



**ACADEMIC
PROGRAM REVIEW
REPORT**


Science/Biology

Associate in Science

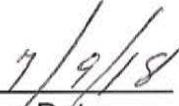
Last Approved GCCC Program Review: 2016

Submitted on 5/18/2018

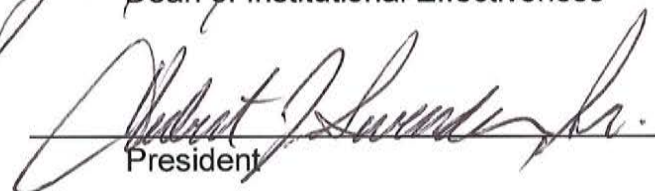
Signature Page and Archiving



Dean of Institutional Effectiveness



Date



President

Date

Archiving:

Division Leader submits to Dean of Institutional Effectiveness, Planning and Research.

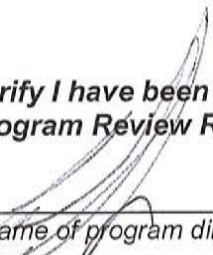
1. A complete electronic version of the Academic Comprehensive Program Review
2. All documentation (electronic and print)
3. A signed signature page (electronic and print)



GARDEN CITY COMMUNITY COLLEGE

Program Review Faculty and Dean Verification

I verify I have been an active participant in the program review process and have read this Program Review Report to be submitted to the Program/Department Review Committee:



[insert name of program director if applicable], Program Director Date 5/18/18



[insert name of full-time faculty] Date 5/18/18



[insert name of full-time faculty] Date 5/18/18

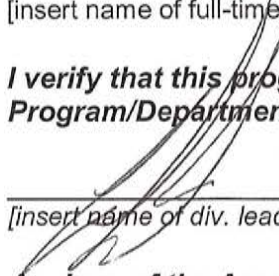
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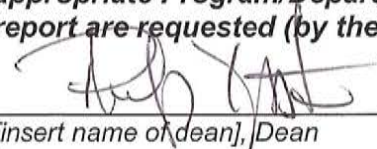
[insert name of full-time faculty] Date _____

I verify that this program review report is ready to be reviewed for feedback and action by the Program/Department Review Committee.



[insert name of div. lead], Division Leader Date 5/18/18

As dean of the Academic or Technical Education and Workforce Development Division, I verify that this program review report is ready to be reviewed for feedback and action by the appropriate Program/Department Review Committee. If revisions to original submission of the report are requested (by the committee), I understand another signature by me will be required:



[insert name of dean], Dean Date 5/28/18

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Component A - Mission and Context

A.1 Program Mission and Purpose State your program emphasis area's mission and purpose and how it helps to fulfill the broader mission of GCCC. Briefly describe where your program emphasis area fits within the college's structure (e.g. division/dept.) and what credentials and/or areas of specialization it grants. Briefly, discuss the trends in higher education related to the need for your program and identify how the program is responsive to the needs of the region or broader society it intends to serve.

The Science Division is committed to offering quality learning opportunities to all students. Our courses are designed to meet the preparatory needs of all majors in the foundational sciences. The Science curriculum strives to provide the student with the opportunity to develop a scientific line of thought and to be able to analyze information and make informed decisions. Classes provide critical thinking skills and fundamental scientific knowledge that will in turn develop desired employable skills and productive citizens.

Science classes are developed to foster critical thinking skills and to develop a fundamental understanding of topics that fit the needs of all majors. When possible articulation agreements or KBOR seamless standards are followed to guarantee transferability to Kansas Universities.

A.2 Progress Since Last Review Before commencing with this review, attach from your last review the Program Emphasis Area Goals with Recommended Action Steps (or equivalent) (include as [Template Appendix A](#)), as well as the Administrative Response to those goals (include as [Template Appendix B](#)), and your Strategic Planning Documents (Appendix D). Identify the original goals from your report as well as any new goals that emerged from your mid-cycle report and in the strategic planning process and provide evidence your progress toward accomplishing them. (If you don't have a copy, ask your Dean).

First year.

NOTE: The information for Data Tables required in Components B-E will be provided to the fullest extent possible by the Office of Institutional Effectiveness and Institutional Research (IE/IR). Data collection for faculty will be as of November 1 and student enrollment will be as of October 15 for students of the year prior to the submission of the report (follows IPEDS delineation). Programs *may* choose to update data beyond November 1 or October 15 of the year prior to the submission of the report. Data collection for student completion, GPA, and class size will end by June 30 of the year prior to the submission of the report. Programs may need to supplement the tables with information unavailable to IE/IR. In such cases, programs *must* specify collection methods and dates (or date ranges). For example, faculty data are recorded at the department level and may not accurately reflect the program assignment. The program is encouraged to review the faculty data provided by IE/IR and make adjustments according to the program records. Please provide IE/IR with any updated faculty data tables.

Data queries can be found in Earth Reports under Accreditation in the Program Review folder.

Component B - Faculty Characteristics and Qualifications

The following faculty classification definitions apply to the data exhibits in section B.

- Full-time faculty – faculty whose load is 100% of a full-time contract within the program/department
- Part-time faculty – faculty whose load is less than 100% of a full-time contract within the program/department

Table B.1 - Faculty Qualifications: Faculty listed below are those who taught courses for the program emphasis area within the "2016-2017" academic year as well as those on the "Fall 2017" faculty roster from the Dean's office as of November 1st. (Insert rows as needed).

Faculty Qualifications			
Name of Faculty Member	Highest Degree Earned and Date of Acquisition (provided by dept.)	Institution of highest degree (provided by dept.)	Certifications, practices, specialties, etc. related to the discipline that illustrate qualifications
[Full-time faculty listed here]			
John Schafer	MS of Biology 1997	Fort Hays State University	
Shelli Lalicker	MS of General Biology 2014	Mississippi State University	KS teaching license
Elizabeth Tharman	MS of Biology 2017	Fort Hays State University	Advanced EMT
[Part-time faculty listed here]			
Jeri Neuman	Doctor of Chiropractic 2009	Palmer College of Chiropractic	
Angie Reisch	MS of Zoology 2011	Oklahoma State University	
Misty Ayers	MS of Biology 2006 MS of Education 2017	Akron State University Fort Hays State University	

Table B.2 - Faculty Demographics: Faculty listed below are those who taught courses for the program emphasis area within the academic year "_____" as well as those on the "_____" faculty roster from the Dean's office as of November 1st.

Faculty Demographics						
	Full-time		Part-time		Total	
	Female	Male	Female	Male	Female	Male
a.) Faculty who are						
Non-resident (International)	0	0	0	0	0	0
Asian	0	0	0	0	0	0
Black, non-Hispanic	0	0	0	0	0	0
Hispanic	0	0	0	0	0	0
American Indian or	0	0	0	0	0	0

Alaska Native						
Native Hawaiian / Pacific Islander	0	0	0	0	0	0
Two or more races	0	0	0	0	0	0
Race/Ethnicity Unknown (Or Decline to Identify)	0	0	0	0	0	0
White, non-Hispanic	2	1	3	1	5	2
Totals						
c.) Number of faculty with doctorate or other terminal degree	2	1	3	1	5	2
d.) Number of faculty whose highest degree is a master's, but not a terminal master's	0	0	0	0	0	0
e.) Number of faculty whose highest degree is a bachelor's	0	0	0	0	0	0

B.3 Faculty Scholarship: Provide, in a report format, a comprehensive record of faculty scholarship since the last program review (last 5 years). In addition to traditional scholarship, include faculty accomplishments that have enhanced the mission and quality of your program (e.g., discipline-related service, awards and recognitions, honors, significant leadership in the discipline, etc.).

Faculty of the biology program have been involved in math and science club activities, received nominations for teacher of the year at GCCC, received GCCC student support recognition, and have an active science division leader.

Faculty are engaged in volunteer activities outside of the college that include volunteering in medical fields (such as emergency medical services) and biology related fields (such as being a docent for the Lee Richardson Zoo). Faculty have demonstrated student engagement by conducting tours for high school students in the cadaver lab and by participating in the KC Gear-up program which promotes biology activities to under-served high school students.

Shelli Lalicker

Math and Science Club Activities (2016-2018), nominees to Student Services Outstanding Faculty Member (2016-2018), liaison to Outreach and Adjunct Instructor (2017-2018), Mentor to outreach and adjunct instructor (2016-2018), Nominee for Faculty Rookie of the Year (2018), Docent at Lee Richardson Zoo (2010-2018), Kansas City Gear UP Program (2017), Kansas Teaching Certificate (1995-2018).

B.4 Department Scholarship Analysis: State the goals previously set by your department's emphasis area for scholarship production (previous review). Analyze whether goals were met and the factors that contributed to goal attainment. What changes or modifications are necessary in light of this analysis?

First year.

B.5 Analysis of Faculty Qualifications: From the evidence available, evaluate the qualifications and contributions of your faculty toward fulfilling the mission of the program emphasis area. Comment on the composition of your faculty in terms of diversity. Identify gaps in preparation, expertise, or scholarly production that need to be filled.

All faculty have attained a masters degrees or higher. All faculty have teaching experience and many have practical experience in their fields (medical and biology related).

One adjunct faculty is currently working on a second master's degree in education and anticipates completion in December 2017.

Table B.6 - Full-Time Faculty Workload: For each of the past 5 years, report full-time faculty workload distribution based on the categories identified below. Include units assigned as overload.

	12-13				13-14				14-15				15-16				16-17			
	FA	SP	SU	TO TA L	FA	SP	SU	TO TA L	FA	SP	SU	TO TA L	FA	SP	SU	TO TA L	FA	SP	SU	TO TA L
Shelli Lalicker																	20	20	0	40
Terry Lee	13	14	0	27	14	14	2	30	14	15	0	29	14	15	2	31				
Art Nonoff	17	23	0	40	17	15	2	34	20	10	0	30	15	15	2	32				
John Schafer	17	17	5	39	17	15	5	37	15	20	10	45	20	20	10	50	20	20	10	50
Liz Tharman																	18	21	4	43

FA12 TL-Criminology(4) Lead Challenge(1), JS-Mentor(1)

SP13

FA13 AN-Mentor(1), JS-Mentor(1), TL-Criminology(1) Faculty Senate Pres(1650)

SP14 TL-Faculty Senate Pres(1650) Crim(1)

FA14 TL-Faculty Senate Pres(1650)

TL-Lab(1) Mentor(1) Faculty Senate Pres(1650), AN-Lab(1), JS-Lab(1)

SP15 Mentor(1)

FA15 TL-Lab(1), AN-Lab(1), JS-Lab(1)

SP16 TL-Lab(1), AN-Lab(1), JS-Lab(1)

FA16 SL-Lab(1) Mentor(1), JS-Lab(1), LT-Lab(1)

SP17 SL-Lab(1), JS-Lab(1), LT-Lab(1)

B.6.1 Analysis of Faculty Workload: In what ways does faculty workload contribute to or detract from faculty ability to work effectively in the program emphasis area?

At this time, overloads are offered in some Biology classes. With the amount of teaching time during the day, it is often difficult to meet with students when students are available, and to engage in other student-supported activities.

Table B.7 - Percentage of courses taught by each faculty classification: The following table includes the percentage of credit bearing courses taught by emphasis area faculty (by classification) during the five most recent years for which data are available.

Percentage of Courses Taught by Faculty					
Faculty Classification as of November 1	2012-13	2013-14	2014-15	2015-16	2016-17
Full-Time	35.14	34.15	35.06	35.29	32.26
Part-time	64.86	65.85	64.94	64.71	67.74
TOTAL	100%	100%	100%	100%	100%

Table B.8 - Student Faculty Ratio: The following table includes student to faculty ratios for the 5 most recent years. The ratios provided are based on the number of students enrolled in the program emphasis area and the faculty assigned to teach in the program emphasis areas. Program emphasis areas that offer courses in which students from outside the emphasis area often enroll (e.g., general studies courses), may wish to include additional data such as the average number of students per course taught by emphasis area faculty.

Student: Faculty Ratio					
Academic Year	2012-13	2013-14	2014-15	2015-16	2016-17
# of Full-Time Faculty	3	3	3	3	3
# of Part-time*	15	16	14	15	15
FTE Faculty	8.00	8.33	7.67	8.00	8.00
# of Full-Time Students	2	5	7	7	6
# of Part-Time Students	2	2	4	3	4
FTE Student	2.67	5.67	8.33	8.00	7.33
FTE Student: FTE Faculty Ratio**	2.67 : 8	5.67 : 8.33	8.33 : 7.67	8 : 8	7.33 : 8

* These data are based on course data used for IPEDS reporting as well as faculty data (as of November 1) provided by IE/IR. Please correct as needed and notify IE/IR of any changes made to the data.

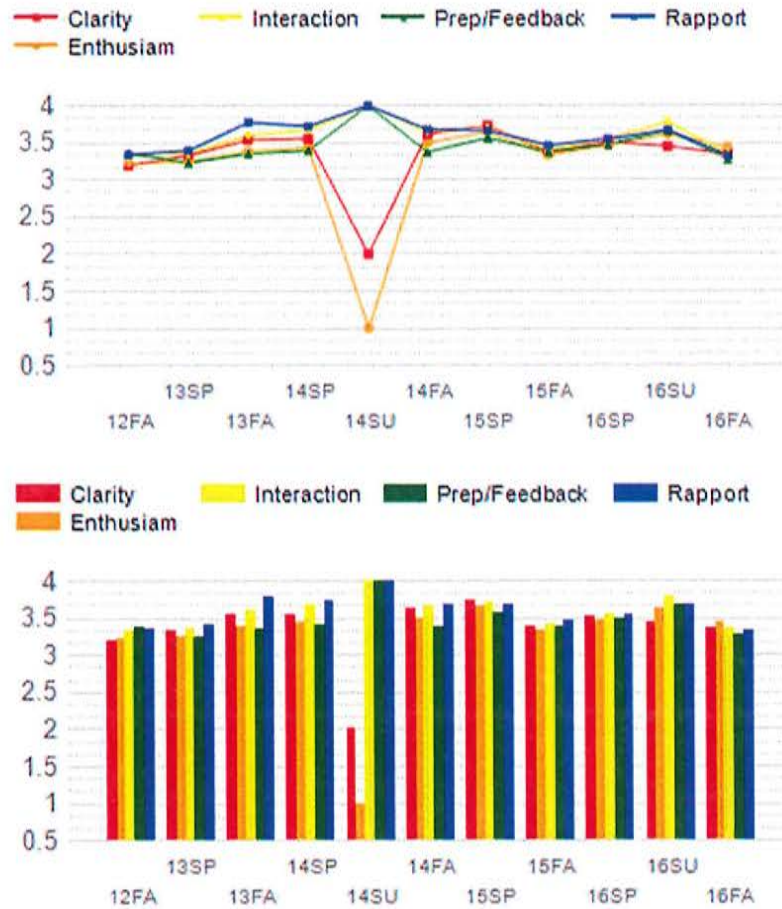
**Full-time equivalent (FTE) is calculated using the following formula:

Total # Full-Time Faculty (or Students) + One-third Total # Part-Time Faculty (or Students)

B.8.1 - Analysis of Faculty Distribution: Comment on the adequacy or number of full-time vs. part-time faculty and the ability to deliver quality education.

As of the 2017/2018 academic year, we have a concurrent instructor at the high school, two online adjuncts, and an on-site night biology adjunct. An additional adjunct for anatomy and physiology would be beneficial to the students. Currently, the Anatomy and Physiology classes quickly fill to capacity and the instructor often has waitlisted students who she accepts beyond the course capacity.

Table B.9. - Summary of Teaching Effectiveness: The following figure includes data derived from student end of course evaluations for the emphasis area.



B.10 Other Evidence of Faculty Effectiveness: Program emphasis areas may provide additional evidence (not anecdote) of faculty effectiveness.

Faculty attend Kansas Core Outcomes Group Conference annual meetings when applicable to the program.

B.11 Analysis of Teaching Effectiveness: Using data from the data above, as well as other pieces of available evidence, evaluate the effectiveness of faculty in the classroom. When applicable, include an analysis of faculty effectiveness across delivery system (e.g., outreach locations, online, etc.).

Clarity: According to the data above in B9, the average score for teachers' performance in clarity of the subject matter is 3.00 out of 4.00, which represents 75%. This is way above average. This implies teachers are doing good job when it comes to coherence of teaching and learning.

Enthusiasm: From the graph in B9, the average of most years is above 3.0 out of 4.00, which represents 75%. This is above average. This means, teachers are enthusiastic about their subject, what they teach, and their students which is helpful to student's retention and success.

Interaction: According to the data in graph B9, interaction is 3.25 out of 4 which 81%. This score indicates that students feel comfortable interacting Biology instructors.

Prep/feedback: According to the date the prep feedback has been above 3.25 out of 4 which is 81%, which indicates that students think the instructors are prepared and give adequate feedback.

Looking at all of the numbers above, we can say that the teachers at mathematics division over the last five years are well prepared and effective for the job.

B.12 Faculty Summary Analysis: Based on evidence and responses provided above, provide a summary analysis of the quality and quantity of faculty associated with the emphasis area. Discuss how workload, course distribution, or other considerations impact the ability of the emphasis area to deliver excellent teaching to students. Identify resources, mentoring programs, or other services provided or made available by the department to ensure that faculty are developed professionally (this may include release time or funds provided to faculty for curricular and professional development). What changes, if any, should be implemented to ensure faculty effectiveness? Identify any needs related to faculty that impact delivery of a high-quality program.

GCCC currently employees a total of seven faculty with master's degrees or higher. First semester instructors have a mentor and a liaison for the subsequent year. Online instructors are provided with a liaison. Quality is assessed each semester and changes are implemented as needed.

We deliver information to students using multiple interfaces. These classes allow the program to reach students both on campus and off campus. This program offers a wide variety of courses for majors as well as non-majors.

Faculty professional development is improved by attending conferences and engaging in trainings. KCOG, AAAS Emerging Researchers National conference, and docent training give faculty applicable skills to the classroom to further enhance information delivery and technical skills.

Component C - Quality of Curriculum and Student Learning

C.1 Curriculum Structure: Provide a brief overview of the course offerings and degree requirements of your program emphasis area. To what degree does the emphasis curriculum align with other comparable programs at other institutions and exemplify best practices for the discipline? Describe the process used by faculty to ensure the emphasis is current and competitive.

We offer non-majors principles biology, non-majors anatomy and physiology, and non-majors environmental science. The program also offers an eight credit hour anatomy and physiology and a five credit hour microbiology for biology and health care related majors. For comparison, Seward County Community College offers a course sequence similar to GCCC with the exception that SCCC offers biology I and biology II for majors as compared to GCCC which offers a one semester principles of biology for non-majors.

GCCC faculty regularly evaluate course needs and aligns course objectives with KBOR seamless transfer classes when applicable.

C.2 Assessment of Student Learning: Attach your emphasis area's most updated Multi-Year Overall Assessment Plans (attach as Template Appendix C) and their Annual Assessment Reports since their last program review (attach as Template Appendix D). Briefly describe the direct and indirect measures your emphasis area uses to assess student learning. Analyze how well students are demonstrating each learning outcome within the emphasis area. If there is a culminating project in the emphasis area, include an objective evaluation of a sample of these products since undertaking the last program review. Use a rubric or other criteria to support your assessment of the culminating projects, and analyze the results of this evaluation. Specify the areas where students are not meeting expected levels of competency and provide an analysis of possible explanations for these results.

First year.

Table C.3 - Curriculum Map of Program Emphasis Area Student Learning Outcomes: If your program emphasis area has a curriculum map, paste it below. Otherwise, complete the table. In the column headings across the top, list all student learning outcomes (ELO) from the emphasis area and in the column on the left, list the courses offered. Identify within the cells of the table, where each student learning outcome is introduced (I), the course(s) where it is reinforced (R) and the course(s) where students are expected to have mastered the student learning outcome (M) (See sample table below). Copy and paste the table if room for additional ELOs are needed, numbering the ELO sequentially. Add rows for courses as needed in the existing table.

I = Introduced, R = Reinforced & Practiced with Feedback, M = Demonstrated at the Mastery Level Appropriate for Graduation, I/R = Introduced/Reinforced, I/M = Introduced/Demonstrated Mastery, Reinforced/M = Reinforced/Demonstrated Mastery

Program: Biology		Curriculum Map						
Program Outcomes		Express the organization and classification principles employed in biological sciences	Demonstrate knowledge of the biomechanical processes.	Demonstrate knowledge of the developmental processes.	Recognize the importance of biological diversity.	Acquire laboratory competence by developing and refining technical skills	Acquire laboratory competence by developing analytical skills	Critically examine information and discover new knowledge through rigorous scientific reasoning
Courses								
BIOL-105 Principles of Biology	M	IR	IRMA	IRMA	IR	IR	IR	IRMA
	ES	3	1,3	2,3	3	3	1, 3	1, 3
BIOL-109 Intro to Ecology	M	I	I	I	IR	R	R	R
	ES	3	3,5	3	2		1,3	5
BIOL-110 Special Topics in Science	M					RM	MA	
	ES					2	2	
BIOL-210 A & P	M	IR	IR	I	I	IR	IR	IR
	ES	3	3	3	3		3	3
BIOL-211 A & P I	M	IRMA	IRMA	IRMA	IA	I	IRMA	IA
	ES	3	3	3,4	3,4	2,3	2,3,4	1
BIOL-212 A & P II	M		IRMA	IRMA	IA	IRM	IRA	RA
	ES		3	3,4	3,4	2,3	2,3,4	1
BIOL-213 Microbiology	M	MA	IRMA		IRMA	IRMA	IRMA	IRMA
	ES	3	3		1, 3	3	3	1, 3

C.4 Assessment of Curricular Effectiveness: Using your emphasis area's curriculum map and the evidence collected from the assessment of student learning, outline your emphasis area's intended steps for improving student learning. Include any proposed changes to the curriculum that may be necessary.

Our emphasis program area is biology. A deficiency noted from the curriculum map is the absence of a biology class specifically for biology majors. We are looking into adding a majors class but are concerned with enrollment.

C.5 Assessment of Diversity in the Curriculum: Describe and evaluate your emphasis area's efforts to create a culture of diversity through the curriculum. In what ways is your emphasis area being intentional about embedding diversity-related issues in the curriculum?

From our curriculum map, our science emphasis classes in the program do not address cultural diversity. However, this need will be met as students take the program required general education courses outside of biology.

C.6 Use of Continuous Assessment for Educational Effectiveness: Describe and evaluate the process that your emphasis area uses to annually evaluate the quality of curriculum and to assess student learning. Document how your emphasis area has used its assessment findings to impact area decisions. In what ways is this process effective toward making effective educational decisions? In what ways should the process change?

Our program relies on semester course assessments and annual program assessments to review and assess the quality of curriculum. Students must meet set benchmarks outlined in the course assessments, and instructors are asked to evaluate the SLOs using the benchmarks. Changes to instruction are considered bases on outcomes of these reviews.

Component D: Student Enrollment and Success

Table D.1 Student Enrollment: The following table includes fall enrollment data disaggregated by gender and ethnicity for the five most recent years. The ethnicity categories are based on IPEDS requirements. Therefore, International (non-resident alien) students will only be reported in this category regardless of their ethnicity.

As of Fall Census	2012-13		2013-14		2014-15		2015-16		2016-17		Totals
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	
Non-resident (International)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Asian	0	0	1	0	1	0	0	0	0	0	2
Black, non-Hispanic	0	0	0	0	1	1	0	0	1	0	3
Hispanic	0	1	1	2	3	1	8	1	5	2	24
American Indian or Alaska Native	0	0	0	0	1	0	0	0	0	0	1
Native Hawaiian / Other Pacific Islander	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Two or more races	0	0	0	0	0	1	0	1	0	0	2
Race/ethnicity Unknown	1	0	0	0	0	0	0	0	0	1	2
White, non-Hispanic	1	2	3	1	2	1	1	3	2	4	20
<i>Totals</i>	2	3	5	3	8	4	9	5	8	7	

D.2 Recruitment and Enrollment: Using the evidence provided, discuss your emphasis area's enrollment trends over the past five years, including any trends related to diversity. What events are happening within the profession, local or broader community that might explain enrollment trends? What does evidence suggest might be future enrollment trends for your area over the next 3-5 years? What, if any, changes to recruitment strategies would benefit the area so that it attracts a sufficient number of students who are a good fit?

We've noted a positive trend in minority students likely due to the Louis Stokes Alliances for Minority Participation (LSAMP) Program, a STEM program coordinated through Kansas State University STEM and BRIDGES to the Future, a grant funded by the National Institutes of Health to represent underrepresented students enrollment into biomedical and behavioral science programs at Kansas State University.

We continue to recruit minority students with the STEM and BRIDGES program. We've recently began offering science major scholarships. Through the scholarships offered in the biology program, we're recruiting students interested in biology and pre-professional majors. The BRIDGES program scholarship requires the student scholar to assist with activities of the department.

For area junior and senior high school students, we offered an opportunity via Discovery Day, fall 2017, to meet with the biology program instructors to encourage enrollment in the biology program. Instructors have also been involved with recruitment at the local high school.

D.3 Student Fit with Program Mission: Using the student data provided, analyze the quality of students typically enrolled in the emphasis area. What are the student qualities sought by the emphasis area and to what degree do students and graduates exemplify those qualities? What changes, if any, are desired in the type of student enrolled in the emphasis area?

Our emphasis area supports mostly white and Hispanic males and females. Students entering professional fields often are biology majors. No changes are needed at this time.

D.4 Student Organizations: Identify and describe any national professional, honorary, other student organizations and/or activities sponsored by the department or faculty members in the emphasis area which enrich a student's educational experience.

Math and science club, STEM, and BRIDGES. Through advising we discuss career planning with students.

D.5 Student Assistance: Describe any special assistance or services provided by the department for your students (e.g., grants, scholarships, assistantships, tutorial help, job placement, advising and career planning, and awards), and in particular any services provided by the department for students with special needs, which facilitate student success.

Faculty participated in tutoring in the student support center for the 2016-2017 year.
We offer scholarships through math and science club, STEM, and BRIDGES programs, and sigma mu.
We also encourage and recommend students as tutors.

D.6 Student and Alumni Achievement: Since the last program review, how have current students and/or alumni exemplified the mission and purpose of the emphasis area? In addition to discussing data produced above, this may include achieving influential positions, engaging in service or practice, acquiring advanced degrees or other significant scholarly accomplishments.

Instructor Shelli Lalicker, graduate of GCCC 1989, is now employed as a qualified instructor at GCCC.
Biology major students presented research conducted at GCCC to an audience at a conference in Washington, D.C.

Table D.7 - GPA Trend Analysis by Ethnicity: Data in the following table reflect the cumulative GPAs of students in the emphasis area compared to the overall institution (excluding new students without a GPA), disaggregated by ethnicity, for the five most recent years of fall enrollment. Fall enrollment data is a snapshot of enrollment as of Fall census.

GPA Trend										
	2012-13		2013-14		2014-15		2015-16		2016-17	
	Average GPA in major/program	GCCC Avg	Average GPA in major/program	GCCC Avg	Average GPA in major/program	GCCC Avg	Average GPA in major/program	GCCC Avg	Average GPA in major/program	GCCC Avg
Non-resident (International)										
Asian	n/a	n/a	3.912	3.215	3.955	3.151	n/a	n/a	n/a	n/a
Black, non-Hispanic	n/a	n/a	n/a	n/a	2.627	2.458	n/a	n/a	2.83	2.433
Hispanic	1.04	2.696	2.218	2.76	2.461	2.744	2.563	2.817	2.428	2.784
American Indian or Alaska Native	n/a	n/a	n/a	n/a	1.656	3.224	n/a	n/a	n/a	n/a
Native Hawaiian / Other Pacific Islander	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Two or more races	n/a	n/a	n/a	n/a	3.22	2.815	3.103	2.68	n/a	n/a
Race/ethnicity Unknown	2.815	2.547	n/a	n/a	n/a	n/a	n/a	n/a	0.579	3.18
White, non-Hispanic	3.364	3.069	3.054	3.123	2.4	3.077	2.705	3.176	2.621	3.197
Female	3.09	2.952	3.462	2.968	2.902	2.971	2.761	3.065	3.061	3.064
Male	2.589	2.829	1.824	2.853	1.979	2.8	2.428	2.862	1.663	2.826

Table D.8 - Completions Analysis by Ethnicity: The completions table includes emphasis area completers disaggregated by gender and ethnicity for the five most recent completion cycles. A completion cycle includes graduates from the program between July 1st and June 30th of each year. The ethnicity categories are based on IPEDS requirements. Therefore, International (non-resident alien) students will only be reported in this category regardless of their ethnicity.

Student Diversity—Completions**										
	2012-13		2013-14		2014-15		2015-16		2016-17	
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
Non-resident (International)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Asian	0	0	0	0	1	0	0	0	0	0
Black, non-Hispanic	0	0	0	0	1	0	0	0	0	0
Hispanic	0	0	0	0	1	0	1	0	0	0
American Indian or Alaska Native	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Native Hawaiian / Other Pacific Islander	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Two or more races	0	0	0	0	0	0	0	1	0	0
Race/ethnicity Unknown	1	1	0	1	0	0	1	0	0	0
White, non-Hispanic	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

*For purposes of these data, program refers to degree-granting, credential, certificate, and licensure emphasis areas.

**Data are based on past federal IPEDS reports. Whenever possible, areas should rely on the official IPEDS data. Given past variations in data collection report dates (e.g., inclusion of summer graduations), however, emphasis areas may supplement and elaborate on this exhibit with data they have kept internally.

D.9 - Evidence of Successful Completion: The following tables provide year-to-year retention rates, graduation rates, and time-to-degree rates for the five most recent year's data. Retention and graduation rate tables include individual year counts and percentages as well as five-year averages of counts and percentages. The time-to-degree table includes the number of completers within the completion cycle and the median time to completion in years. A completion cycle includes graduates from the emphasis area between July 1st and June 30th of each year. Emphasis areas may provide other sources of data or evidence to demonstrate student success; please specify timeframes used in this analysis.

Table D-9a – retention rates

One-year retention rates (Fall to Fall)											
5-year average		Fall 2012		Fall 2013		Fall 2014		Fall 2015		Fall 2016	
# in Cohort	% retained	# in Cohort	% retained	# in Cohort	% retained	# in Cohort	% retained	# in Cohort	% retained	# in Cohort	% retained
54	42.59%	5	40.00%	8	25.00%	12	58.33%	14	42.86%	15	40.00%

Table D-9b – graduation rate (150% of time)

Program 3-year graduation rates												
5-year total			Entering cohorts Fall semester									
			2010		2011		2012		2013		2014	
% Graduated	# in cohort	# Graduated	% graduated	# in cohort	% graduated	# in cohort	% graduated	# in cohort	% graduated	# in cohort	% graduated	# in cohort
19.51	41	8	12	33.33 %	4	0.00 %	5	20.00 %	8	12.50 %	12	16.67 %

Table D-9c – Average semester credit hours for program graduates

Program Average Semester Credit Hours at Graduation														
Academic Year Graduates – Average Institutional and Transfer In Hours														
2012			2013			2014			2015			2016		
# Grad	Avg Inst SCH	Avg Tsf SCH	# Grad	Avg Inst SCH	Avg Tsf SCH	# Grad	Avg Inst SCH	Avg Tsf SCH	# Grad	Avg Inst SCH	Avg Tsf SCH	# Grad	Avg Inst SCH	Avg Tsf SCH
2	57.5	29.5	1	69	0	3	55.33	26.33	3	70.33	0	0	NA	NA

Table D-9d – program graduates time to degree

Time to degree (Exiting cohort) (July 1 – June 30)									
2012-13		2013-14		2014-15		2015-16		2016-17	
Median Time (years)	# Graduated	Median Time	# Graduated	Median Time	# Graduated	Median Time	# Graduated	Median Time	# Graduated
1.00	2	2.00	1	1.00	3	1.00	3	0.00	0

Note: The time to degree cohorts are established at the time of graduation and are based on the students that graduated from the program within the year specified.

D.10 Retention and Student Success Analysis: Summarize and evaluate the effectiveness of the emphasis area’s recruitment and retention efforts as it relates to enrolling and graduating students who fit the mission of the emphasis area. Identify any areas in need of improvement for producing successful students. In the analysis, address the following elements:

- a. What does the evidence from above data suggest regarding how well your emphasis area is producing successful students?
- b. List specific events/activities that the emphasis area uses to increase student retention and degree completion.
- c. Provide your best practices for tracking students who leave the emphasis area (without completing) and any follow up you may do with these students to determine why they have left.
- d. Identify any areas in need of improvement for producing successful students.

- a. Based on the evidence we are not graduating a high number of biology program students.
- b. We are offering biology scholarships (STEMS, BRIDGES, Math and Science club) in order to improve enrollment and retention.
- c. Currently there is no plan. In the future science faculty are considering options such as interviews or an exit survey.
- d. We need to develop a procedure for maintaining communication with students who leave the program prior to graduation.

Component E: Academic Opportunities and Class Size

Table E.1 – Instruction Type: The following table includes the number of students enrolled by instruction types available through your department/program. Please add any additional data as applicable.

Special Study Option	Number of Students Who Participated/Number of SCH Generated for each Study Option Offered by the Program									
	Academic Year 2012-13		Academic Year 2013-14		Academic Year 2014-15		Academic Year 2015-16		Academic Year 2016-17	
	# of students	Total SCH	# of students	Total SCH	# of students	Total SCH	# of students	Total SCH	# of students	Total SCH
Outreach program (aggregate)	na	na	na	na	na	na	18	72	na	na
Concurrent Enrollment (Outreach-HS)	20	100	41	205	56	280	52	260	19	95
On-line courses	250	1120	245	1112	205	915	215	964	277	1232
Dual Credit Enrollment (Outreach-HS)										
On-line courses-GCCC										
On-line courses-EDUKAN										
On-line courses-Contract										
Face to Face courses	547	2491	553	2516	550	2531	602	2760	633	2932
Internships/practica										
Independent study, tutorials, or private instruction										
Developmental courses										

Table E.2 - Class Size Analysis: Based on the definitions provided below, the following table includes student counts in each class-size category for the past 5 years. Data are reported for the number of *class sections* and *class subsections* offered in each class size category. For example, a lecture class with 100 students which also met at other times in 5 separate labs with 20 students each lab is counted once in the “100+” column in the Class Sections column and 5 times under the “20-29” column in the Class Subsections table. Note: data provided by IEPR for this table are from the annual class section report included in the Common Data Set and reflect annual class enrollment from the fall through the following summer semesters.

Class Sections: A class section is an organized course offered for credit, identified by discipline and number, meeting at a stated time or times in a classroom or similar setting, and not a subsection such as a laboratory or discussion session. Class sections are defined as any sections in which at least one degree-seeking student is enrolled for credit. The following class sections are excluded: distance learning classes and noncredit classes and individual instruction such as dissertation or thesis research, music instruction, independent studies, internships, tutoring sessions, practica, etc. Each class section is counted only once.

Class Subsections: A class subsection includes any subdivision of a course, such as laboratory, recitation, discussion, etc.; subsections that are supplementary in nature and are scheduled to meet separately from the lecture portion of the course. Subsections are defined further as any subdivision of courses in which degree-seeking students are enrolled for credit. The following class subsections are excluded: *noncredit* classes as well as individual instruction such as, music instruction, or one-to-one readings. Each class subsection is counted only once.

**E2(v2) Class Size Analysis -
BIOL.AS**

	9 or Less	10 - 19	20 - 29	30 - 39	40 - 49	50 - 99	100 +	Totals
2012 General Class Sections	3	8	18	0	0	0	0	29
2013 General Class Sections	3	6	19	0	0	0	0	28
2014 General Class Sections	2	7	19	0	0	0	0	28
2015 General Class Sections	3	11	18	0	0	0	0	32
2016 General Class Sections	5	6	22	0	0	0	0	33
2012 Edukan Class Sections	37	6	0	0	0	0	0	43
2013 Edukan Class Sections	44	5	1	0	0	0	0	50
2014 Edukan Class Sections	42	3	0	0	0	0	0	45
2015 Edukan Class Sections	47	0	1	0	0	0	0	48
2016 Edukan Class Sections	52	2	2	0	0	0	0	56
2012 High School Class Sections	1	1	0	0	0	0	0	2
2013 High School Class Sections	1	1	1	0	0	0	0	3
2014 High School Class Sections	2	0	2	0	0	0	0	4
2015 High School Class Sections	1	1	0	1	0	0	0	3
2016 High School Class Sections	1	2	0	0	0	0	0	3
Totals	244	59	103	1	0	0	0	

Table E.3 Non-credit Courses: If your department offered non-credit courses during the past 5 academic years, please use the chart below to list the course(s) and the number of students who *completed* the course.

Non-credit Courses					
Academic Year	2012-13	2013-14	2014-15	2015-16	2016-17
Course	# of students completing	# of students completing	# of students completing	# of students completing	# of students completing
NA					

E.4 Academic Opportunities and Class Size Analysis: Using the evidence provided in all exhibits above, discuss the trends in the emphasis area's class sizes and, if relevant, the impact on student learning and emphasis area effectiveness. Note, in particular, downward or upward trends in class size and provide justification for those trends. When possible, identify the impact of special study options and individualized instruction on emphasis area quality. Make certain you address, if appropriate, all off-campus and on-line courses and/or programs.

In 2016/2017, fewer outreach classes were offered. A potential reason for low enrollment in the outreach classes is that the outreach class enrollment is competing with online class enrollment. Class size remained relatively stable across all means of delivery. The total number of sections taught on campus continues to increase. EduKan sections of nine or less appear to be the most popular option for online delivery. This might be because of the large work load required in a lab science course. In the legend there are WILD.AGS and WILD.AS. I have no idea where these came from, who teaches them and how they fit into the data.

Component F - Student and Constituent Feedback

F.1 Student Feedback: Summarize available findings that relate to emphasis area quality from student surveys, focus groups, exit interviews or other student sources. Include their perceptions of how well the emphasis area met their needs, the area's strengths and weaknesses, and suggestions for improving the emphasis area. Describe the ongoing mechanisms that are in place to acquire and utilize student feedback regarding emphasis area quality. What changes need to be made to meaningfully incorporate students into the program review process?

Student feedback is provided and evaluated in course reviews, and is used for continuous instructional improvement. Each course goes through a course review each semester. Student comments in the course reviews are used to enhance improvement by developing individualized course plans by the instructor. These plans are evaluated with the subsequent course review.

F.2 Alumni Feedback: Summarize the results from available alumni surveys, focus groups, or advisory committees as it relates to emphasis area quality. When possible, include data indicating how well the emphasis area met the alums' goals and expectations, how well they think the emphasis area prepared them for next steps professionally and academically, and any emphasis area changes they recommend.

The biology emphasis area does not seek alumni feedback.

F.3 Employer/Supervisor Feedback: Summarize the results from available surveys, job performance appraisals, intern or clinical supervisor evaluations, or other relevant data as it relates to student preparation or competence or emphasis area quality. Comment on the level of preparation given to students as a result of the emphasis area.

The biology emphasis area does not seek employer/supervisor feedback.

F.4 Constituent Feedback Analysis: Analyze the emphasis area's overall effectiveness at utilizing student, alumni, and supervisor feedback as part of the assessment process. How well does the emphasis area solicit and respond to feedback, as well as communicate results of program review to its constituents, especially its current students?

The biology emphasis area does not seek constituent feedback.

Component G - Resources and Institutional Capacities

G.1 Information Literacy and Library Resources: Information literacy can be understood as the ability to “recognize when information is needed and...to locate, evaluate, and use effectively the needed information” (from the Association of College and Research Libraries). Describe the degree to which library and information resources are adequate and available for students and faculty members in your department (onsite and remotely). What level of support and instruction is available to students and faculty in the areas of technology and information literacy? Provide examples of how students are meeting information literacy competencies and discuss the level of competency exhibited by students in the emphasis area. What resources are needed for your emphasis area in this area?

Information literacy is evaluated by assessing 25% of the SLO each semester for a given course. Most science instructors use a 70% competency level
 We offer students support through the CLC with separate study rooms where anatomy and physiology students can use models, literature, and have access to computers.
 Classes use Canvas interface with students. Anatomy and physiology for health-care students use Pearson MyAPLab. GCCC provides Microsoft programs and a Read and Write program that students can take advantage of.
 Students must use technology to find information for writing assignments and presentations for various courses.

G.2 Resource Analysis: Discuss the process used by emphasis area faculty to secure needed resources for the emphasis area. Include innovative strategies that have resulted in successful resource acquisition. Evaluate the emphasis area’s effectiveness at securing necessary resources to ensure emphasis area quality. What systems or processes are working well, and what improvements could be made to make non-budgeted resource acquisition successful?

Garden City Community College provides thousand dollar grants and Mary Jo Williams grants to secure resources. Some faculty have been approved for grants and others have not. Instructors utilize local resources:
 Lee Richardson Zoo for displays, models, artifacts, etc.
 Endowment mini grants: slides
 Mary Jo Williams: Mass Spec and IR

Table G.3 - Budget and Enrollment Analysis: Insert emphasis area data from at least five academic years. Contact Deans for data.

Academic Year	Operational Budget (do not include salaries)	+/- % change in budget from prior year	Program SCH Enrolled	+/- % change in SCH from prior year	+/- % change in income from prior year
2012-13	316742	n/a	-	n/a	n/a
2013-14					
2014-15					
2015-16					
2016-17					

G.4 Analysis of Acquired Resources: Since the last program review, identify each major emphasis area resource acquisition and its direct or indirect impact on emphasis area growth or improved quality. Discussions of impact should include the measureable effect of acquisitions such as new faculty, staff, equipment, designated classroom/office space, non-budgeted monies, awarded grants, scholarships, and other acquisitions by the emphasis area or faculty on student learning, enrollment, retention, revenue or other emphasis area indicators of educational effectiveness. Justify the program's use of resources through this analysis. When appropriate, discuss resource acquisitions that did not positively impact the emphasis area.

As mentioned in G.2. the department has purchased biological slides and other chemistry items. No extra money was used to increase lab or office space, hire new faculty or staff. There is no measureable data that demonstrates the purchase of these items has effective educational effectiveness.

G.5 Resource Allocation Relative to Capacity: Analyze trends in the emphasis area's operational budget as it relates to emphasis area enrollment, emerging needs, and emphasis area goals. Has the budget increased or decreased in proportionate response to emphasis area growth? Using evidence obtained from this review and other data, discuss your emphasis area's enrollment trends and/or revenue streams as it relates to non-budgetary resource allocation. In other words, if an emphasis area has reduced enrollment or income, what steps have been taken to correct resource allocations or expenses; if an emphasis area has increased in size or income, what resources or capacities are needed to meet new demand? What is the impact of budget changes on educational effectiveness? For each necessary capacity, rank order its importance relative to other needs and estimate its cost. Describe planned efforts to obtain funding for these needed capacities.

Oddly enough our operation budget is not a concern. We have plenty of money accumulated via course fees. As mentioned throughout this review the GCCC endowment offers \$1,000 mini-grants to faculty and the Mary Jo William Foundation money for large ticket items. Mary Jo Williams money was used with the past 5 years to purchase 2 3D printers.

Summary Conclusions

Summarize the major findings of the program review as it relates to both the strengths of the emphasis area and areas in need of improvement. Include in this discussion any "intangibles" or assessments that you wish to discuss that were not requested in the Program Review Report. Make sure your conclusions are based on evidence

The biology emphasis area offers students an excellent selection of courses that transfers well to Kansas regent schools. Not mentioned in this program review, but new this school year, is an environmental science class that also transfers to Kansas regent schools.

Our faculty have master's degrees and many have practical experience in their fields. Although there has been much faculty turn over, GCCC still employs excellent instructors. Instructors seek alternative funding methods such as GCCC endowment mini-grants (\$1,000) and Mary Jo Williams Grant (Large Ticket Items). In the past 5 years we have received grants to update our histological slides collection, anatomy and physiology models, and also two 3D printers.

With the addition of an active science and math club, Bridges and LSAMP programs enrollment in the biology emphasis continues to improve. This school year a group of biology majors presented research at a conference in Washington, DC. The biology emphasis instructors are active participants in the math and science club and look to continue active participation in the future.

Moving forward, we are exploring the possibility of offering a biology for science majors. The current enrollment might not support this; however, if biology emphasis continues to climb this would be a reasonable course of action. This is the biology emphasis area's first attempt at a program review under this current format and we look forward to using this tool in other program areas.

Also, as seen in sections F2-4, the biology emphasis area does not seek feedback from alumni, employers or supervisors, or constituents. The biology emphasis area would like to see this change and start getting feedback regarding the biology graduates.

GCCC is a financially stable institution with excellent faculty and a growing student population. From here you can go anywhere!

Program Emphasis Area Goals with Recommended Action Steps

Emphasis Area Name: BIOLOGY Date: FALL 2017

Include this document with your Program Review Report. Considering the totality of the program review report, use the table to set goals that, if met, would result in improved student learning, increased enrollment, retention, revenue, or other emphasis area indicators of success. Set reasonable, measurable, and achievable goals and identify clear action steps needed to obtain the goal. **This information serves as the basis for the Dean's Administrative Response, as well as the Mid-Cycle Status Report and ongoing strategic planning process.**

(Attach **this** year's "Program Goals with Recommended Action Steps" as Template Appendix A in your emphasis area's **next** program review. See "Schedule of Future Program Reviews" document, next page, for date of your next review.) You may add rows to this table as needed.

Component Area	Specific Goal or Desired Outcome to Maintain or Improve Program Emphasis Area Quality.	Activity or Strategies to Achieve Goal (include responsible person)	Proposed start and end dates	Progress Metrics and timeframe for measurement	Resource requirement (in-kind & direct)	Priority of Resource Allocation (High, Medium, Low.)	Anticipated Impact on Educational Effectiveness & relation to GCCC Skills
A - Mission and Context	Provide a biology majors class that transfers KS regent schools	Participate in KBOR articulation meetings	Continuing	Measured in fall semester of each continuing year	Travel expenses	High	High impact allows GCCC to offer transferable classes to four-year universities
B - Faculty Characteristics and Qualifications	Maintain faculty with a minimum of a master's degree in emphasis area or master's degree plus 18 hours in emphasis area	Higher qualified faculty as needed	Continuing	As needed	Maintain competitive salaries	High	Qualified instructors contribute to the GCCC effectiveness and skills
C - Quality of Curriculum and Student Learning	Evaluate the need for a biology-for-majors course	Collect data of number of biology majors	Fall 2018	Complete by spring 2019	Collect data	Low	Offer a highly transferable skill for majors that would incorporate the essential skills from KBOR
D - Student Enrollment and Success	Increase via area recruiting or other on campus activities (discovery day) participation in STEMS and	Recruitment at area high schools	FALL 2018	FALL 2019	Travel expenses and faculty time	Medium	Increased enrollment

Template Appendix A

Program Goals with Recommended Action Steps—From Previous Review

Attach this document with your Program Review Report for Section A.2 above.

Template Appendix B

Administrative Response Sheet—From Previous Review

Attach this document with your Program Review Report for Section A.2 above.

Template Appendix C

Annual Assessment Reports—Since Last Program Review

Attach the program's Annual Reports for the last 5 years or since the last program review.

Template Appendix D

Strategic Plan and Status Reports Since Last Review

Attach the program's Strategic Plan and Status Reports for the last 5 years or since the last program review.