WICHITA STATE UNIVERSITY

Program Review

Self-Study Template

Revised 11-1-2019

Academic unit: **Medical Laboratory Sciences** College: **Health Professions**

Date of last review **SP 2017** Date of last accreditation report (if relevant) **SP 2014**

List all degrees described in this report (add lines as necessary)

Degree: **B.S. in Medical Laboratory Sciences** CIP* code: **51.1005**

Degree: _____ CIP* code: _____

Degree: _____ CIP* code: _____

Degree: _____ CIP* code: _____

*To look up, go to: Classification of Instructional Programs Website, http://nces.ed.gov/ipeds/cipcode/Default.aspx?y=55

Certificate (s): _____

Faculty of the academic unit (add lines as necessary)

(If interdisciplinary, please list your core teaching faculty and department name if external to academic unit)

NAME (List department –if external to unit)	SIGNATURE	TENURE OR NON-TENURE TRACK
Diana Cochran-Black	Diana Cochran-Black	Tenured
Laurie Alloway	Laurie Alloway	Non-Tenure
Reitha Deiter	Reitha Deiter	Non-Tenure
Sarah Nickel	Sarah Nickel	Tenure
Noelle Steen	Noelle Steen	Non-Tenure

Submitted by: Diana Cochran-Black, Chair and Associate Professor Date 5/18/2020

(Name and title) (Date)

Part 1: Departmental Purpose, Relationship to the University Mission and Strategic Plan engagement

Please list the program purpose statement. Explain in 1-2 concise paragraphs the role of the program and tie them to the University mission (printed below) and strategic plan.

The mission of Wichita State University is to be an essential ***educational, cultural and economic driver*** *for Kansas and the greater public good.*

A. Program Purpose Statement - formerly Mission

The purpose of the MLS program is defined by the following mission statement:

The mission of the Medical Laboratory Sciences program is to improve the health of the community by :

- Educating resourceful, adaptable and well-prepared individuals to serve and lead the medical laboratory sciences profession.
- Contributing to the body of knowledge for Medical Laboratory Sciences, and
- Facilitating life-long learning for Medical Laboratory Scientist.

B. The role of the Program(s) and relationship to the University mission:

The program strives to contribute to the mission of the university by assisting the university to meet the goals of the WSU Strategic Plan. This includes promoting student centeredness, embracing interprofessional education and interdisciplinary research and advancing partnerships with clinical affiliates. Students in the Medical Laboratory Sciences Program complete a semester of applied learning experiences in healthcare facilities across Kansas. These experiences are the capstone of the curriculum, which begins with introductory general education and program prerequisites, continues with didactic and student laboratory preparation on WSU campus, and ends with an applied learning experience in a healthcare facility. Through applied learning experiences both faculty and students remain closely associated with healthcare facilities in Wichita and across Kansas as well as the Kansas City metro area. Laboratory supervisors and directors of these facilities serve on the MLS Advisory Board and help align the program curriculum with current practices and policies. The program continues to require medical laboratory sciences students to participate in interprofessional community events through a program we call "Connect". Under guidelines, students design their own experiences with assistance from their peers. Over time, this program has developed into a dynamic process led by medical laboratory sciences student leaders. Connect evolves each semester with new student leaders and changes with healthcare in our community. Recently, the department has partnered with two other university departments to work collaboratively on a research project funded by the university. This collaboration is unique as it also involves and introduces students on the aspects of working as an interdisciplinary team.

C. *Has the purpose of the Program(s) changed since last review?* ☐ *Yes* ☒ *No*

If yes, describe in 1-2 concise paragraphs. If no, is there a need to change?

The purpose of the program has not changed but the learning outcomes to meet this purpose have changed. The laboratory scientist role in healthcare is constantly changing. This is due to the ever-changing health care environment and new innovations in laboratory testing such as the increase in the number of lab tests requiring knowledge of molecular diagnostic techniques.

D. *How does the Program support the university strategic plan?*

The program supports the university strategic plan by:

- Providing a high- quality education using didactic student laboratories and applied learning experiences under the standards of accreditation outlined by the National Accrediting Agency for Clinical Laboratory Sciences.
- Providing opportunities for community services and interdisciplinary practice in the professional curriculum.
- Capitalizing systematically on relevant existing and emerging societal and economic trends that increase quality educational opportunities.
- Promoting life-long learning and the pursuit of new knowledge through teaching, scholarship and service.
- Empowering students to define their own program of community services and interdisciplinary practice in the professional curriculum.
- Aligning program assessment with current national standards of our professional accrediting body, National Accrediting Agency for Clinical Laboratory Scientists (NAACLS).

Provide an overall description of your program (s) including any changes made since the last review?

The Bachelor of Sciences in Medical Laboratory Sciences prepares students to enter clinical laboratory positions for the assessment of markers of both health and disease. Students may apply to the program after successful completion of university general education and program prerequisites. Since the last review the number of credit hours in the professional program has been reduced from 53 to 52 credit hours to comply with KBORs mandate of a maximum of 120 hours for a bachelor's degree. The first 12 months of the program includes lectures and student laboratory sessions in all major areas of the clinical laboratory followed by a 5- month clinical practicum. Student laboratories are equipped with microscopes and other manual and automated laboratory equipment. During the clinical practicum semester, students participate in over 100 hours of clinical practice in one or more of our 25 clinical affiliates located in rural and urban areas of Kansas, Oklahoma and Missouri. Throughout the program, students participate in community healthcare events to develop and practice leadership skills. Most graduates find employment in clinical laboratories in Wichita and smaller communities in Kansas. Other graduates use the bachelor's degree to enter graduate programs in healthcare. In the past three years over 100% of MLS graduates have found relevant employment within 6 months of graduation or have gone on to complete advanced degrees. Faculty in the MLS program also provide instruction to other students in

the college and university. These courses include HP 203 and 303 (Medical Terminology) and HP 430 (Impact of Disease upon Global Events), an issues and perspective course that meets general education requirements.

While the broad goals and objectives of the program remain the same, course objectives evolve to reflect changes in clinical laboratory practice. Faculty and staff of the Medical Laboratory Sciences department strive to prepare students as competent Medical Laboratory Science professionals as defined by the program's local and regional community of interest and by National Board credential matrices. Students are provided with a curriculum which addresses and meets the demands of the changing technology and practice in the profession. The goal, objectives and outcome measures described below are developed through national accreditation guidelines and regional healthcare needs.

Goal: To prepare students as competent Medical Laboratory Scientists as defined by the program's local and regional community of interest and by National Board credentialing examination matrices.

Objective: Upon graduation, the student will demonstrate the ability to comprehend, apply and evaluate information relevant to the role of a medical laboratory scientist.

Outcome Measures: Outcome measures consist of the results of

- Comprehensive written examinations given at the completion of the program (minimum grade of 70%)
- National Board Credentialing examination by the American Society for Clinical Pathology (program pass rate equal to or greater than the national pass rate)
- Indication of satisfaction with program graduates by employers. Employers are surveyed at two- year intervals.

Objective: Upon graduation, students will demonstrate technical proficiency in all skills required to practice in the profession.

Outcome Measure: Outcome measures consist of the results of

- Ratings at or above minimal performance levels on clinical rotation checklists completed by clinical instructors at the end of the rotation.
- Indication of satisfaction with program graduates by employers. Employers are surveyed at two- year intervals.

Objective: Upon graduation, students will demonstrate the ability to effectively communicate and interact with patients, physicians and other health professionals, in a manner consistent with employer standards.

Outcome Measures: Outcome measures include the results of

- Summative affective evaluations completed by clinical rotation instructors. Evaluations are conducted at the end of each clinical rotation.
- Indication of satisfaction with program graduates by employers. Employers are surveyed at two- year intervals.

Part 2: Faculty Quality and Productivity as a Factor of Program Quality

The quality of the program/certificate as assessed by the strengths, productivity, and qualifications of the faculty in terms of scholarly/creative activity and service. (Refer to instructions in the WSU Program Review Instructions for more information on completing this section.

Complete the table below for the faculty who support the program (all faculty who signed or should have signed the coversheet).

Table 1 Departmental Outputs

Scholarly Productivity	Number Journal Articles		Number Presentations		Number Conference Proceedings		Performances			Number of Exhibits		Creative Work		No. Books	No. Book Chaps.	No. Grants Awarded or Submitted	$ Grant Value
	Ref	Non-Ref	Ref	Non-Ref	Ref	Non-Ref	*	**	***	Juried	****	Juried	Non-Juried				
2016-2017				4													
2017-2018				7	4											1	500
2018-2019			4	7											1	2	21,536
2019-2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

*Winning by competitive audition. **Professional attainment (e.g., commercial recording). ***Principal role in a performance. ****Commissioned or included in a collection.

A. ***Briefly explain the standards in place in your college/department for the evaluation of your faculty research/scholarship/creative activity.* ***If an interdisciplinary program, please report on the program where faculty research has been recorded and provide narrative related to productivity.***

The Medical Laboratory Sciences department implemented the Uniscope model with the 2018 Faculty Activity Records (FAR). The tenured faculty member of the department is the chair/program director and has a 50% teaching and 50% administrative role. The tenure track faculty member has an 80% teaching, 15% research and 5% service appointment. The non-tenure track faculty have a 90% teaching, 5% scholarly activity and 5% service appointment. Quality of faculty teaching is evaluated through SPTE evaluations and discipline specific scores on the ASCP- Board of Certification exam. Scholarly activity and service are evaluated using the Uniscope model with quantity based on the aforementioned workload percentages.

B. *Provide a brief assessment of the quality of the faculty/staff using the data from the table above. Include details related to productivity of the faculty including scholarship/research and creative activity and services. (i.e., some departments may have a few faculty producing the majority of the scholarship), service, efforts to recruit/retain faculty, departmental succession plans, etc.*

MLS program faculty members include one tenured, one tenure track and three non-tenure track faculty with 50% or greater teaching responsibility. All faculty members have MLS certification and earned graduate degrees in the field or in related fields. All faculty members have experience as clinical laboratory practitioners in the subject matter that they teach. As full- time faculty, individuals are expected to teach at the maximum level, 12 credits per semester, as designated by WSU Policies and Procedures. The quality of faculty teaching is assessed through standardized teaching evaluation surveys completed by students, discipline specific scores on the ASCP Board of Certification exam, and discipline specific clinical instructor evaluations on student progress. The department offers funds for continuing education to maintain certification and for remediation based on the results of evaluation documents.

MLS faculty provide instruction in the program as well as program prerequisite courses and a general education course. These tasks allow faculty to interact with pre-medical laboratory sciences students before the admissions process. Program faculty members also teach HP 203 and 303 (Medical Terminology), HP 430, an issues and perspective course that meets general education requirements and 6 badge courses for the university. Through these courses, faculty members develop inter-professional perspectives with business, liberal arts, education and other programs in the university. Since program faculty members teach HP-prefixed courses, as well as MLS-prefixed courses, FTE for program faculty is not accurately reflected in table 5C from OPA. The true faculty SCH production for MLS faculty is listed in the following table. This demonstrates SCH production for MLS faculty is above the reported SCH production for other faculty in the college and the university.

Teaching Load*	Credit hours (fall semester)		Total SCH (fall semester)	# faculty	SCH/ FTE	Table 5c Reported FTE*
	Program SCH *	College SCH taught by MLS faculty				
2015	959	1045	2004	5	409	198
2016	956	897	1853	4	463	241
2017	862	946	1808	5	362	173

* Source: WSU Reporting Services

In addition to heavy teaching loads, program faculty members pursue continuing education to maintain certification, faculty development, scholarly activities and service opportunities. Scholarly and service activities for the department include writing grants for student participation in the ASCLS-Kansas annual meeting, providing continuing education and workshops for MLS professionals and involvement in

recruitment, retention and interprofessional activities for the department, college and university. In addition, faculty are members of university, college and department committees. Faculty members serve on the boards of professional organizations and consult with local clinical laboratories as needed. The tenure track faculty member in the department is currently involved in five interdisciplinary research projects. Both the chair and the tenure track faculty member are advisors for student research projects and are currently involving MLS students in an interdisciplinary research grant with biomedical engineering and human performance departments. Faculty are actively involved in recruitment activities through Black and Yellow Days, DSI, interactive high school presentations, WSU's Honors, MLS department open house events and through the creation of badge courses. The department's retention activities are in alignment with the university's SEM plan through the utilization of the Student Early Alert System (SEAS) and through program initiatives to maintain a 100% graduation rate over the last three years. In addition, faculty in the MLS department are content experts in each of their MLS specialty area. Sarah Nickel holds a masters in immunology/molecular studies, Diana Cochran-Black has a specialty certificate in hematology and Laurie Alloway has specialty certification in clinical chemistry.

Part 3: Academic Program(s) and Emphases

Analyze the quality of the program as assessed by its curriculum and impact on students for each program (if more than one). Attach updated program assessment plan(s) as an appendix

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A. Undergraduate programs:

1. Please review Table 8 provided by the Office of Planning and Analysis. Is the program ACT below 20 (triggered by KBOR defined Minima)? ☐ Yes ☒ No

   If yes, please explain the average ACT scores for your students.

B. Graduate programs:

1. Please review Table 9 provided by the Office of Planning and Analysis. Is the program GPA below the university average? ☐ Yes ☐ No

If yes, please explain the average GPA of your graduate students.

C. Accreditation status: If accreditation is previously noted, please add:

Accrediting Body: National Accrediting Agency for Clinical Laboratory Science

Next Review Date: **Fall 2020**

Commendations and concerns from the last review: **Accredited for seven years with no citations.**

D. Assessment of Learning Outcomes

1. Complete the table below with program level data. Identify the principal learning outcomes (i.e., with what skills does your Program expect students to graduate) and provide aggregate data on how students are meeting those outcomes

You may add an appendix to provide more explanation/details. (If specialty accreditation has been conferred within 18 months of this process, programs can append the information from the accreditation document to this self-study and cite, with page number, the appropriate information. If specialty accreditation has not been affirmed within 18 months, please complete the table or submit an updated version of your accreditation information. If not accredited, please complete the table below.)

Table 2 Learning Outcome Assessment					
Learning Outcomes (most programs will have multiple outcomes)	Assessment Type (e.g., portfolios, exams)	Assessment Tool (e.g. rubrics, grading scale)	Target/Criteria (desired program level achievement)	Results	Analysis
Students will have a basic understanding of human anatomy.	*Comprehensive Exam*	*Rubric*	*80% of students will score 80% Or <*	*90% of students scored 80% or better.*	*Proficient knowledge of anatomy has been demonstrated.*
Knowledge level as defined by program faculty	Comprehensive Exams	Program-administered comprehensive exams during clinical practicum semester	100% of students will score a minimum grade of 70% on each of the major areas of the clinical laboratory by the 4th comprehensive exam.	% of students passing all areas by 4th exam: Fall 2017: 56% Sp 2018: 80% Fall 2018: 38% Sp 2019: 69% Fall 2019: 80%	Making progress but have not met target of 100%. Continue making improvements to meet target.
Knowledge level as defined by National Credentialing Agency	National Certification Exam	ASCP Board of Certification Exam	Program's pass rate certification exam at or higher than national pass rates and higher than NAACLS benchmark of 75%	**Program**/National 2017: **89%**/79% 2018: **93%**/79% *2019: **96%**/82% *current pass rate for 25/26 students. 2 students have not taken exam.	Acceptable; continue monitoring

Skills evaluation as evaluated by clinical instructors at applied learning sites	Applied learning Checklists	Ratings: 1-4 4 = Exceeds standard 3= Meets standard 2 = Marg. performance 1 = Below standards	100% of students will have ratings of 3 or 4 on all evaluated items.	2017: 100% met target 2018: 93.5% met target 2019: 100% met target	2017: All students met target. 2018: 2 students did not meet target and required remediation to meet graduation requirement 2019: All students met target
Summative affective/ attitude evaluations completed by clinical instructors	Applied Learning Professionalism Checklist	Rating or above 3	100% of students will have ratings on all performance items above the minimal level	2017: 100% met target 2018: 100% met target 2019: 100% met target	2017 : Acceptable results continue monitoring 2018: Acceptable results continue monitoring 2019: Acceptable results; continue monitoring
Employer satisfaction of WSU- MLS program graduates	Survey of employers of program graduates administered at two -year intervals.	Ratings from Excellent to Poor	100% Excellent to good ratings on all surveyed parameters.	2018 survey demonstrated 100% Excellent to good ratings for program graduates in all areas except problem solving ability	Continue responding to suggestions of employers to improve program.

Definitions:
Learning Outcome: Learning that should result from instruction.
Assessment Type: Type of assessment used to identify, collect, and prepare data to evaluate the achievement of learning outcomes (e.g., a writing project evaluated by a rubric).
Assessment Tool: Instrument used to evaluate the achievement of learning outcomes.
Criterion/Target: Percentage of students expected to achieve the desired outcome for demonstrating program effectiveness (e.g., 90% of the students will demonstrate satisfactory performance on a writing project).
Result: Actual achievement on each learning outcome measurement (e.g., 95%).
Analysis: Determines the extent to which learning outcomes are being achieved and leads to decisions and actions to improve the program. The analysis and evaluation should align with specific learning outcome and consider whether the measurement and/or criteria/target remain a valid indicator of the learning outcome as well as whether the learning outcomes need to be revised

2. Provide an analysis and evaluation of the data by learner outcome with proposed actions based on the results listed in Table 2. Data should relate to the goals and objectives of the program as listed in Part 1.

Evaluation of Outcome # 1 from Table 2:

Target: 100% of students will pass all areas on Program comprehensive exams within 4 attempts.

Semester	N	% of class passing all areas of comprehensive exams in ≤ 4 attempts	Pass Rate on BOC for students passing all areas in ≤ 4 attempts	Pass Rate on BOC for students requiring 5 attempts to pass all areas of comprehensive exams
Fall 2017	16	56%	100%	86%
Spring 2018	15	80%	100%	67%
Fall 2018*	16	38%	100%	77%
Spring 2019 **	13	69%	100%	75%
Fall 2019***	15	80%	100%	67%* In progress

Changes made each semester:

* 1.5 hour review sessions added to 3rd reflection meeting

** 1.5 hour review sessions started at 1st reflection meeting

*** 1.5 hour review sessions + review sessions with faculty during remediation week.

There is a direct correlation between passing all areas of the comprehensive exams by 4 or fewer tries and success on the BOC exam. Improvement is being made in the number of students passing all areas of the Program's comprehensive exams by the 4th attempt although still well below 100%. Have increased time for review sessions to 2.5 hours with Spring 2020 class.

Evaluation of Outcome #2 from Table 2:

Target: Overall Program pass rate above the National pass rate and above NAACLS benchmark of 75%

Semester	Number Taking BOC Exam	Program Pass Rate	National Pass Rate
Fall 2017	16	93%	79%
Spring 2018	15	93%	79%
Fall 2018	15	93%	79%
Spring 2019	13	92%	81%
Fall 2019	*13	*100%	83%

*As of 4/28/20- 2 students have not taken certification exam.

Success rate on the BOC exam for WSU-MLS graduates is above the national pass rate and above NAACLS benchmark of 75%. Program Pass rates are consistent over the last three years. Will continue "Reflection Friday" meetings with reviews and develop additional teaching materials and methods to achieve retention of program competencies

Evaluation of Outcome # 3 & 4 from Table 2:
Target: 100% of student will achieve the required performance level for all items on the skills and affective checklist administered by clinical affiliate instructors.

Semester	Number of Students	% achieving required performance on Skills and Affective Checklists in Applied Learning Courses	Graduation rate
Fall 2017	16	100%	100%
Spring 2018	15	*93.5%	*100%
Fall 2018	16	100%	100%
Spring 2019	13	100%	100%
Fall 2019	15	100%	100%

*2 students required remediation which delayed their graduation to Summer 2018

All MLS students are achieving required performance ratings on skills and affective checklists used to evaluate program competencies which equates to successfully completing clinical coursework and graduating from the program. In the spring of 2018, two students did not meet all competencies in the skills checklist in Immunohematology. These students required remediation with the course instructor to meet these competencies which delayed their graduation to summer 2018. Site visits were conducted at the corresponding clinical facilities where these students were assigned. Clinical and program faculty worked together to determine reasons for the failed competencies. No changes were made as it was determined that the failed competencies were more related to the individual student rather than the instruction of the required skill. Checklist are reviewed and updated each semester based on clinical faculty and student feedback.

Outcome # 5 from Table 2 evaluation is found in Table 3c: Employer Survey results.

E. Assessment of Student Satisfaction

Table 3a Student Learning Outcomes Comparison

Aggregate data supporting student success, by year, for the last three years (e.g., capstone, licensing/certification exam pass-rates)				
Year	N	Name of Exam	Program Result	National Comparison±
2017	29	American Society for Clinical Pathology Board of Certification Exam	89% Pass rate	79% Pass rate
2018	30	Same	93% Pass rate	79% Pass rate
2019	26*	Same	96% Pass rate* In progress	82% Pass rate
2020	NA	NA	NA	NA

The program's pass rates on the ASCP-BOC exam are well above the national pass rates and NAACLS benchmark of 75%. This signifies the program's curriculum content and teaching methods are effective in promoting success on national credentialing exams. This also equates to student satisfaction as passing the BOC increases their chances for employment

3. Use Table 3 and OPA Table 10 to provide analysis and evaluation using student majors' satisfaction (e.g., exit surveys from the Office of Planning and Analysis), capstone results, licensing or certification examination results (if applicable), employer surveys or other such data that indicate student satisfaction with the program and whether students are learning the curriculum (for learner outcomes, data should relate to the outcomes of the program as listed in 3d) to illustrate student satisfaction with the program and perceptions of program value.

Table 3b University Exit survey

Learner Outcomes related to student satisfaction, for the last three years, by completers of the program*					
Year	N	Name of Survey	Program Result - % satisfied or very satisfied	University Result - % satisfied or very satisfied	College Result - % satisfied or very satisfied
2016	25	University end-of-program exit survey	96	80.7	80.8
2017	30	Same	86.7	82.3	82
2018	30	Same	90	80	75.5

The university's graduate exit survey demonstrates that MLS program graduates have higher satisfaction ratings than other graduates in the university or college. The program also conducts a graduate exit survey to evaluate needed improvements.

Table 3c Employer Survey

Learner Outcomes related to employer satisfaction with MLS graduates. Survey conducted every 2 years. Table reflects results of 2018 survey.						
Year	N	Name of Survey	Quality of Training and Education	Coverage of skills needed for job	Coverage of knowledge needed for the job	Problem Solving Ability
2016	4	MLS program Employer survey	100% excellent or good ratings	100% excellent or good ratings	100% excellent or good ratings	100% excellent or good ratings
2018	19	MLS program Employer survey	100% excellent or good ratings	100% excellent or good ratings	100% excellent or good ratings	90% excellent or good ratings

Employers are 100% satisfied with MLS program graduates except in the area of problem- solving ability. No changes were made based on the results of the 2016 survey partially due to the low rate of return on this survey. Based on results from the 2018, faculty have increased the number of case studies and trouble shooting assignments to curriculum. Evaluation of this change and the need for modifications will be determined after review of the 2020 employer survey.

F. General Education

1. Does your program support the university General Education program? ☒ Yes ☐ No

   If yes, please complete the table below by listing the general education courses and noting which of the general education outcomes are addressed in the class. If no, skip this question.

Course	Results	Assessment Type	General Education Outcomes			
			Have acquired knowledge in the arts, humanities, and natural and social sciences	Think critically and independently	Write and speak effectively	Employ analytical reasoning and problem-solving techniques

HP 430	2017:93% passed 2018:94% passed 2019: 96% passed	Quizzes Writing assignments	X	X	X	X

Table 4 General Education Outcomes

Note: Not all programs evaluate every goal/skill. Programs may choose to use assessment rubrics for this purpose. Sample forms available at: http://www.aacu.org/value/rubrics/

2. Use Table 4 to further explain which goals of the *WSU General Education Program* are assessed in undergraduate programs (optional for graduate programs) and the results.

   Medical Laboratory Sciences faculty offer several Health Professions (HP-prefix) courses. One of these courses, HP 430 Impact of Disease on Global Events, is approved as an Issues and Perspectives, General Education course. MLS 430 provides scenarios on disease events throughout history, such as the Influenza Pandemic of 1918-19, and requires students to discuss the issues of these events with other online members of the course and then articulate their own perspective, based on information in the scenarios and discussions with other students. For most activities, there is no right or wrong answer. The course is evaluated by end-of-semester student survey (SPTE). Satisfaction with the course has been above university and college averages for the last three years.

G. Concurrent Enrollment

1. Does the program offer concurrent enrollment courses? ☐ Yes ☒ No

If yes, provide the assessment of such courses over the last three years (disaggregated by each year) that assures grading standards (e.g., papers, portfolios, quizzes, labs, etc.) course management, instructional delivery, and content meet or exceed those in regular on-campus sections.

If no, skip to next question.

H. Credit Hours Definition

1. Does the Program assign credit hours to courses according to Wichita State University Policy 2.18?
   ☒ Yes ☐ No

If no, provide explanation.

I. Overall Assessment

Define the overall quality of the academic program based on the above information and other information you may collect, including outstanding student work (e.g., outstanding scholarship, inductions into honor organizations, publications, special awards, academic scholarships, student recruitment and retention).

By the standards and evaluation reports of the program accrediting body, the practitioner credentialing body, employers of program graduates, clinical instructors of affiliation sites, and graduates of the program, the program is meeting and exceeding its academic goals. Graduation

rates and placement rates have been 100% for the last three years and the program's pass rate on the national credentialing exam averages 93% for the last three years.

Over the three years under study, MLS students have been awarded for their community service and scholarship.

- Abdul -Mannaan Giles, a Dorothy and Bill Cohen Honors and McNair scholar was awarded an Undergraduate Student Research Grant for his project, "Profiling mRNA with Protein Metabolite Expression in Plasma as a Diagnostic and Treatment Biomarker for Early Stage Alzheimer's Disease." He presented his research findings at five conference proceedings which included WSU- URCAF and McNair symposium, Harvard University National Collegiate Research Conference, Posters on the Hill in Washington D.C. and Kansas Undergraduate Research Day at the Capitol in Topeka. He received two awards during the McNair symposium, first place for his research poster and an award for excellence in research. He graduated with a dual degree in Biology and Medical Laboratory Sciences in May, 2018.
- Laura Boots was the recipient of the CHP Service and Leadership award. This award is given annually to a student who exemplifies the CHP Mission through involvement in activities/initiatives that demonstrate one or a combination of the following: community/civic engagement, service for and with others, celebration or promotion of diversity and inclusion, advocacy/educational awareness work, mentorship or guidance, and promotion of health and wellness.
- The Compliance Research Group (CRG) in Oklahoma City awarded MLS student, Emma Huffman a scholarship on the basis of her vision of the future role of the MLS in healthcare. CRG was created by a MLS graduate who has pledged $1000/year for student scholarships and $1000/year to support MLS faculty scholarly activity.
- In the Fall of 2017, MLS students participated in medical mission trips to Pierre Payen, Haiti, as part of their program. This trip not only provide opportunity to practice discipline skills but also demonstrate the importance of inter-professional teamwork. Students gained valuable perspective on the roles of all members of the healthcare team.

Part 4: Student Need and Employer Demand

Analyze the student need and employer demand for the program/certificate. Complete for each program if appropriate

Table 5 Employment of Majors

	Avg. Salary	Employment In state (%)	Employment in the field (%)	Employment related to the field (%)	Employment outside the field (%)	Pursuing graduate or professional education (N)	Projected growth from BLS** 2018
2017 - 19	$48,455 (WSU) $52,330 (BLS)	84% WSU	95% WSU	2% WSU	1% WSU	2% WSU	11%

* https://ksdegreestats.org/program_search.jsp and U.S. Bureau of Labor Statistics Website: http://www.bls.gov/oco/ are good resources to view job outlook data and salary information (if the Program has information available from professional associations or alumni surveys, enter that data)

A. Provide a brief assessment of student need and demand using the data from Tables 11-15 from the Office of Planning and Analysis and from the table above. Include the most common types of positions, in terms of employment graduates can expect to find. Also address students enrollment, degree production and employment outcomes for diverse students.

The program accepts on average 80% of those applying through the online application process for the professional program. Medical Laboratory Sciences is a "capped program," that is, the program may only accept the number of students that may safely practice in student laboratories and may be accepted into medical facilities for applied learning. The program continues to attract and matriculate well-qualified students to fill its classes and to graduate medical laboratory scientists who are sought-after by clinical laboratories in Kansas and elsewhere. Our graduates are in great demand with the majority finding employment prior to graduation. Most are employed in the field (95%) with a few (2%) pursuing graduate degrees in medicine or physician assistance programs. MLS graduates practice in hospital labs, physician office labs, reference and research labs and in fields related to laboratory practice such as sales representatives for laboratory equipment and education of laboratory personnel. Salaries are steadily increasing due to the shortage and the projected growth of the profession. OPA data reveals that the rolling 5-year average of program enrolled underrepresented minorities has significantly increased from 2011-15;(8.6%) to 2013-17; (13.8%). Rolling 5 -year graduation averages for under-represented minorities also have increased from 2012-16; (6.6%) to 2014-18;(11.2%). Employment outcomes for under-represented minorities mirrors those of non-minority graduates.

Part 5: Program Service

*Analyze the service the Program/certificate provides to the **discipline, other programs at the University, and beyond**. Complete for each program if appropriate. **Data tables 1, 2, 3 and 5a, b and c provided by the Office of Planning Analysis (covering SCH by FY and fall census day, instructional faculty; instructional FTE employed; program majors; and degree production) can be used to partially address this section.***

A. Provide a brief assessment of the service the Program provides using SCH by majors and non-majors.

Student Participation in Non-Major Course/*	MLS 430 Impact of Disease on Global Effects (Issues and Perspectives)		MLS 311 & 405 Program Prerequisite Courses		HP 203 & 303 Medical Terminology	
	SCH Majors	SCH Non-Majors	SCH Majors	SCH Non-Majors	SCH Majors	SCH Non-Majors
Year 2017	6	162	117	42	9	769
Year 2018	12	159	123	33	3	632
Year 2019	6	120	96	60	5	641

- Source: Reporting Services Fall Semesters

B. *Provide a brief assessment of the service the Program/certificate provides to other university programs.*

As a capped program, Medical Laboratory Sciences offers professional courses to MLS majors only. However, the program also offers online courses, both prerequisites to the program and general education courses. MLS 311 biochemistry, a program prerequisite, is offered online for state residents who plan to transfer into the campus professional program. MLS 405, immunology, also a program prerequisite, is offered online for similar reasons. The program seeks applicants from all parts of the state to provide medical laboratory personnel to healthcare facilities in all parts of the state.

MLS offers a General Education Issues and Perspectives course, HP430 Impact of Disease on Global Events, as a service to the university. Students from many programs in the College of Health Professions, and from other colleges, such as Liberal Arts and Sciences, Business, Education, Fine Arts and Engineering, participate in the course.

Program faculty rotate instructional participation in the college courses, HP 203 and 303, Medical Terminology, 2 credit hours and 3 credit hours, respectively. Students enrolled in the College of Health Professions, and other programs across campus participate in medical terminology courses. MLS faculty present lectures for other CHP departments including Dental Hygiene, Nursing, Physician Assistant, and Public Health Sciences.

C. *Provide a brief assessment of the service the Program/Certificate provides to the institution and beyond.*

All faculty members of the Medical Laboratory Sciences program serve on department admissions, scholarship, and curriculum committees. In addition, MLS faculty members serve on all college committees, under the guidelines of the college bylaws. Because there are more college committees than faculty in the program, some MLS faculty members serve on more than one college committee.

The tenure track and tenured faculty members in the Medical Laboratory Sciences department are involved in interdisciplinary research projects with the School of Nursing, and the departments of Dental Hygiene, Biomedical Engineering and Human Performance Studies.

To assist with recruitment and increase student credit hour production, the program created MLS 160- Introduction to the Clinical Laboratory which currently is delivered face to face but will delivered online to attract high school students and undeclared majors.

The program is responsible for the instruction of HP 203/303-Medical Terminology and HP 430-Impact of Disease on Global Events. These courses have generated an average of 840 SCH in the fall semester over the past three years. The the program created 6 badge courses in medical terminology to increase SCH for the university.

Faculty are members of ASCLS-KS, a professional organization for laboratory professionals. The chair is on the board of directors and all program faculty provide continuing education presentations at the annual meeting.

Two faculty maintain their clinical practice as laboratory professionals for Ascension Via-Christi and all program faculty are consultants as needed for clinical affiliate laboratories.

Faculty are involved in community service events such as Senior Health Services health fair and Medical Mission at Home. The program provides laboratory testing at these events.

Students in the MLS program are involved in a community service through a program called "Connect". In this program, students are required to perform a minimum of 10 hours of community service for various interdisciplinary community events and programs.

Part 6: Graduate Enrollment Management (GEM)

For each graduate program, summarize and reflect on the progress you have made toward your GEM plan following the (a)-(d) template.

A. *Briefly summarize the GEM plan, paying particular attention to the vision, actions, and GEM evaluation.*

B. *Discuss how graduate assistantships are being used to advance the GEM goals.*

C. *Provide an assessment of successes, challenges, and deficiencies with the GEM plan.*

D. *Summarize how the GEM plan is being updated going forward based on the findings above.*

Part 7: Undergraduate Enrollment Management

For each undergraduate program, summarize and reflect on the progress you have made toward your college's enrollment goals.

A. *Briefly describe how the department and faculty have engaged in undergraduate strategic enrollment management including both recruitment and retention initiatives and activities.*

Retention:

Every semester the chair sends emails to pre-MLS majors who have not enrolled and encourages them to enroll and stay on track.
All faculty use Student Early Alert System in MLS taught pre-requisite courses and HP 203/303/430. In addition, MLS faculty reach out with emails to students struggling in these courses to express their willingness to help them succeed. This help includes referring student to services provided by the university such as the counseling and testing center, financial aid, TRIO support and student health services.

Recruitment:

MLS faculty are involved in numerous university and college recruitment activities including:

Black and Yellow Days
Distinguished Scholarship Invitational (DSI), Honors Scholar Open House
Twice a year MLS informational open house events
Interactive presentations given at area high schools.
Tours of our labs to local and regional high school science classes.
Providing shadowing opportunities to student interested in a medical laboratory profession.
Collaborating with and providing information about the MLS program to pre-health care advisors at Butler, Hutchinson, Cowley County, Pittsburg State, K-State, Emporia State, Washburn and Fort Hays.
Creation of 6 Badge courses in Medical Terminology

B. *Provide an assessment of successes, challenges, and deficiencies with departmental activities.*

The majority of our successes have come from utilization of university services and SEM initiatives related to retention of our pre-majors. These services and initiatives have given us the tools and information to provide early interventions when a decline in academic performance is noticed in our pre-MLS majors that are taking pre-requisite courses for the program.

Our biggest challenges and deficiencies are in recruitment and there are a variety of reasons related to this. These include lack of time and faculty for recruitment activities, declining number of students entering higher education and an overall lack of knowledge of the MLS profession. Over the last three years our applicant pool has decreased by about 30%. This trend is not unique to the WSU-MLS program but rather a trend seen by all MLS/CLS program in the Midwest. Increased utilization of SEM recruitment initiatives will help with this challenge and the program will continue to make recruitment a priority.

Part 8: Impact of Previous Self-Study Recommendations

At the conclusion of the last program self-study performed, the committee provided recommendations for improvement for the department. Please list those recommendations and note your progress to date on implementation.

Complete the table.

Table 6 Changes made based on Previous Recommendations

Recommendation	Activity	Outcome
Free up tenured faculty time for research/creative scholarly activity.	Workload has been re-assessed and courses have been assigned based on teaching, scholarship and service percentages for tenure vs non-tenure track faculty	Tenure track workload now includes time for scholarly activity. Non-tenure track faculty assigned responsibility for teaching non-MLS courses.
Consider incorporating the newly approved UNISCOPE model into department's assessment of scholarship.	The UNISCOPE model was incorporated in the 2018 FARs.	Faculty recognized the value of using this model and have become more innovative and productive in their scholarship of teaching and service.
Align recruitment and retention efforts with the university's strategic enrollment plan.	More utilization of university services and initiatives related to retention and recuitment.	Increased numbers of pre-MLS students staying on track.

Part 9: Program Goals from Last Review

Report on the Program's/certificate's goal (s) from the last review. List the goal(s), data that may have been collected to support the goal, and the outcome. Complete for each program if appropriate

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Complete the table.

Table 7 Results of Goals from Last Review

(For Last 4 FYs)	Goal(s)	Assessment Data Analyzed	Outcome	Status (Continue, Replace, Complete)
	Adjust teaching load, focusing on the use of non-tenured faculty time in student lab experiences, in order to provide tenured faculty time for scholarly activity.	Scholarly activity	Scholarly activity has increased for both non-tenure and tenure track faculty since last review especially in the areas of research and professional presentations.	Continue
	Develop laboratory simulations of the applied learning experience to reduce costs in the program.	Reagent expenditures	Costs associates with laboratory reagents have gone down due to simulations created for both Chemistry and Molecular Diagnostics lab sessions.	Continue
	Explore options for re-services equipment to lower the cost of purchasing new equipment.	Equipment expenditures	No newly acquired equipment has been purchased. Faculty are maintaining current lab instruments. Used equipment has been donated to the program by clinical affiliates.	Continue

Part 10: Forward-facing Goals

Identify goal(s) for the Program to accomplish in time for the next review. Goals must be **Specific, Measurable, Attainable, Realistic and Time-bound (SMART)** and should be tied to the university and college strategic plans.

Complete the table.

Table 8 Forward Facing Goals for Program Review Period

Program/Certificate Goal	Specific	Measurable	Attainable	Realistic	Time-bound
Ex. To improve student learning outcomes (exam scores) by supporting Supplemental Instruction from four sections to seven by fall 2020.	*Yes – Exam Scores*	*Yes – How many sections.*	*Yes – budget approved. Discussed with OSS.*	*Yes – Within the scope of responsibility.*	*Yes – Fall 2020*
Increase MLS program applicant pool	Yes- Recruitment and enrollment	Yes- # of applicants to program	Yes- utilization of SEM initiatives	Yes- able to accept up to 16 students/semester	Yes- Spring 2021
Create a certificate in Phlebotomy	Yes- Recruitment and enrollment	Yes # of SCH created	Yes- Discussed with faculty	Yes- within the scope of practice and a requested certificate by clinical affiliates	Yes – Spring 2021
Create badge courses in lab interpretation	Yes- Enrollment	Yes # of SCH created	Yes- Discussed with faculty	Yes- within the scope of practice	Yes – Fall 2021

Provide any additional narrative covering areas not yet addressed.