2019, recommending a comprehensive list of unranked projects seemed inappropriate.

Conclusion

Based on this situation, the MDHE staff believes the priority focus for higher education appropriations should be funding institutional operating budgets. As a consequence, staff does not recommend that the CBHE make a formal recommendation regarding capital improvement projects for the FY 2019 budget cycle. MDHE staff will review the current capital improvement guidelines and process and bring recommendations for revision of those items to be CBHE for action prior to the beginning of the FY 2020 budget cycle.

STATUTORY REFERENCE

Section 163.191, RSMo – State aid to community colleges
Chapter 33.220, RSMo – Submission of annual appropriation requests
Section 173.020, RSMo – CBHE statutory responsibility to plan systematically for the state higher education system
Chapter 173.480, RSMo – Department of Higher Education, Higher Education Capital Fund

RECOMMENDED ACTION

This is an information item only.

ATTACHMENT(S)

Attachment A: FY 2019 Capital Improvement Top Institutional Priorities

**COORDINATING BOARD FOR HIGHER EDUCATION
FY 2019 Capital Improvement Top Priorities**

Site Location/Facility	Description	Total Project Cost	Local Match	FY 2019 Request
<u>CROWDER COLLEGE</u>				
New Building at Neosho Campus	New Construction	\$4,916,000		\$4,916,000
<u>EAST CENTRAL</u>				
Hansen Hall Caulking	Renovation	\$313,800		\$313,800
<u>JEFFERSON COLLEGE</u>				
Vet Tech Addition and Renovation	Addition and Renovation	\$2,118,479		\$2,118,479
<u>HARRIS-STOWE STATE UNIVERSITY</u>				
Construction of New STEM Building	New Construction	\$16,823,308		\$16,823,308
<u>LINCOLN UNIVERSITY</u>				
Campus-Wide Renovations	Renovation	\$43,263,680		\$43,263,680
<u>METROPOLITAN COMMUNITY COLLEGE</u>				
Student Success Centers	Addition and Renovation	\$9,100,130		\$9,100,130
<u>MINERAL AREA COLLEGE</u>				
Career for Center and Technical Education (Area Vocational School)	New Construction	\$26,743,600		\$26,743,600
<u>MISSOURI SOUTHERN STATE UNIVERSITY</u>				
Taylor Performing Arts Center Renovation	Renovation	\$20,570,731		\$20,570,731
<u>MISSOURI STATE UNIVERSITY</u>				
Ozarks Science Center & Garnett Library	New Construction & Renovation	\$50,818,778		\$50,818,778
<u>MISSOURI UNIVERSITY OF SCIENCE & TECHNOLOGY</u>				
Schrenk Hall, Phase III	Addition and Renovation	\$54,005,000		\$54,005,000
<u>MISSOURI WESTERN STATE UNIVERSITY</u>				
Potter Hall	Addition and Renovation	\$6,649,633		\$6,649,633
<u>MOBERLY AREA COMMUNITY COLLEGE</u>				
Allied Health Expansion	New Construction	\$4,296,135	\$1,223,564	\$3,072,571
<u>NORTH CENTRAL COLLEGE</u>				
Student Services Building	New Construction	\$4,438,200		\$4,438,200
<u>NORTHWEST MISSOURI STATE UNIVERSITY</u>				
Agricultural Sciences	New Construction	\$25,086,500		\$25,086,500
<u>OZARKS TECHNICAL COLLEGE</u>				
Advanced Manufacturing & Technology Center-Springfield	New Construction	\$22,000,000		\$22,000,000
<u>ST. CHARLES COMMUNITY COLLEGE</u>				
Workforce Development Center	New Construction	\$2,500,000		\$2,500,000
<u>ST. LOUIS COMMUNITY COLLEGE</u>				
Forest Park Campus	Renovation	\$847,032		\$847,032
<u>SOUTHEAST MISSOURI STATE UNIVERSITY</u>				
Art Building	Renovation	\$13,385,119		\$13,385,119
<u>STATE FAIR COMMUNITY COLLEGE</u>				
New Technology Center	New Construction	\$26,843,116		\$26,843,116
<u>STATE TECHNICAL COLLEGE OF MISSOURI</u>				
Utility Technician Program Facility	New Construction	\$5,896,965		\$5,896,965
<u>THREE RIVERS COMMUNITY COLLEGE</u>				
Crisp Technology Center	Addition and Renovation	\$5,824,200		\$5,824,200
<u>TRUMAN STATE UNIVERSITY</u>				
Pershing, Phase II	Renovation	\$17,494,085	\$2,574,085	\$14,920,000
<u>UNIVERSITY OF CENTRAL MISSOURI</u>				
W.C. Morris Science Building	Renovation	\$20,146,072		\$20,146,072

**COORDINATING BOARD FOR HIGHER EDUCATION
FY 2019 Capital Improvement Top Priorities**

<u>UNIVERSITY OF MISSOURI – COLUMBIA</u> Research & Education Strategic Redevelopment, Phase I	Renovation and New Construction	\$150,000,000	\$100,000,000	\$250,000,000
<u>UNIVERSITY OF MISSOURI – KANSAS CITY</u> Spencer Chemistry and Biological Sciences Buildings, Phase II	Renovation	\$33,057,000	\$4,600,000	\$37,657,000
<u>UNIVERSITY OF MISSOURI – ST. LOUIS</u> Space Consolidation & Infrastructure	Renovation	\$16,000,000		\$16,000,000
TOTALS		\$578,221,563	\$108,397,649	\$679,023,914

AGENDA ITEM SUMMARY

AGENDA ITEM

Missouri Student Loan Program Update
Coordinating Board for Higher Education
December 14, 2017

DESCRIPTION

The purpose of this agenda item is to summarize recent events relating to the Missouri Department of Higher Education (MDHE) guaranty agency.

Information Security

The United States Department of Education (USDE) recently required all Federal Family Education Loan Program guaranty agencies to submit a Security Self-Assessment form describing the guaranty agency's system security controls protecting student loan data and the infrastructure controls supporting regulatory compliance.

On November 5, 2017, USDE provided MDHE with an analysis of MDHE security control effectiveness and strength of evidence. The analysis assigned MDHE an overall rating of good, which is was the highest rating available. The report also recommended approximately 14 steps MDHE should take in order to improve particular security controls. MDHE information security staff has begun working with the Missouri Office of Administration and Great Lakes Higher Education Guaranty Corporation, the MDHE loan servicer, to take the recommended actions.

Cohort Default Rate

Missouri's cohort default rate dropped from 11.5 percent for student loan borrowers who began repayment in 2013 to 10.9 percent for those who entered repayment in 2014. Missouri's rate is lower than the national rate of 11.5 percent and lower than the majority of border states, with only Nebraska and Illinois reporting lower rates.

MDHE focuses on Missouri's default rate through continuing efforts such as the MDHE Default Prevention Grant Program, Missouri Default Prevention Day, and financial literacy education programs. The Default Prevention Grant Program provides funding and support to Missouri higher education institutions. The grants are used for financial literacy programs and are awarded through a competitive grant process. Missouri Default Prevention Day is an annual event during which MDHE invites Missouri's financial aid professionals to learn about default prevention from industry experts. MDHE also promotes financial literacy through publications and school presentations for students and their families.

STATUTORY REFERENCE

34 CFR 382.410 – Fiscal, administrative, and enforcement requirements
34 CFR 682.401(e) – Guaranty agency financial literacy and debt management requirements

RECOMMENDED ACTION

This is an information item only.

ATTACHMENT(S)

None

AGENDA ITEM SUMMARY

AGENDA ITEM

Journey to College
Coordinating Board for Higher Education
December 14, 2017

DESCRIPTION

The purpose of this agenda item is to present information on 2017-2018 Missouri Department of Higher Education (MDHE) Journey to College outreach programs.

Background

Increasing postsecondary attainment is the first goal included in the Coordinating Board for Higher Education coordinated plan, *Preparing Missourians to Succeed: A Blueprint for Higher Education*. In order to move toward that goal, the plan calls for MDHE to “increase efforts to assist students in completing college admissions and financial aid applications.” Accordingly, MDHE encourages high schools to participate in Journey to College, which is an initiative that includes several MDHE access and success activities. The three major Journey to College programs are Apply Missouri, FAFSA Frenzy, and Decision Day.

Apply Missouri

During September and October, 133 high schools across Missouri hosted Apply Missouri programs. The programs assist seniors with the college application process during the school day. Participating sites are still submitting data, but with 65 percent of sites reporting, approximately 83 percent of participating seniors reported submitting at least admissions application during the program.

FAFSA Frenzy

FAFSA Frenzy events help students and their families complete the Free Application for Federal Student Aid (FAFSA). High schools, postsecondary institutions, and other community organizations can host FAFSA Frenzy events. The current year’s events began occurring in October and will continue through January. More than 180 sites are hosting FAFSA Frenzy events during the 2017-2018 academic year. To date, with about 63 percent of sites reporting, FAFSA Frenzy events have served approximately 2,180 students.

Decision Day

Decision Day celebrates seniors’ post-high school plans for college or military service. The purpose of the plan is to encourage seniors to finalize future plans and to build a college-going culture among younger students. The more than 130 high schools that have committed to participating in Decision Day will host events in April or May of 2018.

Around 100 high schools have committed to participate in all three programs, which is an 80 percent increase over the 2016-2017 program year.

STATUTORY REFERENCE

34 CFR 682.401(d) – College access initiative

RECOMMENDED ACTION

This is an information item only.

ATTACHMENT(S)

None

AGENDA ITEM SUMMARY

AGENDA ITEM

Five-Year Provisional Program Review
Coordinating Board for Higher Education
December 14, 2017

DESCRIPTION

This board item recommends board action on provisionally-approved academic programs. The Coordinating Board for Higher Education provisionally approved the programs listed in the table below in September 2012. Missouri Department of Higher Education staff recommends the following actions:

Institution	Program Name and Delivery Site	Program CIP Code	Recommended Action
East Central College	AAS, Chemical Technology	410301	Deleted by IHE
East Central College	AAS, C2 Medical Assistant	510801	Full approval
Jefferson College	AAS, Radiologic Technology	510911	Full approval
Missouri State University	BS, Health Sciences	510000	Full approval
Northwest Missouri State University	BA, BS Communication	090101	Full approval
University of Central Missouri	BSBA, Economics	450601	Full approval
University of Missouri-Kansas City	BM, Jazz Studies	500910	Full approval
University of Missouri-Kansas City	MMS, Physician Assistant	510912	Full approval

STATUTORY REFERENCE

Section 173.005(1), RSMo CBHE statutory authority to approve proposed new degree programs to be offered by the state institutions of higher education . . .

Section 173.005(8), RSMo CBHE statutory authority to collect the necessary information and develop comparable data for all institutions of higher education in the state . . .

Section 173.030(1), RSMo CBHE statutory authority to request the governing boards of all state-supported institutions of higher education and of major private institutions to submit . . . proposed policy changes . . . and make pertinent recommendations relating thereto . . .

Section 173.030(2), RSMo CBHE statutory authority to recommend to the governing board of any institution of higher education in the state the development, consolidation or elimination of programs, degree offerings, physical facilities or policy changes where that action is deemed . . . in the best interests of the institutions . . .

RECOMMENDED ACTION

Staff recommends that the Coordinating Board for Higher Education approve the actions listed in the Five Year Provisional Review summary of recommendations table contained in this board item.

ATTACHMENT(S)

None

AGENDA ITEM SUMMARY

AGENDA ITEM

University of Central Missouri Program Proposal
Coordinating Board for Higher Education
December 14, 2017

DESCRIPTION

The University of Central Missouri (UCM) has submitted a proposal to offer a baccalaureate degree in software engineering. This agenda item is submitted to the Coordinating Board for Higher Education (CBHE) for its consideration and possible action.

Background

Section 173.005 of Missouri Revised Statutes assigns the Coordinating Board for Higher Education responsibility for approval of new degree programs offered by the state institutions of higher education. The Board exercises this authority through the Missouri Department of Higher Education (MDHE) and the rules promulgated in 6 CSR 10-4.010, currently being revised (see Tab K)

MDHE staff reviewed a similar proposal from UCM in November 2016. Staff determined, based on the information submitted, the program would unnecessarily duplicate existing programs. Additionally, other institutions raised concerns about program delivery within the Kansas City metropolitan area, particularly as discussions were being held to revise the academic program approval process as part of the Higher Education System Review. UCM submitted to the MDHE in June a revised proposal, one that provided additional information regarding program demand and addressed concerns raised about the initial proposal.

MDHE staff concluded it did not have the requisite expertise and enough information to recommend approval of the proposal, and recommended an external review of the proposal to determine both the actual need for the program and the capacity of existing programs to meet that demand. MDHE and UCM both agreed to the use of external consultants, and UCM agreed to pay for the services of the consultants. These consultants' reports will be considered as part of UCM's proposal to offer the program.

Parameters for External Consultants

MDHE staff provided UCM with guidelines regarding the external consultants' scope of work. The consultants were asked to address the following questions:

- a. Is there sufficient student demand for the proposed program? Do institutions with existing programs have the capacity to satisfy student demand?
- b. Is there a demonstrated occupational or work force need that existing programs cannot satisfy?
- c. If approved, would the proposed program serve students that existing programs have not or cannot serve? If yes, is access to existing programs limited by geography? Costs? Preparation? Other factors?

UCM, in consultation with MDHE staff, contracted with the following consultants:

- Dr. Thomas B. Hilburn, Professor Emeritus in the Department of Electrical, Computer, Software, and System Engineering College of Engineering at Embry-Riddle Aeronautical University, contracted to assess the market demand for the program in the region, as well as the capacity of existing programs to meet that need. Dr. Hilburn's report is included as an attachment; his curriculum vitae is on file with the MDHE.
- The Educational Advisory Board Company (EAB) is conducting a market demand analysis of software engineering need in the region and state. EAB reports typically rely on market data from Burning Glass Labor/Insight tool, JobsEQ tools, U.S. Census Bureau, and Bureau of Labor

Statistics. EAB will submit its report to UCM and MDHE by December 8, 2017. Upon receipt, MDHE will share the report with the larger academic community.

Representatives of UCM will appear before the CBHE Academic Affairs & Workforce Needs Committee on December 13 to discuss the proposed program. Representatives of other institutions may also provide information at the meeting.

Discussion of Pertinent Issues

This proposal raised several complicated issues for MDHE staff to consider during its review.

1. **Mission.** UCM argues an engineering program with CIP (Classification of Instructional Program) number of 14 is an “applied science,” which aligns with its statewide mission in the “applied sciences and technology.” MDHE staff considers engineering programs generally to be outside of any institutions’ mission, except for the University of Missouri. This does not preclude UCM from submitting a proposal for an engineering program. The revised academic program approval process directly addresses proposals for new engineering programs as outside of the mission of all institutions but the University of Missouri.

UCM specifically asked Dr. Hilburn to address this question, and he generally supports UCM’s view. While mission remains an important element of program review, in this instance, it is not the sole or even primary concern.

2. **Duplication of existing programs.** The University of Missouri-Columbia (UMC) and the University of Missouri-Kansas City (UMKC) offer programs that are similar to the one proposed by UCM. Dr. Hilburn notes that no other Missouri university offers a bachelor’s degree in software engineering. He makes a compelling case that UCM’s program, particularly its curriculum, is distinct from those offered by UMC and UMKC. Curricular distinctiveness alone, however, is not enough to demonstrate unnecessary duplication. Another factor to consider is UMKC and UMC have different price points than does UCM, which is not an insignificant consideration.

The mere existence of a program in a given area is insufficient to justify denying the approval of a similar, perhaps even duplicative, program. The state’s investment in certain programs requires that thoughtful consideration be given to the impact a new and similar program would have on existing programs. However, if current programs do not have the capacity or the intent to satisfy the societal and occupational need for the degree, then a similar program would not unnecessarily duplicate the existing programs. Dr. Hilburn’s report does not adequately address the capacity of current programs to meet demand.

3. **Demand.** UCM believes there is strong demand—among students and employers—for software engineers, a belief that is supported by Dr. Hilburn. Unemployment rates for applications, systems, and software developers, in Missouri and in Kansas City, are very low. Location quotients—which measure local employment needs relative to the rest of the nation—are higher in Kansas City than in the rest of Missouri, which is a reasonable measure of actual need (see Table 3 in Hilburn Report). Projected growth rates are modest.

What is missing from Hilburn’s report is an assessment of what capacity existing programs have to meet employer and student demand. Complicating the picture is the fact that many job postings for “software engineer” do not require a degree in software engineering. A cursory search for “software engineer” on leading job websites (Indeed.com and Monster.com, for example) returned more than 1,000 results. A closer examination, however, reveals that most of the posts for software engineers require a bachelor’s degree in a computer science field or several years of equivalent work experience. In other words, a degree in software engineering does not appear to be—at the present time, at least—a prerequisite to finding work as a software engineer.

MDHE staff believe the market demand analysis being conducted by EAB will provide a much clearer picture of the actual demand in the Kansas City region for workers with degrees in software engineering. EAB's report is due to UCM and MDHE on December 8, 2017.

STATUTORY REFERENCE

Sections 173.005.2(1), 173.005.2(8), 173.005.11, 173.030(1), and 173.030(2), RSMo – Statutory requirements regarding CBHE approval of new degree programs

RECOMMENDED ACTION

MDHE staff will refrain from making a recommendation on the proposal submitted on behalf of the UCM to offer a baccalaureate degree in software engineering until it has received and reviewed the market demand analysis being prepared by EAB.

ATTACHMENT(S)

Attachment A: UCM program proposal

Attachment B: Report on University of Central Missouri Software Engineering Program (Hilburn)



NEW PROGRAM PROPOSAL FORM

Sponsoring Institution(s): University of Central Missouri

Program Title: Software Engineering

Degree/Certificate: Bachelor of Science

Options: None

Delivery Site(s): Main Campus in Warrensburg, Missouri and Central Summit Campus in Lee's Summit, Missouri


CIP Classification: 14.0903

Implementation Date: Fall 2018

Cooperative Partners: None

AUTHORIZATION:

Dr. Kim Andrews, Vice Provost for Academic Programs and Services



06/16/2016

Name/Title of Institutional Officer

Signature

Date

Dr. Xiaodong Yue, yue@ucmo.edu

660-543-4930

Person to Contact for More Information

Telephone

Rationale for the B.S. in Software Engineering Program

Over the past thirty years, the practices of everyday life have become increasingly infused with and mediated by software. The capacities and growing pervasiveness of software make it the lifeblood of today's emerging information society. Software is shaping our world from all aspects of our lives, from the launch of billion-dollar spacecraft to more mundane work such as measuring and displaying time, controlling traffic lights, and monitoring the washing of clothes. Indeed, whatever the task-domestic chores, paid work, shopping, traveling, communicating, governing, playing - software increasingly makes a difference as to how social and economic life takes place, and enables members of society to work more efficiently. To maintain a competitive edge, industry and commerce continue to make creative engineering advances as well as produce high quality products. More than ever, there is a demand for a highly prepared work force with Software Engineering training that is enabled to deliver quality software and innovation. The proposed B.S. in Software Engineering program will prepare our students in a much-needed area and is well aligned with the University of Central Missouri's mission of preparing students with the knowledge, skills and confidence to succeed and lead in the region, state, nation and world.



STUDENT ENROLLMENT PROJECTIONS

Year	1	2	3	4	5
Full Time	15	25	35	45	55
Part Time	5	5	5	5	5
Total	20	30	40	50	60

Please provide a rationale regarding how student enrollment projections were calculated:

Due to the high market demand in the region and an insufficient number of software engineers available to fill the open positions, the program is expected to grow and achieve the above projection. In addition, as shown in Table 6, the average enrollment of several ABET accredited Software Engineering programs from master level institutions is more than 100, we expect a similar enrollment for the proposed program. ABET is an internationally recognized accrediting body for colleges and universities programs in the disciplines of applied science, computing, engineering, and engineering technology.

Provide a rationale for proposing this program, including evidence of market demand and societal need supported by research:

Background

In the decades since the 1960s, Association of Computing Machinery (ACM), along with leading professional and scientific computing societies, has endeavored to tailor curriculum recommendations to the rapidly changing landscape of computer technology. Computing Curricula 2005: The Overview Report, published by ACM in 2005, provides undergraduate curriculum guidelines for five defined sub-disciplines of computing [1]. Table 1 lists the definitions for Computer Science, Computer Engineering and Software Engineering. While computer engineering emphasizes on hardware and computer science (like other sciences) focuses on creating new knowledge, software engineering (like other engineering disciplines) focuses on rigorous methods for designing and building things that reliably do what they're supposed to do. In addition to its computer science foundations, software engineering also involves human processes that, by their nature, are harder to formalize than are the logical abstractions of computer science. Experience with software engineering courses within computer science curricula showed many that such courses can teach students about the field of software engineering but usually do not succeed at teaching them how to be software engineers [1].



Table 1 Definition for Computer Science, Computer Engineering and Software Engineering - Computing Curricula 2005: The Overview Report [1]

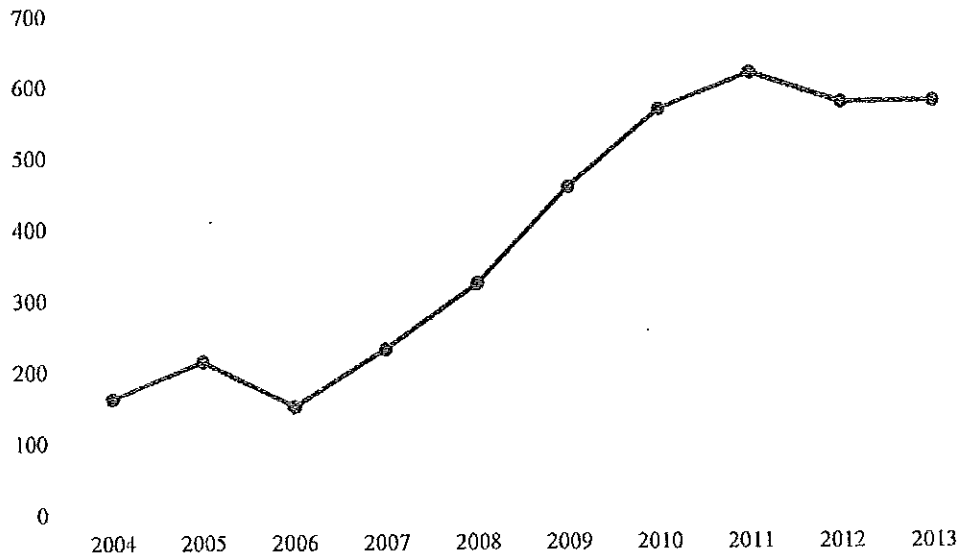
Computer Science	Software Engineering
Computer Science spans a wide range, from its theoretical and algorithmic foundations to cutting-edge developments in robotics, computer vision, intelligent systems, bioinformatics, and other exciting areas.	Software Engineering is the discipline of developing and maintaining software systems that behave reliably and efficiently, are affordable to develop and maintain, and satisfy all the requirements that customers have defined for them.
Computer Engineering	
Computer engineering is concerned with the design and construction of computers and computer-based systems. It involves the study of hardware, software, communications, and the interaction among them. Its curriculum focuses on the theories, principles, and practices of traditional electrical engineering and mathematics and applies them to the problems of designing computers and computer-based devices.	

The history of Software Engineering education is a story of academics struggling to fulfill industry needs with little support from computer science curriculum designers [2]. Most practicing software engineers do not have a degree in Software Engineering, but rather in Computer Science and some other related discipline. In the United States, degree programs in software engineering, designed to provide a more thorough foundation than can be provided within computer science curricula, began to emerge during the 1990s. The Department of Education published data regarding the number of students receiving a bachelor's degree in Software Engineering in the Digest of Education Statistics [3]. The report shows an upward trend (see Figure 1 below).

Figure 1 The Number of Students Receiving a Bachelor's Degree in Computer Software Engineering (source: Digest of Education Statistics).



B.S. in Software Engineering Graduates



While these statistics indicate solid growth in the number of bachelor's degrees granted, the number of Software Engineering graduates is still extremely small when compared with the number of software engineers needed in the workforce. Details regarding market demand are described in the next section.

In 2004, the Institute of Electrical and Electronics Engineers (IEEE) Computer Society published The Guide to the Software Engineering Body of Knowledge (SWEBOK) which describes generally accepted knowledge about software engineering, and continuously revised and updated to the most recent version SWEBOK 3.0 in 2014 to accompany the change of practices, body of knowledge, etc. [4]. In order to create curriculum recommendations in several computing disciplines including Software Engineering, the ACM Education Board and the IEEE Computer Society also prepared the undergraduate curriculum guidance on software engineering (SE2004 & SE2014) [5] for institutions of higher education.

Due to the high demands for software engineers, the School of Computer Science and Mathematics at the University of Central Missouri (UCM) is requesting approval for a new program, a B.S. in Software Engineering degree. The proposed addition is important to the UCM School of Computer Science and Mathematics' continuing efforts to enhance its contributions to prepare the 21st century technical workforce in a STEM field of national interest.

Market Demand

This program will be the first of its kind in Missouri to cater to the growing market demand of skilled software engineering professionals. A quick job search on June 12, 2017 on *indeed.com* for software engineer returned 2718 open positions in Missouri, just for the month of June alone, many of which are in the St. Louis and Kansas City area [6].

The job outlook for software engineers is very positive. Growth will increase much faster than average compared to other U.S. occupations. The demand is expected to increase due to a large

need for computer software used in industries like mobile technology and healthcare computer systems [7].

According to The Bureau of Labor Statistics [8], the overall employment of software engineers is projected to grow by 17 percent from 2014 to 2024. In particular, employment of applications software developers is projected to grow 19 percent, and employment of systems software developers is projected to grow 13 percent.

The following are the employment projections for different software developers [8]:

- Applications Software Developers: 2014 employment – 718,400; projected 2024 employment – 853,700; 19% change from 2014-2024
- Systems Software Developers: 2014 employment – 395,600; projected 2024 employment – 447,000; 13% change from 2014-2024

Figure 2 Total U.S. STEM Jobs Through 2024, U.S. Bureau of Labor Statistics [9]

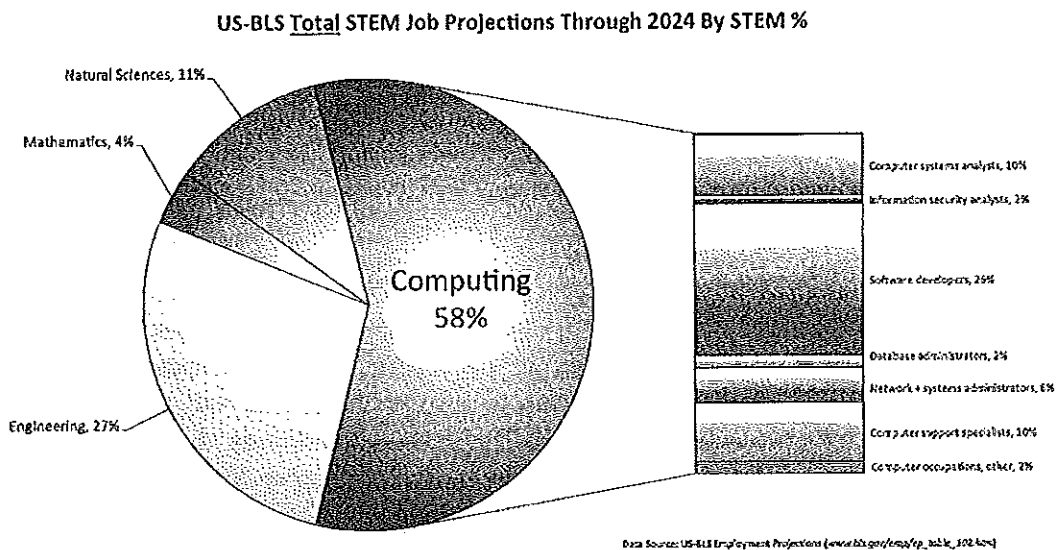
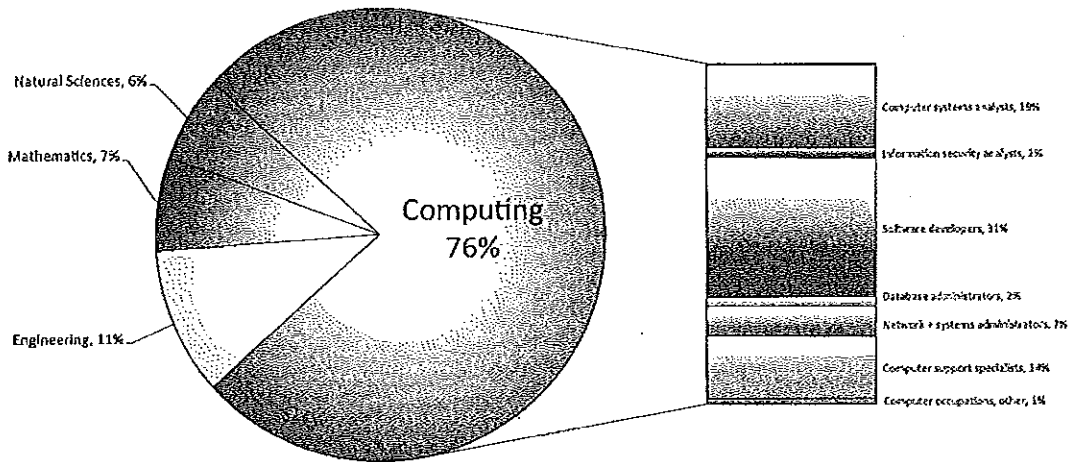


Figure 2 shows the distribution of total U.S. STEM jobs through 2024. 58% of total STEM jobs in U.S. are computing related. Among all computing jobs, 26% of the jobs are in software development. In other words, there will be nearly as many openings in software development as there will be in all the branches of traditional engineering combined [9]. Figure 3 shows the distribution of U.S. new STEM jobs through 2024. There is an expectation that 76% of new STEM jobs in U.S. will be computing related. As can be seen in the chart, the U.S. Bureau of Labor Statistics is predicting 31% of the new STEM jobs will be in software development (aka software engineering) alone as compared to 11% in the combined branches of traditional engineering.

Figure 3 U.S. New STEM Jobs Through 2024, U.S. Bureau of Labor Statistics [9]

US-BLS New STEM Job Projections Through 2024 By STEM %



Data Source: US-BLS Employment Projections (www.bls.gov/emp/pro_102400)

Table 2 lists the top 10 occupations in US with the most openings 2014-2024. Applications software developer is ranked No. 6. Similar to the national trend, applications software developer is ranked No. 8 in Missouri for the top 10 occupations with the most openings 2012-2022.

Table 2 Top 10 Occupations with the Most Openings in US, 2014-2024 (www.careerinfonet.org)

#	Occupation	Employment 2014	Projected Annual Job Openings
1	Registered Nurses	2,751,000	108,840
2	General and Operations Managers	2,124,100	68,880
3	Accountants and Auditors	1,332,700	49,800
4	Elementary School Teachers, Except Special Education	1,358,000	37,870
5	Secondary School Teachers, Except Special and Career/Technical Education	961,600	28,400
6	Software Developers, Applications	718,400	23,800
7	Management Analysts	758,000	20,850
8	Computer Systems Analysts	567,800	19,160
9	Middle School Teachers, Except Special and Career/Technical Education	627,500	17,550
10	Financial Managers	555,900	16,930

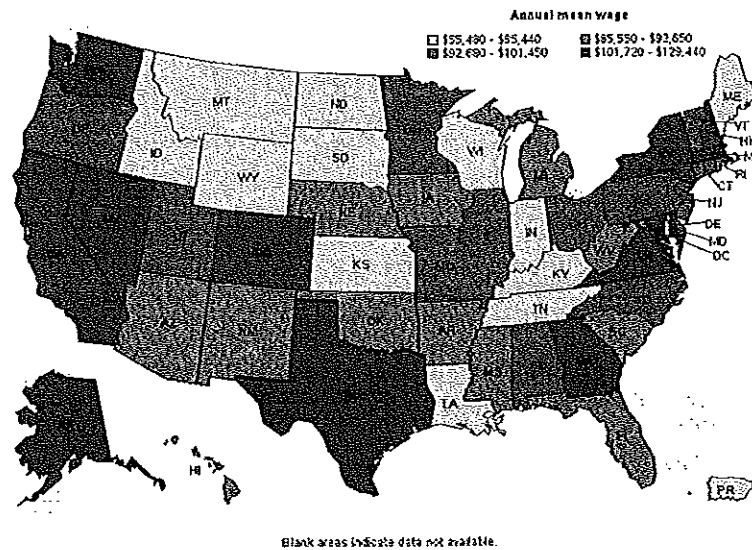
Table 3 Top 10 Occupations with the Most Openings in Missouri, 2012-2022 (www.careerinfonet.org)

#	Occupation	Employment 2012	Projected Annual Job Openings
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1	Registered Nurses	66,970	2,100
2	General and Operations Managers	53,130	1,500
3	Accountants and Auditors	25,850	1,090
4	Elementary School Teachers, Except Special Education	23,150	750
5	Secondary School Teachers, Except Special and Career/Technical Education	19,970	610
6	Middle School Teachers, Except Special and Career/Technical Education	13,910	450
7	Computer Systems Analysts	10,950	390
8	Software Developers, Applications	11,750	320
9	Cost Estimators	5,010	280
10	Coaches and Scouts	6,830	270

Figure 4 shows the most recent annual mean wage of applications software developers by state published by the U.S. Bureau of Labor Statistics. The mean salary in Missouri is \$92,680-\$101,450.

Figure 4 Annual Mean Wage of Applications Software Developers, by State, May 2016, US
Bureau of Labor Statistics (<https://www.bls.gov/oes/current/oes151132.htm>)
Annual mean wage of software developers, applications, by state, May 2016



Career website Glassdoor cross-referenced its salary data with official cost of living figures from the federal government to see where tech industry salaries go the furthest [10]. Table 4 below ranks each city by their salary, which takes into account the cost of living. Software Engineers earn a higher salary compared with some other jobs in similar areas. Two cities in Missouri, St. Louis and Kansas City, ranked No. 6 and No. 28 among the best cities in the US to be a software engineer.



Moreover, the information technology industry in Missouri continues to grow. As a matter of fact, software is one of Missouri's information technology industry's three niches [11]. Specifically, the Kansas City area has many IT related companies. For example, Cerner anticipates a large expansion of its Kansas City workforce over the next 10 years that will involve hiring thousands of software engineers [12] [13]. According to the most recent (December 2016) Information Technology Industry Real Time Labor Market Summary published by the Missouri's Economic Research and Information Center (MERIC) [14], there were over 1,500 job postings in the Information Technology Industry for the previous 6 month period in Missouri. The top occupation was Applications Software Developers. In another report [15] published by MERIC titled 2016 STEM Labor Demand Analysis, the top STEM job ads for the Missouri Workforce Development Area (WDA) regions were mostly Applications Software Developers.

Table 4 Salary Data with Official Cost of Living Rank

Metro Area	Cost of Living Index	"Real" Soft. Eng. Salary \$	Rank	"Real" Prog. Analyst Salary	Rank	"Real" Sys. Admin. Salary	Rank
Seattle, WA	107.0	107,540	1	79,945	6	72,639	10
San Jose, CA	122.0	107,121	2	73,387	14	84,530	1
Raleigh, NC	95.2	102,950	3	87,131	2	71,758	12
Portland, OR	100.5	101,592	4	72,687	18	70,635	16
San Francisco, CA	121.3	101,006	5	78,439	7	81,162	2
St. Louis, MO	88.9	97,821	6	83,585	3	80,271	3
Denver, CO	104.3	97,442	7	93,783	1	72,893	9
Atlanta, GA	95.6	95,519	8	73,222	15	77,797	5
Austin, TX	98.5	95,262	9	72,710	17	62,509	27
Boston, MA	111.6	94,717	10	69,296	26	72,276	11
Dallas, TX	101.0	94,417	11	74,505	12	75,817	6
Phoenix, AZ	99.7	93,649	12	77,056	9	70,729	15
Pittsburgh, PA	93.4	92,981	13	74,116	13	70,752	14
San Diego, CA	119.0	90,739	14	84,813	28	82,511	28
Columbus, OH	93.8	90,616	15	81,636	5	74,017	6
New York, NY	122.2	90,543	16	70,296	23	66,841	21
Los Angeles, CA	118.2	90,421	17	69,914	24	67,948	18
Chicago, IL	106.8	89,027	18	72,094	19	67,397	20
Tampa, FL	99.4	88,658	19	77,594	8	63,684	25
Miami, FL	105.0	88,487	20	71,734	22	64,099	23
Houston, TX	100.7	88,450	21	73,087	16	61,878	28
Minneapolis, MN	103.0	87,998	22	69,318	25	84,717	22
Baltimore, MD	109.4	87,667	23	65,360	27	71,386	13
Philadelphia, PA	106.0	87,030	24	71,828	20	70,252	17
Orlando, FL	98.0	86,735	25	74,851	11	63,866	24
Detroit, MI	97.8	86,578	26	75,435	10	74,530	7
Washington, DC	120.4	84,801	27	71,779	21	67,641	19
Kansas City, MO	92.7	79,585	28	82,183	4	77,923	4

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Source: Glassdoor Economic Research; U.S. Bureau of Economic Analysis. Salaries are inflation-adjusted median total compensation reported on Glassdoor from 2010 to June, 2015 [10].

In addition, Software Engineer is ranked No. 8 among the best jobs of 2015 [16], and has a high growth outlook. Software engineers are in high demand. Skilled software engineers are well paid and rarely have trouble finding work. The unemployment rate for this career is consistently below the national average [17]. According to the Best Computer Careers Reviews in 2016 [17], software engineer is ranked No. 1 among top ten computer careers. The detailed comparison is shown in Table 5.

Table 5 Software Engineer Ranked No. 1 Among Top Ten Computer Careers

Career	Overall Rating	Salary	Opportunity	Education	Work Environment
Software Engineer	10.00/10	10.00/10	10.00/10	10.00/10	10.00/10
Systems Analyst	9.40/10	9.38/10	8.75/10	10.00/10	10.00/10
Network Security Specialist	8.73/10	9.38/10	8.75/10	8.75/10	9.38/10
Network Architect	8.53/10	10.00/10	6.88/10	8.13/10	9.38/10
Database Administrator	8.07/10	8.75/10	6.25/10	8.75/10	9.38/10
Network Administrator	7.95/10	8.75/10	5.88/10	8.75/10	9.38/10
Web Developer	7.82/10	8.13/10	6.50/10	8.13/10	10.00/10
Computer Tech Support	6.60/10	7.50/10	7.50/10	3.13/10	9.38/10

Student Demand

Currently there are approximately 60 undergraduate software engineering programs in the United States [18]. The number of programs is growing steadily (compared with about 40 undergraduate software engineering programs in 2011). The enrollments and graduates are growing steadily, too [19]. The following table lists the enrollment of several ABET accredited Software Engineering programs from master level institutions. Considering the overall student population for each institution, the software engineering enrollment is strong in all those institutions. It is also worth



mentioning that all those institutions also offer a BS in Computer Science. These figures demonstrate that Software Engineering is a viable undergraduate program in the US which has a strong, consistent and increasing student demand.

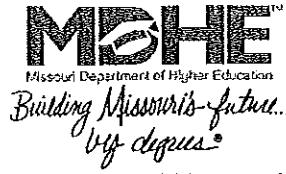
Considering that there is no existing undergraduate software engineering program in Missouri and Kansas while the demand for software engineers is very high, we anticipate there will be strong student demand for such a program.

Table 6 Enrollment of Several ABET Accredited Software Engineering Program from Master Level Institutions

Institution Name	Enrollment
California Polytechnic State University, San Luis Obispo	180
Clarkson University	34
Embry-Riddle Aeronautical University - Daytona Beach	53
Kennesaw State University	207
Milwaukee School of Engineering	214
Monmouth University	70
Pennsylvania State University, Behrend College	55
Rochester Institute of Technology	492
Rose-Hulman Institute of Technology	133
University of Michigan - Dearborn	134
University of Wisconsin - Platteville	183

Societal Need

Over the past thirty years, the practices of everyday life have become increasingly infused with and mediated by software. The capacities and growing pervasiveness of software make it the lifeblood of today's emerging information society. Software is shaping our world from all aspects of our lives, from the launch of billion-dollar spacecraft to more mundane work such as measuring and displaying time, controlling traffic lights, and monitoring the washing of clothes. Indeed, whatever the task- domestic chores, paid work, shopping, traveling, communicating, governing, playing - software increasingly makes a difference to how social and economic life takes place, and enables members of society to work more efficiently [20]. To maintain a competitive edge, industry and commerce continue to make creative engineering advances as well as produce high quality products. More than ever, there is a demand for a highly prepared work force with Software Engineering training that is enabled to deliver quality software and innovation.



above the state figure, and the average median household income is significantly below the state figure. At the same time, a clear majority of UCM students are from our 21 service counties according to the most recent report released by the UCM Office of Institutional Research. As a comprehensive regional university with a statewide mission in professional applied sciences and technology programs, it is our mission to provide Missouri citizens in our own service region and/or beyond the access to affordable undergraduate study in Software Engineering with reasonable cost and driving distance.

Table 7 Average Percent of Poverty and Average Median Household Income

Area	Average Percent of Poverty (2010-2014)	Average Median Household Income (2010-2014)
UCM service area (21 counties)	16.4%	\$44,162
State of Missouri	15.5%	\$47,764

Source: US Bureau of Census

Duplication and Collaboration: If similar programs currently exist in Missouri, what makes the proposed program necessary and/or distinct from the others at public institutions, area vocational technical schools, and private career schools?

By searching the program inventory provided by Missouri Department of Higher Education (<http://collegesearch.mo.gov/>) using the CIP code 14.0903 designated for the proposed program, no institution in Missouri offers a BS in Software Engineering program. As a result, there is no duplication issue.

It is worth mentioning that University of Missouri-Kansas City (UMKC) offers a software engineering option in its BS in Computer Science program. The proposed software engineering program has a different curriculum than UMKC's computer science programs. More specifically, the proposed software engineering program has a rigorous curriculum as specified by the ABET accreditation guidelines on software engineering program. Its curriculum differs significantly from a computer science program. Another factor making our proposed program unique is its emphasis on secure programming and secure software engineering. There are two dedicated courses (6 credit hours) in the curriculum. One of our faculty members had specialized SANS training on secure programming and has the GSSP-JAVA certificate. To the best of our knowledge, there is no other existing software engineering program with such emphasis.

Furthermore, the proposed program is also designed to meet the expressed needs of our industry partners. UCM's Computer Science program has a long tradition of working closely with local companies to provide the curriculum needed for their workforce of the future. Our programs have a very active industry advisory board with representatives from many local companies such as Cerner, Garmin, DST systems, Sprint, Honeywell and Commerce Bank, etc. The Board meets each Fall and Spring semester. A few support letters from local companies are attached to our proposal.



UCM's Computer Science program strives to provide our students with hands-on learning experiences. During their study, our students have opportunities to work on projects from small to large scales either through individual or team efforts. Often our industry partners create these projects. In addition, many students have internship experiences. Currently, UCM's Computer Science program has 11 faculty members with software engineering training and/or software engineering work/research experiences among whom 6 are tenured or tenure-track. Although the majority of our faculty have a Ph.D. in Computer Science, we do have two faculty members with a Ph.D. in Electrical and Computer Engineering. They complement other faculty members by incorporating engineering practices into our curriculum.

Notably, UCM traditionally attracts very different student populations as compared with UMKC. Our students prefer a small college environment, rural campus setting, small class size and teaching-focused faculty. On the other hand, as Missouri's research university, UMKC offers a large campus, urban setting and more research-oriented faculty. Furthermore, affordable cost is another major factor for students and their families when considering to attend UCM.

UCM's undergraduate students have very different socioeconomic backgrounds, academic preparation and career goals as compared with those in UMKC. As specified in the MDHE Policies and Guidelines, UMKC has a selective admission criteria which requires an ACT score of 24 or better for admission. More specifically, UMKC's engineering and computer science programs require an ACT math score of at least 25 and ACT composite of at least 24 or a class rank in the upper 25 percent if the minimum ACT score is not met. On the other hand, UCM has a moderately selective admission criteria which only requires an ACT score of 21 or better for admission. There is no additional admission criteria for the proposed software engineering major.

Given that the University of Central Missouri's statewide mission in professional applied sciences and technology programs, UCM is a natural home for the proposed B.S. in Software Engineering program. A clear majority of UCM students are from our traditional 21 service counties which include Jackson County and are tied to this area by jobs and/or family responsibilities. Many of the students have circumstances making attendance at another university or college difficult or impossible particularly due to ACT requirements and/or family financial situations. The options available to them are largely determined by the options provided at UCM. As a comprehensive regional university with a statewide mission in professional applied sciences and technology programs, it is our goal to provide Missouri citizens in our service region and/or beyond more access to affordable undergraduate study in software engineering.

Does delivery of the program involve a collaborative effort with any external institution or organization? If yes, please complete Form CL.

No. The current Computer Science faculty members at UCM are qualified and sufficient to handle the new program. Delivering the program will not involve collaborative efforts with any external institution or organization.



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20. US Bureau of Census. On the Internet at: <http://www.census.gov/quickfacts/table/INC110214/2977092,29,00>



PROGRAM STRUCTURE

A. Total credits required for graduation: 120

B. Residency requirements, if any: minimum 30 credit hours at UCM

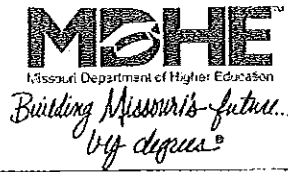
C. General education: 44

Course Number	Credits	Course Title
CS 1000	3	Computers and Modern Society
COMM 1000/1050	3	Public Speaking/Foundation of Oral Communication Competency
MATH 1151	5	Calculus & Analytic Geometry I
Areas/Category	Credits	Notes
Writing I	3	
Writing II	3	
Managing Info.	2	
Literature	3	
Fine Arts	3	
Another Course for Knowledge Area I	3	Choose one additional course from Literature/Fine Arts or Languages/Humanities
Science with Lab	4	
Another Course for Knowledge Area II	3	Choose one additional course from Science or Mathematics
History	3	
Social/Behavioral Sciences	3	
Additional Courses for Knowledge Area III	3	Choose one additional course from History or Social/Behavioral Sciences

D. Major requirements: 73

Core Courses (50 credits):

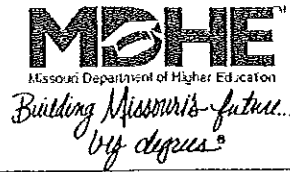
Course Number	Credits	Course Title
CS 1100	3	Computer Programming I
CS 1110	3	Computer Programming II



CS 2300	3	Data Structures
CS 2400	3	Discrete Structures
CS 3130	3	Secure Programming
CS 3900	3	Software Requirements Engineering
CS 3910	3	Software Engineering
CS 4300	3	Algorithms Design and Analysis
CS 4600	3	Database Theory and Applications
CS 4920	3	Senior Project
CS 4930	3	Software Testing & Quality Assurance
CS 4940	3	Software Design and Architecture
CS 4950	3	Secure Software Engineering
MATH 1152	5	Calculus & Analytic Geometry II
ACST 3311	3	Introduction to Mathematical Statistics
INDM 4250	3	Project Management

Electives (9 credits):

Course Number	Credits	Course Title
CS 3100	3	Programming Languages
CS 3110	3	App Prog. With C# and .NET
CS 3120	3	Client Side Web Programming
CS 3200	3	Computer Organization & Architecture
CS 3300	3	Intro. to Cryptography
CS 3500	3	C and UNIX Environment
CS 3800	3	Apps. Development with VB.NET
CS 3810	3	Intro. To Game Design
CS 4000	3	Special Problems in CS
CS 4110	3	Mobile App. Prog. With Android
CS 4120	3	Advanced App. Prog. In Java
CS 4130	3	Server Side Web Programming
CS 4140	3	Web Applications Security
CS 4500	3	Operating Systems



CS 4510	3	Intro. to Distributed Systems
CS 4610	3	Intro to Cloud Computing
CS 4620	3	Big Data Systems
CS 4630	3	Data Mining
CS 4700	3	Artificial Intelligence
CS 4710	3	Machine Learning
CS 4800	3	Computer Networking
CS 4810	3	Computer Graphics
CS 4820	3	Intro. to Information Assurance

Math and Science Electives (14 credits):

*Minimum 8 credit hours science, from Elective Group II & III, must be selected in the electives. Total math and science, from the following lists, combined must be at least 14 credit hours.

- **Elective Group I (0-6 credits):**

Course Number	Credits	Course Title
MATH 2153	3	Calculus & Analytic Geometry III
MATH 2221	3	Foundations of Geometry
MATH 3151	3	Differential Equations
MATH 3710	3	Linear Algebra
MATH 4450	3	Introduction to Graph Theory

- **Elective Group II (0-3 credits):**

Course Number	Credits	Course Title
BIOL 1110	3	Principles of Biology
BIOL 2010	3	Human Biology
BIOL 2510	3	Basic Genetics
BIOL 4102	3	Evolution
EASC 3010	3	Environment Geology
EASC 3112	3	Astronomy

- **Elective Group III (8-14 credits):**



Course Number	Credits	Course Title
PHYS 1101/2121	4/5	College Physics I or University Physics I
PHYS 1102/2122	4/5	College Physics II or University Physics II
BIOL 1111	4	Plant Biology
BIOL 1112	4	Animal Biology
CHEM 1131	5	General Chemistry I
CHEM 1132	5	General Chemistry II
EASC 1004	4	Intro. to Geology
EASC 1114	4	Weather and Climate
EASC 2100	4	Engineering Geology
EASC 2200	4	Historical Geology
EASC 4300	4	Earth Resources

E. Free elective credits: 3

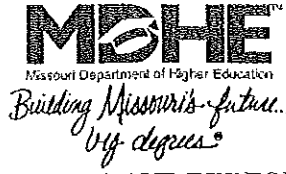
(Sum of C, D, and E should be larger or equal to A.)

F. Requirements for thesis, internship or other capstone experience:

CS 4920 Senior Project serves as a capstone course for the program which is required.

G. Any unique features such as interdepartmental cooperation:

N/A



PROGRAM CHARACTERISTICS AND PERFORMANCE GOALS

Institution Name: University of Central Missouri
Program Name: Bachelor of Science in Software Engineering
Date: Fall 2018

(Although all of the following guidelines may not be applicable to the proposed program, please carefully consider the elements in each area and respond as completely as possible in the format below. Quantification of performance goals should be included wherever possible.)

1. Student Preparation

- Any special admissions procedures or student qualifications required for this program which exceed regular university admissions, standards, e.g., ACT score, completion of core curriculum, portfolio, personal interview, etc. Please note if no special preparation will be required.

No special admission procedures or student qualifications required. The proposed program will adopt the same admission criteria for undergraduate students at UCM.

- Characteristics of a specific population to be served, if applicable.

N/A

2. Faculty Characteristics

- Any special requirements (degree status, training, etc.) for assignment of teaching for this degree/certificate.

Ph.D. in Computer Science, Software Engineering or a closely related area required for tenure track faculty. M.S. in Computer Science, Software Engineering or a closely related area required for non-tenure track faculty.

- Estimated percentage of credit hours that will be assigned to full time faculty. Please use the term "full time faculty" (and not FTE) in your descriptions here.

All courses will be taught by full-time faculty.

- Expectations for professional activities, special student contact, teaching/learning innovation.

Faculty teaching in this program will be expected to be professionally active, as evidenced by peer reviewed publications and/or externally funded grants. Faculty will also be expected to attend and/or present at professional meetings, participate in workshops/seminars in areas related to their specialties and be involved in other related professional activities. Faculty are expected to continue improving their teaching by keeping up to date on material or pedagogy.

3. Enrollment Projections



- Student FTE majoring in program by the end of five years.

60 students

- Percent of full time and part time enrollment by the end of five years.

91.5% full time, 8.5% part time

4. Student and Program Outcomes

- Number of graduates per annum at three and five years after implementation.

Three years-5, Five years-12

- Special skills specific to the program.

Graduates with a Bachelor of Science degree in Software Engineering will demonstrate the following specific student outcomes:

- *An ability to identify, formulate, and solve engineering problems by applying principles of engineering, science, and mathematics*
- *An ability to apply both analysis and synthesis in the engineering design process, resulting in designs that meet desired needs.*
- *An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.*
- *An ability to communicate effectively with a range of audiences.*
- *An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.*
- *An ability to recognize the ongoing need for additional knowledge and locate, evaluate, integrate, and apply this knowledge appropriately.*
- *An ability to function effectively on teams that establish goals, plan tasks, meet deadlines, and analyze risk and uncertainty.*

- Proportion of students who will achieve licensing, certification, or registration.

N/A

- Performance on national and/or local assessments, e.g., percent of students scoring above the 50th percentile on normed tests; percent of students achieving minimal cut-scores on criterion-referenced tests. Include expected results on assessments of general education and on exit assessments in a particular discipline as well as the name of any nationally recognized assessments used.

None available.

- Placement rates in related fields, in other fields, unemployed.



95% in Software Engineering related fields, 5% in other fields, 0% unemployed

- Transfer rates, continuous study.

N/A

5. Program Accreditation

- Institutional plans for accreditation, if applicable, including accrediting agency and timeline. If there are no plans to seek specialized accreditation, please provide a rationale.

The program will seek ABET accreditation.

6. Alumni and Employer Survey

- Expected satisfaction rates for alumni, including timing and method of surveys.

There is an expected satisfaction rate of around 90%. A survey will be sent to graduates at periods of one and three years after their graduation to gauge how the program has prepared them for their careers. Data from the survey will be compiled and analyzed to improve the quality of the program.

- Expected satisfaction rates for employers, including timing and method of surveys.

There is an expected satisfaction rate of around 90%. A survey will be sent to employer(s) every three years requesting their input on quality of the program and its graduates. Data from the survey will be compiled and analyzed to improve the quality of the program. The UCM Software Engineering Advisory Board, which meets once per year and consists of representatives from industry, alumni, and students, will also provide input.

7. Institutional Characteristics

- Characteristics demonstrating why your institution is particularly well equipped to support the program.

Founded as a teacher's college in 1871, the University of Central Missouri has maintained its commitment to excellent teaching. UCM has a statewide mission in applied sciences and technology programs. Our average undergraduate class size is 24. UCM's six-month job-placement rate for undergraduates is 92 percent, and, reflecting our excellent financial support packages, our students benefit from one of the lowest student-debt ratios in the state. Publicly supported, richly diverse in our people and programs, UCM offers a remarkable educational experience.

November 21, 2016

Rusty Monhollon, Assistant Commissioner
Missouri Department of Higher Education
205 Jefferson Street, P.O. 1469
Jefferson City, MO 65102

Dear Rusty:

The University of Missouri has a number of concerns about the proposed bachelor of science degree in Software Engineering proposed for delivery at main campus and Central Summit Campus in Lee's Summit. As we do with each MDHE posting, we shared the information with our campus provosts who then distributed the materials to the appropriate faculty. We received concerns from the faculty and deans from the College of Engineering at MU as well as the School of Engineering and Computer Science at UMKC.

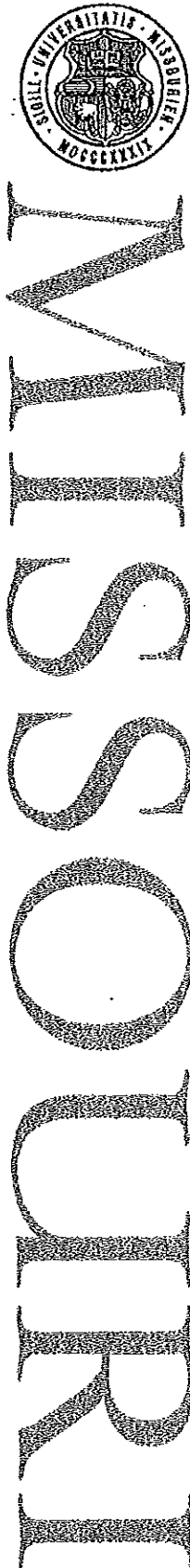
The major concerns relate to the following points – with specific details provided in the material articulated below:

- Given that MDHE is currently finalizing new guidelines for offering engineering programs in Missouri that will require collaboration as a prerequisite for engineering programs, we do not believe it is prudent to approve a new software engineering program shortly before the guidelines are put in place.
- Naming the program as an “engineering” degree when it would not be offered by a school or college of engineering - an ABET accredited school.
- Indicating that the program would be unique in meeting needs by being the only software engineering program in the state. Both the College of Engineering at MU and the School of Engineering and Computer Science at UMKC offer software engineering programs through their computer science and engineering programs. Both schools are ABET accredited.
- This new program could unnecessary duplication, particularly in the Kansas City area. Both the MU and UMKC programs have capacity to enroll more students.
- There are concerns about the nature and structure of the program as proposed.

The sections below provide details to our concerns about this proposal. MU and UMKC are willing to discuss collaborative partnerships with UCM to strengthen their current program offerings and enhance their undergraduate and master's graduate programs.

Titling the program as an “engineering” degree when it would not be offered by a school or college of engineering - with ABET accredited programs.

Concerns were expressed by both the MU and UMKC faculty about offering an “engineering” degree from a campus that is not dedicated to engineering. The program is called “software engineering” so it implies a certain level of engineering expertise within the faculty and that the programs are operated by an “engineering” based faculty. The basic standard for offering engineering degree programs would be



through an engineering college where all the degree programs have received ABET accreditation. Both UMKC and MU offer programs similar to this proposed program and all their programs have received ABET accreditation.

UCM is proposing to create an ABET accredited software engineering bachelor's degree program, consequently extensive additional resources would be required to secure ABET accreditation for the program. Currently their BS computer science and BS Cybersecurity programs are not ABET accredited. Accreditation of one or more degree programs would require extensive resources and investments from the state in a resource constrained and diminishing state budget for higher education.

To be successful, UCM would need to recruit tenure track faculty with extensive industry experience in software development and software engineering as part of a process to improve the quality of their degree offerings. UCM currently has five full professors, no associate professors and 23 assistant professors. Of all of these faculty, only two of the assistant professors appear to specialize in software engineering. Further, it is not clear how many of their assistant professors are tenure track versus short term temporary contracts. This structure of a fluctuating population of instructors makes it difficult to develop high quality ABET accredited programs given that such programs require a sustained effort over many years with a dedicated group of committed faculty.

Indicating that the program would be unique in meeting needs by being the only software engineering program in the state.

This is not the first program of its kind in Missouri. UMKC offers the BS and MS degrees in computer science and both have emphasis areas in software engineering. Currently the BS degree with an emphasis in software engineering has over 120 students enrolled and the MS degree program with an emphasis in software engineering has over 150 students. The programs are ABET accredited and this is an area of growth for UMKC with plans to add three additional faculty members in software engineering in the next two years.

As of this date, UMKC School of Computing and Engineering has not turned away any qualified student in the software engineering programs and has a strategic vision of growing these programs to twice the current enrollments with the new faculty hires. Until this growth is achieved, it would not be prudent to add additional programs in the KC region, especially in the Lee Summit area. It would only conflict with an existing ABET accredited program.

Likewise, software engineering is an important area of study within the broader field of MU College of Engineering and the Computer Science department has a strong programming project emphasis and exposure to industry standards and norms of practice. On some campuses, software engineering may be offered as a separate degree program. However, this is not the case at MU or UMKC or other AAU institutions.

MU already offers a number of courses that provide for a strong course of study as part of a Software Engineering emphasis area, track or potentially a minor that MU students can choose. This could include courses focusing on the world-wide web, data base programming, object-oriented programming and design, software engineering, and mobile applications.

To summarize, the MU computer science program, which is ABET accredited, is already offering these software engineering area courses. The MU information technology program is also able to offer a software engineering emphasis area in addition to the current areas (mobile computing, systems administration, modeling & animation, game design) by sharing these courses.

Create unnecessary duplication, particularly in the Kansas City area. Both the MU and UMKC programs have capacity to enroll more students.

UMKC School of Computing and Engineering (SCE) is informed about the computing job market, today as well as the projections. The UMKC computer science faculty (which includes trained software engineers) is the largest group of faculty and they teach the largest number of students. SCE has 20 full time CS faculty and 10-12 adjunct faculty and 8 of the faculty members are dedicated full time to software engineering. The bachelor's and master's computer science programs have over 600 students with more than 270 of them in the software engineering emphasis area.

UMKC plans to add three full time faculty and to double the number in the software engineering emphasis area. The UCM software engineering program will be an impediment to that growth. There is a demand as 90% of all of the BSCS students, including software engineers, have jobs at graduation ... which speaks to the quality and the desire to increase the numbers within this ABET accredited and well established program.

UMKC is working closely with local companies to provide the curriculum needed for their workforce of the future. Currently UMKC has over 500 alumni working at Cerner with nearly 200 of those alums coming from UMKC SCE (which is only 15 years old). Furthermore, Kansas State University is the largest supplier of software engineers to Cerner.

In the case of UMKC, SCE has discussed adding a separate degree in software engineering, but decided not to pursue that option as the enrollments in the emphasis are quite robust and growing. Further, many of the courses in the computer science bachelor's program serve a broader set of emphasis areas, making it easier for students to design a curriculum that suits their desires or industry needs.

The proposed program from UCM may not have an immediate short term impact on student enrollment at the University of Missouri System campuses in the computer science or information technology degree programs. But it may have long term negative impacts -- especially for students who are interested in commercial software projects, software application development, software engineering industry practice and tools. Specifically, enrollment estimates from UCM projects only 60 students in five years, a very small increase relative to UCM's current graduate student population of around two thousand students. Such a small increase is not compelling to justify the extensive resources required for creating a high quality new degree offering that would improve the workforce capability in software and IT within the state of Missouri as opposed to focus on existing programs already in place at MU and elsewhere in the UM system.

There are concerns about the nature and structure of the program as proposed.

- 1) Lack of exposure to industry practice and industry collaborative partnerships: The proposed degree program from UCM is essentially a computer science degree program with a few additional courses: 3900 Software Requirements Eng, 3910 Software Eng, 4930 Software Testing & Quality Assurance, 4940 Software Design and Architecture, 4950 Secure Software Eng.

Software engineering education should have significant elements outside standard course work. Experiential learning, team-based projects, internships, and industrial collaboration are especially essential for training students to be software engineers as opposed to just programmers. None of these critical components are addressed. It is therefore unclear

whether UCM can prepare its students well for a career in software engineering that reflects well on the quality of graduates in this field from the state of Missouri.

Greater student involvement in developing or maintaining large scale projects, interactions with industry partners, certification opportunities, and coverage of the large body of ISO/IEC standards for software engineering quality management is needed. The proposal does not include the necessary hands-on, large scale projects and the strong partnership efforts with industry that are essential for a successful degree program in Software Engineering.

- 2) Strengthening the quality of existing programs at UCM will provide better employment prospects: The UCM School of Computer Science and Mathematics (SCM) already offers two related undergraduate and graduate degrees: BS in Computer Science, BS in Cybersecurity; MS CS and MS in Cybersecurity and Information Assurance, which began in Fall 2016. UCM has many emphasis areas for undergraduates including software development, computer science, computer networking, game development, data science, computer science minor.

UCM indicates that they have an enrollment of over two thousand students in their MS graduate program (primarily international students) and supports the largest computer training program in the state of Missouri with industry relationships in the Kansas City area. If this is true, we would recommend that UCM strengthen their current programs in order to produce higher quality graduates to satisfy the needs of industry and build stronger industry-academic partnerships with local companies.

- 3) It is necessary to first explore alternatives and accurately gauge demand for UCM graduates: Instead of a separate BS software engineering degree, UCM could offer a minor, track, or emphasis area similar to their Software Development program within the computer science degree and their minor in Cybersecurity. This could be accomplished by offering the proposed new SE courses for several areas as part of their current BS CS degree and then gauging more accurately the appropriate data on enrollment and future demand.
- 4) The report that was submitted lacked data on the demand for Software Engineers in the state of Missouri. For example, the number of companies interested in this area and the number of students in previous years who have been hired with a software development emphasis were not included. The report lacks important information on specific collaborations between UCM and companies in the state of Missouri that are focused on software engineering.

We welcome the opportunity to discuss some sort of collaborative program with one of the UM campuses.

Sincerely,



Steve Graham
Senior Associate Vice President

June 12, 2017

Rusty Monhollon, Assistant Commissioner
Missouri Department of Higher Education
205 Jefferson Street, P.O. 1469
Jefferson City, MO 65102

Dear Dr. Monhollon:

The University of Central Missouri is resubmitting the new program proposal for a BS in Software Engineering. Below addresses the concerns raised by Dr. Steve Graham in his letter to you dated November 21, 2016 as well as the letter we received from MDHE on November 23, 2016.

The sections below provide details to address the concerns listed in Dr. Graham's letter.

Naming the program as an "engineering" degree when it would not be offered by a school or college of engineering -- an ABET accredited school.

We contacted Dayne Aldridge the Adjunct Accreditation Director for the Engineering Accreditation Commission (EAC) of ABET. His response is listed below

"There is no requirement in our policy or criteria that dictates the administrative structure for ABET accredited programs. There are a significant number of accredited engineering programs that are administered in units other than colleges or schools of engineering."

It is clear that there is no requirement for an engineering program to be in a college or school of engineering to be accredited by ABET. In addition, it is worth mentioning that University of Central Missouri already has several ABET accredited programs. For example, the BSBA in Computer Information Systems is accredited by the Computing Accreditation Commission (CAC) of ABET; the BS in Occupational Safety and Health and MS in Industrial Hygiene both are accredited by the Applied and Natural Science Accreditation Commission (ANSAC) of ABET.

UCM's BS in Computer Science program had a very successful ABET site visit in October 2016 and we are currently waiting for the official accreditation decision which will be announced in August 2017. The ABET onsite visit for the BS in Cybersecurity program has also been confirmed for October 2017. Considering that the accreditation guidelines and processes are fairly consistent among different commissions of ABET, the University of Central Missouri has the necessary knowledge, experience and resources to secure ABET accreditation for the proposed software engineering program. Most importantly, none of UCM programs' accreditation efforts have required any additional resources and investments from the state. It is also worth mentioning that during our computer science site visit, the ABET team had no single concern with regards to our curriculum, faculty, facility and institutional support.

Currently, UCM's Computer Science program has 11 faculty members with software engineering training and/or software engineering work/research experiences among whom 6 are tenured or tenure-track. Although the majority of our faculty have a Ph.D. in Computer Science, we do have two faculty members with a Ph.D. in Electrical and Computer Engineering. They complement other faculty members by incorporating engineering practices into our curriculum. Furthermore, the Computer Science program plans to add another tenure track faculty (due to a recent retirement) with expertise in Software Engineering in 2018-2019 academic year.

Below is the ABET 2017-2018 Program Criteria for Software and Similarly Named Engineering Programs concerning the faculty criterion

2. Faculty

The program must demonstrate that faculty members teaching core software engineering topics have an understanding of professional practice in software engineering and maintain currency in their areas of professional or scholarly specialization.

It is clear that there is no specific requirement on the number of faculty who must be in the software engineering area to be accredited by ABET. As indicated earlier, during our Computer Science ABET visit, there was no single concern about our faculty specialization. Therefore, we are confident that our current computer science faculty structure and expertise are well equipped to secure ABET accreditation for the proposed software engineering program.

Indicating that the program would be unique in meeting needs by being the only software engineering program in the state.

The proposed BS in Software Engineering program (CIP 14.0903) is indeed a unique program in the state of Missouri for the following reasons.

1. There is no Missouri institution that offers a bachelor degree with software engineering in the degree title.

UMKC offers a software engineering emphasis area in its BS in Computer Science program (CIP 11.0701). MU offers several software engineering related courses in its BS in Computer Science program (CIP 11.0101). In both cases, students receive a computer science degree but not software engineering (note that the CIP codes are also different). Association for Computing Machinery (ACM), the leading international professional organization which provides curricula guidelines to computing disciplines, in its *Computing Curricula 2005: The Overview Report* states there are five major computing disciplines. They are Computer Science, Computer Engineering, Software Engineering, Information Systems and Information Technology. The differences between computer science, software engineering and computer engineering are also listed in our program proposal.

2. The curriculum of the proposed BS in Software Engineering program follows the ABET accreditation guidelines on software engineering curriculum.

Both MU and UMKC's computer science program curriculum follows the CAC/ABET's accreditation criteria for a computer science program just like UCM's computer science program. On the other end, the proposed software engineering program adopts the EAC/ABET accreditation criteria for a software

engineering program. To meet the ABET software engineering curriculum requirements, seven software engineering focused courses (3130 Secure Programming, 3900 Software Requirements Engineering, 3910 Software Engineering, 4250 Project Management, 4930 Software Testing and Quality Assurance, 4940 Software Design and Architecture and 4950 Secure Software Engineering) are included in the curriculum to differentiate the proposed program from a computer science program. Considering the mandated minimum 30 credit hours in mathematics and science, and 42 credit hours general education, the 21 credit hours software engineering coursework represent 44% of the remaining 48 credit hours major requirement in the program.

Another factor making our proposed program unique is its emphasis on secure programming and secure software engineering. There are two dedicated courses (6 credit hours) in the curriculum. One of our faculty members had specialized SANS training on secure programming and has the GSSP-JAVA certificate. To the best of our knowledge, there is no other existing software engineering program with such emphasis.

Below is the ABET 2017-2018 Program Criteria for Computer Science, Software Engineering and Computer/Electrical Engineering concerning the curriculum criterion

Computer Science	Software Engineering
<p>Students must have the following amounts of course work or equivalent educational experience:</p> <p>a. Computer science: One and one-third years that must include:</p> <ol style="list-style-type: none"> 1. Coverage of the fundamentals of algorithms, data structures, software design, concepts of programming languages and computer organization and architecture. 2. An exposure to a variety of programming languages and systems. 3. Proficiency in at least one higher-level language. 4. Advanced course work that builds on the fundamental course work to provide depth. 	<p>The curriculum must provide both breadth and depth across the range of engineering and computer science topics implied by the title and objectives of the program.</p> <p>The curriculum must include computing fundamentals, software design and construction, requirements analysis, security, verification, and validation; software engineering processes and tools appropriate for the development of complex software systems; and discrete mathematics, probability, and statistics, with applications appropriate to software engineering.</p>
Computer/Electrical Engineering	
<p>The structure of the curriculum must provide both breadth and depth across the range of engineering topics implied by the title of the program.</p> <p>The curriculum must include probability and statistics, including applications appropriate to the program name; mathematics through differential and integral calculus; sciences (defined as biological, chemical, or physical science); and engineering topics (including computing science) necessary to analyze and design complex electrical and electronic devices, software, and systems containing hardware and software components.</p>	

<p>The curriculum for programs containing the modifier “electrical,” “electronic(s),” “communication(s),” or “telecommunication(s)” in the title must include advanced mathematics, such as differential equations, linear algebra, complex variables, and discrete mathematics.</p> <p>The curriculum for programs containing the modifier “computer” in the title must include discrete mathematics.</p>	
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It is obvious that computer science, software engineering, and computer engineering are completely different degree programs since they have different curricula and focuses. Even ABET uses two different commissions to review these programs: computer science is under CAC while software engineering and computer/electrical engineering are under EAC.

3. The proposed program, if approved, will be part of the University of Central Missouri’s Missouri Innovation Campus (MIC) initiative.

The Missouri Innovation Campus is an exciting, progressive collaboration between the Lee’s Summit R-7 School District, Metropolitan Community College and the University of Central Missouri. By engaging business partners and community organizations, the MIC is reshaping the way students experience education.

The MIC students graduate with:

- A bachelor's degree, two years after high school.
- Little to no student debt.
- Applied experience through paid internships.
- Highly sought-after skills for high-paying careers.

One of the most significant obstacles facing students who pursue a college education is cost. The MIC delivers the value of a bachelor’s degree with little to no student debt through:

- Student Employment
- Tuition Forgiveness
- Institutional and Departmental Scholarships
- Shared Tuition
- Low-Interest Loan Programs
- Paid Internships

To the best of our knowledge, there is no such software engineering program in Missouri or surrounding states with the features listed above.

This new program could create unnecessary duplication, particularly in the Kansas City area.

As indicated in the previous section, the proposed software engineering program has a different curriculum than MU and UMKC's computer science programs. Notably, UCM traditionally attracts very different student populations as compared with MU and UMKC. Our students prefer a small college environment, rural campus setting, small class size and teaching-focused faculty. On the other hand, as Missouri's research university, MU and UMKC offers a large campus, urban setting and more research-oriented faculty. Furthermore, affordable cost is another major factor for students and their families when considering to attend UCM.

UCM's undergraduate students have very different socioeconomic backgrounds, academic preparation and career goals as compared with those in MU and UMKC. As specified in the MDHE Policies and Guidelines, MU and UMKC have a selective admission criteria which requires an ACT score of 24 or better for admission. More specifically, MU's engineering and computer science programs require an ACT math score of at least 26 and ACT composite of at least 26 or a class rank in the upper 25 percent if the minimum ACT composite score is not met. UMKC's engineering and computer science programs require an ACT math score of at least 25 and ACT composite of at least 24 or a class rank in the upper 25 percent if the minimum ACT score is not met. On the other hand, UCM has a moderately selective admission criteria which only requires an ACT score of 21 or better for admission. There is no additional admission criteria for the proposed software engineering major.

Given that the University of Central Missouri's statewide mission in professional applied sciences and technology programs, UCM is a natural home for the proposed B.S. in Software Engineering program. A clear majority of UCM students are from our traditional 21 service counties which include Jackson County and are tied to this area by jobs and/or family responsibilities. Many of the students have circumstances making attendance at another university or college difficult or impossible particularly due to ACT requirements and/or family financial situations (as shown in our proposal, the average poverty rate for the UCM service area is above the state figure, and the average median household income is significantly below the state figure.). The options available to them are largely determined by the options provided at UCM. As a comprehensive regional university with a statewide mission in professional applied sciences and technology programs, it is our goal to provide Missouri citizens in our service region and/or beyond more access to affordable undergraduate study in software engineering.

There are concerns about the nature and structure of the program as proposed.

I. Lack of exposure to industry practice and industry collaborative partnerships

As mentioned in the previous section, the proposed software engineering program has a rigorous curriculum as specified by the ABET accreditation guidelines on software engineering program. Its curriculum differs significantly from a computer science program. Furthermore, the proposed program is also designed to meet the expressed needs of our industry partners. UCM's Computer Science program has a long tradition of working closely with local companies to provide the curriculum needed for their workforce of the future. Our programs have a very active industry advisory board with representatives from many local companies such as Cerner, Garmin, DST systems, Sprint, Honeywell and Commerce Bank, etc. The Board meets each Fall and Spring semester. A few support letters from local companies are attached to our proposal.

UCM's Computer Science program strives to provide our students with hands-on learning experiences. During their study, our students have opportunities to work on projects from small to large scales either through individual or team efforts. Often our industry partners create these projects. In addition, many students have internship experiences. For example, just in Summer 2017, there are 19 undergraduate

students interning with various companies in the Kansas City and St. Louis areas. The actual number could be higher since not every interning student chooses to take an internship course for credit.

Currently, UCM's Computer Science program has 11 faculty members with software engineering training and/or software engineering work/research experiences among whom 6 are tenured or tenure-track. Although the majority of our faculty have a Ph.D. in Computer Science, we do have two faculty members with a Ph.D. in Electrical and Computer Engineering. They complement other faculty members by incorporating engineering practices into our curriculum.

2. Strengthening the quality of programs at UCM will provide better employment prospects

UCM strives to provide high quality programs in Computer Science and Cybersecurity. As indicated in the previous sections, our programs are designed according to ABET accreditation criteria for Computer Science and Cybersecurity. The Computer Science program is expecting the official ABET accreditation decision in August 2017 and the Cybersecurity program will conduct the ABET onsite visit in October 2017. We are confident that our programs hold the same high standard as other ABET accredited programs which include MU and UMKC's Computer Science programs.

UCM's Computer Science graduates are highly sought by employers. Our placement rate is consistently high. The most recent UCM Graduate Employment Statistics published by the UCM Office of Career Services indicates a 95% job placement for 20 Computer Science graduates in the 2014-2015 academic year with an average starting salary of \$65,001-\$70,000. Our BS in Cybersecurity program was implemented in Fall 2015 and just had its first graduate in May 2017. That student is currently employed with Cerner.

3. It is necessary to first explore alternatives and accurately gauge demand for UCM graduates

When the Cybersecurity program was added, we did not see a decline in our Computer Science majors. Rather, we had new incoming freshman and transfer students looking specifically for Cybersecurity. We also have seen many students wanting both programs and choosing to double major. In addition, we had prospective students-both domestic and international-asking specially for a Software Engineering program. It is expected that with the addition of Software Engineering we will be able to reach new students with specific interests in this field rather than shift current students from Computer Science to Software Engineering.

Furthermore, creating a software engineering track or emphasis area in our Computer Science or Cybersecurity programs will prevent us from securing EAC/ABET accreditation for the proposed Software Engineering program. Based on the current ABET Accreditation Policy and Procedure Manual, the program name determines the commission and the criteria applicable to its review. A track or emphasis area under Computer Science will be reviewed by CAC/ABET using Computer Science program criteria. Without ABET accreditation, our ability to attract prospective students as well as our graduates' competitiveness in the job market will be negatively affected.

4. The report that was submitted lacked data on the demand for software engineers in the state of Missouri

The Market Demand Section of our program proposal listed extensive data and information concerning the demands of software engineers both in Missouri and in the U.S. Many industry representatives serving on

our Computer Science Advisory Board also expressed interest in the proposed Software Engineering program. A few support letters from local companies are attached with our proposal.

The sections below provide details to address the concerns listed in the letter received from MDHE.

Duplication of Existing programming

The letter received from MDHE dated on November 23, 2016 listed the following existing programs as duplication.

140901	UM-C	B.S. Computer Engineering
140901	MS&T	B.S. Computer Engineering (Network/Software Engineering Option)
141001	UMKC	B.S. Electrical & Computer Engineering
110701	UMKC	B.S. Computer Science (option is Software Engineering)

As indicated in previous sections, Software Engineering, Computer/Electrical Engineering and Computer Science are different disciplines with different curricula and focuses. It is worth mentioning that MS&T's B.S. Computer Engineering program does not have an option called Network/Software Engineering. Its undergraduate catalog lists four options: Computational Intelligence, Computer Architecture and Embedded Systems, Integrated Circuits and Logic Design, and Networking, Security and Dependability. MDHE program inventory (<http://collegesearch.mo.gov/>) also confirms our finding.

Delivery of programs within Kansas City region

Kansas City (Jackson County) is one of UCM's traditional 21 service counties. It must also be noted that the proposed program is the first Software Engineering program in the state of Missouri, and we attract different student populations than UMKC. We, therefore, believe that the proposed program will not add competition in the Kansas City region.

Respectfully,



Kim Andrews, Ph.D.
Vice Provost for Academic Programs and Services
University of Central Missouri



Summit Technology Academy

777 NW Blue Parkway, Suite 3090
Lee's Summit, Missouri 64086-5712
(816) 986-3410 • Fax (816) 986-3435

Director: Elaine Metcalf, EdS

Assistant Director: Jeremy Bonnasen, EdD

April 27, 2017

RE: LETTER OF SUPPORT

To Whom It May Concern:

On behalf of the Summit Technology Academy and the Lee's Summit R-7 School District, I am writing this letter to note our support of the University of Central Missouri's School of Computer Science and Mathematics, specifically the addition of a Bachelor of Science degree in Software Engineering.

The University of Central Missouri (UCM) is poised and ready to be an emerging leader in the delivery of innovative solutions that will entice traditional and nontraditional college students to earn a software engineering degree. The UCM vision includes creating a pipeline of competent, skilled graduates ready to meet the demands of the 21st century. This will ensure that a diverse and sustainable STEM workforce becomes a reality in the Kansas City area and beyond.

The professors and leaders in the School of Computer Science and Mathematics are masters at developing an environment that leverages the strengths of educators, STEM organizations, and local industry. Working together with Summit Technology Academy, as well as the area community college, UCM is a leader in innovation K-16 practices, such as the nationally recognized program called The Missouri Innovation Campus (MIC). UCM faculty know how to establish a program of study that meets learning outcomes for software engineers, as well as ensuring high academic standards for their students.

The addition of a software engineering program would make a big impact on the students pursuing higher education in this geographic region. Summit Technology Academy and the Lee's Summit School District are pleased to be able to provide our full support to UCM for an exciting new program.

Sincerely,

Elaine Metcalf
Director



Warrensburg R-VI School District

District Office
201 S. Holden St., P. O. Box 638
Warrensburg, MO 64093

Phone: (660) 747-7823
Fax: (660) 747-9615
Web Site: warrensburg6.org

Dr. Scott Patrick, District Superintendent

Ms. Shelbie Dalton, Director of Special Programs

Mrs. Jackie Duvall, Director of Curriculum and Assessment

Dr. Andy Kohl, Assistant Superintendent

Dr. Michael Scott, Assistant Superintendent

April 28, 2017

Dr. Zora Mulligan, Commissioner
Missouri Department of Higher Education
205 Jefferson Street
P.O. Box 1469
Jefferson City, MO 65102-1469

It is with great pleasure that I write this letter of support on behalf of the Warrensburg R-VI School District for the proposed new Bachelor of Science in Software Engineering program at the University of Central Missouri. This proposed program is important to the UCM School of Computer Science and Mathematics' continuing efforts to enhance its contributions to preparing the 21st century technical workforce in a STEM field of national interest.

As a long-standing academic partner with the University of Central Missouri, we also understand the importance of these types of programs for our students and our organization. Without the ability to continue to prepare a highly-qualified workforce in Software Engineering, our information society will suffer.

If you have any further questions regarding our district's support of this proposed program, please do not hesitate to contact me.

Sincerely,

Scott W. Patrick, Ed.D.
Superintendent

May 10th, 2017

Dr. Zora Mulligan, Commissioner
Missouri Department of Higher Education
205 Jefferson Street
P.O. Box 1469
Jefferson City, MO 65102-1469

To Dr. Zora

As Assistant Vice President of software development at Commerce Bank, I am writing this letter in support of the proposed Bachelor of Science in Software Engineering degree at the University of Central Missouri (UCM).

Commerce has been an industrial partner of UCM's School of Computer Science and Mathematics for the last five years through a variety of activities such as classroom-sponsored projects, presenting at Association for Computing Machinery (ACM) meetings, career fairs and participation on the Advisory Board. I have personally hired many talented students for internships and fulltime software development positions. We also participated in building curriculum for the software development and security cohorts for the Missouri Innovation Campus (MIC) and we sponsored a student.

Through these activities, I have observed UCM's ongoing attention to shaping their programs and offerings to the mutual benefit of students and industry. Considering the demand for people trained in software development is expected to significantly increase in the near future, I see the proposed degree program as an essential continuation of UCM's excellent tradition of necessary and appropriate innovation.

Please do not hesitate to contact me if I may be of further assistance in this matter.

Respectfully,

Darren J. Abels
Assistant Vice President
Commerce Bank



Metropolitan Community College

Longview

May 12, 2017

Dr. Zora Mulligan, Commissioner
Missouri Department of Higher Education
205 Jefferson Street
P.O. Box 1469
Jefferson City, MO 65102-1469

I am writing in support of University of Central Missouri's proposal of a new Bachelor of Science in Software Engineering. I have reviewed the proposed curriculum and supporting documentation. This proposed program is important to the community at large due to the continued growing demand for Software Engineers. The increasing growth of technology in mobile applications and healthcare has influenced an above average growth rate.

The Computer Science Department at Metropolitan Community College has had a long-standing relationship with the University of Central Missouri. We have partnered with the University of Central Missouri to provide students a smooth 2 + 2 pathway towards degree completion. We have also experienced increasing enrollment in our software development program and continued requests from industry partners to increase the pipeline of workers.

As Software Engineers continue to consistently increase in demand, it is imperative that students have an avenue for educational training in this field.

If I can answer any questions on behalf of Metropolitan Community College's Computer Science department, please contact me.

Regards,

A handwritten signature in cursive script that reads 'Cindy Herbert'.

Cindy Herbert
Computer Science Faculty & Program Coordinator
cindy.herbert@mccckc.edu

..

"College of the Year"
by TIME/The Princeton Review 2001



2800 Rockcreek Parkway
Kansas City, MO 64117
816.201.1024 ^{Tel}
816.474.1742 ^{Fax}

May 25, 2017

Dr. Zora Mulligan, Commissioner
Missouri Department of Higher Education
205 Jefferson Street
P.O. Box 1469
Jefferson City, MO 65102-1469

Dear Dr. Mulligan:

It is my privilege to provide this letter in support of the proposed Bachelor of Science in Software Engineering degree at the University of Central Missouri (UCM). I support the proposed degree program because it will provide an excellent opportunity for students in a technology field that continues to grow. There are not enough software engineering graduates to fill all the software engineering jobs in the business community today. This proposed degree program would prepare additional software engineers to move our companies forward.

Cerner has been a partner of the School of Computer Science and Mathematics for over 20 years. Over the past seven years, Cerner has hired two hundred and eighteen graduates from UCM with a majority of those graduates filling a technical role within our organization.

As a member of the Advisory Board for the Computer Science Department, I know that the faculty and staff of the School of Computer Science and Mathematics are dedicated to preparing students to meet the software engineering needs of today's businesses.

Sincerely,

Aaron Guest

A handwritten signature in black ink that reads 'Aaron Guest'.

Director, Physician Development

Dear Sir/Madam:

Re: Support for Software Engineering at UCM

We at DST in Kansas City, MO recruit heavily from the University of Central Missouri. Our partnership exists in many forms including our partnership with the MIC program and attendance at the university Career Fairs in the Fall and Spring semesters each year.

DST is a technology firm and we have always sought individuals in the Computer Science area. Additionally, we recently expanded our Cyber Security area and we anticipate seeking to expand in the Software Engineering area in the coming years. The capacities and growing pervasiveness of software make it the lifeblood of today's emerging information society as the demand will certainly increase for a highly-prepared workforce in Software Engineering who can deliver quality software and innovative solutions.

We fully support UCM's addition of a BS degree in Software Engineering and look forward to reaping the benefits of a degree program in Software Engineering.

Sincerely,

DST's University Relations Team

Andy Cole -- University Relations Program Leader

Ashley Washington, University Relations Talent Advisor

Katy Howard -- University Relations Talent Advisor

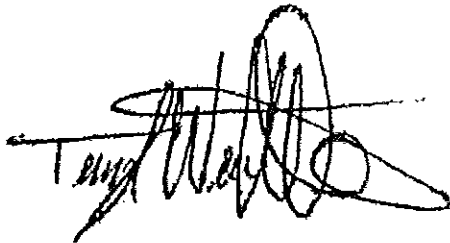
Hello Dr. Yousef,

I'm honored to give my endorsement for the proposed Bachelor of Science in Software Engineering program at UCM. As a graduate of UCM's Masters of Science in Computer Science program, a member UCM's Computer Science Advisory Board, and an Aviation Software Engineer at Garmin I believe I am uniquely qualified to give this endorsement.

Developing and maintaining software under the FAA's watchful eye is a challenging process. The challenge arises from the need for Aviation Software to be developed from thorough and unambiguous requirements and for that software to be tested to the FAA satisfaction. Translating an idea into a set of high quality requirements and developing tests that verify those requirements while also exercising all facets of the written code are two tasks I regularly see new hires struggle with. A thorough understanding of Software Engineering concepts like requirements development and software testing are absolutely essential for a Software Engineer to thrive in the Aviation industry. I believe that more end-to-end exposure to common Software Engineering processes and concepts at the university level will result in graduates who are better prepared and more confident to take positions as Software Engineers in any industry, but especially those industries with rigid software development guidelines like those found in the Aviation industry. I believe the proposed Bachelor of Science in Software Engineering program will give students this exposure, thus providing local industries with high quality Software Engineers, keeping UCM graduates in demand.

Please let me know if there is anything else I can do to support the proposed program.

Sincerely,

A handwritten signature in black ink, appearing to read "Terryl Westerhold". The signature is stylized with a large, circular flourish at the end.

Terryl Westerhold

June 15, 2017

Dr. Zora Mulligan, Commissioner
Missouri Department of Higher Education
205 Jefferson Street
P.O. Box 1469
Jefferson City, MO 65102-1469

Roger Stanley
Director of Enterprise Architecture
DST Systems, Inc.
210 W. 10th Street
Kansas City, MO 64105

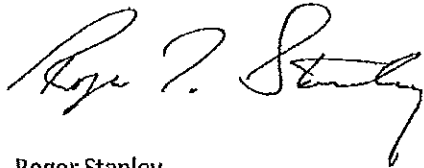
Dear Dr. Mulligan,

I am writing in support of the new Software Engineering program being proposed by the University of Central Missouri. In a day and age in which the depth and breadth of software engineering is growing rapidly, programs with a strong emphasis on programming, project management and mathematics are badly needed.

We currently see many areas of rapid growth in the software industry. Internet of things (IoT), Data Analytics (Big Data), cloud computing, and neural net programming (Artificial Intelligence - AI) are just a few examples of how software engineering is continuing to push the boundaries of what computers can do. In a world with this type of dramatic growth of capabilities, we need students graduating with a strong background in software engineering and mathematics who can join the work force ready to contribute.

As an alumnus of UCM who came into a software development field, I know the challenges these students face. The information technology field continues to grow and expand, but it's also becoming more competitive than ever before. Students need to graduate ready to contribute and ready for the challenges of developing software fast and with great quality. A program like the new Software Engineering program will help students enter the work force ready for these challenges.

Sincerely,

A handwritten signature in black ink, appearing to read "Roger Stanley". The signature is fluid and cursive, with a large initial "R" and "S".

Roger Stanley

Report on University of Central Missouri Software Engineering Proposal

Thomas B. Hilburn, PhD
Professor Emeritus, Distinguished Engineering Professor
Embry-Riddle Aeronautical University
hilburn@erau.edu

A. Software Engineering Proposal

In June of 2016, the University of Central Missouri (UCM) proposed the establishment of a Bachelor of Science program in Software Engineering. The proposed program is intended to prepare students to pursue the profession of software engineering. The proposal states that the program is “well aligned with the University of Central Missouri’s mission of preparing students with the knowledge, skills and confidence to succeed and lead in the region, state, nation and world”.

The proposal includes the following features:

- student enrollment projections
- definitions of the disciplines of software engineering, computer science, and computer engineering
- the market demand for software engineers
- information about existing B.S. programs in Software Engineering

In this report we will elaborate on some of these issues and provide additional information and opinion related to the UCM proposal. Also, in Table 4, we compare features of the UCM software engineering proposal to other B.S. computing programs at Missouri universities.

B. The Nature of Software Engineering

1. Engineering and Applied Science

Concerning the nature of “Engineering”, there is a question about whether Engineering is an “Applied Science”. If we were to query practicing engineers about this question, most would probably say something like “as an engineer I apply science in my practice of engineering, but I would not call it an applied science discipline – like applied physics, chemistry, or biology”. However, as the following definitions illustrate, engineering is strongly connected with applied science:

- Merriam Webster defines engineering as “the application of science and mathematics by which the properties of matter and the sources of energy in nature are made useful to people”.
- Engineers Council for Professional Development (ECPD) [ECPD 1941], the predecessor of ABET (Accreditation Board for Engineering and Technology), defined engineering as “The creative application of scientific principles to design or develop structures, machines, apparatus, or manufacturing processes, or works utilizing them singly or in combination ...”.

- ABET (<http://www.abet.org/>) defines engineering as “Engineering is the profession in which a knowledge of mathematical and natural sciences gained by study, experience, and practice is applied with judgment to develop ways to utilize, economically, the materials and forces of nature for the benefit of mankind”.
- ABET Criteria for Accrediting Engineering Programs [ABET 2016 -2] states that graduates of engineering programs must attain “an ability to apply knowledge of mathematics, science, and engineering”.

2. Differences between Software Engineering and the Traditional Fields of Engineering

Software engineering is defined in various documents as follows:

- The *SEI Report on Undergraduate Software Engineering Education* [Ford 1990] defines software engineering as “that form of engineering that applies the principles of computer science and mathematics to achieving cost-effective solutions to software problems.”
- ISO/IEC/IEEE 24765 Standard - Systems and Software Engineering Vocabulary [IEEE 24765]
 - Defines software engineering as “the systematic application of scientific and technological knowledge, methods, and experience to the design, implementation, testing, and documentation of software”.
 - Defines computer science as “the branch of science and technology that is concerned with information processing by means of computers”.

Software Engineers work on the development of various types of software systems in a variety of domains, such as transportation, health services, education, business/financial affairs, entertainment, and government affairs.

- The engineering of software systems is often more complicated than other types of systems: it typically involves development of multiple subsystems and modules, which must interact with other systems; software systems may be extremely large, involving hundreds of thousands of lines of code or more; and such systems require teams of engineers and domain experts to develop, and takes time to develop (many months or years).
- An experienced software engineer needs knowledge and practice in the following areas [Bourque 2014]:
 - computing fundamentals
 - software process models
 - software project management
 - software quality assurance and testing
 - software requirements analysis and specification
 - software architecture
 - software construction
 - software operation and maintenance
- Software engineers may go by other titles – “software developer” or “software system engineer”. Also, the term “Software Engineer” is sometimes imperfectly used for those who only have capability in the software construction of small to moderate-size modules or programs. A more accurate job title for this type of work would be “computer programmer”.

- In *The Mythical Man-Month* [Brooks 1995], Fred Brooks sites key elements of software systems, which distinguish software engineering from more traditional engineering disciplines.
 - Complexity – software systems are typically more complex than other engineered systems. The complexity arises from the large number of unique interacting parts in a software system. Parts encapsulated as functions, objects, modules, and components, which are invoked as needed rather than being replicated.
 - Conformity – conventional engineered systems must conform to the physical world, while there are no similar controlling or guiding principles for software systems. Additionally, in physical systems, if two parts must fit together, they are allowed tolerances at their interface; however, in a software system, the interfaces for two parts must conform perfectly.
 - Changeability – because a software system is not physical, it is easy to change; hence, it is often changed, even in the latter stages of development. However, if the change is not made with thorough analysis and care, the results can cause more problems than they solve.
 - Invisibility - because it has no physical properties, software is considered invisible. It cannot be seen, heard, or felt. The intangible nature of software makes it harder to model and understand. So, software engineers use different representations, at different levels of abstraction, to “visualize” software systems.

Because of this complexity, the engineering of software is often more troublesome than other engineered systems. For example, schedule and cost overruns are more likely for software development, and high-quality software products are more difficult to achieve. Over one-third of software projects experience 150% to 300% cost and schedule overruns, and over 30 % of projects will be cancelled before they are completed. [Chaos 2014]. A major contributor to these problems is that too many software developers lack preparation in software estimation, quality assurance, and software processes.

C. Employment of Computing Professionals

1. Education of Computing Professionals in Missouri

Missouri universities do not currently offer a software engineering degree program. However, there are numerous computer science programs offered. Table 1 shows the enrollment and the number of recent graduates from Missouri schools and some from Kansas.

Table 1: B.S. Computer Science Enrollments and Number of Graduates

Missouri Public	2014-2015		2015-2016		2016-2017	
	Enrolled	Graduates	Enrolled	Graduates	Enrolled	Graduates
MU	280	63	251	74	240	83
MS&T	550	72	605	91	659	94
SEMO	147	11	165	11	183	13
MSU	305	36	358	33	380	61
UMSL	361	33	384	35	380	50

Missouri Western	72		76	12		12
UMKC	259		270	21	294	
UCM	238	27	292	27	307	35
	2014-2015		2015-2016		2016-2017	
Missouri Independent	Enrolled	Graduates	Enrolled	Graduates	Enrolled	Graduates
Wash U	196	21	279	70	399	71
St. Louis U	90	19	102	15	127	23
Maryville	0	1	0	0		
Fontbonne	30	3	29	6		6
Central Methodist University	36	10	35	6	24	9
Avila University	29	7	28	2	44	12
Drury University		0		0	58	0
Southwest Baptist University	100	20	110	21	125	20
Evangel University	24	2	23	11	24	6
	2014-2015		2015-2016		2016-2017	
Kansas Institutions	Enrolled	Graduates	Enrolled	Graduates	Enrolled	Graduates
KU	311	37	343	58		
Kansas State	432	28	558	34	560	68
Washburn	133	14	110	14		24
Wichita State	281	25	343	25	360	24

2. Demand for Software Developers

Tables 2 and 3 provide information on employment data for software developers and programmers in Missouri (<http://www.chmuraecon.com/jobseq>).

Table 2: Employment Data for Software Developers and Programmers in Missouri

2016-2017 Occupation of Software Developers and Programmers in Missouri						
	Computer Programmers	Applications Software Developers	Systems Software Developers	Web Developers	Software Developers & Programmers	Total - All Occupations
Number Employed	6,476	14,532	6,727	2,700	30,436	3,002,177
2016 Avg. Annual Wages	\$79,800	\$95,700	\$99,100	\$61,200	\$90,900	\$45,400
Location Quotient	1.11	0.87	0.77	0.85	0.88	1.00
Unemployed	250	201	97	83	631	n/a
Unemployed Rate	4.2%	1.6%	1.6%	3.3%	2.3%	n/a
Increases over 2012-2017						
	Computer Programmers	Applications Software Developers	Systems Software Developers	Web Developers	Software Developers & Programmers	Total - All Occupations

Number Employed	920	2,093	1,016	201	4,229	167,354
Missouri	3.1%	3.2%	3.3%	1.6%	3.0%	1.2%
Kansas	3.9%	4.3%	1.8%	2.5%	3.4%	0.8%
USA	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
Projected Changes over Next ten years						
	Computer Programmers	Applications Software Developers	Systems Software Developers	Web Developers	Software Developers & Programmers	Total - All Occupations
Current Online Job Ads	96	1,490	19	701	2,306	138,250
Total Replace Demand	1,460	2,399	915	481	5,256	782,311
Total Growth Demand	-783	2,354	768	655	2,995	80,643
Average Annual Growth %	-1.3%	1.5%	1.1%	2.2%	0.9%	0.3%

Table 3: Employment Data for Software Developers and Programmers in Kansas City Metro Area

2016-2017 Occupation of Software Developers and Programmers in Missouri						
	Computer Programmers	Applications Software Developers	Systems Software Developers	Web Developers	Software Developers & Programmers	Total - All Occupations
Number Employed	2,945	8,182	3,527	1,215	15,868	1,103,396
2016 Avg. Annual Wages	\$77,200	\$91,200	\$97,700	\$60,600	\$88,000	\$48,400
Location Quotient	1.37	1.33	1.09	1.04	1.25	1.00
Unemployed	119	120	55	39	332	n/a
Unemployed Rate	4.0%	1.5%	1.6%	3.1%	2.1%	n/a
Increases over 2012-2017						
	Computer Programmers	Applications Software Developers	Systems Software Developers	Web Developers	Software Developers & Programmers	Total - All Occupations
Number Employed	619	1,650	490	129	2,889	92,266
KC Metro	4.8%	4.6%	3.0%	2.3%	4.1%	1.8%
Missouri	3.1%	3.2%	3.3%	1.6%	3.0%	1.2%
USA	2.9%	3.4%	2.4%	2.6%	3.0%	1.7%
Projected Changes over Next ten years						

	Computer Programmers	Applications Software Developers	Systems Software Developers	Web Developers	Software Developers & Programmers	Total - All Occupations
Current Online Job Ads	45	735	13	309	1,102	71,439
Total Replace Demand	665	1,381	494	220	2,761	288,415
Total Growth Demand	-342	1,703	616	338	2,314	69,444
Average Annual Growth %	-1.2%	1.9%	1.6%	2.5%	1.4%	0.6%

The metric “Location Quotient” (LQ), used in Tables 2 and 3, is an analytical statistic that measures Missouri and KC Metro employment in software development, relative to the nation. The USA has a LQ of 1; Table 2 shows an LQ of 0.77 for Systems Software Developers, which means there is less concentration of this occupation in Missouri than for the whole nation. However, as Table 3 shows, in the Kansas City metro area, the LQs are higher.

The *Occupational Outlook Handbook* [BLS 2016] from the U.S. Bureau of Labor Statistics assesses professional positions in the United States: The following are extracts, which are pertinent to the software engineering employment:

- Computer Programmers write and test code that allows computer applications and software programs to function properly. They turn the program designs created by Software Developers and Engineers into instructions that a computer can follow.
- Software Developers - 2016 median pay: \$102,280 per year, \$49.17 per hour
- Employment of software developers is projected to grow 24 percent from 2016 to 2026, much faster than the average for all occupations.
- Computer programmers – 2016 median pay \$79,840 per year \$38.39 per hour.
- Employment of computer programmers is projected to decline 8 percent from 2016 to 2026.

In 2016, *U.S. News* (<https://money.usnews.com/careers/best-jobs/rankings/best-technology-jobs>) ranked Software Developer #2 in Best Technology Jobs

- 135,300 Projected Jobs \$98,260 Median Salary 2.0% Unemployment Rate

A recent study, *Education Asset Inventory for Greater Kansas City* [MARC 2017], states “In order to grow or attract top technology employers, the region is expected to need more information technology talent capacity, specifically in software development.” The study lists the UCM Computer Science program, with the Software Development, option, as among six programs in Missouri that focuses on software development. The UCM proposed Software Engineering program requires courses in software development that are needed for the development of complex software systems, and which do not exist in any current Missouri program.

3. Employment Opportunities for Software Engineers

Tables 2 and 3 present employment information for a variety of job titles: Computer Programmers, Applications Software Developers, Systems Software Developers, Web Developers, and Software Developers & Programmers. Although a graduate of a software engineering program should be able to fill any of these roles, employers seeking a Systems Software Developer would be most attracted to someone with a software engineering background. That is, someone who has knowledge and competency about such topics as Software Requirements Engineering, Software Design and Architecture, and Software Testing & Quality Assurance, all of which are part of UCM's proposed Software Engineering degree program.

Tables 2 and 3, the 2016 *Occupational Outlook Handbook*, a 2016 *U.S. News* report, and the *Education Asset Inventory for Greater Kansas City* all show excellent employment opportunities for Software Engineers, both in Missouri and the USA:

- some of the highest salaries in the computing profession,
- low unemployment rates,
- and positive employment growth in the next ten years.

D. Comparing Computing Curricula

1. ACM/IEEE-CS Curriculum Guidelines

The ACM (Association of Computing Machinery) and IEEE-CS (IEEE Computer Society) have developed guidance for the development of undergraduate programs in Computer Science [ACM 2013] and in Software Engineering [ACM 2015]. A comparison of the knowledge areas covered in the two sets of guidelines illustrates the profound difference and intent of the two. For example, the Computer Science Guidelines recommends a minimum of 24 class hours for software engineering topics, while the Software Engineering Guidelines recommends a minimum of 208 class hours for software engineering topics

2. Differences in ABET Accreditation Criteria for Computing Programs

The Accreditation Board for Engineering and Technology (ABET) specifies criteria for accrediting engineering and technology programs. The following criteria, listed for three computing programs, do not include all the criteria; but, the extracts are intended to highlight the differences and similarities between the programs.

- Software Engineering: Among other things, the Engineering Accreditation Commission (EAC) [ABET 2016 -2] requires the following:
 - The curriculum must have (1) one year of a combination of college level mathematics and basic sciences (some with experimental experience) appropriate to the discipline. (Basic sciences are defined as biological, chemical, and physical sciences); and (2) one and one-half years of engineering topics, consisting of the engineering sciences and engineering design, appropriate to the student's field of study.
 - The curriculum must include computing fundamentals, software design and construction, requirements analysis, security, verification, and validation; software

- engineering processes and tools appropriate for the development of complex software systems.
- The program must demonstrate that faculty members teaching core software engineering topics have an understanding of professional practice.
 - Graduates must be prepared to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
 - **Computer Science:** Among other things, the Computing Accreditation Commission (CAC) [ABET 2016 -1] requires the following:
 - The curriculum must have one year of a combination of college level mathematics and basic sciences (some with experimental experience) appropriate to the discipline. Basic sciences are defined as biological, chemical, and physical sciences”.
 - The curriculum must have one and one-third years that must include: (1) coverage of the fundamentals of algorithms, data structures, software design, concepts of programming languages and computer organization and architecture; and (2) an exposure to a variety of programming languages and systems.
 - Graduates must be prepared to apply design and development principles in the construction of software systems of varying complexity.
 - Some full-time faculty members must have a Ph.D. in computer science.
 - **Computer Engineering:** Among other things, the Engineering Accreditation Commission [ABET 2016 -2] requires the following:
 - The curriculum must have (1) one year of a combination of college level mathematics and basic sciences (some with experimental experience) appropriate to the discipline. (Basic sciences are defined as biological, chemical, and physical sciences); and (2) one and one-half years of engineering topics, consisting of engineering sciences and engineering design appropriate to the student's field of study.
 - The curriculum must include engineering topics (including computing science) necessary to analyze and design complex electrical and electronic devices, software, and systems containing hardware and software components.
 - Graduates must be prepared to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.

E. Comparison for Missouri Computing Programs

Table 4 compares the curricula for several computing programs in Missouri and the proposed UCM Software Engineering program. The table concentrates on the software engineering topics, which are part of the curricula.

Table 4: Comparison of Missouri Computing Programs

Program	Required Credits	ABET Accreditation	Required Software Engineering Topics	Other Features
UCM B.S. Software Engineering	120	A Proposal, hence not Accredited	Intro. Software Engineering, Project Management, Software Requirements Engineering, Software Design and Architecture, Software Testing & Quality Assurance, Secure Software Engineering, Senior Project	Elective courses: Big Data Systems, Data Mining, Cloud Computing
UMKC B.S. Computer Science	120	Accredited by ABET-CAC	Foundations of Software Engineering and a Capstone course	There is a software engineering option that includes two courses from the following: Software Architecture, Requirements & Design, Software Architecture, Testing & Maintenance
UMKC B.S. Electrical & Computer Engineering	128	Accredited by ABET-EAC	No software engineering courses	Two intro. to programming courses, some assembly, embedded programming courses, and two Senior Design courses.
MU B.S. Computer Science	126	Accredited by ABET-CAC	Intro. Software Engineering, two Senior Capstone courses.	No electives in software engineering topics.
MU S&T B.S. Computer Science	128	Accredited by ABET-CAC	Intro. Software Engineering, Software Systems Development	Electives: second course in Software Systems Development, Software Testing and Quality Assurance
MU S&T B.S. Computer Engineering	128	Accredited by ABET-EAC	No software engineering courses. Two Senior Design courses.	Two intro. to programming courses, elective in Software Engineering.

F. United States B.S. Software Engineering Programs

The creation of software engineering degree programs is a rather recent event. The first program to be accredited was at Rochester Institute of Technology, occurring in 2001. There are currently twenty-eight programs accredited by ABET under the Software Engineering program criteria, while there over 300 ABET accredited programs in computer science.

The reasons for the differences in the numbers is not certain, but several influencing factors seem clear:

- Computer science, as a discipline, has been around much longer. The first Department of Computer Science in the United States was established at Purdue University in 1962.
- A computing department may not possess the expertise to offer such a program. To offer a software engineering program, faculty are needed with backgrounds in software requirements, software architecture, quality assurance and project management. The United States has only eight Ph.D. programs in software engineering, while there are over 200 Ph.D. programs in computer science (some with software engineering options). Also, as stated earlier, ABET requires software engineering faculty to “have an understanding of professional practice”.
- There is still confusion and misunderstanding about the terms “software engineering”, “software developer”, “computer scientist”, and “computer programmer”, both by the general public and in parts of academia.

G. Conclusions

- Software engineering is a distinct and separate discipline from other computing disciplines (e.g., computer science, computer engineering, computer information systems). The other disciplines do not have a central focus on such areas as software project management, software quality assurance and testing, software requirements analysis and specification, and software architecture.
- There is strong evidence that software engineering and other engineering fields involve the application of science and mathematics to solve engineering problems. However, most engineers would probably not classify themselves as applied scientists.
- There is strong demand in industry for software engineers, who have knowledge and experience in the areas described in the *Guide to the Software Engineering Body of Knowledge*, [Bourque 2014]. And, there are currently a limited number of programs offering this desired preparation.
- In comparing the curriculum of the UCM Software Engineering proposed program with other computing programs (Table 4), it is clear that the UCM program is different from the others and would be the only one to satisfy the needs of a software engineering professional as detailed in [Bourque 2014]. Also, the UCM proposed program appears to be the only one from Table 4, which would satisfy the EAC requirements for software engineering [ABET 2016 -2].

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DATA SNAPSHOT

Employer Demand for Bachelor's-Level Software Engineering Professionals

Analysis of Missouri Employer Demand and
Degree Completions

COE Forum

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1) Research Methodology

Project Challenge Leadership at the University of Central Missouri approached the Forum as they considered the market demand for a bachelor’s-level software engineering program. The Forum assessed employer demand for bachelor’s-level software engineering professionals and degree completions bachelor’s-level software engineering and related programs in Missouri.

EAB reports rely primarily on labor market data from the Burning Glass Labor/Insight™ tool (description below). Reports occasionally use data from the United States Census Bureau and United States Bureau of Labor Statistics data to explore occupation and job trends. Market research reports may also incorporate Integrated Postsecondary Education Data System (IPEDS) data to assess student enrollment, demographics, and completion rates across competitor programs.

Methodology and Definitions

Methodology: Unless stated otherwise, this report includes data from online job postings from July 2013 to June 2017. The Forum identified trends in demand over time for bachelor’s-level software engineering professionals in Missouri. The Forum also assessed reported degree completions for bachelor’s-level “software engineering programs” in Missouri.

Definitions: “In-state” refers to Missouri. “Software engineering professionals” refer to the following **O*NET occupation codes:**

- Software Developer, Applications (15-1132),
- Software Quality Assurance Engineers and Testers (15-1199.01), and
- Software Developers, Systems Software (15-1133).

“Software engineering programs” refer to the following **CIP codes:**

- Computer science (11.0701),
- Computer engineering (14.09),
- Computer engineering (14.0901),
- Computer software engineering (14.0903),
- Electrical & electronics engineering (14.1001),
- Systems engineering (14.27),
- Systems engineering (14.2701),
- Computer engineering technologies/technicians (15.12), and
- Computer software technology/technician (15.1204).

Annual growth in job postings is measured in the change between July 2013 and June 2017 by six-month halves (i.e., H2 2013 is July 2013 to December 2013).

Burning Glass Labor/Insight™

EAB's Partner for Real-Time Labor Market Data

This report includes data made available through EAB's partnership with Burning Glass Technologies, a Boston-based leader in human capital data analytics. Burning Glass Technologies specializes in the use of web spidering technology to mine more than 80 million online job postings and analyze real-time employer demand. Under this partnership, EAB may use Burning Glass's proprietary Labor/Insight™ tool to answer member questions about employer demand for educational requirements, job titles, and competencies over time, as well as by geography. The tool considers job postings "unspecified" for a skill, industry, employer, geography, certification, or educational requirement when the job posting did not advertise for one of these particular job characteristics. Unspecified postings represent null values and should be excluded from the total number (n value) of job postings analyzed in the query. A more complete description of the tool is available at <http://www.burning-glass.com/products/laborinsight-market-analysis/>. For more information about the Labor/Insight™ tool, please contact Betsy Denious, Director of Business Development Learning & Policy at bdenious@burning-glass.com or 301-525-6596.

Project Sources

The Forum consulted the following sources for this report:

- EAB's internal and online research libraries (eab.com)
- National Center for Education Statistics (NCES) (<http://nces.ed.gov/>)

2) Missouri Market Demand and Completion Trends

Demand over Time

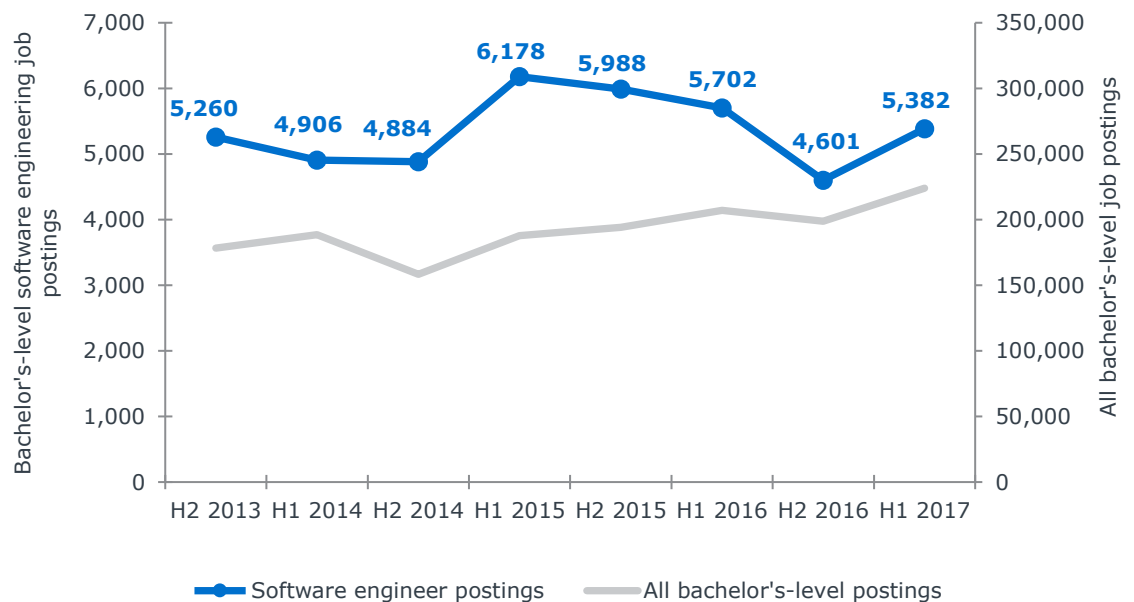
Missouri Employers Posted 10,323 Software Engineering Job Postings in the Last 12 Months

Missouri employer demand for bachelor’s-level software engineering professionals remains experienced minimal growth from July 2013 to June 2017. Missouri employers list 5,382 job postings for bachelor’s-level software engineering professionals in H1 2017, a two percent increase from the 5,260 relevant job postings in H2 2013. Across the last 12 months (i.e., November 2016 to October 2017), employers posted 10,323 jobs for software engineers in Missouri, similar to the number of postings in the last two years. Most recently, employer demand for bachelor’s-level software engineering professionals in Missouri rose 17 percent between H2 2016 and H1 2017 (i.e., 4,601 to 5,382 postings).

Administrators should note employer demand for all bachelor’s-level professionals in Missouri rose 26 percent between H2 2013 and H1 2017, much faster than the two percent growth in demand for bachelor’s-level software engineering professionals in this period. Recently, demand for all bachelor’s-level professionals in Missouri rose from 198,854 job postings in H2 2016 to 223,924 postings in H1 2017 (i.e., a 13 percent increase).

Historical Demand for Bachelor’s-Level Software Engineering Professionals

July 2013-June 2017, Missouri Data¹



1) Burning Glass Labor/Insight™

Missouri Institutions Report 590 Bachelor’s-Level Software Engineering Degree Completions in 2014-15

Reported degree completions for bachelor’s-level software engineering programs do not appear to meet market demand for bachelor’s-level software engineering professionals in Missouri. In-state institutions report a total of 590 degree completions for bachelor’s-level software engineering programs in the 2014-2015 academic year (i.e., the most recent year of data available). However, employers in Missouri posted 12,166 jobs for bachelor’s-level software engineering professionals in 2015.² While professionals from other states may fill bachelor’s-level software engineering roles in Missouri, the magnitude of this disparity may indicate an opportunity to launch a bachelor’s-level software engineering program at the **University of Central Missouri**. Administrators should note the Bureau of Labor Statistics (BLS) [identifies](#) a bachelor’s degree as the entry-level education typically required for “software developer” roles.

The data displayed below aggregates completions from all “software engineering” CIP codes identified by administrators at the University of Central Missouri. Sixteen institutions in Missouri in addition to the University of Central Missouri report bachelor’s-level software engineering degree completions in the 2014-15 academic year.

Reported Degree Completions for Bachelor’s-Level Software Engineering Programs in Missouri

National Center for Education Statistics, “Software Engineering Programs”

The 2014-15 academic year represents the most recent year of available completions data.

Institutions	Reported Completions 2014-15
Washington University in St. Louis	214
University of Missouri-St. Louis	69
University of Missouri-Kansas City	59
Saint Louis University	48
Webster University	36
Missouri State University-Springfield	35
Truman State University	31
University of Central Missouri	26
Park University	17
Southwest Baptist University	11
Central Methodist University-College of Graduate and Extended Studies	10
Columbia College	10
Central Methodist University-College of Liberal Arts and Sciences	8
Drury University	7
College of the Ozarks	4
Hannibal-LaGrange University	4
Maryville University of Saint Louis	1
Total	590

2) Burning Glass Labor/Insight™

AGENDA ITEM SUMMARY

AGENDA ITEM

Revision of the Rule on Program Approval
Coordinating Board for Higher Education
December 14, 2017

DESCRIPTION

The Coordinating Board for Higher Education (CBHE) approved a new, three-tiered framework for the review of new academic program proposals at its meeting on [June 8, 2017](#), prompting a review of the administrative rule supporting academic program approval. This agenda item presents several proposed revisions to the Academic Program Approval rule 6 CSR 10-4.010 as identified by the Missouri Department of Higher Education (MDHE). Upon CBHE approval, the MDHE will begin the rulemaking process to amend the existing Academic Program Approval rule and will report to the Joint Committee on Administrative Rules (JCAR) that the revision is in process.

Background

The three-tiered framework for the review of new academic proposals was one product resulting from the work of the Higher Education System Review Task Force. The framework was vetted thoroughly, as recounted at the June 2017 CBHE meeting. MDHE staff used the framework to revise the extant rule on academic program approval.

Proposed Changes

The amended rule with new language in bold and deleted items in italics is attached to this item (Attachment A). The proposed amendments are classified into three categories:

1. **Revision of general program approval procedures.** The rule was amended to include the addition of the staff, routine, and comprehensive review process and associated timelines, as approved by the CBHE at its meeting on June 8, 2017. The rule was also revised to include the addition of the five-year provisional approval process, approved by the CBHE at its meeting on [June 9, 2011](#). Although the new process went into effect July 1, 2011, the administrative rule had not been updated to reflect this policy change.
2. **Addition and/or clarification of definitions.** The definitions contained within the rule had not been updated since 1989, resulting in a number of definitions that needed to be added and/or clarified to more closely align with those of the U.S. Department of Education (USDE) and the Higher Learning Commission (HLC), the accrediting body for Missouri's public and independent institutions. Aligning definitions with USDE and HLC will ease the burden on higher education institutions as they fulfill both federal and state reporting responsibilities.
3. **Technical updates.** A number of updates were made to the rule to reflect revisions in statute and/or references to outside agencies. For example, a number of references to the Commission on Institutions of Higher Education of the North Central Association of Colleges and Secondary Schools were updated to reflect the organization's new name, Higher Learning Commission.

Conclusion

Streamlining the process for reviewing academic program proposals and processing programmatic changes provides higher education institutions the flexibility to meet workforce demands while maintaining fidelity to their core missions. The changes proposed in this item are designed to strengthen and improve this rule, which provides the contextual framework and supports the statutory requirement for the review and approval of academic programs.

STATUTORY REFERENCE

Sections 173.005.2(1), 173.005.2(8), 173.005.11, 173.030(1), and 173.030(2), RSMo – Statutory requirements regarding CBHE approval of new degree programs

RECOMMENDED ACTION

Staff recommends that the Coordinating Board approve the revisions to 6 CSR 10-4.010, as presented in the attachment, and direct the Commissioner of Higher Education to take all actions necessary to ensure the changes become effective as an administrative rule as soon as possible.

ATTACHMENT(S)

Attachment A: EDITED 6 CSR 10-4.010 Academic Program Approval Rule

Title 6—DEPARTMENT OF HIGHER EDUCATION
Division 10—Commissioner of Higher Education
Chapter 4—Submission of Academic Information, Data and New Programs

6 CSR 10-4.010 Academic Program Approval. The department is deleting sections (1) and (6); deleting subsections (2)(B), (3)(A), (3)(B), (4)(A), (4)(B), (4)(C), (4)(D), (4)(E), (5)(A), (5)(F), (5)(G), (9)(J); deleting divisions (8)(B)2, (10)(C)2, (10)(H)4, (10)(H)5, (10)(H)7, (10)(I)5; adding a new section (5); adding new subsections (2)(A), (2)(B), (2)(C), (2)(E), (2)(F), (2)(K), (2)(L), (2)(M), (2)(P), (2)(Q), (2)(S), (2)(T), (2)(W); adding division (10)(C)3; adding subdivision (10)(D)2.C.; amending sections (3), (4), (5), (9); amending subsections (2)(D), (2)(I), (2)(J), (2)(N), (2)(R), (2)(U), (2)(V), (2)(X), (3)(C), (3)(D), (6)(B), (6)(C), (6)(D), (6)(E), (7)(A), (7)(B), (7)(C), (8)(A), (9)(B), (9)(C), (9)(D), (9)(E), (9)(F), (9)(G), (9)(H), (9)(I), (10)(A), (10)(E), (10)(F), (10)(G), (10)(H); and amending divisions (7)(D)1, (8)(B)1, (8)(B)3, (9)(A)1, (9)(A)3, (10)(B)1, (10)(B)2, (10)(B)3, (10)(B)4, (10)(B)5, (10)(C)1, (10)(C)3, (10)(D)1, (10)(I)4.

PURPOSE: This amendment sets forth the revised evaluation criteria and procedures for submitting new degree and certificate programs and program changes by public and independent institutions of higher education in Missouri to the Coordinating Board for Higher Education.

[(1) Policy.

(A) In light of its responsibilities imposed and assigned by sections 173.005.2(1) and (7) and 173.030(1) and (2), RSMo, the Coordinating Board for Higher Education (CBHE) has determined that it can and should discharge its obligations by requiring institutions of higher education in the state to submit to it information concerning all new degree and certificate programs. The coordinating board will review all new program proposals and, in the case of public institutions, will approve or disapprove them. In the case of independent institutions, the coordinating board will review the programs and make pertinent recommendations. Although these recommendations are not binding on independent institutions, submission of the proposals is required of independent institutions in order to address the issues of duplication and access at the postsecondary level as well as to enable the coordinating board to fulfill its statutory obligations. Furthermore, compliance with this policy is one (1) of the conditions for the eligibility of independent institutions for participation in the Missouri student grant program.

(B) Sections of this rule that do not apply to independent institutions are those dealing with cooperative intercampus degree programs, staff advisory comments, use of consultants, performance reviews for new programs, joint review with CBHE and the Department of Elementary and Secondary Education and program finances.]

(2) Definitions.

(A) CBHE-approved mission—a description of the public institution’s programs, audiences served, level and type of degrees offered, or other distinguishing factors, which the CBHE has reviewed and approved

(B) [CIP Taxonomy—the six-digit code number assigned to academic program types by the Center for Educational Statistics of the United States Department of Education. CIP categories are described in the United States Department of Education publication, A Classification of Instructional Programs (CIP)]

CBHE-approved off-site location—locations other than the main campus (for universities) or taxing district (for community colleges) that the CBHE has reviewed and approved. The department maintains an official inventory of approved off-site locations.

(C) CBHE-approved service region—a geographic region for which a public institution has responsibility for meeting the educational needs of its residents.

([A/D) Certificate program—a prescribed course of study which confers an award other than a formal academic degree.

(E) Classification of Instructional Programs (CIP)—a taxonomic scheme that supports the accurate tracking and reporting of fields of study and program completions activity. The CIP is the accepted federal government statistical standard on instructional program classifications, developed by the U.S. Department of Education.

(F) Combination programs—the result of a mechanical combination of two (2) previously existing programs.

([C/G) Commissioner—the commissioner of higher education as appointed by the CBHE.

([D]H) Content—the program specialization with its related options, if any, for which recognition is intended to be given by the conferring of a degree or certificate.

([E]I) Coordinating board, board or CBHE— the Coordinating Board for Higher Education created by *[the Omnibus State Reorganization Act, Law 1974, p. 530]* **article IV, section 52 of the Missouri Constitution.**

([F]J) Degree—*[any prescribed course of study in an institution of higher education which constitutes an area of specialization leading to a recognized degree. This is the same as the term discipline specialty as represented by the Classification of Instructional Program (CIP) code used in reporting to]* **an award conferred by a college, university, or other postsecondary education institution as official recognition for the successful completion of a program of studies as defined by and reported to the United States Department of Education***[’s Integrated Postsecondary Education Data System]* and to the *[Missouri]* coordinating board’s *[for higher education’s]* certificate and program inventory. In baccalaureate degrees or higher, the term program is generally the same as major.

(K) Department—the Missouri Department of Higher Education created by article IV, section 52 of the Missouri Constitution.

(L) Duplication—proposing to offer the same or a similar program to one that is already being offered by another institution.

(M) Inactive status—the result of formal action by an institution on the status of an existing academic program, which suspends the program for a period not to exceed five (5) years.

([G]N) Independent institution—an approved private institution of higher education meeting the requirements of section 173.*[205]* **1102(2)**, RSMo, provided it is also either accredited or a candidate for accreditation by the *[Commission on Institutions of Higher Education of the North Central Association of Colleges and Secondary Schools and provided it offers a postsecondary course of instruction at least two (2) years in length leading to conferral of a degree]* **Higher Learning Commission.**

([H]O) Level—a degree, such as associate, baccalaureate, first professional, master’s, specialist, doctorate and any other designation lower, higher or intermediate to those which now exist or may be created. (Specialist programs, related to the state requirements for the certification of public school administrators and to the further education of public school teachers and supervisors, should be limited specifically to the field of education. These programs are essentially extensions of master’s level studies and should evidence a study beyond that expected of master’s programs.)

(P) Minor change—modifications to existing programs that do not involve changes to course content, prerequisites, or credit hours, including change of program title or CIP code; combination programs; inactive status; one-year certificate programs; options; program deletion; single-semester certificate programs.

(Q) Professional Degree—is an award for completing a program that (1) serves as a prerequisite to practicing in the profession; (2) requires at least 2 years of college work prior to entering the program; and (3) requires a total of at least 6 academic years of college work to complete the degree program, including prior required college work plus the length of the professional program itself.

([I]R) Program—a prescribed course of study that leads to the formal award of a certificate or degree.

1. Certificate 0 (Undergraduate)—Postsecondary award, certificate, or diploma (less than 1 academic year) below the baccalaureate degree

- Less than 900 contact or clock hours, or
- Less than 30 semester or trimester credit hours, or
- Less than 45 quarter credit hours

2. Certificate 1 (Undergraduate)—Postsecondary award, certificate, or diploma (at least 1 but less than 2 academic years) below the baccalaureate degree

- At least 900, but less than 1,800 contact or clock hours, or
- At least 30, but less than 60 semester or trimester hours, or
- At least 45, but less than 90 quarter hours

3. Associate’s degree—an award that normally requires no more than 60 semester credit hours unless necessary for accreditation or licensure.

4. Certificate 2 (Undergraduate)—postsecondary award, certificate, or diploma (at least 2 but less than 4 academic years) below the baccalaureate degree

- At least 1,800 but less than 3,600 contact or clock hours, or
- At least 60 but less than 120 semester or trimester credit hours, or

- At least 90 but less than 180 quarter credit hours

5. **Baccalaureate degree**—an award that normally requires no more than 120 semester credit hours unless necessary for accreditation or licensure.

6. **Graduate certificate**—an organized program of study beyond the bachelor's degree, designed for persons who have completed a baccalaureate degree but not meeting requirements of academic degrees at the master's level.

7. **Master's degree**—an award that typically requires successful completion of a program of study of at least the full-time equivalent of 1 but not more than 2 academic years of work beyond the bachelor's degree. Some of these degrees may require more than two full-time equivalent academic years of work.

8. **Post-master's certificate (First-professional certificate)**—an organized program beyond the master's degree but not meeting requirements of academic degrees at the doctor's level. This award is designed for persons having completed the first-professional degree (refresher courses or additional units of study in a specialty or subspecialty).

9. **Doctoral degree**—the highest award a student can earn for graduate study (research/scholarship or professional practice).

(S) **Program deletion**—the removal of a program or an option from an institution's program offerings.

(T) **Program change**—any revision or change in a program name or its nomenclature, including CIP number.

(J/U) **Public institution**—an approved public institution of higher education meeting the requirements of section 173.[205]1102(3), RSMo[, *provided it is also either accredited or a candidate for accreditation by the Commission on Institutions of Higher Education of the North Central Association of Colleges and Secondary Schools, and provided it offers a postsecondary course of instruction at least two (2) years in length leading to conferral of a degree*].

(K/V) **Program option[s] or option**—a formally designated area of specialization within an existing degree program that has a distinctive curricular pattern. A [preponderance]majority of required courses for the option will be taken in a core of courses common to all variations of the existing parent degree. For the purposes of program changes, option, emphasis area and other similar terms are assumed to be equivalent.

(W) **Substantive curricular change**—significant modifications or expansion of an existing program. Examples of substantive changes include, but are not limited to a change in the program's overall credits or goals; deletion and replacement of a significant number courses in the program's curriculum; change in the primary mode of delivery; change in the program's purpose; change in the audience(s) that the program is intended to serve.

(L/X) **Program [T]type or type of program** —A designation within a degree level, such as associate of arts(AA), associate of science (AS), associate of applied science (AAS), bachelor of arts, bachelor of science, bachelor of science in engineering, master of arts, master of science, doctor of philosophy, doctor of education, etc. [AA and AS degrees are oriented toward transfer to baccalaureate programs. AAS degrees are not oriented toward transfer to baccalaureate programs, but rather are terminal vocational programs.]

(3) [General Program Approval]Special Procedure[s] for **New** Public Institutions.

(A) *The coordinating board or its designee shall be responsible for the review of all new program proposals and shall either approve or disapprove them. Institutions submitting new programs for CBHE review shall follow the format outlined by CBHE staff. Submissions shall be made on appropriate forms as provided by the CBHE. All actions resulting in the approval of new programs for public institutions shall be subject to a stipulation regarding the program's ability to attain specified performance goals during a stipulated period that shall have been established by the sponsoring institutions and shall have been approved by the board or its designees.*

(B) *Performance Review. At the conclusion of the stipulated period, the program's performance shall be reviewed on the basis of the specified goals in a manner mutually satisfactory to the sponsoring institution and the commissioner. In the event a new program fails to develop satisfactorily in the allotted period as determined by the board or its designee, the status of the new program shall be evaluated. As a result of this review, approval may be continued with or without further stipulations, or program authorization may be withdrawn. In the latter event, should the sponsoring institution choose to continue*

the new program rather than terminate it, the resources associated with the program shall be withdrawn from the institution's funding base for the purpose of developing future state appropriation requests.

(C) Special Procedure for New Public Institutions.]

[1](A). Since newly-established public institutions have ordinarily only begun the process of assembling the resources necessary to offer instruction, application of the usual [and customary] review process would [not] be inappropriate. As a consequence, new public institutions must develop a five (5)-year academic plan that projects those programs the institution intends to develop during this period based upon a need analysis it has conducted. The institution must also provide satisfactory evidence that it can reasonably expect to acquire the resources necessary to support these programs. The institution must submit annual updates on the plan and its progress toward full implementation. At these times the institution may request revisions in its original plan.

[2](B). Subject to [coordinating board]CBHE approval of the plan, the new institution may offer these programs for a period not to exceed five (5) years. During this time the institution must submit formal proposals for new program approval; however, the submission of these programs may occur on a schedule convenient to the institution. Those programs that have not received regular approval by the end of the five (5)-year planning period shall be terminated, or the resources associated with the program shall be withdrawn from the institution's funding base for the purpose of developing future state appropriation requests.

[D]C) Notice. Prompt notice of the results of all academic program approval and review actions by the board or its designee, including any pertinent comments relating thereto, [shall]will be sent to the [Coordinating Board for Higher Education]CBHE whenever the action decision has been delegated, to all higher education institutions and to the public in a manner deemed appropriate by the commissioner.

(4) General Program Review [Policies] for Independent Institutions. Except for subsections (5)(A), (5)(B), the right to appeal provided in section (9), and any pertinent definitions in section (1), this rule does not apply to independent institutions. Independent institutions shall submit all new degree and certificate programs for CBHE review according to the procedure in either subsection (5)(A) or (5)(B), as determined by department staff. The CBHE may offer nonbinding recommendations on such program proposals, and may use submitted information to aid the analysis of public institutions' program proposals. Submission of new program information is a prerequisite to receiving any funds administered by the CBHE in accordance with section 173.005.2(9) and (10) RSMo, but receipt of such funds does not depend on receipt or compliance with CBHE comments or recommendations. In no event, section (5) of this rule notwithstanding, will independent institutions' program proposals be subject to CBHE approval.

(A) Independent institutions shall submit all new degree and certificate programs for coordinating board review. Institutions submitting new programs for CBHE review shall follow the general format used by public institutions. Submissions should be made on appropriate forms as provided by the CBHE.

(B) The board or its designee shall review new program proposals submitted by independent institutions and may make pertinent comments and recommendations. Although these recommendations are not binding on independent institutions, submission of the proposals is required of independent institutions to address the issues of duplication and access at the postsecondary level as well as to enable the CBHE to fulfill its statutory obligations]. Compliance with this policy is one (1) of the conditions for the eligibility of independent institutions for participation in the Missouri student grant program.

(C) The board or its designee shall ensure that the review of new programs submitted by independent institutions is conducted in a manner to provide that all criteria and definitions that are applicable to public institutions are also applicable to independent institutions except as explicitly provided in this rule. These criteria, however, shall be applied with due regard for the differences between public and independent institutions as well as the different degree of responsibility and authority the coordinating board and state have in the operation of the respective sectors.

(D) With respect to permissible differences in the review process between independent and public institutions, the following criteria, procedures and definitions shall not be applicable to independent institutions unless an individual independent institution should voluntarily elect to participate in a particular review provision:

- 1. All financial criteria shall not be applicable and related data should not be submitted;*
- 2. Provisions related to cooperative intercampus degree programs shall not be applicable;*
- 3. Provisions related to staff advisory comments shall not be applicable;]*

4. Provisions related to performance reviews for new programs shall not be applicable;
5. Provisions related to the use of consultants shall not be applicable; and
6. Provisions related to the joint review of vocational programs by the coordinating board and the Department of Elementary and Secondary Education shall not be applicable.

(E) Notice. Prompt notice of the results of all academic program review actions by the CBHE or its designee, including any pertinent comments relating thereto, shall be sent to the Coordinating Board for Higher Education whenever the action decision has been delegated, to all higher education institutions and to the public in a manner deemed appropriate by the commissioner.]

(5) Types of Review.

(A) Staff Review.

1. Minor changes to existing academic programs and the addition of some certificates may be addressed through a staff review. Institutions shall report all minor changes to ensure that the state program inventory is accurate and complete.

2. Requests for minor changes to existing academic programs must be submitted to the department on forms provided by the department. The following guidelines apply to specific change requests:

A. Moving an existing program to inactive status.

(I) Programs placed on inactive status will be suspended for a specified period not to exceed five years.

(II) Students in the program at the time this status is adopted will be permitted to conclude their course of study if they have no more than two years of coursework remaining, but no new students may be admitted to the program.

(III) At the conclusion of the designated inactive period, not to exceed five years, the institution must review the program's status and may either delete it or reactivate it.

(IV) Only programs and certificates may be placed in inactive status; options are deleted through the program deletion process.

B. Program deletion. At the time an institution notifies the Higher Learning Commission (HLC) in writing about the circumstances for which HLC requires a teach-out agreement, the institution must also notify the department. Institutions must provide program name, level, CIP code, and effective date of deletion.

C. Location notification. This includes change of address updates, and notifications of closed location. Notifications of closed locations must also include the list of programs to be deleted at the location.

D. Change of program title or CIP code. A title, CIP code, or nomenclature revision that includes substantive curriculum changes may be deemed tantamount to a new program and may be referred to the institution for consideration at the routine or comprehensive review level.

E. Combination programs. Combination programs will be reviewed at the staff review level for the elimination of duplicated requirements. The development of interdisciplinary programs and area study programs that utilize the resources of several existing programs will be reviewed through the routine or comprehensive new program approval process. However, proposals that combine two or more programs ordinarily involve a substantive curricular change, which must be reviewed the comprehensive process described in subsection (5)(C).

F. Certificate programs. Single-semester certificate programs, either as a stand-alone or as part of a parent-degree program, will be considered under staff review. A one-year certificate may be considered under staff review only if developed from, directly related to, and deriving courses predominantly from an approved parent degree program. Otherwise, one-year certificate proposals must be submitted as a new program at the routine or comprehensive review level, as appropriate.

G. Graduate certificates. Graduate certificates greater than a single semester in length may be approved at the staff review level if they are part of an existing approved parent degree program. Graduate certificates greater than a single semester that are not part of an approved parent degree must be submitted as a new program at the routine or comprehensive review level, whichever is appropriate.

H. Adding an option to an existing program. The addition of a specialized course of study as a component of an umbrella degree program may be submitted as a program change

subject to a determination by the CBHE or its designee regarding the potential for unnecessary or inappropriate duplication of existing programs, in accordance with subsection (10)(C) of this rule. Only in those instances in which duplication is necessary and appropriate may the proposed option be implemented. Options within a parent degree program will have the same CIP code as the parent degree. The institution shall provide evidence that the proposed option functions as a component of an umbrella degree program, including the curriculum common to the parent degree and all of its options.

(I) The following general guidelines distinguish a permissible option addition from a proposed new degree program:

(a) An option or emphasis area generally functions as a component of an umbrella degree program. As such, an option in a specialized topic will consist of a core area of study in the major plus selected topical courses in the specialty. Typically, the core area of study will constitute a majority of the requirements in the major area of study as measured in the number of required courses or credit hours;

(b) A proposed option or emphasis area must be a logical component or extension of the umbrella degree program. One (1) measure of this compatibility—but not the only one—would be the consonance of the proposed addition with the federal CIP taxonomy. For instance, using physics as an example, optics would be an appropriate option (emphasis area) while astrophysics would ordinarily not be acceptable as it is typically viewed as a branch of astronomy rather than physics; and

(c) The number of new courses required to implement a new option or emphasis area is relevant. Four (4) or more new courses in a proposed new option would tend to raise questions about resource commitments and suggest that a new program has been developed;

(d) The need to develop new courses as a condition of implementing an option is a relevant consideration.

3. Review and reporting. Department staff will review requests for minor changes to existing academic programs. Department staff may request additional information from the proposing institution.

4. Timeline. For all requests submitted by the first of the month department staff will process, review, and report back to institutions by the end of that same month. Department staff will report routine review actions to the CBHE at the next regular board meeting following completion of review.

(B) Routine Review

1. Proposals for new academic programs that are not minor, but do not constitute a significant change in an institution's current role, scope, or mission will be reviewed under the routine review process. For a proposed program to be considered through routine review, it must meet all of the following criteria:

- A. The program is clearly within the institution's CBHE-approved mission;
- B. The program will be offered within the proposing institution's CBHE-approved service region;
- C. The program will not unnecessarily duplicate an existing program in the applicable geographic area, as described in subsection (10)(C) of this rule;
- D. The program will be offered at the main campus or at a CBHE-approved off-site location;
- E. The program will build on existing programs and faculty expertise; and
- F. The cost to launch the program will be minimal and within the institution's current operating budget.

2. The following proposals generally will be considered under the routine review process:

- A. Substantive curricular changes to an existing program;
- B. Delivery of an approved program at a CBHE-approved off-site location; and
- C. New degree programs offered in collaboration with an institution already approved to offer such a program.

3. Process

A. Institutions shall provide information about the proposed program to the department on forms provided by the department. This information will include certification that

the proposal meets the criteria for routine review and that the program meets the criteria for all new academic programs. Department staff may request additional information from the proposing institution.

B. Department staff will verify and post the proposal on the department's website to allow for twenty (20) days of public review and comment. Any institution, member of the profession, occupation, or specialized academic field, and any other interested individual may express an opinion to department staff regarding any new program proposal. Comments must be received within 20 days of the proposal's posting on the department website.

C. The proposing public institution will address comments and feedback received. Once all concerns are resolved, the commissioner will recommend provisional approval of the program for a period of five years.

(I) The public institution shall establish clearly defined performance goals for the new program to be achieved during the provisional implementation period. The public institution may revise its performance goals for the new program at any time during the designated implementation period with the concurrence of department staff.

(II) Provisional approval by the CBHE or its designee is valid for two (2) years following the first fall term after CBHE approval. If an institution has not implemented the proposal by that date, the approval will lapse and the program proposal must be resubmitted with updated information.

D. At the end of the five-year provisional approval period, the department will review the program's viability to determine whether the CBHE's provisional approval should become unconditional, remain provisional pending further review in two years, or be terminated.

(I) Public institutions shall provide to department staff, in a manner prescribed by department staff, enrollment, graduation and staffing data for the program, as well as a brief summary of program performance. If the program is performing as well as or better than the projections in the original program proposal, the department will recommend that the CBHE approve the program unconditionally.

(II) If the CBHE terminates provisional approval, the public institution shall take the necessary steps to close the program, which includes accommodating students currently enrolled in the program.

4. Timeline

A. Requests submitted by the first of the month will be reviewed and processed, and in most cases institutions will be notified, by the end of that same month. Department staff will report routine review actions to the CBHE at the next regular board meeting following completion of review.

(C) Comprehensive Review

1. Proposed new academic programs that meet any of the following criteria will be subject to a comprehensive review:

A. The program will be offered outside the institution's CBHE-approved service region;

B. The institution will incur substantial costs to launch and sustain the program;

C. The program will include the offering of degrees at the baccalaureate level or higher that fall within the Classification of Instructional Programs (CIP) code of 14, Engineering;

D. The program is outside an institution's CBHE-approved mission.

E. The program will include the offering of a doctoral degree, as further described in division (10)(C)(3) of this rule (applicable only to non-University of Missouri institutions);

F. The program will include the offering of a professional degree, as further described in division (10)(C)(3) of this rule (applicable only to non-University of Missouri institutions); or

G. The program will include the offering of an education specialist degree.

2. Elements of a Complete Proposal for Comprehensive Review. Institutions shall submit the proposal to the department on forms provided by the department. A complete proposal includes the following:

A. Evidence of good faith effort to explore the feasibility of collaboration with other institutions whose mission or service region encompasses the proposed program. At a minimum, this will include letters from the chief academic officers of both the proposing institution and

other institutions involved in exploring the feasibility of collaborative attesting to the nature of the discussions and explaining why collaboration in this instance is not feasible.

B. Evidence that the offering institution is contributing substantially to the CBHE's *Blueprint for Higher Education* as adopted on February 4, 2016, pursuant to section 173.020(4) RSMo, and is committed to advancing the goals of that plan.

C. Evidence of institutional capacity to launch the program in a high-quality manner, including:

(I) An external review conducted by a team including faculty experts in the discipline to be offered and administrators from institutions already offering programs in the discipline and at the degree level proposed. The review must include an assessment of the offering institution's capacity to offer the new program in terms of general, academic, and student service support, including faculty resources that are appropriate for the program being proposed (e.g. faculty credentials, use of adjunct faculty, and faculty teaching workloads);

(II) A comprehensive cost/revenue analysis summarizing the actual costs for the program and information about how the institution intends to fund and sustain the program;

(III) Evidence indicating there is sufficient student interest and capacity to support the program, and, where applicable, sufficient capacity for students to participate in clinical or other external learning requirements, including library resources, physical facilities and instruction equipment; and

(IV) Where applicable, a description of accreditation requirements for the new program and the institution's plans for seeking accreditation.

D. Evidence that the proposed program is needed, including:

(I) Documentation demonstrating that the program does not unnecessarily duplicate other programs in the applicable geographic area, as described in subsection (10)(C) of this rule;

(II) A rigorous analysis demonstrating a strong and compelling workforce need for the program, which might include data from a credible source, an analysis of changing program requirements, the current and future workforce and other needs of the state, and letters of support from local or regional businesses indicating a genuine need for the program; and

(III) A clear plan to meet the articulated workforce need, including:

(a) Aligning curriculum with specific knowledge and competencies needed to work in the field(s) or occupation(s) described in the workforce need analysis in part (II) of this subparagraph;

(b) Providing students with external learning experiences to increase the probability that they will remain in the applicable geographic area after graduation;

(c) A plan for assessing the extent to which the new program meets that need when implemented.

3. Process

A. Department staff will verify and post the proposal on the department's website to allow for twenty (20) days of public review and comment. Any institution, member of the profession, occupation, or specialized academic field, and any other interested individual may express an opinion to department staff regarding any new program proposal. Comments must be received within 20 days of the proposal's posting on the department website.

B. Department staff, in consultation with the external review team described in part (5)(C)2.C.(I) of this rule, will review a complete proposal and provide feedback to the proposing institution.

C. The proposing public institution will address comments and feedback received. Once all concerns are resolved, the commissioner will recommend provisional approval of the program for a period of five years.

(I) Public institutions shall establish clearly defined performance goals for the new program to be achieved during the provisional implementation period. The public institution may revise its performance goals for the new program at any time during the designated implementation period with the concurrence of department staff.

(II) Public institutions must report annually to the CBHE on the number of students completing the program, financial performance of the program, job placement rates of

program graduates, success on any applicable licensure exams, and the extent to which the program is meeting the needs it was designed to address.

(III) Provisional approval by the CBHE or its designee is valid for two (2) years following the first fall term after CBHE approval. If an institution has not implemented the proposal by that date, the approval will lapse and the program proposal must be resubmitted with updated information.

D. At the end of the five-year provisional approval period, the department will review the program's viability to determine whether the CBHE's provisional approval should become unconditional, remain provisional pending further review in two years, or be terminated.

(I) Public institutions shall provide to department staff, in a manner prescribed by department staff, enrollment, graduation and staffing data for the program, as well as a brief summary of program performance. If the program is performing as well as or better than the projections in the original program proposal, the department will recommend that the CBHE approve the program unconditionally.

(II) If the CBHE terminates provisional approval, the public institution shall take the necessary steps to close the program, which includes accommodating students currently enrolled in the program.

4. Timeline

A. Proposals must be submitted to the CBHE by July 1 of each year. The CBHE, in its sole discretion, will determine which proposals to evaluate, and will announce its evaluation decision(s) in September. Final decisions to approve programs will ordinarily be made by February.

B. Comprehensive reviews will be phased in to the program approval process.

(I) In the 2017-2018 review cycle, the CBHE will consider no more than three proposals, in total, to offer a degree outside an institution's CBHE-approved mission. No more than two proposals may come from either public universities or public two-year institutions during this review cycle.

(II) In the 2018-2019 review cycle, the CBHE will consider no more than five proposals, in total, to offer a degree outside an institution's CBHE-approved mission. No more than three proposals may come from either public universities or public two-year institutions during this review cycle.

(III) If changes to statutes or licensure requirements warrant the authorization of more than one institution to propose a program requiring a comprehensive review, such proposals may be considered as a single proposal for purposes of this section only.

(IV) Each individual institution's proposal will be evaluated on its own merits.

(V) After two proposal cycles, the CBHE may reconvene a task force to evaluate the new framework and to recommend improvements for the CBHE's consideration.

[5]6 [Submission of Proposals] Off-campus and Out-of-district Degrees and Courses

[(A) Program Review Schedule.

1. Except as otherwise noted in this rule, proposals for degree and certificate programs must be submitted at least one hundred twenty (120) days prior to implementation and should be submitted to the Missouri Coordinating Board for Higher Education during one (1) of the following three (3) periods each year: A. March 1 through March 31; B. July 1 through July 31; and C. November 1 through November 30.

2. Every effort will be made to complete the review of proposals received in each of these periods during the following one hundred twenty (120)-day cycles (which will begin on April 1, August 1 and December 1), unless unusual circumstances require more time for review of a particular program. The CBHE or its designee may permit departure from this schedule, if necessary, but the sponsoring institution shall be notified of the delay and the reasons for it. The sponsoring institution may request an expedited review of a proposed program in extenuating circumstances by informing the commissioner in writing of the reasons for the request. Pending degree programs shall not be implemented until coordinating board action has been completed.

(B) Off-campus and Out-of-district Degrees and Courses.]

[1.](A) In addition to submitting proposals for new certificate and degree programs for on-campus offerings, an institution must submit a new program proposal if more than half the major

requirements for the degree can be completed at an off-campus site for four (4)-year institutions or at an out-of-district site for two (2)-year institutions. (For the purposes of this section, major requirements *[shall be considered to]* include course requirements in the specific area of concentration only; general education requirements and free electives *[shall]* will not be a factor in this determination.)

2.(B) All formal two-plus-two (2 + 2) curricular agreements must be submitted for review if either the sponsoring institution or the host institution is publicly supported.

(C) *[Instructional Site Defined. In the context of the previous subsection, instructional site shall be defined to include only those settings where instruction is delivered directly to students by a physically present teacher. Internship sites and the simple receipt of telecommunications transmissions ordinarily do not constitute an instructional site. However, programs identified for delivery by such nontraditional means as telecommunications must be submitted for review, and the subsequent review shall focus on instructional delivery at the point of origin. All customary review criteria shall be applicable to programs delivered by nontraditional means.]* **Types of Off-Campus Instructional Sites Requiring CBHE**

Approval. The following off-campus instruction sites require CBHE approval:

1. Residence centers, as defined at 6 CSR 10-6.020(1).

2. Off-campus instruction as defined at 6 CSR 10-6.030(1)(C).

3. Out-of-district instruction as defined at 6 CSR 10-6.030(1)(D).

(D) Special Procedure for Multiple-campus Institutions.

1. Multiple-campus four (4)-year institutions must submit separate program proposals for individual campuses, subject to certain exceptions for cooperative degree programs that are defined in subsequent paragraphs. For the purposes of cooperative degree programs, residence centers *[shall]* are not *[be regarded as]* separate campuses.

2. New program authorization for one (1) campus of a multiple-campus two (2)-year public institution may be extended to all other campuses within a district at the discretion of the sponsoring institution *[subject to the stipulation that]*, **provided** the *[coordinating board]* **sponsoring institution** *[shall be informed]* **informs the CBHE** of all academic programming available at each campus.

(E) Cooperative Intercampus Degree Program for Public Institutions.

1. A cooperative~~[,]~~ intercampus degree program extends an academic program authorized by the CBHE on one (1) of an institution's campuses to one (1) or more of its other campuses (not including residence centers) under the following conditions:

A. The campus authorized to provide the program will continue to do so;

B. The program is cooperative in nature, that is, it involves the faculty and resources of each participating campus;

C. The program *[shall]* **must** be included in the institution's plan and *[shall]* be consistent with the mission statement for the receiving campus; and

D. The program *[shall]* **must** meet the accreditation guidelines of the appropriate national accrediting body, if any exists, as well as any applicable state licensure requirements.

2. Subject to the previously mentioned definition, a cooperative~~[,]~~ intercampus program is distinct from the more typical new program model in which a program is developed as a new, free-standing entity on a campus.

3. The procedures and criteria for the review of *[these]* **cooperative intercampus** programs *[shall be]* are the following:

A. Following the endorsement by the president and the governing board of the institution, the program shall be sent to the *[board]* **CBHE** or its designee for review **at least one hundred twenty (120) days prior to the proposed implementation;**

[B. Each cooperative, intercampus program shall be shared with the CBHE staff for its review and consideration at least one hundred twenty (120) days prior to the proposed implementation;]

[C.] **It** *[shall be]* **is** the institution's responsibility to document the economic development opportunity or the need the proposed program is designed to address, including specific *[manpower]* **workforce** needs at the state or regional level;

[D.] **C.** Additional expenditures associated with the proposed program **shall** be defined. If the resource needs cannot be satisfactorily addressed by internal reallocation or alternative delivery systems, the program *[shall]* **will** be included in the institution's next budget request for state support; and

[E.] **F.** The *[board]* **CBHE** or its designee *[shall]* **will** review the cooperative~~[,]~~ intercampus program on an expedited basis involving a period not to exceed sixty (60) days. In the event the program

is not approved by the board's designee, the decision may be appealed to the [coordinating board]CBHE following established program appeal procedures.

[4. This subsection is not applicable to independent institutions.]

(F) Staff Advisory Comment for Public Institutions.

1. *The first step in the approval process for free-standing new degree programs is known as the staff advisory comment (SAC) and applies to public institutions only. The SAC report enables the coordinating board staff to make preliminary judgments regarding a program proposed by a public institution prior to the preparation of an entire program proposal document and initiation of the internal approval process at the institutional level. The process also enables the sponsoring institution to anticipate and address issues that might be relevant during the full review. A favorable staff advisory comment does not guarantee final approval of the program when staff reviews the full proposal. Conversely, an unfavorable staff advisory comment does not necessarily mean that the final proposal for a program will not be approved. It will be expected, however, that staff concerns expressed in the staff advisory comment will be addressed in the final proposal.*

2. *The SAC report will emphasize those program approval criteria listed in this rule which are relatively stable in the short- to mid-term and which cannot be readily adjusted to different circumstances or perceived needs.*

A. *Mission and planning priorities of sponsoring institution. Each proposal shall include a statement regarding the compatibility of the proposed program with an institution's mission and approved institutional plan or plan update.*

B. *Need for the proposed program. Each proposal shall address the issues of what are the societal, occupational, research and public service needs the program is intended to address as well as the anticipated student demand for the program, preliminary evidence related to market demand for program graduates and the relationship of the program to the economic development of the state, as may be appropriate.*

C. *Duplication of the proposed program. Each proposal shall comment on the issue of the extent to which any existing programs in the proposed service area already address the needs and purposes this program is designed to fulfill. Factors salient to the duplication issue include the relevance of existing programming, the availability of alternative educational delivery systems, extent of student demand, state or regional manpower requirements and access considerations.*

3. *To provide a frame of reference so the responses to these questions can be properly understood, it will also be necessary to submit a brief description of each program including an outline of the proposed curriculum. The structure of the proposed curriculum will not be subject to comment in this phase of the review process, and the CBHE staff will assume that the details of these descriptive materials may be subject to modification as the program development process proceeds. However, if additional planning suggests that a major shift in program emphasis would be appropriate, a new document must be submitted for a staff advisory comment.*

4. *All documents related to this process should be submitted in duplicate. Materials related to a staff advisory comment may be submitted at any time during the year. Every effort will be made to complete a staff advisory comment within forty-five (45) days of submission.*

(G) Proposal for a New Academic Degree Program.

1. *A proposal for a new academic degree program shall be submitted during one (1) of three (3) specified submission periods: March, July or November. All documents related to this process should be presented in triplicate in the form prescribed by CBHE staff. The board staff may request information in addition to that contained in the proposal.*

2. *Approval by the CBHE or its designee of new degree and certificate program proposals submitted by public institutions as well as the formal receipt of new programs from independent institutions are valid for two (2) years following the first fall term after the action. If an institution has not implemented the program by that date, the approval or receiving shall be considered to have lapsed and the program proposal must be resubmitted with updated information.*

3. *Any institution or interested party, that is, a representative from another institution, of the profession, occupation, or specialized academic field, or any individual who, as a potential student or employer, believes him/herself to be affected by the proposed program, may express an opinion to the coordinating board or its designee regarding the evaluation or recommendation of any new degree program proposal. This may also occur when an institution or individual wishes to comment on a degree*

program submitted by another institution. In addition, a formal appeal of a program action may be initiated as provided elsewhere in this rule.

4. Proposal for a new AS transfer degree program.

A. The AS degree is a specialized degree which is intended for transfer into a preprofessional program and is substantively different from the AAS degree. The AAS degree is not intended as a transfer degree into a four (4)-year program and contains courses that are not primarily designed for transfer. Students seeking to transfer this degree will have their transcripts evaluated on a course by course basis.

B. The AS degree should result from careful planning and should constitute an articulation agreement between specific institutions.

C. The primary intent of the AS degree is to provide an alternative to the AA degree in those limited instances when the model general education program included in the AA degree cannot accommodate the demands of a preprofessional program. The AS degree shall be used only in exceptional circumstances when no other remedy is available.

D. The AS degree is to be developed through consultation between sending and receiving institutions on a program-by-program basis. Proposed AS degree programs may be submitted at any time of the year and will be reviewed using a modified program review process. The emphasis of this review will be on the justification for establishing an exception to the prescribed thirty-nine (39)-hour general education core requirement and the resource implications of the proposed agreement for the sending institution. Submission of a staff advisory comment request is not required for proposed programs of this type.

(6) Program Changes. Changes in programs must be submitted to the coordinating board for both informational and review purposes. After considering these changes, the board or its designee may determine that the change in program should be submitted instead as a new program proposal. Program changes should be reported using appropriate forms provided by the CBHE. Program changes that should be submitted include the following:

(A) Program Title Change All revisions or changes in a program name or its nomenclature shall be reported to the CBHA title or nomenclature revision that includes substantive curriculum changes may be deemed tantamount to a new program and be referred back to the institution for resubmission as a new program;

(B) Combination Programs.

1. This category is narrowly defined to include only those programs that result from a mechanical combination of two (2) previously existing programs. Substantive curricular changes shall ordinarily be limited to the elimination of duplicated requirements.

2. The development of interdisciplinary programs and area study programs that utilize the resources of several existing programs shall be handled through the new program approval process.

(C) Single Semester Certificates. A single semester certificate may be added or deleted simply by using a Notice of Changes in Programs form provided by the CBHE. The establishment of a longer program, however, shall be pursued through the procedures established in this rule;

(D) One (1)-year Certificate Programs.

1. A one (1)-year certificate program developed from an approved associate degree program shall be reported as a program change provided that the program is directly related to the approved associate degree program and consists predominantly of courses included in the associate degree program.

2. A one (1)-year certificate not associated with an approved parent degree program must be submitted as a new program;

(E) Option Addition.

1. The addition of a specialized course of study as a component of an umbrella degree program may be submitted as an option addition program change subject to the limitation that the CBHE or its designee shall make a determination regarding the potential for unnecessary or inappropriate duplication of existing programs. Only in those instances in which duplication is not a problem may the proposed option be implemented.

2. The following general guidelines are used to distinguish a permissible option addition from a proposed new degree program:

A. At the conceptual level an option or emphasis area functions as a component of an umbrella degree program. As such, an option in a specialized topic shall consist of a core area of study in the major plus selected topical courses in the specialty. Typically, the core area of study shall constitute a preponderance of the requirements in the major area of study as measured in the number of required courses or credit hours, but no specific percentage distribution requirement has been established;

B. A proposed option or emphasis area shall be a logical component or extension of the umbrella degree program. One (1) measure of this compatibility—but certainly not the only one—would be the consonance of the proposed addition with the federal CIP taxonomy. For instance, using physics as an example, optics would be an appropriate option (emphasis area) while astrophysics would ordinarily not be acceptable as it is typically viewed as a branch of astronomy rather than physics; and

C. The number of new courses required to implement a new option or emphasis area can also be a relevant consideration. Four (4), five (5) or more new courses in a proposed new option would tend to raise questions about resource commitments and suggest that a new program has been developed;

(F) Inactive Status for Existing Programs.

1. Programs placed on inactive status will essentially be suspended for a specified period not to exceed five (5) years. Students in the program at the time this status is adopted shall be permitted to conclude their course of study if they have no more than two (2) years of course work remaining, but no new students may be admitted to the program. Programs designated as inactive will be so noted on institutional program inventories.

2. At the conclusion of the designated inactive period—not to exceed five (5) years—the institution must review the program’s status and may either delete it or reactivate it.

3. In the event the institution chooses to reactivate the program, the institution shall provide the coordinating board satisfactory evidence that the resources necessary for the program are available and must establish performance goals for the program that are also acceptable to the coordinating board; and

(G) Deletion and Consolidation of Programs. Institutions must submit standard program change information whenever a program or option is deleted. This same provision applies whenever two (2) or more programs or options are to be consolidated into one (1) or more new offerings.]

(7) Use of Consultants.

(A) In addition to evaluating written proposals, the board or its designee, in some circumstances, may use the services of consultants. It is anticipated that this procedure will be used [infrequently] **primarily for comprehensive reviews.**

(B) These consultants [shall] **must** be individuals who are mutually acceptable to the board and to the **public** institution whose program is under consideration. Both the commissioner and the **public** institution may recommend consultants, but the ultimate selection of the consultant [shall] **must** be agreeable to both.

(C) Services of consultants will be paid for by the **public** institution whose program is pending.

(D) Consultants may be used in the following circumstances:

1. At the request of either the commissioner or the **public** institution pending an unfavorable recommendation by [the coordinating board] **department** staff;

2. For some health-related professions or high technology programs whenever clinical facilities, laboratory facilities, equipment or other aspects of the program need professional evaluation; or

3. In instances in which a judgment is difficult to make without the evaluation of professionally qualified external consultants.

(8) Programs Reviewed Jointly by the Coordinating Board for Higher Education and the Department of Elementary and Secondary Education.

(A) A[n] **public** institution requesting financial reimbursement for a new program from vocational/technical funds administered by the Department of Elementary and Secondary Education must submit at the same time a copy of the proposal in the CBHE’s format to the Division of Career and Adult Education of the Department of Elementary and Secondary Education in accordance with the instructions of that office. [Because independent institutions are not eligible for reimbursement under this program, this section does not apply to independent institutions.]

(B) The coordinating board and the Department of Elementary and Secondary Education concur on the following procedures and understandings for effecting cooperation between the two (2) agencies in the exercise of their respective responsibilities regarding the development of vocational/technical programs in Missouri colleges and universities:

1. The responsibilities of the Department of Elementary and Secondary Education to approve courses of instruction for vocational/technical financial reimbursement and of the *[coordinating board]*CBHE to approve new degree and certificate programs are independent responsibilities and are not contingent one upon the other. However, as a general policy the Department of Elementary and Secondary Education will not approve financial reimbursement requests which are components of degree or certificate programs not approved by the coordinating board;

[2. In order to avoid duplication of effort by institutions, the Department of Elementary and Secondary Education will employ the coordinating board's proposal format for submission of new program proposals as its instrument for fiscal reimbursement requests;]

[3]. [Coordinating Board for Higher Education]CBHE staff will notify Department of Elementary and Secondary Education staff of the development of any vocational/technical program, and members of both staffs will confer on all vocational/technical degree and certificate programs submitted to the coordinating board; and

[4]. The Division of Career and Adult Education of the Department of Elementary and Secondary Education will receive notification of the commissioner's actions on all vocational/technical program proposals.

(9) Appeal Procedure. In the event of an appeal of a program review action for *[either]* a public *[or independent]* institution, the following procedures *[shall be followed]*apply:

(A) Any of the following parties may initiate an appeal of a program action decision:

1. The **public** institution submitting the original proposal;
2. Any Missouri higher education institution that believes its interests are adversely affected by the program decision; or
3. Any member of the *[Coordinating Board for Higher Education]*CBHE, in the event the original decision was made by the board's designee[;].

(B) An appeal originating with a higher education institution must be signed by the chief executive officer of the institution[;].

(C) A letter of intent to appeal must be received by the commissioner *[of higher education]* within thirty (30) days of receipt of the official notice of the program decision. If the appeal is initiated by a party other than the **public** institution that proposed the program, a copy of the intent to appeal letter and all other subsequent documentation must be sent to the sponsoring institution[;].

(D) The new program may not be implemented while an appeal is pending[;].

(E) Within fourteen (14) days after a letter of intent to appeal has been submitted, the appealing party must submit its full rationale in support of the appeal to the commissioner and to any affected institutions. This rationale should summarize the appellant's justification for a review of the program decision and should include any relevant supporting evidence[;].

(F) This rationale and the responses of the commissioner and any affected institutions will be placed on the agenda of the next meeting of the *[Coordinating Board for Higher Education]*CBHE, provided that the next meeting is scheduled at least fourteen (14) days after receipt of the rationale. If *[this criterion is not satisfied]***the rationale is received less than fourteen (14) days before the next meeting**, the request for an appeal will be heard by the *[board]*CBHE at its next regularly scheduled meeting[;].

(G) *[If a majority of the Coordinating Board for Higher Education agrees that an appeal initiated by an institution should be heard, the matter will be referred to the committee on academic and library affairs]***The CBHE chair will refer the matter to a relevant committee of the CBHE.** A public meeting of the committee will be scheduled at which time testimony will be presented by all interested parties, and the committee *[shall]***will** make its determination[;].

(H) In those instances when a member of the *[coordinating board]*CBHE has initiated a review of a decision by the board's designee, the chair~~[man]~~ of the board *[shall]***will** receive copies of all relevant documents. Provided that a majority of the board agrees that an appeal should be heard, the board may decide either to~~]~~ refer the matter to *[the]***a relevant committee [on academic and library affairs or to hear the appeal itself] of the CBHE.** If the matter is heard by the committee, the same procedures *[shall]***will**

apply as if the appeal were initiated by an institution. If the matter is heard directly by the board, the chair[*man*] of the board [*shall*]**will** establish the appropriate procedural guidelines[*;*].

(I) All decisions of the body hearing the appeal, whether the full [*coordinating board*]**CBHE** or its committee [*on academic and library affairs, shall*]**will** be final[*; and*].

[(J) This section on appeal procedures is intended to be applicable to both public and independent institutions, but no provision of this section shall supersede the general principle that] decisions or recommendations by the Coordinating Board for Higher Education or the commissioner of higher education regarding programs submitted by independent institutions shall be recommendatory only.]

(10) General Review Criteria for New Degree and Certificate Programs.

(A) Mission and Planning Priorities.

1. The proposed new program must be consistent with the institutional mission, as well as the principal planning priorities of the **public** institution, as set forth in the **public** institution's approved plan or plan update[*in the case of public institutions or the institutional mission statement in the case of independent institutions*].

2. The [*coordinating board shall*]**CBHE will** determine if proposed programs are consistent with a public institution's plan or plan update as approved by the [*coordinating board*]**CBHE**. Except in unusual circumstances, only those proposed new programs submitted by a public institution that are consistent with the institution's mission statement and, when appropriate, anticipated in its approved institutional plan, [*shall*]**will** be eligible for approval and implementation.

(B) Need for the Proposed Program.

1. [*There*]**Public institutions** shall [be a] clearly demonstrate[*d*] and [*well-*]document[*ed*] demand and/or need for the program in terms of meeting present and future needs of the locale and the state, although it is recognized that for program approval purposes state needs are a part of broader national needs. Three (3) kinds of needs may be identified—

- A. Societal needs;
- B. Occupational needs relative to upgrading vocational/technical skills or meeting labor market requirements; and
- C. Student needs for a program.

2. Some programs may be desirable on the basis of their cultural contribution or social value or potential to serve student interests independent of labor market or demand considerations. However, in these instances the societal and student need for the program must be clearly demonstrated by the **public** institution submitting the proposal.

3. **Public** [*l*]institutions proposing new programs [*must present data projecting employment and student demands and availability of openings in the labor market to*] **at the routine level must certify that employment and student demands exist, are backed by compelling data, and will** be served by the new program. The kinds of information and data [*submitted*]**used** will vary somewhat with the type of program proposed but may include the following: personnel and employment projections prepared by the Bureau of Labor Statistics and the Missouri Occupational Information Coordinating Committee (MOICC) as well as professional and trade associations; surveys of potential employers, including numbers of anticipated vacancies and training requirements; and surveys of potential student interest.

4. Adequate data [*shall be provided to*]**should** support projections for the number of students who are expected to enter the program. Program enrollment [*shall*]**should** be sufficient to ensure a quality educational experience [*as well as an*]**and make** efficient [*utilization*]**use** of resources.

5. As an additional indicator of need, the **public** institution shall [*clearly detail*] **explain** how program success will be defined and measured, particularly if that definition includes measures in addition to the conferral of a degree or certificate.

6. Determination of need for a new program will be based in part upon an assessment of the function to be served by the program and the availability of alternative sources of education in a given service area. Availability of spaces in the same or similar programs in all institutions in the state offering postsecondary programs will be taken into account, as will possibilities for interinstitutional arrangements, including contracting as provided by statute.

(C) Duplication of the Proposed Program.

1. A **public institution's** proposed program shall not be unnecessarily duplicative of [*those of*] other Missouri institutions' **programs**. Ordinarily, proposed programs in basic liberal arts and sciences at the baccalaureate level would not be considered unnecessarily duplicative, provided sufficient student

demand can be demonstrated. Unnecessary duplication is a more specific concern in graduate, technical and professional programs which meet special labor market needs.

[2. The questions of how a proposed program meets an institution's local and state service area needs and how it articulates with appropriate baccalaureate or graduate programs shall also be addressed (In this context it is understood that some programs, for example, the AAS, are designed to be terminal in character and are not ordinarily expected to articulate with more advanced programs.)]

[3]2. [Factors salient to the duplication issue include] **Unnecessary or inappropriate duplication will be determined by assessing the following factors**, in descending order of priority[,]: the relevance of existing programming; the availability of alternative educational delivery systems; the extent of student demand; state or regional work force demand; and access considerations such as geographic availability, student population served and cost of instruction.

3. No public institution other than the University of Missouri and its campuses may offer a Ph.D. or professional practice doctorate (a.k.a. "first-professional degree") without CBHE approval pursuant to subsection (5)(C) of this rule.

A. All first-professional degree programs are closely regulated by recognized professional and specialized accrediting agencies. Some first-professional degrees require a prior degree, but this is not true of all. First-professional degrees include the following:

- A. Chiropractic (D.C. or D.C.M.)**
- B. Dentistry (D.D.S. or D.M.D.)**
- C. Law (L.L.B., J.D.)**
- D. Medicine (M.D.)**
- E. Optometry (O.D.)**
- F. Osteopathic Medicine (D.O.)**
- G. Pharmacy (Pharm.D.)**
- H. Podiatry (D.P.M., D.P., or Pod.D.)**
- I. Theology (M.Div., M.H.L., B.D., or Ordination)**
- J. Veterinary Medicine (D.V.M.)**

B. The Ph.D. in any discipline is generally recognized as a research degree, typically requiring completion of original research or evidence of artistic accomplishment. Ph.D. programs require unique faculty, student/faculty ratios, assigned teaching loads, and infrastructure and financial support.

(D) Program Structure.

1. Existing programs can be strengthened and enriched when appropriate new courses and certificate or degree programs are added to the curriculum. A proposed program should be based on existing strengths of the **public** institution rather than be composed entirely of new courses. Off-campus degree programs must be based on existing on-campus degree programs.

A. Normally, graduate programs should be built upon strong baccalaureate programs which can support advanced study through basic library holdings, faculty resources and appropriate research facilities and funds. It is, however, recognized that some graduate programs in universities and medical schools do not require supporting undergraduate baccalaureate majors in that field.

B. New **public** institutions in the process of being established may also be considered exceptions to this general expectation, but special procedures have been established in this rule to accommodate the developing institution.

2. There shall be a carefully planned and systematic program of study for the proposed program which is clear and comprehensive. The structure of a new program *[shall]must* take into account, and be demonstrably consistent with, program objectives and intended student learning outcomes.

A. The linkage between program requirements and anticipated learning outcomes shall be delineated. Required courses in the major *[shall]must* not be excessive and should be consistent with customary expectations for the type of degree proposed.

B. The curriculum of the proposed program *[shall]must* reflect the requirements of any accrediting or certifying body if the **public** institution elects to apply for accreditation or certification. (This statement is not intended to imply that specialized accreditation should be an institutional goal.)

C. Unless necessary for accreditation or licensure, new baccalaureate degrees should consist of no more than 120 semester credit hours and new associate degrees should consist of no more than 60 semester credit hours.

3. Innovative programs of study shall also contain an orderly and identifiable sequence of education experiences that lead to a recognizable goal.

A. The awarding of credit for any experiential learning, credit by examination, off-campus courses, etc., shall be consistent with both established institutional and coordinating board policies. The requirements for off-campus programs *[shall]must* be fully comparable to those for similar on-campus programs. If these requirements are not the case for the proposed program, the rationale for the difference must be clearly explained.

B. The policies and procedures for granting experiential credit and/or credit by examination (including the maximum number of such credit hours which are applicable to a specific degree program and the minimum scores which are acceptable) shall be clearly specified in written guidelines available to the student. The maximum number of experiential credit hours applicable to a specific degree program *[shall]must* be the same for students enrolled at off-campus locations as for students enrolled on-campus.

4. In general, courses offered for credit off-campus *[shall]must* be part of the regular catalogue offerings of the **public** institution and *[shall]must* be applicable to programs in the same manner as courses taken on-campus. Special courses developed solely for off-campus teaching shall be limited and *[shall be]* consistent with the mission of the **public** institution. The standards for awarding credit to students enrolled at off campus locations *[shall]must* be the same as the standards applied to students enrolled on campus.

5. Each **public** institution's policy concerning residency for academic study purposes (as distinct from fee level) shall be stated clearly regarding the number of credit hours applicable to a degree program which must be earned in residence on its campus and *[shall]must* explicitly define in residence.

(E) Faculty Resources. Faculty resources *[shall]must* be appropriate for the program, given the sponsoring **public** institution's mission and the character of the program to be developed.

1. The minimum educational attainment of the faculty *[shall]must* be the appropriate degree and/or occupational or other equivalent experiences commensurate with the degree level of the proposed program. While the doctorate, in most instances, is the appropriate terminal degree for baccalaureate and graduate programs, the Master of Fine Arts (MFA) or a similar degree is often considered a terminal degree. If accreditation is a desired goal of the program, the number of terminal degree holders *[shall]must* meet the minimum requirements of the appropriate accrediting association.

2. Adjunct faculty are an important and necessary component of some programs, particularly those programs that require a high degree of vocational/technical competence. However, programs shall involve credentialed full-time faculty in teaching, program development and student services. If a program will involve more than fifty percent (50%) adjunct faculty, the rationale for the use of adjunct faculty *[shall]must* be documented and approved by the coordinating board or its designee.

3. Adjunct faculty, when utilized, *[shall]must* possess the same or equivalent qualifications as the regular faculty of the **public** institution and *[shall]* be approved by the academic unit through which the credit is offered. The responsibilities of adjunct faculty shall be specified in such a manner that their involvement in program development and academic advising is assured, or that these activities are provided by other appropriate means.

4. Expected faculty workloads *[shall]must* be appropriate and consistent with good educational practice and expressed in student credit hours per full-time equivalent faculty member in the administrative unit that will support the proposed program. This information, of course, must be evaluated in the context of the sponsoring institution's mission, the mission of the proposed program and the character of the discipline from which the proposed program is an outgrowth.

(F) Library Resources.

1. Qualitative and quantitative factors of library resources *[shall]must* be appropriate for the proposed program, given the sponsoring **public** institution's mission and the character of the program to be developed. Books, periodicals, microfilms, microfiche, monographs and other collections *[shall]must* be sufficient in number, quality and currency to serve the program. Adequacy of the library personnel and of facilities to service the proposed program in terms of students and faculty will be considered. While some technical programs may not demand the same type or extent of holdings and services conventional arts and science programs do, these factors must be adequate.

2. Access to interlibrary loans and to libraries at other institutions or in other cities shall be indicated. Interlibrary loans and reciprocal loan privileges at local libraries may constitute valuable resources for the program. However, within this framework, adequate library material *[shall]must* be

available at the **public** institution which proposes the program. If the program is to be taught off-campus, access to adequate library resources shall be provided.

(G) Physical Facilities and Instructional Equipment. **The public institution shall provide** [P]physical facilities and instructional equipment [shall be] adequate to support the program and space for classrooms and for staff and faculty offices. Laboratories for studies in the technologies and sciences shall be designed to provide maximum utilization of facilities, materials and equipment, **which may include**. *Some courses require laboratory facilities,*] specialized equipment such as computer terminals and audiovisual aids, or other special resources. The institution offering these courses off-campus shall assure that appropriate support requirements are met.

(H) Administration and Evaluation.

1. Administration of the proposed programs [shall] **should** not be unduly cumbersome or costly and, ideally, fit into the **public** institution's current administrative structure. If administrative changes are required, they [shall] **should** be consistent with the organization of the **public** institution as a whole and necessitate a minimum of additional expense in terms of personnel and office space.

2. Proposals for jointly sponsored programs [shall] **should** include [provisions for] adequate plans for cooperative administration.

3. Each **public** institution shall set forth not only the administrative organization but also the instructional supervision and evaluation procedures for the program. These procedures [shall] **must** include evaluation of courses and faculty by students, administrators and departmental personnel. Curriculum review procedures established by each **public** institution for its program offerings shall include standards and guidelines for the assessment of student outcomes as defined for the program and consistent with the institutional mission.

[4. The institution shall establish clearly defined performance goals for the new program to be achieved during a stipulated implementation period. The institution may revise its performance goals for the new program at any time during the designated implementation period with the concurrence of the CBHE staff.

5. The institution shall define a review process with the concurrence of coordinating board staff to assess the program's development. In the event a new program fails to develop satisfactorily in the allotted period as determined by the commissioner, the status of the new program shall be evaluated. As a result of this review, approval may be continued with or without further stipulations, or program authorization may be withdrawn.]

*[6]4. In the event that program authorization is withdrawn or approval is denied, if the sponsoring institution chooses to continue the new program rather than terminate it, the resources associated with the program [shall] **will** be withdrawn from the institution's funding base for the purpose of developing future state appropriation requests—*

[7. Paragraphs(10) 4.—6. of this rule are not applicable to independent institutions.]

(I) Finances.

1. Suitable financing for initiating proposed programs must be available. Programs should be financed with fees from students new to the institution, funds that have been reallocated from institutional sources or grants, contracts or sources other than normal state appropriations for higher education.

2. In those circumstances for which one (1)-time or limited duration funds are an integral component of the financing arrangements for a new program, the institution must also define a transition plan for the period when the one (1)-time or limited duration funds cease to be available.

3. The proposed program may require phasing-out of some existing program(s) to reallocate institutional resources for new programs that are a logical outgrowth of existing institutional strengths and consistent with the approved institutional plan or plan update.

4. Ordinarily, approval will be extended only for those programs that meet these requirements unless the sponsoring institution specifically requests additional state funds for program implementation. In this event, approval [shall] **will** be conditional on actual receipt of these funds through the legislative process.

[5. This subsection on finances is not applicable to independent institutions.]

AUTHORITY: sections 173.005(2) and 173.030, RSMo Supp. 2013. Original rule filed Feb. 13, 1979, effective June 18, 1979. Amended: Filed September 30, 2017.

PUBLIC COST: This proposed amendment will not cost state agencies or political subdivisions more than five hundred dollars (\$500) in the aggregate.

PRIVATE COST: This proposed amendment will not cost private entities more than five hundred dollars (\$500) in the aggregate.

NOTICE TO SUBMIT COMMENTS: Anyone may submit a statement in support of or in opposition to this proposed amendment to the attention of Academic Affairs, Missouri Department of Higher Education, P.O. Box 1469, Jefferson City, MO 65102. To be considered, comments must be received within thirty (30) days after publication of this notice in the Missouri Register. No public hearing is scheduled.

DRAFT

AGENDA ITEM SUMMARY

AGENDA ITEM

Academic Program Actions
 Coordinating Board for Higher Education
 December 14, 2017

DESCRIPTION

This agenda item reports all proposals reviewed at the routine and staff levels by the Missouri Department of Higher Education (MDHE) since the September 14, 2017, board meeting and are submitted to the Coordinating Board for Higher Education (CBHE) information.

The following tables provide a summary of the proposed program actions submitted to the CBHE. The complete list of proposed program actions can be found in the attachment to this agenda item.

Public Institution Update

	Certificates	Associate	Baccalaureate	Graduate	Total
Deleted	8	6	6	3	23
Inactivated	4	0	6	5	15
Other Program Changes*	15	3	9	9	36
New	10	8	2	2	22
Off-Site	0	14	0	2	16
Programs Withdrawn	0	0	0	0	0

*includes options inactivated/deleted, options added, titles changed, programs combined, and coursework revised

Comments for Public Institutions. State Technical College of Missouri (STC) commented on a proposal submitted by Ozarks Technical Community College (OTC) in November 2017 to offer the Associate of Applied Science in Electrical Distribution Systems. State Technical College expressed concerns that the proposed program would unnecessarily duplicate an existing program offered by STC and would impede on STC's statewide mission. There were also questions regarding the actual demand for the program and the projected cost of delivery. MDHE staff has forwarded STC's concerns to OTC for a response. *This program remains under review.*

Independent Institution Update

	Certificates	Associate	Baccalaureate	Graduate	Total
Deleted	3	0	50	0	53
Inactivated	0	0	1	0	1
Other Program Changes*	5	3	16	0	24
New	0	0	2	3	5
Off-Site	1	2	3	0	6
Programs Withdrawn	0	0	0	0	0

*includes options inactivated/deleted, options added, titles changed, programs combined, and coursework revised

Comments for Independent Institutions. Lindenwood University has submitted proposals to offer nine post-baccalaureate degrees at a permanent site in Springfield, Missouri. On two previous occasions – September 2016 and April 2017 – MDHE staff expressed concerns with the proliferation of education programs offered by Lindenwood University, including the quality of programs offered with limited campus oversight, faculty credentialing, and the number of adjunct faculty versus the number of full-time faculty available for the proposed programs. MDHE staff also noted the lack of details in the program proposals regarding need, sustainability, and duplication, not only of existing programs at other institutions in the same regions, but also duplication of Lindenwood University's own programs in certain locations. Since

September 2016, Lindenwood University has submitted proposals for 48 new master's, doctoral, and education specialist degrees around the state.

While the CBHE neither approves nor disapproves program proposals from independent institutions, it may comment on the proposals as appropriate. While Lindenwood University's proposals are the immediate focal point, the larger issue is the challenge of coordinating educator preparation programming across multiple sectors and agencies with varying rules and authority. Also of issue is the restriction on public institutions' ability to offer duplicative programs in regions where other institutions are located. Were these proposals submitted by a public institution, MDHE staff would have recommended to the CBHE not to approve them, due to the concerns noted above.

The concerns noted above have been forwarded to the institution for their response. *These programs remain under review.*

Off-Site Location Status Updates

None.

STATUTORY REFERENCE

Sections 173.005.2(1), 173.005.2(8), 173.005.11, 173.030(1), and 173.030(2), RSMo – Statutory requirements regarding CBHE approval of new degree programs

RECOMMENDED ACTION

This is an information item only.

ATTACHMENT(S)

Attachment A: Academic Program Actions

ACADEMIC PROGRAM ACTIONS

Academic Program Changes Submitted for Staff Review (Public Institutions)

Lincoln University

- 1) Current Program
BA, History, CIP 540101 (inactive)

Proposed Change:
Reactivate program

Program as Changed:
BA, History, CIP 540101 (reactivate)
- 2) Current program:
AAS, Early Childhood Care & Educ., CIP 131210

Proposed Change:
Delete program

Program as Changed:
~~AAS, Early Childhood Care & Educ., CIP 131210~~ (program deleted)

Mineral Area College

- 1) Current Program:
AAS, Paramedic Technology, CIP 510904

Proposed Change:
Add certificate program from approved existing parent degree

Program as Changed:
C0, Paramedic Technology-Community Paramedic Program, CIP 510904 (add certificate)
- 2) Current Program:
AAS, Paramedic Technology, CIP 510904

Proposed Change:
Add certificate program from approved existing parent degree

Program as Changed:
C1, Paramedic Technology Certificate, CIP 510904 (add certificate)
- 3) Current Program:
AAS, Engineering Technology, CIP 150101

Proposed Change:
Add certificate program from approved existing parent degree

Program as Changed:
C1, Engineering Technology-Design Drafting, CIP 150101 (add certificate)
- 4) Current Program
AAS, Engineering Technology, CIP 150101

Proposed Change:
Add certificate program from approved existing parent degree

Program as Changed:
C1, Engineering Technology-Manufacturing, CIP 150101 (add certificate)

Missouri State University

- 1) Current Program:
BS, Physics, CIP 400801
Astronomy & Astrophysics
Engineering & Applied Physics
Materials Physics
Graduate Prep Physics

Proposed Change:
Option title change, delete option

Program as Changed:
BS, Physics, CIP 400801
Astronomy & Astrophysics
~~Engineering & Applied Physics~~ (option deleted)
Materials Physics
Career Prep Physics (title change)

- 2) Current Program:
BS, Biology, CIP 260101
Environmental Biology & Evolution
Microbiology & Biotechnology
Wildlife Biology

Proposed Change:
Add option

Program as Changed:
BS, Biology, CIP 260101
Environmental Biology & Evolution
Microbiology & Biotechnology
Wildlife Biology
Pre-Teacher Education (add option)

- 3) Current Program:
MS, Counseling, CIP 131101
Elementary School Counseling
Secondary School Counseling

Proposed Change:
Add option, delete option

Missouri State University-West Plains

- 1) Current Program:
AA, Health Professions, CIP 511199

Proposed Change:
Add options to existing program

Program as Changed:
AA, Health Professions, CIP 511199
Physician's Assistant (add option)
Radiographer (add option)

Occupational Therapist (add option)
Physical Therapist (add option)

- 2) Current Program:
AS, Agriculture, General (via ITV) CIP 010000

Proposed Change:
Delete program

Program as Changed:
~~AS, Agriculture, General (via ITV) CIP 010000 (program deleted)~~
- 3) Current Program:
C2, Food Science, CIP 011001

Proposed Change:
Delete program

Program as Changed:
~~C2, Food Science, CIP 011001 (program deleted)~~
- 4) Current Program:
AS, Information Technology, CIP 110103

Proposed Change:
Delete program

Program as Changed:
~~AS, Information Technology, CIP 110103 (program deleted)~~
- 5) Current Program:
AA, Elementary Education and Teaching, CIP 131202

Proposed Change:
Delete program

Program as Changed:
~~AA, Elementary Education and Teaching, CIP 131202 (delete program)~~
- 6) Current Program:
C1, Technology Management, CIP 150613

Program as Changed:
Delete program

Program as Changed:
~~C1, Technology Management, CIP 150613 (delete program)~~
- 7) Current Program:
AA, Human Development & Family Studies, General, CIP 190701

Proposed Change:
Delete program

Program as Changed:
~~AA, Human Development & Family Studies, General, CIP 190701 (delete program)~~

- 8) Current Program:
AS, Fire Science/Fire Fighting, CIP 430203

Proposed Change:
Delete program

Program as Changed:
~~AS, Fire Science/Fire Fighting, CIP 430203~~ (delete program)

- 9) Current Program
C1, Entrepreneurship, CIP 520701

Proposed Change:
Delete program

Program as Changed:
~~C1, Entrepreneurship, CIP 520701~~ (delete program)

Missouri University of Sciences and Technology

- 1) Current Program
MS, Electrical Engineering, CIP 141001

Proposed Change:
Add certificate program from approved existing parent degree

Program as Changed
MS, Electrical Engineering, CIP 141001
GRCT, Advanced Control Systems, CIP 141099 (add certificate)

- 2) Current Program
MS, Electrical Engineering, CIP 141001

Proposed Change:
Add certificate program from approved existing parent degree

Program as Changed:
MS, Electrical Engineering, CIP 141001
GRCT, Automation Engineering and PLC, CIP 150406 (add certificate)

- 3) Current Program
GRCT, Graduate Certificate in Digital Media, CIP 110401

Proposed Change:
Title change

Program as Changed:
GRCT, Digital Media and Web Design, CIP 110401 (add certificate)

North Central Missouri College

- 1) Current Program
C1, Business Management, CIP 520201

Proposed Change:
Title change, CIP change, reduction in credit hours

Program as Changed:
C1, Business Management Essentials, 520407 (title, CIP, credit hour change)

- 2) Current Program:
AAS, Agriculture, CIP 010101

Proposed Change:
Add certificate program from approved existing parent degree

Program as Changed:
AAS, Agriculture, CIP 010101
C0, Agricultural Business, CIP 010101 (add certificate)

Northwest Missouri State University

- 1) Current Program:
BS, Data Science, CIP 279999

Proposed Change:
CIP change

Program as Changed:
BS, Data Science, CIP 110802 (CIP change)

- 2) Current Program:
C2, Business Technology Certificate, CIP 520499

Proposed Change:
CIP Change

Program as Changed:
C2, Business Technology Certificate, CIP 520407 (CIP change)

- 3) Current program
BS, Industrial Psychology, CIP 422804

Proposed Change:
Place program on inactive status

Program as Changed:
BS, Industrial Psychology, CIP 422804 (inactive)

- 4) Current Program
GRCT, Education, CIP 130404

Proposed Change:
Place program on inactive status

Program as Changed:
GRCT, Education, CIP 130404 (inactive)

- 5) Current Program
GRCT, Elementary School Principal, CIP 130408

Proposed Change:
Place program on inactive status

Program as Changed:
GRCT, Elementary School Principal, CIP 130408 (inactive)

- 6) Current Program:
GRCT, ELL/ESOL Certification, CIP 130201

Proposed Change:
Place program on inactive status

Program as Changed:
GRCT, ELL/ESOL Certification, CIP 130201 (inactive)

- 7) Current Program:
MS, Instructional Technology, CIP 130501

Proposed Change:
Place program on inactive status

Program as Changed:
MS, Instructional Technology, CIP 130501 (inactive)

- 8) Current Program:
MS, Teaching Elementary, CIP 131202

Proposed Change:
Place program on inactive status

Program as Changed:
MS, Teaching Elementary, CIP 131202 (inactive)

- 9) Current Program:
BA/BS, Sociology, CIP 451101

Proposed Change:
Delete program

Program as Changed:
~~BA/BS Sociology, CIP 451101~~ (program deleted)

- 10) Current program:
BS, Journalism, CIP 090401

Proposed Change:
Delete program

Program as Changed:
~~BS, Journalism, CIP 090401~~ (program deleted)

- 11) Current Program:
BS, Merchandising Textiles Apparel Furnish, CIP190905

Proposed Change:
Delete program

Program as Changed:
~~BS, Merchandising Textiles Apparel Furnish, CIP 190905~~ (program deleted)

12) Current Program:
BS, Organizational Communication, General, CIP 090901

Proposed Change:
Delete program

Program as Changed:
~~BS, Organizational Communication, General, CIP 090901~~ (program deleted)

13) Current Program:
BS, Radio and Television, CIP 090701

Proposed Change:
Delete program

Program as Changed:
~~BS, Radio and Television, CIP 090701~~ (program deleted)

14) Current Program:
GRCT, Secondary School Principal, CIP 130409

Proposed Change:
Delete program

Program as Changed:
~~GRCT, Secondary School Principal, CIP 130409~~ (program deleted)

15) Current Program:
C2, Medical Administrative Assistant, CIP 510716

Proposed Change:
Delete program

Program as Changed:
~~C2, Medical Administrative Assistant, CI 510716~~ (program deleted)

16) Current Program:
MS, Biotechnology, CIP 261201

Proposed Change:
Delete program

Program as Changed
~~MS, Biotechnology, CIP 261201~~ (program deleted)

17) Current Program:
GRCT, Superintendent, CIP 130411

Proposed Change:
Delete program

Program as Changed:

~~GRCT, Superintendent, CIP 130414 (program deleted)~~

St. Charles Community College

- 1) Current Program:
AAS, Computer Science, CIP 521299
Cybersecurity
Database Management
Management Information Systems
Multimedia Authoring
Network Security
Networking
Programming

Proposed Change:
Title Change, Add Options, CIP Change

Program as Changed:
AAS, Computer Science, CIP 110201
Cybersecurity
Database Management
Management Information Systems
Multimedia Authoring
Information Technology (Title change)
Networking
Programming
Data Analytics (Add option)
Animation and Gaming (Add option)

State Fair Community College

- 1) Current Program:
C1, Medical Assistant, CIP 510801

Proposed Change:
Title change

Program as Changed:
C1, Medical Assisting, CIP 510801

Three Rivers College

- 1) Current Program:
AAS, Occupational Education, CIP 131319

Proposed Change:
Delete program at main campus and all off-site locations

Program as Changed:
~~AAS, Occupational Education, CIP 131319 (program deleted)~~

- 2) Current Program:
C0, Certified Medical Technician (non-credit), CIP 510801

Proposed Change:
Delete program at main campus and all off-site locations

Program as Changed:
~~C0, Certified Medical Technician (non-credit), CIP 510801 (program deleted)~~

- 3) Current Program:
 AAS, Engineering Technology, CIP 510000
 Construction Management and Civil Applications
 Process and Controls
 Welding
- Proposed Change:
 Delete options at main campus and all off-site locations
- Program as Changed:
 AAS, Engineering Technology, CIP 510000
 ~~Construction Management and Civil Applications (option deleted)~~
 ~~Process and Controls (option deleted)~~
 ~~Welding (option deleted)~~
- 4) Current Program:
 C1, Civil Engineering Technician, CIP 150000
- Proposed Change:
 CIP change at main campus and all off-site locations
- Program as Changed:
 C1, Civil Engineering Technician, CIP 151001 (CIP change)
- 5) Current Program:
 C1, Construction Management, CIP 150000
- Proposed Change:
 CIP Change at main campus and all off-site locations
- Program as Changed:
 C1, Construction Management, CIP 151001 (CIP change)
- 6) Current Program:
 C1, Technical Graphics Specialist, CIP 150000
- Proposed Change:
 CIP change at main campus and all off-site locations
- Program as Changed:
 C1, Technical Graphics Specialist, CIP 151302 (CIP change)
- 7) Current Program:
 C0, Surveying, CIP 150000
- Proposed Change:
 CIP Change at main campus and all off-site locations
- Program as Changed:
 C0, Surveying, CIP 151102 (CIP change)
- 8) Current Program:
 C1, Power Plant Technician, CIP 150000
- Proposed Change:

CIP change at main campus and all off-site locations

Program as Changed:

C1, Power Plant Technician, CIP 150699 (CIP change)

9) Current Program:

C0, Electrical Technician, CIP 150000

Proposed Change:

CIP change at main campus and all off-site locations

Program as Changed:

C0, Electrical Technician, CIP 150613 (CIP change)

10) Current Program:

C0, Industrial Technician, CIP 150000

Proposed Change:

CIP change at main campus and all off-site locations

Program as Changed:

C0, Industrial Technician, CIP 150613 (CIP change)

11) Current Program:

C0, Quality Control, CIP 150000

Proposed Change:

CIP change at main campus and all off-site locations

Program as Changed:

C0, Quality Control, CIP 150613 (CIP change)

12) Current Program:

C1, Maintenance Welding, CIP 150000

Proposed Change:

CIP change at main campus and all off-site locations

Program as Changed:

C1, Maintenance Welding, CIP 480508 (CIP change)

13) Current Program:

C1, Manufacturing Welding, CIP 150000

Proposed Change:

Title change, CIP change at main campus and all off-site locations

Program as Changed:

C1, Welding Fabrication Specialist, CIP 480508 (CIP and title change)

Truman State University

1) Current Program:

BA, BS, Psychology, CIP 420101

Proposed Change:

CIP change

Program as Changed:
BA, BS, Psychology, CIP 422799 (CIP change)

University of Central Missouri

- 1) Current Program:
MA, Environmental Studies, CIP 030103

Proposed Change:
Place program on inactive status

Program as Changed:
~~MA, Environmental Studies, CIP 030103~~ (inactivate)

- 2) Current Program:
BA, Philosophy, CIP 380101

Proposed Change:
Place program on inactive status

Program as Changed:
~~BA, Philosophy, CIP 380101~~ (inactivate)

- 3) Current Program:
MA, Sociology, CIP 451101

Proposed Change:
Place program on inactive status

Program as Changed:
~~MA, Sociology, CIP 451101~~ (inactivate)

- 4) Current Program:
BS, Athletic Training, CIP 510913

Proposed Change:
Place program on inactive status

Program as Changed:
~~BS, Athletic Training, CIP 510913~~ (inactivate)

- 5) Current Program:
GRCT, Women, Gender, and Sexuality, CIP 050207

Proposed Change:
Place program on inactive status

Program as Changed:
~~GRCT, Women, Gender, and Sexuality, CIP 050207~~ (inactivate)

- 6) Current Program:
BS, Professional Photography, CIP 500605

Proposed Change:
Place program on inactive status

Program as Changed:
~~BS, Professional Photography, CIP 500605 (inactivate)~~

- 7) Current Program:
BS, Hotel & Restaurant Administration, CIP 520901

Proposed Change:
Place program on inactive status

Program as Changed:
BS, Hotel & Restaurant Administration, CIP 520901 (inactive)

- 8) Current Program:
BSBA, Hospitality Management, CIP 520901

Proposed Change:
Place program on inactive status

Program as Changed:
BSBA, Hospitality Management, CIP 520901 (inactive)

- 9) Current Program:
MA, Theatre, CIP 500501

Proposed Change:
Place program on inactive status

Program as Changed:
MA, Theatre, CIP 500501 (inactive)

- 10) Current Program:
GRCT, Nurse Practitioner, CIP 513805

Proposed Change:
Delete program

Program as Changed:
~~GRCT, Nurse Practitioner, CIP 513805 (program deleted)~~

University of Missouri-Columbia

- 1) Current Program:
PhD, Information Science & Learning Technologies, CIP 130301

Proposed Change:
CIP change

Program as Changed:
PhD, Information Science & Learning Technologies, CIP 303101 (CIP change)

- 2) Current Program:
N/A

Proposed Change:
Addition of free-standing certificate program

Program as changed:
GRCT, Quantitative Research, CIP 130601 (add certificate)

- 3) Current Program:
PhD, Psychology, CIP 420404

Proposed Change:
CIP change

Program as Changed:
PhD, Psychology, CIP 422799 (CIP change)

- 4) MEd, Information Science & Learning Technologies, CIP 130301
Technology in Schools
Online Educator
Learning Systems Design and Development

Proposed Change:
CIP change, nomenclature change, title change, delete option

Program as Changed:
MS, Learning Technologies and Design, CIP 303101 (title/nomenclature change)
Technology in Schools
Online Education (title change)
~~Learning Systems Design and Development (delete option)~~

- 5) EdSp, Information Science & Learning Technologies, CIP 130301
Technology in Schools
Online Educator
Learning Systems Design and Development

Proposed Change:
CIP change, title change, delete option

Program as Changed:
EdSp, Learning Technologies and Design, CIP 303101 (title change)
Technology in Schools
Online Education (title change)
~~Learning Systems Design and Development (delete option)~~

- 6) Current Program:
PhD, Pathobiology Area Program, CIP 260910

Proposed Change:
CIP Change

Program as Changed:
PhD, Pathobiology Area Program, CIP 512505 (CIP change)

- 7) Current Program:
GRCT, Online Educator, CIP 130301

Proposed Change:
CIP Change, title change

Program as Changed:
GRCT, Online Education, CIP 303101 (title change)

- 8) Current Program
EdD, Special Education, CIP 131001

Proposed Change:
Delete program

Program as Changed:
~~EdD, Special Education, CIP 131001 (delete program)~~

- 9) Current Program:
EdD, Educational Leadership, CIP 130499

Proposed Change:
Delete program

Program as Changed:
~~EdD, Educational Leadership, CIP 130499 (delete program)~~

University of Missouri-St. Louis

- 1) Current Program:
MED, Educational Administration, CIP 130401
Community Education
Elementary Administration
Secondary Administration

Proposed Change:
Add option

Program as Changed:
MED, Educational Administration, CIP 130401
Community Education
Elementary Administration
Secondary Administration
School Administration (add option)

- 2) Current Program:
BS, Mathematics, CIP 270101

Proposed Change:
Add option

Program as Changed:
BS, Mathematics, CIP 270101
Fiscal Mathematics (add option)

- 3) Current Program:
N/A

Proposed Change:
Add stand-alone certificate

Program as Changed:

GRCT, Museums, Heritage, and Public History, CIP 540101

- 4) Current Program:
BS, Physics, CIP 400801
Astrophysics
Engineering Physics
General Physics
Medical Physics

Proposed Change:
Option title change, add option

Program as Changed:
BS, Physics, CIP 400801
Astrophysics
Engineering Physics
General Physics
~~Medical Physics~~ (delete option)
Optical Physics (add option)
Biophysics (add option)

- 5) Current Program:
MA, History, CIP 540101
Museum Studies

Proposed Change:
Title change

Program as Changed:
MA, Museums, Heritage, and Public History, CIP 540101 (title change)
Museum Studies

- 6) Current Program:
N/A

Proposed Change:
Add stand-alone certificate

Program as Changed:
Interdisciplinary Entrepreneurship Certificate, CIP 520101

- 7) Current Program:
BES, Bachelor of Educational Studies, CIP 130101
Information Science and Cultural Education
Human Services and Development
Early Childhood Education
Exercise Science

Proposed Change:
Option title change, add option, delete option

Program as Changed:
BES, Bachelor of Educational Studies, CIP 130101
Information Science and Cultural Education (delete option)
Human Services and Development (delete option)
Early Childhood Education

Exercise Science and Wellness Cultural Education (title change)
Park and Museum Programs (add option)
Youth and Adult Development (add option)

Academic Program Changes Submitted for Staff Review (Independent Institutions)

Columbia College (main campus)

- 1) Current Program:
BA, American Studies, CIP 050102

Proposed Change:
Place program on inactive status

Program as Changed:
BA, American Studies, CIP 050102 (inactive)

Lindenwood University

- 1) Current Program:
GRCT, Applied Research Methods, CIP 130601

Proposed Change:
CIP change

Program as Changed:
GRCT, Applied Research Methods, CIP 450102 (CIP change)

Ranken Technical College

- 1) Current Program:
C2, Evening Program Certificate, Industrial Technology, CIP 470399

Proposed Change:
CIP change

Program as Changed:
C2, Evening Program Certificate, Industrial Technology, CIP 470303 (CIP change)
- 2) Current Program:
C2, Certificate of Technology, Industrial Technology, CIP 470399

Proposed Change:
CIP change

Program as Changed:
C2, Certificate of Technology, Industrial Technology, CIP 470303 (CIP change)
- 3) Current Program:
C1, Microsoft Windows Server Program, CIP 111001

Proposed Change:
Title Change

Program as Changed:
C1, Microsoft Windows Server Certificate, CIP 111001
- 4) Current Program:
AS, High Performance Automotive Technology, CIP 470617

Proposed Change:
Title Change

Program as Changed:
AS, High Performance Racing Technology, CIP 470617

- 5) Current Program:
C0, High Performance Automotive Technology, CIP 470617

Proposed Change:
Title change

Program as Changed:
C0, High Performance Racing Technology, CIP 470617

- 6) Current Program:
AS, Industrial Science, CIP 470399

Proposed Change:
CIP change

Program as Changed:
AS, Industrial Science, CIP 470303

- 7) Current Program:
AS, Information Technology, CIP 111001

Proposed Change:
CIP change

Program as Changed:
AS, Information Technology, CIP 151201

- 8) Current Program:
C0, Woodworking, CIP 460201

Proposed Change:
Delete program

Program as Changed:
~~C0, Woodworking, CIP 460201~~ (deleted)

William Jewell College

- 1) Current Program:
C0, ACEP Alternative Certification, CIP 139990

Proposed Change:
Delete program

Program as Changed:
~~C0, ACEP Alternative Certification, CIP 139990~~ (delete program)

- 2) Current Program:
BA, Area Studies Other (British Studies), CIP 050199

Proposed Change:
Delete program

Program as Changed:
~~BA, Area Studies Other (British Studies), CIP 050199~~ (delete program)

- 3) Current Program:
BA, Area Studies Other (Japanese Studies), CIP 050199

Proposed Change:
Delete program

Program as Changed:
~~BA, Area Studies Other (Japanese Studies), CIP 050199~~ (delete program)

- 4) Current Program:
BA, Bioethics, CIP 260102

Proposed Change:
Delete program

Program as Changed:
~~BA, Bioethics, CIP 260102~~ (delete program)

- 5) Current Program:
BA, Business Administration, CIP 520201

Proposed Change:
Delete program

Program as Changed:
~~BA, Business Administration, CIP 520201~~ (delete program)

- 6) Current Program:
BA, Business Administration Management, CIP 520201

Proposed Change:
Delete program

Program as Changed:
~~BA, Business Administration Management, CIP 520201~~ (delete program)

- 7) Current Program:
BS, Business Administration Management General, CIP 520201

Proposed Change:
Delete program

Program as Changed:
~~BS, Business Administration Management General, CIP 520201~~ (delete program)

- 8) Current Program:
BS, Business Banking & Finance, CIP 520201

Proposed Change:
Delete program

Program as Changed:
~~BS, Business Banking & Finance, CIP 520204~~ (delete program)

- 9) Current Program:
Business Entrepreneurship Leadership, CIP 520201

Proposed Change:
Delete program

Program as Changed:
~~Business Entrepreneurship Leadership, CIP 520204~~ (delete program)

- 10) Current Program:
BS, Business Marketing, CIP 520201

Proposed Change:
Delete program

Program as Changed:
~~BS, Business Marketing, CIP 520204~~ (delete program)

- 11) Current Program:
BA, Cell and Molecular Biology Other, CIP 260499

Proposed Change:
Delete program

Program as Changed:
~~BA, Cell and Molecular Biology Other, CIP 260499~~ (delete program)

- 12) Current Program:
BA, Church Music, CIP 390501

Proposed Change:
Delete program

Program as Changed:
~~BA, Church Music, CIP 390504~~ (delete program)

- 13) Current Program:
BS, Clinical Laboratory Science, CIP 511005

Proposed Change:
Delete program

Program as Changed:
~~BS, Clinical Laboratory Science, CIP 511005~~ (delete program)

- 14) Current Program:
BS, Communications with Theatre Emphasis, CIP 231001

Proposed Change:

Delete program

Program as Changed:

~~BS, Communications with Theatre Emphasis, CIP 231004 (delete program)~~

15) Current Program:

BS, Computer and Information Sciences Other, CIP 119999

Proposed Change:

Delete program

Program as Changed:

~~BS, Computer and Information Sciences Other, CIP 119999 (delete program)~~

16) Current Program:

BA, Computer Science & Information Systems, CIP 110701

Proposed Change:

Delete program

Program as Changed:

~~BA, Computer Science & Information Systems, CIP 110701 (delete program)~~

17) Current Program:

BA, Early Childhood, CIP 131204

Proposed Change:

Delete program

Program as Changed:

BA, Early Childhood, CIP 131204 (delete program)

18) Current Program:

BA, Economics, CIP 520601

Proposed Change:

CIP change

Program as Changed:

BA, Economics, CIP 450601

19) Current Program

BA, Education, CIP 131206

Proposed Change:

Delete program

Program as Changed:

~~BA, Education, CIP 131206 (delete program)~~

20) Current Program

BS, Education, CIP 131206

Proposed Change:

Delete program

Program as Changed:
~~BS, Education, CIP 131206~~ (delete program)

21) Current Program:
BA, Elementary Education, CIP 131202

Proposed Change:
Delete program

Program as Changed:
~~BA, Elementary Education, CIP 131202~~ (delete program)

22) Current Program:
BA, English General, CIP 230101

Proposed Change:
Delete program

Program as Changed:
~~BA, English General, CIP 230101~~ (delete program)

23) Current Program:
BA, English Literature, CIP 230101

Proposed Change:
Delete program

Program as Changed:
~~BA, English Literature, CIP 230101~~ (delete program)

24) Current Program:
BA, English with Teaching Emphasis, CIP 230101

Proposed Change:
Delete program

Program as Changed:
~~BA, English with Teaching Emphasis, CIP 230101~~ (delete program)

25) Current Program:
BA, English Honors, CIP 230101

Proposed Change:
Delete Program

Program as Changed:
~~BA, English Honors, CIP 230101~~ (delete program)

26) Current Program:
BA, Foreign Languages Teacher Education, CIP 131306

Proposed Change:
Delete program

Program as Changed:

~~BA, Foreign Languages Teacher Education, CIP 131306 (delete program)~~

27) Current Program:

BS, Information Systems, CIP 110401

Proposed Change:

Delete program

Program as Changed:

~~BS, Information Systems, CIP 110401 (delete program)~~

28) Current Program:

BA, International Business/Language, CIP 521101

Proposed Change:

Delete program

Program as Changed:

~~BA, International Business/Language, CIP 521101 (delete program)~~

29) Current Program:

BA, Japan Area Studies, CIP 050127

Proposed Change:

Delete program

Program as Changed:

~~BA, Japan Area Studies, CIP 050127 (delete program)~~

30) Current Program:

BA, Junior High Education, CIP 131203

Proposed Change:

Delete program

Program as Changed:

~~BA, Junior High Education, CIP 131203 (delete program)~~

31) Current Program:

BS, Junior High Education, CIP 131203

Proposed Change:

Delete program

Program as Changed:

~~BS, Junior High Education, CIP 131203 (delete program)~~

32) Current Program:

BA, Mathematics Education, CIP 131311

Proposed Change:

Delete program

Program as Changed:

~~BA, Mathematics Education, CIP 131311 (delete program)~~

- 33) Current Program:
BS, Mathematics with DP Emphasis, CIP 279999
- Proposed Change:
Delete program
- Program as Changed:
~~BS, Mathematics with DP Emphasis, CIP 279999~~ (delete program)
- 34) Current Program:
BS, Medical Technology, CIP 511005
- Proposed Change:
Delete program
- Program as Changed:
~~BS, Medical Technology, CIP 511005~~ (delete program)
- 35) Current Program:
BA, Multi/Interdisciplinary (Oxbridge), CIP 309999
- Proposed Change:
Delete program
- Program as Changed:
~~BA, Multi/Interdisciplinary (Oxbridge), CIP 309999~~ (delete program)
- 36) Current Program:
BS, Multi/Interdisciplinary (Self Des.), CIP 309999
- Proposed Change:
Delete program
- Program as Changed:
~~BS, Multi/Interdisciplinary (Self Des.), CIP 309999~~ (delete program)
- 37) Current Program:
BA, Multi/Interdisciplinary Other (Self Des.), CIP 309999
- Proposed Change:
Delete program
- Program as Changed:
~~BA, Multi/Interdisciplinary Other (Self Des.), CIP 309999~~ (delete program)
- 38) Current Program:
BS, Music Education Instrument, CIP 131312
- Proposed Change:
Delete program
- Program as Changed:
~~BS, Music Education Instrument, CIP 131312~~ (delete program)
- 39) Current Program:

Music Education Vocal, CIP 131312

Proposed Change:

Delete program

Program as Changed:

~~Music Education Vocal, CIP 131312~~ (delete program)

40) Current Program:

BA, Oxbridge: English Language & Literature, CIP 230101

Proposed Change:

Title change

Program as Changed:

BA, Oxbridge: English Literature & Theory, CIP 230101

41) Current Program:

BA, Organizational Communication, CIP 090901

Proposed Change:

Delete program

Program as Changed:

~~BA, Organizational Communication, CIP 090901~~ (delete program)

42) Current Program:

BA, Molecular Biology, CIP 260499

Proposed Change:

CIP change

Program as Changed:

BA, Molecular Biology, CIP 260204

43) Current Program:

C1, Paralegal, CIP 220302

Proposed Change:

Delete program

Program as Changed:

~~C1, Paralegal, CIP 220302~~ (delete program)

44) Current Program:

BS, Physical Education, CIP 131314

Proposed Change:

Delete program

Program as Changed:

~~BS, Physical Education, CIP 131314~~ (delete program)

45) Current Program:

BS, Physical Education with Recreation, CIP 310101

Proposed Change:
Delete program

Program as Changed:
~~BS, Physical Education with Recreation, CIP 310101~~ (delete program)

46) Current Program:
BS, Physics, CIP 400801

Proposed Change:
Delete program

Program as Changed:
~~BS, Physics, CIP 400801~~ (delete program)

47) Current Program:
BA, Psychology, CIP 420101

Proposed Change:
Title change

Program as Changed:
BA, Psychological Science, CIP 420101

48) Current Program:
BA, Religion, CIP 380201

Proposed Change:
Title Change

Program as Changed:
BA, Religion and Culture, CIP 380201

49) Current Program:
BA, Science & Tech. Emp. Biology, CIP 410000

Proposed Change:
Delete program

Program as Changed:
~~BA, Science & Tech. Emp. Biology, CIP 410000~~ (delete program)

50) Current Program:
BA, Science & Tech. Emp. Chemistry, CIP 410000

Proposed Change:
Delete program

Program as Changed:
~~BA, Science & Tech. Emp. Chemistry, CIP 410000~~ (delete program)

51) Current Program:
BA, Science & Tech. Emp. Physics, CIP 410000

Proposed Change:

Delete program

Program as Changed:

~~BA, Science & Tech. Emp. Physics, CIP 410000~~ (delete program)

52) Current Program:

BA, Science Education, CIP 131316

Proposed Change:

Delete program

Program as Changed:

~~BA, Science Education, CIP 131316~~ (delete program)

53) Current Program:

BA, Secondary Education, CIP 131205

Proposed Change:

Delete program

Program as Changed:

~~BA, Secondary Education, CIP 131205~~ (delete program)

54) Current Program:

BA, Social Studies Education, CIP 131318

Proposed Change:

Delete program

Program as Changed:

~~BA, Social Studies Education, CIP 131318~~ (delete program)

55) Current Program:

BA, Speech & Rhetorical Studies, CIP 231001

Proposed Change:

Delete program

Program as Changed:

~~BA, Speech & Rhetorical Studies, CIP 231001~~ (delete program)

56) Current Program:

BA, Speech Education, CIP 131331

Proposed Change:

Title change

Program as Changed:

BA, Speech/Theatre Education, CIP 131331

57) Current Program:

BA, Teacher Education Other (Speech and Theatre), CIP 131399

Proposed Change:

Delete program

Program as Changed:

~~BA, Teacher Education Other (Speech and Theatre), CIP 131399 (delete program)~~

58) Current Program:

BA, Theatre Education, CIP 131324

Proposed Change:

Delete program

Program as Changed:

~~BA, Theatre Education, CIP 131324 (delete program)~~

59) Current Program:

BS, Church Music, CIP 390501

Proposed Change:

Add accreditation

Program as Changed:

BS, Church Music, CIP 390501, NASM accredited

60) Current Program:

BS, Elementary Education, CIP 131202

Proposed Change:

Add accreditation

Program as Changed:

BS, Elementary Education, CIP 131202, MDESE accredited

61) Current Program:

BA, Music, CIP 500901

Proposed Change:

Add accreditation

Program as Changed:

BA, Music, CIP 500901, NASM accredited

62) Current Program:

BS, Music, CIP 500901

Proposed Change:

Add accreditation

Program as Changed:

BS, Music, CIP 500901, NASM accredited

63) Current Program:

BS, Music Education-Vocal/Instrument, CIP 131312

Proposed Change:

Add accreditation

Program as Changed:

BS, Music Education-Vocal/Instrument, CIP 131312, NASM accredited

64) Current Program:

BS, Music Performance, CIP 500903

Proposed Change:

Add accreditation

Program as Changed:

BS, Music Performance, CIP 500903, NASM accredited

65) Current Program:

BS, Music Theory and Composition, CIP 500904

Proposed Change:

Add accreditation

Program as Changed:

BS, Music Theory and Composition, CIP 500904, NASM accredited

66) Current Program:

BS, Nursing, CIP 513801

Proposed Change:

Add accreditation

Program as Changed:

BS, Nursing, CIP 513801, CCNE accredited

67) Current Program:

BS, Nursing-Accelerated, CIP 513801

Proposed Change:

Add accreditation

Program as Changed:

BS, Nursing-Accelerated, CIP 513801, CCNE accredited

68) Current Program:

BS, Secondary Education, CIP 131205

Proposed Change:

Add accreditation

Program as Changed:

BS, Secondary Education, CIP 131205, MDESE accredited

Routine Programs Recommended for Provisional Approval (Public Institutions)

East Central College

- 1) Associate in Applied Science, Medical Laboratory Technician, in collaboration with North Central Missouri College, State Fair Community College, Moberly Area Community College, and Three Rivers College (*general education courses delivered at home main campus sites, and professional education courses delivered by distance education from Moberly Area Community College and Three Rivers College faculty*). The CIP for this program is 511004. Approved September 2017.

Moberly Area Community College

- 1) Associate in Applied Science, Medical Laboratory Technician, in collaboration with North Central Missouri College, State Fair Community College, East Central College, and Three Rivers College (*general education courses delivered at home main campus sites, and professional education courses delivered by distance education from Moberly Area Community College and Three Rivers College faculty*). The CIP for this program is 511004. Approved September 2017.

Missouri University of Science and Technology

- 1) Master of Science, Explosives Technology (*for delivery at the main campus*). The CIP for this program is 142101. Approved November 2017.

North Central Missouri College

- 1) Associate in Applied Science, Medical Laboratory Technician, in collaboration with Moberly Area Community College, State Fair Community College, East Central College, and Three Rivers College (*general education courses delivered at home main campus sites, and professional education courses delivered by distance education from Moberly Area Community College and Three Rivers College faculty*). The CIP for this program is 511004. Approved September 2017.

Northwest Missouri State University

- 1) Bachelor of Science, Cybersecurity (*for delivery at the main campus*). The CIP for this program is 111001. Approved November 2017.

Ozarks Technical Community College

- 1) Associate in Applied Science, Aviation Flight Technology (*for delivery at OTC-Lebanon and OTC-Waynesville*). The CIP for this program is 490102. Approved November 2017.

Southeast Missouri State University

- 1) Master of Arts in Teaching: Middle and Secondary Education, with options in 5-9 Mathematics; 5-9 Science; 9-12 Mathematics; 9-12 Biology; 9-12 Chemistry; 9-12 Earth Science; and 9-12 Physics (*for delivery online*). The CIP for this program is 131316. Approved October 2017.

State Fair Community College

- 1) Associate in Applied Science, Medical Laboratory Technician, in collaboration with Moberly Area Community College, North Central Missouri College, East Central College, and Three Rivers College (*general education courses delivered at home main campus sites, and professional education courses delivered by distance education from Moberly Area Community College and Three Rivers College faculty*). The CIP for this program is 511004. Approved September 2017.

Three Rivers College

- 1) Associate in Applied Science, Medical Laboratory Technician, in collaboration with Moberly Area Community College, North Central Missouri College, East Central College, and State Fair Community College (*general education courses delivered at home main campus sites, and professional education courses delivered by distance education from Moberly Area Community College and Three Rivers College faculty*). The CIP for this program is 511004. Approved September 2017.
- 2) Associate in Applied Science, Construction Engineering Technology (*for delivery at main campus, Sikeston, Dexter, Kennett, and Malden*). The CIP for this program is 151001. Approved October 2017.
- 3) Associate in Applied Science, Process & Controls Engineering Technology (*for delivery at main campus, Sikeston, Dexter, Kennett, and Malden*). The CIP for this program is 150613. Approved October 2017.

- 4) Associate in Applied Science, Welding Engineering Technology (*for delivery at main campus, Sikeston, Dexter, Kennett, and Malden*). The CIP for this program is 480508. Approved October 2017.

University of Central Missouri

- 1) Master of Science, Big Data Analytics and IT (*for delivery at the main campus and the Missouri Innovation Campus at Lee's Summit*). The CIP for this program is 110501. Approved November 2017.

University of Missouri-St. Louis

- 1) Bachelor of Science, Actuarial Science (for delivery at the main campus). The CIP for this program is 521304. Approved November 2017.

New Residence Sites Recommended for Provisional Approval

None.

Routine Programs Submitted for Review and Comment (Independent Institutions)

Avila University

- 1) Master of Science in Kinesiology (for delivery at main campus). The CIP for this program is 310505. Reviewed November 2017.

Central Methodist University

- 1) RN to BSN Completion Program (*for delivery as hybrid and online at Parkland Health Center, 1101 W. Liberty Street, Farmington, MO 63640*). The CIP for this program is 513899. Reviewed September 2017.

Cottey College

- 1) Bachelor of Arts, Secondary Education, with options in Biology, Business Education, Chemistry, English, Social Science, and Speech/Theatre (*for delivery at the main campus*). The CIP for this program is 131205. Reviewed November 2017.

Missouri Valley College

- 1) Master of Science, Fitness Management (*for delivery at main campus*). The CIP for this program is 310504. Reviewed November 2017.

Park University

- 1) Bachelor of Science in Business Administration, Accounting (*for delivery at Whiteman Air Force Base*). The CIP for this program is 520305. Reviewed October 2017.
- 2) Bachelor of Science in Business Administration, Computer Information Management (*for delivery at Whiteman Air Force Base*). The CIP for this program is 521201. Reviewed October 2017.
- 3) Master of Education, Principal Leadership in Urban School (for delivery at main campus). The CIP for this program is 130409. Reviewed November 2017.

Ranken Technical College

- 1) Associate of Science, Industrial Engineering Technology (*for delivery at 1205 Corporation Lane, Perryville, MO 63775*). The CIP for this program is 470303. Reviewed September 2017.
- 2) Associate of Technology, Industrial Engineering Technology (*for delivery at 1205 Corporation Lane, Perryville, MO 63775*). The CIP for this program is 470303. Reviewed September 2017.
- 3) Two-Year Certificate, Industrial Engineering Technology (*for delivery at 1205 Corporation Lane, Perryville, MO 63775*). The CIP for this program is 470303. Reviewed September 2017.

William Jewell College

- 1) Bachelor of Science, Public Relations (*for delivery at main campus*). The CIP for this program is 090900. Reviewed November 2017.

AGENDA ITEM SUMMARY

AGENDA ITEM

Statewide Review of Existing Academic Programs (Interim Report)
Coordinating Board for Higher Education
December 14, 2017

DESCRIPTION

Pursuant to Sections 173.005(1), 173.005(8), 173.030(1), and 173.030(2), RSMo, the Missouri Department of Higher Education (MDHE) in February 2017 began a statewide review of all academic programs – with the exception of those currently approved provisionally – offered by Missouri's public two- and four-year institutions. This item reports on the progress of the review and offers some general observations for consideration. The final report is expected to be completed by the end of the calendar year.

Background

While the Coordinating Board for Higher Education (CBHE) has statutory responsibility for the approval of new academic programs, it also is charged with reviewing existing programs and making recommendations to consolidate or eliminate programs if the CBHE determines such action is in the best interest of the institutions and the state. The CBHE last conducted a statewide review of existing academic programs in 2010-2011, which resulted in the termination of more than 100 programs.

In February 2017, the MDHE undertook a similar review. As in the previous exercise, this review was informed and guided by CBHE rules and polices, as enumerated in [6 CSR 10-4.4.010](#). CBHE policy requires degree programs offered by public institutions in Missouri to meet, at a minimum, the following criteria:

1. **Contribution of Program to Institutional Mission.** The program is central to the institution's mission.
2. **Statewide Needs.** The institution shall provide objective evidence of success in addressing statewide needs and/or contributing toward the attainment of statewide goals.
3. **Access.** Students of varying abilities, interests, and career goals should have access to instructional programs within the state. Articulation between programs and institutions is a particularly important access issue at the state level.
4. **Program Expenditures.** The efficient use of state resources requires an analysis of instructional programs in the context of their congruence with institutional mission and productivity.
5. **Productivity.** Unless there is sufficient justification for exceptions, particularly in the arts and sciences, programs shall maintain a critical mass of majors and graduate annually an average, calculated over the prior three years, of at least 10 graduates at the associate or baccalaureate degree level, five graduates at the master's degree level, and three graduates at the doctoral degree level.
6. **Highly-qualified graduates.** Programs shall regularly produce highly qualified graduates as demonstrated by:
 - Performance on assessments of general education, including measures of oral and written communication skills and critical thinking;
 - Performance on nationally normed tests, licensure or certification examinations, and/or other measures of achievement in the major;
 - Average placement rates of those seeking employment which take into account general economic conditions; and
 - Alumni and employer satisfaction rates.

It is within this framework, and using a similar methodology as the 2010 review, that the MDHE began the current statewide review of existing programs.

Methodology

In the initial phase of the statewide review of existing programs, MDHE compiled a list of each institution’s academic programs, at all degree levels, through the MDHE Program Inventory and the number of completions for all programs from the Enhanced Missouri Student Achievement Study (EMSAS). The 6-digit Classification of Instructional Program (CIP) code assigned to each program as listed in the Program Inventory, along with its degree level code, are the identifying data for each program.

Once MDHE compiled a list of each institution’s programs and completions, the department sent the data to each public institution to review and verify the accuracy of the data. MDHE staff worked with the institutions to reconcile the data to obtain an accurate list of programs and completions. After the program list was reconciled and the accuracy of the data was affirmed, MDHE staff sent each institution a list of programs that fell below the CBHE-recommended completions threshold and that required further review by the institution.

Following CBHE policy for program productivity, the completion thresholds, based on three-year averages, were designated as follows:

Degree	Productivity threshold triggering additional review:
Associate degrees	Fewer than an average of 10 graduates over the three previous years. <ul style="list-style-type: none"> • Certificates tied to a parent degree shall be counted with the parent degree.
Stand-alone certificates	Fewer than an average of 10 graduates over the three previous years.
Baccalaureate	Fewer than an average of 10 graduates over the three previous years. <ul style="list-style-type: none"> • Programs that offer both the Bachelor of Arts and Bachelor of Science in the same discipline will be considered as a single program.
Master	Fewer than an average of 5 graduates over the three previous years.
Graduate certificate	Fewer than an average of 5 graduates over the three previous years.
Post-baccalaureate certificates	Fewer than an average of 5 graduates over the three previous years.
Post-master’s certificates	Fewer than an average of 5 graduates over the three previous years.
Education Specialist	Fewer than an average of 5 graduates over the three previous years.
Doctoral	Fewer than an average of 3 graduates over the three previous years.

Along with the low-producing program list, the institutions received a Program Review Feedback Instrument (*see attachment A*) in which the institution could state next steps or justifications for retaining each identified program. For each justification provided, the institution was asked to provide documentation to support the retention of the program and to verify any claims made regarding the future viability of the program.

Several institutions were conducting or preparing to conduct comprehensive reviews of their academic programs. The MDHE agreed to consider institution-specific reviews as a substitute for the MDHE review, provided the campus review methodology was no less rigorous, identified at a minimum the same number of programs, and generally followed the same timeline as the MDHE review. The University of Missouri—Columbia, Missouri University of Science & Technology, Southeast Missouri State University, and the University of Central Missouri all requested to undertake their own, more in-depth comprehensive review of all programs regardless of approval status or productivity. MDHE staff reviewed each institution’s methodology and approved the requests. These institutions have reported their findings to the department, but MDHE staff has not yet had a chance to review. The department will include them in the final report.

In the next phase of the review, MDHE staff collected the data from the Program Feedback Instrument and began reviewing the justifications and accompanying documentation for each of the identified low-producing programs. Each staff review fell into one of four broad categories:

1. The institution voluntarily terminated the program;
2. MDHE staff accepted the justification for retaining the program;
3. MDHE accepted the institution’s decision to retain the program, but required a follow-up review in three years; or
4. The institution did not provide sufficient documentation to support its justifications, and MDHE staff asked the institution to submit additional information.

This last instance warranted another review by MDHE staff, which identified and outlined for the institution the type of documentation needed to complete the review. MDHE staff will review the additional documentation to determine whether to accept the justifications.

Preliminary Findings

MDHE identified 1,774 programs not currently approved provisionally. Of these programs, 892 (roughly 50 percent) fell below the completions threshold. The highest percentage of programs not meeting the threshold was at the associate degree level, where about two-thirds (252 programs) fell below the ten-completion threshold (see *Table 1.1*). At the baccalaureate level, 253 programs, or 41 percent, failed to meet the completions threshold. Graduate level degrees were by far the most efficient, with 70 percent of masters and doctoral degrees and 81 percent of professional degrees – such as law, dentistry, and medicine – meeting the threshold.

All Programs. Across all sectors and degree levels, the field of education had the largest number of overall programs and the most falling below the completions threshold; of the 260 education programs, 146 or roughly 56 percent did not meet the completions threshold (see *Table 1.2*). Health professions had both the second largest number of overall programs (225), with roughly 40 percent of programs (104) falling below the threshold.

Degree Level	Total number of programs	Programs below threshold	Percent below threshold
Certificate, less than one semester	17	6	35.3%
Certificate, less than one year	88	65	73.9%
Certificate, 1-2 years	130	91	70.0%
Certificate, 2 years	11	9	81.8%
Associate Degree	380	252	66.3%
Baccalaureate Degree	617	253	41.0%
Graduate Certificate	125	94	75.2%
Master’s Degree	306	94	30.7%
First Professional Degree	21	4	19.0%
Doctoral Degree	79	24	30.4%
All degree levels	1,774	892	50.3%

2-Digit CIP	Broad Program Category	Total number of programs	Programs below threshold	Percent below threshold
52	Business Management & Administration	152	69	45.4%
11	Computer Sciences	65	37	56.9%
13	Education	260	146	56.2%
15	Engineering Technology	109	79	72.5%
19	Family & Consumer Sciences	46	28	60.9%
16	Foreign Languages	42	33	78.6%
51	Health Professions	225	104	46.2%
47	Mechanic & Repair Tech	55	37	67.3%
45	Social Sciences	74	29	39.2%
50	Visual & Performing Arts	87	41	47.1%

Two-year Institutions. Across the two-year sector, 68 percent of all programs, regardless of degree level – certificate or associate degree – did not meet the completions threshold. Some of the programs not meeting the completions threshold include health professions, computer science, mechanic & repair technology, and construction trades (see Table 1.3 and Table 1.4).

2-Digit CIP	Broad Program Category	Total number of programs	Programs below threshold	Percent below threshold
52	Business Management & Administration	67	51	76.1%
11	Computer Sciences	32	27	84.4%
46	Construction Trades	20	18	90.0%
13	Education	21	11	52.4%
15	Engineering Technology	74	64	86.5%
19	Family & Consumer Sciences	25	20	80.0%
51	Health Professions	124	66	53.2%
47	Mechanic & Repair Technology	55	37	67.3%
48	Precision Production	33	25	75.8%
43	Protective Services	31	17	54.8%

As a result of this review MDHE staff discovered that many students begin a program at the two-year sector and leave once they have gained the necessary skills employers are seeking, without finishing the credential. For an outline of the total number of programs and those falling below the completions threshold by institution at the two-year sector, see Table 1.5.

2-Digit CIP	Broad Program Category	Degree Level	Total number of programs	Programs below threshold	Percent below threshold
52	Business Management & Administration	Associate	36	27	75.0%
15	Engineering Technology	Associate	38	33	86.8%
15	Engineering Technology	Cert, 1-2 Year	20	17	85.0%
15	Engineering Technology	Cert, <1 Year	13	13	100.0%
19	Family & Consumer Sciences	Associate	18	15	83.3%
51	Health Professions	Associate	77	37	48.1%
51	Health Professions	Cert, <1 Year	13	13	100.0%
47	Mechanic & Repair Technology	Associate	34	23	67.6%
48	Precision Production	Associate	17	16	94.1%
43	Protective Services	Associate	20	14	70.0%

Institution Name	Total number of programs	Programs below threshold	Percent below threshold
Crowder College	64	57	89.1%
East Central College	31	23	74.2%
Jefferson College	28	13	46.4%
Missouri State University - West Plains	14	10	71.4%
Metropolitan Community College	104	75	72.1%
Mineral Area College	52	43	82.7%
Moberly Area Community College	19	14	73.7%
North Central Missouri College	22	22	100.0%
Ozarks Technical Community College	58	15	25.9%
St. Charles Community College	30	25	83.3%
St. Louis Community College	69	42	60.9%
State Fair Community College	31	23	74.2%
State Technical College of Missouri	21	5	23.8%
Three Rivers College	37	27	73.0%
two-year sector Total	580	394	67.9%

Four-year institutions. At the four-year sector, there are currently 1,194 programs, ranging from undergraduate degrees (both baccalaureate and a handful of associate degrees) to graduate programs that include graduate certificates masters, first professional, and doctoral degrees. Of these programs 498, or 41 percent, fell below the completions threshold, including programs in education, health professions, and visual & performing arts (see Table 1.6 and Table 1.7).

2-Digit CIP	Broad Program Category	Total number of programs	Programs below threshold	Percent below threshold
26	Biological Sciences	49	24	49.7%
52	Business Management & Administration	85	18	21.2%
13	Education	239	135	56.5%
14	Engineering	85	20	23.5%
15	Engineering Technology	35	15	42.9%
16	Foreign Languages	41	33	80.5%
51	Health Professions	101	38	37.6%
40	Physical Sciences	50	18	36.0%
45	Social Sciences	72	27	37.5%
50	Visual & Performing Arts	75	34	45.3%

2-Digit CIP	Broad Program Category	Degree Level	Total number of programs	Programs below threshold	Percent below threshold
26	Biological Sciences	Masters	20	12	60.0%
13	Education	Baccalaureate	110	70	63.6%
13	Education	Masters	79	31	39.2%
13	Education	Graduate Certificate	31	22	71.0%
14	Engineering	Graduate Certificate	12	8	66.7%
16	Foreign Languages	Baccalaureate	34	28	82.4%
51	Health Professions	Baccalaureate	44	19	43.2%
40	Physical Sciences	Baccalaureate	25	10	40.0%
45	Social Sciences	Baccalaureate	42	16	38.1%
50	Visual & Performing Arts	Baccalaureate	51	24	47.1%

There appear to be many programs which are duplicated across the four-year sector, and a more in-depth analysis of duplicated programs will be available in the final report. For an outline of the total number of programs and those falling below the completions threshold by institution at the four-year sector, see Table 1.8.

Institution Name	Total number of programs	Programs below threshold	Percent below threshold
Harris-Stowe State University	11	8	72.7%
Lincoln University	61	49	80.3%
Missouri Southern State University	47	27	57.4%
Missouri State University	139	42	30.2%
Missouri University of Science and Technology	92	33	35.9%
Missouri Western State University	59	39	66.1%
Northwest Missouri State University	107	62	57.9%
Southeast Missouri State University	98	36	36.7%
Truman State University	60	27	45.0%
University of Central Missouri	120	43	35.8%
University of Missouri - Columbia	197	63	32.0%
University of Missouri - Kansas City	122	54	44.3%
University of Missouri - Saint Louis	81	15	18.5%
Four-year sector total	1,194	498	41.7%

Next Steps

As mentioned above, there were a number of programs for which MDHE staff felt that an institution did not provide sufficient documentation to support its justifications, and further documentation was requested. MDHE staff is currently in the process of collecting and reviewing this additional documentation. For information on the status of the review for each institution, see Tables 1.9 and 1.10 below.

Once the review of additional information is completed, MDHE staff will prepare a draft report and send it to the chief academic officer at each public institution for review and comment. This report will include findings across the state, across sectors, and institutional reports. Based on this feedback, the draft will be revised as needed and as is appropriate. The final report will be presented to the CBHE in January. Additionally, the report will include recommendations based upon the findings of the statewide review of existing programs. One of the recommendations to come from the previous statewide review included the implementation of the five-year provisional review of all new programs, which allowed MDHE and institutions to monitor the progress of new programs and decide, after the five-year provisional process, whether to recommend that a program be kept or terminated.

STATUTORY REFERENCES

Section 173.005(1), RSMo – CBHE statutory authority to approve proposed new degree programs to be offered by the state institutions of higher education.

Section 173.005(8), RSMo – CBHE statutory authority to collect the necessary information and develop comparable data for all institutions of higher education in the state . . .

Section 173.030(1), RSMo – CBHE statutory authority to request the governing boards of all state-supported institutions of higher education and of major private institutions to submit . . . proposed policy changes . . . and make pertinent recommendations relating thereto . . .

Section 173.030(2), RSMo – CBHE statutory authority to recommend to the governing board of any institution of higher education in the state the development, consolidation or elimination of programs, degree offerings, physical facilities or policy changes where that action is deemed . . . in the best interests of the institutions . . .

RECOMMENDED ACTION

This is an information item only.

ATTACHMENT

Attachment A: Program Review Feedback Instrument

Table 1.9: Status of review, two-year sector

Institution Name	Programs below threshold	voluntarily Terminated	Retained	Provisionally Retained	Further information needed	Review Status
Crowder College	57	34	5	-	18	68% complete
East Central College	23	7	1	-	15	35% complete
Jefferson College	13	5	4	-	4	69% complete
Missouri State University - West Plains	10	6	2	2	-	complete
Metropolitan Community College	75	-	-	-	-	pending
Mineral Area College	43	14	4	-	25	42% complete
Moberly Area Community College	14	3	10	-	1	93% complete
North Central Missouri College	22	-	13	5	4	82% complete
Ozarks Technical Community College	15	6	6	1	2	87% complete
St. Charles Community College	25	1	2	4	18	28% complete
St. Louis Community College	42	28	6	7	1	98% complete
State Fair Community College	23	10	7	-	6	74% complete
State Technical College of Missouri	5	2	2	-	1	80% complete
Three Rivers College	27	7	11	1	8	70% complete
Two-year sector Total	394	123	73	20	103	55% Complete

Table 1.10: Status of review, four-year sector

Institution Name	Programs below threshold	voluntarily terminated	Retained	Provisionally retained	Further information needed	Review status
Harris-Stowe State University	8	-	-	-	-	pending
Lincoln University	49	5	10	4	30	39% complete
Missouri Southern State University	27	10	10	2	5	81% complete
Missouri State University	42	19	20	2	1	98% complete
Missouri University of Science and Technology	33	-	-	-	-	pending
Missouri Western State University	39	*14	18	3	4	90% complete
Northwest Missouri State University	62	17	26	15	4	94% complete
Southeast Missouri State University	36	*15	5	-	16	56% complete
Truman State University	27	7	15	2	3	89% complete
University of Central Missouri	43	*10	17	1	15	65% complete
University of Missouri - Columbia	63	7	12	8	36	43% complete
University of Missouri - Kansas City	54	*10	23	10	11	80% complete
University of Missouri - Saint Louis	15	4	3	2	6	60% complete
Four-year sector total	498	118	159	49	131	65% complete
STATEWIDE TOTALS	892	241	232	69	234	61% complete

* includes reporting errors

Missouri Department of Higher Education
EXISTING ACADEMIC PROGRAM REVIEW
REQUEST FOR PRODUCTIVITY INFORMATION AND JUSTIFICATIONS

Form 1

Program Inventory Name(s)

CIP Code (#####, no decimal)

Degree Level

Please Select from:

CHECK ANY OF THE FOLLOWING TO DESCRIBE ACTION(S) THE INSTITUTION WILL TAKE CONCERNING THIS PROGRAM AND ATTACH REQUIRED DOCUMENTATION (X all that apply)

Program has been or will be voluntarily terminated (submit copy of MDHE program deletion form or other official documentation that program elimination is in process)

Program is critical to mission and will be retained (provide supporting documentation)

Program contains courses that support general education and/or other programs (provide documentation to show how this program supports other programs)

Interdisciplinary program (provide evidence of percentage of the required courses in the curriculum that are unique to program)

Program shares a substantial number of courses and faculty with other similar programs (provide CIP codes for other programs and evidence of shared resources)

Student or employer demand, or demand for intellectual property is high and external funding will be jeopardized by program closure (provide evidence and cite sources of demand or funding)

Program provides unique access to an underserved population or geographical area (provide justification)

Program meets a unique need in the region, state, or nation (provide justification)

Joint/consortium program in which combined number of graduates meets productivity threshold (provide copy of consortium agreement and enrollments in other programs)

Cost-recovery based program for workforce development and/or specialized population (provide justification)

Program has been renamed or assigned a different 6-digit CIP code (provide documentation)

Certificate is stackable or affiliated with another program

Identify Program:

6-digit CIP:

Degree Level:

Please Select from:

IF 6-digit CIP codes between affiliated programs do not match, please justify below (more space available at the bottom):

Other (e.g., development plan to increase completion rate with specific date for results; revenue-producing program; potential for collaborative program; placement on inactive status; master's program in same discipline as a PhD with sufficient graduates, inaccurate data, under provisional approval, etc.)

of additional documents attached: (Use convention: initials_cipcode_deglevcode_doc#; e.g. UMC__PI_1)

Provide sufficient context and describe pertinent factors and other special considerations as needed to justify the proposed action. Use separate attachment if necessary.

AGENDA ITEM SUMMARY

AGENDA ITEM

English Language Proficiency Report
Coordinating Board for Higher Education
December 14, 2017

DESCRIPTION

Missouri universities with graduate programs regularly assign teaching assistantships to international students. Missouri law requires all graduate students who did not receive both their primary and secondary education in a nation or territory in which English is the primary language to be tested for their ability to communicate orally in English in a classroom setting. This board item presents the biennial report on the English language proficiency of graduate teaching assistants (GTAs) at Missouri's public institutions of higher education.

Background

Per state statute, all graduate teaching assistants at Missouri public universities who did not receive both their primary and secondary education in a nation or territory in which English is the primary language must be tested for their ability to communicate orally in English in a classroom setting prior to receiving a teaching appointment at a Missouri public institution of higher education. The statute also requires that the institutions provide the Missouri Department of Higher Education (MDHE) with the results of this testing.

The institutions are required to provide data every two years on the total number of GTAs, as well as their native language, the procedures used in selecting the GTAs, and the orientation programs provided for all GTAs. In addition to being tested for their proficiency in English, graduate students who have not previously lived in the United States and who are assigned to teaching positions are expected to receive a cultural orientation prior to assuming teaching responsibilities. Data for this year's report are for AY 2015 and AY 2016.

The MDHE sent a survey to all public four-year institutions asking for the information outlined in Section 170.012, RSMo. In addition to the aforementioned items, the survey asked for information regarding applicable institutional policies as well as possible exceptions granted as allowed by statute (see Attachment A for the survey and the statute). All four-year institutions responded with the required data.

Highlights from the 2015 and 2016 reporting period include:

- Ten public four-year institutions awarded teaching assignments to graduate students in AY 2015 and AY 2016.
- Each campus that employs GTAs has provided evidence to the MDHE that they assess the English language competency of all international graduates students given teaching assignments at the institution. MDHE staff concludes that all institutions are in compliance with the intent of Section 170.012, RSMo, by administering appropriate tests, measurements, and cultural orientation programs to ensure English language proficiency.
- The total number of GTAs at public institutions was 2,760 in 2015 and 2,842 in 2016, up from 2,706 in 2014.
- Among the ten public four-year institutions that employed GTAs, 24.13 percent were nonnative English speakers in AY 2015 and 25.37 percent were nonnative English speakers in AY 2016.
- A majority of the nonnative English-speaking graduate students with teaching assignments are at the University of Missouri's four campuses, which employed 85.5 percent and 87 percent of nonnative GTAs at public institutions in AY 2015 and AY 2016, respectively.

GTA English Language Proficiency Survey Results		AY15	AY16
1.	Number of Teaching Assistant (TA) applicants taking an English Language proficiency test	1,002	965
2.	Number of TA applicants in Question #1 who have utilized any remedial language services that may be available	106	114
3.	Number of TA applicants in Question #1 taking an English Language proficiency test who <u>did not</u> pass	189	168
4.	Number of TA applicants in Question #2 who received a graduate teaching assistantship	53	76
5.	Total number of TAs awarded	2,760	2,842
6.	Number of TAs awarded to students who <u>did not</u> receive <u>both</u> primary and secondary education in a nation or territory in which English is the primary language	666	721
7.	Number of TAs in Question #6 who speak certain native languages	See Attachment B	See Attachment B
8.	Number of exceptions granted to TAs in Question #6 to receive a teaching assignment during their first semester of enrollment	19	30
9.	Number of TAs in Question #6 who received a cultural orientation	372	454

Conclusion

Section 170.012, RSMo, does not establish minimum proficiency standards. While all institutions are required to submit biennial reports to the board, the effectiveness of programs for nonnative English speakers with graduate teaching assistantships is monitored at the institutional level. Missouri's public four-year institutions that assign teaching assistantships to nonnative English speakers have met all the statutory requirements.

STATUTORY REFERENCE

Section 170.012, RSMo – Graduate Teaching Assistants Communication in English Language Requirements - Testing and Reports

RECOMMENDED ACTION

This is an information item only.

ATTACHMENTS

Attachment A: Institution Survey

Attachment B: Reported Number of Teaching Assistants by Native Language



**Graduate Teaching Assistant
Language Proficiency Questionnaire
2017 Biennial Report**

Institution:

Name and Title of Person Responding:

Contact Information:

Telephone Number: _____ E-mail: _____

		AY 2015	AY 2016
1.	Number of Teaching Assistant (TA) applicants taking an English language proficiency test		
2.	Number of TA applicants in Question #1 who utilized any remedial language services that may be available. If no remedial language services are available at your institution, enter N/A		
3.	Number of TA applicants in Question #1 taking an English language proficiency test who <u>did not</u> pass		

4.	Number of TA applicants in Question #2 who received a graduate teaching assistantship		
<i>*In an attachment, please explain why these TAs received a teaching assignment.</i>			
5.	Total number of Teaching Assistantships awarded		
6.	Number of TAs awarded to students who <u>did not</u> receive <u>both</u> primary and secondary education in a nation or territory in which English is the primary language		
<i>*In an attachment, please report the number of TAs in question 6, along with their native languages, by academic year.</i>			
<i>Example:</i>			
	LANGUAGE	2015	2016
	Amharic	4	1
	Afrikaans	2	5
	Arabic	3	7
7.	Number of exceptions granted to TAs in Question #6 to receive a teaching assignment during their first semester of enrollment		
<i>*In an attachment, please describe why these TAs received an exception.</i>			
8.	Number of TAs in Question #6 who received a cultural orientation		

Attachments:

Please attach the following documents to your response; you may use web links as available:

- Circumstances for granting graduate teaching assignments to applicants in Question 4
- Numbers of graduate teaching assignments, by language, by year
- Circumstances for granting exceptions to TAs in Question 7
- Policy for selection of graduate teaching assistants
- Policy for cultural orientation of graduate teaching assistants who have not previously lived in the United States (attach policy and description of orientation activities)

- Policy/procedures used to ensure oral language proficiency of graduate teaching assistants who did not receive both primary and secondary education in a nation or territory in which English is the primary language (attach policy, test name(s), and cut-off score(s) if applicable)

- Policy/procedures regarding remedial English language proficiency programs available to graduate teaching assistant applicants (attach policy and description of remedial program(s))

Missouri Revised Statutes
Chapter 170
Instruction--Materials and Subjects
Section 170.012

Graduate teaching assistants communication in English language requirements--testing and reports.

- 170.012. 1. Any graduate student who did not receive both his primary and secondary education in a nation or territory in which English is the primary language shall not be given a teaching appointment during his or her first semester of enrollment at any public institution of higher education in the state of Missouri. Exceptions may be granted in special cases upon approval of the chief academic and executive officers of the institution.
2. All graduate students who did not receive both their primary and secondary education in a nation or territory in which English is the primary language shall be tested for their ability to communicate orally in English in a classroom setting prior to receiving a teaching appointment. Such testing shall be made available by the public institution at no cost to the graduate student.
3. All graduate students prior to filling a teaching assistant position as a graduate student, who have not previously lived in the United States shall be given a cultural orientation to prepare them for such teaching appointment.
4. All public institutions of higher education in this state shall provide to the coordinating board for higher education on a biennial basis a report on the number and language background of all teaching assistants, including a copy of the institutions current policy for selection of graduate teaching assistants.
5. The provisions of this section and sections 174.310 and 175.021 shall not apply to any person employed under a contract of employment in existence prior to August 13, 1986.

(L. 1986 S.B. 602 § 2)

**Reported Number of Graduate Teaching Assistants by
Native Language Other than English**

Language	2015	2016
Akan	0	1
Arabic	25	54
Bangla/Bengali	28	32
Burmese	1	1
Belarusian	1	2
Catalan	0	1
Chinese Languages Unspecified	187	201
Creole	1	1
Danish	2	0
English (Non-US)	24	22
Farsi	24	25
French	9	9
Georgian	1	0
German	12	7
Greek	1	1
Gujarati	4	5
Hebrew	0	1
Hindi	45	43
Hungarian	1	1
Igbo/Ibo	2	1
Indian Languages Unspecified	33	39
Indonesian	3	4
Italian	6	4
Japanese	1	1
Kannada	2	6
Kurdish	0	3
Korean	27	31
Lithuanian	0	1
Malay	2	1
Malayalam	3	1
Mandarin	1	0
Mandingo	0	1
Maithili	1	2
Marathi	7	7
Mongolian	0	1
Nepalese	21	13
Odia	0	1
Other (unspecified)	52	44
Oriya	1	1
Polish	0	1
Portuguese	5	8
Punjabi	2	0
Romanian	1	3
Runyoro	0	1
Russian	5	6
Serbian	2	1
Setswana	1	0
Shona	0	1
Sinhalese	10	9
Spanish	26	33

Swahili	4	5
Tajik	1	2
Tamil	10	6
Telugu	40	44
Thai	7	6
Tok Pisin	1	1
Turkish	9	7
Twi	3	2
Ukrainian	4	1
Urdu	4	4
Vietnamese	17	12
Yoruba	5	2
Total	685	724

AGENDA ITEM SUMMARY

AGENDA ITEM

Fall 2017 Enrollment: A Preliminary Report
Coordinating Board for Higher Education
December 14, 2017

DESCRIPTION

The intent of this item is to present information regarding enrollment trends at Missouri's public and comprehensive independent colleges and universities. Data collection is generally complete, although additional revisions are possible in the course of subsequent analyses and reporting.

The attachment includes several tables displaying enrollment figures reported by sector and institution. There are separate tables for full-time equivalent (FTE) enrollment and enrollment based on headcount. Full-time equivalent enrollment is generally based on 15 credit hours for undergraduate students, 12 credit hours for graduate students, and varies by institution and program for professional students. Headcount enrollment counts the total unduplicated number of students enrolled at each institution at fall census date.

Summary of Findings

Fall 2017 enrollment figures generally indicate a continuing decrease across all sectors from fall 2016. Public two-year FTE declined 3.6 percent in the past year, and 19.5 percent since fall 2012. Public two-year headcount declined 4.6 percent in the past year, and 18.6 percent since fall 2012.

Public four-year FTE declined 3.2 percent in the past year, and 1.1 percent since fall 2012. Public four-year headcount declined 3.5 percent in the past year, and increased 0.1 percent since fall 2012.

Headcount at independent institutions declined 5.1 percent from fall 2016, and 9.4 percent since fall 2012. Independent FTE declined 5.3 percent in the past year, and 9.4 percent since 2012.

Overall, headcount at public and comprehensive independent institutions is down 4.5 percent from fall 2016 and 8.5 percent since fall 2012. FTE decreased 5.3 percent in the past year and 9.4 percent since fall 2012.

As a comparison, the total number of public high school graduates in Missouri has also declined slightly in recent years, from 61,573 in 2016 to 61,251 in 2017 (-0.5 percent). The state's public high school graduating class also declined from 61,609 in 2012 to 61,251 in 2017 (-0.6 percent). The Western Interstate Commission for Higher Education's *Knocking at the College Door*, a widely respected national source of projections of high school graduates, predicts that public high school graduates will be generally flat in Missouri for the foreseeable future.

STATUTORY REFERENCE

N/A

RECOMMENDED ACTION

This is an information item only.

ATTACHMENT(S)

Attachment A: Fall 2017 Enrollment Tables

TRENDS IN HEADCOUNT ENROLLMENT, FALL 2012 - 2017
PUBLIC INSTITUTIONS

		2012	2013	2014	2015	2016	2017	1-year Change	3-year Change	5-year Change
Public Two-Year	Crowder College	5,575	5,845	5,710	5,584	5,434	4,959	-8.7%	-13.2%	-11.0%
	East Central College	4,043	3,900	3,606	3,222	2,966	2,897	-2.3%	-19.7%	-28.3%
	Jefferson College	5,494	5,194	4,883	4,705	4,692	4,439	-5.4%	-9.1%	-19.2%
	Metropolitan Community College	20,093	19,225	18,202	17,680	18,138	16,788	-7.4%	-7.8%	-16.4%
	Mineral Area College	3,775	4,508	4,632	4,387	4,173	3,700	-11.3%	-20.1%	-2.0%
	Missouri State University - West Plains	2,082	2,098	2,161	1,970	1,941	1,918	-1.2%	-11.2%	-7.9%
	Moberly Area Community College	5,857	5,792	5,444	4,823	5,004	4,865	-2.8%	-10.6%	-16.9%
	North Central Missouri College	1,769	1,743	1,720	1,679	1,722	1,841	6.9%	7.0%	4.1%
	Ozarks Technical Community College	15,123	14,794	14,393	13,611	13,255	12,688	-4.3%	-11.8%	-16.1%
	St. Charles Community College	7,642	7,396	7,153	6,865	6,755	6,563	-2.8%	-8.2%	-14.1%
	St. Louis Community College	26,613	24,005	21,218	18,902	19,052	18,835	-1.1%	-11.2%	-29.2%
	State Fair Community College	5,114	5,185	4,981	4,926	5,138	4,786	-6.9%	-3.9%	-6.4%
	State Technical College	1,212	1,293	1,259	1,274	1,227	1,256	2.4%	-0.2%	3.6%
	Three Rivers Community College	4,651	4,399	4,201	3,856	3,505	3,226	-8.0%	-23.2%	-30.6%
Sector Subtotal	109,043	105,377	99,563	93,484	93,002	88,761	-4.6%	-10.8%	-18.6%	
Public Four-Year	Harris Stowe State University	1,484	1,298	1,280	1,390	1,470	1,442	-1.9%	12.7%	-2.8%
	Lincoln University	3,205	3,043	3,117	2,945	2,738	2,619	-4.3%	-16.0%	-18.3%
	Missouri Southern State University	5,417	5,616	5,613	5,783	6,205	6,170	-0.6%	9.9%	13.9%
	Missouri State University	20,628	21,265	21,813	22,268	23,537	23,696	0.7%	8.6%	14.9%
	Missouri University of Science & Technology	7,644	8,129	8,640	8,884	8,833	8,883	0.6%	2.8%	16.2%
	Missouri Western State University	6,056	5,802	5,863	5,530	5,377	5,551	3.2%	-5.3%	-8.3%
	Northwest Missouri State University	6,830	6,483	6,718	6,592	6,530	6,337	-3.0%	-5.7%	-7.2%
	Southeast Missouri State University	11,672	11,866	12,039	11,786	11,791	11,437	-3.0%	-5.0%	-2.0%
	Truman State University	6,226	6,215	6,241	6,196	6,364	6,260	-1.6%	0.3%	0.5%
	University of Central Missouri	11,878	12,494	13,379	14,395	13,988	12,333	-11.8%	-7.8%	3.8%
	University of Missouri-Columbia	34,704	34,616	35,425	35,424	33,239	30,844	-7.2%	-12.9%	-11.1%
	University of Missouri-Kansas City	15,990	15,718	16,146	16,685	16,936	16,372	-3.3%	1.4%	2.4%
	University of Missouri-St. Louis	16,705	16,809	17,072	16,738	16,989	16,715	-1.6%	-2.1%	0.1%
	Sector Subtotal	148,439	149,354	153,346	154,616	153,997	148,659	-3.5%	-3.1%	0.1%
Statewide Totals - Publics		257,482	254,731	252,909	248,100	246,999	237,420	-3.9%	-6.1%	-7.8%

TRENDS IN FTE ENROLLMENT, FALL 2012 - 2017
PUBLIC INSTITUTIONS

		2012	2013	2014	2015	2016	2017	1-year Change	3-year Change	5-year Change
Public Two-Year	Crowder College	3,464	3,614	3,642	3,473	3,175	3,024	-4.8%	-17.0%	-12.7%
	East Central College	2,626	2,511	2,342	2,065	1,896	1,854	-2.2%	-20.8%	-29.4%
	Jefferson College	3,776	3,523	3,319	3,060	3,042	2,934	-3.6%	-11.6%	-22.3%
	Metropolitan Community College	12,188	11,630	11,050	10,483	10,669	10,274	-3.7%	-7.0%	-15.7%
	Mineral Area College	2,751	3,521	3,670	3,419	3,386	2,911	-14.0%	-20.7%	5.8%
	Missouri State University - West Plains	1,422	1,439	1,434	1,086	1,243	1,197	-3.7%	-16.5%	-15.8%
	Moberly Area Community College	3,933	3,759	3,510	3,136	3,242	3,161	-2.5%	-9.9%	-19.6%
	North Central Missouri College	1,156	1,140	1,125	1,072	1,060	1,113	5.0%	-1.1%	-3.7%
	Ozarks Technical Community College	9,972	9,745	9,237	8,622	8,440	8,167	-3.2%	-11.6%	-18.1%
	St. Charles Community College	5,064	4,844	4,738	4,605	4,491	4,408	-1.8%	-7.0%	-13.0%
	St. Louis Community College	16,157	14,624	12,847	11,487	11,223	11,152	-0.6%	-13.2%	-31.0%
	State Fair Community College	3,400	3,473	3,200	3,058	3,241	2,978	-8.1%	-6.9%	-12.4%
	State Technical College	1,236	1,325	1,276	1,273	1,226	1,242	1.3%	-2.7%	0.5%
	Three Rivers Community College	3,234	3,140	2,991	2,767	2,460	2,245	-8.7%	-24.9%	-30.6%
Sector Subtotal	70,378	68,288	64,381	59,606	58,794	56,660	-3.6%	-12.0%	-19.5%	
Public Four-Year	Harris Stowe State University	1,188	1,053	1,052	1,136	1,251	1,254	0.2%	19.2%	5.5%
	Lincoln University	2,270	2,155	2,284	2,301	2,160	2,035	-5.8%	-10.9%	-10.4%
	Missouri Southern State University	4,296	4,400	4,415	4,561	4,869	4,859	-0.2%	10.1%	13.1%
	Missouri State University	16,433	16,758	17,136	17,528	18,375	18,544	0.9%	8.2%	12.8%
	Missouri University of Science & Technology	6,448	6,791	7,277	7,487	7,456	7,448	-0.1%	2.3%	15.5%
	Missouri Western State University	4,590	4,416	4,413	4,152	3,991	4,074	2.1%	-7.7%	-11.2%
	Northwest Missouri State University	5,663	5,482	5,641	5,550	5,495	5,316	-3.3%	-5.8%	-6.1%
	Southeast Missouri State University	9,320	9,334	9,478	9,233	9,174	9,000	-1.9%	-5.0%	-3.4%
	Truman State University	5,615	5,609	5,535	5,488	5,505	5,482	-0.4%	-1.0%	-2.4%
	University of Central Missouri	9,462	9,869	10,413	10,985	10,532	9,468	-10.1%	-9.1%	0.1%
	University of Missouri-Columbia	29,840	29,869	30,526	30,661	28,720	26,632	-7.3%	-12.8%	-10.8%
	University of Missouri-Kansas City	11,386	11,390	11,552	11,742	11,814	11,579	-2.0%	0.2%	1.7%
	University of Missouri-St. Louis	10,120	10,101	10,203	9,917	9,788	9,683	-1.1%	-5.1%	-4.3%
	Sector Subtotal	116,630	117,227	119,925	120,741	119,130	115,374	-3.2%	-3.8%	-1.1%
Statewide Totals - Publics		187,007	185,515	184,306	180,347	177,924	172,034	-3.3%	-6.7%	-8.0%

TRENDS IN HEADCOUNT ENROLLMENT, FALL 2012 - 2017
INDEPENDENT INSTITUTIONS

		2012	2013	2014	2015	2016	2017	1-year Change	3-year Change	5-year Change
Indp Two- Year	Wentworth Military Academy	808	860	838	776	908	**	**	**	**
	Sector Subtotal	808	860	838	776	908	**	**	**	**
Independent Four-Year	Avila University	1,908	1,971	1,907	1,842	1,710	1,676	-2.0%	-12.1%	-12.2%
	Central Methodist University - CGES	4,237	4,128	4,517	4,665	4,665	4,199	-10.0%	-7.0%	-0.9%
	Central Methodist University - CLAS	1,173	1,107	1,185	1,094	1,094	1,060	-3.1%	-10.5%	-9.6%
	College of the Ozarks	1,388	1,535	1,455	1,452	1,522	1,508	-0.9%	3.6%	8.6%
	Columbia College ***	17,852	16,992	16,587	14,771	16,430	13,504	-17.8%	-18.6%	-24.4%
	Cottey College	292	277	275	324	288	270	-6.3%	-1.8%	-7.5%
	Culver-Stockton College	769	843	971	1,066	1,095	1,134	3.6%	16.8%	47.5%
	Drury University	5,228	4,649	4,215	3,688	3,569	3,359	-5.9%	-20.3%	-35.7%
	Evangel University	2,079	2,274	2,006	1,958	1,821	2,112	16.0%	5.3%	1.6%
	Fontbonne University	2,075	1,997	1,819	1,713	1,526	1,390	-8.9%	-23.6%	-33.0%
	Hannibal-LaGrange University	1,214	1,230	1,169	1,167	1,103	972	-11.9%	-16.9%	-19.9%
	Lindenwood University *	11,903	12,213	12,151	11,584	10,749	10,010	-6.9%	-17.6%	-15.9%
	Maryville University	4,203	5,033	5,931	6,414	6,828	7,689	12.6%	29.6%	82.9%
	Missouri Baptist University	5,212	5,345	5,321	5,275	5,732	5,488	-4.3%	3.1%	5.3%
	Missouri Valley College	1,734	1,724	1,550	1,728	1,808	1,820	0.7%	17.4%	5.0%
	Park University	11,787	11,370	10,263	11,762	10,866	11,583	6.6%	12.9%	-1.7%
	Rockhurst University	2,808	2,920	3,002	2,930	2,845	3,039	6.8%	1.2%	8.2%
	Saint Louis University ****	17,646	17,341	17,052	17,595	17,214	14,748	-14.3%	-13.5%	-16.4%
	Southwest Baptist University	3,856	3,751	3,696	3,684	3,656	3,551	-2.9%	-3.9%	-7.9%
	Stephens College	899	833	862	893	949	862	-9.2%	0.0%	-4.1%
	Washington University	13,952	14,032	14,348	14,688	15,047	15,303	1.7%	6.7%	9.7%
	Webster University	18,563	18,005	16,893	15,302	14,224	12,883	-9.4%	-23.7%	-30.6%
Westminster College	1,084	1,039	944	930	856	767	-10.4%	-18.8%	-29.2%	
William Jewell College	1,052	1,043	1,060	1,063	997	933	-6.4%	-12.0%	-11.3%	
William Woods University	1,830	2,142	2,042	2,172	2,076	2,212	6.6%	8.3%	20.9%	
	Sector Subtotal	134,744	133,794	131,221	129,760	128,670	122,072	-5.1%	-7.0%	-9.4%
Statewide Totals - Independents		135,552	134,654	132,059	130,536	129,578	122,072	-5.1%	-7.0%	-9.4%
Statewide Totals - ALL INSTITUTIONS		393,034	389,385	384,968	378,636	376,577	359,492	-4.5%	-6.6%	-8.5%

* Lindenwood University changed from continuous / program enrollment reporting to academic year / census date reporting in fall 2015

** Wentworth Military Academy closed following the 2016-17 academic year.

*** Columbia College switched term structures in 2016 to allow year round classes.

**** In Fall 2017, Saint Louis University moved its census date up therefore capturing significantly fewer dual credit students. Also, the students from Spain campus were excluded in accordance with IPEDS guidelines.

TRENDS IN FTE ENROLLMENT, FALL 2012 - 2017
INDEPENDENT INSTITUTIONS

		2012	2013	2014	2015	2016	2017	1-year Change	3-year Change	5-year Change
Indp Two- Year	Wentworth Military Academy	461	463	489	442	480	**	**	**	**
	Sector Subtotal	461	463	489	442	480	**	**	**	**
Independent Four-Year	Avila University	1,468	1,523	1,511	1,485	1,390	1,366	-1.7%	-9.6%	-6.9%
	Central Methodist University - CGES	2,014	2,022	1,806	2,184	2,184	2,493	14.1%	38.0%	23.8%
	Central Methodist University - CLAS	1,149	1,113	1,212	1,147	1,147	1,084	-5.5%	-10.6%	-5.7%
	College of the Ozarks	1,511	1,751	1,610	1,595	1,716	1,660	-3.3%	3.1%	9.9%
	Columbia College ***	11,739	11,063	11,768	10,483	9,288	7,690	-17.2%	-34.7%	-34.5%
	Cotley College	309	279	277	337	295	276	-6.4%	-0.4%	-10.7%
	Culver-Stockton College	751	823	946	1,027	1,055	1,095	3.8%	15.8%	45.8%
	Drury University	3,890	3,573	3,274	2,837	2,811	2,812	0.0%	-14.1%	-27.7%
	Evangel University	1,939	2,131	1,872	1,830	1,723	1,792	4.0%	-4.3%	-7.6%
	Fontbonne University	1,534	1,498	1,383	1,373	1,217	1,125	-7.6%	-18.7%	-26.7%
	Hannibal-LaGrange University	1,010	988	945	944	895	834	-6.8%	-11.7%	-17.4%
	Lindenwood University *	10,260	10,436	10,407	8,952	8,372	7,797	-6.9%	-25.1%	-24.0%
	Maryville University	3,018	3,474	3,942	4,201	4,605	5,245	13.9%	33.1%	73.8%
	Missouri Baptist University	2,910	2,958	2,846	2,784	2,978	2,839	-4.7%	-0.2%	-2.4%
	Missouri Valley College	1,544	1,408	1,417	1,490	1,481	1,495	0.9%	5.5%	-3.2%
	Park University	4,581	4,414	4,065	6,383	5,715	4,606	-19.4%	13.3%	0.5%
	Rockhurst University	2,292	2,365	2,377	2,391	2,311	2,415	4.5%	1.6%	5.4%
	Saint Louis University ****	12,901	11,707	11,623	12,666	13,054	11,374	-12.9%	-2.1%	-11.8%
	Southwest Baptist University	3,112	3,004	2,998	2,927	2,876	2,797	-2.7%	-6.7%	-10.1%
	Stephens College	870	696	686	780	864	798	-7.6%	16.3%	-8.3%
	Washington University	12,903	12,945	13,320	13,795	13,966	14,296	2.4%	7.3%	10.8%
Webster University	10,759	10,435	9,837	9,133	8,519	7,848	-7.9%	-20.2%	-27.1%	
Westminster College	1,094	1,059	962	939	864	757	-12.4%	-21.3%	-30.8%	
William Jewell College	1,037	1,050	1,074	1,072	1,021	950	-7.0%	-11.5%	-8.4%	
William Woods University	1,364	1,513	1,423	1,465	1,416	1,459	3.0%	2.5%	7.0%	
	Sector Subtotal	95,959	94,228	93,581	94,220	91,763	86,903	-5.3%	-7.1%	-9.4%
Statewide Totals - Independents		96,420	94,691	94,070	94,662	92,243	86,903	-5.3%	-7.1%	-9.4%
Statewide Totals - ALL INSTITUTIONS		283,427	280,206	278,376	275,009	270,167	258,937	-4.2%	-7.0%	-8.6%

* Lindenwood University changed from continuous / program enrollment reporting to academic year / census date reporting in fall 2015

** Wentworth Military Academy closed following the 2016-17 academic year.

*** Columbia College switched term structures in 2016 to allow year round classes.

**** In Fall 2017, Saint Louis University moved its census date up therefore capturing significantly fewer dual credit students. Also, the students from Spain campus were excluded in accordance with IPEDS guidelines.

AGENDA ITEM SUMMARY

AGENDA ITEM

Proprietary School Certification Actions and Reviews
Coordinating Board for Higher Education
December 14, 2017

DESCRIPTION

The Missouri Department of Higher Education's Proprietary School Certification Program provides oversight of certain types of Missouri-based and out-of-state private, postsecondary education providers. This board item provides an update on current issues regarding the Proprietary School Certification Program as well as a summary of recent program actions.

Recent Program Actions

All program actions that have occurred since the September 14, 2017, Coordinating Board for Higher Education meeting are reported in the attachment to this item. The report includes information concerning anticipated actions on applications to establish new postsecondary education institutions, exemptions from the department's certification requirements, and school closures.

STATUTORY REFERENCE

Sections 173.600-173.619, RSMo – Regulation of proprietary schools

RECOMMENDED ACTION

This is an information item only.

ATTACHMENT(S)

Attachment A: Proprietary School Certification Program Actions and Reviews

**Coordinating Board for Higher Education
Proprietary School Certification Program Actions and Reviews**

Certificates of Approval Issued (Authorization for Instructional Delivery)

None

Certificates of Approval Issued (Authorization Only to Recruit Students in Missouri)

None

Exemptions Granted

None

Applications Pending Approval (Authorization for Instructional Delivery)

AAM Educational Services
St. Louis, Missouri

This for-profit institution seeks to offer non-degree programs in nurse assisting, customer service, and metal fabrication. The mission of the school is to equip students with readily employable skill sets in a variety of industries. The school is not accredited.

Claim Academy
St. Louis, Missouri

This for-profit institution seeks to offer non-degree programs in computer coding. The mission of the school is to transform technology novices into industry-ready software developers. The school is not accredited.

Dogwood Dental Assisting School
Jefferson City, Missouri

This for-profit institution seeks to offer a non-degree program in dental assisting. The mission of the school is to equip students to provide dental assisting support to dentists and dental hygienists. The school is not accredited.

Jackson-Hewitt Tax Service
Cottleville, Missouri

This for-profit institution seeks to offer a non-degree program in basic tax preparation. The mission of the school is to provide students with the knowledge to become a paid tax preparer. The school is not accredited.

Jefferson City Flying Service
Jefferson City, Missouri

This for-profit institution seeks to offer non-degree programs in private and commercial flight training as well as instrument training. The mission of the school is to provide qualified students with the academics and practical aspects of flying aircraft. The school is not accredited.

Ozark CDL
Rolla, Missouri

This for-profit institution seeks to offer non-degree programs in commercial driver training. The mission of the school is to provide quality training needed for students to pass the commercial driver's license exam. The school is not accredited.

TraiLiner Corp
Springfield, Missouri

This for-profit institution seeks to offer non-degree programs in commercial driver training. The mission of the school is to provide quality training in preparation for the state CDL exam. The school is not accredited.

Applications Pending Approval (Authorization Only to Recruit Students)

None

Schools Closed

Brown Mackie College – St. Louis
Fenton, Missouri

Brown-Mackie College, accredited by the Accrediting Council for Independent Colleges and Schools (ACICS), was approved to offer certificate and undergraduate programs in business and allied health fields. The school's owners made the decision to cease new enrollment at the Fenton location and submitted an approved teach out plan to allow currently enrolled students to complete their programs of instruction. The school permanently closed August 25, 2017. Department staff monitored the closure process and verified the appropriate storage of all student-related records, as required by Missouri statutes.

Midwest Machine Tool Training Center
O'Fallon, Missouri

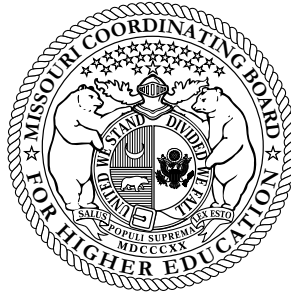
Midwest Machine Tool Training Center was approved to offer certificate programs in machine tool technology. The school's owners made the decision to close the school due to lack of enrollment. The school permanently closed June 30, 2017. Department staff is currently monitoring the closure process to ensure appropriate storage of all student-related records, as required by Missouri statutes.

Professional Massage Training Center
Springfield, Missouri

Professional Massage Training Center, accredited by the Accrediting Commission of Career Schools and Colleges until March 15, 2015, was approved to offer certificate programs in massage therapy. The school's owner made the decision to close the school due to lack of enrollment. The school permanently closed June 30, 2017. Department staff monitored the closure process and verified the appropriate storage of all student-related records, as required by Missouri statutes.

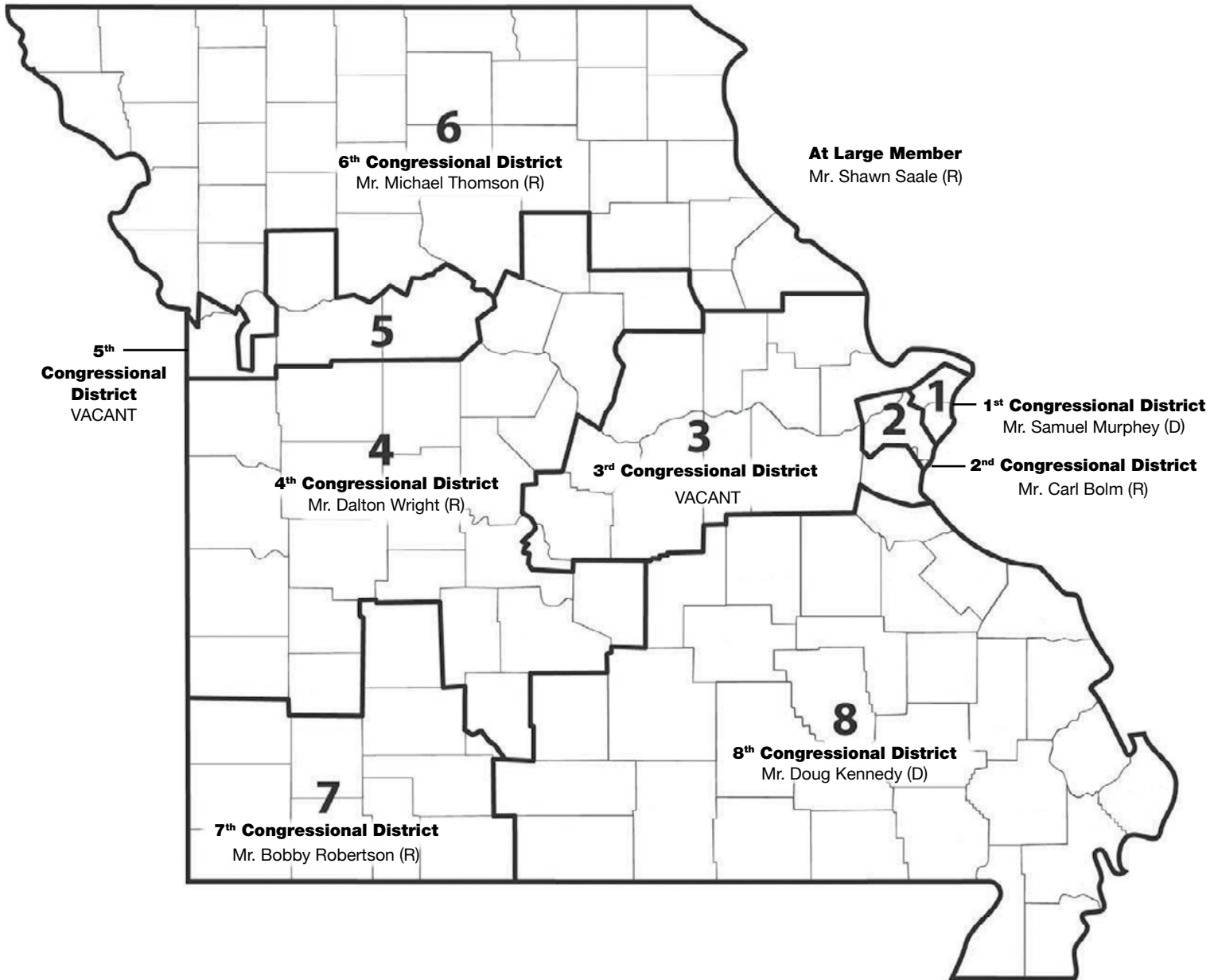
Certifications Denied

None



Coordinating Board for Higher Education

Members by Congressional District





Coordinating Board for Higher Education Members by Congressional District

Term expirations for Coordinating Board for Higher Education Members:

1st District: Mr. Samuel Murphey - 5/5/2016 to 6/27/2020

2nd District: Mr. Carl Bolm - 8/23/2017 to 6/27/2020

3rd District: VACANT

4th District: Mr. Dalton Wright - 2/16/2011 to 6/27/2014

5th District: VACANT

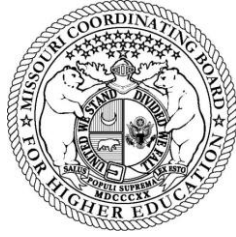
6th District: Mr. Michael Thomson - 5/5/2016 to 6/27/2016

7th District: Mr. Bobby Robertson - 8/23/2017 to 6/27/2018

8th District: Mr. Douglas Kennedy - 11/5/2015 to 6/27/2020

At Large Member: Mr. Shawn Saale - 8/23/2017 to 6/27/2018

District	Description of boundary	Population
1	St. Louis County (part of), St. Louis City	736,055
2	Counties of Jefferson (part of), St. Charles (part of), St. Louis County (part of)	767,531
3	Counties of Jefferson (part of), Franklin, Gasconade, Maries, Osage, Cole, Callaway, Montgomery, Warren, Lincoln (part of), St. Charles (part of), Miller, Camden (part of)	774,899
4	Counties of Audrain (part of), Randolph, Boone, Howard, Moniteau, Cooper, Morgan, Camden (part of), Hickory, Benton, Pettis, Johnson, Henry, St. Clair, Cedar, Dade, Barton, Vernon, Bates, Cass, Dallas, Laclede, Pulaski, Webster (part of)	762,763
5	Counties of Jackson (part of), Ray, Lafayette, Saline, Clay (part of)	757,920
6	Counties of Lincoln (part of), Audrain (part of), Ralls, Marion, Shelby, Lewis, Monroe, Knox, Clark, Scotland, Schuyler, Adair, Macon, Chariton, Linn, Sullivan, Putnam, Mercer, Grundy, Livingston, Carroll, Caldwell, Daviess, Harrison, Worth, Gentry, DeKalb, Clinton, Clay (part of), Jackson (part of), Platte, Buchanan, Andrew, Nodaway, Holt, Atchison	765,667
7	Counties of Jasper, Newton, McDonald, Lawrence, Barry, Stone, Taney, Christian, Greene, Polk, Webster (part of)	770,073
8	Counties of Ozark, Douglas, Wright, Texas, Howell, Oregon, Shannon, Dent, Phelps, Crawford, Washington, Jefferson (part of), Iron, Reynolds, Carter, Ripley, Butler, Wayne, Madison, St. Francois, Ste. Genevieve, Perry, Bollinger, Cape Girardeau, Scott, Stoddard, Mississippi, New Madrid, Pemiscot, Dunklin	748,764



ORGANIZATIONAL INFORMATION: DEPARTMENT DUTIES

The CBHE (CBHE) and its administrative arm, the Missouri Department of Higher Education (MDHE), have a varied portfolio of duties. The following provides a high-level summary of those duties.

Planning is one of the MDHE's core functions. The department is responsible for developing and overseeing implementation of a coordinated plan for higher education for the state and its subregions (§ 173.020(4)), identifying the state's higher education and workforce needs (§ 173.020(2)), and delineating each institution's areas of competence (§ 173.005.2(9)). The department reviews each public college's and university's mission periodically (§ 173.030(7)) and has authority to approve applications from institutions seeking to establish a statewide mission (§ 173.030(8)). The department collects data to use in its decision-making processes and makes those data available in the Statistical Summary of Missouri Higher Education published on the MDHE website.

Academic program approval and review are closely linked to the department's planning function. The department reviews new degree program proposals offered by public colleges and universities (§ 173.005.2(1)) and has authority to make recommendations to institutions' governing boards regarding the development, consolidation, or elimination of programs, degree offerings, and facilities (§ 173.030(2)).

The department is also tasked with fostering **institutional relationships** that serve the state's higher education needs. Specific responsibilities in this area include encouraging the development of cooperative agreements for the offering of graduate degrees, as well as developing arrangements for more effective and economical specialization among institutions, and for more effective coordination and mutual support among institutions in the use of facilities, faculty, and other resources (§ 173.020(3)).

The department coordinates public colleges' and universities' core operating and capital projects **budget requests** by establishing guidelines for public universities' requests (§ 173.005.2(3)), approving a community college funding model (§ 163.191.1), and submitting a unified budget request for community colleges (§ 163.191.1). Requests for operating appropriations are made based on the

performance funding model the department adopted in 2008 (§ 173.1006.1).

The department also develops budget requests for and oversees the state's **student financial aid** programs, the largest of which are Access Missouri (§ 173.1103.1); the Higher Education Academic Scholarship Program, commonly referred to as "Bright Flight" (§ 173.250.3); and the A+ Scholarship Program (assigned to the department by Executive Order 10-16).

Also in the affordability category, the department administers the Higher Education Student Funding Act, commonly referred to as SB 389, which provides that a public university that increases tuition and some fees more than the rate of inflation will be subject to a fine of 5% of the institution's state appropriation (§ 173.1003.5). The law also includes a provision that allow institutions ask the commissioner of higher education for a waiver of all or part of the fine (§ 173.1003.5).

Proprietary school certification is another of the department's important responsibilities. The department licenses and oversees *for-profit* proprietary schools like the University of Phoenix and some *not-for-profit* proprietary schools like Victory Trade School, a religiously affiliated institution in Springfield with a mission of preparing homeless individuals for work in the culinary arts (§§ 173.604.1 & 173.616.1).

Finally, the department offers resources that help students **plan for** and **complete** postsecondary programs. The MDHE's Journey to College programs support high school students as they apply for college admission and financial aid, and celebrate students' choices about attending college and participating in military service.

The department has a long history of working with colleges and universities to develop guidelines that promote **transfer** between institutions; a statewide library of core courses that transfer from one institution to another; and a policy fostering

“reverse transfer,” which allows a student who transfers from a community college before earning enough credits to receive an associate degree to be awarded an associate degree when he or she earns the remaining needed credits at the university to which they have transferred (§ 173.005.2(8)).

Senate Bill 997, a higher education omnibus bill that became law on August 28, 2016, gives the department significant additional responsibilities, many of which strengthen the department’s role in promoting transfer. The department is tasked with working with an advisory committee – the majority of which must be faculty members – to develop a core curriculum that is guaranteed to transfer to another institution and a common course numbering equivalency matrix (§ 178.780.2(10)). These provisions essentially make mandatory practices that have been voluntary in the past. The new law also requires the department to evaluate and maintain data on each institution’s transfer practices (§ 178.788.1) and to resolve disputes about transfer (§ 178.788.2).

Senate Bill 997 requires the department to develop programs designed to promote **on-time completion**, including “15 to Finish” (§ 173.2510) and guided pathways (§ 173.2515); to establish a pilot program for “concurrent enrollment,” which allows community college students to enroll in a public university, take select university classes, and use the university’s facilities (§ 173.2520); and to create a website that provides information about academic programs available at each institution, financial aid, and transfer of course credit (§ 173.035).

In addition, the new law establishes a dual credit scholarship for high school students who meet certain academic standards and demonstrate financial need. The MDHE has

indicated that it will cost approximately \$4.5 million to launch the scholarship program. That information is included in the department’s high-priority budget recommendation, which accompanies the department’s actual budget request and is intended to provide information about important funding needs that do not fit within the parameters of the Office of Administration’s budget instructions.

The department has served as the **state-designated student loan guaranty agency** in the Federal Family Education Loan Program (FFELP) since 1979, making it possible for generations of students, regardless of personal resources, to receive loans because of protection against defaults.

As a FFELP guaranty agency, the MDHE receives servicing fees from the U.S. Department of Education and retains a portion of defaulted student loan collections. These revenues are used to fund loan administration functions and other financial aid-related activities. In addition, the MDHE purchases defaulted student loans from lending institutions and is reimbursed for loan purchases by USDE (20 U.S.C. §1072a).

As Missouri’s guaranty agency, the MDHE helps students and families pay for a college education by:

- Providing information on postsecondary opportunities and financial aid directly to students and families (20 U.S.C. § 1072b);
- Creating financial literacy materials and programs for students, families, and schools to help them better manage finances (§ 165.275); and
- Helping borrowers resolve problems repaying their loans and restore their credit if they default (20 U.S.C. § 1072b).

CURRENT STATUTORY FUNCTIONS

The summary provided above does not include all of the department's current statutory functions. Those functions are listed below. Many of the items listed here are referred to in the summary above.

Fiscal

- Establish guidelines for appropriation requests by public four-year institutions (§173.005.2(3))
- Approve a community college funding model developed in cooperation with the community colleges (§ 163.191.1)
- Submit an aggregated community college budget request (§ 163.191.1)
- Oversee implementation of the Higher Education Student Funding Act (commonly referred to as Senate Bill 389), including the adjudication of waiver requests submitted by institutions proposing to raise tuition at a rate that exceeds the statutory guideline (§ 173.1003.5)
- Recommend to governing boards of state-supported institutions, including community colleges, formulas to be employed in specifying plans for general operations, development and expansion and requests for appropriations from the general assembly (§ 173.030(3))
- Promulgate rules to include selected off-campus instruction in public colleges' and universities' appropriation requests where prior need has been established in areas designated by the CBHE (§ 173.030(4))

Planning

- Conduct studies of population and enrollment trends affecting institutions of higher education in the state (§ 173.020(1))
- Identify higher education needs in the state in terms of requirements and potential of young people and labor force requirements (§ 173.020(2))
- Develop arrangements for more effective and economical specialization among institutions in types of education programs offered and students served, and for more effective coordination and mutual support among institutions in the utilization of facilities, faculty and other resources (§ 173.020(3))
- Design a coordinated plan for higher education for the state and its subregions (§ 173.020(4))
- Collect information and develop comparable data for all institutions of higher education in the state and use it to delineate areas of competence of each of these institutions and for any other purposes the CBHE deems appropriate (§ 173.005.2(9))
- Establish state- and institution-specific performance measures (§ 173.1006.1)
- Conduct institutional mission reviews every five years (§ 173.030(7))
- Review and approve applications from institutions for statewide missions (§ 173.030(8))
- Issue annual report to the governor and general assembly (§ 173.040)
- Report to Joint Committee on Education (§ 173.1006.2)

Academic Programs

- Approve proposed new degree programs to be offered by the state institutions of higher education (§ 173.005.2(1))
- Approve degree programs offered by out-of-state institutions, in a manner similar to Missouri public higher education institutions (§ 173.005.2(13)(b))
- Recommend to governing boards the development, consolidation or elimination of programs, degree offerings, physical facilities or policy changes deemed in the best interests of the institutions or the state (§ 173.030(2))
- Approve out-of-district courses offered by community colleges (§ 163.191.4)
- Establish competencies for entry-level courses associated with an institution's general education core curriculum (§ 173.005.2(7))
- Approve dual credit programs offered by postsecondary institutions to high school students (§ 173.2500)
- Develop policies that promote on-time completion of degree programs (§ 173.2510)
- Develop a "guided pathways to success" pilot program designed to provide students with clear pathways to degree completion (§ 173.2515)
- Establish a concurrent enrollment pilot program to coordinate students' simultaneous enrollment at four- and two-year institutions (§ 173.2520)
- Determine to what extent courses of instruction in the Constitution of the U.S., and of the state of Missouri, and in American History should be required by colleges and universities (§ 170.011.1)
- Establish guidelines to facilitate transfer (§ 173.005.2(7))
- Administer the Studies in Energy Conservation Fund in collaboration with the Department of Natural Resources and, subject to appropriations, establish full professorships of energy efficiency and conservation (§ 640.219.1)
- Promulgate rules to ensure faculty credentials and student evaluations are posted on institutional websites (§ 173.1004)
- Cooperate with the Department of Corrections to develop a plan of instruction for the education of offenders (§ 217.355)
- Establish guidelines to promote and facilitate the transfer of students between institutions of higher education within the state (§ 173.005.2(8))
- Develop a recommended lower division core curriculum of 42 credit hours, which shall be transferable among all public institutions; develop criteria to evaluate public institutions' transfer practices; and administer a transfer dispute resolution process (§§ 178.780(10) & 178.785-789)
- Require all public two- and four-year higher education institutions to create a statewide core transfer library of at least twenty-five lower division courses across all

institutions that are transferable among all public higher education institutions (§ 173.005.2(8))

- Develop a policy to foster reverse transfer for any student who has accumulated enough hours by meeting specific statutory requirements to be awarded an associate degree (§ 173.005.2(8))
- Require all public two- and four-year higher education institutions to replicate best practices in remediation (§ 173.005.2(6))
- Require all public institutions to award educational credit for courses that are equivalent in content and experience to a student's prior military training or service (§ 173.1158)

Institutional Relationships

- Promote and encourage the development of cooperative agreements between Missouri public four-year institutions of higher education which do not offer graduate degrees and Missouri public four-year institutions of higher education which do offer graduate degrees for the purpose of offering graduate degree programs on campuses of those public four-year institutions of higher education which do not otherwise offer graduate degrees (§ 173.005(2))
- Coordinate reciprocal agreements between or among institutions at the request of one or more of the parties (§ 173.030(5))
- Enter and administer interstate reciprocal agreements for delivery of postsecondary distance education, including approval of applications to participate and development of consumer protection and complaint policies (§ 173.030(6))
- Approve new state-supported senior colleges or residence centers (§ 173.005.2(4))
- Establish admission guidelines consistent with institutional missions (§ 173.005.2(5))
- Establish guidelines to help institutions with decisions relating to residence status of students (§ 173.005.2(7))
- Conduct binding dispute resolution for disputes between public institutions that involve jurisdictional boundaries, or the use or expenditure of any state resources (§ 173.125)
- Receive biennial reports from all public institutions on the number and language background of all teaching assistants, including a copy of the institution's current policy for selection of graduate teaching assistants (§ 170.012.4)
- Promulgate model conflict of interest policy that is used to govern all public institutions of higher education that did not have a similar measure in place (§ 173.735)
- Enforce provisions of the Missouri Returning Heroes Education Act, which limits the amount of tuition public institutions can charge combat veterans (§ 173.900.4)
- Promulgate rules for the refund of all tuition and incidental fees or the awarding of a grade of "incomplete" for students called into active military service, voluntarily or involuntarily, prior to the completion of the semester (§ 41.948.5)
- Provide an annual report to the Department of Elementary and Secondary Education on the performance of graduates of public high schools in the state during the students' initial year in the public colleges and universities of the state (§ 173.750.1)

- Promulgate instructions and recommendations for implementing eye safety in college and university laboratories (§ 173.009)
- Exercise oversight of State Technical College (§ 178.638)
- Establish standards for the organization of community colleges (§ 178.770)
- Approve establishment of community college subdistricts and redistricting (§ 178.820)
- Supervise community colleges (§ 178.780), including:
 - Establishing their role in the state
 - Setting up surveys to be used for local jurisdictions when determining need and potential for a community college
 - Administering the state financial support program
 - Formulating and putting into effect uniform policies as to budgeting, record keeping and student accounting
 - Establishing uniform minimum entrance requirements and uniform curricular offerings
 - Make a continuing study of community college education in the state
 - Being responsible for their accreditation, annually or as often as deemed advisable, and in accordance with established rules

Note: Section 173.005.7 transfers to the CBHE the duties of the State Board of Education relating to community college state aid, supervision and formation specified in Chapters 163 and 178, RSMo.

Financial Aid¹

- Administer the Access Missouri Financial Assistance Program (§ 173.1103.1)
- Administer Higher Education Academic Scholarship Program ("Bright Flight") (§ 173.250.3)
- Administer the A+ Scholarship Program (Executive Order 10-16, January 29, 2010)
- Administer the Advanced Placement Incentive Grant (§ 173.1350)
- Administer the Kids' Chance Scholarship Program for children of workers who were seriously injured or killed as result of a workmen's compensation-related event (need based) (§ 173.256.1)
- Administer the Public Safety Officer or Employee Grant Program for certain public employees and their families if the employee is killed or permanently and totally disabled in the line of duty (§ 173.260.2 & .4)
- Administer the Marguerite Ross Barnett Competitiveness Scholarship Program for students who are employed 20 hours or more per week while attending school part time (§ 173.262.3)
- *Administer the Missouri Teaching Fellows Program for educational loan repayments, to include maintaining a program coordinator position to identify, recruit, and select potential applicants for the program (§ 168.700)*
- Administer the Minority Teaching Scholarship Program (§ 161.415)

¹ Entries in italics historically have not had funds appropriated to them by the General Assembly and so require no ongoing activity by the department.

- Administer the Minority and Underrepresented Environmental Literacy Program (§ 173.240)
- Administer the Dual Credit Scholarship for students from low-income families enrolling dual credit courses (§ 173.2505)
- Administer the Advantage Missouri Trust Fund, which provided loans and a loan forgiveness program for students in approved educational programs who become employed in occupational areas of high demand in the state (§§ 173.775.2 & 173.781)
- Make provisions for institutions to award tuition and fee waivers to certain students who have been in foster care or other residential care under the Department of Social Services (§ 173.270.1)
- May request information from public or private institutions to determine compliance with the requirement that no student receiving state need-based financial assistance receive financial assistance that exceeds the student's cost of attendance (§ 173.093)
- Develop, maintain, and operate a website with, at minimum, information on Missouri postsecondary institutions' academic programs, financial aid, and course transferability (§ 173.035)
- Receive annual certification from all postsecondary institutions that they have not knowingly awarded financial aid to a student who is unlawfully present in the U.S. (§ 173.1110.3)
- Promulgate rules to ensure individuals serving in the Missouri National Guard, Armed Forces Reserves, and those in the process of separating from the U.S. military may readily obtain in-state residency status for purposes of tuition and admission (§§ 173.1150 & 1153)

State Guaranty Agency under the Federal Family Education Loan Program²

- Administer Missouri Student Loan Program (§§ 173.100 to .120 & .130 & .150 to .187; also Title IV, Part B of the Higher Education Act of 1965, as amended (20 U.S.C. §§ 1071 to 1087-2), and its implementing regulations in 34 C.F.R. §§ 433A, 485D & 682). Responsibilities include:
 - Establishing standards for determining eligible institutions, eligible lenders and eligible borrowers
 - Processing applications
 - Loan disbursement
 - Enrollment and repayment status management
 - Default awareness activities
 - Collecting on defaulted borrowers
 - School and lender training
 - Financial literacy activities
 - Providing information to students and families on college planning, career preparation, and paying for college
 - Administering claims
 - Compliance

- Provide information on types of financial assistance available to pursue a postsecondary education (§ 167.278)
- Act as a lender of last resort for students or schools that cannot otherwise secure loans (§ 173.110.3)
- Enter into agreements with and receive grants from U.S. government in connection with federal programs of assistance (§173.141)

Proprietary Schools

- License and oversee all for-profit Missouri certificate or degree granting schools (§ 173.604.1)
- License and oversee some not-for-profit Missouri certificate or degree granting schools (§§ 173.604.1 & 173.616.1)
- License and oversee out-of-state higher education institutions offering instruction in Missouri (public out-of-state are exempt but go through program approval similar to in-state publics) (§§ 173.602 & 173.005.2(11)(b))
- License and oversee certain types of student recruitment by non-Missouri institutions (§ 173.602)
- Require annual recertification, or recertification every two years if certain conditions are met (§ 173.606.1 & 173.606.2)
- Establish appropriate administrative fees to operate the certification program (§ 173.608.2)

Grants for Institutions/Faculty

- Administer the Nurse Education Incentive Program (§ 335.203)
- Apply for, receive and utilize funds which may be available from private nonprofit foundations and from federal sources for research on higher education needs and problems in the state (§ 173.050(2))
- Serve as the official state agency to plan for, define, and recommend policies concerning the allocation of federal funds where such funds, according to provisions of federal legislation, are to be received and allocated through an official state agency (§ 173.050(1))

Enforcement

- Compliance with requests from the coordinating board is a prerequisite to the receipt of any funds which the coordinating board is responsible for administering (§ 173.005.2(10))
- Institutions that willfully disregard CBHE policy may be subject to penalties including inability to receive students who participate in student financial aid programs and the withholding of any funds the CBHE is charged with disbursing (§ 173.005.2(11))

² As a result of provisions in the recently enacted Healthcare and Education Affordability Reconciliation Act, no new FFELP loans will be issued after June 30, 2010. However, the Guaranty Agency's statutory and regulatory obligations will continue as to loans still outstanding and guaranteed before that date.

**Bylaws of the
Missouri Coordinating Board for Higher Education**
(Adopted by the Board October 1987, Revised on October 12, 2006)

**Article I
Enabling Authority**

These bylaws govern the conduct of the business and affairs of the Missouri Coordinating Board for Higher Education ("Board") pursuant to the responsibilities vested in it by the Missouri Constitution and Revised Statutes.

**Article II
Members**

The membership of this Board and the terms of office of each member are prescribed in Section 173.005 of the Missouri Revised Statutes. Any member desiring to resign from the Board shall submit such resignation in writing to the Secretary of the Board, who shall provide it to the Executive Committee for action. The Executive Committee shall immediately notify the Director of Boards and Commissions in the Governor's Office of such member's resignation.

**Article III
Officers**

Section 1. Officers

The officers of the Board shall be: Chair, Vice Chair and Secretary. They shall be elected by the Board from its own membership. These officers shall perform the duties prescribed by the Missouri Revised Statutes, these bylaws and as may be prescribed by the Board.

Section 2. Election - Tenure of Officers

At the regular meeting of the board immediately prior to April 30, a Nominating Committee of three members shall be appointed by the Chair. It shall be the duty of this Committee to nominate candidates for the offices to be filled by election at the regular meeting immediately prior to June 30. Before the election at the regular meeting in June, following the report of the Nominating Committee, additional nominations from the floor shall be permitted. Officers' terms shall begin at the close of the regular June meeting, and officers shall serve for a period of one year and until their successors are elected and qualified. No member shall hold more than one office at a time, and no member shall be eligible to serve more than two consecutive terms in the same office.

Section 3. Duties of Officers

Chair

The Chair of the Board shall preside at all meetings of the Board and shall be the spokesperson for the Board and shall perform such duties as may be prescribed by the Missouri Revised Statutes and by the Board. The Chair shall appoint the members of any committee established pursuant to these bylaws and shall name the Chair of each such committee.

Vice Chair

In the event of the absence of the Chair, the Vice Chair shall serve as Chair of the Board and perform all the duties of the Chair. The Vice Chair shall perform such other duties as prescribed by the Missouri Revised Statutes and by the Board.

Secretary

The Secretary of the Board shall take minutes of any executive session of the board and shall perform other duties as prescribed the Missouri Revised Statutes and by the Board.

**Article IV
Meetings**

Section 1.

Meetings of the Board may be held at any place or places within the State of Missouri. The Board shall hold no less than four (4) regular meetings during each calendar year. Special or additional meetings may be called by the Chair or upon call of at least five (5) members of the Board. The purpose of the meeting shall be stated in the call.

Section 2. Notice of Meeting

The notice of meeting and agenda shall be in accordance with the Missouri Revised Statutes.

Section 3. Absence at Meetings

If any member of the Board fails to attend any two consecutive regularly called meetings of the Board, or any three regularly called meetings in any calendar year, of which meetings the member shall have had due notice, unless such absences shall be caused by sickness or some accident preventing the member's presence (as defined in Article IV, Section 4.A) at the meetings, the Chair shall bring the matter to the attention of the Director of Boards and Commissions in the Governor's Office. For purposes of this Section, "regularly called meetings" shall include the February, April, June, October, and December Board meetings, as well as the Board's annual retreat.

Section 4. Conduct of Meetings

- A. A majority of the members of the Board shall constitute a quorum. Any act of the majority of the members present at any Board meeting at which a quorum is present shall be the act of the Board. Board members may participate in a meeting by means of conference telephone or similar communication equipment whereby all persons participating in or attending the meeting can communicate with each other, and participation in a meeting in this manner shall constitute presence in person at the meeting for all purposes.
- B. All meetings of the Board and any Committee thereof must comply with the Missouri Revised Statutes on meetings of governmental bodies and maintenance of records by such bodies.
- C. At all Board and Committee meetings, a staff member shall act as Recording Secretary. In the absence of a staff member, the Board or Committee shall designate a member to serve as Recording Secretary. Full and complete minutes shall be kept of each meeting and shall be submitted to Board members for review prior to the succeeding meeting.
- D. Voting on all matters coming before the Board shall be voice vote. In all cases where the vote of the members present is unanimous, it shall be sufficient to indicate unanimity in the minutes of the proceedings. In all cases where the vote of the members present is not unanimous, the "ayes" and "nays" shall be separately entered upon the minutes. In the absence of such expression of dissent or an expression of abstention, a member of the Board who is present at any meeting in which action is taken on any matter shall be presumed to have assented to such actions unless, before the adjournment of the meeting, the member shall affirmatively request that the member's vote of "nay" be separately entered upon the minutes, or the member be recorded as not having voted.
- E. The Board may meet for appropriate purposes in executive session. Any vote taken in executive session shall be deemed and retained confidential, subject to the closed meeting provisions the Missouri Revised Statutes.

**Article V
Committees**

Section 1. Executive Committee

An Executive Committee shall be established and composed of five Board members: Chair, Vice Chair, and Secretary of the Board, as well as Chairs of both the Audit and the Student Loan/Financial Aid Committees. The Executive Committee shall have general supervision of the affairs of the Board between its business meetings, make recommendations to the Board, and perform such other duties as are specified in these bylaws or as directed by the Board. The Executive Committee shall be subject to the orders of the Board, and none of its acts shall conflict with action taken by the Board.

The Board Chair shall serve as the Chair of the Executive Committee. Meetings of the Executive Committee may be called by the Chair of the Executive Committee or upon call of at least three members of the Committee. The Commissioner of Higher Education may also request that the Chair call a meeting of the Executive Committee. The purpose of the meeting shall be stated in the call.

Section 2. Audit Committee

An Audit Committee composed of three Board members shall be established. The Chair of the Board shall appoint the members of the Audit Committee and at the same time shall name the Chair of the Committee promptly after the regular meeting immediately prior to June 30 of each year. Committee members shall serve for a period of one year and until their successors are appointed and qualified.

The Audit Committee shall receive and review all audit reports pertaining to the Board and the Department of Higher Education and such other audit reports as may be referred to the Committee. The Committee shall report to the Board on the contents of the reports and shall follow up with the Commissioner and department staff regarding resolution of any findings in the reports. The Committee shall report to the Board on the status of any such findings. The Committee shall perform such other duties as are specified in these bylaws or as directed by the Board.

Section 3. Student Loan/Financial Aid Committee

A Student Loan/Financial Aid Committee composed of three Board members shall be established. The Chair of the Board shall appoint the members of the Student Loan/Financial Aid Committee and at the same time shall name the Chair of the Committee promptly after the regular meeting immediately prior to June 30 of each year. Committee members shall serve for a period of one year and until their successors are appointed and qualified.

The Committee shall work with the Commissioner of Higher Education and Department staff on student loan/financial aid issues as they arise and shall, as necessary, make reports to the Board on such activities. The Committee shall perform such other duties as are specified in these bylaws or as directed by the Board.

Section 4. Other Committees

Such other committees, standing or special, shall be appointed by the Chair as the Board or the Executive Committee shall from time to time deem necessary to carry on the work of the Board. The Chair shall appoint the membership of such committees, which may, but need not, include members of the Board, and shall designate the matters to be considered by said committees. The Chair shall be an ex officio member of all committees except the Nominating Committee.

**Article VI
Advisory Committees**

Section 1. Presidential Advisory Committee

Four times each year the Board shall meet with the Presidential Advisory Committee as established by the Missouri Revised Statutes. Such meetings shall enable the Presidential Advisory Committee to advise the Board of the views of the institutions on matters within the purview of the Board.

Section 2. Proprietary School Advisory Committee

The Board delegates responsibility to the Commissioner of Higher Education to meet with and receive reports from the Proprietary School Advisory Committee as established by the Missouri Revised Statutes.

**Article VII
Conduct of Business and Affairs**

Section 1. Staff

The Board shall employ a Commissioner of Higher Education ("Commissioner") to serve at the pleasure of the Board. The Commissioner shall employ and determine the compensation of all such professional, clerical, and research personnel, including, where justified, specialists and/or consultants, as may be necessary to assist the Board in performing those duties outlined in the Missouri Revised Statutes. Except as otherwise expressly provided, all department staff shall be subject to the supervision and direction of the Commissioner.

The Commissioner shall have such duties and responsibilities as prescribed by the Board, including:

- A. Assume general direction of the staff to help meet the objectives set forth by the Board.
- B. Serve as liaison with the presidents, chancellors, and chief executive officers of institutions in carrying out policy objectives promulgated by the Board.
- C. Follow and keep the Board advised of all federal and state legislation affecting the Board and its purposes and objectives.
- D. Issue reports of Board action.
- E. Prepare, review, analyze, and implement all budgets which are approved by the Board.
- F. Make recommendations to the Board concerning the purposes, objectives, and responsibilities of the Board.

- G. Assist the Chair in the release of all information concerning the Board.
- H. Perform such other duties as prescribed by the Board and/or bylaw.

Section 2. Commissioner Search

The Board shall act as a committee of the whole as a search committee, unless the Chair, as directed by the Board, establishes a special committee for the purpose of searching for and screening candidates. The Board may include outside consultants and other persons in the search and screening process provided, however, that only Board members shall vote on the selection of a Commissioner.

Section 3. Evaluation of Commissioner

The Board shall annually evaluate the performance of the Commissioner. The purpose of the evaluation shall be to establish a record of performance over a period of time, to identify strengths, and to determine areas where more attention may be needed.

**Article VIII
Records**

Full and complete records of Board actions and activities shall be kept available in accordance with Missouri Revised Statutes on governmental bodies and records.

**Article IX
Diversity**

The Coordinating Board for Higher Education and its staff should use selection processes and criteria designed to ensure diverse representations when making appointments to various committees, councils, or commissions. In as much as reasonably possible, criteria for representation should include the following:

1. Individuals who have demonstrated appropriate expertise and experience through their vocation, employment, affiliation or interests in connection with the membership being assembled;
2. Individuals who reflect the various geographic regions of the state as a whole or other appropriate sub-unit directly in connection to the membership being assembled; and
3. Individuals who reflect the race, ethnicity, age, gender, and disability characteristics of the population of the state as a whole, or other appropriate sub-unit in connection with the membership being assembled.

In as much as reasonably possible, the campus presidents and chancellors, and their respective local boards should use a similar selection process and criteria in making appointments to various committees, councils, or commissions. (Adopted June 7, 2001)

**Article X
Parliamentary Authority**

The rules contained in the current edition of *Robert's Rules of Order Newly Revised* shall govern the Board in all cases to which they are applicable and in which they are not inconsistent with these bylaws and any special rules of order the Board may adopt.

**Article XI
Amendment of Bylaws**

These bylaws may be amended at any regular meeting of the Board by a two-thirds vote, provided that the amendment has been submitted in writing at the previous regular meeting.